The Sign of the V

Papers in Honour of Sten Vikner

Edited by Ken Ramshøj Christensen,
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Department of English
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All contributions have undergone anonymous peer review.

Foreword

With this volume, friends and colleagues worldwide wish to honour Sten Vikner on his 60th birthday on the 9th of December 2019 and celebrate not only his birthday, but also his contribution to the field of Linguistics.

Although he was born in Copenhagen, Denmark, and now makes his home in Denmark's second largest city, Aarhus, Sten is truly an international scholar. This is evident from his degrees, awarded in four different countries: *Dr. Phil. Habil.*, University of Tübingen, Germany (Vikner 2001c); *Docteur ès lettres*, University of Geneva, Switzerland (Vikner 1990); *Cand. Phil.*, University of Copenhagen, Denmark; M.A., University College London, U.K. He has held visiting positions in six different countries: University of Cambridge, U.K.; Netherlands Institute for Advanced Studies, Wassenaar; Rutgers University, New Jersey, USA; University of Tromsø, Norway; University of Lund, Sweden; University of Aarhus, Denmark; Massachusetts Institute of Technology, Cambridge MA, USA.

Of his many publications, it is fitting to first mention that which established him as one of the foremost linguistic authorities on Germanic verb movement (Vikner 1995) and which remains a frequently cited monograph 25 years later. A large part of his subsequent work is focused on the distribution and structure of the verb and the verb phrase, i.e. the VP headed by V. It is, therefore, appropriate that the title, *The Sign of the V*, features the 'V', the verb, incorporating his initials, S.V. The title brings in one of his other interests, detective fiction, in particular the Sherlock Holmes novels. Those familiar with the Holmes stories will recognise the word play on the novel *The Sign of the Four,* or in this case, the Roman V for 'five'. The front-page artwork features the oak tree, which grows in a branching pattern that is highly reminiscent of a binary branching syntactic tree, the version of generative grammar that Sten has always argued for (e.g. Vikner 2011). Those in search for further symbolism will note the eerie background, suggestive of a Holmes novel; readers may also recognise that the font face is Baskerville.

The four projects for which Sten has been investigator reveal the range of his scientific research area. He has an interest in theoretical syntax, evident from the project *Optimality-theoretic syntax of German and the other Germanic languages* and publications on Optimality Theory (e.g. Engels & Vikner 2014; Heck et al. 2002; Vikner 2001b,c). Another of his theoretical interests focuses on the similarities between formal and functional linguistic theories; he has long advocated facilitating dialogue among researchers who work in different frameworks. This theoretical

comparative work first involved clause structure (e.g. Bjerre et al. 2008; Vikner & Jørgensen 2017) and later nominal syntax with the project *Similarities and differences between clauses and nominals – Comparative syntax across theoretical approaches*. He is also an established authority on object shift, cf. the project: *Object positions – Comparative syntax in a cross-theoretical perspective* (Vikner, 1994a, 2001b, 2005a, 2017c; Engels & Vikner 2013a, 2014). While constantly concerning himself with advancing theory, Sten has been thorough in perusing empirical data. For example, he has contributed to the database of variation in Danish through his involvement in the project *Danish Dialect Syntax*, where he and Henrik Jørgensen collaborated.

The comparative approach to the study of linguistics has always been important to Sten, whether comparing theories or languages (e.g. Vikner 2007). The scope of comparison is sometimes the Germanic family, as in his PhD dissertation, 1995 monograph, and Habilitation, as well as in subsequent work (Vikner 1990, 1995, 2001c, 2005b, 2017 a,b). At other times, the comparison is narrower, e.g. the Scandinavian languages (Johnson & Vikner 1994; Thráinsson & Vikner 1995; Vikner 1997a). He does also attend to his native language, Danish (Kizach & Vikner 2018; Vikner 1988, 1991) or focus on comparisons with some of the less widely spoken Germanic languages, such as Faroese (Heycock et al. 2012), Yiddish (Vikner 2003) and Afrikaans (Biberauer & Vikner 2017). Although he is well known for his work on verb movement, particularly the clausal left periphery (Schwartz & Vikner 2007; Vikner 1991, 2017a; Vikner, Christensen & Nyvad 2017), Sten has not neglected the nominal domain (Vikner 2001a, 2014; Wood & Vikner 2011). He has also has worked on tense, aspect, modality and event structure (Grimshaw & Vikner 1993; Thráinsson & Vikner 1995; Vikner 1988). Judging from the many co-authors in the reference list, it is evident that Sten is a team player, collaborating, over the years, with many colleagues internationally, but also very close to home, including his father (S. Vikner & C. Vikner 1997; C. Vikner & S. Vikner 2008).

Sten's colleagues are grateful for his service to the field, particularly his work as editor of the *Nordic Journal of Linguistics* (2001–2015), his continual support of young researchers as head of the PhD programme *Language, Linguistics & Cognition*, University of Aarhus (2011–2016) and his work as head of the research programme in *Language Science*, University of Aarhus. Thank you, Sten, and many happy returns.

Ken Ramshøj Christensen, Henrik Jørgensen, and Johanna L. Wood
Aarhus. November 2019.

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Til en ung en kjekk en kar: Indefinite determiner spreading in Scandinavian and beyond[1]

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Abstract

This study investigates multiple indefinite determiners in structures involving adjectival modification in a Norwegian dialect. Determiner spreading has been observed in numerous non-standard Germanic varieties but has been most extensively explored in Modern Greek. This paper considers recurring indefinites in Norwegian in light of Greek polydefinites, finding numerous similarities. In both languages, structures involving multiple determiners allow violations of adjectival ordering restrictions (AORs) and are prohibited with adjectives that may not occur in predicative position. However, these similarities are only apparent, as both can be explained by the fact that polyindefinites in Norwegian involve parallel direct modification. Furthermore, they are homophonous with nominal proforms such as *a big one* (*en stor en*). These facts, together with their prosodic characteristics, hints at an analysis where these polyindefinites are nominal proforms.

1. Introduction

While the occurrence of multiple definite articles in the presence of adjectival modification in languages such as Modern Greek is a well-known

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and well-studied linguistic phenomenon (cf. e.g. Alexiadou & Wilder 1998; Alexiadou 2014; Kolliakou 2004, Lekakou & Szendröi 2007; Ramaglia 2007; Leu 2009; and Lekakou 2017), the existence of multiple indefinite articles with adjectival modifiers has received considerably less attention in the literature. This paper aims to bridge this gap by studying a phenomenon which looks like recursive indefinite articles, or polyindefiniteness, in a North Norwegian dialect spoken on the island of Senja.

In the Senja dialect, multiple indefinite articles can be found in indefinite noun phrases involving one or more adjectives, as illustrated in (1a) – (1c). The presence of all except the first article is optional, as indicated by parentheses. Furthermore, all adjectives must precede the noun (1d).

(1)   **Norwegian, Senja dialect**
    a. **ei**   stor   **(ei)**   fin   **(ei)**   seng
       a.F   big.M/F   (a.F)   fine.M/F   (a.F)   bed
       'a big nice bed'

    b. **en**   stor   **(en)**   fin   **(en)**   gutt
       a.M   big.M/F   (a.M)   fine.M/F   (a.M)   boy
       'a big nice boy'

    c. **et**   stor-t   **(et)**   fin-t   **(et)**   hus
       a.N   big-N   (a.N)   fine-N   (a.N)   house
       'a big nice house'

    d. *__en__ stor   **en**   gutt   **en**   fin.
        a   big.M   a   boy   a   fine.M

Note that adjectives in Norwegian also inflect for gender, although due to syncretism between the masculine and the feminine gender, there is only a two-way opposition between the syncretic form and the neuter form. The adjectival inflection is often called the 'strong adjectival paradigm', to illustrate that definite forms inflect differently (the 'weak adjectival paradigm'), as shown in (2).

(2)   **Norwegian, Senja dialect**
　　　　det   stor-**e**   fin-**e**   hus-**e**
　　　　the.N   big-WEAK   nice-WEAK   house-DEF.N
　　　　'the big nice house'

This paper will investigate the various restrictions on the distribution of polyindefinites, as well as another phenomenon which strongly resembles these structures, namely the possible addition of the vowel *-e* with adjectives in indefinite noun phrases. Such an investigation involves considering to what extent these multiple indefinites share any characteristics with polydefinites, or so-called Determiner Spreading (DS), in Modern Greek and determining to what extent they can be represented in similar ways. As we will see, the two construction types share some important characteristics, but are also different in several ways.

　　　This article is organized as follows. Section 2 considers recursive indefinite articles and adjectives in the dialect of Senja. Conversely, section 3 does the same but for definite articles and adjectives in Greek. In section 4, the data from the Senja dialect will be compared with determiner spreading in Modern Greek. Two analytic questions concerning the recursive article and the predicativity of adjectives are addressed in section 5. Section 6 concludes the paper.

2. An overview of polyindefinites and recursive *-e* in the Senja dialect

As illustrated in (1) above, the Senja dialect of Norwegian optionally allows recursive indefinite articles in modified indefinite noun phrases. These articles can appear with all the three genders, and all except the first article can be omitted. However, when multiple articles occur, there is a preference for them to appear with all the adjectives. The phenomenon under investigation is referred to as a recursive article, but thus far this term is mainly used for convenience, as the exact status of the element is not clear (see section 2.3 below).

　　　Indefinite determiner doubling has been reported from a range of non-standard varieties across Germanic. (3)-(5) provide some examples from the literature (see also Lekakou 2017 on article doubling more generally).

(3)   **North Swedish** (Delsing 1993: 143)
       en stor **en** ful   **en** kar
       a   big a   ugly a   guy
       'a big ugly guy'

(4)   **Zürich German** (Weber 1948: 203)
       Mer   wöisched **en** rächt **en** gueten Apitit.
       We   wish   a   real   a   good appetite
       'Enjoy your meal.'

(5)   **Bavarian** (Kallulli & Rothmayr 2008: 97)
       a so **a** groβa bua
       a   so   a   big   boy
       'such a big boy'

However, as Wood & Vikner (2013) point out, these examples can also be found in written corpora, e.g., in English and in Danish (see also Vannebo 1972 on Norwegian).

(6)   My rules are to cut down drinking, control my temper if I am drinking, not to drink in **a** such **a** large group and not to waste much money. (Wood 2002: 109)

(7)   **Danish** (Wood & Vikner 2013: 518)
       Det modsatte er, at   du   ere
       The opposite is   that you   are

       en sådan **en** smart fyr, der er meget ude om natten.
       a   such a   smart guy who is much   out at   night

(8)   **Danish** (Wood & Vikner 2013: 519)
       Men **et** så stort **et** prosjekt i   byens   hjerte   kræver
       But a.N so big.N a.N project   in town.the's heart   demands

       selvsagt et langt højere informationsgrad.
       of.course a far   higher information.degree

Wood & Vikner argue that the use of this article is not confined to a particular style or register in either English or Danish. Native speakers report that such examples need a comma intonation in order for them to

be acceptable. A full investigation of these constructions remains to be conducted in Danish, so we turn our attention to another Scandinavian variety, namely the dialect of Senja in Northern Norway.

The recursive article usually appears in structures which are highly descriptive. A few examples found through a Google search are provided in (9)-(11) below:[2]

(9) **Norwegian**

    Noen   bilder fra   **en flott** **en vinterdag** i Finnvikdalen.

    some   photos from a   lovely a winter.day in Finnvik.valley

    'Some photos of a beautiful winter's day in Finnvikdalen.'

(10) **Norwegian**

    Det   gir   oss **en flott** **en økning**   på   27%.

    That   gives us a great an increase on   27%

    'That provides us with a great increase of 27%.'

(11) **Norwegian**

    Amazon   mener å se **et stort** **et potensial**...

    Amazon   mean to see a large a potential...

    'Amazon believes there to be a great potential...'

In fact, recursive articles very often appear and feel most natural in exclamative constructions of the kind *what a _____*. Again, consider a couple of examples from Google (12), and a couple of our own examples (13).

(12) **Norwegian**

    a. For **en flott** **en hjemmeside** du har!

       What a nice a home page   you have

       'What a nice home page you've got!'

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[2] It is interesting that it is possible to find examples with recursive articles through Google searches. Our guess would be that these are the result of the mixed oral/written status of a number of the functions of the web, such as blogs and chat rooms, which makes it possible to use forms that are non-standard in writing. Another possibility is that they are quite simply errors, but we do not think this is very likely. Whether these are all written by speakers of North Norwegian dialects, or whether there are other areas where the same structures are used, is not clear. Also, the google searches give very many examples of the structure in Danish, raising similar questions.

b. For   **en flott en**   **presentasjon**!
   What a   nice a   presentation
   'What a nice presentation!'

(13) a. Førr **ei** stor **ei** fin **ei** pia!³
      What a big a nice a girl
      'What a nice big girl!'

   b. Førr   **en** falsk **en** faen!
      What a false a devil
      'What a lying bastard!'

Additionally, recursive structures resemble intensifying structures with *så* 'so', which are found in all dialects of Norwegian. In these structures, adjectives are followed by an indefinite article. The following examples illustrate the phenomenon, all taken from Google (see also Wood & Vikner 2011 on Danish, English and German).

(14) **Norwegian**
   a. **Så fin en gryte** du   fikk!
      So nice a   pot   you got
      'What a nice pot you got!'

   b. … han hadde hatt **så fin   en drøm.**
         he   had   had so nice a dream
      '… he had had such a nice dream.'

   c. Ah, **så fin en by**!   Ah, **så fin en tur**!
      Ah, so nice a city   ah, so nice a trip
      'Ah, what a city! Ah, what a trip!'

   d. og det var ikke **en fullt så fin   en   tanke.**
      and that was not   a quite so nice a   thought
      '… and that was not quite as nice a thought.'

These facts suggest that the recursive article is related to an intensifying interpretation (see also Alexiadou 2010: 12), unlike Greek, as we will see in sections 3 and 4.

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³ This is very typical use of the polyindefinite as a comment on somebody's baby.

In the next section, we will consider some of the literature on the much more well-studied phenomenon of polydefiniteness in Modern Greek in order to determine whether it shares any characteristics with polyindefiniteness found in North Norwegian.

3. An overview of polydefiniteness in Greek

Multiple definite determiners have been observed in a number of languages; the most well-known and well-studied of these is probably so-called Determiner Spreading (DS) or polydefiniteness in Greek. This section will consider some of the characteristics of this phenomenon to see how it compares with the recursive indefinites found in the North Norwegian Senja dialect. However, it is already clear that DS in Greek is fundamentally different from polyindefinitess in Norwegian in at least two ways: First, there is an important difference between the two in the sense that we are considering definites in one language and indefinites in the other. Second, we will suggest that the recursive article in Norwegian is post-adjectival rather than pre-adjectival. Nevertheless, there are some ways in which Norwegian polyindefiniteness resembles polydefiniteness in Greek, and because of this it is helpful to consider the Greek case in some more detail.

Determiner Spreading in Greek is a phenomenon that occurs in the presence of two or more adjectives in definite noun phrases. It is obligatory when the adjectives appear post-nominally. While the order of the various adjectives is rigid in general (15), DS leads to a freer word order (16) (Alexiadou & Wilder 1998: 303). However, the order of adjectives cannot be scrambled if they all appear pre-nominally; it is necessary for the noun to move away from its base position for this to happen (Alexiadou & Wilder 1998: 316-317; Alexiadou 2014) (17).[4]

(15)   **Greek** (Alexiadou & Wilder 1998: 317)
   a. **to**   megalo   kokkino   vivlio
      the   big   red   book

   b. ***to**   vivlio   kokkino   megalo
      the   book   red   big

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4   According to Alexiadou and Wilder (1998: 317), this order is only acceptable if *kokkino* 'red' is contrastively stressed. However, according to Ramaglia (2007), some speakers consider (17) acceptable even without contrastive focus/stress.

(16)   **Greek** (Alexiadou & Wilder 1998: 316-317)
    a. **to**   megalo **to**   kokkino **to**   vivlio
      the big   the red   the book

    b. **to**   vivlio **to**   kokkino **to**   megalo
      the book the red   the big

(17)   **Greek** (Alexiadou & Wilder 1998: 317)
    *to   kokkino **to**   megalo **to**   vivlio
     the red   the big   the book

Modified indefinite noun phrases in Greek do not involve any DS, but nevertheless permit a relatively free word order (18). However, the indefinite article can only appear once in these structures, as illustrated in (19).

(18)   **Greek** (Marinis 2003: 168)
    a. ena   meghalo petrino   spiti
      a/one big   stone-made house

    b. ena   meghalo spiti   petrino
      a/one big   house   stone-made

    c. ena   petrino   spiti   meghalo
      a/one stone-made house   big

    d. ena   spiti   meghalo petrino
      a/one house   big   stone-made

    e. ena   spiti   petrino   meghalo
      a/one house   stone-made big

(19)   **Greek** (Marinis 2003: 168)
    *ena   meghalo **ena** petrino   **ena** spiti
     a   big   a   stone-made a   house

Alexiadou (2014) argued that the reason why multiple indefinite determiners are out is because the indefinite article is actually a numeral, i.e. an AP in its own right, and as a result it cannot be doubled.

4. Greek polydefiniteness and Norwegian polyindefiniteness compared

If we compare the findings in section 3 to polyindefiniteness in the Senja dialect, we find that general Adjectival Ordering Restrictions (AORs) apply to both indefinites and definites in Norwegian (20), while the order is less restrictive with polyindefinites (21). However, all adjectives must be prenominal (22), which is different from Greek DS, where it appears that the adjectives can scramble only when the noun also has scrambled (see the examples in (15)-(17) above).

(20) **Norwegian**
    a. en stor fin rød vase
       a big nice red vase
       'a nice big red vase'

    b. *en rød stor fin   vase
       a red big nice vase

    c. den   store fine røde vase-n
       the.M/F big   nice red   vase-DEF
       'the nice big red vase'

    d. *den   røde   store fine vase-n
       the.M/F red   big   nice vase-DEF

(21) **en**   rød **en** fin   **en** stor **en** vase
     a   red a nice a big a   vase
     'a red, nice, big vase'

(22) ***en** vase   **en** stor **en** fin
     a vase a big a nice

Note, however, that in examples such as (21), in which the adjectives do not follow AORs, there is no accompanying marked interpretation of the noun phrase.

        Returning to polydefiniteness in Greek, it has been shown that it is prohibited with non-intersective adjectives of the type *alleged* and *former* and with ethnic adjectives, including nationality adjectives occurring with

event nominals, and names[5] (for relevant examples and other adjectives that resist DS, see e.g., Alexiadou & Wilder 1998; Kolliakou 1999; Marinis 2003; Ramaglia 2007). Consider (23):

(23)　**Greek** (Ramaglia 2007: 164)
　　　a. **o**　ipotithemenos　**(*o)**　　dolofonos
　　　　　*the　alleged　　　　(*the)　murderer*

　　　b. **o**　proin　**(*o)**　proedhros
　　　　　*the　former　(*the)　president*

　　　c. **i**　italiki　**(*i)**　isvoli
　　　　　*the　Italian　(*the)　invasion*

All of these share the characteristic that they would be ungrammatical with the adjective in predicative position, and this has resulted in Alexiadou & Wilder (1998) proposing an analysis of the phenomenon inspired by Kayne's (1994) analysis of attributive adjectives. Alexiadou & Wilder suggest that the adjectives occurring with DS originate in relative clauses which are complements of the determiners. Furthermore, they argue that the fact that modified indefinite noun phrases also permit scrambling in Modern Greek suggests that these structures should be given the same representation as their definite counterparts involving DS. Leu (2009) also takes Greek polydefinites to originate as relative clauses, but unlike Alexiadou & Wilder (1998), he claims that this is true of all attributive adjectives, including non-intersective ones.[6]

　　This seeming ban on polydefiniteness with adjectives that cannot be used predicatively found in Greek appears to apply to polyindefinites as well, as adjectives that cannot be used predicatively cannot occur with the recursive article (24). However, in Norwegian, the ungrammaticality of nationality adjectives also extends to non-event nominals, as illustrated in

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[5]　With names, such as the North Pole (ia) and the White House (ib), the predicative use is
　　ungrammatical under the relevant interpretation.
　(i)　a.　o　　Vorios　(*o)　Polos
　　　　　　　the　North　　　　Pole
　　　　b.　o　　Lefkos　(*o)　Ikos
　　　　　　　the　White　　　House
[6]　According to Leu, there is some variation between native speakers regarding whether
　　they accept non-intersective adjectives in DS structures or not.

(24d). The adjective *Norwegian* is perfectly acceptable as the predicate of the noun *artist*, as shown in (24e).

(24)   **Norwegian**
    a. ***en** påstått   **en** morder
       an alleged   a murderer

    b. ***en** tidligere   **en** skuespiller
       a former   a actor

    c. ***en** norsk   **en**   invasjon
       a Norwegian   an   invasion

    d. ***en** norsk   **en**   artist
       a Norwegian   an   artist

    e. Artist-en   var   norsk.
       Artist-DEF   was   Norwegian
       'The artist was Norwegian.'

The fact that nationality adjectives which can appear in predicative position may be used in polyindefinites suggests that predicativity might not play as important a role for these structures as it might appear. This issue will be returned to in section 5, as we consider the interpretive impact of article recursion in Greek and Norwegian.

The interpretation of Greek polydefinites has been considered to varying degrees in the literature. In some cases, such as Alexiadou & Wilder (1998), DS is not ascribed any particular interpretation as compared to monadic definites. This view is shared by Lekakou & Szendröi (2007), who in fact explicitly argue that there is no particular interpretation connected to these structures. There are some studies where polydefinites are claimed to have an interpretive impact (for a summary, see Alexiadou 2014), however, and one of these is Kolliakou (2004). Kolliakou argues that monadic definites and polydefinites are semantically identical, but that while both kinds of definites are associated with the kind of uniqueness constraints that applies to definites in general, the latter are also dependent on some notion of contrast with alternative elements that are contextually salient. A similar view is expressed in Ramaglia (2007). This is an effect

that is frequently achieved by deaccenting in other languages. Kolliakou (2004: 268) illustrates deaccenting with the following dialogue (25):

(25) Ann: What did you get Ben for Christmas?
      Clara: I gave him [$_{focus}$ a blue SHIRT].
      Ann: What did you get Diane?
      Clara: I got her [$_{focus}$ a RED shirt].

The DPs *the blue shirt* and *the red shirt* are prosodically different in the sense that in the former, the nuclear accent (in small capitals) is on the noun, while in the latter, it is on the adjective *red*. In the second DP, the noun has been deaccented to contrast the red with the blue shirt. As mentioned, the same kind of contrast can be expressed either through deaccenting or with the use of polydefinites in Greek, according to Kolliakou (2004). This is illustrated in the following dialogue:

(26) **Greek** (Kolliakou 2004: 269)
      a. Zoe: Ti   pires   tu   Yanni   gia ta
                  What.ACC *got.2SG* *the*   *John-GEN* *for* *the*

                  christugena?
                  christmas
                  'What did you get Yannis for Christmas?'

      b. Daphne: (Tu   pira)   [$_{focus}$ tin   asemia PENA]
                  He.GEN   *got.1sg*   *the* *silver* *pen.ACC*
                  'I got him the silver pen.'

      b'. Daphne: #(Tu pira) [$_{focus}$ tin ASEMIA pena]
                  #'I got him the silver pen.'

      b''.Daphne: #(Tu pira) [$_{focus}$ tin asemia tin pena]
                  #'I got him the silver pen$_{polydefinite}$.'

      c. Zoe: Ti   pires   tis   Maria?
                  What.ACC *got.2SG* *the*   *Mary-GEN*
                  'What did you get Maria?'

d. Daphne: (Tis   pira)   [$_{\text{focus}}$ tin   chrisi   tin   pena]
             She.GEN   *got.1sg*   *the golden the*   *pen.ACC*
             'I got her the golden pen$_{\text{polydefinite}}$.'

d'. Daphne: (Tis pira) [$_{\text{focus}}$ tin CHRISI pena]
               'I got her the golden pen.'

d''.Daphne: #(Tis pira) [$_{\text{focus}}$ tin chrisi PENA]
               #'I got her the golden pen.'

Thus, it appears that Greek polydefinites are interpreted with contrastive focus on the adjective, but this is not the case for Norwegian polyindefinites. A context such as (25) above is not appropriate for the recursive indefinite article. Rather, Norwegian polyindefinites seem to have the quality that they intensify the interpretation of the adjective that they cooccur with.

Our comparison between the determiner spreading phenomena found in Greek and Norwegian reveals that both allow scrambling of adjectives and that both are prohibited with non-predicative adjectives. However, there are some differences as well, as we have seen that Norwegian polyindefinites are not permitted with nationality adjectives, even when they appear with non-event nominals. Furthermore, we have seen that the two recursion phenomena yield very different interpretations. In the next section, we will consider a couple of issues in some more detail, which will prepare the ground for a more detailed formal analysis in future work.

5. Some analytical questions
In this section, we will consider two analytical questions that pertain to polyindefiniteness: The status of the recursive article and adjectival inflection in 5.1, and in 5.2 the relationship between polyindefiniteness, predicativity, and adjectives.

5.1 The status of the recursive article and adjectival inflection
The Senja dialect, like many other Germanic varieties, distinguishes between strong and weak adjectives; strong adjectives appear in indefinite noun phrases (and predicatively) and are referred to as such among other things because they are marked for gender, as illustrated in section 1 above. The weak adjectival inflection is found in definite noun phrases and is characterised by displaying the same form in all genders and numbers (27).

In the Senja dialect, as well as some other North Norwegian varieties, there exists something which looks like an extra adjectival inflection (-*e*). This inflection may occur in modified indefinite noun phrases. This adjectival ending will henceforth be referred to as adjectival -*e*, and is illustrated in (28).

(27)   **Norwegian, Senja dialect**
    a. det   stor-*e*   fin-*e*   hus-e
      the.N *big-WEAK* *nice-WEAK* *house-DEF*

    b. den   stor-e   fin-e   seng-a
      the.M/F *big-WEAK* *nice-WEAK* *bed-DEF*

    c. den   stor-e   fin-e   gutt-n
      the.M/F *big-WEAK* *nice-WEAK* *boy-DEF*
      'the nice big house/bed/boy'

(28)   **Norwegian, Senja dialect**
    ei   stor**(-e)** fin**(-e)** seng
    a.F *big-e* *nice-e* *bed*
    'a nice big bed'

A comparison between (27b) and (28) shows that the adjectival -*e* appearing in the indefinite noun phrase resembles the weak adjectival inflection, but this similarity is only apparent. A closer comparison between the two reveals that they are different prosodically. The adjectival -*e* that appears in indefinite noun phrases imposes pitch accent 1 (high-low), while the weak adjectival inflection imposes pitch accent 2 (low-high-low) (see Kristoffersen 2000 on this difference in Norwegian more generally). Interestingly, the recursive article patterns with the adjectival -*e* and takes pitch accent 1.

(29)   **Norwegian, Senja dialect**
    a. den   ²[stor-**e**]   gutt-en
      the.M *big-WEAK* *boy-DEF*

    b. **en**   ¹[stor-**e**] gutt
      a.M *big-e* *boy*

    c. **en**   ¹[stor **en**] gutt
      a.M *big* *a.M* *boy*

The fact that both occur post-adjectivally and impose pitch accent 1 suggests that the adjectival *-e* and the recursive indefinite article might be slightly different spell-outs of the same element. Relatedly, the post-adjectival indefinite article appears to be prosodified with the preceding adjective rather than the following adjective or noun, making (30a) and not (30b) the correct representation of the element in question. This raises the question of whether the recursive article is a true article.

(30) **Norwegian, Senja dialect**
    a. en **[**stor en**] [**fin en**]** gutt
    b. **[**en stor**] [**en fin**] [**en gutt**]**
       a *big* *a* *nice* *a* *boy*

Naturally, this prosodification does not preclude the possibility that the relevant element is an article; it is well known that prosodic and syntactic structure do not always overlap. Thus, the term recursive article will be used here for practical purposes. The possibility that the form used in these contexts is a post-adjectival element of some kind opens up the question of what the exact status of this element is, a question we will return to below.

    The claim that adjectival *-e* and the recursive indefinite article spell out at least partly overlapping features is reinforced by the fact that they occur in complimentary distribution, as illustrated in (31) below.

(31) **Norwegian, Senja dialect**
    ei stor-**e** (***ei**) fin-**e** (***ei**) seng
    a.F *big-e* *(a.F)* *nice-e* *(a.F)* *bed*

However, there is one important difference between the two: While the recursive indefinite article appears with nouns in all genders, the adjectival *-e* is only found on adjectives that are not overtly marked for gender. Recall that we distinguished between strong and weak adjectives above, where strong adjectives were described as occurring in indefinite noun phrases and having overt gender (and number) marking. A closer look at these reveals that it is in fact only neuter adjectives that have clear overt gender marking, and the adjectival *-e* can only occur with the forms that do not, namely the syncretic masculine and feminine forms. This is illustrated in (32a-c), which is equivalent to (1), but with the adjectival *-e* rather than the recursive indefinite article. As shown in (32d), stripping the neuter

adjective of its inflection does not improve the acceptability of the noun phrase. Furthermore, the only strong adjective that is overtly inflected for gender in the masculine and the feminine forms, *liten* (small), cannot occur with the adjectival *-e*, irrespective of whether the gender marking is present or not (32e-f).

(32)   **Norwegian, Senja dialect**
   a. **ei**   stor-**e**   fin-**e**   seng
      a.F   big-e   fine-e bed

   b. **en**   stor-**e**   fin-**e**   gutt
      a.M   big-e   fine-e boy

   c. *****et**   stor-t-**e**   fin-t-**e**   hus
      a.N   big-N-e   fine-N-e   house

   d. *****et**   stor-**e**   fin-**e**   hus
      a.N   big-e   fine-e   house

   e. *****en**   lit-en-**e**/lit-**e**   gutt
      a.M   small-M-e/small-e boy

   f. *****ei**   lit-a-**e**/lit-**e**   jente
      a.F   small-F-e/small-e girl

So far, we have seen that the Norwegian Senja dialect permits recursive indefinite articles. However, these articles are prosodified as enclitic rather than proclitic on the adjectives, suggesting that they are post-adjectival elements rather than pre-adjectival articles. This impression is reinforced by the existence of the adjectival *-e* which also may be used in indefinite noun phrases and can be shown to be in complimentary distribution with the recursive article. Both the recursive article and the adjectival *-e* impose pitch accent 1 on the adjective and article/-*e* combination. The two are different, however, in the sense that while the article form can occur with nouns and adjectives of any gender, the adjectival *-e* can only appear with adjectives without overt gender marking. This suggests that what has been referred to as a recursive article here is in fact not an article at all, though the name is maintained for practical reasons.

Numerous different analyses have been proposed for the recursive article. Delsing (1993) originally proposed that they are all articles. This captures the plural indefinite article in these Northern Swedish varieties, cf. (33):

(33) **North Swedish** (Delsing 1993: 144)
    små   a   stena
    small   *a.PL*   *stones*

However, this analysis needs to capture the different status from the main indefinite article, which we can see when considering the Northern Norwegian plural indefinite article as in (34).

(34) **Norwegian, Senja dialect**
    a. Han hadde **ei**   *(stor-e) tre   i hage-n.
       he   *had*   *a.F*   *big-PL* *tree.N.PL* *in* *garden-DEF*
       'He had some (big) trees in the garden.'

    b. Førr *(**ei**) (stor-e) hend-er
       what *a.F*   *big-PL*   *hand-PL*
       'What (big) hands!'

As (34) illustrates, the plural indefinite article only occurs in structures that are either modified (34a) or exclamative (34b). Importantly, in these contexts, the indefinite article cannot be recursive.

    We will now consider three further hypotheses about the status of the recursive article. First, we explore the possibility that it is an adjectival inflection of some kind. Second, we consider an analysis whereby the recursive article is a spurious article. Lastly, we discuss an analysis whereby the recursive article is a nominal proform, arguing that this captures two important properties, namely the intensified interpretation and the parallel direct modification that it imposes.

    We start by looking at the possibility that it is an adjectival inflection. It has been suggested in Julien (2005) and Anderssen (2006) that the recursive article could be the spell-out of the head of the phrase which has the Adjectival Projection in its specifier position. Anderssen further argues that the adjectival *-e* represents a non-gender-marked form of the

same head. Recall that we have already seen that both the adjectival *-e* and the recursive article take pitch accent 1 in combination with the preceding adjective. This also seems to support the view that both should be regarded as adjectival inflections. Consider (35a-b), repeated from (29b-c) above.

(35) **Norwegian, Senja dialect**
    a. **en**   ¹[stor-**e**] gutt
       a.ᴍ   *big-e* *boy*

    c. **en**   ¹[stor **en**] gutt
       a.ᴍ   *big* *a.ᴍ* *boy*

The view that multiple determiners originate as adjectival inflections has also been argued by Leu (2009). Leu develops an analysis of Greek DS that takes the recursive definite article to be the expression of adjectival inflection. We will not go into the details of his approach here but briefly note two arguments against pursuing such an approach to Norwegian polyindefinites: Taking the view that the recursive article is an adjectival inflection also does not explain why it is incompatible with non-predicative adjectives. Nor does it provide us with any insight into why it is accompanied by an intensive interpretation and parallel direct modification.

    The second proposal to be considered holds that the recursive article is a spurious article (Bennis, Corver & den Dikken 1998; Alexiadou 2014). Specifically, Alexiadou proposes that the recursive article is a relator/linker (cf. den Dikken 2006) in a predicative small clause structure. (36) illustrates this for the indefinite article *en* 'a.ᴍ'.

(36)   [$_{DP}$ en [$_{FP}$ F [$_{SC}$ NP en AP]]]

Wood & Vikner (2013) argue against this based on two arguments. First, only the second of two doubled articles in Northern Swedish has special properties (Delsing 1993: 144). Second, sometimes the first and sometimes the second of the two doubled articles in Austrian German and Swiss German can take on a special and non-agreeing form (Kallulli & Rothmayr 2008: 127). Their own data from Danish and English also suggest that there are interpretational effects associated with the presence of the recursive article. In terms of the Senja dialect, it is also worth mentioning that unlike e.g.,

Northern Swedish, the recursive article in Northern Norwegian does not have a plural form. That is, something like (37) is entirely unacceptable.[7]

(37) **Norwegian, Senja dialect**
    *tre   stor-e **ei** fin-e   jente
     three big-PL a.F nice-PL girls

We take this to suggest that the recursive article is not a spurious article.

    A more promising line of inquiry may be the third and final proposal that the recursive indefinite article is a nominal proform following each adjective. Several Germanic languages, including English and Norwegian, make use of nominal proforms in the presence of adjectives, and in Norwegian these proforms are homonymous with the indefinite articles. Consider some examples in (38).

(38) **English**
    a. I bought a new dress, a blue **one**.

    Norwegian
    b. Jeg lever I en drøm, en vill   **en**.
       I   live   in a.M dream a.M wild a.M
       'I'm living in a dream, a wild one.'

    c. De   har   kjøpt nytt hus,   et   stort **et**.
       They have bought new house a.N big   a.N
       'They have bought a new house, a big one.'

    d. Jeg ønsker meg ny seng, ei   stor **ei**.
       I   wish   REFL new bed a.F big a.F
       'I wish for a new bed, a big one.'

In Norwegian, these nominal proforms only occur in indefinite noun phrases. It should also be noted that adjectives can be stacked in these structures.

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[7] The form *ei* can be used as a quantifier of some sort, akin to *noen* 'somebody' in cases like (i).
  (i) Han hadde ei   store   hender/føtter/øra.
      He   had   a.F big.PL hands/feet/ears
  However, in such environments, *ei* cannot be recursive.

(39) **Norwegian**
  a. Marit har kjøpte (et) nytt hus, et stort,fint *(et).
     Marit has bought a   new house a big   nice one (lit. a.N)

  b. Marit har kjøpt (et) nytt hus, et stort (et) fint *(et).
     Marit has bought a   new house a big   one nice one (lit. a.N)

Thus, an analysis that takes the recurring indefinite articles to be nominal proforms appears to be a promising avenue to pursue.

5.2 Parallel direct modification and the ban on non-predicative adjectives

So far, we have established a number of facts about the recursive indefinite article in Norwegian. We have seen that it is used in highly descriptive contexts and intensifies the interpretation of the adjective in these situations. The addition of these articles furthermore makes it possible to scramble the adjectives. In this subsection, the interpretive effect of polyindefinites will be considered in the context of Sproat & Shih's (1991) notion of parallel direct modification. As we will see, noun phrases involving indefinite article recursion exhibit all the characteristics of parallel direct modification. Furthermore, it will be argued that the ban on non-predicative adjectives with recursive articles is not related to the predicative nature of these adjectives, but rather to two different facts: First, non-predicative adjectives are not easily intensified. Second, they always scope over adjectives that occur further down in the structure and hence cannot be involved in parallel direct modification.

Sproat & Shih (1991) discusses parallel direct modification as a phenomenon in which all the adjectives modify the noun directly without scoping over one another, and in which Adjectival Ordering Restrictions (AORs) do not apply. Recall that we have shown that AORs generally apply with Norwegian adjectives, which is why (40a) is acceptable, while (40b) is not. However, there are exceptions to AORs; one of these is illustrated in (40c) in which the adjective *rød* (red) receives contrastive focus/stress, indicated here by small capitals.

(40) **Norwegian**
   a. en stor rød vase
      a   big red vase

b. *en rød stor vase
   a   red big vase

c. en   RØD stor vase
   a   red big vase

Another exception to AORs is parallel direct modification, as discussed in Sproat & Shih (1991). Parallel direct modification is typically found with adjectives that are realised as separate prosodic units. This fact explains why the scrambled order is fine in (41a) and (41b), but not in (40b) above. In (41a) each adjective is made into a prosodic unit by turning them into compounds, while in (41b) this is ensured by inserting a break between the adjectives (so-called 'comma' intonation). In both these cases, each adjective modifies the noun directly without scoping over the adjective following it.

(41) **Norwegian**
      a. en illrød   kjempestor vase
         a fire.red   giant.big   vase
         'a deep red, gigantic vase'

      b. en rød, stor vase
         a red big vase

Recall that recursive articles have the characteristic that they permit scrambling of adjectives without inducing a marked interpretation of the noun phrase as a whole. Furthermore, the recursive article makes each adjective a separate prosodic unit. This means that polyindefinites exhibit all the characteristics of direct parallel modification, and we will argue that this is exactly the effect that polyindefinites (and the adjectival *-e*) in Norwegian have on the interpretation of the adjectives and the noun phrase as a whole. Compare (41) and (42):

(42) **Norwegian, Senja dialect**
      en rød **en** stor **en** vase   (parallel dir. mod.)
      a   red a   big a   vase

Thus, it appears that polyindefinites permit scrambling because they fall within the typical examples of exceptions to AORs. That is, they are instances of parallel direct modification.

Recall that nationality adjectives, such as *Norwegian*, like non-intersective ones, cannot occur in polyindefinites when they occur with an event nominal, such as in (43a) below, repeated from (24c). This could be attributed to the fact that nationality adjectives cannot occur in predicative position with event nominals, as illustrated in (43b). However, as shown in (24d) and (24e) in the previous section, repeated here as (43c) and (43d), this ban extends to nationality adjectives when they do not appear with event nominals as well, and thus can occur in predicative position.

(43) **Norwegian**

    a. *__en__ norsk   __en__ invasjon
      a Norwegian an invasion

    b. *invasjon-en   var norsk
      invasion-DEF   was Norwegian

    c. *__en__ norsk   __en__ artist
      a Norwegian an artist

    d. Artist-en   var norsk.
      artist-DEF   was Norwegian

This observation makes us question whether non-predicativity really is a central characteristic of polyindefinites. This impression is reinforced by the fact noted above that non-intersective adjectives such as *former* and *alleged* cannot take part in parallel direct modification. These observations strenghten the impression that polyindefinitess is fundamentally different from polydefiniteness. The predicative nature of DS in Greek has been at the core of some approaches to this phenomenon, such as for example Alexiadou & Wilder (1998). Note, however, that as discussed in Alexiadou (2014), predicativity is not the only factor enabling adjectives to appear in polydefiniteness, since e.g., numerals may appear in predicative position, but do not appear in DS. Thus, Alexiadou (2014) concludes that at least for DS what is necessary is a restrictive interpretation of the adjective.

We have already seen that the recursive indefinite article in the Senja dialect is different from Greek DS in the sense that it does not cause any of the adjectives to be focussed, irrespective of whether the order is

scrambled or not. We have also suggested that the interpretive effect of the recursive indefinite article is that it (i) causes all the adjectives to modify the noun directly and (ii) leads to an intensified interpretation of the noun phrase. The former fact is illustrated in (42) above, while the latter was shown in (12)–(13) in section 2, and illustrated the strong preference for polyindefinites to appear in exclamatives. Example (13) is repeated here for convenience.

(13) **Norwegian, Senja dialect**
    a. Førr **ei** stor **ei** fin **ei** pia!
       What a big a nice a girl
       'What a nice big girl!'

    b. Førr **en** falsk **en** faen!
       what a false a devil
       'What a lying bastard!'

It is possible that the dispreference for non-predicative adjectives with recursive articles is the result of the highly descriptive, intensified nature of polyindefinites. Consider (28) below, which illustrates that non-predicative adjectives are not compatible with exclamatives. This suggests that these adjectives are not descriptive enough to co-occur with the recursive article in the Senja dialect. Note also that the exclamatives in (44) are unacceptable irrespective of whether the recursive article is present or not, as the adjectives themselves are incompatible with the kind of grading involved.

(44) **Norwegian, Senja dialect**
    a. *Førr en påstått (en) morder!
       What an alleged a murderer

    b. *Førr en tidligere (en) president!
       What a former a president

    c. *Førr en norsk (en) invasjon!
       What a Norwegian an invasion

    d. *Førr en norsk (en) artist!
       What a Norwegian an artist

In light of this, it is unlikely that these nominals originate as relative clauses, while monadic indefinites do not. The ban on non-predicative adjectives can be ascribed to other characteristics of these elements.

Related to this is the following observation: We sketched above an analysis, according to which articles are actually resumptive nominal proforms. The literature on nominal ellipsis has pointed out that there are certain restrictions as to the type of adjectives that may participate in ellipsis. For instance, Sleeman (1996) argues that only adjectives that are partitive can participate in ellipsis (see also Alexiadou & Gengel 2012). The adjectives that are not licensed in poly-indefiniteness typically do not allow such readings.

In this subsection, we have seen that polyindefinites involve parallel direct modification; the addition of the recursive article turns each adjective into separate prosodic units that modify the noun directly and hence permit scrambling of the adjectives. Recursive structures are highly descriptive and intensify the interpretation of the modified noun phrase. The ban on non-intersective adjectives in these structures can be attributed to the impossibility of using direct modification with these adjectives, as they always scope over any following adjectives. Furthermore, neither non-intersective nor nationality adjectives can be used in exclamatives, which suggests that they are not gradable and descriptive enough to appear in polyindefinites. The fact that these adjectives all are non-predicative appears to be a coincidence.

An analysis whereby the recursive articles are resumptive nominal proforms that are spelled out in intensifying nominal expressions involving direct parallel modification would have to take all the facts described in the previous sections into account. First, it would need to ensure that the resumptive forms are coreferential with and get their reference from the head noun. The (indefinite) DP has to consist of an αP for each adjective, all branching into αPs containing the adjective (AP) and a nominal element consisting of the proform *en/ei/et* (*one*), thus ensuring parallel modification.[8] In the presence of the nominal proform, α has to spell out a gender-marked adjectival inflection (*-t or -Ø)*, while when it is absent, α spells out the adjectival ending *-e*. The details of such an analysis will still need to be worked out, and for reasons of space, we leave this for future work.

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[8] We note here that Alexiadou & Gengel (2012) offer an alternative analysis, according to which *one* in English is actually a classifier and not a pro-form. In Borer's (2005) system, *one* lexicalizes DivP.

6. Conclusion

In this paper, we have discussed indefinite determiner spreading in Scandinavian and beyond. We have especially focused on polyindefiniteness in the Senja dialect of Norway and we have compared the properties of polyindefiniteness with those of polydefiniteness in Modern Greek. The two kinds of determiner spreading display different properties, among other things relating to their interpretation. As we have shown, the recursive indefinite article in the Senja dialect results in an intensifying interpretation of the noun phrase. Furthermore, characteristics that at first sight appear to be shared by the two determiner spreading phenomena, such as the ban on non-predicative adjectives, on closer examination are found to be caused by different properties of these adjectives. We have also briefly discussed the status of the recursive indefinite article in the Senja dialect, tentatively arguing in favour of a nominal proform analysis.

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The influence of Scots, especially of Robert Burns, on Danish poets and authors

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Abstract

The main theme of this paper is the Jutlandic poet and author Jeppe Aakjær's translations of several poems by Robert Burns in the late 19th century and the beginning of the 20th century. In addition, translations of Burns' poems in the middle of the 20th century by another dialect-poet, Martin N. Hansen, are taken into account, as well as a translation of one of the longer poems by the author Hans Kirk. However, the inspiration from Scots already began in the early 19th century with the author St. St. Blicher.

1. Early inspiration around 1800: St. St. Blicher translating Ossian and Laidlaw

During his years of study in Copenhagen, the Danish poet and author Steen Steensen Blicher (1782–1849) became very engaged in the Ossian epic poems. He certainly believed in the claim of James Macpherson (1736–1795) that, at remote places in Scotland, he had found the long stories of the Celtic past by the bard Ossian, and had published them in 1761 and 1763, although Samuel Johnson and others had raised serious doubts as to the originality of the poems, implying that Macpherson had written them himself. Blicher's translation into Standard Danish in two volumes, first published in 1807 and 1809 (Blicher 1920), was quite well acknowledged, and at the time he was called "Ossians heldige Oversætter" [Ossian's skillful translator] (Nørvig 1943: 54). Stylistically, the poems may be described as a 'conglomerate of the Bible, the Iliad and the Aeneid' which corresponded to the image people at Macpherson's time wanted to

have of their forefathers; the gloomy style is more or less transferred to some of Blicher's writings about life on the heath and in rural parts of Jutland (Nørvig 1943: 49ff.). Some years later, Blicher became interested in writing short stories and poems; some of these used dialectal words, and a few were written wholly in the Jutlandic dialect. Blicher was inspired in this by a Scottish poem, *Lucy's flittin'* (published 1810) by William Laidlaw (1780–1845)[1], at the time Walter Scott's secretary. Blicher called his version of this poem, *Faawal Marri* [Farewell Marie / Mary]; it was first printed in the periodical *Nordlyset* [The Northern Lights] in 1828 (cf. Blicher 1923: 83ff.) and, some years later, with small improvements, in the collection of dialectal stories and poems in *E Bindstouw* [The Knitting Room] (cf. Blicher 1842; Blicher 1930: 73ff.). In 1828, in the preamble to *Faawal Marri*, Blicher praises the use of dialects and criticizes public opinion for not being willing to accept them, e.g. the use of initial *w-* instead of *v-* in the Jutlandic pronunciation of many words. He argues that this, and other Jutlandic sounds, are used at the court of St. James in London where "they sound lovely from the lips of the lovely ones" (i.e. the ladies) (Blicher 1923: 84). In literature, dialects have often been employed to give the effect of sneering humour, Blicher remarks, but with *Faawal Marri* he wants to show that they can be used for serious and sad events as well. The poem (5 stanzas of 6 verses) in East Jutlandic dialect is about broken-hearted love: the 16 year old maid at a farm is in love with the young son there, but she has to move to another farm, which they both are very sad about; she feels that she now has no friends left and, as her parents are dead, she longs for death too. In fact, her death a couple of months later ends the poem, "before three months had passed she was stiff and cold; / before the sun came back Marri lay in the black mould" (in the dialect: *Aa faer et Fjarringoer uar om, da ua hun stin aa kaald; / Fa Suolen kom igjen, da loe Marri i suoten Maald*, stanza 5). The poem by Laidlaw likewise has 5 stanzas, but each of 8 verses; the age of Lucy is not mentioned, only that she is an orphan (stanza 1); the last verses of stanza 5 run, "For bonnie sweet Lucy, sae gentle and peerless, / lies cauld in her grave, and will never return". Blicher indeed showed that Jutlandic dialect as well as Scots could be used for relating sad incidents. In his notes to the poem, Blicher compiled a list of about 20 words from his translation of Laidlaw, intended to show parallel forms in Jutlandic, English (Scots) and Danish (Blicher 1923: 85ff.). Superficially, there are some similarities, but there is no basis

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[1]   Laidlaw's poem can be found in Aakjær's biography of Blicher (Aakjær 1904: 203).

for more systematic conclusions regarding parallels between the dialects or languages mentioned.

One may ask why Laidlaw and not Burns inspired Blicher to write a dialect poem, as Burns and Blicher seem to have had the same literary taste, Ossian was also "king of poets" to Burns, according to Nørvig (1943: 528f). But, as Burns is not mentioned in the preamble to *Faawal Marri*, Blicher presumably did not know of him at that time. It should be added that Blicher wrote more poems in dialect in the following years, and some of these are found in the volume mentioned above, *E Bindstouw.*

2. Main inspiration around 1900 and 1950

2.1. Aakjær translating Burns from the 1890s

In his youth, the (Jutlandic) poet and author Jeppe Aakjær (1866–1930) became very much engaged in the poetry and whole life story of Robert Burns (1759–1796). He ascribes this to Thomas Carlyle's book about heroes (Carlyle 1841), which he had read in the Norwegian translation (Carlyle 1889, cf. Aakjær 1929: 36f.) after attending a folk high school. Some twenty years after, Aakjær recalls the experience in a public speech in 1913:

> I still remember my mind's strong engagement in the book's two to three wildly well-speaking pages about Robert Burns. The sublimity and force of the description together with the peace and beauty of the scenery had, to me, the whole suddenness and ecstasy of a revelation. I felt the same deep quivering that must seize the astronomer when he suddenly discovers a star of the first order. And I promised myself that I would not give in before I had collected and taken in the treasures here shown to my eyes. And now followed years of labour to learn a foreign language, even a foreign dialect – and the learning of foreign languages has never been easy to me – but for 10 years of my life Robert Burns became the personality who occupied me most profoundly. His poetry enthralled me; his life's fortune took me in by its simplicity and tragedy. (Aakjær 1919b: 264f., my translation)[2]

Presumably, Aakjær was impressed by descriptions (in the Norwegian translation) of Burns in the 18th century such as, "a curious phenomenon …

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[2] Aakjær's Scottish reviewer, Kinghorn, refers to this passage too; his translation (1980: 58) differs slightly from mine.

a Hero starting up among the artificial pasteboard figures and production, in the guise of Robert Burns. Like a little well in rocky desert places … a giant Original Man; one of those men who reach down to the perennial Deeps, who take rank with the Heroic among men" (Carlyle 1841: 174). In six lectures, Carlyle describes six types of hero, and lecture V, *The Hero as a Man of Letters*, includes Samuel Johnson, Rousseau and Burns. Carlyle mentions some obstacles Burns had to fight, e.g. that he wrote in "a rustic dialect, known only to a small province of the country he lived in" (Carlyle 1841: 175); he was known as the "ploughman-poet". In another work Aakjær sums up, "My first knowledge about Robert Burns dates back to reading Thomas Carlyle (1889–90). In the middle of the 90s I learned Scottish on my own; in 1897–98 I began to translate him" (Aakjær 1919a: 286, my translation).

Aakjær started translating Burns while studying in Copenhagen and reached about 50 poems (Aakjær 1934: 31). Some of these were first published in newspapers; these are mentioned with dates of publication in Aakjær (1919a: 286f). Later, they were published again together with other poems in the volumes, *Fri Felt* [Open Landscape] (1905) and *Muld og Malm* [Mould and Metal (alloy)] (1909), and finally with a few more in *Digte* [Poems] as vol. II in *Samlede Værker* [Collected Works] in Aakjær (1919a). Burns' long poem, *Tam o' Shanter,* was given its own version, very much changed and extended, in the rhymed story *Esper Tækki* in 1913. However, the most famous and widely known poem only came forth in 1922–23, the translation – or rather, the new poetic version – of *Auld lang syne / Should auld acquaintance be forgot,* as the Jutlandic song, *Skuld gammel Venskab rejn forgo*, to be used with the well-known Scottish melody. In 1906, Aakjær had a grant which made it possible for him to visit Scotland and Burns' places there; he was much taken by the landscape, and the visit inspired him to write three poems about Burns, published in *Muld og Malm* (1909). These will be explored further in section 3.2.

2.2. Martin N. Hansen translating Burns from the 1940s

The dialect author and poet Martin N. Hansen (1893–1976) from the island Als in Southern Jutland (North Schleswig) was so inspired by Robert Burns that he translated 25 of his poems, published in Hansen (1951): *Nogle digte af Robert Burns*, [Some poems of Robert Burns], among them several of the poems already translated by Aakjær, which will be discussed in the following sections. Burns' love poems in particular attracted this

poet; additionally, the poems that he has in common with Aakjær should be mentioned: *Ja, fløjt og æ komme* [Whistle an' I'll come to you], *Åh, var min Kjærest* [O, were my love yon lilac fair], and *Grøen groer e Kløwer, oh* [Green grow the Rashes O].[3] According to Hansen (1951: 15), it presumably also holds for Burns as well as for Goethe (whom Hansen also translated) that "the women he praised did not rank more than the ordinary. It was he that gave them their status and created what he needed". Or, as Burns' brother Gilbert formulates it more directly, "The women with which Robert fell in love he immediately bestowed with a lot of beauties that no one else could catch sight of in them" (Hansen 1951: 15, my translation). Hansen visited Burns' places after the Second World War, and like Aakjær he immediately felt comfortable in this countryside; he found it was like coming home to his beloved Als (Hansen 1948: 14).

In the following section, the poems by Aakjær are quoted from the editions mentioned. The poems are presented in a (mainly) chronological order according to when Aakjær published them. Where Hansen translated a poem also translated by Aakjær it will be mentioned after the comments on Aakjær's translation.

3. Dialectal words in the translations

Aakjær mostly translates into Standard Danish and only uses characteristic dialect words (especially from Midwestern Jutland) in some places; most of these will be commented on below. Hansen translates into almost pure Alsian (or Southern Jutlandic) dialect, so only a selection of the dialectal words from this can be noted here. In most of the translations Aakjær follows Burns as to number of stanzas and the verses in them, although he occasionally adds a stanza or omits one to match the meaning of the original; Hansen is even more loyal to Burns.

3.1. Fri Felt [Open Landscape] (Aakjær: 1905).
The volume holds translations of seven poems by Robert Burns (Aakjær 1905: 79–104). The poems are placed as a group in front of other groups of poems, named (in translation) *Men and opinions* (1905: 107–127), *Student songs* (1905: 130–145), *Political songs* (1905: 145–151), and *Social poems* (1905: 53–181).

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[3] *Kløwer* is a dialectal form of Standard Danish *kløver,* 'clover', and *rash* is Scots for 'rush'.

3.1.1. *De lystige Tiggere* (Aakjær 1905: 79–95). (Burns: *The Jolly Beggars*).
This long poem in fact holds an array of poems, including poems about:
love, a soldier's bragging, a poet's (the fiddler's) story and credo and
finally, threatening skirmishes. Aakjær divides it into 16 parts, I–XVI, each
having from 1 to 7 stanzas consisting of from 4 to 14 verses, in total about
300 verses. The setting by Burns is a jolly party held at an inn by a group
of beggars on a cold autumn or winter evening. Aakjær tries to transfer
this to Denmark / Jutland by writing of a *Tatertrop*, i.e. a troop (or group)
of gypsies or the like; such groups were known in Aakjær's home area.
In Burns' version, a beggar is sitting and drinking with his *doxy* (lover),
Aakjær translates this to *Dulle* which is a derogatory word for a woman of
easy living both in Standard Danish and in the dialects (although in some
areas it also may describe a 'sweet little girl', cf. the entry *dulle*[1] in Jysk
Ordbog). Also *tøjte*, 'hussy, tart' in *Tatertøjte* (section V) is a derogatory
word, the compound being a translation of Burns' *tinkler hizzie* (verse 84);
this means 'tinker' and 'young woman' (hussy).

Other dialect words are, *En lille Praas* (section IX), Jutlandic for a
little, perhaps boasting person, corresponding to Burns' "A pygmy scraper"
(v. 155). Later, for *dansed Ril* (section XIII) [danced a reel] a parallel is
not found in Burns, who used another wording. A special word is *Glutter*
(section XIV), plural of *Glut*, 'girl, young woman', which is not a dialectal
word, rather, an informal word; *Glutter smaa* 'young girls' corresponds to
Burns' *a' the fair* (all the fair women, v. 258). *Glut* is used again (section
XVI), here rendering the depreciating *callet*, 'a prostitute', v. 312) used by
Burns.

In this poem, Burns often alludes to antiquity or mythology, and Aakjær
renders it in Standard Danish; only a couple of verses will be mentioned
here to show how he masters this style. What may be called 'the fiddler's
credo' by Burns runs, "I am a bard of no regard / Wi' gentlefolks and a' that
/ But Homer-like, the glowrin' byke / Frae town to town I draw that" (v.
246–249). Aakjær translates this into, *Jeg er Poet og ildeset / hos Folk af
Stand og alt det; / men Hoben selv den lytter til, / som selve Livet gjaldt det*
(section IV, v. 268–272). It should be noted that Aakjær manages to coin
an internal rhyme: *Poet / ildeset* as a parallel to Burns' "bard / no regard".
Here, Aakjær omits the reference to Homer, but just after this he mentions
the muses as well as *Kastalias Væld* and *Helikon*, renderings of Burns'

"Castalia's burn and Helicon"; Helicon is the mountain of the muses, and Castalia's burn is a spring in the vicinity of Helicon. See Arboe (2005: 40f.) for further comments on the use of antiquity in the poems.

Hansen (1951: 48–62) translates this poem into the Alsian dialect under the heading, *Det lykle Rak* [The jolly riff-raff]. The verses quoted above are here rendered, *Æ skal itt vigt' mæ med å digt' / Di rig' kån sjælden fatt' e / Men hvad gør det, om I hør te, / og Folk som jer vil skatt' e*, i.e. [I shall not show off by my writing poetry / The rich ones will seldomly understand it / But what does that matter if you just listen / and people like you will appreciate it] (Hansen 1951: 60). Hansen also manages to form an internal rhyme, *vigt' / digt'*, in the first of the verses. He does not refer directly to antiquity, but alludes to the muses in the following lines by using the noun *Sangmø,* 'singing maid', creating a poetical touch.

The following poems are more or less love poems.

3.1.2. *Findlay / Hvem staar der ved min Kammerdør?* (Aakjær 1905: 46). (Burns: *Findlay / Wha is that at my bower door?*).
The poem is constructed as a dialogue between a girl in her chamber and a man outside. Aakjær's translation is in Standard Danish with no dialectal words. The initial *wha* by Burns is Scots for the pronoun 'who'. Hansen gave the poem the title, *Hven er derud?* [Who is out there?], and to give it a more local stamp he changed the name Findlay to *Jesper*, a man's name in Danish, used in the dialects too.

3.1.3. *Jenny i Rugen* (Aakjær 1905: 98). (Burns: *Coming through the Rye*). The theme here is, 'girl meeting boy in the field'. As in *Findlay*, Aakjær's translation is in Standard Danish and, as in *De lystige Tiggere* above, the noun *Glut,* 'girl' is used in each stanza; the definite form *Glutten* is made to rhyme with e.g. *Gutten*, the definite form of *Gut* 'boy'. Stanza 3 begins, *Hvis nu Gutten mødte Glutten* [if the boy now met the girl], corresponding to *Gin a body meet a body* by Burns, where *gin* means 'if', and *a body* is the Scots word for 'one', i.e. 'a person' (Murison (1977: 39). In the second stanza, Aakjær uses the girl's name, Jenny, from stanza 5 by Burns, and he takes it into the title too. Hansen's title is, *Tidle i e Dågg* [Early in the dew'] (p. 74), and he translates some of the verses in the poem more directly than Aakjær, e.g. in stanza 3, *Træffe jen en* ([If one meets one], i.e. 'if a person

meets another person', and in the same way, *kysse jen en* [If one kisses one], corresponding to *Gin a body kiss a body* by Burns.[4]

3.1.4. *Jock Rab* (Aakjær 1905: 99). (Burns: *Eppie M'Nab*).
The poem shows a man who is losing his girl to a lord. In stanza 1 and later, Aakjær translates "my dearie" into *min Kjærrest* where *Kjærrest* is a dialectal form of Standard Danish *kæreste*, literally a superlative, 'dearest'. No other dialectal words or forms are used in the translation, and only small changes are made in the imagery, e.g. in stanza 3, *Pak du dig din Vej!* [go away] instead of "she has you forgot", and in stanza 4, *stakkels* 'poor' *Jock Rab* instead of *thy ain Jock Rab*.

3.1.5. *Tibbie Dunbar* (Aakjær 1905: 100). (Burns: *Tibbie Dunbar*).
The theme here is, 'young man loving girl despite her rich father's dislike'. Dialectal words are not used in Aakjær's translation; "sweet Tibbie Dunbar" is rendered, *skjøn Tibbie Dunbar* where *skjøn* (or *skøn* in the orthography now) means 'beautiful, sweet'. Here too we find only small changes due to the translation, e.g. the sentence, "say thou wilt hae me for better for waur" (i.e. for better or worse), is just altered into, *saa lidt jeg end har* [as little as I have got]. Hansen changes the girl's name into *Ann Katrin* (in Standard Danish, Anne Katrine) and makes this the title of the poem (p. 85), again to associate the poem more tightly to his region.

3.1.6. *Duncan Gray* (Aakjær 1905: 101f.). (Burns: *Duncan Gray*).
The theme of this poem may be described as, 'shipwrecked wooing restored'. The 5 stanzas of 8 verses are retained in Aakjær's translation, likewise the thrice repeated refrain in each stanza, *ha, ha for Bejlen der,* which renders Burns' refrain, "Ha, ha, the wooing o't" (of it). In the translation, no dialectal words are used, but the imagery is much changed, e.g. in stanza 2, "Meg was deaf as Ailsa Craig" had to be changed because

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[4] This poem by Burns has given inspiration not just across the North Sea to Aakjær and Hansen, but also across the Atlantic Ocean, to the novel *The Catcher in the Rye* by J.D. Salinger (1945). The title of the book is made from a false quotation by the protagonist, the young Holden Caulfield, who refers to the poem as, *If a body catch a body comin' through the rye* and persists with this, although his sister, Phoebe, corrects him with the right words, *meet a body* (Salinger 1991: 186). Holden has made himself the vision of becoming a person who can save many small children playing in a big field of rye and coming near to a cliff without realizing the danger, and then he can catch them safely at the right moment. It is really hard for him to give up this image of himself when he later on must admit that Phoebe's version is the right one.

most Danish readers would not know the island Ailsa Craig in the Firth of Clyde, not far from Burns' place. Aakjær turned the analogy into another, *Meg var døv som Stok og Sten* [deaf as log and stone, (stone-deaf)].[5] In the translation in stanza 3, "She may gae to – France for me!" Aakjær catches the implication that Burns makes and expresses it directly, *Hun for mig kan gaa til Hel!* [she can go to Hell if she pleases]. Aakjær retains the Scots personal names, Duncan and Meg, but Hansen changed them into the more local names, *Pede* (in Standard Danish, Peder) and *Mette*, in his translation with the title, *Det Frieri* [The wooing] (p. 86f.). In stanza 3, Hansen uses another idiom, *Rejs te Hekkenfeldt, min Ven!* [go to Hekkenfeldt, my friend] with the same meaning as the idioms by Aakjær and Burns; *Hekkenfeldt* is an old name for the volcano Hekla on Iceland, but in the idiom it just means 'an unpleasant place far away'.

3.1.7. *Nancy* (Aakjær 1905: 103f.). (Burns: *Husband, husband, cease your strife*).
The poem shows sharp skirmishes between a husband and his wife. No dialectal words are used in the translation by Aakjær, but again the imagery is changed in some respects, e.g. Nancy's ironic answer in stanza 3, "I'll desert my sov'reign lord", is turned into the more cheerful, *saa Farvel, min Dril'pind* [then goodbye, my teaser].

As some of the comments and quotations suggest much more could be said about these poems and the translations. But hopefully, the examples above have given an impression of the challenges Aakjær as well as Hansen had to fight, and how they managed to cope with them in the translations.

3.2. Muld og Malm (Aakjær 1909) [Mould and Metal (alloy)].
Translations of eight of Robert Burns poems are found here (1909: 81–106); Aakjær had translated them some years before (1898–99), according to the introduction to the volume. Preceding these poems are three poems written by Aakjær himself after visiting Burns' home and its surroundings in 1906 (p. 75–78). Their titles are, *Ved Skotlands gamle Eg* [At the old oak of Scotland], *I Burns' Fødehjem* [In Burns' native home], and *Paa Lochlea* [On Lochlea]. Aakjær here praises Burns' poetry, e.g. *hvert Digt en Diamant* [each poem a diamond], and loathes Burns' contemporaries, e.g. *Som fattig Tolder lod dit Folk dig dø* [as a poor customs officer your nation let you die].

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[5] A rather special use of the Danish sequence, 'Stok og Sten'; normally these words together are used in the idiom, *over stok og sten* ('in a haste, wildly').

The Burns section comes after a section of poems under the heading *I Tiden og Striden* [In the time and the fight] (p. 3–71), and is followed by a section of other poems named *Stille Vand* [Silent Water] (p. 109–175).

3.2.1. *John Anderson* (Aakjær 1909: 81). (Burns: *John Anderson, my jo*). In the poem, an elderly woman speaks of her love to her husband. In Aakjær's translation a single dialectal word is found in stanza 2, *vi klatred op til Kammen; nu maa vi dulre ned, John* [we climbed the hill to the top / now we must walk slowly down], i.e. the verb *dulre*, which means 'walk slowly, with small (uncertain) paces', according to the entry *dulre 1* in Jysk Ordbog (in my translation). It is used as an equivalent to the verb *totter* by Burns. In Hansen (1951: 69), the personal name is altered into the Danish name *Jens*, and the title is changed into, *Do var min Glæj og ålt* [you were my love and everything], which relates *my jo* by Burns in a dialectal, but adequate way.

3.2.2. *O, luk mig ind blot én Nat* (Aakjær 1909: 82ff.). (Burns: *O Lassie, art thou sleeping yet?*).
The theme here is, 'young man's wish to be with a young woman, and her negative answer'. There are no dialectal words in Aakjær's translation but, as earlier, the noun *Glut* 'girl' is used, here as the last word in the first five stanzas, the young man's apostrophe to the girl, *jeg vil saa gerne ind, Glut* [rise and let me in, jo]. The imagery is changed a good deal, but Aakjær manages to give good Standard Danish equivalents to the metaphors with flowers and birds by Burns (Arboe 2005: 41f.). Hansen (1951: 93f.) does likewise in dialectal form, e.g. in the girl's bitter answer, stanza 9, *En fatte Pig', det ved en nok, / er vel en Blomm, I gjenn vil plåkk, / for senn å ramm' hind med jer Stok / og gi' hind Tramp og Træj, Ven* [a poor girl, one knows for sure, / is certainly a flower you want to pick / in order to hit her with your stick later on / and tread and trample her, my friend].

3.2.3. *Skjøn Nelly* (Aakjær 1909: 85). (Burns: *On a Bank of Flowers*).
The poem describes a young man's feelings when seeing a young woman sleeping between flowers. In Aakjær's translation there are no dialectal words, but again the noun *Glut,* 'girl' is used, here only in the last verses in stanza 4, *Glutten blev / som Glutter bliver til sidst* [the girl became as girls become at last], corresponding to, "he found the maid / Forgiving all, and good" by Burns. As mentioned in 3.1.5, the adjective *skjøn,* 'beautiful' is spelled *skøn* nowadays.

3.2.4. ***Hvad kan en ung Kvinde*** (Aakjær 1909: 87f.). (Burns: *What can a Young Lassie do with an Auld Man*).
Here a young woman is complaining about her elderly husband. Aakjær expanded the four stanzas by Burns from 4 to 6 verses each, cf. the extension in stanza 2, *Han klager, han klynker / hans Ansigt har Rynker*, as sort of a parallel to the single verse by Burns, i.e. "He's always compleenin' frae mornin to e'enin'". In the same stanza a dialectal adjective is found in, *Blodet er blaaset* [the blood is bluish]; Standard Danish would prefer another derivation of *blå* 'blue' with the same meaning, i.e. *blaalig* instead of Jutlandic *blaaset*.

3.2.5. ***Der boed en Bonde*** (Aakjær 1909: 89ff.) (Burns: The carle of Kellyburn braes).
The poem renders a rollicking story about a peasant who gives his sharp-tempered wife to the devil but must take her back again, as she is raging too much for the devils in hell! This is described in 15 stanzas (of 4 verses) in Aakjær's translation. Each stanza has a refrain in both the second and fourth verse, in which more unusual plant names are mentioned, correctly translated by Aakjær: *Rude, Timian* 'rue', 'thyme'. In stanza 5, a dialectal oath is found in the verse, *da er du mænd værre end Rygterne gaar* [then you are worse than rumours tell]; here *mænd* is a dialectal short form for *saamænd*, a weak oath, in fact a shortening of the idiom: *så hjælpe mig gud og hans hellige mænd* [so help me God and his holy men]. And, in stanza 7, the peasant's wife replies to the devil, *Nej, Gi' om jeg vil!* [no, for God's sake, I will not], where *Gi'* is another dialectal weak oath used instead of *Gud*, 'God', again an emphasis with earlier religious overtones.

   A further dialectal word in the translation is the noun *Polde,* used about a pig in stanza 6, where the husband helps the devil by putting the wife in a sack to carry on his back: *som Bonden sin Polde han bar hende væk* [like the peasant his pig he carried her away]. This analogy is used instead of the analogy by Burns, "like a poor pedlar, he's carried his pack".[6] Also in stanza 12, Aakjær uses a somewhat dialectal image, *svor ved sin rødeste Kok* [swore by his reddest cock]. The Standard Danish noun is here *hane* instead of *kok*, and the whole intended idiom is certainly invented by Aakjær himself as it is not attested in dictionaries. All this is done to render the verse by Burns, "The devil he swore by the kirk and the bell".

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[6] Aakjær once more uses the 'pig in a sack'-motive in his version of *Tam o' Shanter*, cf. chapter 4.1.

3.2.6. *Hellig Wolles Bøn* (Aakjær 1909: 93ff.). (Burns: *Holy Willie's Prayer*).

This long poem (17 stanzas of 6 verses) forms a critique of persons in church life, including bits of concessions of personal moral shortcomings. Burns wrote it as a satirical portrait of a hypocritical priest[7], whose name Aakjær renders as *Wolle,* a Jutlandic pronunciation of the Standard Danish man's name *Ole*, presumably chosen to take away some of the dignity of the person. In stanza 8, Aakjær uses the dialectal noun *Klokke* 'skirt, petticoat' in the verse, *Da skal din Tjener aldrig lette / en Klokke mere* [Then your servant shall never more lift a skirt], where *din Tjener* is the priest himself, who has just confessed to have been too intimate with a girl. By Burns, the corresponding verses run, "I'll ne'er lift a lawless leg / Again upon her". In stanza 13, the speaker tells of one of his enemies that *han alle sjofler* [he treats everybody very badly], where Burns has that he "set the warld in a roar / O' laughin' at us". In the later edition, *sjofler* is changed into the Jutlandic verb *mofler* (Aakjær 1919a: 173), which Aakjær explains in a note as *har Krammet paa* [is in control of]. The word is intended to make a rhyme with *Kartofler,* 'potatoes', which *mofler* is doing better than *sjofler*, although not perfectly.

3.2.7. *Trods alt det* (Aakjær 1909: 99f.). (Burns: *For a' that and a' that*).

This poem (of 5 stanzas) is written in Standard Danish and gives a socially oriented critique of the lords, or the upper classes as such, from the poor man's view. The sequence *Trods alt det* [in spite of all that] is used as the fifth verse in all stanzas. The spite is directed against the rich people, as the poor people struggle on to make a living in spite of their neglect. Aakjær mentions that, at the time of writing this and the following poem, he translated a good deal of social poetry, "of which our own literature owned so little" (Aakjær 1934:31, my translation).

3.2.8. *Født til Graad* (Aakjær 1909: 102ff.). (Burns: *Man was made to mourn*).

In this Standard Danish poem of 11 stanzas, again social conditions are criticized from the poor people's perspective. The title of the poem, which translates into [born to crying], is used as the last verse in stanzas 3–6, whereas the following stanzas have variations with *Graad,* 'crying' as a fixed element. No dialectal words are used, but some words are rather old-

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[7] Aakjær (1919a: 286) mentions him as *a Scottish Tartuffe* with reference to a comedy (1664) by Moliere.

fashioned, e.g. *Folen* in stanza 4 is the definite form of *Fole,* 'foal', where *Føl* (with the definite form *Føllet*) was the usual noun at Aakjær's time as well as later on.

The social indignation, the wrath against the wealthy classes who spoil or at least harass the existence for the poor, is a theme Aakjær brings out especially in the novel *Vredens Børn* [The children of wrath, 1904].[8]

3.3. Samlede Værker. II. Digte [Collected works. II. Poems]

Here, the fifteen translated poems from *Fri Felt* and *Muld og Malm* are placed together in a group (Aakjær 1919: 165–198) also containing the five following translated poems. After these, twenty poems follow (p. 199–280), including translations by Aakjær of English poets (e.g. Goldsmith, Shelley), of French and German poets (e.g. Goethe, Heine) and of Scandinavian poets (e.g. Bellman, Fröding). Hansen did not translate any of the five poems discussed below.

3.3.1. *Burns om sig selv* (Aakjær 1919: 165f.) (Burns: *There was a lad*).

In the poem, a boy is named Robin and is foreseen to be a womanizer. In stanza 1, the words *Der var en Knøs, var født i Kejl*, follow Burns, "There was a lad, was born in Kyle", Aakjær respelling Kyle into *Kejl* to get a rhyme with *Segl* (seal of a document). The poem is translated into Standard Danish; only the verb preterite form *keg* may also be dialectal, cf. stanza 3, *Den Spaakvind keg ham i hans Haand*, rendering "The gossip keekit in his loof" [palm of the hand]. The infinitive of *keg* is *kige*, an older and dialectal parallel form to the verb *kikke,* 'look'. Aakjær's translation of the noun *gossip* may be a little unprecise, it means 'godmother' rather than 'fortune-teller' (cf. Spaakvind), acccording to *Engelsk-Dansk Ordbog*, and it is more likely that a godmother may have a say in giving the boy a name, which she has in Burns' poem, "I think we'll ca' ham Robin" (stanza 3).

3.3.2. *I det Fjærne* (Aakjær 1919: 170). (Burns: *The bonnie lad that is far away*).

Here, a young girl is longing for her lover to return as she is expecting their child. There are no dialectal words in the poem. The first verses run, *Hvor kan jeg være god og glad / og synge ved min Kjærne* [how can I be good and glad / and sing by my churn], whereas Burns, instead of the last wording has, "how can I gang brisk and braw", and thus does not mention a

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[8]   The title is an idiom dating back to the Pauline Epistles of the New Testament.

noun corresponding with *Kjærne,* 'churn', as Aakjær does. This word was usual in late 19th century, nowadays spelled *kærne*. Aakjær presumably made the sequence, *synge ved min Kjærne*, to get a rhyme with the verse, *maa færdes i det Fjærne* [has to be far away], the last word now written *fjerne*.

3.3.3. ***Var Skylden min*** (Aakjær 1919: 185f.). (Burns: *Had I the wyte*).
The theme of the poem is, 'man defending a love affair with the wife of a violent man'. In stanza 4, we find one marked dialectal and old-fashioned word, the noun *Skjættekam*, a direct translation by Aakjær of *ripplin-kame* in stanza 3 by Burns; it designates a rough type of comb earlier used in the making of flax, besides *rippling comb* also called a *flax scutcher*. Stanza 4 by Aakjær runs, *En Skjættekam han brugte tit / imod den arme Kvinde* [a rippling comb he often used / against the poor woman] whereas Burns, in stanza 3, describes the process and results in more detail, "He clawed her wi' the ripplin-kame, / And blae and bluidy bruised her" (Scots *blae* 'blue', *bluidy* 'bloody'). The speaker appeals to the reader for understanding that he has helped the woman in cheating such a husband, who is called a *Stodder* 'blighter' by Aakjær in stanza 4.

3.3.4. ***Wolles Viv*** (Aakjær 1919: 186f.). (Burns: *Willie's Wife*).
In this poem, a woman is described in detail as really ugly. As in 3.2.6, the Jutlandic form *Wolle* is used for the Standard Danish first name *Ole*. The surname *Wattel* is formed after *Wastle* by Burns, and Aakjær has transferred the poem to Salling in the first stanza by placing the protagonist in the village *Junget*. This is a place name chosen in order to make a rhyme with *runged,* 'resounded', a shortening of the standard orthographic form *rungede* to secure the rhyme. Aakjær gives the wife the name, *Marri Hop* 'Mary Hop', a jesting name, corresponding to "Tinkler Madgie" by Burns, with a Jutlandic form *Marri* of the Standard Danish form *Marie*. In the refrain in stanza 1, *En saadan Kvind som Wolle har / jeg gav sgi ej en Sysling for her*, which in Burns is: "Such a wife as Willie had, / I wad na gie a button for her", the derogatory or dialectal form *Kvind* 'woman' is used instead of the usual form *Kvinde*. In the following sentence, *Sysling* denotes an old coin of little value (also written *Søsling*), in use until about 1850. In the same sentence, *sgi* is a weak oath, a contraction of *så gid* where *gi* is the same replacement for 'God' as *Gi,* mentioned in 3.2.5, and *hind* is a dialectal form of the pronoun *hende* 'her'. The oath is repeated in

the refrain of stanza 3, but in stanza 2 and 4 it is omitted and substituted by other short words to retain the metrical foot of the refrain.

3.3.5. *En Skrædder i Sengen* (Aakjær 1919: 187). (Burns: *The Tailor fell thro' the Bed*).
The poem renders an unexpected, but welcomed love affair. A tailor fell, as Burns puts it, with "thimbles and all" through one floor to the floor below where he hit the bed of a young girl, and she did not mind his coming there. The only dialectal word is *bardused* in stanza 3, a preterite form of *barduse* 'to fall suddenly', derived from a more common adverb *bardus* in the idiom, *falde bardus*, 'fall suddenly'. In Aakjær's version, the last verse runs, *mon der ej er flere, som ej blev alt for vred, / selv om en lille Skrædder bardused til dem ned?* [I wonder if there should not be more (girls) who would not be too angry / although a little tailor suddenly fell down to them]. This is a variation of the ending by Burns, where someone would like to "see the bit tailor come skippin' again".

As has been hinted at several times above, Aakjær often translates poems about strained relationships between man and woman, husband and wife. Kinghorn (1980: 74) mentions that this may have a connection with Aakjær's problematic marriage with the author Marie Bregendahl (1867–1940) from 1893; when he was translating the poems above the marriage was collapsing and he felt strong emotional tensions in his domestic life. They divorced in 1900. In 1907, Aakjær married Nanna Krogh; they settled at the farm *Jenle* in Salling, some miles north of Skive.

4. Danish versions of *Tam o' Shanter*
This long poem by Burns (224 verses) has been characterized as a "mock-heroic rendering of folk material" (Abrams 1979: 98). Kinghorn (1980: 70) also mentions this aspect; "rapid succession of events forces the mock-hero towards his inevitable doom".

4.1. *Esper Tækki* (Aakjær 1913)
This rhymed story by Aakjær is not a direct translation of *Tam O' Shanter*, but a much expanded story on the same theme, although transplanted to Salling and formed as an *empe* (a dialectal word for 'adventure' or folk story in its own). Burns' poem was more directly translated into Danish by Hansen (1951) and a few years earlier by the author, Hans Kirk (1945). Comparisons will be made between these three versions.

Aakjær tried to make a direct translation of "this price-less poem with its exuberant spirits", but was not content with his first attempts; he felt that "Burns' Scottish high spirits became so grey and colourless" in his rendering. However, when he remembered his "own old people from Fjends and their sumptuous orgies at Skive market" he found that he could write an "original story with a cognate motive", and then at last the writing was easy for him (Aakjær 1934: 140, my translation). He felt that his dialectal story had to be much longer before it sounded like a genuine tale from Salling[9] so he expanded the story *Esper Tækki* to about 700 verses (55 pages of 12–15 verses). *Esper* is an alternative form of the man's name, Jesper, mentioned above, and *Tækki* is dialectal for Standard Danish *tækker*, 'thatcher'.

The market day where it all started is placed in Ayr by Burns; late in the day and after some drinking in a joyful company Tam saddled his horse and rode homewards, but was detained by Alloway's "auld haunted kirk" (verse 32), which now "seem'd in a bleeze" (a blaze, 102) because of a witches' sabbath going on there. Aakjær's protagonist, Esper, also had to leave a drinking party before he started walking home, carrying a newly bought pig in a sack on his back (p. 17). He slowly walked some miles and suddenly was most frightened by a sight: *Æ Hægser*[10] *war sammelt ved Breum Kjeld'* [the witches had gathered at Breum spring], (p. 35)[11], in clear light, *wal hundrede Lys med Flamm' øwer Flamm'* [probably a hundred lights with flame by flame] (p. 37). Now, Burns lets Tam get really enthralled by the sight of all the dancing and wriggling women / witches to the frenzied tones by the devil, "auld Nick" (120ff.), especially by looking at one girl, the neighbour's Nannie, "a souple jade she was and strang" wearing an all too short skirt, and Tam at last loses his mind and roars, "'Weel done, Cutty Sark!' / And in an instant all was dark!" (189f.).[12] Aakjær also lets Esper look at the witches and all their feast;

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[9] Aakjær was aware that his native dialect in Fjends south of Skive was not quite the same as the dialect in Salling north of Skive, where he lived from 1907. He solved the problem by letting the protagonist *Esper* be from Fjends, but his wife *Kjesten* (Kirsten, in Standard Danish) from Salling, so that people from Salling could not accuse him of using wrong Salling-forms of the dialectal words (Aakjær 1934: 141). In fact, the differences between the two dialects are rather small (Arboe 2019).

[10] In Standard Danish, *Heksene*; in Western Jutlandic the definite article *æ* is prepositioned (as in English), yielding *æ Hægser* here, and *æ Kjeld* a few lines below this.

[11] Breum is a village a couple of miles north of Aakjær's farm, *Jenle,* in Salling.

[12] Presumably, the fast sailing ship of the 1870s, the tea-clipper *Cutty Sark* with the short sails, got its name from this passage (Arboe 2005: 37).

he recognizes a neighbour's daughter, *Ka' Rytter*, who then (surprisingly) sets out to sing a song of 12 stanzas about the witches' feast with *Gammel Jerrik,* 'Auld Nick' as the guest of honour (p. 43ff.). As the witches swarm around in the air, Esper tries to steal away, and suddenly he stumbles over the pig, which gives a shriek (p. 50); the witches also shriek and turn their flock threatening against Esper: *Æ Kjeld' laa som død. Aall' Lys de slottes* [the spring lay as dead, all light was made out] (p. 51). So, the provoking factor here is changed from a roar by the protagonist to a shriek from the protagonist's newly bought pig.

By this sketch of the plot leading up to the climax, I hope also to have given a small impression of the Midwestern Jutlandic dialect in Aakjær's long epic poem inspired by *Tam o' Shanter*. I shall return to the ending of the story below, but first we shall have a look at two more direct translations into Danish, one of them into the Southern Jutlandic dialect.

4.2. *Tammes Sånder* (Hansen: 1951)

As above, Hansen changes some Scots names into more Danish- or Jutlandic-sounding names, and *Tam o' Shanter* is turned into *Tammes Sånder* (Hansen 1951: 75–84, with illustrations), which maybe represents a Jutlandic pronunciation of a Danish name (e.g. Thomas Sander). Tam's wife is called *Kjesten* (as by Aakjær), and some of the other persons are known from other poems by Hansen. The name of the market town is not mentioned, but presumably is Sønderborg, the largest town of Als, and as the place for the witches' sabbath *Lysafild Kjerk* (Lysabild church) (p. 78) is chosen, some eight miles east of Sønderborg. Tam is riding on horseback as in the poem by Burns, not walking as Aakjær's Esper. The dancing girl is here called *Anna*, and when at last *Tammes råft fro Sind o Såns: / Det, Stumpsærk, er en rigtig Dåns!* [Tammes roared, out of his mind, / This, Cutty-Sark, is really a dance!] (p. 83), also here all the light vanished. By comparison with Hans Kirk, discussed below, it will be noted that Hansen uses the same translation of Cutty-Sark as Hans Kirk; he also has a few other translation details in common with Kirk.

4.3. *Tam o' Shanter* (Kirk: 1945)

The author Hans Kirk (1898–1962), known for the novel *Fiskerne* (The Fishermen, 1928) and other novels, translated *Tam o' Shanter* in 1945 into Standard Danish in a congenial way, maintaining many of the images and metaphors in Burns' poem. He also maintains the place names and most of the personal names (although he does not mention Tam's wife, "thy ain

Kate", by name), and the protagonist is riding on horseback as by Burns and Hansen. At the witches' sabbath the devil is said to be playing the bagpipes (*Sækkepibe*, p. 18), which presumably is hinted at by Burns, "He screwed the pipes and gart them skirl" (v. 123, i.e. made them shriek). Also, Kirk's Tam is looking almost in a frenzy at Nannie, the wild, well-dancing girl, until he roars*: 'Bravo, Stumpesærk!' / – og saa blev mørkt alt Satans Værk* [Bravo, Cutty-Sark / and then all Satan's work was in the dark] (p. 21). Moreover, Kirk has four verses (p. 19) about dead lawyers and priests in the array of uncouth dead persons at Alloway's church, verses which are not found in the original versions of *Tam O' Shanter* where the phrasing just is, "Wi' mair of horrible and awfu' / Which even to name wad be unlawfu'" (v. 141f.) .[13] Also, Hansen offers additional verses not found in Burns.

4.4. The different endings of the story

As to the ending of the poem, Hans Kirk and Hansen follow Burns: after the showdown by the church *Tam* resp. *Tammes* tries to flee on his horse with the flock of flying witches howling after them. They almost succeed because the witches cannot pass a stream, only get to the middle of it, but before that one of them, Nannie / Cutty-Sark by Burns, just gets hold of the horse's tail and tears most of it off. Burns ends the poem by an admonishing morale to "each man and mother's son" who should be inclined to drinking or to think of cutty-sarks, "Think! ye may buy the joys o'er dear / Remember Tam o' Shanter's mare". Hansen likewise asks for such men that *di må var' sej for en Spøg* ('they will be on guard for pleasantry'), remembering *Tammes Sånders Øg* (a depreciating word for 'horse', 'mare').

Aakjær's ending takes another turn: *Esper* has to walk his way home with the pig in the sack, and some of the witches have to toil their way up and down the furrows of the fields. However. when the thus tired *Ka' Rytter* almost catches him he is saved by his knife of pure steel, which she and other witches cannot cope with (p. 53). On his way homewards he falls asleep in a field; his wife, who has found him, wakes him up; she scolds him for being drunk and asleep while other people are busy at work. The two of them argue a good deal, but they go home and work together. Esper gets a kiss and a couple of drinks (an element of the 'folk material' hinted at above), and Aakjær ends the story by the comment, *Men bejst*

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[13] Burns (1793, vol.2: 203), Burns (1820, vol.3: 295), as well as Burns (1994:4).

af det hiele: Æ Gris den tryves! [but best of all, the pig is thriving!] (p. 59), referring to the side story of the pig bought at the market. In this way, Aakjær found that he had written a really good tale from Salling, and some people even judged it as being among the best of all he had written in dialect form (Aakjær 1934: 140).

The translations of *Tam o' Shanter, The Jolly Beggars* and *O Lassie, art thou sleeping yet?* by Aakjær and Hansen (cf. 3.1.1 and 3.2.2 above, as well as *Green grow the Rashes O* by Hansen) are analyzed and compared as to their equivalents to some of the imagery (especially metaphors) by Burns in Arboe (2005:39ff).

5. Skuld gammel Venskab rejn forgo (Aakjær: 1922/1923)

Aakjær used the title mentioned, *Skuld gammel Venskab rejn forgo,* [Should old friendship pass wholly away], for his version of *Auld Lang Syne / Should auld acquaintance be forgot.* Aakjær's translation was first published in a newspaper, *Skive Folkeblad,* 31 January 1922 (Kinghorn 1980: 69), late in the year also in an the illustrated almanac, *Danmark 1923,* with the title, *For læng, læng sind* [Long, long ago], and with a written accompaniment (Arboe 2002: 17).

Most of the poems mentioned above are not generally known any longer, but this last translation or version of Burns is as well-known as many of Aakjær's popular Danish songs, esp. from the *Højskole-sangbogen*, a rather frequently updated song book; it is also found in Aakjær (1931: 23), where it is dated 31 Jan 1922. The story behind the translation of *Auld Lang Syne* is that in 1921–22 at Aakjær's farm *Jenle,* they had a farm hand, Søren Poulsen, who could play the fiddle and who brought the tune of *Auld Lang Syne* to Aakjær's knowledge. Aakjær then translated the song so that they all, children and grown–ups, could sing it together, as recalled many years later by his daughter, Solvejg Bjerre (cf. Arboe 2004: 37). Aakjær also mentions this period with joy, "the Scottish singer Rob. Burns has once more filled my parlour with highness, oh Scotland, which I visited in 1906, it is my second native country", (my translation, Arboe 2002: 37).

The poem has 5 stanzas of 4 verses plus the refrain, which begins with, *De skjønne Ungdomsdaw, aaja, / de Daw saa swær aa find* [the beautiful days of our youth, oh yes, those days so hard to find]. Here, Aakjær is, in fact, adding content to Burns verses, as Burns just repeats, *For auld lang syne (my dear).* In stanza 2, Aakjær makes a really difficult beginning, *Og gi så kuns de Glajs en Top / og vend en med di Kaw'* [And then just

give the glass a top / and turn it around with your left hand]. Here, Burns has the verses, "And surely ye'll be your pint stowp! / and surely I'll be mine!", which Aakjær obviously does not translate directly. Many people, including dialect speakers, have, over the years, asked us at *The Jutland Dialect Dictionary* what Aakjær is, in fact, talking about here. The solution of the riddle is that the two old friends are drinking *kaffepunch* 'coffee punch' together, i.e. each of them takes a small glass of aquavit, fills it to the rim (the 'top'), and pours it into his cup of coffee. In earlier times, this was a beloved drink in Jutland (Arboe 2002: 23), in many areas called *en bitte swot* 'a little black one' or the like. It does not seem part of the tradition to use the left hand to pour the aquavit from the glass into the cup; presumably Aakjær is using the noun *Kaw'* 'left hand' to get a rhyme with *Daw,* 'days' just after. In stanza 5, Burns has the verse, "And we'll tak a gude-willie waught (i.e. a very hearty swig[14]), / for auld lang syne", whereas Aakjær has a much more deep-felt reflection, *Hvor er æ skjøn aa find en Ven / en haaj mist for læng, læng sind!* [how beautiful it is to find a friend / one had lost long, long ago!]. Furthermore, in my view, this has more content than the verses by Burns, but it is correct that the idiom, *a gude-willie waught* is lost, an idiom the use of which in the poem is appreciated by Scottish readers (Kinghorn 1980:67). The two poems are analyzed in detail in Arboe (2002) with comparisons of idioms and imagery, and with comments on the Jutlandic and Scots words used.

Hansen (1951) also translated this poem into Jutlandic: *For læng, læng senn* [long, long ago], (p. 70f.). Stanza 5, which corresponds to stanza 2 by Aakjær[15], is translated by Hansen into, *Og lævnes der voss Stoend å tømm / et Halsstab no og da, / så vil vi mindle løvt vort Krus / o tænk o ålt, der va.* [If we are given the time to empty / a half-stoup sometimes, / then we shall amicably lift our cup / and think of all that was]. This translation seems more subdued than Aakjær's above; the same holds for the other stanzas by Hansen, and his version has not been able to compete with Aakjær's in popularity.

6. Conclusion

The Danish poets and authors treated here were greatly inspired by Scots poets, Aakjær, Hansen and Hans Kirk by Burns, Blicher by Laidlaw (and perhaps later by Burns). They were so inspired that they directly translated

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[14] Gude-willie = hearty; waught = a big drink

[15] In some editions, *Auld Lang Syne* was published with stanza 2 and 5 interchanged, (cf. Arboe 2002: 27).

poems, mostly those by Robert Burns, or gave new versions of them, or used a poem as a springboard for a partly parallel, but much elongated rhymed story (Aakjær's version of *Tam o' Shanter*). The themes of the poems mirrored central facets of life as feasts (*The Jolly Beggars*), pleasures and sorrows of love, social inequality and more. It has been shown that dialects could be used in poems relating both hilarious stories and everyday events as well as serious and sad incidents.

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Litotes[1] – an ironic or polyphonic figure of speech?

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I shall now therefore humbly propose my own thoughts,
which I hope will not be lyable to the least Objection.
(Jonathan Swift. 1729. *A Modest Proposal*)

Abstract

According to classical rhetorical traditions, *litotes* is a rhetorical figure of speech used as a negative statement in order to emphasise the speaker's positive point of view. In this contribution in honour of Sten Vikner, I discuss the function and the semantic features of negative litotes, i.e. a positive statement expressed by negating its opposite. Although some scholars claim that negative litotes does not possess any kind of polyphony, i.e. the idea that an utterance or a text communicates different points of view, I will argue that negative litotes communicates different points of view when used by a speaker for ironic purposes, especially because the presence of a polemic negation in combination with irony can be interpreted in terms of linguistic polyphony.

1. Introduction

The main focus of this article is to examine the nature of litotes, which has been regarded since ancient times as a rhetorical figure of speech. Latin grammarians define litotes as follows:

[litotes] *minus dicit quam significat*

[Litotes] says less than it means

The main function of litotes is to soften the meaning of the speaker's utterance, thereby weakening its pragmatic effects. In negative litotes the

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[1] Litotes' – from Greek 'litotés', literally meaning simplicity or plainness; derivative of λιτοσ, meaning 'plain', 'small' or 'meagre'.

morphosyntactic negation is an important element. Negative litotes uses an understatement to emphasize a statement by stating a negative to further affirm a positive, and often incorporates double negatives for effect. The negation downplays, so to speak, the force of the speaker's meaning as in (1):

(1) Peter is not talkative.

In (1), the speaker's utterance hides the real meaning behind the explicit negative point of view, so what the speaker really means is that 'Peter is (rather) taciturn/reticent/uncommunicative'. Litotes only refers to the negation of one quality while emphasising its opposite. Of course, the negation itself does not imply that the statement should be read as litotic; it can only be a linguistic indication because a correct interpretation depends on the recipient's interpretative skills and the contextual situation in which the speaker presents the statement.

In some contexts, litotes is used by the speaker for ironic purposes, so litotes can be regarded as a form of ironic understatement. Verbal irony is a figure of speech just like litotes. What the two can have in common is that the speaker's statement is the opposite of what (s)he really means. Litotes is often regarded as a special form of verbal irony which represents an implicit meaning and an understatement, but which also represents specific verbal aspects such as the presence of a morphosyntactic negation. It is the combination of the implicit, the understatement, the negation and irony that I take a closer look at in this article. The theoretical framework of the analysis that I propose is linguistic polyphony, which is an important part of French enunciation linguistics. I argue that litotes is a form of verbal irony that does have polyphonic features, just like irony, and that this figure of speech is used for rhetorical and conversational reasons (cf. Grice 1975). First, I give some definitions of litotes and discuss its form and function in section 2. In section 3, there is a discussion of the relationship between litotes and irony. The relationship between litotes and negation, within the theoretical framework of linguistic polyphony that I use in this analysis, is studied in section 4.

2. Litotes
2.1 Definitions of litotes
According to traditional definitions, litotes is regarded as a form of understatement which is used by the speaker with the intention of

presenting something as worse, smaller, less etc. than it really is. Litotes always includes an aspect of negativity. This negative aspect of litotes is found in encyclopedic definitions, e.g. *Webster's Encyclopedic Unabridged Dictionary of the English Language*, which defines litotes as: "*Rhet.* understatement, esp. that in which an affirmative is expressed by the negative of its contrary, as in 'not bad at all'". The *Cambridge Advanced Learner's Dictionary & Thesaurus* also mentions the importance of the presence of a negative statement when suggesting the following definition: "… the use of a negative statement in order to emphasize a positive meaning, for example 'a not inconsiderable amount of money' (= a considerable amount of money)".

The core meaning of litotes is implicit. The speaker's strategy is to make the understatement obvious to the recipient by means of a negative element whose main function is to negate the speaker's statement. The speaker presents a negative point of view, whereas her/his 'real' point of view is implicit, i.e. opposite or contrary to the explicit negative one, for instance the following examples of common expressions from everyday life:

(2) Well, that wasn't the best cocktail party.
(3) This was not a small problem.

By using the litotes in (2) and (3), the speaker has considered the implicit point of view too harsh for a plain expression, so the speaker is 'hiding' her/his implicit point of view behind the explicit point of view in which the morphosyntactic – and polemic in polyphonic terms – negation is present. In this article I argue that examples of litotes like 'Well, that wasn't the best cocktail party' have a polyphonic nature when they function as ironic figures of speech.

2.2 Form and function of litotes

To some scholars, litotes is simply a variant of euphemism. For instance, Kerbrat-Orecchioni (1994) claims that litotes should be regarded as a process of mitigation – just like euphemisms, which possess mitigated features. Nevertheless, I claim that the two figures are not phrased in the same verbal manner and do not have the same function. A euphemism actually says less, whereas litotes only pretends to say less with a view to softening a statement. A euphemism designates the representation of something unpleasant by a mitigated expression and is used to refer to

things and situations that people might find upsetting or harsh, e.g. 'to be economical with the truth' instead of talking about 'a liar'; 'to be between jobs' instead of 'to be unemployed'; 'ethnic cleansing' instead of 'genocide'; whereas negative litotes is often used in more or less fixed negated expressions in which the presence of a morphosyntactic negation is a typical linguistic feature. However, some utterances that resemble litotes are in fact euphemisms, for instance (4):

(4) Peter is not the sharpest pencil in the box.

As already mentioned in the definitions above, litotes involves understatements which the speaker uses with conversational intentions. The presence of a morphosyntactic negation or a negative element is obligatory, and it seems to be the case that the negated element, i.e. the attribute in the most common syntactic structure, has to belong to a semantic paradigm whose semantic meaning is negative, e.g. 'not **bad**'; 'not **unhappy**'; 'not **stupid**', with 'bad', 'unhappy' and 'stupid' being regarded as semantically negative adjectives. The sentences (5), (6) and (7) are examples of litotes in which the negation intensifies the contrastive effect:

(5) This dinner isn't bad. (= This dinner is good)
(6) It's not inedible. (= It's edible)
(7) He is not a bad singer. (= He is a good singer)

The presence of a negation in litotes might be a sign of an opposite meaning, especially if the negation is regarded as a mathematical and logical sign of subtraction. But this is not always the case, and as Jespersen (1924: 331–332) says:

> Language is not mathematics, and […] a linguistic negative cannot be compared with the sign – (minus) in mathematics; […] Language has a logic of its own, and in this case its logic has something to recommend it. Whenever two negatives really refer to the same idea or word (as special negatives) the result is invariably positive; this is true of all languages, and applies to such collocations as e.g. *not uncommon, not infrequent, not without some fear*. The two negatives, however, do not exactly cancel one another in such a way that the result is identical with the simple *common, frequent, with some doubt*; the longer expression is always weaker: 'this is not unknown to me' or 'I am not ignorant of

this' means 'I am to some extent aware of it', etc. The psychological
reason for this is that the *détour* through the two mutually destructive
negative weakens the mental energy of the listener and implies on the
part of the speaker a certain hesitation which is absent from the blunt,
outspoken *common* or *known*. In the same way *I don't deny that he was
angry* is weaker than *I assert*, etc.

But why do speakers not just express their real meaning and intentions
literally? Jespersen mentioned psychological reasons, but litotes also seems
to be used by the speaker for conversational reasons, i.e. as a phenomenon
that can be used in utterances which might be face-threatening for either
of the two interlocutors. Many examples of litotes are used to refute, to
criticise or to reproach. When this is the case, litotes must be interpreted as
a conversational phenomenon that is used in verbal interaction as a sign of
politeness, a so-called *softener* (cf. Brown & Levinson 1987), allowing the
speaker to keep her/his face without threatening the interlocutor's negative
face.

The idea of weakening or strengthening an utterance is recognised by
many scholars and in the rhetorical tradition – for instance by Beauzée, who
talks about litotes as a means of concealing the speaker's real intentions –
the effect is to give the concealed statement more energy and more weight
(Le Guern 2011: 56). The French rhetorician Fontanier agrees with Beauzée
when he says that [litotes] "au lieu d'affirmer positivement une chose, nie
absolument la chose contraire ou la diminue plus ou moins, dans la vue
même de donner plus d'énergie et de poids à l'affirmation positive qu'elle
déguise." (1968: 133) ('instead of making a positive statement, litotes
negates the opposite or diminishes it more or less in order to give more
energy and power to the positive statement that it hides'). So apparently,
when speakers use litotes, they do not need to say what they really mean
but express their meaning by using a verbal negative expression in order
to mitigate their point of view by denying the opposite. The result is that
the meaning of the utterance becomes stronger, whereas the real meaning
remains implicit and understood.

What can be concluded from the different descriptions of litotes
outlined above is that the implicit core meaning of litotes is hidden behind
the speaker's explicit statement from which it has to be derived. In other
words, the implicit meaning is part of a hierarchy. In section 4.3, I argue
that it is the idea of such a hierarchy that allows for a polyphonic analysis
of litotes.

3. Litotes and irony

According to classical rhetorical traditions, litotes can cover ironic aspects. In this case, the negation has a double function: it intensifies the contrastive effect, and emphasises the speaker's ironic point of view and attitude. To some extent, the meaning and function of litotes and irony are identical: both litotes and irony share the semantic features of divergence between the literal meaning and the real, hidden, implicit meaning. Ever since Quintilian's work[2], irony has been regarded as a speech act that the speaker uses in order to say the opposite of what she/he really means. In many studies, irony is regarded as antiphrasis. However, like litotes, irony is not always just a case of contradiction and opposite meaning; and the idea of the 'opposite' seems in many situations too naïve and too general. Irony brings about a relation of power between the speaker and the target of irony. Naturally, the interpretation depends on the interrelations between the speaker and the interlocutor who can be the target of the irony, and on the situation and the context in question. In fact, irony is a complex kind of utterance that consists of many different and crucial factors, such as the speaker (the 'ironist') and the target or individuals to whom the irony is addressed. Irony is an action of fake and pretend (Berrendonner (2002) talks about 'singerie') in which the speaker acts as if (s)he is the one who is responsible for the point of view in the utterance, whereas her/his real meaning is hidden. Irony is far from being an exclusively verbal phenomenon: gestures, facial expressions and intonation are also important if irony is to succeed.

The common feature of litotes and irony is that the speaker does not talk explicitly about an object but talks about it discreetly instead, thus avoiding naming it explicitly. According to Grice, "To be ironical is, among other things, to pretend […] and while one wants the pretense to be recognized as such, to announce it as a pretense would spoil the effect" (1978: 125). Since litotes avoids precision and clarity, it very often obscures what the speaker really means and (s)he can therefore be accused of insincerity. For example, in (8)(8), if the speaker uses this statement in a situation where Peter has acted or solved a problem or a task in a clever way, the statement can be interpreted as irony – and as litotes.

(8) Peter is not stupid.

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[2] Marcus Fabius Quintilian lived 35–96 AD. Known for his work *Institutio oratoria.*

While the statement in (8) implies that Peter is to some extent 'not stupid', we do not learn whether Peter is 'intelligent', 'very smart' or just 'not quite stupid'. So (8) does not tell us exactly what the speaker really thinks of Peter's intelligence. In other words, our language is very often unclear. In his essay, Politics and the English Language (1946: 7), Orwell goes as far as to talk about insincerity: "The great enemy of clear language is insincerity. When there is a gap between one's real and one's declared aims, one turns, as it were instinctively, to long words and exhausted idioms, like a cuttlefish spurting out ink". In many situations people do not use language in accordance with the four Gricean maxims (Grice 1975), i.e. quantity, quality, relevance and manner which are the rational principles for communication when people follow the cooperative principle in their striving towards effective communication. In the cases in which I am interested here, i.e. negative litotes used as irony, the maxims of quality and quantity are violated because the speaker does not give all the information (s)he is supposed to give (quantity) and (s)he is not truthful according to her/his real meaning or point of view (quality).

4. Litotes, negation and polyphony

4.1 Brief introduction to linguistic polyphony

As litotes includes the use of negation and can be used for ironic purposes, the combination of irony and negation in litotes constitutes an expression that seems to fit well into a polyphonic analysis. The combination allows a polyphonic analysis of the speaker's role and of the interrelations between the speaker and her/his interlocutor. The first ideas about linguistic polyphony are to be found in Oswald Ducrot's linguistic works (see e.g. Ducrot 1984) and have been developed since then by Nølke, in particular in his *ScaPoLine* theory published in English in 2017. I have no intention of describing this approach in detail here, but will merely present some of the ideas which it contains.

The central idea of polyphony is that several points of view are conveyed in one utterance, i.e. several discourses are embedded in one single utterance. The meaning of the utterance is produced by superimposing several single discourses for which several speakers are responsible. As a consequence of this hypothesis, the idea of the unity of the speaker is not relevant.

4.2 Negation

Morphosyntactic negation is a typical example of polyphony because it covers/can cover different points of view. These different points of view are ordered in a hierarchy in which there is one dominant point of view belonging to the speaker who is responsible for it. The speaker uses an explicit point of view to respond to an implicit point of view belonging to another speaker, a real person or just an imagined person or individual.

When different points of view are present at the same time in an utterance, we talk about polyphony. According to the theory of linguistic polyphony, morphosyntactic negation can have two different functions:

      1) a *polemic* function which contains two variants:
- a *metalinguistic* negation
- a proper *polemic* negation

      2) a *descriptive* function

The two functions differ from each other: the scope for the metalinguistic negation is the *form* of the utterance because it does not preserve presuppositions. It often has a marked effect, as in example (9):

(9) Peter is not tall, he is a giant. (Nølke 2017: 99)

In this example, *not tall* is normally expected to mean 'small'. In (9) the scalar predicate which is in the scope of the negation is not reversed, but the speaker is correcting the interlocutor's former utterance. A metalinguistic reading of the negation reveals that the hidden point of view belongs to a real speaker.

The scope of the polemic negation is the *utterance*. This negation keeps the presupposition: the enunciation houses two contradictory and incompatible points of view, as in example (10):

(10)   Mary is not stupid
       pov1 [X] (TRUE) (Mary is stupid)
       pov2 [l0] (FALSE (pov1))

The utterance presents two points of view: an implicit one which defends the content of the positive proposition, pov1, and another, pov2 which holds the negation and for which the speaker of the utterance is responsible. By default, the pov1 is not the speaker's point of view, whereas pov2

belongs to her/him. The second point of view, pov2, has to be regarded as a comment on the first point of view, pov1, which belongs to an individual who may be a real person or a fictional character or person. The speaker, i.e. the one who is responsible for the negative utterance, rejects, by the use of the negation, a point of view which does not belong to her/him and with which (s)he does not agree. A polemic interpretation of the negation can be stressed by a subsequent sequence as in (10a):

(10)   a. Mary is not stupid
             … which you might think.

The polemic function of the negation is regarded as the basic (default) interpretation, whereas the other two readings are the result of the influence of contextual factors that can be identified, and are regarded as having a pragmatic meaning.

    A descriptive reading of the negation however means that the first point of view is downplayed or even deleted. Its scope is the proposition. It represents one single negative point of view whose only function is to describe a situation or a fact. So, if the negation in example (10) is interpreted as descriptive, the utterance only gives us a description of Mary's intelligence, as in 10b), and the utterance cannot be interpreted as an ironic negative litotes.

(10)   b. Mary has the characteristic of being 'non-stupid'.

The utterance can even be negated by yet another negation, giving it a double negation:

(10)   c. Mary is not not-stupid.[3]

So, the negation *not* can be interpreted in different ways, but an adequate interpretation depends on different kinds of facts, e.g. more information about the contextual situation, the relationship between the speaker and her/his interlocutor, etc. Without input from such contextual information, it is impossible to distinguish between descriptive and polemic negation.

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[3]   This would undoubtedly be expressed differently in everyday life, e.g. 'Mary is rather clever'.

4.3 Negative litotes and irony

I have already stated that negative litotes involves a statement that is expressed by the negation of its contrast. But, as illustrated by (11), it is not always that simple.

(11)   a. She is not unhappy.
       b. She is happy.

An utterance like(11))a is not exactly the opposite of the utterance in(11) (11)b, because 'not unhappy' does not necessarily mean that you are 'happy', but that the degree of 'happiness' is situated on a scale somewhere in between the two extremes 'happy' and 'unhappy'. The same analysis goes for example (12):

(12)   This wine isn't bad.

The predicate 'not bad' makes reference to a scalar idea by indicating a particular degree on a qualitative scale. So, when the speaker regards a wine as not bad, the quality of the wine must be somewhere in between the two extremes 'good' and 'bad' on a scale. By using the negative statement (pov2), the speaker denies a positive point of view (pov1), judging the wine as bad but not stating exactly her/his own judgement of the quality of the wine. So the description 'not bad' represents various stages on a quality scale going from 'slightly bad', 'quite good', 'rather good', 'good' and 'really good' to 'excellent'. The interpretation of the speaker's utterance depends on the context and the situation.

A polyphonic analysis of the combination of negative litotes and irony becomes rather complicated because each isolated phenomenon can be regarded as a polyphonic phenomenon in its own right. These phenomena all have in common that they can unfold different points of view, which are organised hierarchically. According to Ducrot's early work on linguistic polyphony and Nølke's *ScaPoLine* theory, any negative statement refers to a positive one. The speaker who is responsible for the negative statement always distances her/himself from the positive statement, which is attributed to another enunciator, hence the refusal of the unity of the subject/the speaker. The meaning of the combined phenomena, i.e. negation, litotes and irony, is composed of a literal meaning plus a derived meaning. So if they are regarded as representing polyphonic aspects, each phenomenon (litotes and irony) has two points of view: a point of view

stating something positive, and a second negative point of view denying the positive point of view. Negative litotes used as irony is an 'enunciative double game', which becomes even more complicated owing to the presence of the morphosyntactic negation because it provokes the idea of the presence of two points of view in the utterance. In an example lik 3) the speaker's judgement does not appear clearly.

(13)   Your dress is not bad.

What is revealed here is that the speaker expresses an implicit, somewhat positive point of view in spite of the presence of the morphosyntactic negation *not*. The speaker denies her/his full responsibility for the implicit point of view and is in fact hiding her/his real (positive) judgement by using a fake point of view. The implicit information is scalar, and it is the interlocutor's responsibility to decode the real meaning. The only information available is that the denial 'not bad' means a refusal of 'bad'. The negation *not* indicates two points of view. This means that the negation here must be polemic because the explicit point of view, pov2, refutes the implicit point of view, pov1. But who is responsible for pov1? According to the polyphonic approach, the speaker who is responsible for the utterance imagines that someone, a real or an imagined person, might have had the point of view that 'the dress is bad', but the point is that it is apparently not an unknown person. The person responsible is most probably the speaker of the utterance. The polyphony revealed here is what is called '*internal polyphony*' (cf Nølke 1994), i.e. the speaker of the utterance is responsible for pov1 AND for pov2 as well.[4]

    Rossari (2011) claims that the negation in litotes is always descriptive because the speaker is not in opposition to somebody else, but just downplays the message. When negative litotes is used ironically, I claim that the negation must be polemic because the speaker enters into a polyphonic negotiation with her/himself in order to soften her/his real point of view. So the only interpretation of ironic negative litotes is that the speaker does not clarify her/his point of view exactly. In other words, it is the interlocutor who has to decode the speaker's point of view. For argumentative reasons, the speaker softens the pov2 for which (s)he is responsible and avoids threatening the interlocutor's negative face. The speaker does not want to be responsible, and presents instead a point of view with which (s)he negotiates.

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[4] Cf. Berrendonner's expresssion 'the false naïve' from his article 'Portrait de l'énonciateur en faux naïf' 2002 ('Portrait of the speaker as a false naïve').

It is true that negative ironic litotes constitutes a violation of the quality and quantity maxim. The reason why the speaker does not want to be fully responsible must be found in the contextual situation; so, the speaker prefers negative litotes because (s)he wanted to say more than was possible in the given situation. The success of the speaker's ironic intentions when using negative litotes depends on the interlocutor's ability to identify, understand and interpret these intentions.

5. Can we conclude?

When the meaning of negative litotes is ironic, the morphosyntactic negation is polemic. The speaker is responsible for the points of view which exist in the polyphonic game in which (s)he plays the antagonist role. In fact, it is the speaker who is responsible for the explicit point of view, but at the same time (s)he is hidden/masked as a false naïve person who is hiding her/his real meaning. But why does the speaker conceal her/his real meaning? Is the speaker insincere, trying to hide her/his real intentions within the communicative act? If this is the reason for the use of negative litotes, it must be a conversational tool that allows her/him to mitigate the communication in order to facilitate a dialogue or conversation which (s)he considers too brutal or too harsh in the situation in question. The function of litotes is to soften the speaker's utterance, but it also tends to be used to avoid open responsibility for the real point of view, precisely because irony can be face-threatening for either of the interlocutors. There is certainly no doubt that irony and litotes can be overused as a conversational phenomenon; and as George Orwell says in a footnote in his essay "Politics and the English Language" (1946:8): "one can cure oneself of the *not un-*formation by memorizing this sentence: *A not unblack dog was chasing a not unsmall rabbit across a not ungreen field.*"

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Language in the genes: Where's the evidence?

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Abstract
Evidence regarding the genetic bases of human language abilities comes from many sources, but none is as rich and reliable as the one that comes from infant speech perception studies. This contribution provides an overview of how research on infant speech perception informs the debate on the genetic basis of human language abilities. Specifically, this contribution reviews findings which document infants' abilities to learn from pre- and postnatal experience, and findings which strongly suggest that humans possess language-specific abilities as part of their genetic makeup.

1. Introduction

Linguists disagree on many things, but there is perhaps no divide as deep as the one between those who view linguistic knowledge as largely shaped by experience with the ambient language(s) and learned through the application of general cognitive principles, and those who claim that the linguistic knowledge of humans is genetically based. Traditionally, the evidence that the "geneticists" bring to bear on this issue comes from (putative) language universals, from the assumption that the learning of native languages (L1s) is fast, and from the claim that negative feedback does not play any role in L1 acquisition (Vikner 2001).

The problem with these three sources of evidence is that they are not as solid as the genetic camp would like them to be. Language universals can be specifically linguistic, but in many cases the jury is still out on whether alternative accounts, such as those that invoke a cognitive or functional basis for language universals, are not more valid (Haspelmath 2008). The claim that L1 acquisition is fast depends very much on what is meant by "fast"; the evidence clearly shows that children in their second decade

of life do not yet have the same linguistic knowledge as adults do (C. Chomsky 1969; Hazan & Barrett 2000). A recent large-scale study even reported that "native speakers did not reach asymptote until around 30 years old" (Hartshorne, Tenenbaum & Pinker 2018: 269). This is certainly fast in geologic terms, but slow in terms of human development. Finally, the claim that L1 learning takes place in the absence of negative evidence (which learners receive when they produce ungrammatical utterances) is one of the most hotly debated issues in L1 acquisition research. While both parents and psycholinguists know that attempts to provide children with *explicit* direct negative evidence (in which the learner is explicitly told what is wrong) are wasted on the learner, L1 acquisition researchers agree that the input of child learners contains *implicit* direct negative evidence (in which the learner is exposed to an adult reformulation of her utterance). The unresolved issue of contention is whether L1 learners (can) use this type of negative evidence to learn their language (Saxton 2000).

A sympathetic evaluation of the traditional arguments for a genetic basis of linguistic abilities would have to conclude that the three pillars on which they rest (universals which do not have a general cognitive/functional basis, "fast" language acquisition, irrelevance of negative feedback) lack a solid empirical foundation. Still, the facts that humans are the only species that communicates through language and that language acquisition is highly regular and (near-)universal in our species makes it seem logical to assume that the species-specific trait "language" must have a genetic basis. But where is the evidence for this? An obvious area of research to consider in the pursuit of this question are studies of infants' (pre-) linguistic abilities. Infants' linguistically relevant abilities are due either to early exposure to the ambient language(s), or to the fact that evolution has prepared human infants to acquire any language. Much research on infant speech perception has been motivated by a strong interest in teasing apart the effects of early experience on the one hand and innate abilities on the other. This contribution provides an overview of how research on infant speech perception informs the debate on the genetic basis of human language abilities.

The structure of this chapter mirrors the chronology of speech perception development over the first year, with an outlook on later speech perception abilities in adolescence and adulthood. Section 2 provides an overview of linguistically relevant abilities at or around birth, and section 3 examines how early experience interacts with innate abilities over the first year of life and beyond.

2. Linguistically relevant abilities at (or around) age 0

Two reasons can be given for the somewhat unprecise title of this section, in which "around" covers late prenatal and early postnatal ontogenesis: First, the fetal auditory system is functional during the final prenatal trimester (Lickliter 1993), which makes it necessary to include the prenatal period in any discussion of infants' linguistically relevant abilities. Second, the "around" reflects the tradition in the infant literature to refer to infants up to the age of 8 weeks as "newborn", which is justified because of the very different behavioral, cognitive, and neuropsychological characteristics of newborns, thus defined, from infants two months and older (Watson, Robbins & Best 2014).

   The abilities which newborns demonstrate are usually interpreted as being due to either prenatal experience or genetic endowment, with the important qualification that external stimulation can only become experience if the stimulated organism is genetically predisposed to turn stimulation into experience. So, which linguistically relevant abilities and biases do newborns possess?

2.1 Global properties of speech

Newborns enter this world with broad predispositions and with experience-based knowledge which both indicate that some of the prerequisites for language learning are in place already at birth. Newborns discriminate speech from nonspeech (Alegria & Noirot 1982), and they prefer to listen to normal speech as opposed to speech played backwards, filtered speech, or sine-wave analogues of speech (Dehaene-Lambertz, Dehaene & Hertz-Pannier 2002; Vouloumanos & Werker 2007). However, they broadly prefer to listen to primate vocalizations and only later, at three months of age, narrow their preferences down to human speech (Voloumanos et al. 2010). With respect to more specific biases, it has been known for some time that newborns prefer to listen to their mother's voice (Mehler et al. 1978). More recently, Voegtline et al. (2013) measured the response (heart rate, movement in utero) in fetuses at 36 weeks gestation and found that the fetuses demonstrated maternal voice recognition. The attentiveness of fetuses to the nonsegmental properties of speech to which they have access in the low-pass filter environment of the womb, i.e., rhythm and intonation, is further evidenced by the preference of newborns to listen to infant directed as opposed to adult directed speech (Cooper & Aslin 1990), most likely because in many cultures, infant directed speech is characterized by higher and more varied pitch (Fernald et al. 1989; but see Bohn 2013). The prenatal attentiveness to pitch changes was also demonstrated in study

by Partanen et al. (2013), who reported that newborns display mismatch responses in response to pitch changes in speech-like auditory stimuli heard before birth. The sensitivity of fetuses to rhythmic properties of speech is evidenced by newborns' preference for their mother's language (if the mother is monolingual) or languages (if the mother is bilingual) as shown by Byers-Heinlein, Burns & Werker (2010) for rhythmically distinct languages such as English and Tagalog. Interestingly, a study by Moon, Lagercrantz & Kuhl (2012) revealed that the language experience of fetuses is not restricted to nonsegmental properties because infants born to American English women or to Swedish-speaking women responded differently (sucking rate) to vowels from the native as opposed to the nonnative language.

Except for the very broad and apparently genetically based preference for sounds produced by human(-like) vocal tracts, the above brief overview suggests that the newborn's linguistically relevant preferences are all based on prenatal experience with the mother's speech characteristics. Clearly, these prenatally shaped preferences prepare and aid the infant in her species-specific task of acquiring the ambient language(s). However, the prenatal stimulation could not become experienced-based linguistically relevant knowledge if the infant did not have the ability to process these stimuli. Part of the genetic basis of this ability has been well documented for a long time. For instance, Molfese (1977) reported that newborns show cerebral specialization for speech (left hemisphere) and nonspeech (right hemisphere). A more recent study localized speech processing in the newborn more narrowly and found, using fMRI, a left-lateralized response in the temporal cortex for speech compared to biological non-speech sounds, indicating that this region is selective for speech by the first month of life (Shultz et al. 2014). This and similar findings for 3-month-olds (Homae, Watanabe & Taga 2014) is not only informative regarding the locus of speech processing very early in life. It also supports the "speech is special" claim of the Motor Theory of speech perception, which postulates that the processes by which humans decode linguistic messages from the acoustic signal are different from auditory processes used to perceive non-speech acoustic signals (Liberman et al. 1967). For adults, there is convincing behavioral and neurological evidence that the human perceptual system responds differently to speech as opposed to general auditory input (e.g., Mattingly et al. 1971; Van Lancker & Fromkin 1973; Best & Avery 1999), and the studies just cited strongly suggest that this specialization for speech is part of our genetic makeup.

2.2 Specific properties of speech

Perhaps one of the most solid findings from research on early infant development concerns the ability of infants to discriminate stimuli from consonant continua in a categorical fashion (Eimas et al. 1971), no matter whether the contrast is used in the infant's ambient language(s) (Lasky, Syrdal-Lasky & Klein 1975; Streeter 1976). What is meant by "categorical fashion" is that infants, just like adults, do not discriminate just any two acoustically distinct stimuli, rather, they discriminate just those stimuli which straddle the boundary between two categories as established in adult perception experiments. Until recently, this finding has been replicated for just about any consonant contrast on which infants have been tested, and it has been found in infants right after they were born (for a review, see Eimas 1985), which very strongly suggests that the infant ability to discriminate consonant contrasts categorically is part of their genetic makeup.

The importance of this finding for developmental psychology and psycholinguistics was and still is enormous, because it radically changed the view of infants' abilities that was prevalent in the first half of the last century and beyond. This view was expressed by Fry (1966: 198) as "the child begins by being insensible to differences among speech sounds … a vital part of language-learning in the early stages is the process by which he becomes sensitive to more and more differences among sounds". Clearly, this empiricist view, for which empirical evidence did not exist at the time of Fry's claim, is wrong. However, the very well documented fact that, to re-write Fry, the child begins by being **sensible** to differences among speech sounds has to be qualified for the present discussion of infants' innate linguistically relevant abilities.

The first qualification has to acknowledge comparative studies which have shown that some of the contrasts which newborns discriminate categorically are also categorically discriminated by other animals. For example, Kuhl & Miller (1975) showed that chinchillas, whose peripheral auditory system is quite similar to that of humans, equivalence-classified stimuli from a voice onset time continuum in much the same way as human adults, with a steep labeling function and a boundary located very near the boundary of what humans classify as [da] vs. [ta]. This suggests that, at least with respect to the syllable-initial voicing contrast for stop consonants, human infants exploit general capacities of the mammalian auditory system (see also Kuhl 1981).

The second qualification considers what, at first sight, could be viewed as a partial rehabilitation of Fry's (1966) global claim. Several recent

studies seem to suggest that it is not the case that infants can discriminate all consonant contrasts in a categorical fashion, no matter whether the contrast is used in the infant's ambient language(s). For example, Narayan, Werker & Beddor (2010) found that English-learning infants could not discriminate the syllable-initial [na-ŋa] contrast at any of the tested ages up to 12 months, but Filipino-learning infants could, though first at the age of 10-12 months (not at 6-8 months). Because Filipino, but not English, has this contrast, Narayan, Werker & Beddor interpreted this finding as suggesting that acoustic salience (which is low for the [na-ŋa] contrast) affects the ability of infants to discriminate consonant contrasts, and that language experience facilitates discrimination of acoustically similar distinctions. This interpretation is further supported by Sato, Sogabe & Mazuka (2010), who reported that Japanese-learning infants do not discriminate vowel length contrasts (which are phonemic in Japanese) until the age of ca. 8 months. Likewise, Sato, Kato & Mazuka (2012) found that Japanese-learning infants acquire sensitivity to contrasts of single/ geminate obstruents first by 9.5 months of age. Further support for the view that the ability to discriminate contrasts which are not particularly salient needs to be learned and is not innate, comes from a study by Polka, Colantonio & Sundara (2001), who reported that English-leaning infants' discrimination of [d]-[ð] is poor, and from a study by Shin, Choi & Mazuka (2018), who found that Korean-learning infants do not discriminate the Korean plain-tense [s-s*] contrast until the age of 7-9 months.

However, a recent study casts doubt on the revisionist view that infants' ability to discriminate contrasts is restricted to acoustically salient contrasts, and that subtle contrasts depend on language experience. Sundara et al. (2018) attempted to replicate the findings of Narayan, Werker & Beddor (2010). In one experiment, Sundara et al. used the stimuli employed by Narayan, Werker & Beddor in a very similar procedure which, however, differed in that it was fully infant-controlled. Sundara et al. (2018) reported that, using this more sensitive paradigm, English-learning children could indeed discriminate the syllable-initial [na-ŋa] contrast at 4 months of age, unlike what Narayan, Werker & Beddor (2010) had reported using a less sensitive non-infant controlled paradigm. Additionally, Sundara et al. (2018) showed that both French-learning and English-learning infants could discriminate the acoustically not very salient Tamil dental-retroflex contrasts for both nasals and laterals at 6 months of age. Even though the infants in the Sundara et al. study were not newborns, these findings show that early experience is not necessary for the ability to discriminate

subtle consonant contrasts. This suggests that, to conclude, the evidence contradicts Fry (1966): The child does indeed begin by being sensible to differences among speech sounds.

This section has focused on consonant perception because the research on vowel perception in newborns and older infants has primarily addressed sets of questions that relate to the perceptual narrowing pattern (see section 3.1), the characteristics, origins, and functions of perceptual asymmetries (see section 3.2), and bimodal/intermodal speech perception in infancy. The latter question was first addressed by Kuhl & Meltzoff (1982; 1984) who examined at what age infants, like adults, are intermodal perceivers who exploit and integrate information about speech from the auditory and the visual channel. The finding by Kuhl & Meltzoff (1982; 1984) that 5 months old infants recognize the correspondence between auditorily and visually presented speech sounds (for the extreme vowels [i] and [a]) pointed to an early link between the channels and between the production and perception of vowels. At first sight, it could be argued that this link is not specific to speech sounds because infants at that age also successfully integrate visual and auditory information for the perception of nonspeech events such as a sound burst and a visual impact (Spelke 1979, see also Bahrick 1983). However, more recent studies have pushed the age at which this link can be observed further down to 4 months (Bahrick, Netto & Hernandez-Keif et al. 1998; Patterson & Werker 2002). The finding by Patterson & Werker (2003) that infants as young as 2 months provide robust evidence of matching vowel information in face and voice was interpreted by the authors as supporting arguments for "some kind of privileged processing or particularly rapid learning of phonetic information". The privileged processing would point to a genetic origin of this ability, and even the rapid learning would suggest that the speed at which this learning takes place is possible only if it builds on some kind of predisposition.

3. Infant speech perception from newborn to toddler (and beyond)
3.1 Perceptual narrowing
Much of the research on infant speech perception after the newborn stage has focused on the question of when infants, who initially are universal perceivers, become language-specific listeners, and, more specifically, the chronology of different aspects of speech perception changes (e.g., for different consonant classes, for vowels, for prosodic properties). At first sight it could appear that the infant age range between newborn (up to ca. 2 months) and toddler (ca. 12 months) has little to offer for any discussion of the genetic basis of linguistically relevant knowledge because this age

is largely characterized by a perceptual narrowing pattern during which infants tune in to native speech properties. This attunement first affects prosodic properties: Whereas newborns can only discriminate languages from different rhythmical classes like English and French, 5-month olds discriminate languages from the same rhythmical class, e.g., English and Dutch (Nazzi & Ramus 2003; Nazzi, Jusczyk & Johnson 2000). Between 6 and 12 months, infants become worse at discriminating consonant contrasts which do not occur in their native language (for a review, see Werker & Tees 2005, for an interesting exception see Best, McRoberts & Sithole 1988) and they show improved discrimination of native contrasts (e.g., Kuhl et al. 2006), indicating perceptual elaboration as a function of experience with the native language(s). The findings for vowels are less clear: Within-category discrimination is clearly affected by the ambient language at 6 months of age (Kuhl et al. 1992) and a meta-analysis by Tsuji & Cristia (2014) revealed a similar (but earlier) perceptual narrowing pattern for vowels as for consonants. However, this pattern is not confirmed by all studies: Polka & Bohn (1996) found that cross-category discrimination of native and nonnative vowels did not change for English- and for German-learning infants between the ages of 6 and 12 months.

Overall, the speech perception development between the newborn and the toddler age is characterized by a maintenance of discrimination abilities for those sounds that occur contrastively in the ambient language(s), and a "loss" of abilities that do not. The quotation marks around "loss" are important and highly relevant to the topic of this contribution, because Werker (1989), who originally characterized the role of experience as leading to either maintenance or "loss" of perceptual abilities, later made it clear that "developmental change does not involve loss" (Werker 1994: 93). This is an important point because what happens in the second half of the first year of life is a **reversible** shift of attention away from those acoustic cues that are not phonologically informative. There is a very large body of research, especially on cross-language and second language speech perception, which clearly shows that the universal perceptual abilities that all humans had as newborns are never completely lost (e.g., due to neurophysiological ageing), but remain latent and can be re-learned, through immersion or perceptual training, at any of the adult ages which have been examined (for a review, see Bohn 2018). A more appropriate characterization of the influence of the ambient language on speech perception in the second half of the first year of life (instead of maintenance vs. "loss" of initial, most likely innate abilities) would be maintenance

vs. latency. This characterization is not just supported by studies of L2 speech perception but also by studies which examined the relearning of perceptual abilities in international adoptees who were exposed to a native sound system in infancy, then grew up in a language environment with no exposure to native sound contrasts, and still showed native-like perception after many years of zero exposure (e.g., Au et al. 2002; Oh, Au & Jun 2010; Choi, Cutler & Broersma 2017).

3.2 Maintenance of perceptual biases

Another phenomenon which points to a species-specific and thus perhaps genetically based aspect of human language learning ability was first described by Polka & Bohn (1996), who observed that both English-learning and German-learning infants are biased vowel perceivers. As confirmed by a series of later studies (e.g., Bohn & Polka 2001; Polka & Bohn 2003; 2011), vowels which are peripheral in the universal human articulatory/acoustic vowel space have a special status vis-à-vis less peripheral vowels, e.g., the more peripheral English [æ] as opposed to the less peripheral English [ɛ] vowel. As is customary in many infant speech perception studies, we used a change/no change paradigm, in which both English-learning, German-learning, and Danish-learning children consistently were much better at discriminating a vowel contrast if the change was presented from a less peripheral to a more peripheral vowel (e.g., [y] to [u]) than from a more peripheral to a less peripheral vowel (e.g., [u] to [y]). A review of the literature revealed that this perceptual asymmetry favoring relatively peripheral vowels was observed (but not interpreted) in several other studies with different methodologies (regarding procedures, types stimuli, participants), which led us to propose the Natural Referent Vowel (NRV) framework (Polka & Bohn 2011). Research inspired by this framework addresses a range of questions including those regarding the origin, the species-specificity, and the maintenance or loss of this bias beyond infancy.

Two of the questions addressed within the NRV framework are highly relevant in the context of the topic of this contribution, namely, species-specificity and maintenance or loss of the perceptual bias favoring relatively peripheral vowels in infant speech perception. Regarding the question of whether the perceptual biases observed with human infants are unique to our species, the review of the relevant literature by Polka & Bohn (2003) revealed that the perceptual asymmetries which had been observed in non-human species (cats and blackbirds, see Hienz, Sachs & Sinnott

1981 and Hienz, Alesczyk & May 1996) are a function of just one acoustic parameter of the stimuli, namely, the frequency of the second formant (F2), which is very different in nature from asymmetries observed in infant speech perception studies: For infants, vowels that serve as attractors in perceptual asymmetries are those which are relatively more peripheral in the human vowel space. This is acoustically much more complex than the simple change in F2 because it can be signaled by an increase or a decrease in either F1 and/or F2. Polka & Bohn (2003; 2011) suggest that this difference between human infants and non-human animals can be taken as indication of a special adaptation to the human vowel space in humans. It should be noted however, that these perceptual biases have not yet been tested in infants younger than 4 months, so the alternative interpretation that the special status of relatively peripheral vowels could be experienced-based (through infant-directed speech, see Kuhl et al. 1997, or by exposure to typical facial expressions mothers direct to their infants, which are the visual equivalents of corner vowels, see Chong et al. 2003), cannot be ruled out.

Regarding the maintenance or loss of the perceptual bias favoring relatively peripheral vowels in infant speech perception, a hypothesis developed using the NRV framework is that these biases will be lost if nonfunctional because the ambient language(s) provide(s) experience with both members of the contrast, but will be maintained if the ambient language(s) do not provide this experience. This hypothesis has been confirmed, for instance in studies of the discrimination of the [u-y] vowel contrast, which English-learning and German-learning infants discriminate asymmetrically. English-speaking adults, who are not exposed to this contrast, maintain this asymmetry, whereas German adults, in whose language this contrast is phonemic, do not show this asymmetry. These and other results summarized in Polka & Bohn (2011; see also Bohn & Polka 2014; Polka, Bohn & Weiss 2015), show how innate propensities and native language experience may interact.

The infant vowel perception research briefly referred to above suggests, to paraphrase Nam & Polka (2016: 57), that "the phonetic landscape in infant … perception is an uneven terrain". A recent meta-analysis by Tsuji & Cristia (2017) has solidly confirmed the basic tenet of the NRV framework, namely, that infants are not blank slates as far as vowel perception is concerned. But what about consonants? Are there consonants which have a special status in both infant and adult speech perception and which thus suggest innate predispositions? The question of whether natural referent

consonants exist has only recently been explored in just a few infant and adult perception studies. In general, and to the extent that generalization is possible, the evidence so far suggests that the alveolar place of articulation has this special status, no matter whether the manner of articulation is stop, fricative, affricate, or approximant. (For infants, see Tsuji et al. 2015; for adults, see Cutler, Weber & Otake 2006; Lai 2009; Bundgaard-Nielsen et al. 2015; Schluter, Politzer-Ahles & Almeida 2016.) Overall, these studies suggest that alveolars are somehow "better" consonants for both L1 and L2 learners. More research is clearly needed, but the findings reported so far carry the promise of providing a psycholinguistic basis for descriptive notions such as "underspecification" and "markedness".

4. Conclusion

The aim of this contribution was to review infant speech perception research for evidence addressing the question of a genetic basis of linguistically relevant abilities. This review showed that newborns have already prenatally learned about the global properties of the ambient language(s). They seem to be biologically well prepared to process linguistically relevant information because the left temporal cortex in the fetal human brain is specialized to process speech as opposed to nonspeech sounds. At the earliest possible age that infants can be tested, they demonstrate an innate ability to discriminate consonant contrasts, no matter whether these contrasts occur in the ambient language(s) or not. This ability is never lost, it remains latent and can be re-acquired at any age. For infants, the phonetic landscape is uneven, with certain speech sounds having a universally privileged status. This apparently innately skewed perception of speech sounds can also be observed in adults. In conclusion, research on speech perception provides clear evidence that humans are not blank slates. An important part of our species-specific ability to learn and use language is indeed in the genes.

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No escape from the island: On extraction from complement *wh*-clauses in English[1]

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Abstract

In theoretical syntax, English complement *wh*-clause are considered syntactic islands which block extraction in an asymmetric way: Argument extraction is more acceptable than adjunct extraction. Though this pattern is often assumed to be universal, studies have shown that Danish (and other Mainland Scandinavian languages) may be exceptions. It has also been argued that the patterns of (un)acceptability are biased by expert intuitions. We present data from 100 native speakers of English which confirms (i) that English complement *wh*-clauses are islands, (ii) that there is a (subtle) argument-adjunct asymmetry, and (iii) that this acceptability pattern is not due to participant bias. Together with earlier findings on Danish, these results are compatible with an island account that relies on parametric variation in the possibility of CP-recursion.

1. Introduction: The standard pattern

It has been reported numerous times that extracting an argument (e.g. *what* or *which*) from a complement *wh*-clause is more acceptable than extracting an adjunct (such as *how* or *where*), though neither is considered completely acceptable in English, as illustrated in (1), taken from Rizzi (1990: 4):

(1) a. ??<u>Which problem</u>₁ do you wonder [<u>how</u>₂ John could solve __₁ __₂]?
    b. *<u>How</u>₂ do you wonder [<u>which problem</u>₁ John could solve __₁ ___₂]?

Extracting an argument, as in (1)a, is traditionally explained as a Subjacency violation (Haegeman 1994: 402), because *what* crosses two IPs. What makes adjunct extraction, as in (1)b, worse is that in addition to the Subjacency violation, it also violates the Empty Category Principle (Haegeman 1994: 442), because the trace of *how* is not lexically governed.

Both violate the general principle of locality (cf. the *Minimal Link Condition* (Chomsky 1995: 311) and *Relativized Minimality* (Rizzi 1990)) because movement of the *wh*-element to the matrix spec-CP 'skips' the intermediate spec-CP in the embedded clause. Movement must take place in successive cyclic (i.e. local) steps, cf. the *Successive Cyclic Hypothesis* (Poole 2011: 160), a principle which is independently supported with data from many cross-linguistic studies (Kayne & Pollock 1978; Torrego 1984; Chung & McCloskey 1987; Henry 1995), language acquisition studies (Felser 2004; Crain & Thornton 1998), and psycholinguistic studies (Gibson & Warren 2004; Marinis et al. 2005).

The argument/adjunct asymmetry in *wh*-island extraction, as in (1), is assumed to be universal. However, as discussed below, it has been argued that at least some languages allow both types of extraction without asymmetry (Christensen, Kizach & Nyvad 2013a). It has also been argued that the expert intuitions on which syntactic theory is based are flawed due to confirmation bias (syntacticians presumably want the data to support their theory) (Dąbrowska 2010). It could also be that such intuitions are affected by knowledge of other languages (due to mere exposure to foreign languages or outright bilingualism) (Bohnacker 2006; Booth, Clenton & Van Herwegen 2018). In short, the question is whether we can be confident that there is an underlying universal constraint that results in the grammaticality judgements in (1), and if not, what about locality?

Studies on extraction from complement *wh*-clauses in Danish (Christensen, Kizach & Nyvad 2013a; Christensen, Kizach & Nyvad 2013b) suggest that such structures are not islands but may simply be very difficult to process. The results showed that sentences involving movement out of an embedded *wh*-clause which is uncontroversially grammatical, as in (2), are less than fully acceptable, and that it is more acceptable to extract an argument than an adjunct.

(2) a. <u>Which problem</u>$_1$ do you think [that John could solve ___$_1$]?

  b. <u>How</u>$_1$ do you think [that John could solve the problem ___$_1$]?

These effects naturally follow from processing considerations, since movement as such increases working memory load which reduces acceptability, and because some of the fronted *wh*-elements could (temporarily) be misconstrued as complements of the matrix verb (cf. also Fodor & Inoue's (1998) *Attach Anyway* heuristic, Frazier & Clifton's (1989) *Active Filler Hypothesis*, and lingering garden-path interpretations (Ferreira, Christianson & Hollingworth 2001)). The fronted argument *wh*-elements were Matrix Verb Compatible [+MVC], i.e. compatible as arguments/adjuncts of the matrix verb, and the temporary interpretation (attachment) at the matrix verb is well-formed (*What did she know?*). The adjunct *wh*-elements, on the other hand were matrix verb incompatible [–MVC], i.e. not compatible as arguments/adjuncts of the matrix verb, and the temporary interpretation at the matrix verb is anomalous (*Where did she know?*). The temporary anomaly induced by matrix verb incompatibility further decreases acceptability. The results in Christensen, Kizach & Nyvad (2013a) also showed effects of trial such that the participants found the island violations slightly more acceptable as a function of exposure (i.e. an amelioration effect). This was also the case for uncontroversially grammatical long movement of arguments and adjuncts, as in (2), but crucially, not for clearly ungrammatical sentences.

It has been argued that Danish allows extractions from a range of structures that are normally considered islands, possibly due to a syntactic parameter that allows recursive CPs in Danish, but not in English (Nyvad, Christensen & Vikner 2017; Vikner, Christensen & Nyvad 2017). In a nutshell, the argument is that Danish (and potentially the other Mainland Scandinavian languages) have the option of a recursive functional *c*P-layer ('little *c*P'), which allows extraction by providing extra specifier positions and complementizer stacking; all subordinate clause types (embedded clauses headed by an overt or non-overt complementizer, embedded *wh*-questions, clauses that are complements of nouns, and relative clauses) are *c*Ps ('little *c*Ps), whereas 'big' CP is only found in (embedded as well as main) V2 clauses. Modern English does not allow multiple complementizers in the same minimal clause (such as, *because that*, *if that*, *which that*), whereas Middle English did (Vikner 1995: 121–122). In Danish, it is ubiquitous: *fordi at* (because that), *hvis at* (if that), *som at*

der (which/that that that) (Nyvad 2016). However, it is also conceivable that extractions from *wh*-clauses in English are just difficult to process but not ungrammatical, as is arguably the case for Danish. In this paper, we present the results from a study on extraction from complement *wh*-clauses in English using the same experimental setup and design as in our studies on *wh*-islands in Danish.

There is also an ongoing debate about the nature of data that has traditionally been used in generative syntax. For example, Branigan & Pickering (2017: 4–5) argue that the "standard" approach to data collection, which they claim is "to ask a single informant about the acceptability of a few sentences", is fundamentally flawed. It is open to various sorts of bias from the informant, who might be influenced by what they know about linguistic theory or what they think about the information-seeking linguist; see also Gibson & Fedorenko (2010). However, all of these objections to the (caricature of the) "standard" approach have been answered in detail, and there seems to be no real reason to suspect that generative syntactic theory is based on false assumptions and flawed acceptability judgments (Featherston 2009; Phillips 2009; Sprouse & Almeida 2017; Christensen 2019). Some of the concerns should still be taken seriously, however. One concern is that there is good reason to carry out experiments with many examples and many participants when examining subtle contrasts in acceptability in order to avoid participant or expert bias (Gibson, Piantadosi & Fedorenko 2013); another concern is that expert intuitions may also be biased (Dąbrowska 2010).

Following the generally accepted assumption that complement *wh*-clauses are weak islands in English, i.e. they exhibit a selective, non-uniform extraction pattern (Szabolcsi 2006), and the uncontroversial assumption that movement in itself increases processing load, we made the following set of predictions:

Prediction 1: There are processing effects: Movement per se increases processing load which decreases acceptability (which is not an effect attributable to the specifics of the grammar of English).

Prediction 2: Complement *wh*-clauses are islands, and extraction leads to consistent ungrammaticality or (at least) severely reduced acceptability. Therefore, (non-local) movement across a *wh*-element in the embedded spec-CP is significantly less acceptable than long (local, successive-cyclic) *wh*-movement. We assume that English *wh*-islands are 'real' islands (i.e.,

what blocks extraction is structural and absolute, not a matter of processing load) and as such immune to lexical effects, and therefore, the level of acceptability of extraction from a *wh*-island does not correlate with the frequency of occurrence of the matrix verb.

Prediction 3: The acceptability pattern for extraction out of a *wh*-island is asymmetric. Argument extraction is more acceptable as it 'only' violates locality (or rather, Subjacency), whereas adjunct extraction is less acceptable because it also violates the Empty Category Principle.

Prediction 4: The pattern is not due to participant bias, neither expert bias (effect of being a linguist), nor repetition (effect of trial).

There might potentially be sociolinguistic factors that affect the acceptability judgments. It could be that there is variation between different varieties of English, or that there are overall differences between participants of different age or level of education. It is also possible that there is transfer from one language to another in bilinguals. To test for (and to control for) these possibilities, we also looked at the main effects of bilingualism, nationality, age, and level of education of the participants. However, since we did not have any theoretically or empirically motivated hypotheses about how any of these particular factors might specifically influence island extractions, we did not look for interaction effects. Their potential main effects were included as controls.

2. Experiment
2.1 Participants
The task description specified that participants must be native speakers of English, and the survey itself also contained a control question requiring participants to confirm they were native speakers. Only responses from native speakers were included in the analysis. In total, 122 persons participated in our online survey, which was sent to various Facebook forums for people interested in English (e.g. university English departments). In the analysis, we included only responses from people aged 11–100 with 8–29 years of education, and only nationalities with more than 10 participants. This filtering resulted in 100 native speakers of English (male 52, female 48; linguists 57, non-linguists 43); nationality: 45% from the UK, 45% from the USA, 10% from Canada; participants per list: 10, 13, 11, 13, 15, 38), mean age 42.6 years (range=18–81, SD=17.7) with a mean length of education of 19.5 years (range=12–27, SD=3.2).

2.2 Materials

The target stimuli consisted of 72 sentences embedded in a total set of 140 sentences: 12 sets of six target types as illustrated in Table 1: Baseline (no movement), Long ARG (argument extraction from the embedded clause), Long ADJ extraction (adjunct extraction from the embedded clause), Across ARG (island violation by argument extraction), Across ADJ (island violation by adjunct extraction), Anomaly (ungrammatical). All sentences were carefully constructed such that the matrix verb was incompatible with the *wh*-phrase in order to avoid (as far as possible) interpreting the sentences as local, matrix clause questions.

Example	Type
The mother explained that they should treat the children very leniently.	Baseline
Which children did the mother explain that they should treat very leniently?	Long ARG
How leniently did the mother explain that they should treat the children?	Long ADJ
Which children did the mother explain how leniently they should treat?	Across ARG
How leniently did the mother explain which children they should treat?	Across ADJ
The mother explained how leniently which children they should treat.	Anomaly

Table 1: Examples of the six types of sentences in the stimulus set.

All sentences were in the simple past tense, and the number of words was kept constant (except the interrogative structures which triggered the addition of dummy-*do*).

The sentences were distributed evenly over six lists, making sure that each participant saw each matrix verb only once (and hence, judged only one member of each quadruple). The same 20 fillers occurred on all lists, such that each list consisted of 40 sentences in randomized order. The six lists were presented as online surveys using Google Drive. Each participant chose a list based on the month of their birthday: January–February = list 6, March-April = list 5, etc.

2.3 Procedure

The task consisted of acceptability judgments on a five-point Likert scale from 1 (completely unacceptable) to 5 (completely acceptable). Participants were instructed to base their judgments on their own intuition, not on what they might expect to be correct or standard language, and to ignore punctuation. The instructions also included the following examples

of a completely unacceptable sentence (1 on the scale) and a completely acceptable one (5 on the scale), respectively:

(3) a.   *What kind of food did the truck explains that the mule died?
    b.   The child often broke the rules.

2.4 Results

Using R (R Core Team 2017) with the *lmerTest Package* (Kuznetsova, Brockhoff & Christensen 2017) and the *MASS Package* (Venables & Ripley 2002), the results were subjected to a linear mixed-effects analysis with sliding contrasts to compare the neighboring levels in the type factor. To control for effects of frequency of occurrence of the matrix verb (Christensen & Nyvad 2014), our model included the mean of the z-transformed frequencies of each verbs in the British National Corpus (Davies 2004) and in the Corpus of Contemporary American English (Davies 2008). The maximal model with all random intercepts and slopes (Barr et al. 2013) failed to converge as did the zero-correlation parameter model (Bates et al. 2015). The maximal converging model included random intercepts for participants and items and random slopes for trial by participants. The mean acceptability ratings are presented in Figure 1, and the results of the statistical analysis are presented in Table 2.
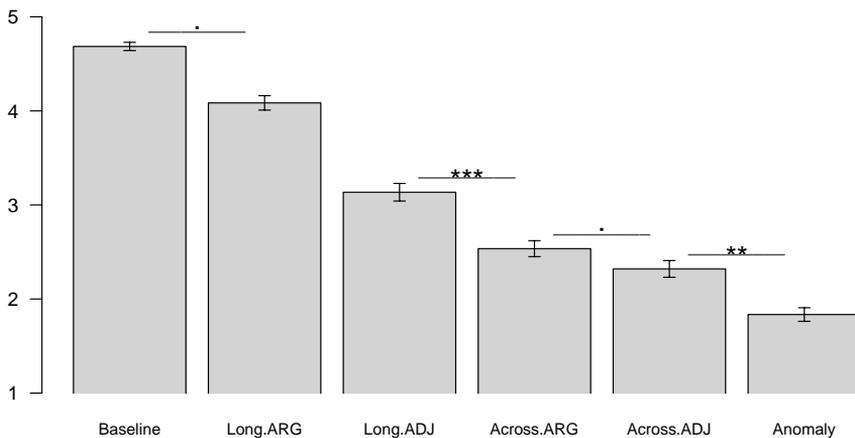
Figure 1: Mean acceptability ratings per type across items and participants. ***significant p<0.001, **significant p<0.01, *significant p<0.05 (·marginal p<0.1). Error bars ±1 standard error.

	Estimate	SE	df	*t*-value	*p*-value	
Long ARG – Baseline	-0.83	0.45	63.1	-1.82	0.074	·
Long ADJ – Long ARG	0.91	0.55	61.8	1.65	0.104	
Across ARG – Long ADJ	-2.25	0.58	62.4	-3.89	0.000	***
Across ADJ – Across ARG	0.83	0.47	59.9	1.76	0.083	·
Anomaly – Across ADJ	-1.31	0.42	62.2	-3.12	0.003	**
Age (in years)	-0.01	0.00	89.5	-2.24	0.027	*
Education (in years)	0.00	0.02	91.6	-0.01	0.996	
Bilingual (Yes – No)	0.04	0.11	91.5	0.36	0.722	
Nationality (UK – Canada)	0.25	0.19	91.4	1.30	0.197	
Nationality (USA – Canada)	0.07	0.19	90.3	0.37	0.711	
Baseline x Freq	-0.12	0.30	39.9	-0.40	0.689	
Long ARG x Freq	0.10	0.34	64.0	0.31	0.757	
Long ADJ x Freq	-0.92	0.38	58.3	-2.46	0.017	*
Across ARG x Freq	-0.07	0.37	62.8	-0.20	0.843	
Across ADJ x Freq	0.23	0.38	56.9	0.61	0.547	
Anomaly x Freq	-0.03	0.32	53.1	-0.08	0.933	
Baseline x Trial	0.01	0.01	60.0	0.71	0.481	
Long ARG x Trial	0.01	0.01	49.8	1.16	0.252	
Long ADJ x Trial	-0.06	0.02	55.9	-2.74	0.008	**
Across ARG x Trial	0.01	0.01	57.5	0.70	0.488	
Across ADJ x Trial	-0.03	0.01	52.6	-2.09	0.042	*
Anomaly x Trial	0.02	0.01	54.5	1.49	0.143	
Baseline x Linguist (Yes)	0.26	0.18	314.1	1.49	0.139	
Long ARG x Linguist (Yes)	0.53	0.17	312.9	3.06	0.002	**
Long ADJ x Linguist (Yes)	0.10	0.17	316.3	0.56	0.576	
Across ARG x Linguist (Yes)	0.23	0.17	314.1	1.30	0.194	
Across ADJ x Linguist (Yes)	-0.15	0.17	313.6	-0.88	0.381	
Anomaly x Linguist (Yes)	-0.31	0.17	302.8	-1.79	0.075	·

Table 2: Summary of fixed effects. 'Estimate' indicates the relationship between acceptability rating (the output) and each of the contrasts (between the sentence types) and interactions (between type and trial). SE= standard error, df=degrees of freedom, ***significant p<0.001, **significant p<0.01, *significant p<0.05, (·marginal p<0.1).

3. Discussion

Based on the existing theoretical and experimental literature on islands, we made four predictions:

Prediction 1: There are processing effects: Movement per se increases processing load which decreases acceptability (which is not an effect attributable to the specifics of the grammar of English). This was **confirmed**. There was a marginally significant drop in acceptability for long movement compared to the baseline condition. Unlike our previous studies on Danish (Christensen, Kizach & Nyvad 2013a; Christensen, Kizach & Nyvad 2013b), the difference between long argument and long adjunct movement was not statistically significant, though the trend is in the same direction. This is most probably because there was more variation in the adjunct condition than in the argument condition. Controlling for MVC, Nyvad, Kizach & Christensen (2014) also found that adjunct extraction was less acceptable than argument extraction (both [–MVC]) from an embedded declarative clause. The data could be taken to suggest that it is more difficult to integrate an incompatible [–MVC] adjunct, cf. also that agrammatic speakers seem to have an adjunction deficit: They prefer predicative adjectives over attributive ones, and they are significantly slower at integrating adjuncts than arguments (Lee & Thompson 2011; Meltzer-Asscher & Thompson 2014). (However, Nyvad, Kizach & Christensen (2014) found no difference for non-aphasic speakers in processing time for integrating arguments versus adjuncts.) In a similar vein, Hofmeister (2007: 56) states that adjunct questions "typically demand more effort for constructing the relevant existential presupposition and imagining an appropriate discourse for the question". The same intuition underlies the argument/adjunct asymmetry proposed in the theoretical syntax literature: In spite of the locality violation in (1)a, it is still possible to reconstruct the base-position for the extracted *wh*-element because it is selected by the embedded verb (the verb provides an identifiable empty slot in its argument structure); in (1)b, on the other hand, the base-position of *how* cannot as easily be reconstructed because, being an adjunct, it is not selected by the embedded verb and consequently, the base position is structurally indeterminate.

Prediction 2: Complement *wh*-clauses are islands, and extraction leads to consistent ungrammaticality or (at least) severely reduced acceptability. Therefore, (non-local) movement across a *wh*-element in the embedded spec-CP is significantly less acceptable than long (local, successive-cyclic) *wh*-movement. In addition, we assume that *wh*-islands are immune to lexical effects, and therefore, the level of acceptability of extraction from a *wh*-island does not correlate with the frequency of occurrence of the matrix verb. This prediction was **confirmed.** Our experiment showed that on average, the participants found extractions from a *wh*-island unacceptable (argument extraction was rated 2.54, adjunct extraction 2.32 on a scale from 1 to 5) but significantly better than the ungrammatical controls (the Anomaly condition, which was rated 1.84). Furthermore, frequency did not have a positive effect on acceptability. The only significant effect of frequency is negative. The more frequent the matrix verb, the more degraded our participants judged long adjunct extraction.

Prediction 3: The acceptability pattern for extraction out of a *wh*-island is asymmetric. Argument extraction is more acceptable as it 'only' violates locality (or rather, Subjacency), whereas adjunct extraction is also more difficult to reconstruct (because it also violates the Empty Category Principle). This was to some extent also **confirmed**: There is a marginally significant trend (p=0.083), which is in line with the standard pattern in theoretical syntax. The fact that is only marginally significant (the p-value is above 0.05 but below 0.1) fits the intuition that the difference between '??' and '*' is rather subtle. (As also pointed out by Hubert Haider, p.c., this acceptability asymmetry can also be reduced to a processing effect; as argued above, all things being equal, the base-position of an extracted argument is easier to reconstruct (there is an easily identifiable empty slot in the embedded argument structure) than the base-position of an extracted adjunct (which is not selected). This processing asymmetry is present in both licit and illicit contexts of extraction.)

Prediction 4: The pattern is not due to participant bias, neither expert bias (effect of being a linguist), nor repetition (effect of trial). This prediction was **confirmed**. The acceptability judgments for island extractions were not affected by being a linguist (expert bias). The linguists in our study rated long argument movement as more acceptable than the non-linguists did, as the linguists found the anomalies marginally worse

than the non-linguists did. This is in line with Culbertson & Gross (2009), who present data showing that linguists and students who have taken one or more classes in theoretical syntax show more consistent judgements as a group than naïve participants; see also Sprouse & Almeida (2013; 2017). Similarly, Christensen, Kizach & Nyvad (2013a: 58) found that students who had taken a course in generative syntax responded much faster (a full 1.1 second) and found long extractions (from islands and non-islands) slightly more acceptable (0.1 point on a 5-point scale) than students with no background in generative syntax did (there was no difference in the acceptability ratings for ungrammatical sentences). In short, linguists (and students with syntax training) are faster and more consistent in their judgments because they have better understanding of the nature of the task. This is also supported by the lack of significant effect of level of education, as well as age, which had a small but significantly negative effect; post hoc analysis revealed that this was driven by a decrease in acceptability of adjunct extraction from islands). There was also no ameliorating effect of trial. On the contrary. The two types of adjunct *wh*-movement were actually perceived as less acceptable over time. (Cf. also that Snyder (2000) found a ameliorating 'training' effect for *whether*-islands, but NOT for *wh*-islands.) Finally, the results also showed that the acceptability pattern is stable across different varieties of English (no effect of nationality). The effect of bilingualism was also not significant.

Taken together, the results from our studies on Danish and English strongly suggest that there is parametric variation between the two languages regarding the structure of the CP-domain. In non-V2 contexts, Danish allows a more elaborate structure in the CP domain by means of a recursive functional *c*P-layer which provides an escape hatch for extraction from *wh*-islands. English, on the other hand, only allows a single CP layer and since there is only one specifier position, which is filled by a *wh*-element, extraction out of the clause is effectively blocked. This contrast is illustrated in (4a) and (4b) below:

(4) a. English: *Ungrammatical*
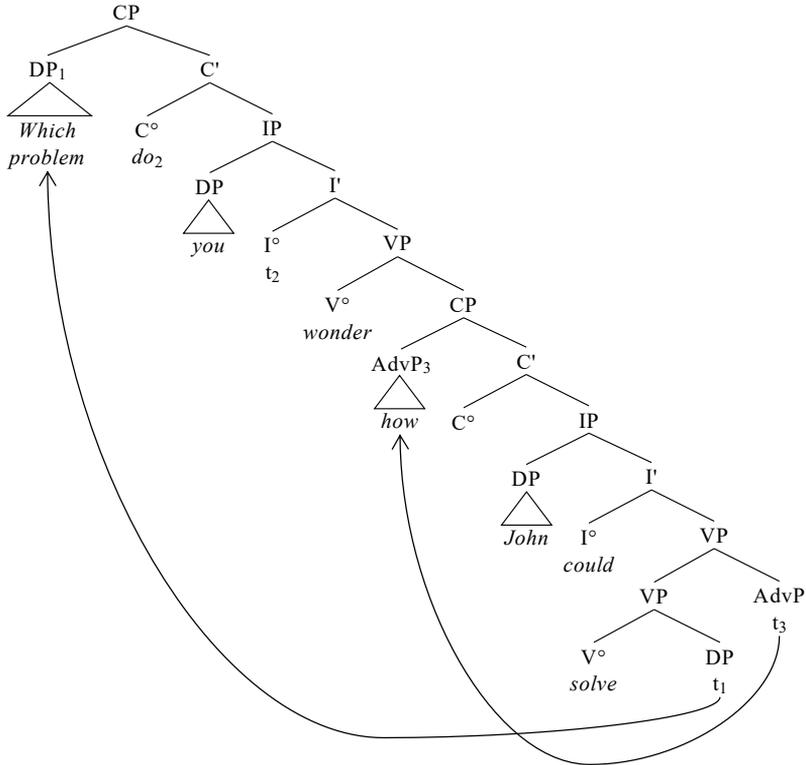
Ignoring differences due to verb movement, the key difference is the availability of an intermediate landing site for *wh*-movement in the Danish structure, which is not available in English. This is in line with the assumption that successive-cyclic movement is a universal principle. Without an intermediate landing site, movement from the embedded *wh*-clause is blocked. This analysis is fully compatible with the standard assumptions about clause structure in English as well as recent proposals about Mainland Scandinavian languages (Christensen, Kizach & Nyvad 2013a; Christensen, Kizach & Nyvad 2013b; Christensen & Nyvad 2014; Heinat & Wiklund 2015; Nyvad, Christensen & Vikner 2017; Vikner, Christensen & Nyvad 2017; Lindahl 2017).

(4) b. Danish: Difficult to process
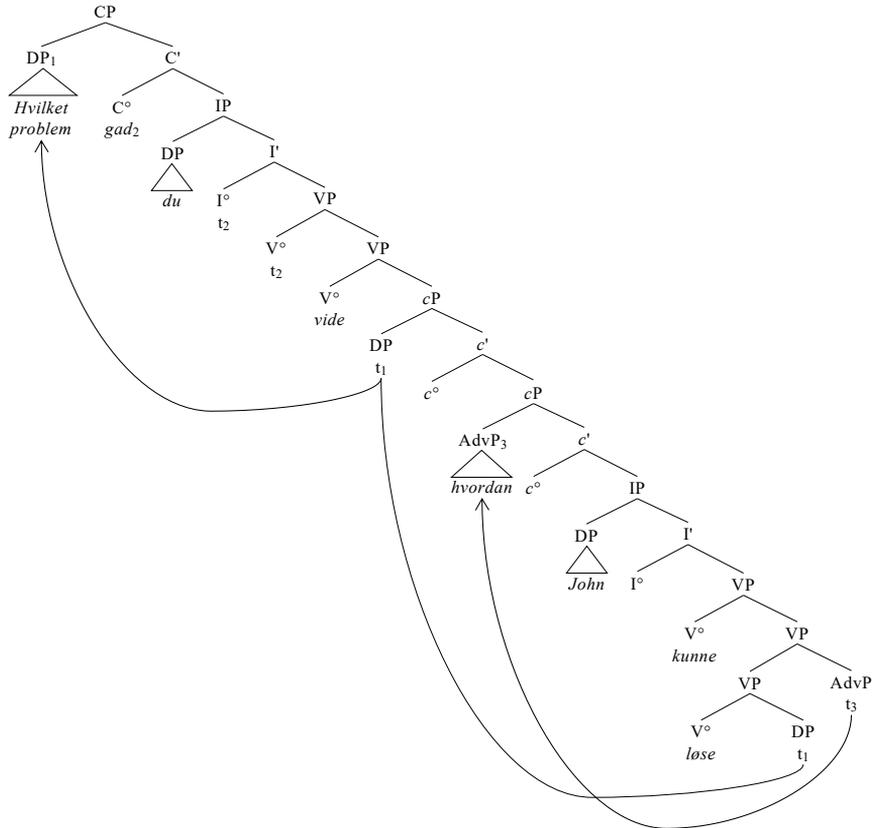
The option of *c*P-recursion may not be available in relation to all types of island constructions (adjunct islands, relative clauses, complex NPs, subject islands, *whether*-islands, etc.), as there appears to be some variation in the acceptability of extractions from these domains within and across the Mainland Scandinavian languages (Kush, Lohndal & Sprouse 2018; Kush, Lohndal & Sprouse 2019; Tutunjian et al. 2017).[2] Interestingly, however,

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[2]   As explained in the introduction, the option in Danish of a recursive functional *c*P-layer ('little' *c*P) that provides an extra specifier position as an escape hatch is available only in *subordinate* clause types. V2 clauses (embedded as well as main clauses), on the other hand, are 'big' CPs. The head of CP 'becomes' lexical when the finite verb moves into it. V2 is never selected (it is never required by a matrix verb), and it follows that there must be a projection above an embedded CP, namely a *c*P headed by a declarative complementizer which does not provide an extra specifier. For details, see Nyvad, Christensen & Vikner (2017) and Vikner, Christensen & Nyvad (2017).

the present results from English native speakers corroborate (replicate) the intuitions from the 'armchair'.

4. Conclusions

Our results support the standard assumption in theoretical syntax that complement *wh*-clauses are weak islands in English. The argument/adjunct asymmetry, however, is only marginally significant, which could be taken as support for the assumption that the contrast is a subtle one between highly degraded (??) and ungrammatical (*). In conclusion, our results from the present experiment are compatible with the standard assumption in the generative syntax literature, namely that there is a universal island constraint that impedes extraction from finite complement *wh*-clauses in English. This confirmation, however, makes our results regarding *wh*-island structures in Danish all the more pertinent, and suggests that there may be parametric variation between English and Danish when it comes to the possibility of CP-recursion. The island is still there, and it is slightly better to extract an argument than an adjunct from it.

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Indirect threats as an illegal speech act

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Abstract

This article demonstrates how speech act theory and specifically the notion of felicity conditions can help elucidate the threatening aspects of otherwise vague and unspecific messages. Based on a discussion of language crimes, illegal speech acts and the question of intent, I propose a list of felicity conditions for threats that account for their primary purpose as attempts to intimidate a victim. Examples for discussion are taken from a data set of indirect, written threats extracted from verdicts by Danish higher courts. Contrary to previous claims, it is shown that it is not only possible but linguistically quite straightforward to analyze even indirectly phrased messages as instances of threats.

1. Threatening messages as a crime of language

The topic for this article is born out of a study of verdicts from the Danish High and Supreme Courts trying threatening messages under section 266 of the Danish Penal Code.[1] This study revealed that the majority of the written threats had been posed indirectly, a fact that raises questions both about the intent and purpose of the defendants in these cases and about the nature of the cases brought to the highest courts. I will return to the latter point in my conclusion (Section 5).

First, the current section introduces the notion of language crimes as discussed within the expanding field of forensic linguistics (cf. Shuy 1993, Fraser 1998, Solan & Tiersma 2005) and shows how threats can be phrased both directly and indirectly. Section 2 lays out the defining characteristics

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[1] This article is based upon perspectives and results presented in an article in Danish co-authored with Marie Bojsen-Møller (Christensen & Bojsen-Møller 2019). Here, I place a larger focus on speech act theory.

of threatening messages both in terms of Searlean speech act theory (e.g. Searle 1965, 1979) and in terms of the law. Based on the felicity conditions for promises, a list of felicity conditions for threats is developed in section 3, and in section 4 a variety of indirect threatening messages are analyzed with a focus on the felicity conditions they appeal to. Contextual factors are considered where available and relevant. Finally, in section 5, I discuss the findings and their possible implications for the judicial system.

1.1 Forensic linguistics and language crimes

Forensic linguistics deals with all aspects of language and the law, ranging from the interpretation of contractual terms to analyses of courtroom interaction and to extracting intelligence from ransom notes or threatening messages (for a broad introduction to the field, see Coulthard, Johnson & Wright 2017). A sub-field examines so-called language crimes (Shuy 1993). Solan and Tiersma explain that these are crimes that can be "committed partially or entirely by means of language" and list such crimes as conspiracy, solicitation, perjury, extortion and threats (2005: 179). Several of these crimes can be committed using speech acts that are otherwise completely legal, such as informing about the layout of a building, or instructing someone in the proper use of a tool. It is when the information or instruction is used as a basis for a criminal act that a language crime has occurred; as when the building in question is a bank and the tool is an explosive device. In other words, it is not the utterances that are criminal but the way they are used to attain illegal goals.

In distinction, there are some speech acts that are criminalized in themselves. We can roughly divide them into transgressions against the norm of speaking truthfully and transgressions against the norm of speaking respectfully. In other words, they are extreme cases of violations of the conversational maxim of quality (Grice 1975) and of general principles of politeness (Brown & Levinson 1987). I go through a few examples of each below.

1.2 Illegal speech acts

Perjury is a prime example of a speech act that is criminalized because the speaker knowingly tells an untruth during testimony (Shuy 2011). It is sometimes called 'lying under oath' but is equally punishable in jurisdictions where witnesses are not sworn in before testimony (as is the case in Denmark, for example). It is no wonder that perjury is sanctioned legally since false information risks derailing criminal investigations, waste pre-

cious time and resources, and ultimately prevent the capture and just sentence of the guilty party. Outside of the justice system, false statements are not necessarily illegal; it is considered immoral to lie to others but generally it is not a criminal offence. However, the spreading of false information about others is criminalized when used to harm their reputation. This is the illegal speech act of defamation (Shuy 2010).

In some jurisdictions, even the spreading of harmful information that is true is considered legally defamatory. This is the case in Denmark where section 267 in the Penal Code criminalizes utterances that offend someone's honor, while section 268 defines it as an aggravating circumstance if the utterance is untrue. In Denmark, therefore, defamation cases can belong to either or both of the above-mentioned categories of transgressions (against speaking respectfully and against speaking truthfully).

The reason that some forms of disrespectful speech are penalized stems from the notion of civil rights, which include the right to participate freely in political and civil life (Catlin 1993). Such rights are effectively diminished when other members of society believe an individual to be unworthy in some respect. Therefore, many countries have criminalized hate speech, i.e., demeaning or derogatory utterances based on a person's membership of a targeted group, typically an ethnic, religious or sexual minority. In other countries (notably, the US with its first amendment rights), freedom of speech is generally prioritized over the freedom from such verbal targeting. In such cases hate speech will not count as an illegal speech act (the proliferation of online abuse of minorities has made this a hotly debated topic over the past couple of decades (Siegel 1998; Leets 2001; Daniels 2008; Henry 2009)).

In contrast, there appears to be universal agreement that threatening someone with violence or other serious harm is a criminal act. Note that it is the act of threatening that is itself criminalized – it is not necessary for there to be an actual act of violence, too, and if there is, it will be prosecuted as a separate count. While a threat can be performed non-verbally, for instance by pointing a gun at a victim, I focus solely on the speech act of threatening. Importantly, verbal threats can be conveyed both directly and indirectly, as shown below.

1.3 Direct and indirect threats

Direct threats often mention both the victim, the type of harm intended to befall the victim, and the threatener as the agent of the harmful act (see examples 1-2).

(1) We will kill all of you
     (excerpt from written letter; Rugala & Fitzgerald 2003: 779)

(2) IM
     GONNA
     BOMB
     this School @ 2/23/07
     (handwritten on wall of public school; Gales 2010: 1)

Disregarding their level of credibility, we see mention of the type of harm as the fairly unspecific act of killing in (1) and the more precisely defined act of bombing in (2). The intended victims are designated as, again the rather fuzzy group of *all of you* in (1), and the institutional rather than personal *this School* in (2). Finally, the threateners as agents are in both cases referred to by first person pronouns, plural *we* in (1) and singular *I* in (2). It is not unusual for threateners to use 1pl *we* to refer to themselves, even when there is in fact only one person behind the threat, "as if to instill credibility and fear through the invocation of a large and mysterious group" (Simons & Tunkel 2013: 203).[2]

   Indirect threats may leave any of these factors unmentioned or unspecified, as seen in (3-4), and their status as threats can therefore more easily be challenged in a court of law.

(3) If this is how you treat honest dissent then WATCH OUT all of you
     will reap what you sow (excerpt from email; Gales 2010: 41)

(4) North Korean Leader Kim Jong Un just stated that the "Nuclear Button is on his desk at all times." Will someone from his depleted and food starved regime please inform him that I too have a Nuclear Button, but it is a much bigger & more powerful one than his, and my Button works! (tweet by US President Donald J. Trump, 2 Jan 2018[3])

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[2] Note that to my knowledge no systematic quantitative measures of the distribution between singular and plural references to threateners have been reported to date. The few corpus linguistic studies of threatening messages all conflate singular and plural pronouns and only distinguish between 1st, 2nd and 3rd person (Gales 2010, 2015a, 2015b; Nini 2017; Muschalik 2018).

[3] https://twitter.com/realDonaldTrump/status/948355557022420992

Note how (3) makes use of two different types of tropes that are almost generic to threats: First the imperative *WATCH OUT*. On the face of it, this may look like a warning and a defendant will likely claim that it was meant as such. However, warnings differ from threats in at least two respects: the speaker has no impact on the outcome of the situation referred to, and, further, the speaker does not wish for it to happen. The initial conditional clause (*If this is how you treat honest dissent*) makes it unlikely that this is a benign warning since it serves as a justification for whatever it is the addressee is supposed to watch out for. Second, the biblical proverb *you [will] reap what you sow* also predicts a just return for some action performed by the addressee. Together, the two tropes do more than simply warn of impeding danger, they threaten the victim with unwanted consequences (because there is no reason to watch out for things you wish for).

In (4), Trump attempts to achieve dominance over Kim Jong Un by implying both that his nuclear arsenal is more powerful than the North Korean regime's and that the North Koreans have not fully developed their nuclear technology yet. First, the size of the *Button* stands metonymically for the power of the weapons it can deploy, and second, stating that the American button works, invites the inference that the North Korean one does not. So, while none of the threats in (3–4) are direct, semantic and pragmatic analysis lays bare that they are indeed threatening.

2. Defining threats in speech act theory and in legislation
In order to give an account of the threat as a speech act, it is necessary to first place it under one of the superordinate categories of speech acts defined in speech act theory and then specify how it differs from similar members of the same category.

2.1 Speech act theory on threats
According to Searle's taxonomy of speech acts (Searle 1979), there are five major categories of speech acts under which several more specific types are subsumed, as exemplified in table 1.

Category	Examples
Assertives – commit the speaker in varying degrees to the truth of a proposition	to inform, to insist, to suggest, to boast, to complain, etc.
Directives – attempt to get the hearer to perform some action	to ask, to order, to request, to beg, to invite, to permit, to advise, etc.
Commissives – commit the speaker to a future course of action	to promise, to vow, to swear, to embrace, to pledge, etc.
Expressives – express the psychological state of the speaker regarding a state of affairs	to congratulate, to apologize, to condole, to deplore, to welcome, etc.
Declarations – brings a state of affairs into existence	"I resign", "I pronounce you husband and wife", "You're fired", "War is hereby declared", etc.

Table 1. Searle's classification of speech acts

In his 1965 article "What is a speech act", Searle – almost as an aside – classifies threats as commissives but distinguishes them from a prominent member of that category, namely promises:

> One crucial distinction between promises on one hand and threats on the other is that a promise is to do something *for* you, not to you, but a threat is to do something *to* you, not for you.
> (Searle 2008 [1965]: 11; my italics)

Other scholars have argued that threats belong in the category of directive speech acts (Harris 1984; Gingiss 1986), but this view rests upon the prevalent misconception that threats contain a condition that the addressee is pressed to fulfill (see also Fraser 1998: 167; Limberg 2009: 1376). However, the few detailed corpus linguistic studies performed on threatening messages demonstrate that conditional threats are far from the most common type. Gales (2010: 98) finds that approximately a fourth of the threats in her data set of 470 hand- and typewritten threats from US cases are conditional, a result corroborated by Muschalik's (2018: 63) study of 301 threats reproduced in US verdicts. Nini (2017: 106), reports a result of 37% conditional threats in a study based on a significantly smaller set of 51 threatening messages. Harris (1984: 249) alleges that "what appears to be an unconditional threat may often mean that the condition is implicit," but as can be seen from examples (1–2) above this is false. There is no implied

condition in these threats. In other words, there is apparently nothing the victims can do to prevent the threatened action from happening, and, importantly, nothing the threatener wants them to do or deliver (as is the case in stalking cases, ransom cases or robberies where some sort of transaction is the primary purpose of the threat in the first place).

Both conditional and unconditional threats, however, contain what I shall call an 'evil promise', even when it is left vague what kind of harmful act that promise entails, or whether the threatener him/herself will perform the act. Whereas normal, benign promises presuppose that the addressee would want the promised act to be performed, a threat presupposes the opposite. Here it is important to keep in mind that whether the threatened act is realized or not is not central to the function of a threat: the purpose of threatening is intimidation: "Inherent in every threat is the intention to send fear into the addressee" (Fraser 1998: 161).

Indeed, intimidation forms the crux of Fraser's definition of threats as a speech act:

> ... the speaker must intend to express by way of what is said
> 1. the intention to personally commit an act (or to see that someone else commits the act);
> 2. the belief that the results of that act will affect the addressee in an unfavorable way;
> 3. the intention to intimidate the addressee through the awareness of the intention in 1.
> (Fraser 1998: 171)

The illocutionary force of a threat can thus be summed up as an attempt to intimidate an addressee by communicating that the threatener intends some serious harm to befall them. Note that this definition does not require a conditional element. As we shall see below, legislation across Danish, British and American contexts differ in this respect.

2.2 Legislation on threats

The Danish Penal Code on threats clearly points to intimidation as a defining criterion:

(5) Whosoever threatens to carry out an illegal speech act in a way that is <u>fit to provoke serious fear</u> in someone for their own or other people's lives, health or wellbeing, shall be penalized by fine or imprisonment

of up to 2 years. (Danish Penal Code, Chapter 27, § 266; my transla-
tion and underlining)

A similar provision is given in the British Offences Against the Person Act
1861 on threats to kill:[4]

(6) A person who without lawful excuse makes to another a threat, intend-
     ing that <u>that other would fear</u> that it would be carried out, to kill that
     other or a third person shall be guilty of an offence and liable on convic-
     tion on indictment to imprisonment for a term not exceeding ten years.
     (British Offences Against the Person Act 1861; my underlining).

The American legislation most relevant to the prosecution of threats
is Chapter 41 of the United States Code of Law, termed 'Extortion and
Threats' (18 USC Ch. 41). No section under Chapter 41 refers to an ability
or intention to instill fear in the recipient but such a criterion has nonethe-
less been discussed several times in American case law (Fuller 2015). In
Watts v. United States, the Supreme Court refers to but does not define a
'true threat' (by which is apparently meant one that is uttered seriously and
not as hyperbole, fiction, jest or the like). It would take us too far to trace
the complicated legal arguments in this and later Supreme Court verdicts,
but suffice to say that the American judicial system is concerned more
with a defendant's intent in uttering a threat than with the perlocutionary
effects it may have. Such a focus on intent may be philosophically sound
but leaves courts in the difficult position of having to determine what a
defendant's mental state was at the time of communicating a threat. While
people's mental state can only be directly experienced and assessed by
themselves, defendants cannot be assumed to speak truthfully when facing
serious legal consequences of their actions.[5]

     Notice that British law also refers explicitly to intention ("*intending
that that other would fear …*"), while Danish legislation invokes the some-
what more objective notion of a threat's 'fitness' to provoke fear, or what
we in speech act terms may call its assumed perlocutionary effect. How-
ever, with the exception of involuntary manslaughter, Danish criminal law
always requires the prosecution to show that a defendant had the intention
(Danish: *forsæt*) to commit a crime. But here again, the specific wording of

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[4] A section of the Criminal Damage Act of 1971 deals with 'threats to damage or destroy
     property' and contains the same reference to an intention to frighten someone.
[5] My point is not to argue that legislation or the courts should dispense with the notion of
     intent or *mens rea*, 'the guilty mind', but simply to point out that the question of intent
     can be weighed against potential to intimidate.

the law is important: Danish law specifically criminalizes a threat's *potential* to intimidate, and not whether a victim actually felt intimidated (Greve et al. 2017: 530-532).

In sum, legal codes criminalizing threats refer to a greater or lesser extent to the intentions of the speaker/writer who on the other hand has very little incentive to admit to an intent to threaten. This makes indirect threats particularly problematic since their vagueness and ambiguity affords the threatener an easy recourse to 'plausible deniability' (Pinker, Nowak & Lee 2008): defendants can simply claim that they never intended to threaten someone, that they merely warned them of impending danger. Contrary to Fraser's contention that it is "virtually impossible … to determine with certainty when a threat has been made" (1998: 162), I will demonstrate below that it is often both possible and linguistically straightforward to identify even indirectly phrased threats. To this end, I revisit and revise the set of felicity conditions underlying threats since they are instrumental for a linguistically sound argument that a message is threatening, even when indirectly phrased.

3. The felicity conditions of threats

The literature on threatening speech acts contains only few treatments focusing on indirect threats (Gingiss 1986; Al-Shorafat 1988; Yamanaka 1995). They are all based on the Searlean notion of felicity conditions as a diagnostic of which primary illocutionary force an indirect speech act has (Searle 2008 [1965]). The oft-repeated example "Can you reach the salt?" counts as a request, not because it directly formulates a request but because it appeals to one of the preparatory conditions for a request. This condition states that the addressee must be able to perform the requested action – otherwise, it makes no sense to request it. By asking if an addressee *can* reach the salt, the speaker invokes the preparatory condition and thereby invites the addressee to not only consider whether s/he in fact can perform that act, but rather to actually perform it. The circumspect manner of requesting by asking is of course considered politer than requesting by ordering, as in "Hand me the salt!" (Brown & Levinson 1987), and the question is typically not even computed as such because it would be irrelevant in the context and likely be considered rude (Grice 1975).

As mentioned above, threats do not belong in the same category as requests (i.e., directives) but in the category of commissive speech acts, being a type of evil promise. Briefly put, for a promise to function suc-

cessfully as a promise (for it to be 'felicitous') it must <u>commit</u> the speaker <u>sincerely</u> to a <u>future act</u> that the <u>hearer wants</u> to happen and that the <u>speaker can actually</u> carry out (Searle 2008 [1965]: 10-11).

The felicity conditions for a threat overlap with those of a promise in some respects but there are two critical differences: Firstly, the hearer (or reader) does *not* wish for the act to happen, and secondly, the speaker (or writer) does not need to intend to perform the action but only to make the hearer *fear* that s/he might. Further, I propose that the essential condition of a threat consists in an attempt to intimidate the hearer, rather than in committing the hearer to a course of action.

Propositional condition	Speaker predicates a future act A
Preparatory conditions	(Hearer believes that) speaker is able to cause A to happen;
	(Speaker believes that) Hearer does **not** wish A to happen
Sincerity condition	Speaker intends to (make Hearer believe he will) cause A to happen
Essential condition	Speaker's utterance counts as an attempt to intimidate Hearer

Table 2. The felicity conditions of a threat

Below, I present excerpts of threatening messages from Danish high and supreme court cases to illustrate how each of these felicity conditions are sufficient to evoke the illocutionary force of a threat – given the right circumstances, of course. There are definitely outlier cases in which it is difficult to determine that a threat has been made.

4. Data material

The data material for this study was collected through searches in a Danish database of judicial journals publishing important verdicts from the higher courts, i.e., verdicts that may set a precedent or change a prior legal position in Danish jurisprudence (*Karnov Online*).[6] Out of 196 cases containing threatening speech acts, merely 22 concerned written messages. Spoken messages are not analyzed here since there is too much uncertainty concerning their exact wording: humans are surprisingly poor at remembering speech verbatim (Sachs 1967). A total of 68 written messages in-

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[6] Examples from this data set are referenced using the abbreviation of the judicial journals used in Karnov Online: TfK = *Tidsskrift for Kriminalret* ('Journal of Criminal Justice') and U = *Ugeskrift for Retsvæsen* ('Legal System Weekly').

dicted as threats under section 266 were extracted from these verdicts, and 75% of them were categorized as indirect threats.

4.1 Indirect threats based on the propositional condition

The propositional condition of a threat (see table 2) entails that a threat must concern a future act; you cannot threaten someone with something that has already happened (you can threaten to *repeat* it but then the repetition will take place in the future). And indeed, in some cases a reference to a future point in time is sufficient to evoke a threat (7).

(7) 2 timer igen (text message. TfK2016.1312)
　　2 hours again
　　'2 hours left'

The text message in (7) comes from a Danish stalking case where the writer sent several texts to his victim every or every other day, frequently referring to 'waiting for' her, 'getting' her or 'taking' her. In this context, declaring that there are '2 hours left' serves as a countdown, for instance to an unwanted meeting but possibly even to an attempted kidnapping. So, simply referring to a point in time two hours ahead from the time of writing suggests that something will happen to the addressee that she is not in control of and does not wish to happen.

　　Muschalik (2018: 77) cites a threat that refers to the future by hinting at a consequence of the addressee's possible actions:

(8) Yell at me again and see what happens

To *see* in this context means 'discover', which presupposes that the addressee does not already know what the consequence is. The relevant understanding of *happens* therefore must refer to a future event, something that has not already taken place. Notice, also, how both (7) and (8) completely omit any reference to a harmful act. This omission can be analyzed as a violation of the maxim of quantity (Grice 1975): the writer provides too little information and is likely *intentionally* underinformative. This invites inferences building on scripts about what might happen, and such scripts can sometimes be even more frightening than an actual mention of a harmful act.

4.2 Indirect threats based on the first preparatory condition
As seen from table 2, there are two main preparatory conditions for suc-
cessfully uttering a threat. The first concerns the threatener's ability to car-
ry out the harmful act. There are obviously many different aspects related
to this: being able to harm someone requires some sort of access to them
(or to their loved-ones or belongings), it requires sufficient competence to
perform the necessary steps needed to complete the act, and it may also
require some technical or mechanical means. I exemplify each of these
conditions below.

A recurring variant of having access to a victim depends on physical
proximity[7], and I therefore call this the 'proximity condition'. Phrases ap-
pealing to the proximity condition are underlined in (9-10).

(9)   E,,,,,,,,,,, <u>JEG FINDER DIG</u> OG NÅR JEG GØR SÅ ER DU SATME
       FÆRDIG MED AT GÅ RUNDT OG SPILLE LÆKKER […] (Face-
       book. TfK2017.628]
       *E,,,,,,,,, I FIND YOU AND WHEN I DO THEN ARE YOU BLOODY
       DONE WITH TO GO AROUND AND PLAY HOT […]*
       'E [court's abbreviation of victim],,,,,,,,, <u>I WILL FIND YOU</u> AND
       WHEN I DO YOU ARE BLOODY DONE PRANCING ABOUT
       PLAYING HOT […] '

(10)   Vent bare. Når du mindst venter det, <u>så henter vi dig</u>!! Om du er i lej-
       ligheden eller i bilen!! Enten det eller også får du snakket!!! (email.
       TfK2016.1312)
       *Wait just. When you least expect it, then get we you!! Whether you are
       in apartment-the or in car-the!! Either that or else get you talked !!!*
       'Just wait. When you least expect it, <u>we'll get you</u>!! Whether you are
       in your apartment or in your car!! Either that or you talk!!!'

In (9), the threatener presents a targeted effort to locate ('find') his victim
and projects that her life circumstances will change dramatically as a
consequence (she will no longer be able to 'play hot' when he has 'found'

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[7] Note that it is possible to go another step backwards in the chain of conditions that have
     to be met for a threatener to harm a victim: in order to come into physical contact with
     the victim, the threatener has to know where s/he is. An indirect threat referencing that
     aspect of the preparatory condition is *Jeg ved hvor du bor* 'I know where you live'– an
     utterance conventionalized as a threat to the extent that people recognize it as such even
     without supporting context (Bojsen-Møller et al., in prep).

her). The specifics of how to ensure that outcome are left unmentioned, again violating the maxim of quantity. The threat in (10) exemplifies an even more domineering attempt to gain control over a victim by 'getting' her, i.e. physically taking her from the place she is in. Other aspects of this case supported an indictment for attempted kidnapping and duress but, notably, none of the 14 threatening messages mentioned what kind of harm the defendant had in mind.

Much less prevalent in my data set are appeals to the threatener's skills or competence to perform a harmful act, what I shall call the 'competence condition'. A good example is (11), where the Danish navy's special operations force (the underwater divers called the 'Frogman's Corps') is referenced as evidence of excellent battle skills.

(11) [XX] er mit øgenavn fra frømandskorpset og bruger det kun når jeg skal i krig og kæmpe indtil døden! Kommer forbi. [XX] (sms. U.2005.2104)
[XX] is my nickname from Frogmanscorps-the and use it only when I must in war and fight until death-the! Come by. [XX]
'[Sender's military nickname] is my nickname from the Frogman's Corps and I use it only when I go to war and must fight until death! Will stop by. [Sender's military nickname]'

Notice how (11) also contains a variant of the proximity condition in the elliptical clause *Kommer forbi* 'Will stop by', a phrase recognizable in other situations as a confirmation of a previous agreement to meet. Placed immediately after the reminder that the writer is a navy underwater diver and only uses his military nickname when going to war, it clearly is not a benign promise but the opposite; an evil promise, i.e. a threat.

In my data set, there are no instances of what I shall call the 'means condition', i.e. having the technical, mechanical or other resources needed to perform the harmful act (see Rugala & Fitzgerald 2003: 783 for a threat assessment perspective on this). However, this is exactly what we saw in Trump's tweet directed at Kim Jong-Un in (4) where he refers to his nuclear button and by extension to the US nuclear arsenal. Another example from an American context is (12), a letter sent to the White House in 2003 in response to an "upcoming change in interstate trucking regulations" (Gales 2010: 1).

(12) If you change the hours of service on
      January 4, 2004 I will turn D.C. into a ghost town
      The powder on the letter is RICIN
      have a nice day
      Fallen Angel

As seen, the means to attain a harmful end here is the plant-based toxin ricin, which is fatal when ingested or inhaled in a sufficient dosage (https://emergency.cdc.gov/agent/ricin/facts.asp).

4.3 Indirect threats based on the second preparatory condition
The second element of the preparatory condition is the addressee's lack of a wish to see the harmful act realized, exemplified in (13-14):

(13) […] Du er gået langt over stregen … <u>du vil ikke ønske at opleve hvad der sker</u> hvis du ikke betaler de penge … (text message. TfK2008.431/2)
      […] You are gone far over line-the ... you will not wish to experience what there happens if you not pay money-the ...
      '[…] You have so crossed the line ... <u>you will not want to experience what happens</u> if you don't pay that money back ...'

(14) Vi venter på dig i parken. <u>Du får en slem overraskelse</u> i aften! 26 kommer nok ikke til at ske for dig! (email. TfK2016.1312)
      We wait for you in park-the. You get a bad surprise to night! 26 comes probably not to to happen for you!
      'We are waiting for you in the park. <u>You'll get a nasty surprise to-night</u>! 26 will likely not occur for you!' (mail. Tfk2016.1312)

The excerpt in (13) explicitly mentions that the addressee 'will not want' the unknown act to happen, and thereby attempts to frighten her into paying some sum of money if she is to avoid that consequence (note that this is one of the comparatively rare conditional threats). Likewise, the 'nasty surprise' in (14) must refer to an unwanted event: the addressee was nearing her 26th birthday at the time, so predicting that '26 will not occur for her' implies that the surprise is nasty in the sense that it has a fatal outcome.

4.4 Indirect threats and the sincerity condition
The status of the sincerity condition is disputed within speech act theory, and particularly so in the context of illegal speech acts. This is an exten-

sion of the problem related to determining other people's intentions: If a speaker claims not to have been sincere in uttering a threat, will the utterance then not have functioned as a threat at all? Solan and Tiersma argue that a threatener "need only *appear* sincere. To be more exact, the speaker must intend the hearer to believe that the speaker intends to carry out the threatened act." (2005: 204; my italics).

In other words, the appearance of sincerity is an important prerequisite for a successful attempt to intimidate an addressee, but explicit claims to sincerity may have the opposite effect, actually making the threat less credible. Perhaps this explains why references to the sincerity condition are not widespread in our data. One of the rare examples is (15), which is in fact the initial part of the message excerpted in (13) above and seems to try to bolster the threat by asserting the threatener's 'seriousness'.

(15)   … mener det seriøst. Du er gået langt over stregen … […] (text message. TfK2008.431/2)
       ... mean it seriously. You are gone far over line-the ... […]
       '… am serious. You have so crossed the line ... […]'

4.5 Indirect threats and the essential condition
References to the essential condition would consist in confessing to an attempt to intimidate the addressee, or, alternatively, that the utterance counts as a threat. I find no examples of this in the verdict data studied here, and invoking the essential condition seems to be a rare, if not unlikely, occurrence. Overall, I find it hard to see how an appeal to a speech act's essential condition can ever function as an *indirect* way of phrasing that same speech act. It would label the speech act rather than conveying it indirectly. In other data sets, we do see objections that "this is not a threat" – but this seems rather to be a violation of the maxim of quality (i.e. a lie), and therefore not an indirect threat but just a false labeling (see Bojsen-Møller et al., in prep.).

5. Conclusion and perspectives
A substantial majority of written threats tried at the higher courts in Denmark is phrased indirectly (at least according to verdicts that Danish legal journals have chosen to publish, where we find 75% to be indirect threats). On the one hand, this finding contradicts Fraser (1998) and others when they maintain that it is next to impossible to determine whether a threat has been made – even with indirect threats, the courts do not seem to waver. On

the other hand, though, this study has only looked at threats that were successfully tried as such. It would be very valuable for both basic and applied research purposes to have access to alleged threats that were dismissed by the courts or not even investigated by police. Such data would allow for a comparison of the linguistic features in central and peripheral types of threats, and further, for assessing whether a linguistic analysis in terms of felicity conditions can assist the triers of fact in determining what counts as a threat and what does not.

Particularly in stalking cases it would be valuable to have better standards of evaluating threats. Stalking victims are frequently turned down by the justice system because it can be extremely difficult to prove that a threat has been made against them. The most cunning stalkers cloak their communications in polite, benign or even friendly words, but given a better understanding of the contextual and communicational conditions that pertain to threats, it may be easier to demonstrate that they are in fact attempts to dominate by intimidation.

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The different merge positions of the different types of relative clauses[1]

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Abstract:
A frequent, implicit, assumption is that the different types of relative clauses (nonrestrictive, restrictive, amount, kind-defining, infinitival and reduced participial relatives) are in one and the same language merged in one and the same position. Here, evidence will be presented that their merger is actually at different heights of the nominal extended projection.

1. The merge positions of non-integrated and integrated nonrestrictives

As noted in Cinque (2008), non-integrated nonrestrictive relative clauses (RCs) are 'outside' of the sentence containing the head, in a structure which is impermeable to sentence grammar relations (Agree, Binding, etc.) despite the asymmetric c-command relation existing between the head and the RC under the extension of the LCA to Discourse Grammar. As expected, given the higher merger of non-integrated nonrestrictives, in head-initial languages such as Italian in (1) where they are both post-nominal, non-integrated nonrestrictive RCs necessarily follow integrated ones.

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[1] To Sten with sympathy and admiration. I wish to thank an anonymous reviewer and Ken Ramshøj Christensen for their comments on a previous version of this article.

(1) **Italian**

a. Gianni, [che è arrivato ieri], …
     Gianni, that is   arrived yesterday,...

     [il   quale poi raramente si   dimostra disponibile], …
      the which then rarely   Refl   shows   availability, ...
      'Gianni, who arrived yesterday, who is rarely ready to help, …'

b. *?Gianni, [il   quale raramente si dimostra disponibile],
     'Gianni, who is rarely   ready   to help,

     [che è   arrivato ieri], …
     that is   arrived   yesterday ...'

2. The merge positions of finite (integrated) nonrestrictive and restrictive relative clauses

In languages in which restrictives remain between the N and the demonstrative, nonrestrictives are invariably found outside of the demonstrative.[2] This is true, among other languages, of head-initial Vietnamese, (2)[3], Indonesian, (3)[4], and Javanese[5], and of head-final Korean[6] (see Nguyen 2004; Lehmann 1984; Ishizuka 2007 and Cinque 2005; and Kim 1997, respectively).

(2) **Vietnamese**

a. Tôi thích cái   đâm [RC mà cô   ây chọn] [Dem **này**]
     I   like   CLF dress   that aunt that choose   this
     'I like this dress that the aunt has chosen'   (restrictive)

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[2] An early proposal for a higher attachment of nonrestrictive RCs with respect to restrictives is in Jackendoff (1977: §7.1), based on the relative position of restrictive and nonrestrictive RCs when they co-occur (with the former closer to the head). Additional works pointing to the same structural difference between the two types of RCs include Emonds (1979), Demirdache (1991: 108f), McCawley (1998), Grosu (2000: 100), Wiltschko (2012). Also see Arsenijević and Gračanin-Yuksek (2016) for an argument that restrictive and nonrestrictive RCs differ syntactically in terms of attachment.

[3] "When the RC precedes the demonstrative, the RC restricts the meaning of the noun; when the RC follows the demonstrative, the phrase has a nonrestrictive meaning" (Nguyen 2004: 61f).

[4] "[2](a) ist restriktiv, [2](b) appositiv" (Lehmann 1984: 282).

[5] "[T]he *séng* RCs preceding a demonstrative are restrictive RCs, whereas the *séng* RCs following a demonstrative are nonrestrictive RCs" (Ishizuka 2007: §2). Javanese NPs have the order N A Num Dem (Cinque 2005: fn19).

[6] According to Kim (1997: §4.3) Korean relative clauses appearing between the demonstrative and the N receive a restrictive interpretation, while those appearing outside the demonstrative receive a nonrestrictive interpretation.

b. Tôi thích cái đầm [Dem **này**] [RC mà cô   ây chọn]
    I   like CLF dress   this   that aunt that choose
    'I like this dress, which the aunt has chosen'   (nonrestrictive)

(3) **Indonesian**
a. lelaki [RC yang sedang tidor] [Dem **itu**]
    man   Rel Prog   sleep   that
    'That man that is sleeping…'   (restrictive)

b. lelaki [Dem **itu**] [RC yang   sedang tidor]
    man   that   Rel   Prog   sleep
    'That man, who is sleeping, …'   (nonrestrictive)

According to Kameshima (1989: §4.3.3.1) and Ishizuka (2008), Japanese minimally differs from Korean in that relatives appearing inside a demonstrative have just a restrictive interpretation whereas those appearing outside demonstratives may receive either a restrictive or a nonrestrictive interpretation.[7] This suggests that the merge position of nonrestrictives is outside the demonstrative and that of restrictives inside the demonstrative, even though restrictives, in languages like Japanese, can optionally raise past the demonstrative (cf. Kameshima 1989: 215), to a position lower than the merge position of nonrestrictives (given that "the natural order, when restrictive and nonrestrictive relatives co-occur, is that a nonrestrictive precedes a restrictive relative", Kameshima 1989: 233). Jaklin Kornfilt, p.c., tells me that the same is true of Turkish where a restrictive RC precedes the demonstrative, following, if present, a nonrestrictive one (which canonically precedes the demonstrative).

3. The merge position of kind-defining and restrictive and nonrestrictive RCs

Judging from Italian, it appears that kind-defining RCs (cf. Benincà 2012, Benincà & Cinque 2014) necessarily occur after ordinary restrictives, (4), and before ordinary nonrestrictives, (5):

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[7] Ishizuka (2008: §2) attributes the original observation to Kamio (1977: 153-159).

(4) **Italian**

   a. Quello è un ragazzo [che conosco]   [che non   esita
       That   is a boy   that I know   that not   hesitate

       mica   a rischiare].
       at.all   to risk
       'That is a young man that I know that does not hesitate at all to
       take risks'.

   b. *Quello è un ragazzo [che non esita **mica** a rischiare] [che
       conosco].
       'That is a young man that does not hesitate at all to take risks
       who I know'.

(5) **Italian**

   a. Quelli sono ragazzi [che   non esitano   **mica** a rischiare]],
       Those   are boys   that   not hesitate   at.all to risk

       [che/i   quali in ogni caso non hanno mai   messo in
       that/the which at any   rate not have   never put   in

       pericolo nessuno].
       danger   nobody
       'Those are young men that do not hesitate to take risks, who
       incidentally never put anyone in danger.'

   b. *Quelli sono ragazzi, [che/i quali in ogni caso non hanno mai
       messo in pericolo nessuno], [che non esitano **mica** a rischiare].
       'Those are young men, who incidentally never put anyone in
       danger, that do not hesitate to take risks.'

Under the roll-up derivation of head-initial/medial languages, these data
show that kind-defining RCs are lower than nonrestrictives and higher than
ordinary restrictives.

   As Radford (2019: §1.2, fn. 4) observes "Data from the Kroch corpus
suggest that the same ordering holds in English, since it contains 27
examples (like those below) in which an antecedent is modified by both a
restrictive gap relative and a resumptive kind relative, and in every one of
these the restrictive relative precedes the kind relative":

(6) a. There's a train [you can take] [that it stops in Chicago]
       (Ann Houston, Kroch corpus)

     b. I have a friend [that I talk to] [that we left-dislocate and
        topicalize all the time]
        (Wendy C., Kroch corpus)

This ordering is not surprising as kind-defining RCs share properties of
both restrictive and (especially) nonrestrictive RCs (see Cinque to appear,
Chapter 3).

4. The merge positions of unmarked (*che/cui*) and marked (art. + *qual-*) restrictive RCs

In Italian, when marked and unmarked restrictive RCs co-occur, marked
(art. + *qual-*) restrictives have to follow unmarked (*che/cui*) restrictives
(Cinque 1982: 267):

(7) **Italian**
     a. Gli student*i* [**che** conoscono bene il   tedesco]
        The students that know   well the German

        [ai   **quali** potrete rivolgervi] sono pochi].
         to.the which you   can.turn   are   few
        'The students that know German well who you can turn to are
        few.'

     b. Gli studenti [i **quali** conoscano bene il   tedesco]
        The students the which   know   well the German

        [a **cui**   potrete rivolgervi] sono pochi].
         to who   you   can.turn   are   few
        'The students who know German well that you can turn to are
        few.'

5. The merge position of restrictive and of amount/maximalizing RCs

In Chapter 1: §1.5 of Cinque (to appear) I made the simplifying assumption
that restrictive RCs and amount/maximalizing RCs are merged in the same
position, between demonstratives/determiners and cardinal numerals.
There is, however, some indication that the two types may be merged in
two distinct positions. This comes from their relative order when they co-

occur. As with Jackendoff's (1977) conclusion that nonrestrictive RCs are merged higher than restrictive RCs, based on the latter having to be closer to the head when they co-occur, I take restrictive RCs to be merged higher than amount/maximalizing RCs as bona fide amount/maximalizing RCs, like those involving a *there*-existential clause, appear to have to occur closer to the head than an ordinary restrictive RC. See the contrast between (8a) and (8b):

(8)   a. (?)I suddenly noticed [the three books that there were on your desk
           [that had earlier been on my desk]]. (Grosu 2012: 7, ex. (8)) vs.

       b. *?I suddenly noticed [the three books that had earlier been on my desk
           [that there were on your desk]].   (Peter Cole, p.c.)

6. The merge position of infinitival RCs
To judge from Sag (1997: 470), who gives the contrasts in (9)–(10), and Larson & Takahashi (2007: §4.3), and Douglas (2016: 169), who give similar contrasts (see (11) and (12), respectively), infinitival RCs are lower (closer to the NP) than finite restrictive RCs:

(9)   a. The only person [(for us) to visit] [whose kids Dana is willing to put up with] is Pat.
       b. *The only person [whose kids Dana is willing to put up with] [(for us) to visit] is Pat.

(10)   a. One book [for us to read] [that Leslie praised] was Sense and Sensibility.
       b. *One book [that Leslie praised] [for us to read] was Sense and Sensibility.

(11)   a. Alice spoke to the dealer [to buy tickets from] [that Mary mentioned].
       b. *?Alice spoke to the dealer [that Mary mentioned] [to buy tickets from].

(12)   a. That is the book [to read] [that I was about to sell].
       b. ??That is the book [that I was about to sell] [to read].

7. The merge position of reduced participial RCs

Pre-nominal relative clauses in head-final languages are often participial (see for example the case of the Caucasian languages Archi and Tsez), though this is by no means general (pace Keenan 1985: §2.5).[8] Their peculiarity as opposed to the participial RCs of European languages is that their relativization possibilities are not limited to relativizing the external argument in the case of present participles or the internal argument in the case of past participles. In many languages they may also occur between demonstratives and cardinal numerals, like pre-nominal finite restrictive RCs. Participial relative clauses in Germanic, Slavic and Romance SVO languages are instead severely limited in the arguments that they can relativize and appear to be merged below cardinal numerals. Rijkhoff (1998: 362) explicitly says that "[i]n Dutch (as well as e.g. in German and Frisian) the preposed participial construction follows the demonstrative and the numeral" (and, we may add, precedes "direct modification" adjectives, in the sense of Sproat & Shi 1990 and Cinque 2010). See the examples in (17) and (18), from German, (19)-(21) from English, and in (22) from Bulgarian:[9]

(17) **German** (Walter Schweikert, p.c.)
    a. diese **drei** [in ihren Büros arbeitenden] Männer
       these three in their office working men
    b. ??diese [in ihren Büros arbeitenden] **drei** Männer
       'these three men working in their office'

---

[8] Pre-nominal RCs are in fact reported to be finite in many head-final languages. See the case of the Cushitic languages Afar (Bliese 1981: §2.4) and Galla (Oromo) (Mallinson and Blake 1981: 288); of the Omotic language Maale (Amha 2001: 162); of the Munda language Kharia (Peterson 2011: 488); of the Iranian language Sarikoli (Kim 2014: §3.3.1); of the Papuan languages Awtuw (Feldman 1986: 164), Gahuku (Reesink 1987: 217f), Menggwa Dla (De Sousa 2006: 420), Mian (Fedden 2007: §6.4.5), Oksapmin (Loughnane 2009: 196), Tauya (McDonald 1990: 289ff), Usan (Reesink 1987: 217) and Yimas (Foley 1991: 420), of the Caucasian languages Laz (Lacroix 2009: 755), Abkhaz (Lehmann 1984: 72) and Chechen (Komen 2007: 1); of the language isolate Kusunda (Watters 2006: ch. 9); among many others. It would be interesting to know how many languages have finite pre-nominal RCs and how many non-finite pre-nominal RCs, and especially what the two options correlate with.

[9] Romance is less revealing in that participial reduced RCs are (virtually) only post-nominal (Dem Num (A) N (A) RC$_{reduced}$ – cf. Cinque 2010: 70), so that their position relative to numerals and adjectives is not directly observable. Nonetheless, the fact that in the presence of a finite restrictive RC they have to be closer to the head than the finite restrictive (cf. Vergnaud 1974: 173ff; Kayne 1994: 97) may be taken as an indication that they are lower than finite restrictives, especially if they lack a CP.

(18) **German** (Walter Schweikert, p.c.)
  a. der [kürzlich   angekommene] **ehemalige** Botschafter von
     the   recently   arrived   former   ambassador of
     Chile
     Chile
  b. ??der **ehemalige** [kürzlich angekommene] Botschafter von
     Chile   [non-parenthetical]
     'the recently arrived former ambassador of Chile'

(19) **English** (Tim Stowell and Christina Tortora, p.c.)
  a. these (other) two [recently completed] plays
  b. *?these (other) [recently completed] two plays

(20) **English** (Tim Stowell and Christina Tortora, p.c.)
  a. (other) two [recently completed] plays
  b. *(other) [recently completed] two plays (cf. (Other) [recently
     completed] plays)

(21) **English** (Tim Stowell and Christina Tortora, p.c.)
  a. the three [recently arrived] former ambassadors of Chile[10]
  b. *?the three former [recently arrived] ambassadors of Chile

(22) **Bulgarian** (Iliyana Krapova, p.c.)
  a. tezi   **trima** [naskoro pristignali] **bivši** poslanici
     these three   recently arrived   former   ambassadors

     ot   Chili
     of   Chile

---

[10] Also see Kayne (2005: 66) (and Kayne 1994: 99 for the reduced relative clause status
of *recently arrived*). We would interpret the grammaticality of *that beautiful recently
arrived letter* (Kayne 2005: 66) vs. the ungrammaticality of (21b) above as due to the
possibility for *beautiful*, though not for *former*, to have a reduced relative clause source
(see Cinque 2010 for discussion). Apparently, in Chinese RCs cannot be merged below
APs (even those followed by *de*), as contrasts such as (i), noted in Lu (1998: 54) seem to
indicate (cf. also Lu 1990: 21):

(i) a   Susumu   de   san-ben   Cyril du-guo   de   lan de   shu
        S.   DE   three-CL C.   read-Perf   DE   blue DE   book
        'Sam's three blue books that Cyril read'
    b   *?Susumu   de san-ben lan de Cyril du-guo de shu

    b. *?tezi [naskoro pristignali] **trima bivši** poslanici ot Chili

    c. *tezi **trima biv**ši [naskoro pristignali] poslanici ot Chili
        'these three recently arrived former ambassadors of Chile'

Pronominals can be modified by finite nonrestrictives (23a), but apparently not by finite restrictive nor by reduced RCs, (23b-c) (Megan Rae, p.c.):

(23)   a.   He, who had recently arrived, added in his two cents and the argument continued.[11]

       b.   *The he who had recently arrived added in his two cents and the argument continued.[12]

       c.   *A recently arrived he added in his two cents and the argument continued.

Different is the case of proper names, which can under the appropriate conditions be modified by all three types of RCs, see (24a-c) (Megan Rae, p.c.):

(24)   a.   John, who had recently arrived, added in his two cents and the argument continued.

       b.   The John who you know is not the one that I know.

       c.   A recently arrived John added in his two cents and the argument continued.

The same state of affairs obtains in Italian, German (Roland Hinterhölzl, p.c.) and Bulgarian (Iliyana Krapova, p.c.). This can possibly be understood if pronominals are merged in the DP above the merge position of both restrictive and reduced RCs, while proper names are merged in NP (though they can raise to DP under certain conditions – Longobardi 1994).[13]

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[11] This case should be distinguished from such light headed free relative clauses as *He/She who says that is wrong*.

[12] Kayne (2017: fn. 47) accepts cases like *That's not the you that everybody used to love*, which unlike (23b), involves stages of the individual referred to by the pronominal, and thus qualifies as a restrictive relative clause.

[13] I assume that because NPs move to Spec,DP rather than as N°s to D° (cf. Giusti 2002: §3.4) they can be complex: *la stessa/la sola Lucia di Lammermoor* 'Lit.: L. of L. herself/ the only L.of L.' vs. *Lucia di Lammermoor_i stessa/sola* t_i 'L. di L. only/herself".

In some languages, pre-nominal RCs appear in the order Dem Num RC A N even if they can relativize more positions than those relativizable in the reduced RCs of Germanic, Slavic and Romance. This is, for example, the case of SOV Karata, an East Caucasian language (see (25)), of SVO Mandarin Chinese (another position being the one that precedes demonstratives) (see (26a-b)), and of T'in, a Khmuic (Mon-Khmer) language, showing the mirror-image order N A RC Num Dem (see (27)):

(25) **Karata** (East Caucasian; Testelec 1998: 277)[14]
      hab k'eda [dena raxw-araj]   č'ikororaj   igruška-bdi…
      this two   I   bring-PRT   nice   toy-PL
      'these two nice toys which I had brought…'

(26) **Mandarin Chinese** (adapted from Lu 1990: 4, 20)
      a. na   2-ben [Lisi mailai de] youqu   de yuyanxue shu
          those two-CL L. bought DE interesting DE linguistic book
          'those two interesting linguistic books that Lisi bought'

      b. [Lisi mailai de] na   2-ben youqu   de yuyanxue shu
          L. bought DE those two-CL interesting DE linguistic book
          'those two interesting linguistic books that Lisi bought'

(27) **T'in** (Mon-Khmer; Alves 2001: 5)[15]
      siŋ kluak ?əɲ [bakɛɛw   thoon] piaï naŋ ?ɛ̌en pəl.
      pig white I   [Mr. Kaew buy]   two CLF that die
      'The two white pigs of mine (that) Mr. Kaew bought died.'

---

[14] According to Kibrik (1996: 153) this is also the position of (participial) RCs in Godoberi, another East Caucasian language, although he says that heavy participial relative clauses tend to occur leftmost in the NP, which appears to reflect the general long-before-short tendency of head-final languages (cf. Yamashita and Chang 2001), the mirror image of the short-before-long tendency of head-initial languages. See Kibrik's example (14), given here as (i):

(i) [im-u-di   kote se=b=a   b=aXi-bu]   ha=b łabu=da-la
    [*father-OBL-ERG little before   N=buy.PST-PART] this=N three-CARD-COLL*

    b=eč'uXa   X.ani
    N=big   horse
    'these three big horses, recently bought by father'

[15] The same order is attributed by Simpson (2005: 806) to Khmer.

How are (Germanic, Slavic and Romance) reduced (participial) RCs ordered with respect to finite restrictive RCs? If the former are lower than cardinal numerals and the latter are higher, one should expect the former to be closer to the head than finite restrictives.[16]

Putting together these data, we arrive at the following structure of Merge for (finite) non-integrated and integrated nonrestrictive, (finite) restrictive, amount, infinitival and 'reduced' (participial) RCs:

(28) **RC**$_{\text{non-integr nonrestr}}$ … [**RC**$_{\text{integr nonrestr}}$ F° [DemP F° [**RC**$_{\text{(marked)finrestr}}$ F° [**RC**$_{\text{(unmarked)finrestr}}$ F° [**RC**$_{\text{amount}}$ F° [**RC**$_{\text{infin}}$ F° [[NumP F° [**RC**$_{\text{reduced(partic)}}$ F° [AP F° [NP]]]]]

Larson and Takahashi (2007) observe that prenominal relatives in Chinese (for which cf. Del Gobbo 2005), Japanese, Korean and Turkish exhibit ordering preferences based on whether they express stage-level versus individual-level properties. They found that stage-level relatives are higher than individual-level relatives (if both co-occur individual-level reduced RCs occur closer to N). Reduced RCs in Italian, and, likely, in languages where they are post-nominal, appear to show the same:

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[16] Even though Sag (1997: 471) reports that for him in English "reduced relatives may precede or follow *wh*-relatives (including *that* relatives)" (see his examples (i) and (ii)), in (my) Italian reduced RCs interpreted restrictively need to be closer to the head than finite restrictive RCs (see (iii)):

(i)   a.   The bills [passed by the House yesterday] [that we objected to] died in the Senate.
      b.   The bills [that we objected to] [passed by the House last week] died in the Senate.
(ii) a.   The only people [being added to our group] [who were at Harvard] are Jones and Abrams.
      b.   The only people [who were at Harvard] [being added to our group] are Jones and Abrams.
(iii) a.   I   soli   ragazzi   [invitati   alla   festa]   [che   ho   riconosciuto]
            The only   boys   invited   to   the party   that   I   recognized

            erano   i suoi studenti
            were   his   students
      b.   *I soli ragazzi [che ho riconosciuto] [invitati alla festa] erano i suoi studenti
      Perhaps (ib) and (iib) sound possible if understood nonrestrictively or as parenthetical restrictive RCs (in Stowell's 2005 sense).

(29) **Italian**

    a. Le   uniche persone amanti del   teatro   incontrate da
       The sole   persons loving of.the theater   met   by

       me   ieri   sono   loro.
       me   yesterday   are   them
       'They are the only people who love the theater who I met
       yesterday.'

    b. ??Le uniche persone incontrate da me ieri   amanti
       The   sole   persons   met   by me yesterday loving

       del   teatro sono   loro.
       of.the theater are   them
       'They are the only people who I met yesterday who love the
       theater.'

Compare (30), the finite counterpart of (29b):

(30) Le uniche persone che ho   incontato ieri   che amano
      The sole   persons that I   have.met yesterday that love

      il   teatro sono   loro.
      the theater are   them.
      'They are the only people who I met yesterday who love the
      theater.'

If correct, then, these observations suggest a more fine-grained structure, where reduced RCs occupy distinct positions depending on whether they are in the scope of a generic (individual-level) or an existential (stage-level) operator: …[NumP F° [**RC**_{redS-L} F° [**RC**_{redI-L} F° [AP F° [NP]]]]].

This gives the overall hierarchy seen in (31):[17]

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[17] The FPs (Functional Projections) in (31) are unspecified labels projected from a head F, not indicated in (31).

(31)

FP
RC$_{int-non-restr}$ FP
QP$_{all}$ FP
DemP FP
RC$_{kind-def}$ FP
RC$_{fin.restr(marked)}$ FP
RC$_{fin.restr(unmarked)}$ FP
RC$_{amount/max}$ FP
RC$_{infin}$ FP
Num$_{card}$ FP
RC$_{redS-L}$ FP
RC$_{redI-L}$ FP
AP   NP
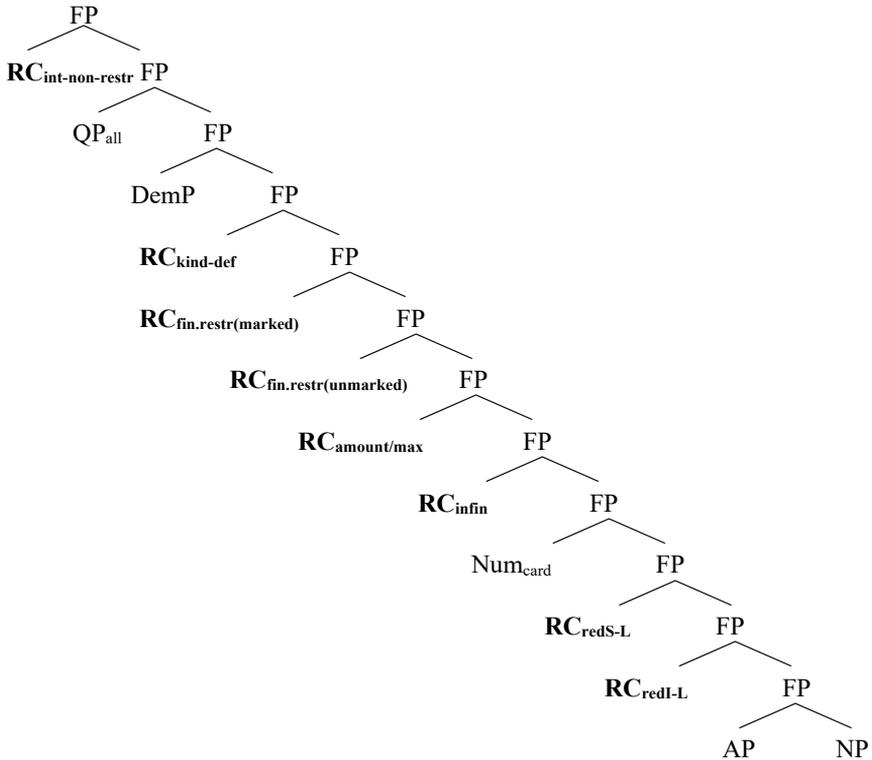
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Om brugen af *i* og *på* før udvalgte komplementer[1]

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Abstract

The prepositions *i* and *på* ('in' and 'on') are both used in Danish to describe the position of something in relation to something else. This paper examines two selected domains, roads and island states, that are interesting in terms of the relationship between the prepositions and their complements. In both domains, the data shows a great deal of variation and apparent interchangeability in the choice of preposition. The topic has been given limited attention in the available literature, which primarily makes specific claims without empirical backing. This study reports frequency data from corpus searches in KorpusDK which support some of the existing claims in the literature and nuance others. In some cases, what looks like interchangeability on the surface actually turns out to be predictably rule-governed.

1. Introduktion

Præpositionerne (eller forholdsordene) *i* og *på* kan begge bruges til at angive relativ placering, men det er vanskeligt at redegøre entydigt for, hvornår de hver især foretrækkes. Den korte, konstruerede tekst i (1) viser kontrastive eksempler på sætninger med de to præpositioner, hvoraf ingen klar forskel mellem de to små ord fremgår.

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(1)   Professoren voksede op *på* Frederiksberg, og boede mange år *på*
        Sjælland. Der gik han *i* skole. Siden boede han også *i* Tyskland.
        Nu bor han *i* Lystrup, som er en lille by *i* Jylland, og han arbejder
        på universitetet.

Teksten er konstrueret med henblik på at vise par hvor det ikke er
indlysende hvorfor den ene præposition foretrækkes frem for den anden,
på trods af at intuitionen bag valget af præposition er helt klar. Det er ikke
åbenlyst hvorfor landsdelen *Sjælland* tager *på* mens landsdelen *Jylland*
tager *i*. Tilsvarende er det ikke klart hvorfor institutionen *skole* tager *i* mens
institutionen *universitet* tager *på*. For ovenstående eksempler hersker der,
for de fleste danskere, næppe tvivl om, hvilken af de to præpositioner,
der skal optræde før hvert af de styrende nominaler, men med andre
præpositionskomplementer kan der hurtigt opstå tvivl. Usikkerhed i
brugen af præpositioner er udbredt, og i sit forord til det lille opslagsværk
Hvilket forholdsord? skriver Gunnar Nissen (1987): "Alle kommer jævnlig
i tvivl om, hvilket forholdsord man bør bruge i denne eller hin vending.
Logikken er ikke altid åbenbar". En simpel googlesøgning afslører hurtigt
en stribe af læserbreve og sprogklummer godt fyldt med spørgsmål fra
forvirrede danskere, der gerne vil vide hvordan man bruger præpositionerne
korrekt. Spørgsmålet om "*i* eller *på*" er særdeles udbredt blandt disse. Når
talers intuitioner kommer på prøve på denne måde, er det selvfølgelig
nærliggende at spørge (som mange danskere så også gør): "Hvad siger man
egentlig?", og når dette ikke kan besvares entydigt af modersmålstalere,
lyder det næste interessante spørgsmål: "Foreligger der en forklaring på
denne tvivl?" Spørgsmålet kræver en grundigere sammenligning af de to
præpositioner, deres distribution og semantiske indhold.

     Præpositioner som *i* og *på* er "ubøjelig[e] ord, der knyttet til [...]
et substantivisk ord eller led, udtrykker et forhold (især: rum- eller
tidsforhold) mellem det ord, det styrer, og et andet ord" (ODS). I det
konstruerede eksempel i (1) kommunikerer *i* og *på* begge en relation
(måske nærmere i overført end fysisk betydning) til et geografisk eller
institutionelt område. I deres mest konkrete, rumlige betydninger refererer
de to præpositioner jo egentlig til forskellige fysiske dimensioner. Med *i*
forstås at noget omkranses eller omgives af det efterfølgende komplement
(DDO, betydning 1). Denne læsning fremgår af (2)a hvor *Othellolagkagen*
omkranses af *kassen*.

(2)   a.   Othellolagkagen ligger i kassen.

       b.   Othellolagkagen ligger på tallerkenen.

Til sammenligning har *på* første betydning i DDO som "i fysisk kontakt med overfladen eller den øverste, støttende del" af noget, som det er tilfældet i b. Her er sætningens subjekt, *Othellolagkagen*, i fysisk kontakt med overfladen eller den støttende del af præpositionskomplementet, *tallerkenen*. *I* og *på* kommunikerer altså noget forskelligt om kagens fysiske placering i de førnævnte eksempler, men man kan let tænke sig eksempler, hvor præpositionerne faktisk betyder det samme. Hvad er fx forskellen i betydning for (3)a og (3)b herunder?

(3)   a.   Han er i kontoret.

       b.   Han er på kontoret.

 a og b kommunikerer det samme om subjektets fysiske placering i et rum, hvor subjektet er omkranset af ("inden i") rummet. b tolkes ikke med betydningen at subjektet fysisk befinder sig på overfladen af præpositionskomplementet. b er formentlig at foretrække for mange dansktalende og er også den hyppigste form i KorpusDK (535 *på kontoret* mod 82 *i kontoret*). Det kan muligvis forklares med det faktum, at man ofte er *på et kontor* for at udføre en bestemt handling. Sandersen (2006) forklarer, at der er tendens til at bruge *på* før et lokale, når lokalet bruges til dets tænkte formål, og Hansen fremsætter gode eksempler på denne forskel i et svar til en læser (1978: 2): En snedker er *på* værkstedet (hvor han naturligvis arbejder), og en hund er *i* værkstedet (da den ikke udfører nogen aktivitet, som værkstedet er beregnet til). For nogle lokationer kan det på den måde forklares at *på* kan være at foretrække, selvom der altså er tale om fysiske rum, hvor man må siges at befinde sig "inden i" det. I de givne tilfælde kan man samlende beskrive brugen af *i* og *på* som forskellen på fysisk lokation (*hunden i værkstedet*) og institutionel ramme (*snedkeren på værkstedet*).

    Leder vi videre, finder vi hurtigt eksempler, hvor forklaringerne ovenfor dog ikke lader til at kunne give skyggen af opklaring, fx i forskellen

mellem *i* banken, og *på* posthuset (eksempel fra Hansen 2012). Hvorfor siger man *på* apoteket, men *i* supermarkedet? Og hvad vælger man, hvis begge præpositioner forekommer lige gode, fx *i* toget versus *på* toget? Måske gør man ingenting, og glæder sig over, at der er plads til en grad af valgfrihed før nogle præpositionskomplementer, som Michael Ejstrup foreslår i et interview med Politiken (Jensen 2016). Måske undersøger man, som Ejstrup også foreslår, om der findes klare tendenser for hvem der foretrækker hvilken præposition, når der opstår grammatisk uklarhed. Eller måske starter man, som os, med at spørge hvilken af de to præpositioner, der optræder oftest før udvalgte komplementer. I dette studie har vi udvalgt to domæner, som ofte fremhæves i litteraturen om *i* og *på*, og vi undersøger for hvert domæne forekomsten af de to konkurrerende præpositioner med udvalgte komplementer. Disse to domæner introduceres og analyseres separat herunder, og omhandler hhv. færdselsårer (3.1) og østater (3.2).

2. Metode

Undersøgelsen om forekomsten af hhv. *i* og *på* før udvalgte komplementer er foretaget i CoREST (Asmussen 2018), som er det nyeste og mest avancerede offentligt tilgængelige søgeværktøj til studier af det danske sprog, udarbejdet af Det Danske Sprog- og Litteraturselskab. Akronymet CoREST står for Corpus Retrieval System & Tools og søgeværktøjet giver mulighed for søgninger i tekstmateriale fra tre korpusser: KorpusDK, TiDK 2018 og Wikipedia 2017. Søgninger til dette studie er foretaget i KorpusDK via CoRESTs standardudgave, som er frit tilgængelig. KorpusDK består i CoREST af tre korpusser, nemlig Korpus90, Korpus2000 og det nyligt introducerede Korpus2010. De tre korpusser er baseret på tekstmateriale der er indsamlet i tre omgange, hver med ca. 10 års mellemrum, og til sammen indeholder de 110 millioner ord. Disse korpusser indeholder blandet tekst-materiale, og beror altså ikke kun på tekst fra snævre nicheområder. Vores specifikke søgninger er foretaget vha. CoRESTs formelle søgesprog, som giver mulighed for at opstille meget nøjagtige søgekriterier.

En anden af CoRESTs styrker er muligheden for at angive relativ frekvens. Eftersom korpusserne ikke indeholder samme antal ord, vil en direkte sammenligning af hyppighed være mindre overbevisende end en sammenligning af relativ hyppighed, og denne mulighed eksisterer i form af CoRESTs angivelse af forekomst af et givent søgekriterie pr. 10 millioner ord. På den måde kan en periodisk sammenligning mellem forekomster

i hhv. Korpus90, Korpus2000 og Korpus2010 mere overbevisende illustrere, om der rent faktisk eksisterer en forskel over tid i forekomsten af et sprogligt fænomen. Dette har vi anvendt i afsnittet om østater, hvor præpositionsbrugen undersøges over tid. I afsnit 3.2 præsenterer vi altså den relative frekvens af forekomsten af *i* og *på* før udvalgte komplementer pr. 10 millioner ord i det angivne korpus.

3. Dataanalyse af præpositioner ved udvalgte komplementer
3.1 Færdselsårer
3.1.1 Baggrund
Færdselsårer kan have mange navne, men det er meget typisk at navnet indeholder et efterled, der angiver hvilken type, der er tale om. Langt de fleste danske færdselsårer ender således på enten *-vej*, *-gade*, *-stræde*, *-vænget* eller lignende, og endelserne afslører lidt om forventelige fysiske karakteristika. Et vænge og et stræde forekommer fx begge mindre end en boulevard. I DDO skrives der at et vænge er et "afgrænset jordstykke" og at et stræde er en "smal gade i en by". En boulevard, derimod, er en "meget bred gade med træer i begge sider" og en allé ("vej eller gade med træer plantet langs begge sider") er måske lidt mindre end en boulevard.

Kampen mellem *i* eller *på* er især heftig lige når det kommer til denne type stednavne. For nogle efterled er vores intuition ret klar:

(4)　　a.　*　Han arbejder i Jens Chr. Skous Vej.

　　　　b.　　Han arbejder på Jens Chr. Skous Vej.

Kun b er umiddelbart acceptabel hvis der er tale om kontorarbejde på Jens Chr. Skous Vej, mens læsningen af a bliver, at arbejdspladsen er fysisk nede i vejen. a, og dermed præpositionen, må være mulig hvis der er tale om en der arbejder med kloakering eller anden underjordisk virksomhed, men selv her er præpositionen påfaldende. Her forstås a's præpositionsforbindelse *i Jens Chr. Skous Vej* som havende betydningen *inde i vejen* eller *omgivet af vejen*. Det er let at forestille sig, at denne brug kan generaliseres til alle stednavne, der ender på *-vej*, og vores gennemgang af data nedenfor viser netop også at stednavne med *-vej* næsten udelukkende følger præpositionen *på* (og ikke *i*).

Når efterleddet er *-gade* bliver vores intuition mindre sikker, for hvor bor bageren i den populære børnesang egentlig? Hedder det *i Nørregade* eller *på Nørregade*? Begge lyder korrekte, men bruges begge præpositioner lige ofte, eller er den ene alligevel at foretrække? En googlesøgning på sangens første strofer indikerer at *på Nørregade* er den hyppigst brugte (ca. 9.400 *på Nørregade* mod ca. 1.600 *i Nørregade*). Samtidig optræder *på Nørregade* typisk i de mere officielle gengivelser af sangen (som i *Det Kongelige Biblioteks* gennemgang af sangens historie[2]), mens *i Nørregade* blandt andet forekommer i reklametekster for jyske bagerbutikker.[3]

Er der mon nogen god generel forklaring på hvorfor der lader til at være valgfrihed før *-gade*, og ikke før *-vej*? I den begrænsede litteratur om brugen af de to præpositioner i dansk er det særligt spørgsmålet om *i* eller *på* foran hhv. *-vej* og *-gade*, der har modtaget størst opmærksomhed, og de foreslåede forklaringsmuligheder refererer gerne til netop disse. Den fysiske forskel i betydningen mellem de to præpositioner nævnes af flere som en mulig forklaring på, at efterled med *-gade* antageligvis kan tage begge præpositioner. En talers opfattelse af færdselsåren som bred og udstrakt kan forbindes med brugen af *på*, mens en opfattelse af færdselsåren som smallere og indesluttet af høje bygninger vil anspore til brug af *i* (fx Petersen 1976). En mulig forklaring er altså at større, bredere færdselsårer kaldes *veje*, og vores forståelse af en vejs rumlige karakter fordrer brugen af *på*. *Gader* er derimod gerne smallere, og får man opfattelsen af at være indelukket som i en æske, med vægge omkring sig (Hansen 2012), så foretrækkes *i*. Problemet med denne fysiske forklaring er dog blandt andet, at færdselsårer udvikler sig, og modeksemplet, som gives af både Petersen og Hansen, er den store, og nu ganske brede, københavnske *Smallegade*, som ofte styres af *i*. Her er der enten en tradition for at sige "*i Smallegade*", som har hængt ved, eller også er det efterleddet *-gade*, der foranlediger talere til at bruge *i*.

Petersen (1976) undersøger netop i hvor stort omfang præpositionen bestemmes af efterleddet, og hendes artikel er os bekendt den eneste, som refererer til acceptabilitetsvurderinger i brugen af *i* og *på*. I sin

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[2] http://www.kb.dk/da/nb/samling/ma/fokus/mdrsang/2011bager.html
[3] https://www.fjordavisen.nu/?Id=11127, https://www.facebook.com/GuldbagerenNor-regade/photos/der-bor-en-bager-i-n%C3%B8rregadedenne-sang-kender-de-fleste-det-er-en-del-af-vores-k/522267367938407/

lille undersøgelse bad Petersen 10 deltagere indsætte enten *i* eller *på* før i alt 28 københavnske færdselsårer, som alle endte på enten *-gade* eller *-vej*. For alle *-vej*navnene skrev alle deltagere konsekvent *på*, hvilket er i overensstemmelse med den typiske observation. Petersen rapporterer desværre ikke, hvad hendes informanter skrev i sætningerne før *-gade*navnene, men hun observerer, at sprogbrugen her er mindre fast, og at *i* dog er mest almindeligt før stednavne med efterleddet *-gade*.

3.1.2 Korpuseksempler
I denne del af vores korpusstudie sammenligner vi brugen af de to præpositioner *i* og *på* før færdselsårer. (5)-(10) herunder repræsenterer eksempler på de udvalgte typer af færdselsårer, som vores analyse tager afsæt i, nemlig *-gade*, *-stræde*, *-vej* og *-vænget* samt *-boulevard(en)* og *-Allé*. Vi undersøger om de intuitioner, som forrige studier rapporterer om, også er i overensstemmelse med data fra KorpusDK.

-GADE

(5) a. … fortæller Tudemarie til damen at hun bor i Sølvgade.
          (KorpusDK)

    b. Når man bor på Østerbrogade, som vi gør, er det den nemmeste vej.
          (KorpusDK)

-STRÆDE

(6) a. I Diagonalstræde opdager Harry Draco Malfoy…
          (KorpusDK)

    b. En autonom gadefest med 300-400 deltagere på Hyskenstræde...
          (KorpusDK)

-VEJ

(7) a. * En bil og et regionaltog kolliderede i overkørslen i Randersvej.
          (konstrueret eksempel)

    b. En bil og et regionaltog kolliderede i overkørslen på Randersvej.
          (KorpusDK)

-VÆNGET

(8) a. Episoden fandt sted fredag i en lejlighed i Rydevænget…

                                                    (KorpusDK)

     b. … for et planlagt attentat mod den jugoslaviske
         ambassade på Svanevænget.

                                                    (KorpusDK)

-BOULEVARD(EN)

(9) a. * Senere ernærede [han] sig bl.a. som torvehandler i
            Ingerslevs Boulevard…

                                         (konstrueret eksempel)

     b. Senere ernærede [han] sig bl.a. som torvehandler på
         Ingerslevs Boulevard…

                                                    (KorpusDK)

-ALLÉ

(10) a. De købte den beværtning og lysthave i Pile Allé…

                                                    (KorpusDK)

      b. … efterfølgende gentaget i Lystrup Auto på Pile Allé.

                                                    (KorpusDK)

Det er værd at bemærke at de eksempler som vi markerer med * som ugrammatiske, i den rigtige kontekst alligevel kan fungere: i a hvis overkørslen ligger *inden i* Randersvej (i en tunnel) og tilsvarende i a hvis torvehandlen foregår *inden i* Ingerslevs Boulevard (et underjordisk marked). Det ene af de kun to eksempler på i *-boulevard(en)* i KorpusDK er gengivet i (11). Eksemplet kan netop læses sådan at udkørslen til dels er inden i boulevarden.

(11)   Endvidere er det blevet aftalt, at den parkeringsdel,
           der skal være under boligerne, der vil udkørslen fra
           parkeringskældrene dér blive i Strandboulevarden.

                                                    (KorpusDK)

Det ses altså at præpositionen *i* ganske vist kan bruges sammen med en stor færdselsåre som en boulevard, men kun i dens konkrete, fysiske betydning af *omkransning* og ikke i den overførte betydning af at befinde sig *på en vej*.

3.1.3 Frekvensdata

Eksemplerne i - viser en tendens hvor visse efterled (fx -*gade* og -*Allé*) kan efterfølge både *i* og *på* mens andre (-*vej* og -*boulevard*) primært følger *i*. I vores undersøgelse efterprøver vi denne tendens i KorpusDK og undersøger forklaringsmodellen med fysisk størrelse som udslagsgivende variabel. Efterleddene -*stræde* og -*vænget* er medtaget i undersøgelsen fordi begge forekommer at være fysisk endnu mindre end -*gade*, og de derfor kan være eksempler på mindre færdselsårer, hvor brugen af *i* kunne have en fysisk forklaring. Tilsvarende er -*boulevard(en)* og -*Allé* medtaget for at illustrere den større færdselsåre hvor *på* kunne have en fysisk forklaring. Grafen i   viser frekvensen af færdselsårer med efterleddet -*gade* eller -*vej* som komplement til *i* og *på* i KorpusDK. Tilsvarende viser (13) forekomsten med efterleddene -*stræde*, -*vænget*, -*Allé* og -*boulevard(en)*.

(12)

ANTAL *I*/*PÅ* EFTERFULGT AF '-GADE' ELLER '-VEJ' I KORPUS90 OG KORPUS2000
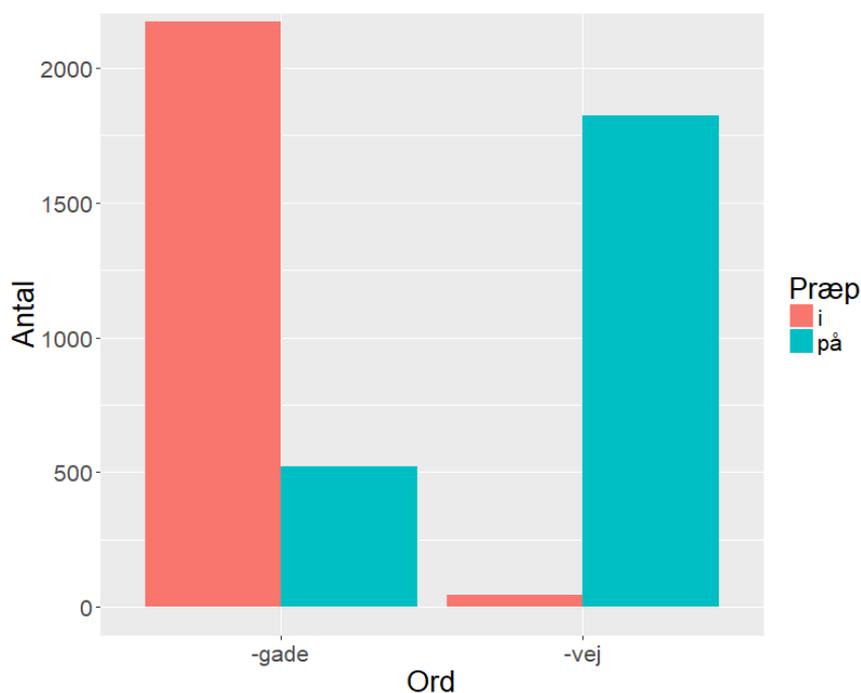
I spørgsmålet om hhv. *-gade* og *-vej* viser vores data en tydelig forskel i præpositionsanvendelsen. Før *-vej* foretrækkes *på*, hvilket også er i overensstemmelse med litteraturen, og før *-gade* foretrækkes *i*. Før *-gade*navne hersker der dog større velvilje mod præpositionen *på*, end det er tilfældet med *i* før *-vej*navne, og med 521 forekomster i KorpusDK er præpositionsforbindelsen *på -gade* bestemt også hyppig, omend mindre udbredt end det er tilfældet for *i -gade* (2172 forekomster i KorpusDK).

(13)

ANTAL *I/PÅ* EFTERFULGT AF '-STRÆDE', '-VÆNGET', '-ALLÉ' ELLER '-BOULEVARD(EN)' I KORPUS90 OG KORPUS2000
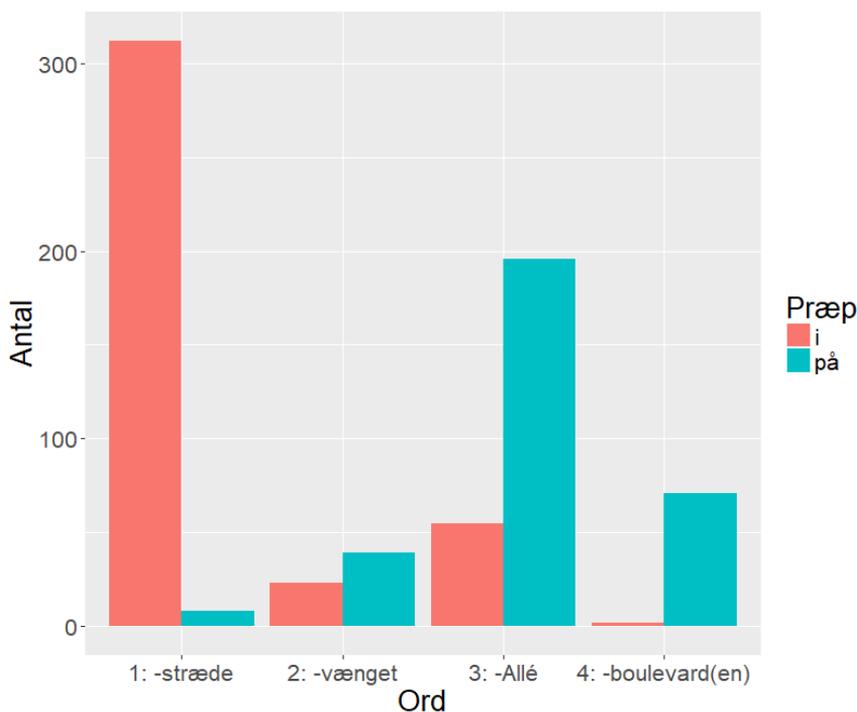
Frekvenserne for *-stræde* viser det modsatte mønster af *-vej*: *i* er klart den foretrukne præposition, og før dette efterled er forekomsten af *på* næsten ikke eksisterende (8 *på -stræde* mod 312 forekomster af *i -stræde*). Opdelingen er mindre klar for *-vænget*, hvor *på -vænget* optræder 39

gange og *i* -*vænget* 23 gange. Tilsvarende optræder -*Allé* hyppigst som komplement til *på* (196 forekomster), men der er samtidig et ganske betydeligt antal -*Allé* som komplement til *i* (55 forekomster). Dette forhold mellem *i* og *på* ligner ganske meget forholdet mellem *i* og *på* for -*gade*. Derimod er det helt klart at -*boulevard(en)* optræder som komplement til *på* og ikke *i*, meget lig brugen for -*vej*.

Hvis man følger DDO's definition af -*stræde* som en mindre færdselsåre og -*boulevard(en)* som en større, kan man derfor med en vis tilfredshed læne sig op ad forklaringen om færdselsårers fysiske egenskaber, idet det tyder på, at *i* foretrækkes ved mindre færdselsårer, mens *på* foretrækkes ved de større. Efterleddene -*vænget*, -*gade* og -*Allé* udgør dog interessante modeksempler til denne hypotese eftersom de alle lader til at kunne bruges som komplement til både *i* og *på*. Samtidig må tilfældet -*vej* i sig selv være et modeksempel, for -*vej* findes både i små (*Lillevej* i Viby J) og store udgaver (*Randersvej* i Aarhus), men forekommer alligevel stort set udelukkende med *på*.

Variationen før både -*vænget*, -*Allé* og -*gade* gør det på overfladen svært at konkludere helt entydigt at *i* kun skulle indlede forbindelser med de mindre færdselsårer. Korpusresultaterne siger dog intet om hvorvidt den pågældende færdselsåre er stor eller lille, så det er en reel mulighed at fx de store -*gade*r er komplementer til *på* og at de små er komplementer til *i*. Dette vil give et resultat som i grafen i , hvor det kan se ud som om at der er en vis grad af valgfrihed mellem *i* og *på* for -*gade*, men hvor det i virkeligheden er tilfældet at visse gader primært optræder med den ene præposition og andre gader med den anden. Vi har udvalgt en lille håndfuld store og små -*gade*r i Aarhus og København for at illustrere hvad der ligner en generel tendens med en del undtagelser.

(14)	**Større -*gade***			**Mindre -*gade***		
Aarhus		**på**	**i**		**på**	**i**
	Nørrebrogade	294	68	Sejrøgade	2	27
	Nordre Ringgade	53	1	Thunøgade	4	115
	Langelandsgade	313	75	Lollandsgade	1	42
				Sølystgade	1	286

København		på	i		på	i
	Amagerbrogade	653	0	Sjællandsgade	4	39
	Vesterbrogade	252	2	Guldbergsgade	3	28
	Bredgade	4	41	Møllegade	2	39
	Store Kongensgade	4	61	Jægersborggade	3	122
	Vester Voldgade	7	13	Lundtoftegade	3	39
	Smallegade	41	236	Rantzausgade	3	115

Tabellen i   viser præpositionsbrugen, *i* eller *på*, med specifikke gader. Tallene stammer fra en side-afgrænset[4] googlesøgning på *i* eller *på* efterfulgt af den specifikke gade. For de mindre -*gade*rs vedkommende er fordelingen ganske klar: *i* er den mest anvendte præposition og *på* optræder ganske få gange. Forholdet mellem *i* og *på* ved de mindre -*gade*r minder altså meget om forholdet mellem *i* og *på* med -*stræde*. For de større gaders vedkommende er der mere variation. Ganske vist er det for flere af de store -*gade*r rigtig nok tilfældet at *på* er den hyppigst brugte præposition, som vi ville forvente hvis *på* netop bruges med større færdselsårer. For både Nørrebrogade og Langelandsgade i Aarhus er der dog en relativt høj andel af *i*.

Amagerbrogade og Vesterbrogade i København er store færdselsårer og optræder som forventet næsten udelukkende med *på*. Til gengæld er der en overvægt af *i* for de andre undersøgte store københavnske -*gade*r, og ikke kun i tilfældet Smallegade som vi omtalte tidligere. Samlet set lader der altså til at være en tendens til at de små gader er komplementer til *i*. Dette er som forudsagt hvis præpositionsbrugen til dels er fysisk betinget. Dette mønster lader dog ikke til utvetydigt at være gældende for de store -*gade*r hvor den fysiske forklaringsmodel ville forudsige en stor overvægt af *på*, som vi ser det med -*boulevard*. I en endnu mere detaljeret undersøgelse kunne man efterprøve om der er en sammenhæng mellem gadens historie og præpositionsbrugen (*Smallegade* var lille og blev stor, og præpositionsbrugen halter måske efter).

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[4]   Tallene for Aarhus stammer fra stiften.dk (Aarhus Stiftstidende) og tallene for København stammer fra minby.dk, som bringer lokalnyheder om København.

(15)	**Større allé**			**Mindre allé**		
Aarhus		**på**	**i**		**på**	**i**
	Jyllands Allé	65	0	Marselisborg Allé	77	6
	Frederiks Allé	301	321	Møllevangs Allé	98	0
	Park Allé	131	173	Fuglesangs Allé	97	0
	Stadion Allé	531	19	Kongsvang Allé	8	0
	Sønder Allé	51	150	Frydenlunds Allé	13	0
	Vester Alle	323	282			
	Nørre Allé	222	1180			

I rapporterer vi data for forekomsten af -*Allé* som komplement til enten *på* eller *i*. Frekvensdataene er samlet på tilsvarende vis som frekvenserne for -*gade*rne i Aarhus. Tallene viser at de mindre alléer også langt overvejende forekommer som komplement til *på*. For de større alléers vedkommende forekommer brugen dog nærmest endnu mere varieret end det er tilfældet for de undersøgte store gader. For to af alléerne, Frederiks Allé og Park Allé, bliver begge præpositioner brugt næsten lige hyppigt. Vores data viser variation på populationsniveau, men giver ikke information om hvorvidt denne variation også forekommer på individniveau, således at talere faktisk kan være i tvivl om hvilken præposition de vil bruge. Det kan altså være tilfældet at visse talere foretrækker *på* og andre *i*, eller at præpositionsvalget afhænger af den specifikke sætnings kontekst. Det ville være værd at undersøge nærmere, fx i et talesprogskorpus hvor individuelle talere kan identificeres.

3.2 Østater

Ser man på brugen af præpositionerne før øer, halvøer og fastland, er hovedreglen, at øer og halvøer tager *på* mens fastland tager *i*. Eksemplerne i (16)-(22) er konstruerede.

(16) a. Han studerede i Tyskland.

  b. * Han studerede på Tyskland.

(17) a. Han tog på ferie i Frankrig.

  b. * Han tog på ferie på Frankrig.

(18)   a.   *   Han ønskede sig et sommerhus i Kolahalvøen.

        b.   Han ønskede sig et sommerhus på Kolahalvøen.

(19)   a.   Nu bor han i Jylland.

        b.   *   Nu bor han på Jylland.

Som det ses i   , er Jylland en undtagelse til reglen om, at halvøer tager *på*. Hansen (1993) forklarer denne uregelmæssighed ved, at det højst sandsynligt er et levn fra den tid, hvor der blev brugt *i* om alle større landsdele i Danmark, såsom *i Lolland*, *i Fyn* og altså også *i Jylland*. Områder på øer omtales som oftest også med *på* ligesom selve øen, dog er der ligeledes undtagelser her:

(20)   a.   *   Hun boede i Nordfyn.

        b.   Hun boede på Nordfyn.

(21)   a.   *   De havde et sommerhus i Sydbornholm.

        b.   De havde et sommerhus på Sydbornholm.

(22)   a.   Hun var på ferie i Nordsjælland.

        b.   ?   Hun var på ferie på Nordsjælland.

   afviger fra reglen om at områder på øer primært tager *på,* og dette er også delvist gældende for andre områder på Sjælland, hvor *Syd-, Vest-,* og *Østsjælland* tilsyneladende alle kan tage både *i* og *på* (Sandersen 2006; Hansen 1993). Af korpuseksemplerne i (23) fremgår det at *i* og *på* begge kan efterfølges af -*sjælland* under sammenlignelige omstændigheder.

(23)   a.   Sagen har vakt opsigt i Osted på Midtsjælland, hvor
                   Johnny og kænguruen…

                                                          (KorpusDK)

        b.   … men må tappe af søerne på Midtsjælland.

                                                          (KorpusDK)

c.   … men i Nordsjælland trives [jordegern] så storartet, at de nu har ynglet.

(KorpusDK)

d.   Drikkevandet fra Uggeløse Vandværk i Nordsjælland er blevet forurenet…

(KorpusDK)

I KorpusDK finder vi dog en klar præference for *i Nordsjælland* frem for *på* (406 *i*, 2 *på*). For Sydsjælland er forholdet 64 *på* og 59 *i*, Vestsjælland 43 *i* og 30 *på*, Midtsjælland 3 *i* og 32 *på* og Østsjælland 1 *i* og 4 *på*. De enkelte områder på Sjælland lader altså til at have forskellige krav til den styrende præposition, hvilket Sandersen (2006) foreslår kan være på grund af talerens perspektiv (-*sjælland* som et område der tager *i*, eller -*sjælland* som en del af en ø der tager *på*).

Sandersen (2006) opstiller desuden en regel om at selvstændige lande/ stater tager *i*. Hvis en ø eller øgruppe er en selvstændig stat, kan denne stats-status tilsidesætte øens ø-status således at den foretrukne præposition bliver *i* og ikke *på*. Dette gør sig også gældende med de konstruerede eksempler i (24).

(24) a.   Han var på ferie i Japan/Australien/Irland.

b. * Han var på ferie på Japan/Australien/Irland.

Der kan næppe herske uenighed om at a fungerer fint, mens b er problematisk. Denne skråsikkerhed gør sig dog ikke gældende for alle øer, da vores data fx viser, at i tilfældet *Island* findes der både eksempler med *i* og med *på*, som i (25). Selv om mange mennesker nok vil have en præference for en af præpositionerne, måske afhængig af konteksten, er begge typer gangbare. Vores samlede data fra KorpusDK viser, at der pr. 10 millioner ord findes lidt færre eksempler på *i Island* (113 forekomster) end *på Island* (143 forekomster).

(25) a.   I Island, var dagpasningen oprindelig tænkt som en måde at socialisere børn på…

(KorpusDK)

>   b.   Selv på Island, hvor skak i lange perioder var en
>   nationalsport…
>
>   (KorpusDK)

Den undtagelse fra reglen som ses af   står dog ikke alene, og vores
undersøgelse omfatter derfor brugen af *i* og *på* før både Island og de to
nuværende østater i Rigsfællesskabet, Grønland og Færøerne. Mange
danskere har fx en fornemmelse af, at et eksempel som a er mest politisk
korrekt, men de fleste finder ikke b ugrammatisk. Dansk Sprognævn
behandler bl.a. dette i et svar til en spørger[5], hvor de skriver at "[d]er er
imidlertid nogle sprogbrugere der mener at man viser mest respekt over
for Grønland og Island ved at bruge *i* fordi man på denne måde sprogligt
anerkender at de to øer er selvstændige områder." Det kunne hænge
sammen med, at Island først blev selvstændig i 1944, og at det derfor
historisk set har været normen at sige *på Island* og derved at betegne Island
som en ø nærmere end en stat. En anden mulig forklaring ved netop dette
komplement kunne være det fonetiske sammenfald mellem præpositionen
[i] og komplementets indledende selvlyd [i], der gør det sværere at
segmentere præposition og komplement end det er tilfældet med *på Island*.

Selvstændighedsstatus, eller i hvert fald den politiske korrekthed,
ser ud til at spille ind ved Grønland, hvor der ses en ændring i brugen af
præpositioner i de forskellige korpusser. Overordnet set er der flere tilfælde
af *i Grønland* end *på Grønland* i vores data, og vi undersøger om brugen
af den potentielt mere politisk korrekte *i Grønland* er steget over tid på
bekostning af *på Grønland*. Samtidig undersøger vi om lignende mønstre
gør sig gældende for Island og Færøerne. Ved hjælp af CoRESTs tredelte
database kan vi danne os et overblik over udvikling i sprogbrugen over de
ca. 30 år som korpusserne dækker.

(26) viser resultatet af søgningen på *i* og *på* efterfulgt af *Færøerne*,
Grønland og *Island* fordelt over de tre korpusser i KorpusDK. Grafen er
delt i to således at venstre halvdel viser søjlerne for *i Færøerne/Grønland/
Island* i de tre korpusser mens højre halvdel viser søjlerne for *på Færøerne/
Grønland/Island*. Søjlerne viser den procentvise andel af konstruktionen *i/
på X-land* i forhold til hvor ofte landet omtales i korpusset, dvs. at det fx
ses at *i Island* stabilt udgør ca. 10 % af den samlede forekomst af ordet
Island i alle tre korpusser. Til sammenligning udgør *på Island* i Korpus90
ca. 15 % og i Korpus2000 og Korpus2010 ca. 10 %. Denne præsentation

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5   https://sproget.dk/raad-og-regler/artikler-mv/svarbase/SV00000065

af data gør det muligt at sammenligne *i/på*-forekomsterne over tid uden at skulle skele til hvorvidt den overordnede omtale af de tre lande er steget eller faldet.

(26) PROCENTVIS ANDEL AF *I/PÅ* I FORHOLD TIL SAMLET ANTAL FOREKOMSTER AF LANDENAVNET I KORPUS
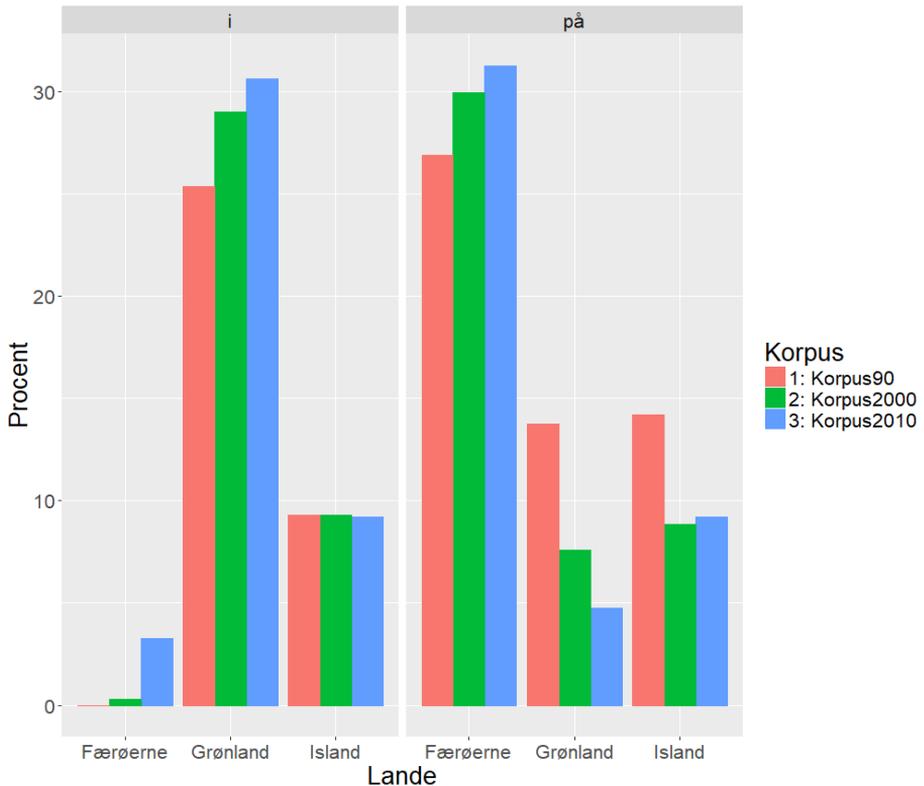
For Færøerne er *på* den klart mest brugte præposition af de to. *I Færøerne* optræder næsten ikke i Korpus90 og Korpus2000, men der er dog en lille relativ stigning i brugen i det nyeste korpus, Korpus2010. Samtidig ses også en tilsvarende lille relativ stigning af *på Færøerne* fra omtrent 26-27 % i Korpus90 til 32 % i Korpus2010.

For Island er den procentvise andel af *i Island* fuldstændig stabil omkring 9-10 % på tværs af de tre korpusser. *På Island* ligger omkring samme leje i Korpus2000 og Korpus2010. Fra Korpus90 til Korpus2000 ses til gengæld et fald på ca. 5 procentpoint. Samlet set tyder tallene for Island på at der ikke er klar konsensus om, hvilken præposition der "passer til" Island. Til gengæld kan faldet i forekomsten af *på Island* måske markere den samme udvikling hen imod politisk korrekt præpositionsanvendelse som vi ser for Grønland.

Den foretrukne præposition for Grønland er ubetinget *i*, men der er alligevel en ikke ubetydelig andel af *på Grønland*. Der ses en stigning på ca. 5 procentpoint af *i Grønland* fra Korpus90 til Korpus2010. Samtidig ses et større fald på 9 procentpoint (fra 13,7 % til 4,7 %) i anvendelsen af *på Grønland* fra Korpus90 til Korpus2010. Vores korpusdata understøtter altså at præpositionsbrugen lader til at følge med tidsånden og fornemmelsen for at *i Grønland* er mere korrekt at bruge end *på Grønland*. Brugen af *i Grønland* er steget en smule, men mere markant er faldet i brugen af *på Grønland*. Denne udvikling er i overensstemmelse med beretningerne om, at danskerne er blevet opmærksomme på at markere Grønlands selvstændighed (Sandersen 2006).

4. Konklusion

Spørgsmålet om hvilken præposition, der skal anvendes før et givet komplement, er komplekst, og især præpositionerne *i* og *på* vækker undren blandt mange danskere. I nogle tilfælde har de fleste modersmålstalere en klar intuition om, at kun den ene af de to præpositioner kan anvendes, mens det i andre tilfælde lader til, at begge kan bruges, enten med samme eller ændret betydning. I dette studie har vi undersøgt brugen af præpositioner før udvalgte komplementer, specifikt komplementer af kategorierne færdselsårer og østater. Disse er nævnt i litteraturen som eksempler på typer af komplementer, hvor der forekommer meget variation i præpositionsbrugen. Dette studie er baseret på præcise søgninger i det største dansksprogede korpus, KorpusDK, og udgør, os bekendt, den eneste større, empiriske undersøgelse af danskernes konkurrerende brug af de to præpositioner. Dataene viser, at der er en vis grad af valgfrihed, usikkerhed eller uenighed inden for hvert af de to undersøgte domæner, men at denne tilsyneladende valgfrihed måske kan have rod i underliggende faktorer som talerens opfattelse af en færdselsåres størrelse eller en fornemmelse for

politisk korrekt sprogbrug. For de mindre gennemskuelige observationer foreslår vi mulige årsager, men en selvfølgelig begrænsning ved denne type undersøgelse er, at vi kun registrerer tendenser i (skriftlig) anvendelse, og altså ikke kan vide os sikre i vores årsagsforklaringer. Det kunne derfor være interessant at lave et acceptabilitetsstudie eller at undersøge anvendelsen i et talesprogskorpus hvor eventuel individuel variation ville kunne afdækkes. En sådan undersøgelse ville i højere grad kaste lys over, hvad der ligger til grund for modersmålstalernes valg af præpositioner.

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Formative feedback as grammar teaching

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Abstract

The aim of this paper is to discuss how formative feedback (FB) on written language production can complement and at times replace grammar teaching in the context of a communicative foreign language (L2) classroom. This is illustrated with results from two research projects where formative FB contributes to developing the L2 learners' grammatical awareness. In the communicative approach to language teaching, grammatical awareness is a necessary component for achieving communicative competence, but grammar is not a goal in itself. In this approach, the teaching of grammatical items is planned according to communicative needs and can either be chosen in advance, as preparation for a task (a pre-emptive approach), or take place as a reaction to production (a reactive approach). Formative corrective FB can be considered as a reactive approach to grammar teaching.

1. Introduction

In this paper, we aim to discuss how formative feedback (FB), i.e. "information communicated to the learner that is intended to modify his or her thinking or behavior to improve learning" (Shute 2008: 153), on written language production can complement and at times replace grammar teaching in the context of an L2 classroom. In a communicative approach to language teaching, grammar is not an objective in itself but a means to develop communicative competence, that is, the ability to communicate adequately in a number of different communicative contexts. In this approach, the teaching of grammatical items is planned according to communicative needs and can either be chosen in advance, as preparation

for a task (a pre-emptive approach), or take place as a reaction to production (a reactive approach) (Nassaji 2015). In this sense, FB constitutes a reactive approach to grammar teaching.

The role of FB for language learning has been widely discussed in the literature and, although some voices have been skeptical of its potential for promoting learning, there is consensus today regarding the positive qualities of timely and adequate formative FB (Bitchener & Ferris 2012).

In order to illustrate the use of FB for contextualized grammar teaching, we present results from two research projects in which formative FB contributes to developing the L2 learners' grammatical awareness. In the communicative approach to L2 teaching, grammatical awareness is a necessary component for achieving communicative competence, as research has shown that an explicit attention to form (in this case, grammar) promotes learning (Nassaji & Fotos 2011). One of the projects focuses on 8th grade English teaching in the Danish lower secondary school (Kjærgaard 2018) and the other one is situated in the context of university level Spanish (Fernández in preparation). Both cases have in common a systematic approach to formative FB with the support of technology and a strong component of interactivity. The article will discuss some results, including both successes and challenges, and will point out future perspectives.

The article starts by shortly introducing the literature about grammar teaching within the framework of SLA-studies (section 2), followed by an equivalent overview of the literature about formative FB (section 3). Once the framework for both grammar and FB has been established, sections 4 and 5 present the two case studies with the aim of exemplifying how a connection can be made between grammar teaching and FB provision. In section 6, some conclusions will be drawn from the two cases, which can lead to further research.

2. Grammar teaching in the Second Language Acquisition (SLA) literature

During the 20th century, positions among SLA scholars and practitioners fluctuated greatly regarding the role of explicit grammar teaching in the L2 classroom. The first great question was whether grammar should be taught at all or whether it should rather be acquired implicitly while communicating in the target language. The extreme positions are illustrated by two widely spread methods: the grammar-translation method on one side

and the natural approach on the other. In a sort of pendulum movement, the controversy seemed to be resolved, at least for some, in a middle position manifested in the communicative approach to language teaching, as we will see in the following paragraphs.

The classic grammar-translation method, which has in fact been used for many centuries and to some extent is still practiced today, is probably the clearest example of a form of language teaching that gives a central role to the presentation of grammatical elements (especially morphology and syntax). In this method, grammar teaching is done through systematic and atomized grammar lessons introducing one grammatical phenomenon at a time, in an order based on complexity. In the SLA literature, this approach to grammar has been given the name of "focus on forms" (Long 1991). The combination of grammar lessons where rules are explained with grammar exercises such as 'fill in the blanks exercises', followed by more free practice, has been a frequent procedure in the language classroom and has been called PPP (present, practice, produce). It originates from a view of language learning as skill learning (DeKeyser 1998), where 'practice makes perfect'. It has characterized approaches to language teaching such as the audiolingual method, where repeated, mechanical exercising is central.

At the opposite side of the spectrum, we find initiatives proscribing explicit grammar explanations from the classroom. Stephen Krashen's Natural Approach from the early 1980s was such an approach, intending to imitate the natural way in which children learn their first language. In his view, contact with comprehensible input through reading and listening is all we need to learn a language (Krashen 1985). This view has been termed 'focus on meaning', as no overt attention is given to the form of language, and only content is in focus.

Extensive research in L2 acquisition and pedagogy has shown that both extremes are insufficient and offer an unbalanced weighting of the different components needed to most effectively learn an L2. We know today that it is necessary to include a certain focus on grammatical forms, as this helps speed up the learning process, promote precision and, in general, obtain a higher proficiency level (Larsen-Freeman & Long 1991). At the same time, there is evidence that points to the fact that grammar teaching is most effective when it is integrated into a communicative context rather than decontextualized (Larsen-Freeman 2001). The view of grammar teaching that attempts to combine the best of both worlds, a focus on communication (content) as well as on form (i.e. grammar structures,

vocabulary and pronunciation), is called 'focus on form' (Long 1991). It represents a middle position between the two extremes, 'focus on forms' (the atomized, context-isolated grammar teaching from the grammar-translation method or the audiolingual method) and 'focus on meaning' (the grammarless approach from the early 1980s). See Nassaji & Fotos (2011) for detailed overviews of this development.

2.1 Focus on form

Focus on form is the approach to grammar teaching that characterizes the communicative approach to L2 learning, which prevails today in large parts of the world. Most of the activities in a communicative classroom aim at promoting communication in the target language, but these activities can and should be combined with others that focus on the grammatical elements, vocabulary items or pronunciation features that are necessary to communicate in the situation in question.

Here, grammar teaching does not necessarily consist of the traditional grammar lesson, with the presentation of a grammatical rule followed by grammar exercises. Instead, a short grammatical explanation can be given as a preparation for a communicative activity. This can be considered a 'pre-emptive' approach, i.e. an anticipation of the language items that are needed to be able to execute a task in the L2. For instance, the past tense can be briefly reviewed before a task consisting of talking about what the students did the previous weekend or the future tense can be introduced to be able to talk about plans for the coming holidays. The opposite approach is termed 'reactive' (Nassaji 2015). It consists of corrective FB given after an activity is over, e.g. when the teacher comments on the most common errors from a finished task. Both in the pre-emptive and reactive approaches, several grammatical items can be addressed in the course of the same lesson. This is called 'extensive' grammar teaching, as opposed to the classical 'intensive' grammar teaching, where longer time is used for each topic and therefore only one topic is normally presented in one class (Ellis 2006).

Despite its name, the approach of "focus on form" has more than just form in focus. Explanations about form are inseparable from explanations about meaning and pragmatic function. The interplay of the three dimensions – form, meaning and function – constitutes the axis of grammar teaching within the communicative approach. So presenting, for instance, the imperfect past tense in Spanish implies working with form (the right verb endings), the meaning of this tense (representing an internal facet of a

past situation), and its most frequent functions (e.g. presenting background information in a narration). This helps to create linguistic awareness, i.e. allows the students to understand how the target language works.

Although the SLA literature has argued for this kind of communicatively contextualized grammar teaching for a long time now, we know from teacher cognition studies (studies focusing on language teachers' knowledge and beliefs about different aspects of language teaching) (e.g. Borg 2015) that teachers find it difficult to implement this kind of grammar teaching. They often fall back on the more familiar 'focus on forms' that they themselves experienced as language learners. In fact, numerous studies show that teachers' reasons for how they teach grammar are not necessarily related to a belief that their grammar teaching promotes learning, as many other factors are at stake: examination requirements, time constraints, learners' expectations and proficiency level, and available materials, among others. All this makes innovation in grammar teaching and a movement towards a grammar based on communicative needs notoriously slow.

3. Written corrective FB

FB can be defined as "information by an agent […] regarding aspects of one's performance or understanding […] FB is thus a consequence of performance" (Hattie & Timperley 2007: 81), and it serves the purpose of "[reducing] discrepancies between current understandings and performance and a goal" (Hattie & Timperley 2007: 86). In our context, then, it is information by a teacher or fellow students on a student's written performance with the purpose of reducing the gap between the students written performance and the goal of the relevant level of education.

That this article concerns itself with mainly written FB on written language is not incidental: We know that written language has a higher degree of permanence, which allows for more attention and noticing than oral FB. There is more time for planning for the student when writing, for the teacher when providing FB (Golonka et al. 2014) and for the student when engaging with the FB (Bitchener & Storch 2016).

The research on FB has categorized various types of FB, one major distinction being oral and written. In this article, only written FB will be in focus, and written FB is usually taken to be both FB that is written and FB on written production. However, in our understanding, FB on written production can also, as in parts of case 2 below, be oral. Most often, teachers are the providers of FB, but peer FB is a viable type of FB (for pros and cons, see Yu & Lee 2016), especially when students are at an

educational level where they have the appropriate metalanguage – be it for textual aspects or for purely linguistic aspects.

FB can be categorized along four different coexisting continua as illustrated in Figure 1. The use of continua indicates that it is not always an either/or, but rather a question of degrees:
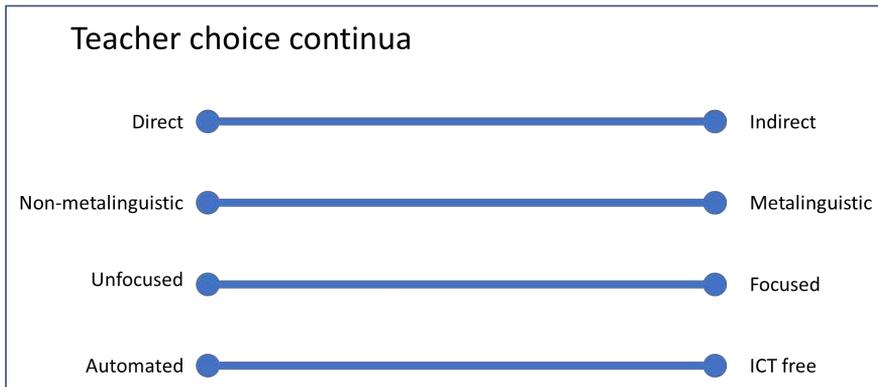
Figure 1: Illustration of the four continua characterizing a teacher's written corrective FB choices (Kjærgaard 2018) (ICT = Information and Communications Technology)

In terms of the first continuum, FB can be direct, i.e. the teacher replaces the student's error with a correct form, or it can, e.g. through provision of explanations, codes, or just a highlight indicating a location, move towards being indirect (Ellis 2008). The second continuum concerns itself with the degree to which the FB uses metalinguistic terms (Ellis 2008): Whether no metalanguage is used; whether it just provides an error code, e.g. "T" for tense; or whether it introduces a (new) metalinguistic term along with an explanation and/or examples. Third, FB is characterized according to whether it is focused or unfocused, i.e. whether foci are selected beforehand or when the teacher starts her actual FB provision, or whether every problem in the text is addressed (Ellis 2008). The final continuum described above concerns the degree to which technology is used in the provision of FB, and it ranges from automated FB (Li 2016) over the use of dedicated programs and comments in e.g. Microsoft Word (Hamel et al. 2016) to no use of technology at all.

Which concrete combination is most appropriate in a given situation depends on many factors. Some of them can be related to a teacher's

general approach, but in most cases, there is no one "best practice" to cover all instances, as many issues need to be taken into consideration:

- Although we know that indirect FB is generally advantageous for student learning as it can be seen as a form of problem solving with high levels of involvement (Bitchener & Knoch 2009), it makes little sense in relation to e.g. grammar or vocabulary errors where the student lacks the knowledge to be able to self-correct (Bitchener & Knoch 2008); in these instances, direct FB with explanations is more appropriate and useful.

- Also metalinguistic FB can provide the student with clues for self-correction in a more problem-solving approach (Ferris 2011). However, the student needs to be familiar with the metalanguage used, and this will determine the appropriateness of the type of metalinguistic FB used.

- In general, research tells us that an unfocused approach is seldom appropriate, both because it discourages students and leaves them little to focus on in future papers (Hartshorn et al. 2010); however, this depends on the educational and language level of the students (Bitchener & Storch 2016).

- Finally, whether a choice of technology is possible will depend, in many cases, on organizational availability rather than teacher choice.

4. Case 1: IT-supported written corrective FB in 8th grade English

In this 8-month intervention study, three lower secondary school teachers and their classes were involved in a two-pronged intervention aiming at incorporating what is known from research to be good practice and at introducing a computer program intended to support teachers' systematicity in the provision of FB as well as students' learning outcome of teacher FB. Teachers' practice prior to the intervention consisted in slightly unsystematic FB on issues that the teacher happened to stumble across, just as, in many cases, direct FB was given. The students were not asked to revise or engage with teacher FB in any way.

The intervention required teachers to build their own FB categories and texts in the setup of the program provided (Holmes 2009), i.e. define

the metalinguistic categories needed in their classrooms, formulate texts to provide explanations, and potentially link these to exercises and grammar materials. In their actual FB work, teachers merely had to highlight errors, click a 'button' denoting the appropriate error category, and students would then be shown merely a highlight nudging them to revise but also giving them the option of asking for more help in two stages: 1) metalinguistic categories and 2) explanations. All this had been 'preprogrammed' in the teachers' initial category building and program. Students had to revise and resubmit and were thus provided with a more formative type of FB, given more agency, i.e. a more active role with more control of their writing, and more scaffolding (Lantolf 2000), i.e. graduated and dialogic teacher support.

Since students were provided with individual FB addressing their specific problem, the FB provided came to be an individual grammar 'lesson'. The grammar needed by the individual student at the time when it was needed (contextualized) was in focus. This is in contrast to a whole class, decontextualized, grammar session ('focus on forms'), which would most likely address very few students' zone of proximal development (Vygotsky 1978).

The intervention thus addressed both teachers and students, and it appeared to have had a positive impact on teachers' thinking and practices concerning FB as can be seen from (1), where Teacher 1 attests to her FB becoming more precise and focused and (2), where Teacher 2 explains how decontextualized grammar teaching has been discontinued:

(1) "This button system is more like… it's just a question of pushing a button, isn't it? And then there is a brief comment. It becomes more precise because it is focused on exactly that one grammatical area"[1] (Teacher 1).

(2) "It's quite interesting that we haven't opened the grammar book since you and I […] constructed the button set" (Teacher 2).

Whether the second statement in and of itself describes an advantageous practice may be discussed, but it needs to be seen in the context of written work only, where the teachers have incorporated much of the grammar book material in the program setup. Additionally, many other grammar and language activities take place in the teaching. Also, Teacher 3 describes

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[1]   All examples are translated by the authors from either Danish or Spanish.

how her decontextualized grammar teaching has been diminished, and that she "wants to take her starting point in what they [the students] do".

Thus, the three teachers have come to see the provision of FB as meaningful grammar teaching.

That students felt they benefited from this type of 'grammar teaching' can be seen from the following examples of student comments:

(3) Student 1: "I learn something because I learn more about English grammar."

(4) Student 2: "I become aware of which types of errors I make so that I'm not so likely to make the same ones again."

Furthermore, despite logistical and technical obstacles during the intervention, students express having gotten a different kind of overview and help as well as better explanations available through the program used. Finally, they claim to have learned more simply due to the revision requirement and have achieved greater agency, both through having to revise and through being able to interact with the program and choose the level of scaffolding necessary.

5. Case 2: Focus on grammar through different forms of corrective FB at a university level Spanish writing course

This case deals with a 12-week writing course designed with a focus on process writing, i.e. with subsequent resubmissions of a text in response to FB. The course targeted university students of Spanish with a B2 level of proficiency with the aim of improving their writing skills in different genres. The course was highly student-centered in its design, as the students themselves were consulted about the selection of topics and text types to be practiced. The students were also assigned different roles as writers, readers, reviewers, reflective learners and team players. The course was devised as an action research project intended to test and evaluate a FB design consisting of a multimodal FB chain (see Figure 2). The types of FB selected and the general modality of the course were based on findings from language pedagogical literature about written corrective FB. The tested FB model had the following characteristics (for more detail see Fernández, in preparation):

- **Intensive FB:** Each full FB cycle lasted only one and a half weeks (the cycle was repeated five times during the course). This is based on results from FB literature that show the cognitive advantages of receiving FB immediately or shortly after a text is submitted (Evans et al. 2010).
- **Interactive FB:** The different FB instances were links in the FB chain but never the final processing of a finished text. The students received indirect FB and were always expected to interact with the received FB in order to continue improving the text.
- **ICT-based FB:** Although technology was not a main focus for the project design, both text submissions and FB were delivered in Microsoft Word format and communicated via e-mail. Word's comment function and track changes were used for code correction and final direct corrections, respectively. A special Word template was used for peer FB.
- **Multimodal FB:** As shown in the figure below, the five different FB modalities that made up the FB chain were (in chronological order):

  o **Learner-centered teacher FB based on student questions** (Campbell & Fauster 2013)**:** Each student writes 3-4 questions for the teacher to answer after reading the first submission of the text. The students receive guidelines for asking relevant questions involving both local and global aspects of the text. The students use the teacher's answers to make a new version of the text.
  o **Peer FB:** Each student is in charge of reading a classmate's text (second version) and providing comments via a peer FB template that calls not only for corrections but also acknowledgement of the text's content and an appraisal of positive features. The students write a third version based on this FB.
  o **Teacher FB with codes:** The teacher reads the third version and makes indirect corrections using a code system. Again, a new version of the text is submitted.
  o **Final direct teacher FB:** The teacher reads the fourth version of the text, corrects residual errors and makes final comments.
  o **Collective teacher FB:** In a class session, the teacher brings up attention areas based on recurrent problems in the students' texts. As preparation for the class, students write a short self-reflection essay about the writing process.

New writing

Class session: discussion, reflexion, topic review

Learner-centered feedback: student questions

Self-reflexion

rewriting

Last correction, final comments

Peer-feedback

rewriting

Feedback with codes
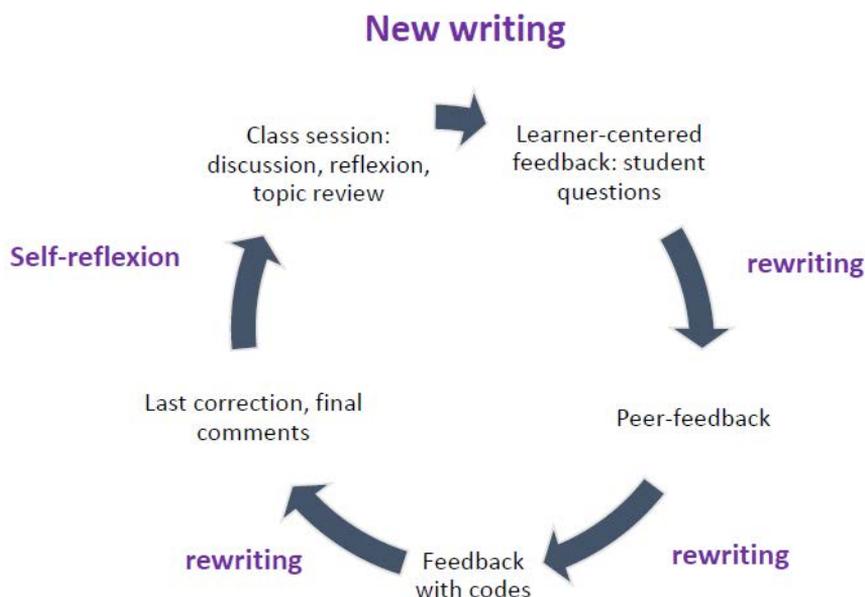
rewriting

Figure 2: A multimodal FB chain in a Spanish writing course (Fernández in preparation)

The five presented FB modalities have the potential to cater for a situated focus on grammar, i.e. a focus-on-form approach as described in the communicative pedagogical literature briefly presented in section 2. The course did not include explicit grammar teaching in the form of PPP; nevertheless, there were numerous instances during the 12 weeks of the course where grammar was directly targeted.

The first FB modality, teacher FB based on student questions, allowed students to ask questions about grammar issues (among other things) that they were in doubt about and to receive metalinguistic explanations from the teacher, as shown in the following example:

(5) **Student question:** Is the use of the future tense correct?

Teacher answer: In the aforementioned example "hayan desaparecido" there should be a perfect future in the indicative mood. In "habrán" the future tense is right but not the plural, as "haber" should never be used in the plural form according to standard Spanish rules. The form "desaparecieren", which is a future subjunctive (and as such has

fallen out of use) is not correct. We do not need a subjective form in this context.

The second FB modality, indirect FB with codes, made the students revise errors based on a marking of error types, many of them grammar errors, as illustrated in (6). The students needed to focus their attention on grammar in order to revise the text.

(6)   MV - "mood": error in modus selection between indicative and subjunctive
      SIN - "syntax" – it can be a problem with a determiner (article, possessive or demonstrative determiner, etc.) or lack of agreement in gender and number in a noun phrase, or an incomplete sentence

In peer FB, the students exerted a double focus on grammar: when reading the classmate's text and making comments on grammar issues, and when processing the FB report they received on their own text. (7) illustrates peer FB with an explicit grammatical focus:

(7)   Some sentences are too long, and they should be shorter and more precise. There are several examples of lacking agreement between subject and verb. You should focus on subject number (singular/plural).

Last but not least, the collective FB session can be seen as a contextualized grammar lesson, as each of the five practiced genres called for different grammatical foci based on the students' problems with the text (e.g. the narrative text called for a focus on tenses and mood, while the argumentative text required a review of connectors).

Throughout the course, a situated focus on form based on communicative needs contributed to the students' grammatical improvement without a single traditional grammar lesson. All feedback modalities in the chain were evaluated positively by the students as regards learning opportunities.

6. Discussion and conclusion

In the course of this article we have argued that grammar teaching can be and has been taught in different ways, explicitly or implicitly, in context or in isolation. Today's understanding of its value for promoting language

acquisition favors an approach that relates grammar to meaning and to the communicative situation in question. One way of achieving this, though not the only one, is by tapping into the opportunities that different kinds of formative feedback can offer.

Having shown two examples of how written corrective FB constitutes grammar teaching, it is important to ascertain what the necessary preconditions for this are:

- The FB has to take place in a focus-on-form context
- The FB has to engage and involve students, providing them with agency (Lee 2017)
- The FB has to take into account student level (e.g. the model applied in case 2 could hardly be implemented in an 8th grade context) and the individual type of error
- The FB has to take advantage of the best available and viable ICT resources

We have not addressed the issue of whether students actually learn more in this form of grammar teaching rather than a more traditional one, since neither of the studies described is an effect study. The cases have proved to be successful as regards teachers' and students' perceived increase in learning, but new studies with a focus on effect are necessary, even though teaching constitutes a "wild problem" (Christensen 2006) with myriad variables, which renders cause-and-effect studies difficult.

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The temporal interpretation of West Flemish non-inverted V3[1]

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Abstract

This chapter focuses on Dutch and the West Flemish dialect. It compares the interpretation of the initial temporal adjuncts in a regular V2 pattern, in which the finite verb has inverted with the subject, and in the West Flemish V3 pattern in which an adjunct precedes a non-inverted V2 pattern. An interpretive difference emerges in the periphrastic tenses: while in the regular V2 pattern, an initial time adjunct modifies either the Reference Time or the Event Time of the associated clause, in the non-inverted V3 pattern, the initial temporal clause can only modify the matrix Reference Time. This restriction is shown to follow from the analysis elaborated in Haegeman & Greco (2018a,b) combined with a split Tense proposal in which Reference time and Event time are located on distinct functional heads.

1. Introduction

This chapter examines the interpretation of the initial temporal clauses in the West Flemish (from now on abbreviated as WF) examples in (1). (1a)

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[1] I dedicate this paper to Sten Vikner. Sten was my very first collaborator at the English department in the University of Geneva and though the function was labelled 'assistant', this was not at all a label fit to characterize our relationship. Sten was there from the start, also – and especially – when times were rough, and his role in building the Linguistics programme was hugely important. But not just that: Sten's research is exemplary and he keeps being an inspiration, as this paper will hopefully show. And finally, he was and remains a friend, 'in good times and in bad times'. To Sten, with fond memories of 'la neige du siècle'.

illustrates a root V2 clause with an initial temporal clause *oan-k toekwamen* ('when I arrived') and the finite auxiliary *was* ('was') to the immediate left of the subject *den eletriek* ('the power'); the equivalent of (1a) is licit in Standard Dutch (from now on StD). (1b) illustrates a deviation from V2 in which the finite auxiliary is preceded by two constituents: the temporal clause and the subject. (1b) is acceptable in WF (Haegeman & Greco 2018a,b); its analogue is unacceptable in StD.

(1) a. **Standard Dutch**
     Oan-k   toekwamen   was   den   eletriek   utgevallen.
     when-I   arrived   was   the   electricity   out.fallen

     b. **West Flemish**
     Oan-k   toekwamen,   den   eletriek   was   utgevallen.
     when-I   arrived   the   electricity   was   out.fallen
     'When I arrived, there had been a power failure.'

There are interpretive differences between the examples in terms of the scope of the adverbial clause. (1a) is ambiguous: following a Reichenbach style approach (Hornstein 1993; but see Vikner 1985; Cinque 1999, a.o.), the adjunct *oan-k toekwamen* ('when I arrived') has two construals. In one construal, the adjunct specifies the Reference Time of the clause it modifies, meaning that at the moment when I arrived the power was down already, i.e. the power cut precedes my arrival. In a second construal, the adjunct specifies the Event Time, meaning that the power cut takes place upon my arrival. WF (1b) with non-inverted V3 only allows the first construal in which the adjunct modifies the Reference Time.

   (1) contains V2 root clauses with a periphrastic tense, i.e. the past perfect of *vallen*, 'fall'. (2) illustrates V2 root clauses with a simple tense, the simple past tense of the verb *vallen*, 'fall'. (2a) has the finite verb, *viel*, 'fell', in second position, preceded by the temporal clause. (2b) departs from the V2 order in that the finite verb is preceded by two constituents: the adverbial clause and the subject. As before, (2b) is acceptable in WF and is unacceptable in StD. In contrast with (1a) and (1b), (2a) and (2b) do not differ in their temporal interpretation: in both, the temporal clause specifies the past Event Time. This is expected: the difference between Reference Time and Event Time is neutralised in the simple tenses because Reference Time and Event Time coincide (Reichenbach 1947).

(2) a. **Standard Dutch**

Oan-k   toekwamen,   viel   den   eletriek   uit.
when I   arrived   fell   the   electricity out
'When I arrived, there was a power failure.'

b. **West Flemish**

Oan-k   toekwamen,   den eletriek   viel uit.
when I   arrived   the electricity   fell out
'When I arrived, there was a power failure.'

This chapter addresses the interpretation of the non-inverted V3 patterns in (1b) and (2b), building on work with Ciro Greco (Haegeman & Greco 2018a,b), which I summarize below. In the regular inverted V2 pattern the initial constituent is merged TP-internally and moved to the left periphery. The interpretive relation with the modal or temporal values of the associated clause are established through reconstruction. To account for the asymmetries in (1), I adopt Haegeman and Greco's hypothesis that in the V3 pattern the initial adverbial constituent is merged as an extra clausal constituent and that reconstruction is not available. For a main clause external constituent to be able to be interpreted as a modifier of TP-internal values, the tensed verb of the associated clause has to be moved to a high left peripheral head. In non-inverted V3 patterns with the past perfect, only matrix RefT construal is available for an initial temporal adjunct. This restriction follows from the analysis combined with the assumption that RefT is encoded on a head that participates in the head chain created by the moved finite auxiliary, while EvT is encoded on a lower functional head which does not participate in the movement chain. In the simple past tense, the contrast between RefT and EvT readings is neutralised because the tensed lexical verb moves to the left periphery and, as a result, the head encoding EvT also participates in the chain created by the movement of the finite verb.

The chapter is organised as follows. Section 2 shows that in Standard Dutch, a speech act modifying adjunct can appear as the initial constituent in a linear V3 pattern both with non subject-initial V2 clauses and with subject-initial V2 root clauses. Section 3 shows that central adverbial adjuncts also combine with a regular V2 root clause, giving rise to a linear V3 pattern. In StD, this pattern is only licit provided the V2 root clause is non subject-initial and hence the analogues of (1b) and (2b), in which a central adverbial precedes a subject-initial V2 root clause, are not

accepted. Section 4 develops a syntactic account for V3 configurations with initial adjuncts. In Section 5, this account is shown to capture the divergence in the temporal readings between the inverted and the non-inverted patterns in the periphrastic tenses. Section 6 briefly discusses an alternative cartographic implementation of the syntax of V2, which allows the reconciliation of the asymmetric analysis of V2 with Schwartz and Vikner's (1996) hypothesis that 'the verb always leaves IP in V2 clauses. Section 7 is a summary.

2. Speech act modifiers and FrameP
2.1. Speech act modifiers
WF (1b) and (2b) constitute a V2 transgression (Catasso 2015). The very acceptability of these patterns is surprising; their unacceptability in StD seems to follow straightforwardly from the V2 constraint. However, as shown in a.o. Zwart (2005); Broekhuis & Corver (2016) and Haegeman & Greco (2018a,b), StD does allow some V2 transgressions. V3 patterns featuring initial speech act modifiers are a case in point: in these, the adverbial adjunct in the V3 configuration is interpreted independently from the propositional content of the V2 clause. Speech act modifiers have been argued to be extra-cyclic (Zwart 2005); main clause external (Broekhuis & Corver 2016; Haegeman & Greco 2018a,b) or extra-sentential (Astruc-Aguilera 2005), i.e. they occupy a position outside the V2 root clause. (cf. Meinunger (2004) and Frey (2012)). In (3), a regular V2 clause is preceded by a speech act modifier, leading to a V3 linear order:

(3)   **Standard Dutch**
      Als   je   het   mij   vraagt, hij   had geen kans.
      if   *you* *it*   *me*   *ask*   *he*   *had* *no*   *chance*
      'If you ask me, he did not have a chance.'

The conditional clause in (3) frames the V2 clause as a whole, encoding a felicity condition for the utterance (cf. Astruc-Aguilera 2005; Scheffler 2008 and references cited). There is no temporal alignment between the adjunct and the V2 clause: the adjunct expresses a present time condition on the speech act, 'if you ask me now'; the proposition encoded in the V2 clause is situated in the past: 'he did not have a chance then'. In licit StD non-inverted V3 with an initial speech act modifier, the latter can thus plausibly be viewed as extra-sentential, it is not integrated in the matrix V2 clause.

2.2. Discourse structure beyond the narrow syntax

The consensus in the literature is that (3) does not violate the V2 constraint because the speech act modifying adjunct is 'outside' the syntactic domain to which V2 applies. Building on Auer's (1996) intuition, Haegeman & Greco (2018a,b) postulate a discourse-building head Frame which combines a full-fledged V2 utterance, with a constituent that sets the relevant context for that utterance. As shown in (4), Haegeman & Greco (2018a) label the V2 root clause ForceP, in line with the cartographic tradition (Rizzi 1997) and to signal that this layer encodes the illocutionary potential of the clause. ForceP essentially corresponds to CP or to the topmost layer in an articulated CP. Below I will mainly use the label CP, for convenience. But see section 6 for a brief cartographic reinterpretation.

Adj-XP, the constituent hosted by SpecFrameP, introduces an entity (or a set of entities) in the discourse in relation to which the proposition conveyed by the associated V2 root clause is interpreted as relevant. When Adj-XP is a speech act modifier, as in (3), the constituents of FrameP are construed independently: the denotation of Adj-XP does not impact on the truth conditions of the proposition encoded in ForceP.

(4)
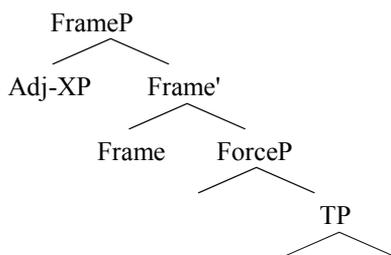
In (5a), the interpretation of Adj-XP, the speech act modifier *als je het moet weten*, 'if you must know', can be seen to be governed by a strict locality condition as schematized in (5b): Adj-XP encodes a condition on the matrix speech act; crucially, Adj-XP cannot modify the speech act embedded under *zeggen,* 'say'. Haegeman & Greco (2018a,b) generalize this locality condition to cover the interpretation of all such Adj-XP.

(5)   a.   [$_{FrameP}$ Als   je   het   moet   weten],
                       if   you   it   must   know

             [$_{CP}$ [ze] zei   [da-ze   het   niet   kon   betalen]].
                     she said   that-she   it   not   could   pay
             'If you must know, she told me she couldn't pay for it.'

       b.   [$_{FrameP}$ Adj-XP [$_{Frame}$] [$_{CP}$ … [$_{TP}$…]]]

3. Central adverbial clauses

Central adverbial adjuncts are semantically integrated into the main clauses
which they modify, expressing, for instance, temporal or modal values of
the associated proposition. Accordingly, one might expect that a central
adverbial adjunct should be illicit as the specifier of FrameP, i.e. occurring
as the initial adverbial constituent in V3 configurations. However, as shown
in Haegeman & Greco (2018a,b), this prediction is incorrect. The relevant
patterns are discussed in the present section.

3.1. With inversion

In both StD and WF, V3 configurations with central adjuncts in initial
position are licit when the root V2 clause with which the adjunct combines
itself displays subject-verb inversion. In (6a) the first constituent in the V2
root clause is a *wh* phrase, *aan wie,* 'to whom', while in (6b) it is a fronted
object nominal *MIJ,* 'me'.

(6)   a.   Als   ik   klaar   ben   met   de handout,
             if   I   ready   am   with   the handout

             aan   wie   moet   ik   hem   (dan)   tonen?
             to   whom   should   I   him   (then)   show
             'When my handout is ready, to whom should I show it?'

       b.   Als   er   morgen   een   probleem   is,
             if   there   tomorrow   a   problem   is

             MIJ   moet   je   niet   bellen.
             me   must   you   not   call
             'If there is a problem tomorrow, don't call me.'

In (6), the initial adjunct restricts the temporal or modal values of the root clause. Some StD informants prefer to insert a resumptive adverbial *dan* in the matrix domain in (6a) as indicated by the parenthesized *dan*. Though of interest, I do not pursue this preference. (6) is evidence that central adverbial adjuncts can give rise to V3 linear order. Pursuing the proposal in Section 2, such adjuncts should be taken to occupy SpecFrameP and thus ought to be sentence-external. The availability of such patterns with central adverbials is thus paradoxical: assuming that the initial adjunct effectively occupies SpecFrameP, the question arises how it can be semantically integrated with the V2 clause to modify the temporal or modal coordinates of the proposition encoded. I address this point in Section 4.1.

3.2. Without inversion
While examples such as (6) are accepted by most speakers of Dutch (*modulo*, for some, *dan*-insertion in (6a)), there is a sharp contrast in the acceptability in relation to WF (1b) and (2b), whose StD analogues in (7) are unacceptable, regardless of *dan*-insertion. The unacceptability of (7) cannot simply be seen as a violation of the V2 constraint because (3), and (6) are evidence that linear V3 orders are licit in StD with speech act modifiers (3) and more importantly they are also licit with central (6) adjuncts.

(7) a. *Toen ik aankwam, de elektriciteit was uitgevallen
      when I   arrived   the electricity   was out.fallen
      'When I arrived, there had been a power failure.'

   b. *Toen ik aankwam, de elektriciteit viel uit.
      when I   arrived,   the electricity   fell out
      'When I arrived, there was a power failure.'

4. SpecFrameP and the syntax of V2
This section summarizes Haegeman & Greco (2018a,b)'s account for the contrast between acceptable StD (3) and (6), and unacceptable StD (7).

4.1. The inverted patterns
Haegeman & Greco (2018a,b)'s generalized locality condition on the interpretation of Adj-XP in SpecFrameP entails that the initial constituent in a V3 configuration can only modify the immediately adjacent matrix domain and cannot modify an embedded domain (cf. (5)).

    Following assumptions in the literature (a.o. Reichenbach (1947); Vikner (1986); Hornstein (1993); Cinque (1999); Demirdache & Uribe Etxebarria (2004)), Haegeman & Greco (2018a,b) assume that temporal and modal values of a proposition are encoded TP-internally. I present one implementation here, inspired by a.o. Zagona (1990); Stowell (1993); Demirdache & Uribe-Extebarria (2004). In the schematic representation (8), CP is a shorthand for the left periphery, RefT is associated with the functional head T, represented as T_{REF}, and EvT is associated with in a lower functional head, here represented provisionally as V_{EV}. Aspectual auxiliaries are taken to instantiate functional heads, labelled Aux (see Cinque 1999):

(8)

```
                CP
              /    \
           Spec     C'
                   /   \
                  C     TP
                          \
                           T'
                          /   \
                         T    AuxP
                                 \
                                 Aux'
                                /    \
                             Aux     VP
                                    /   \
                                  V_EV
```
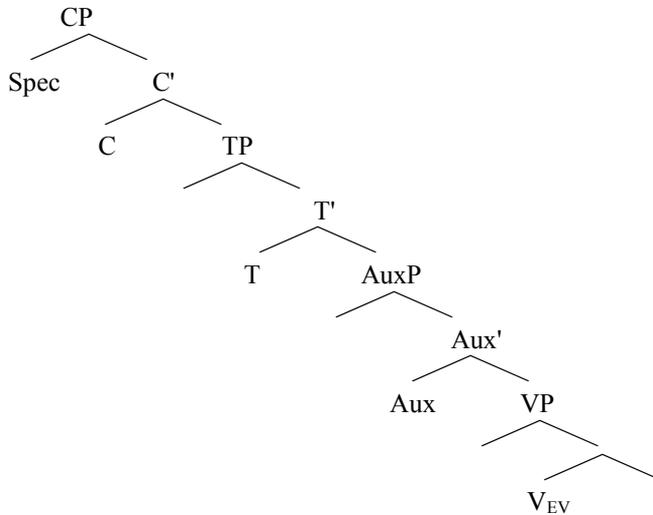
In StD (6a), the conditional clause *als ik klaar ben met de handout,* 'when my handout is ready', modifies the temporal domain of the matrix proposition. The intended construal is schematized by the dotted line in (9a). However, by Haegeman & Greco's (2018a,b) locality condition, the construal represented by the dotted line in (9a) should not be available because the adjunct Adj-XP$_i$ does not have the required local relation with the matrix TP, from which it is separated by the left peripheral layer, CP. The configuration which would comply with the locality condition is represented by the continuous line in (9b), in which the initial adjunct is construed with the left periphery ('CP') of the V2 clause. Haegeman & Greco (2018a,b)

propose that in (6a), configuration (9b) is attained thanks to the movement of the finite verb *moet* ('must'). The idea is that head-movement of the finite verb creates a head chain, C-T, which 'indirectly' establishes the local connection between Adj-XP in SpecFrameP and the TP-internal temporal coordinate: the temporal features are brought up to C by V-movement and then percolate to the CP layer, at which point they are directly related to the specifier of FrameP by virtue of the head Frame. In (9c), co-indexation between the initial adjunct and CP informally represents the modification relation.

(9) a. * $[_{FrameP}$ Adj-XP$_i$ $[_{Frame}$ $]$ $[_{CP}$ ... $[_{TPi}$ ...$]]]$ (StD)

  b. $[_{FrameP}$ Adj-XP$_i$ $[_{Frame}$ $]$ $[_{CPi}$ $[_{TP}$...$]]]$

  c. $[_{FrameP}$ [als ik klaar ben met de handout]$_i$ $[_{Frame}$ $]$
       $[_{CPi}$ [aan wie] $[_C$ **moet**$_i$] $[_{TP}$ ik ... $[_{Ti}$ t$_{moet}$] $[_{VP}$ ... t$_{aan\ wie}$]]]]]

4.2. Standard Dutch subject-initial V2

The contrast between StD inverted (6) and StD subject-initial V2 (7) suggests that the local relation attained through movement of the finite verb in (9c) is not attained in the non-inverted pattern (7). To capture the contrast, Haegeman & Greco (2018a,b) adopt an asymmetric derivation of V2 (Travis 1984, Zwart 1997a,b). As a first approximation, inverted V2 in (6) is derived as in (10a), while non-inverted subject-initial V2 in (7) is derived as in (10b), where the subject remains in its canonical position (Spec,TP) and the finite verb occupies a TP-internal head.

(10a)   (StD; WF)

```
              CP
           ┌──┴──┐
         Spec     C'
          │     ┌──┴──┐
          XP    C     TP
                │   ┌──┴──┐
          finite verb  subject
```

(10b)   (StD)

```
            CP
         ／    ＼
      Spec       C'
              ／    ＼
            C        TP
                   ／  ＼
                subject
```

When a central adverbial Adj-XP combines with a non-inverted V2 clause, the locality relation between Adj-XP in SpecFrameP and the matrix temporal coordinate cannot be attained: in (10c), the adjunct *toen ik aankwam* ('when I arrived') cannot modify the components inside TP, from which it is separated by the CP layer:

(10)   c.   *$[_{\text{FrameP}}$ Adj-XP$_i$ $[_{\text{Frame}}$] $[_{\text{CP}}$ $[_{\text{C}}]$ $[_{\text{TPi}}$ subject $[_{\text{T}}$ finite verb] …

4.3. West Flemish subject-initial V3

The WF analogues of StD (7), (1b) and (2b), are acceptable. Haegeman & Greco (2018a,b) ascribe the difference in the status of StD (7) and WF (1b,2b) to the derivation of subject-initial V2. Based on the argumentation above, we need to ensure that in (1b) and (2b) the matrix temporal/modal coordinates are accessible to the initial adjunct in the V3 configuration: this will be achieved if WF subject-initial V2 patterns do implicate V movement to the C domain, as in (11):

(11)

```
                CP
             ／    ＼
          Spec       C'
           |       ／    ＼
        subject   C        TP
           |      |      ／  ＼
        finite verb    s̶u̶b̶j̶e̶c̶t̶
```
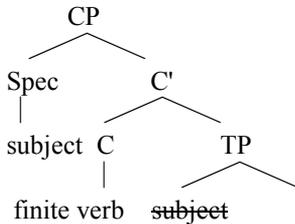
In other words: the difference between WF (1b, 2b) and StD (7) is attributed to micro variation in the derivation of subject-initial V2. That subject-

initial V2 may not be uniformly derived in all varieties of Dutch was first explored in Postma (2011, 2013).[2]

In line with Travis (1984) and Zwart (1997a,b), Haegeman & Greco (2018a,b) cast the difference between the derivations of StD and WF subject-initial V2 in terms of whether the verb does or does not leave the TP domain. However, see Section 6 for a cartographic reinterpretation.

5. The interpretation of the temporal adjunct in the WF subject-initial V3 patterns
5.1. The problem
Let us return to the contrast in the temporal interpretation of the initial adverbial clauses in WF (1) and (2), repeated in (12).

(12)   **West Flemish**

    a.   Oan-k   toekwamen was   den eletriek   utgevallen.
         when I   arrived   was   the electricity   out.fallen
        (i)   'When I arrived, there had been a power failure.'
        (ii)   'When I arrived, there was a power failure.'

    b.   Oan-k   toekwamen, den eletriek   was   utgevallen.
         when I arrived   the electricity   was   out.fallen
        'When I arrived, there had been a power failure.'

---

[2] Ultimately, the proposed difference in the derivation of subject initial V2 should be tied in with other properties of these two varieties of Dutch. StD and WF also differ in relation to the syntax of existential expletives. In the canonical TP-internal subject position, i.e. the position to the immediate right of the complementizer in embedded clauses (ia) and in the post-verbal position in inverted V2 (ib), the expletive is *(d)er* ('there'). In non-inverted V2, the sentence-initial subject expletive is *t* ('it') (ic). StD does not deploy a specialised expletive in initial position: *er* ('there') is used throughout. For reasons of space, I cannot dwell on this here.

(i) a. 'T Stonden   a   drie   mensen.
       it-stood   already   three   people
       'There were already three people.'

    b. dan-der   a   drie   mensen   stonden
       that-3PL- there   already   three   people   stood
       'that there were already three people

    c. In de gang   stonden-der   drie   mensen.
       in the corridor,   stood - there   already   three people
       'In the corridor, there were already three people.'

c. Oan-k   toekwamen,   viel   den eletriek   uit.
    when I   arrived   fell   the electricity   out
    'When I arrived, there was a power failure.'

d. Oan-k   toekwamen,   den eletriek   viel   uit.
    when I   arrived   the electricity   fell   out
    'When I arrived, there was a power failure.'

With a periphrastic past perfect in the root V2 clause, the 'regular' V2 pattern (12a) and the V3 pattern (12b) differ in temporal construal. (12a) is ambiguous. In one reading, the initial adjunct *oan-k toekwamen* ('when I arrived') modifies the Reference Time; in a second reading, the adjunct modifies the Event Time. (12b) only retains the reading according to which the adverbial clause modifies the Reference Time. With a non-periphrastic simple past in the root V2 clause, the regular V2 pattern (12c) and the V3 pattern (12d) have the same construal: the adjunct clause modifies the Event Time.

5.2. The constituent in SpecFrameP cannot be reconstructed

5.2.1. Embedded construal

As shown in Haegeman & Greco (2018a,b), in the regular V2 pattern an initial adjunct can be reconstructed to a clause-internal position, but the initial adjunct in a non-inverted V3 configuration cannot be so reconstructed. I provide one illustration from WF here. In the regular V2 pattern (13a), the initial adjunct modifies either the matrix Event Time, 'the claim was made when it was ready', or the embedded Event Time, 'she will make a call when it is ready'. In the non-inverted V3 pattern (13b), the latter construal is unavailable: the adjunct must modify the matrix Event Time. See the papers cited for more examples.

(13) **West Flemish**

a. Oa-t   gereed was, zei   ze   da   ze   ging   bellen.
    when-it   ready   was   said she that she would   call

b. Oa-t   gereed was, ze zei   da   ze   ging   bellen.
    when-it   ready   was   she said that she would   call

This contrast follows from Haegeman & Greco's (2018a,b) locality condition on the construal of SpecFrameP. For (13a), the initial adjunct originates either in the matrix domain or in the embedded domain. The embedded reading is attained by reconstruction. In (13b), the initial adjunct is main clause external (Spec,FrameP) and can only be construed with the local ForceP, in line with the earlier discussion.

5.2.2. Temporal interpretation

The contrast in interpretation between WF (12a) and (12b), repeated in (14a) and (14b), can be related to the locality condition on the interpretation of XP-Adj in SpecFrameP. In terms of a Reichenbach style interpretation, the initial adjunct *oan-k toekwamen,* 'when I arrived', in (14a) either modifies the Reference time (RefT) or the Event Time (EvT); that in (14b) modifies RefT.

(14)   a.   Oan-k   toekwamen, was   den eletriek   utgevallen.
             when-I   arrived   was   the electricity   out fallen
   (i)   'When I arrived, there had been a power failure.'
   (ii)   'When I arrived, there was a power failure.'

   b.   Oan-k   toekwamen, den eletriek   was   utgevallen.
         when-I   arrived   the electricity   was   out fallen
         'When I arrived, there had been a power failure.'

(15) illustrates the two patterns with a simple past tense, in which RefT and EvT coincide (Reichenbach 1947). The contrast in (14) is no longer detected: both the regular V2 configuration (15a) and the non-inverted V3 configuration (15b) receive the construal according to which the initial adjunct is a temporal specification of the past event.

(15)   a.   Oan-k   toekwamen, viel   den eletriek   uit.
             when I   arrived   fell   the electricity   out
             'When I arrived, there was a power failure.'

   b.   Oan-k   toekwamen den eletriek   viel uit.
         when I   arrived,   the electricity   fell   out
         'When I arrived, there was a power failure.'

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The asymmetry between periphrastic past perfect in (14) and simple past in (15) follows from the interaction between the adjunct *oan-k toekwamen* ('when I arrived') with the internal syntax of the V2 main clause, and in particular with the syntactic encoding of RefT on T_{REF} and EvT on V_{EV}, as in (8) above. In the regular V2 pattern (14a, 15a), the initial adjunct is merged TP-internally (as a modifier of RefT or EvT) and moves to a specifier position in the left periphery. Reconstruction of the adjunct will ensure the appropriate construal (RefT; EvT). In the non-inverted V3 pattern, Adj-XP occupies SpecFrameP, i.e. it is external to CP. Following Haegeman & Greco (2018a,b), Adj-XP can only be construed in a local relation with CP: this means that Adj-XP in SpecFrameP can only be related to the TP-internal temporal coordinates, RefT and EvT, via the head chain created by finite verb movement to C. In the periphrastic tenses, the relevant head chain is created by the movement of the finite aspectual auxiliary. In the schematic representation (16), the auxiliary head-moves to C via the projection encoding RefT. The chain headed by the auxiliary in C contains the head T which encodes RefT, allowing construal of Adj-XP with RefT. EvT is encoded on a lower projection associated with the participle, which itself does not move to Force. Hence, the head chain created by the moved auxiliary does not connect up with EvT and EvT is inaccessible to Adj-XP.

(16) **West Flemish**

FrameP
- Adj-XP
- CP
  - subject
  - C'
    - C / Aux
    - TP
      - T'
        - T_{REF} / t_{aux}
        - AuxP
          - Aux'
            - Aux — t_{aux}
            - VP
              - V_{EV}
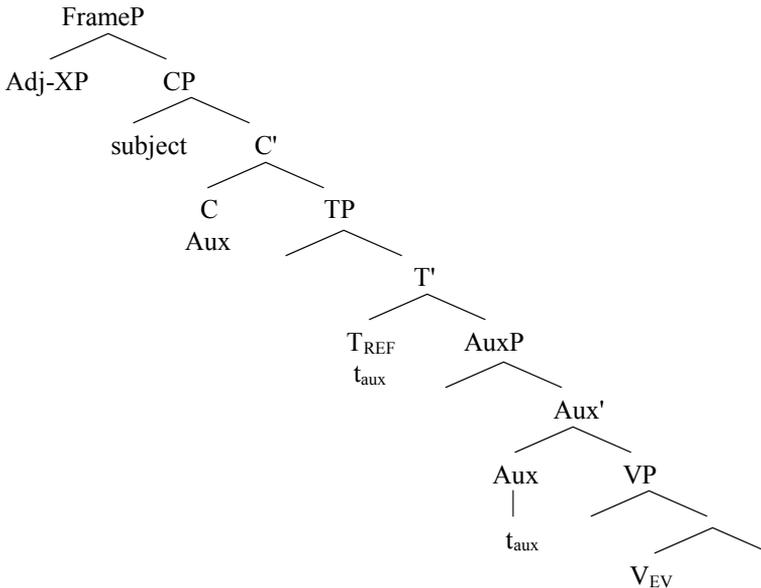
In simple tenses, the head chain is created by the moved lexical verb and thus implicates, V_{EV}, which encodes EvT, hence Adj-XP can modify the EvT as in (17):

(17) **West Flemish**

```
              FrameP
             /      \
        Adj-XP       CP
                    /   \
               subject   C'
                        /  \
                       C    TP
                     verb     \
                               T'
                              /  \
                         T_REF    VP
                         t_verb     \
                                     V'
                                    /  \
                                 V_EV
                                   |
                                 t_verb
```
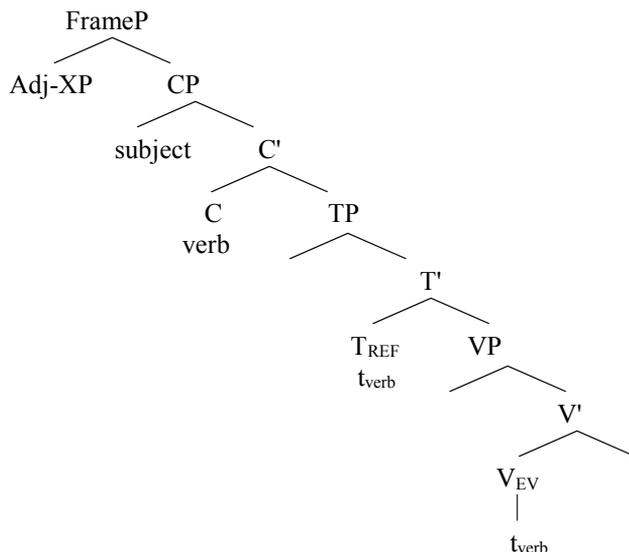
6. The verb always leaves IP in V2 clauses: a cartographic rein-terpretation

So far, I have been assuming the standard model of clause structure with TP dominated by CP, leaving aside further articulations of the left periphery because these were not relevant for the argumentation. I have cast the difference between the derivations of StD and WF subject-initial V2 in terms of whether the verb does or does not leave the TP domain and lands in C, a proposal in line with Travis (1984) and Zwart (1997a,b).

However, representations such as (10b) for subject-initial V2 obviously conflict with the convincing arguments put forward in seminal work by Schwartz & Vikner (1996) that "the verb always leaves IP in V2 clauses". Observe that with a full implementation of the articulated cartographic approach to the left periphery (Rizzi 1997), however, this conflict disappears and representations (10) and (11) can be reconciled with the spirit (if not the letter) of Schwartz & Vikner's (1996) position, while retaining the

findings on micro-variation in the derivation of subject-initial V2 explored in Postma (2011, 2013).

Let us adopt the articulated left periphery developed for V2 languages by Haegeman (1996), Poletto (2013) & Wolfe (2015, 2016), as endorsed in Haegeman & Greco (2018a). Core ingredients are the idea that the left periphery minimally encodes illocutionary force and finiteness, as represented by the two core left peripheral functional heads Force and Fin, which respectively constitute the top layer and the bottom layer of an articulated CP. Discourse-related functional layers such as FocP or TopP are sandwiched between ForceP and FinP. Following Wolfe (2016), I assume that in the Germanic languages under discussion the V2 syntax is played out in relation to Force and Fin.

Representations (10) and (11) above can then be recast as in (18a-c). (10a) for non subject-initial V2 patterns in all varieties of Dutch is replaced by (18a): the verb exits TP and moves to Force via Fin. The first constituent of the V2 pattern moves to SpecForceP via SpecFinP. (10b) for StD subject-initial V2 patterns is replaced by (18b). The contrast between (18a) and (18b) retains the asymmetry between non subject-initial V2 patterns and subject-initial V2 patterns in that the finite verb remains in a lower position in the latter; differently from Travis (1984) and Zwart (1997a,b), the asymmetry is played out at the level of the split CP. In (18a,b), the finite verb does indeed "leave IP", to use Schwartz & Vikner's wording (1996). WF subject-initial V2 is derived as in (18c), with the finite verb targeting Force.

(18) a. $[_{\text{ForceP}}$ XP $[_{\text{Force}}$V-fin$]$ $[_{\text{FinP}}$ t$_{\text{XP}}$ $[_{\text{Fin}}$ t$_{\text{vfin}}]$ $[_{\text{TP}}$ subject… t$_{\text{vfin}}$ …$]]]$
                                                                                                        (StD; WF)

      b. $[_{\text{ForceP}}$ $[_{\text{Force}}]$ $[_{\text{FinP}}$ subject $[_{\text{Fin}}$ V-fin$]$ $[_{\text{TP}}$ …$]]]$ (StD)

      c. $[_{\text{ForceP}}$ subject $[_{\text{Force}}$V-fin$]$ $[_{\text{FinP}}$ t$_{\text{subject}}$ $[_{\text{Fin}}$ t$_{\text{vfin}}]$ $[_{\text{TP}}$ … t$_{\text{vfin}}$ …$]]]$ (WF)

For the temporal interpretation of adjuncts in SpecFrameP, we would have to assume that the strictly local relation between SpecFrameP and ForceP plays the crucial role in creating the local relation between the initial adjunct and the temporal values generated in the TP domain and which are now available at the level of Fin.

7. Summary

Inverted V3 patterns in which an initial adjunct precedes a V2 root clause with subject-verb inversion are licit in all varieties of Dutch, regardless of whether the adjunct modifies the speech act as a whole or the temporal or modal coordinates of the proposition encoded in the TP domain. The non-inverted V3 pattern, in which an initial adjunct precedes a subject-initial V2 root clause, is restricted. In StD, the pattern is limited to those cases in which the initial adjunct belongs to the class of speech act modifiers. In WF, both speech act modifiers and central adverbial modifiers may constitute the first constituent in a non-inverted V3 pattern; in this pattern, central adjuncts are interpretively.

The starting hypothesis is that in a V3 pattern the initial constituent is main clause external and that its interpretation is regulated by Haegeman & Greco's (2018a,b) strict locality condition. *Ceteris paribus*, the initial constituent modifies the utterance, i.e. the associated V2 root clause as a whole. This construal corresponds to that available for speech act modifiers. Initial central adverbial clauses in V3 patterns can modify the temporal values of the associated root clause provided a local relation can be built between the central adjunct and the temporal coordinates of the root V2 clause. For Haegeman & Greco (2018a,b), this local relation can be attained via the movement of the finite verb to the functional head C/Force, which has the appropriate local relation with the constituent in FrameP.

In non-inverted V3 patterns with the past perfect, only matrix RefT construal is available for an initial temporal adjunct. This restriction follows from the analysis combined with the assumption that RefT is encoded on a head that participates in the head chain created by the moved finite auxiliary, while EvT is encoded on a lower functional head which does not participate in the movement chain. In the simple past tense, the contrast between RefT and EvT readings is neutralised because the tensed lexical verb moves to the left periphery and, as a result, the head encoding EvT also participates in the chain created by the movement of the finite verb.

The chapter also shows how given a cartographic implementation of V2 Schwartz & Vikner's (1996) hypothesis that the finite verb always leaves IP in V2 clauses can be reconciled with an asymmetric derivation of V2 as in Travis (1984).

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Grammatical rules are discrete, not weighted, and not vulnerable

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Abstract

The paper defends the following positions: Grammaticality and acceptability must not be regarded as virtually coextensive. Grammaticality is discrete; acceptability is gradient. Acceptability can be measured directly; grammaticality can only be tested indirectly. Acceptability is a reflex of performance factors interacting with the mentally represented grammatical rule system; grammaticality is a theoretical concept. Acceptability is a theory-independent behavioral property; grammaticality is defined by the cognitively encapsulated grammar, which is the empirical research target of grammar theory.

1. Introduction

The principal point of the paper is this: *Grammaticality* is discrete; *acceptability* is gradient. Grammaticality stands for accordance with grammatical rules and principles of a given language. Arguably, these rules are discrete functions. Acceptability, on the other hand, is a compound result of everything that influences the linguistic behaviour of (native) language users, especially when confronted with judgement tasks. Their results are – as for any complex behavioural task – variable and gradient. Grammaticality, on the other hand, characterizes any expression as either well-formed or ill formed with respect to the rules that apply. Therefore, grammaticality is a yes-or-no quality rather than a matter of more-or-less. If a given expression matches up, it is well formed; if it does not, it is in violation of rules and therefore ill-formed. This is also true for models such as Optimality Theory that employ a technical concept of vulnerable

rules (see Keller 2006). In OT, a grammatical expression may violate lower ranked rules. Nevertheless, each rule applies discretely. It is obeyed or violated discretely. Even in a probabilistic version of OT (Boersma & Hayes 2001), the rules apply discretely. Probabilities are attached to alternative rule rankings.

If a rule of grammar appears to be fuzzy, its fuzziness is not a property of grammar but of the conditions under which the expressions in question are put to use or tested. For a syntactician, the assumption of weighted rules of grammar would be a capitulation in face of the complexities of grammar systems. Weighted rules have their place in language engineering, for instance in AI applications.[1] Linguistic expressions are not "*xy*% grammatical", and the localization of an item in its appropriate syntactic structure is not ruled by any uncertainty principle. It is *conceptual* fuzziness when people don't clearly distinguish between the concepts of (discrete) grammaticality and (gradient) acceptability.

2. Acceptability is not grammaticality and vice versa

Grammaticality cannot be measured directly. What "grammaticality judgement tasks" measure is acceptability. Grammaticality is a grammar-dependent property of a potentially infinite set of expressions. An expression is grammatical if it meets the requirements of the applicable grammar. If it does not, it is not grammatical. What is the 'applicable' grammar? It is the mental knowledge system that enables a native speaker to process a language. The knowledge system is a cognitive 'app' in the ensemble of cognitive modules that cooperate in language processing. Moreover, speakers cannot be expected to be completely uniform in their acceptability judgements because of minimal cross-individual differences in their mental grammars. There is no completely homogenous language community. This notwithstanding, a surprising property of human grammars is their high degree of cross-individual uniformity.

The empirical object of linguistic investigations is the grammar as a cognitively represented knowledge system. It is modelled within a theory of grammar. In language science, the model of the grammar of a particular language is – just as in any empirical discipline – always work-in-progress. The status of such a model is that of a complex scientific hypothesis.

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[1] See e.g. Mohri & Nederhof (2001: 257): "Grammars used in many applications such as those related to speech processing incorporate weights. These weights, which are often interpreted as probabilities, are used to rank different hypotheses for the purpose of dis-ambiguation."

Linguists investigate and test their models of grammar by confronting them with data gained from as many and diverse sources as available: informant judgements, cross-linguistic data, data from psycho- and neuro-linguistics, and so on. When linguists claim to have empirically measured grammaticality, they have measured acceptability, which is then interpreted as a reflex of grammaticality. Therefore, linguists often fail to appreciate the highly indirect relation between acceptability and grammaticality; see Cowart (1997, ch.1) for details. It is virtually impossible to receive full consent from informants even for a stimulus set that contains nothing but grammatical expressions. Conversely, a high percentage of flatly ungrammatical expressions may be rated "acceptable" if the test items are smartly chosen (see section 5 on acceptable ungrammaticality). But even carefully designed test batteries cannot be immunized against a percentage of *false-positive* and *false-negative* outcomes. Statisticians refer to these inevitable test imperfections as type I and type II errors. These errors are caused by various kinds of imperfection, as for instance an – in hindsight – suboptimal test design with unforeseen irrelevant but distracting stimulus qualities, uncooperative informants, distracted informants, informants who partially misunderstand their task, and so on. This is true for small-scale studies as well as for large-scale ones.

3. Vulnerabilities

"Vulnerability" is a multifaceted concept. It can be – and in fact is – construed in several distinct ways. First, vulnerability can be seen as characteristic of *regulative* rules (see Searle 1969:51). Such a rule is something between "should" and "must". For instance, you must not drive faster than the traffic limit, although you can, with the risk of being fined if noted by police. Rules of grammar, on the other hand, are *constitutive* rules. The rules constitute the grammar and the grammar defines grammaticality. If expressions that someone utters are *systematically* ill formed in standard German, this person does not violate rules of standard German but merely speaks another variety of German, as for instance "Kiezdeutsch".[2]

Second 'vulnerable rules' may be interpreted as non-discrete, *weighted* grammatical rules. If one misapplies a case assignment rule in German, the resulting utterance may be felt to be more deviant than ignoring a locality constraint when fronting a phrase to the clause initial position.

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[2] Kiezdeutsch is a denomination for German-based varieties in neighbourhoods with a high proportion of youngsters whose L1 is not German. This is not 'bad German' but rather a social variety of its own.

These 'feelings' are acceptability attitudes. The intensity of these feelings depends on the amount and quality of repair efforts when mapping the stimulus onto its well-formed variant. Finally, 'vulnerable' may be used as a characterization of the *stability* of a rule or a rule system across time and space. This squib will focus on the first two of these three notions.

4. Discrete, not continuous
Let us start with the disputed (non-)discrete status of grammatical rules and principles. In set theoretical terms, grammatical rules may be conceived of as "indicator functions" aka "characteristic functions" for defining the set of grammatically well-formed expressions *E*, given a grammar G. Such a function indicates the membership of an element of *E* by assigning the value 1 to it. All elements not in the set *E* are assigned the value 0. Such a function is a *discrete* function. Correspondingly, a set of data is *discrete* if the values belonging to the set are distinct and separate, that is, non-continuous. This is true for any indicator function. If grammatical rules are discrete functions, they characterize two sets, namely the set of grammatically well-formed expressions and its complementary set. From this point of view, a grammar as the ensemble of grammatical rules and principles of a language L is a complex indicator function for well-formedness in L. It discretely characterizes the set of grammatically well-formed expressions.

   If, on the other hand, a set of data is said to be continuous or gradient, the values belonging to the set can in principle take on *any* value within a specified interval. In the graph of a continuous function, the value points are connected with a continuous line since *every* point in this model is in a meaningful relation to the modelled reality. Continuous data require a *measuring device* for measuring the exact value on a continuous scale.[3] If grammatical rules are *non-discrete*, that is, continuous, every expression gets assigned some value on a scale, let us say the set of rational numbers between 0 (= fully deviant) and 1 (= fully acceptable). To say that the data quality is continuous does of course not presume that the data qualities spread over the whole interval of a scale. Typically, they are scattered around attractor regions, that is, potentially overlapping regions that are characteristic of acceptable vs. unacceptable stimuli.

   Let us recapitulate. If grammatical rules are discrete functions, the set of values for the grammaticality of linguistic expressions consists of

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[3]   The exact position on a temperature scale can be measured with a thermometer. Featherston (2008) has proposed a linguistic "thermometer method" for acceptability testing.

only two values, namely 0 and 1. If grammatical rules were continuous functions, they could in principle map expressions on an infinite set of numerical values, ranging for instance between zero and one.

Let us assume an expression is mapped on the value 0,683. What could this mean? Surely, it does not mean that the expression is 68,3% grammatical and 31,7% ungrammatical. A source of such a value could be this. When 1.000 persons are confronted with a given expression and 683 of them rate the expression as acceptable, it is characterized by the value 0,683. Another interpretation might be as follows: A single person is confronted with 1000 instances of a type of construction, for instance the middle of the German causative construction in combination with and without a semantically empty *es*[4] (it) as subject. This person opts for *es* in 683 cases, and in 317 instances for not using *es*. Such a result might be a basis for assigning the value 0.683 to the construction with *es* and the value 0.317 to the construction without *es*. Another possibility is this: The decimal number could be the mean of the z-scores of a magnitude-estimation task. The group result characterizes the given expression as half way between acceptable and deviant.

Such numbers are measuring results. Without a meaningful model, numbers are nothing but data points. They only represent the outcome of a measurement. In the worst case, these are values of a random distribution. One thing should be clear, however: It is pointless to assume for an item that its grammaticality value is 0,683.

Another intricate property of acceptability judgements is the fact that they are graded even across fully grammatical stimuli.[5] The examples (1a,b) and (2a,b) are corpus data. In (1a), the accusative is licit, but only in the presence of a semantically empty subject, viz. *es* (it). Therefore (1c) is deviant. On the other hand, the nominative (1b) is incompatible with the presence of a subject *es*. That's why (1d) is deviant (see Haider 2019).

(1) a. Hier lässt es sich den$_{Acc}$ Sommer gut verbringen.
       here lets it REFL the summer well spend
       'The summer can be spent well here.'

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[4] Example: Damit lässt (*es*) sich gut leben [it-with lets (it) itself well live – 'One may live well with it']

[5] For instance, Schachter and Yip (1990) found that both English natives as well as L2 learners rate long-distance subject wh-fronting lower than object fronting, although both constructions are grammatical.

b. Hier lässt sich   der$_{Nom}$ Sommer gut   verbringen.
    here lets   REFL   the   summer   well   spend
    'The summer can be spent well here.'

c. *Hier lässt sich   den$_{Acc}$ Sommer gut   verbringen.
    here lets   REFL   the   summer   well   spend

d. *Hier lässt es sich   der$_{Nom}$ Sommer gut   verbringen.
    here lets   it REFL the   summer   well   spend

First of all, (1a,b) are expected to receive significantly higher acceptability rates than (1c,d). Second, (1c) is likely to be rated less deviant than (1d). On the one hand, there are easily available repair options for the missing *es* in spoken language,[6] and on the other hand, *es* is optional in the intransitive construction (see fn. 4). Third, the construction (1a) is infrequent[7] and employed with a smaller class of verbs as illustrated in (2a,b) vs. (2c,d), hence this construction is likely to receive lower acceptability ratings than (1b).

(2) a. Bei Kastanien und Glühwein   lässt *es*   sich   den$_{Acc}$
        with chestnuts and mulled-wine lets   it   REFL   the

        Alltagsstress   vergessen.[8]
        daily-grind-stress   forget
        'With chestnuts and mulled wine, the daily-grind-stress is easy to forget.'

    b. So   lässt *es*   sich   den$_{Acc}$ 19. Geburtstag   feiern.[9]
        so   lets   it   REFL   the   19th birthday   celebrate
        'In this way, the 19th birthday is fine to celebrate.'

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[6] In colloquial speech, *es* (it) gets reduced, cliticized, and phonetically amalgamated with the sibilant of the following reflexive.

[7] A Google search (Aug. 1st, 2019), restricted to news sites, produced 4680 hits for „*Hier lässt sich der*", but only 270 hits for "*Hier lässt es sich den*".

[8] https://www.schmalzerhof.it/winter.html

[9] https://www.ok-magazin.de/people/news/sexy-bikini-birthday-bash-so-feierte-kylie-jenner-ihren-19-42415.html

c. ?Mit diesem Köder lässt *es* sich auch einen$_{Acc}$
   with this bait lets it REFL *also a*

   großen Fisch fangen.
   big fish catch

d. ?Über dieses Thema lässt *es* sich nur einen$_{Acc}$
   about this topic lets it REFL *only a*

   kurzen Vortrag halten.
   short lecture give

How to deal with such results? Is (1a) in a measurable relation to (1b)? Is (1b) 'more' grammatical than (1a) or (2a,b)? Obviously, such interpretations would be pointless. Both, (1a) and (1b), are grammatical, even if one may be preferred over the other. If informants prefer (1b), this may be the effect of promoting a more familiar construction. The degrading effect is stronger for (2c,d), for reasons that have not been investigated yet.

Let us proceed to more general types of confounds, namely "acceptable ungrammaticality"[10]; see Frazier (2015); Haider (2011), Phillips et. al 2011) and overstrained test subjects. (3a,b) are German examples of acceptable ungrammaticality, that is, of expressions that tend to be rated as acceptable although they are ungrammatical. In fact, these are last-resort kind of responses in a grammatical rule conflict, as will be explained.

(3) a. einen [groß$_{A°}$ genugen]$_{AP}$ gemeinsamen Nenner[11]
    a *big enough*$_{Acc}$ *common*$_{Acc}$ *denominator*

   b. ein [höher$_{A°}$ [als erwartet-er]]$_{AP}$ Prozentsatz[12]
    a *[higher [than expected*$_{Nom}$*]] percentage*

Speakers who use or accept (3a,b) apparently accept it because it is the less deviant option in comparison to the variant (4), with a correctly inflected head but violating a strict grammatical requirement, namely adjacency between the head of the pre-NP attribute and the NP.

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[10] "Acceptable ungrammaticality is a theoretical notion whereby the best theory of grammar and best theory of processing conspire to account for how an utterance not generated by the grammar nevertheless tends to be accepted by native speakers at least under some conditions." (Frazier 2015: 8).

[11] https://www.welt.de/debatte/kommentare/article171405553/Die-CSU-ist-anders-als-alle-anderen-Parteien.html

[12] https://www.aerztezeitung.de/praxis_wirtschaft/unternehmen/article/639430/roche-stoppt-entwicklung-taspoglutid.html

(4) a. *einen [groß*en*$_{A \circ}$ genug]$_{AP}$ gemeinsamen Nenner
       a   *[big*$_{Acc}$ *enough]*   *common*$_{Acc}$ *denominator*

   b. *ein   [höher*er*   [als erwartet]]$_{AP}$ Prozentsatz
       a   *higher*$_{Nom}$ *than expected*   *percentage*

When uttering (3a,b), people are flouting rules of grammar, but they don't do it wilfully. They do it because they are at a loss. They use such versions as the grammatically least harmful way of escaping a grammatical rule conflict they find themselves entangled in (Haider 2018a). It is a catch-22 dilemma. On the one hand, the head of an attributive AP must be adjacent to the NP. On the one hand, *genug* (enough) or a comparative phrase must follow the head, thereby destroying adjacency.

These two requirements cannot be met simultaneously. So, speakers 'cheat'. They put agreement inflection on an adjacent, inflectable item as if it were the head of the AP, which it is not. (3a,b) contain an inflected, NP-adjacent item and therefore they are judged as less deviant than the ungrammatical (4a,b).

These examples are instances of flouting a rule under special circumstances. Speakers who utter (3a,b) do not employ a *vulnerable* rule of grammar; they *interfere* with a rule of grammar. They use an expression despite its ungrammaticality. However, this does not constitute a case of a "vulnerable rule", just like re-catching a dropped ball before it hits the ground is not a violation of the law of gravitation. If the ball remains above the ground, it does so only because of the energy one exerts. And the expressions in (3) exist only because people invest energy in transgressing a rule of grammar.[13]

Some speakers even try to obey the incompatible demands and resort to (5b). They inflect the adjectival head *and* the adjacent item. Thereby, they try to meet both demands, that is, the adjectival head receives its agreement inflection as the head of the AP, and in addition, an NP-adjacent head receives the same agreement morphology and is turned into the fake head of the phrase. If such an item is not inflectable, the result is robustly unacceptable (5c). It is psycho-linguistically intriguing that speakers resort to 'solutions' such as exemplified by (3) and (5b) at all, since at least in the case of an intervening comparative PP, removing the intervener by extraposing it, as in (5d), would be the perfect solution.

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[13] Such efforts are measurable, for instance, in ERP-experiments.

(5) a. *ein [höher*er*   [als erwartet]]$_{AP}$ Prozentsatz
     a   *[higher$_{Agr}$*   *[than expected]]*   *percentage*

    b. #ein [höher*er*$_{Agr}$ [als erwarte*ter*$_{Agr}$]]$_{AP}$ Prozentsatz[14]

    c. *ein [höher*er*   [als letztes Jahr]]$_{AP}$ Prozentsatz
     a   *[higher*   *[than last year]]*   *percentage*[15]

    d. ein [höher*er*]   Prozentsatz   [als erwartet]]$_{AP}$
     a   *[higher$_{Agr}$]*   *percentage*   *[than expected]*

If informants rate (3b) and (5b) in the range between acceptable and mildly deviant, such a rating is not a grammaticality judgement. Informants do not judge 'grammaticality'; they gauge 'acceptability'. If they end up with a choice between two deviant options, the least deviant one will be picked and rated as (nearly) acceptable. This behaviour must not be misinterpreted as a well-formedness vote. There is no need for a grammar that assigns some value between 0 and 1 to an utterance like (3a,b). They are ungrammatical. The fact that they nevertheless tend to be regarded as at least marginally acceptable is not a fact about grammar but a fact about putting grammars to use, that is, about acceptability.

Bech (1963) described an unavoidable grammatical catch-22 dilemma, that is, a rule constellation without escape. He was the first to realize that grammars may entail rule conflicts. The title of Bech's paper, *Grammatische Gesetze im Widerspruch* (grammatical laws in contradiction), is a succinct declaration of the topic. His prime example is a conflict in German infinitival IPP constructions (= infinitivus pro participio, aka *Ersatzinfinitiv*), illustrated in (6). On the one hand, the infinitival marker *zu* (to) must occur on the final verb of an infinitival clause.[16] On the other hand, a clause-final auxiliary like *haben* ('have') must be preposed across modals and other verbs. This is known as the IPP construction. (6a) is an example in which the trigger auxiliary, viz. *haben* (have), is finite. The fully parallel infinitival counterpart (6b) is ungrammatical because of the positioning of *zu*. In German, unlike Dutch, the infinitival marker of the infinitival clause

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[14] For example: http://www.patent-de.com/20000224/DE19856341C1.html

[15] Here is a single corpus find with a 'fake' Saxon genitive: "The wholesale price indices registered a higher-than-last-year**s** rise".

[16] This is a peculiarity of German. In Dutch, *te* is positionally unrestricted: "*te* hebben moeten doen" (to have must$_{Inf}$ do). German: "hat$_{finite}$ tun müssen" vs. *"*zu* haben tun müssen" – #"haben tun *zu* müssen".

has to occur clause-final. In (6c), *zu* occurs on the final verb, as required, but it is attached to the wrong verb. It ought to be attached to the very same verb that is the finite verb in the corresponding finite clause (6a), namely *haben*.

(6) a. dass man das Problem nicht *hat* beseitigen können / beseitigen *hat*
       that one the problem not has$_{Agr}$ resolve can$_{Inf}$ / resolve has$_{Agr}$
       können
       can$_{Inf}$
       'that one was not able to resolve the problem'

   b. *ohne das Problem *zu* haben beseitigen können   / *beseitigen *zu*
       without the problem to have resolve can$_{Inf}$ / resolve to
       haben können
       can$_{can}$ have

   c. #ohne das Problem haben beseitigen zu können[17] / beseitigen
       without the problem have to resolve can$_{Inf}$ / resolve have
       haben zu können
       to can$_{can}$

(6c) is generally rated better than (6b) and is in fact recommended by prescriptive grammarians. In several elicitation tests with freshman students of linguistics, however, more than a third of the test subjects turned out to be unable to produce a result like (6c). They capitulated (see Haider 2011). This construction apparently is not part of the competence of native German speakers, even after more than twelve years of literacy schooling. Likewise, professional writers avoid the infinitival IPP construction. The novel *Buddenbrooks* by Thomas Mann, for example, does not contain a single token of an infinitival IPP construction although in this novel, the *finite* IPP construction is used frequently. The replication[18] of a corpus search reported in Haider (2011: 249) reproduced similar results. The finite IPP construction is frequent, the infinitival one ranges between extremely

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[17] "einen Übelstand, mit dem man sich schon öfter beschäftigt hat, ohne ihn indes bisher *haben beseitigen zu können*" (https://archive.org/stream/bub_gb_Vb0rAQAAIAAJ/bub_gb_Vb0rAQAAIAAJ_djvu.txt)

[18] Google search, restricted to „books" (25.8.2018): „nicht *hat* übersehen können": 176 hits; „*haben* übersehen zu können": 1; „*nicht* hat vermeiden können": 814; „*haben* vermeiden zu können": 4; „nicht *hat* vermeiden lassen": 314; „*haben* vermeiden zu lassen": 0. „nicht *hat* sagen dürfen": 176; „*haben* sagen zu dürfen": 0. „nicht *hat* mitmachen müssen": 48; „*haben* mitmachen zu müssen": 1.

rare and non-existent. So, it is easy to agree with Gunnar Bech that (6c) merely is a compromising way out of a dilemma. It is an 'official' case of acceptable ungrammaticality.

5. Acceptable ungrammaticality

Acceptable ungrammaticality is a *psycholinguistic* fact. Its explanation has to be sought in performance, not in competence, that is, not in the *grammar* of a given language. These phenomena tend to be underrated and overlooked, but they should be seriously taken into consideration. Acceptability and grammaticality are not coextensive. In fact, they determine the 4-cell matrix in Table 1 (Haider 2011: 224). In addition to "grammatical & acceptable" and "ungrammatical & unacceptable", there are two more cells. Garden path sentences are examples of *grammatical unacceptability*. The converse is *acceptable ungrammaticality*. A garden-path expression triggers a false-negative outcome whereas acceptable ungrammaticality is an instance of a false-positive result. Informant testing gathers data in all four categories, but quite a few linguists[19] tend to map them on just two of the four cells, namely acceptable = grammatical vs. unacceptable = ungrammatical. This may spoil the results.

	GRAMMATICAL	UNGRAMMATICAL
ACCEPTABLE	fully ok	*acceptable ungrammaticality*
UNACCEPTABLE	*garden path, memory overload*	fully deviant

Table 1. The (un)grammaticality & (un)acceptability matrix

Let us turn now to a case that is one of the trickiest candidates for reliable testing. In German, for a sizeable class of verbs, infinitival complements come in two structural varieties (Haider 2010: 311-313). A given clause may either contain an infinitival complement *clause* (= bi-clausal) or the very same infinitival verb may be part of the *verb-cluster* of a *simple* clause (= mono-clausal). Passivization will therefore produce two different results. In the bi-clausal structure, the case of the direct object of the infinitival verb will be unaffected by passivizing the matrix clause. In the mono-clausal variant, however, the case of the direct object will switch from accusative to nominative since it is an instance of the regular

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[19] They are easy to identify by their wording. They usually report their test results as results of *grammaticality* tests, rather than acceptability tests.

passive applied in a simple clause.[20] In the verb-cluster construction, the object of the infinitival verb is the object in a simple clause with a complex verb cluster and so it is treated like any direct object in passivization. For example, when *versuchen* (try) is passivized (7a), the case of the object of the clausal infinitive is not affected and remains accusative. The other option is verb clustering (7b). The infinitival verb is part of the verb cluster and there is no embedded clause. Therefore, the object is the direct object of the clause. If passive is applied to such a construction, the direct object of the infinitival verb is assigned nominative just like in any simple clause with a passivized transitive verb (cluster).

(7) a. dass [den$_{Acc}$ Text zu entziffern]$_{clause}$ versucht wurde
         that [the   text to decipher]   tried   was
         'that an attempt was made to decipher the text'

   b. dass der$_{Nom}$ Text [zu entziffern versucht wurde]$_{V-cluster}$
       that the   text [to decipher   tried   was]

In many instances of these constructions, a given serialization is structurally ambiguous, as in (8a,b). Consequently, the passive of such utterances (8c) comes in two variants, either with singular subject agreement [= passive of the bi-clausal variant (8a)] or with plural subject agreement [= passive of the mono-clausal variant (8b)]. However, there are contexts that are compatible with only one of the two options, such as (8d,e). Fronting a cluster as in (8d) presupposes a cluster construction, whence the passive-triggered switch to nominative, shown by agreement. On the other hand, interveners such as propositional-attitude particles like *ja* (indeed) are cluster-external. So, (8e) must be bi-clausal and passive would not affect the object of the infinitival clause.

(8) a. dass jemand   [die Kollegen$_{Acc}$ rechtzeitig zu informieren]$_{clause}$
         that somebody   [the colleagues timely   to notify]

         versucht hat
         tried has

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[20] The descriptive term for these data, namely "long-distance passive", is a misnomer. It is the regular passive applied to the *mono*-clausal infinitival construction, that is, the verb-cluster construction. The *bi*-clausal infinitival construction does not admit any long-distance passive. Passive is clause-bound in each case (Haider 2010: 285, 319).

b. dass jemand   die Kollegen_Acc rechtzeitig   [zu informieren
    that somebody [the colleagues timely   [to notify

    versucht hat]_cluster
    tried has]

c. dass die Kollegen_Acc/Nom   rechtzeitig   zu   informieren
    that the colleagues   timely   to   inform

    versucht wurde_Sg.   /wurden_Pl.
    tried   was   /were

d. [Zu informieren versucht] wurden_Pl. die Kollegen_Nom rechtzeitig
    [to notify   tried]   were   the colleagues   timely

e. dass die Kollegen_Acc rechtzeitig zu informieren *ja* versucht wurde_Sg.
    that the colleagues   timely   to notify   PRT tried   was

In *elicitation* tasks in class room, students easily identify the adequate case and agreement forms. In *evaluation* tasks, however, the very same groups behave differently. Some accept both the plural as well as the singular form in (1d), which indicates that they treat *die Kollegen* (the colleagues) alternatively as nominative or accusative. There usually are others who accept plural agreement also in (8e). Why that? Apparently, such a task strains the subjects when they have to juggle with case alternatives in order to arrive at a decision for their metalinguistic judgement. So, the decisive question is this. Is this a task artefact or is case assignment in verb cluster construction a vulnerable rule? It is not. What is vulnerable is the judgemental capacity of informants. An elicitation design in a cloze-test format is likely to avoid such artefacts. Production, viz. elicitation, is less vulnerable than acceptability judgement. Production targets at a *single* utterance; acceptability judgements involve choices between potential variants of a stimulus.

The examples discussed above are examples of rules of the grammar of a particular language. As rules, they are not vulnerable and they are not continuous. Nevertheless, language users may lose control in complex expressions and they may have trouble in applying them under test conditions. These influences are real, but they are grammar-external.

6. Rules & grammar theory
Let us turn now briefly to grammar theory. Since the Neogrammarian era, it has been a declared aim of linguistics to become a branch of science as a

discipline that is able to uncover universal laws. Since the very same era, this aim has been disputed. The anthropologist Martin Joos is well remembered for his notorious dictum that languages "differ from each other without limit and in unpredictable ways" (Joos 1957: 96). Could one prove this? What would be compelling evidence? Imagine a biologist venturing such a claim: Organisms may vary without limit and in unpredictable ways? Would the scientific community have ever taken this seriously?

Presently, Construction Grammar (CxG) disputes the existence of cross-linguistic structural invariants. Croft (2013: 210): "The basis of cross-linguistic comparison for grammatical structures must be their function, because of the great structural diversity of languages (the structural properties are essentially language-specific)." Goldberg (2013: 16): "Languages are acknowledged to vary in wide-ranging ways. The cross-linguistic generalizations that do exist are explained by domain-general cognitive processes or by the functions of the constructions involved."

If structural properties were language-specific indeed, there would be no substance for cross-linguistic structural laws, of course. However, the absence of evidence is not evidence for the absence, especially if evidence is sought in areas where there is none. Functionalists fail to detect structural 'laws' since they use 'functions' as sorting criterion. However, a given function may be implemented by means of completely different structures. So it must not come as a surprise that such an investigation strategy fails to identify cross-linguistically stable patterns. Communicative functions do not determine the *structural* properties of the expressions employed.[21] This situation is well known in biology. The function of flying or the function of oxygen metabolism would group together entirely different structures. Therefore, biologists do not compare functions; they compare structures. Biologists sort *homologically*, not *analogically*. CxG researchers sort analogically and consequently fail to uncover invariants since cross-linguistic invariants are properties of homological and not analogical areas of grammar.

In fact, the properties of linguistic *structures* are cross-linguistically narrowly constrained. This tends to be overlooked in functional typologies. There are empirically well-grounded candidates for cross-linguistically

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[21] The correlation between structures and functions fails in both directions. Functions do not determine structures, and structures do not determine functions, but they restrict them. Question formation, for instance, employs diverse grammatical structures, which are subject to cross-structural constraints (cf. Haider 2010, ch. 5), though. On the other hand, interrogative constructions are functionally diverse; see Newmeyer (2010: 302-303).

predictable structural constraints, see Haider (2015a), (2018); Haider & Luka Szucsich (2018).[22]

Both, languages and living organisms are products of ongoing processes of evolution.[23] For organisms, it is evolution on the level of genetic representations. For languages, it is evolution on the level of cognitive representations of linguistic structures and rule systems (Haider 2015b). Even if the theories of biological evolution and the evolution of grammars are not disposed to *predict* the outcomes of on-going evolution, they are able and obliged to characterize the viable and unviable paths of evolutionary changes and thereby *delimit* possible and impossible developments (cf. Newmeyer 2005).

What would be an example of a possible versus an impossible grammatical development? If the grammar of Russian changed and became similar to the grammar of English, this would be a predictable change from a language with undetermined directionality of (verbal) heads to an SVO language (Haider & Szucsich 2018). Concomitantly, the inflection system is likely to get reduced, if not eliminated. An impossible change is the inverse, namely a change from an English-type to a Russian-type grammar. No known English-like language has ever developed into a language like Russian, with 'free' V-Positioning and the recruitment of rich nominal and verbal inflection. Why is that?

There seem to be irreversible clines in Grammar change. For instance, properties supported by the *declarative* memory system (e.g. grammatical functions differentiated by morphological paradigms) are replaced by properties supported by the *procedural* memory system (e.g. grammatical functions differentiated by structural positions), but not vice versa. Cognitively, applying a structural rule seems to be less costly than memorizing, retrieving and controlling an amount of complex morphological markers, which typically get disrupted and distorted by phonological changes. However, this is only a promoting factor in the

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[22] Here is a small selection: (a.) The filler of filler-gap constellations precedes (and c-commands) the gap. In other words, displaced heads or phrases are fronted rather than postponed. (b.) In correctly identified SVO languages, there is an obligatory, VP-external, pre-verbal structural subject position. In the absence of a subject phrase, the position is filled with an expletive. In VSO and in SOV languages, there is no obligatory subject position and therefore no room for subject expletives. (c.) Left adjuncts of head-*initial* phrases must be head-adjacent. (d.) Head-initial phrases are strictly ordered; head-final phrases allow for order variations.

[23] Evolution happens whenever the *variants* of a *self-reproducing* system are exposed to constant and blind *selection*.

cognitive evolution of grammars, not a causal one, lest every Slavic language would by now resemble Bulgarian, in its morphologically deprived modern form.

A crucial factor seems to be the *irreversibility of entropy-changing* processes that holds also for cognitive information processing systems. Morphological decay increases (local grammatical) entropy,[24] that is, the form of the given NP is compatible with more grammatical functions than a form with a clearly marked case would. A stable structural system of grammatical functions renders possible and invites the loss of morphology.

The reversal – decrease of entropy[25] in a system with little or no grammatical morphology by introducing morphological distinctions – is impossible in closed[26] systems. Morphological decay destroys information. Such information cannot be regained. Morphological decay is an irreversible process. It is safe, for instance, to assume that a language like Chinese will never develop a grammar with a morphological inflection system that parallels Latin or Sanskrit. Nevertheless, typologists consider the possibility of a typological cycle (Crowley & Bowern, ch. 12) that proceeds from agglutinating via inflecting to isolating and then back again. Igartua (2015:676), however, emphasizes that "language-external causes (contact influence of a particular kind) […] commonly lie behind the reverse morphological change." There is no cycle but only a one-way road from inflected to isolating languages. The vulnerable part shows in morphological decay as a phonologically caused collateral 'damage'.

Let us finally ask whether a cross-linguistic grammatical 'law' could be a vulnerable law. Could this simply mean that is not operative in the totality of its domain of application? In other words, could the law allow for "exceptions"? In science, such a law would not be considered a universal law. Exceptions invalidate a law (and do not "prove the rule", contrary to a popular but mistaken[27] saying). If there is an anomaly, this cannot be captured by an exception allowance for the law. An "exception"

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[24] Roughly, entropy can be thought of as the amount of variance the system allows.

[25] Max Planck (1926): "Every process occurring in nature proceeds in the sense in which the sum of the entropies of all bodies taking part in the process is increased. In the limit, i.e. for reversible processes, the sum of the entropies remains unchanged."

[26] Linguistically, a closed system is a language that develops without significant contact language influences.

[27] From Cicero's defence of L. Cornelius Balbo (56 B.C.): *Exceptio probat regulam in casibus non exceptis* – The exception confirms the rule in the not excepted cases. This means that a granted exception to a regulation *proves the existence* of the regulation, but it does not mean that a rule is *confirmed* by an exception.

is nothing but confuting evidence. In this case, either the law is wrong or there is a third factor that intervenes. This third factor must be detectable and verified.

In science, a famous example is the apparently exceptional orbit of Uranus detected in 1821. Its orbit deviates from Newton's laws of motion and gravitation. There is a discrepancy of 43 seconds of arc per century. In 1846, Urbain Le Verrier postulated a perturbing planet – Neptune – and calculated the position of this unknown planet. Equipped with this information, the astronomer Johann Gottfried Galle identified Neptune shortly after and thereby re-confirmed Newton's theory (Lequeux 2013).

Another long-standing problem was the precession of the perihelion of Mercury. The orbit of Mercury does not behave as told by Newton's equations. Again, in 1859, Le Verrier postulated a perturbing factor, namely a hypothetical, tiny planet that he named Vulcanus. However, nobody has ever been able to spot it. In 1916, Albert Einstein showed that the theory of general relativity accounts for the Mercury anomaly. In fact, this was the only available and immediately positive evidence for his theory at that time (Lambourne 2010, ch. 7).

These two episodes show that an anomaly may be negative or positive. If the original theory can be shown to be correct, it is positive; if not, the original theory is in danger. It is very likely to be refuted by the anomaly. Newton's theory turned out to be a special case within the theory of general relativity. As a *universal* theory of moving bodies in the universe, Newton's theory is incorrect.

In general, assuming an intervening third factor as account for an anomaly is a licit initial move. However, this assumption remains just an auxiliary hypothesis protecting a potentially wrong theory until is has been thoroughly tested and shown to be correct on the basis of independent evidence. Otherwise, the auxiliary hypothesis is 'vulcanic'.[28]

Theoretical principles are *universal* principles by their very nature. A scientific law is a universally valid generalization. For *every* instance within the domain of application of the universal principle, the outcome

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[28] Here is an example from grammar theory: In Generative Grammar, a Vulcanus-approach for saving an allegedly *universal* EPP law (= Every clause has a subject) is the concept of an „empty expletive." This empty item is deemed to prevent a subject position from ending up as empty [sic!]. However, any Romance pro-drop language contradicts this assumption. In all these languages, a clause with the standard passive applied to an intransitive verb is ungrammatical. In the non-pro-drop languages such as French, an expletive pronoun saves grammaticality. Consequently, an empty expletive would save intransitive passives in pro-drop languages (Haider 2019).

must match the prediction. A universal principle cannot have exceptions, by definition. If there were exceptions, it would not be a universal but merely a partial description of some facts.

In sum, grammars establish *discrete* sets. An expression is either grammatically well-formed or it is not. The behaviour of human beings, who put their grammars to use, is *continuous*. The grammatical capacities are but one module of our rich cognitive inventory. What we observe in experiments is the activity of a complex system of cognitive capacities and the outcome is a superposition of various layers of cognitive decision-making.

It is a demanding task for theoretical and experimental linguists to disentangle and factorize the contributions of the various contributing modules. It is extremely difficult to isolate the contributions of a single module, that is, the grammar module. To take an entire data mishmash at face value and conclude that grammatical rules are basically fuzzy is as easy as unenlightening. Grammatical rules are not fuzzy. It is the language user who is fuzzy. A scientific approach factorizes the observed data and, if successful, demonstrates how the initially perplexing data are an understandable result of the complex interaction of less complex subsystems.

7. (In-)Stability of rule systems

Finally, 'vulnerable' may be understood as 'unstable'. Some rules may be said to be vulnerable because they tend to be replaced by other rules in dialectal varieties or in diachronic progression. Typical examples are rules that have been conserved or imposed by normative efforts and do not fit into the given grammar system. In German, for instance, double accusative (Acc-Acc) verbs have been enforced by prescriptive grammars. In today's colloquial German, for instance, *lehren* ('teach') is not used as a double accusative verb, contrary to the prescriptive norm. (9a,b) are excerpts from corpora of 18th century German. In present day standard German, the dative pronouns in (9b,c) have to be accusative pronouns, but colloquial German prefers Dat-Acc. (9c) is a dialectal example (North-Middle Bavarian), with the Standard German rendering in (9d). In the permissive *lassen* ('let') construction (9c), Bavarian-Austrian dialects keep using Dat-Acc instead of standard German Acc-Acc.

(9) a. Man   lehrte   mir_{Dat}   die Rechenkunst.
     one   taught   me   the numeration

   b. Sie   ließ   ihm_{Dat}   wissen, dass sie   glücklich entbunden   sei.
      she   let   him   know   that she   happily   delivered   has

   c. Loß   ia'n do   heiraddn, waun's'n   heiraddn   wü
      let   her_{Dat}-him_{Acc} just marry,   if-she_{Nom}-him_{Acc} marry   wants

   d. Lasse sie_{Acc} ihn_{Acc} doch   heiraten, wenn sie ihn   heiraten will.
      let   her_{Acc}-him_{Acc} just   marry,   if-she_{Nom} -him_{Acc} marry   wants

Another outlier is *brauchen* ('need') as the only modal verb that selects a *zu*-infinitive (10a) rather than the bare infinitive. In spoken German, this verb is treated as a regular modal, that is, a verb that selects a bare infinitive (10b).

(10) a. Man braucht das   nicht   *zu* lernen.
         one needs   this   not   to   learn
         'One does not need to learn it.'

     b. Man braucht das nicht lernen.
         one   needs   this not learn
         'One needs not learn it.'

In a more general perspective, the well-known and cross-linguistically recurrent Jespersen-cycle in negation systems (Jespersen 1017, Van der Auwera 2009), for instance, attests a general diachronic vulnerability of the morphological implementation of negation systems based on unstressed affixes and unstressed particles. The interplay between morphological weakening on the one hand and compensatory strengthening (i.e. by means of additional markers) triggered by information structuring on the other hand gears the cycle on a diachronic scale.

8. Summary
What test subjects are processing and judging in 'grammaticality judgement tasks' is the acceptability of stimulus items. An acceptability rating is the aggregate of a number of independent factors. Grammatical well-formedness is merely one of these factors. The ingenuity of the experimenters is vital for devising test designs that are in a continuous

relation to the grammatical underpinnings and eliminating distracting factors. Experimental syntax is still an underdeveloped field, unfortunately.

The rules of human grammars are discrete, they are not weighted, and they are not inherently vulnerable. What is vulnerable is the execution of the mentally represented, discrete grammar in language processing. Metalinguistic tasks, such as judging the 'grammaticality' of an expression are particularly vulnerable since language users do not have conscious analytic access to their mental grammar system. Consequently, an (un-) acceptability impression cannot be factorized into its components introspectively. The grammar system is cognitively encapsulated and no language user is able to consciously trace and isolate its effects in the whole ensemble of processes that constitute the language processing capacity.

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Pre-aspiration and the problem of zeroes: Phonological rules can be variable[1]

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Abstract

Pre-aspiration can be defined as a period of glottal friction, [h], which is found in the sequences of sonorants and phonetically voiceless obstruents, as in *map* [maʰpʰ] (e.g. in Welsh English, Hejná 2015). This chapter problematises the default approach to pre-aspiration shown in a number of studies, which assume that unless pre-aspiration applies obligatorily it is subject only to phonetic constraints rather than, at least potentially, both phonetic and phonological constraints. As a result, instances where pre-aspiration reaches the duration of 0 ms, i.e. where it does not apply (*mat* [matˢ]), are typically included in the analyses of its *phonetic* conditioning. This can be problematic in cases where zero values reflect a variable *phonological* rule rather than the output of solely phonetic constraints as such an approach may obscure our understanding of the constraints on pre-aspiration.

> *[I]t may be time to consider the zero*.
> (Tanning 2011)

1. Introduction

This chapter problematises the default approach to a phenomenon known as pre-aspiration (defined in Section 2 below). As Sections 3–4 discuss, pre-aspiration studies frequently assume that, unless pre-aspiration applies

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[1] I am grateful to Anna Jespersen for comments on an earlier version of this chapter. As always, I am also grateful to Yuni Kim, who introduced me to the world of phonological theory and the phonetics-phonology interface through frequent conversations in 2012-2015. I would also like to thank the reviewer.

obligatorily (in 100% of the appropriate contexts), it is subject to phonetic constraints rather than, at least potentially, phonetic and/or phonological constraints.[2] Where pre-aspiration does not apply, its duration is then considered to be that of 0 ms. In other words, instances where there is no pre-aspiration (*mat* [matˢ]) are typically included in the analyses of the *phonetic* conditioning of pre-aspiration, such as the effects of the place of articulation (/p/ vs /t/ vs /k/) or vowel height (high vowels vs low vowels) on its duration. I argue that this can be problematic in cases where zero values do reflect a variable phonological rule rather than the output of solely phonetic constraints. I call this issue the problem of zeroes.

2. Defining pre-aspiration
Pre-aspiration can be defined as a period of (primarily) glottal friction found in the sequences of sonorants and phonetically voiceless obstruents. Instances of pre-aspirated obstruents in English could be transcribed as *map* [maʰpʰ], *mat* [maʰtˢ], and *mac* [maʰkʰ] (e.g. in Welsh English, Hejná 2015). From an articulatory point of view, the phenomenon includes a spread state of the glottis, associated with more lax phonatory settings, in which the intrinsic laryngeal muscles are more relaxed. Some languages can develop a fricative component produced in the oral cavity as well (e.g. Scottish Gaelic – e.g. Bosh 2006/2007). Regarding the voicing aspects of pre-aspiration, we find two different approaches to the phenomenon. Pre-aspiration defined *broadly* can include two phases: a voiced component and a voiceless component. The voiced component, which can be labelled local breathiness, involves the vibration of the vocal folds associated with an increased amount of airflow coming through the glottis as compared to the usual phonatory settings of the relevant pre-aspirating speaker. This results in a laxer phonatory setting, and that in turn results in a breathier phonation. The voiceless component can be labelled pre-aspiration in its narrower sense, and involves voiceless friction. In voiceless pre-aspiration, the vocal folds do not vibrate, but they are close enough to generate glottal friction. Acoustically, the voiceless component lacks periodicity in the acoustic signal in contrast to the voiced component. The voiced component differs from modal phonation acoustically in that it is associated with a more quasi-sinusoidal waveform and friction above the second formant frequencies, and general dampening of the formant structure. The two

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[2] A combination of phonetic and phonological constraints, as well as that of different phonological constraints, is common. See Iosad (2016) for a discussion of rule scattering and further relevant references.

phases, local breathiness and voiceless pre-aspiration, are shown in a spectrogram and a waveform in Figure 1, which displays the acoustic information of the English word *backer* as uttered by a speaker from Aberystwyth, mid Wales.
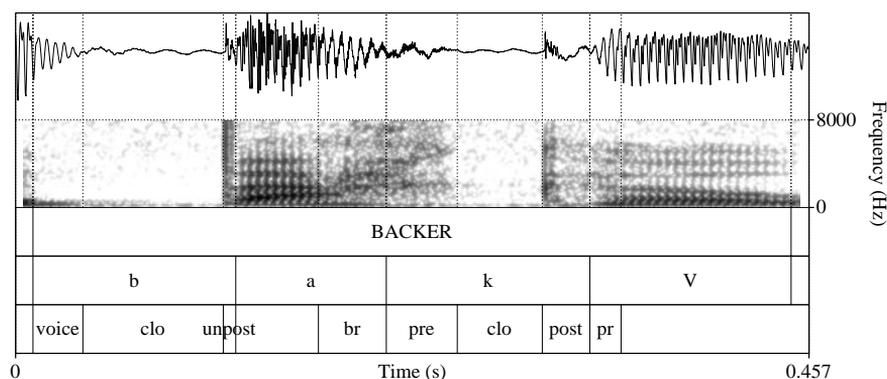
Figure 1. Identification and segmentation of pre-aspiration and local breathiness. 'clo' = closure, 'unpost' = unaspirated release, 'br' = pre-aspiration induced local breathiness, 'pre' = voiceless pre-aspiration, 'post' = post-aspirated release, 'pr' = vowel-initial breathiness, 'V' = unstressed vowel.

Whether both the voiced and the voiceless pre-aspiration phases are indeed treated as two phases of a single phenomenon depends on the individual study of pre-aspiration. Some researchers define pre-aspiration broadly and do not distinguish the voiced and the voiceless components in their analyses (van Dommelen 1999, 2000; van Dommelen & Helgason 2003; Helgason & Ringen 2008; Svantesson et al. 2005; Svantesson & Karlsson 2012; Morris 2010; Ringen & van Dommelen 2013; Stevens 2010, 2011; Stevens & Hajek 2004a, 2004b).[3] Others only target the voiceless component (Hejná & Jespersen 2019; Hejná & Kimper 2019). Some studies do not provide sufficient information for the reader to know if pre-aspiration involves only voiceless or also voiced glottal friction (Helgason 1998; McRobbie-Utasi 2003; Tronnier 2002). Yet we also find studies which focus on *both* components and distinguish these two components in the analyses (Hejná 2015; Kingston 1990; Morris & Hejná 2019; Nance & Stuart-Smith 2013; Ní Chasaide 1985). The last type of pre-aspiration

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[3] Although these authors may distinguish the two in their annotation at some point, they do not report the results separately for the two, nor is it discussed whether these pattern in the same way.

studies typically show that the voiced and the voiceless components can display different patterns regarding their intra- and extra-linguistic conditioning (Hejná 2015; Kingston 1990; Morris & Hejná 2019; Nance & Stuart-Smith 2013; Ní Chasaide 1985).

Pre-aspiration is most frequently analysed in terms of its frequency of occurrence, or the rate of application: How frequently do we find pre-aspiration in the sequences of sonorants and phonetically voiceless obstruents in variety X? The other frequently studied aspect of pre-aspiration is its duration: how long is pre-aspiration? Finally, a limited number of studies also focus on the noisiness of pre-aspiration (Gordeeva & Scobbie 2010; Gordeeva & Scobbie 2013; Morris & Hejná 2019; Nance & Stuart-Smith 2013).

3. Pre-aspiration as a (phonologically) rare phenomenon

It has generally been accepted that pre-aspiration is a (very) rare linguistic phenomenon (see Hejná 2015: 29–31 for an overview). The reported rarity of the phenomenon increases even further if it is *phonological* pre-aspiration which is considered (Clayton 2010: iii). This is because pre-aspiration has been claimed to only be of interest to phonology if it applies in 100% of the cases in which it could possibly apply and if it cues a phonological contrast.[4] These assumptions are problematic not only because of the growing body of evidence showing that there are more pre-aspirating languages than previously thought, but also because the claims related to the rarity of pre-aspiration have sometimes been based on counting only those languages in which pre-aspiration is seen as phonologically relevant. However, establishing phonological relevance is not a straightforward task.

Thus, Ladefoged & Maddieson (1996: 73) state that pre-aspiration is not "a feature [necessarily] required for distinguishing underlying forms". Contrast is undoubtedly at the centre of phonological theory, but how is contrastiveness established exactly? Hejná (2015: chapter 6) engages with this question: Phonological contrasts are well-known to be implemented

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[4] Much of the pre-aspiration literature (e.g. Morris 2010; Wretling, Strangert & Shaeffler 2002) adopts the dichotomy of normative and non-normative pre-aspiration introduced by Helgason (1999b, 2002). It is somewhat unfortunate that Helgason presents us with two rather different definitions of normative and non-normative pre-aspiration. According to the first definition, pre-aspiration is normative if it is phonologically relevant (Helgason 1999a) and obligatory (Helgason 1999b: 1854; 2002: 8). According to the other definition, pre-aspiration is normative if it is used by all of the speakers in a community in the same way (Helgason 2002: 21). The first definition is the one adopted also by Morris (2010) and Wretling, Strangert & Shaeffler (2002).

by a wide range of correlates and cued via a number of cues; as long as pre-aspiration contributes to the implementation of a contrast in some way, we cannot but consider it contrastive. However, pre-aspiration has been traditionally described as contrastive only in Icelandic, Faroese, Scottish Gaelic, and Lule Sami (Ladefoged & Maddieson 1996: 70). Silverman (2003) adds three more languages in which pre-aspiration is contrastive, including Chamicuro, Oraibi Hopi, and Tarascan. In addition to the contrastively pre-aspirating languages mentioned in Ladefoged & Maddieson (1996) and Silverman (2003), pre-aspiration has more recently been found to correlate with fortis as opposed to lenis plosives[5] in Aberystwyth English (Hejná 2016), Manchester English (Hejná & Kimper 2019), Scottish English (Gordeeva & Scobbie 2010, 2013), in the speech of 5 speakers representing Canadian English, Irish English, Welsh English, and SSBE (Hejná & Jespersen 2019), various dialects of Norwegian (van Dommelen 1999, Ringer & van Dommelen 2013), San Martín Itunyoso Trique (DiCanio 2012: 252–254), Central Standard Swedish (Helgason & Ringen 2008), and Bethesda Welsh (Morris & Hejná 2019). Pre-aspiration has been investigated as a potential cue of the fortis-lenis contrast for Norwegian (van Dommelen 1998) and Northern England English (Hejná & Kimper 2019) and has indeed been found to function as a cue to the contrast in these two languages. Stevens & Hajek (2004a) also present evidence of pre-aspiration occurring in fortis geminate plosives but not the lenis ones in Italian.

Contrastiveness is nevertheless not the only gate to the realm of phonology. It has been established that variable outputs can be due to variable phonological rules (e.g. Antilla 2006; Coetzee & Pater 2011; Guy 1999[1]; Sebregts 2014: chapter 6, and the references therein). This means that even if a phenomenon applies in fewer than 100% of the cases, it can still be subject to phonological constraints. For instance, Coetzee & Pater (2011) mention t/d-deletion, as in *west* being pronounced as [wɛs] rather than [wɛst], a variable which is sensitive to phonological and morphological characteristics of the words affected (Guy 1994). This being the case, we simply cannot assume that non-obligatory application of pre-aspiration on its own justifies our choice to include zero values in our analyses of the

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[5]   Although using the terms fortis and lenis may be controversial to some (see for instance the overview on the different uses of the terms in Ladefoged & Maddieson 1996: 95), the two terms are adopted here as convenient labels to distinguish the two phonological series of /p, t, k/ and /b, d, g/ in order "to avoid potentially confusing situation where one speaks of voiceless voiced stops, i.e. phonologically voiced stops with no phonetic voicing" (Ní Chasaide 1985: 105).

phonetic constraints on the phenomenon.

When the relevant literature on pre-aspiration is inspected in detail, we find that often enough pre-aspiration has not been approached from a phonological point of view, but typically from a phonetic or a predominantly sociophonetic point of view (e.g. Foulkes et al. 1999; Helgason et al 2003; Jones & Llamas 2003; Morris 2010; Roos 1998; Su 2007). There is a good reason for this. Since pre-aspiration has been considered so rare, the main goal of a number of pre-aspiration studies is to acknowledge that the phenomenon occurs in a language/variety in the first place. Furthermore, sociophonetic analyses often concentrate on issues other than contrastiveness. Future studies therefore remain to show whether pre-aspiration is contrastive and/or otherwise phonologically conditioned in the relevant languages/varieties. The next section focuses on the problem of zeroes, and the problem of potentially conflating phonetic and phonological outputs in general.

4. The problem of zeroes

Before the problem of zeroes is discussed here in detail, it is important to outline some of the assumptions made in this chapter. Firstly, as perhaps obvious by this point, phonetics and phonology are seen as distinct, i.e. there is a difference between phonetics and phonology. Secondly, diagnosing whether a phenomenon is subject to phonetic as opposed to phonological phenomena can be determined by a careful inspection of the acoustic or articulatory evidence available. If variation in a certain sound can be explained via physiological, aerodynamic, or acoustic accounts, then this variation is considered a *phonetic* type of variation. Thus, for instance, if there is a positive correlation between the duration of aspiration and the posteriority of the articulation, across and within different places of articulation (e.g. /p/, /t/, /k/), it is a phonetic type of conditioning we are dealing with. On the other hand, if there is no such correlation within the category of /p/, the variation found cannot be accounted for by phonetic explanations (alone). These two assumptions are in line with other studies focusing on the phonetics-phonology interface (e.g. Cohn 1998, 2006; Keating 1990, 1996; Strycharczuk 2012; Turton 2014, 2015, 2017; contra to Ohala 1990, depending on the exact definition of the term). As shown by the studies referenced here, phonetically conditioned variation displays gradient effects, whereas phonologically conditioned variation displays phonetically abrupt effects in the temporal-spacial domain of the

specific acoustic and/or articulatory properties that are being quantified (e.g. aspiration duration, formant value associated with a certain phoneme, tongue root retraction, glottal open/contact quotient, etc.).

Let us return to the problem of zeroes in the context of pre-aspiration studies. Frequency of occurrence, at least at first, seems a relatively simple way of quantifying pre-aspiration. If pre-aspiration reaches the duration of 0 ms, it is absent from the signal, and should be counted as a negative instance of the phenomenon – its absence. Any other values should then be considered positive cases of pre-aspiration. Although this is the mainstream approach to quantifying the frequency of application of pre-aspiration, there are nevertheless researchers who have set a point higher than 0 ms to distinguish pre-aspiration as "present" and "absent". Thus, Helgason (2002: 152) counts pre-aspiration as present only if it reaches 15 ms and higher. Similarly, when quantifying the frequency of occurrence of pre-aspiration in their Scottish English data, Gordeeva & Scobbie (2010: 13) set the threshold for annotating pre-aspiration as present only if it reaches 30 ms, which is motivated by perceptual evidence related to pre-aspiration in Norwegian (van Dommelen 1998): If the listeners can register pre-aspiration only if it has at least 30 ms, we should only count instances of 30 ms and higher as positive instances of pre-aspiration. Nonetheless, this approach is problematic. Firstly, we do not in fact have the perceptual evidence relevant for most pre-aspirating languages. Gordeeva & Scobbie (2010) use perceptual evidence available for Norwegian for analyses of *English* pre-aspiration. We can expect perceptual thresholds to vary from language to language (and from accent to accent). Indeed, if we inspect the perceptual literature available, this concern proves to be substantiated (van Dommelen 1998; Hejná & Kimper 2019; Pind 1996a, 1996b, 1998). In addition, however, and perhaps more importantly, we may be interested in factors such as biomechanical constraints on pre-aspiration, in which case all the values measured above 0 ms are surely of interest to our understanding of why the phenomenon patterns the way it does, irrespective of the perceptual properties of the phenomenon.

There is nevertheless a more serious problem related to the importance of zero values. This problem is linked with the second aspect of pre-aspiration which is usually quantified in pre-aspiration studies: pre-aspiration duration. As shown in Figure 2, when we inspect the duration of (voiceless) pre-aspiration in 12 speakers of English spoken in Aberystwyth, mid Wales (see Hejná 2015 for more details on these speakers), we find that all of the twelve individuals show that zero values pattern rather differently

from the non-zero values.
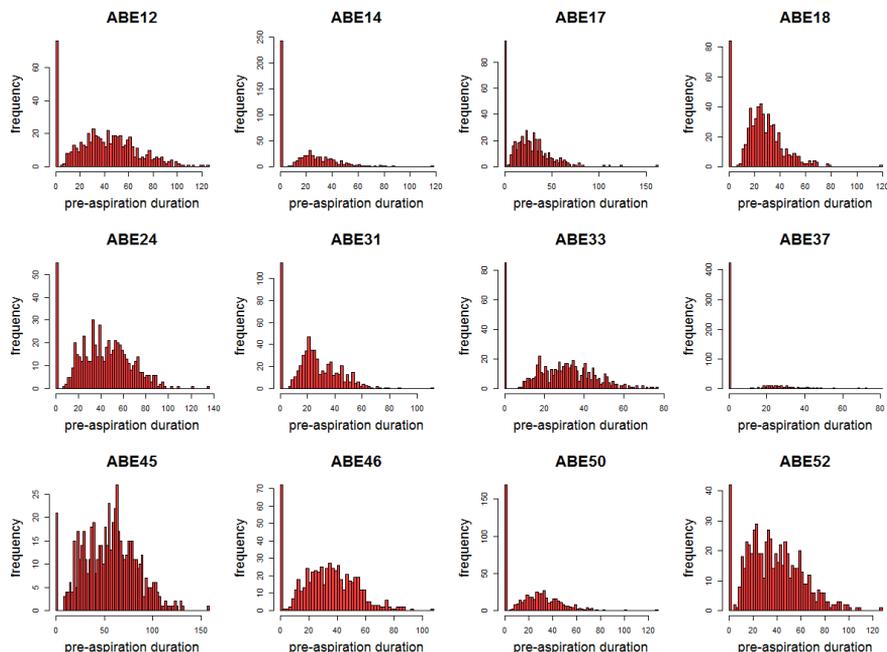
Figure 2. Distribution of the duration (ms) of voiceless pre-aspiration in 12 speakers of Aberystwyth English.

What we see is that there is one peak (or one mode) associated with zero and another peak (or another mode) which is centred around a non-zero value, e.g. around about 60 ms for speaker ABE45 and 30 ms for speaker ABE18. In addition, there is a gap between the first mode and the second mode; in other words, these two modes do not overlap.[6] This detail reveals that pre-aspiration in Aberystwyth English is not subject solely to phonetic rules, for which a gradient (unimodal) outcome would be predicted. Instead,

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[6]   The reviewer poses the interesting question of whether it is physiologically possible not to have this gap, i.e. whether it is possible for pre-aspiration to reach for instance 2 or 3 ms of duration. Physiologically, there does not seem to be any reason for pre-aspiration not to occur with the duration of 2 or 3 ms. However, two other possible explanations may be relevant. Firstly, there may be an annotation bias: is an annotator likely to spot pre-aspiration of 2 ms? Secondly, the gap may be related to perceptual biases: it may be that pre-aspiration is not perceptible unless it reaches a certain period of duration. This perceptual bias would however have to be linked with pre-aspiration being phonological in some (broad) sense, i.e. with pre-aspiration being subject to functional rather than purely phonetic – physiological and/or aerodynamic constraints.

we see a clearly bimodal distribution, which suggests the presence of two distinct categories. The distance between zero and non-zero values of pre-aspiration duration is an abrupt one. In the Aberystwyth data, lumping zero values together with non-zero values may therefore potentially skew the results related to the durational properties of pre-aspiration, and this may potentially lead to erroneous understanding of how pre-aspiration innovates and which constraints it is locally and universally subject to. To demonstrate this on a specific example, if pre-aspiration occurs the least frequently with high vowels (see e.g. Hejná 2015: chapters 3 and 4, and Morris & Hejná 2019), is it really surprising that it is *also* shorter in the context of high vowels, considering all the cases of pre-aspiration absence (i.e. those that reach the duration of 0 ms) are included in the durational measurements *as well*?

It may of course be the case that the presence of a bimodal distribution (such as the one shown in Figure 2; for classical examples see also Lisker & Abramson 1964: 400–408; Scobbie 2002) could be accounted for by confounding variables and/or a combination of a range of phonetic variables. However, the twelve speakers of Aberystwyth English used here show results based on their production of the same words, read in the same order across the speakers, and under the same conditions. Confounding factors therefore cannot account for the bimodal distribution observed. In addition, it is also not the case that the zero peak would be associated with any specific segmental or prosodic environment, or a combination of any of these. In other words, it is not the case that once we discard, for instance, foot-final cases of pre-aspiration (e.g. *bat* [batˢ]), the zero peak disappears. The author has inspected variables which include foot position, vowel height, vowel backness/rounding, vowel length, place of articulation of the plosive, and the type of the consonant preceding the vocalic sonorant and the pre-aspirated plosive, in all the possible combinations, and the conclusion is that the Aberystwyth English data presents us with no impossible environments that would account for the zero peak.

Other tests are frequently used (and ideally combined with the bimodality test) to diagnose whether a phenomenon is subject to phonological conditioning within the same environment. In case of pre-aspiration, Hejná (2015: chapter 4) designed a series of tests of the following type. If pre-aspiration is conditioned by phonetic vowel height as opposed to phonological vowel height, it should be the case that within each vowel phoneme, F1 is correlated positively with pre-aspiration duration, i.e. the higher the F1 (and the lower the vowel), the longer the pre-aspiration.

However, I find that this is not borne out in the Aberystwyth English data, and conclude that phonetic factors alone cannot account for the variation in the implementation of pre-aspiration as produced in the speakers analysed in the study.

Although I have shown an example in which zero values present a separate mode of the distribution of pre-aspiration duration, it may be the case that in some languages and varieties zero values form part of a *unimodal* distribution. In such cases, it is of course absolutely legitimate to include these in the analyses of phonetic constraints on pre-aspiration. That this does happen is illustrated in Figure 3, which displays the distribution of the duration of local breathiness for one of the Aberystwyth speakers (and thus also demonstrates that the voiced and the voiceless components of pre-aspiration may not be subject to the same constraints).[7]
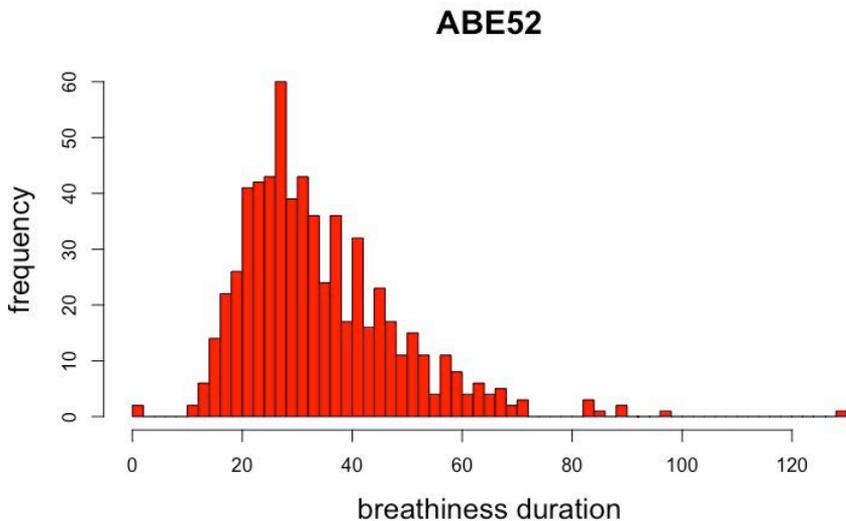
Figure 3. Distribution of the duration (ms) of local breathiness in 1 speaker of Aberystwyth English.

It may well be the case that in most of the studies of pre-aspiration in which zero values are included in the continuous measurements, the phenomenon does not display a bimodal distribution. Nonetheless, unless

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[7]   However, in this case the few tokens associated with zeroes are historically a remnant of a bimodal distribution, as suggested by the apparent-time analysis conducted by Hejná (2015: chapter 7).

this is inspected first, zero values should not be by default included in such measurements and their interpretation. As such, researchers working on pre-aspiration should report whether zero values are part of a unimodal distribution.

5. Conclusion

To summarise, assuming that cases where pre-aspiration does not apply are necessarily due to phonetic constraints is problematic. Instead, zero values of pre-aspiration duration can reflect a variable phonological rule, or a mixture of a phonological rule and phonetic constraints, or even a mixture of multiple phonological and phonetic constraints. When approaching instances of non-obligatory pre-aspiration, we should ideally inspect our data to shed light on whether a phonological conditioning of such variation can be ruled out before proceeding to purely phonetic explanations.

> *Now the zero has a new name […]*
> (Tanning 2011)

6. Happy birthday, Sten

Dear Sten, I will never forget your comment on English pre-aspiration that you made during a seminar session I gave on analysing variation and change in glottalisation and pre-aspiration in English accents. This session was part of a BA Project course which we co-taught in Autumn 2017 ("BA Project: Contemporary Variation in English Dialects – As the Music Changes, You Change Too"). Sadly, we didn't have time to address your comment fully during the seminar (or after the seminar), but I hope that this paper will shed at least a wee bit of light on my hesitation as to the statement that pre-aspiration isn't phonological in English accents, as opposed to the situation found in the traditionally pre-aspirating languages such as Icelandic. I also hope this paper will make you smile and, who knows, perhaps wiggle with a bit of joy too.

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We …with Anna: Inclusory coordination in Finnish and Fenno-Swedish[1]

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Abstract

Finnish and Fenno-Swedish both have a construction where a plural pronoun combined with a comitative adposition and a DP, as in 'we… with Anna', is interpreted as 'Anna and I'. The construction is found in several other languages east of the Baltic Sea but not in Scandinavia or, as far as we know, generally West Europe. In this paper, the main syntactic properties of the construction will be described. A related construction is found in Icelandic, where 'we Anna' means 'Anna and I'. This construction has recently been subject to a detailed examination in Sigurðsson & Wood (2019). The Finnish and Fenno-Swedish construction will be compared with the Icelandic one. The fact that 'we…with Anna' unlike Icelandic 'we Anna' can be discontinuous means that it has more complex syntax. A generalization is proposed characterising the syntactic conditions on 'we…with Anna' in Finnish and Fenno-Swedish. A syntactic analysis will be proposed, in part following Sigurðsson & Wood (2019) on the Icelandic counterpart.

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1. Introduction

The following construction is common in Finnish and Fenno-Swedish, the dialect of Swedish spoken in Finland:[2]

(1) a. **Finnish**
         Me mentiin **Annan   kanssa** kaupunkiin.
         We went.1PL Anna.GEN with   town.ILL
         'Anna and I went into town.'/ 'We went into town with Anna.'

     b. **Fenno-Swedish**
         Vi for **med Anna** till stan.
         We went with Anna to town.DEF
         'Anna and I went into town.'/ 'We went into town with Anna.'

In this construction a plural pronoun, most commonly 'we', is combined with another DP joined by a comitative adposition 'we…with DP', a postposition in Finnish, a preposition in Fenno-Swedish. The expression is ambiguous: in addition to the expected reading where it refers to a group of at least three people, it can refer to a group of two, 'DP and I', the preposition functioning like a conjunction. The construction is familiar from the literature (Schwartz 1988a, b; Lichtenberk 2000; Moravcsik 2003; Vassilieva & Larson 2005; Haspelmath 2007; Dékány 2009; Cable 2017), found in Russian, for example. In some of the literature it is called the 'inclusory construction' or inclusory coordination (Lichtenberk 2000; Haspelmath 2007; Cable 2017), since the reference of the DP is included in the reference of the plural pronoun. The nomenclature is not optimal, as it does not capture the characteristic and most interesting feature of the construction, that the plural pronoun is interpreted as singular. Among Swedish dialects, and, as far as we know, Mainland Scandinavian more generally, inclusory coordination is only found in Fenno-Swedish, presumably due to contact with Finnish. The construction appears to be an areal phenomenon, being found in at least Russian, Polish (Cable 2017), Latvian (Schwartz 1988a), and Estonian[3], among the languages east of the Baltic Sea, and also in Hungarian (Dékány 2009). It is closely related to a construction exemplified by Icelandic in (2):

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[2] The following abbreviations are used for Finnish cases: ADE = adessive, ALL = allative, ELA = elative, ESS = essive, GEN = genitive, ILL = illative, PTV = partitive.

[3] Thanks to Anne Tamm.

(2)   **Icelandic**
        Við   Ólafur
        We   Ólaf
        'I and Ólaf'

This construction, too, is inclusory coordination, but without the adposition. It is familiar from a number of other languages, but is apparently not very common cross-linguistically (Sigurðsson & Wood 2019). The Icelandic version of it has recently been subject to a detailed examination in Sigurðsson & Wood (2019), henceforth S&W. They refer to it as Pro[NP]. As they indicate, the analysis that they propose for Pro[NP] can be adapted to the construction with a comitative adposition which we call Pro[with DP]. We also call the Icelandic construction Pro[DP], for reasons which will become clear. In the present paper we will check whether the properties that S&W establish for Pro[NP] in Icelandic are, indeed, also found in the Finnish and Fenno-Swedish Pro[with DP] construction, and consider how the analysis that S&W propose for Pro[DP] may be adapted to Pro[with DP] in Finnish and Fenno-Swedish. In the process we will also establish whether there are any differences between Finnish and Fenno-Swedish as regards Pro[with DP]. Since the Finnish and Fenno-Swedish construction, unlike Icelandic Pro[DP], can be discontinuous, the conditions on the placement of the two parts of the construction will be given special attention.

Following S&W we will refer to the pronoun of inclusory coordination as Pro, and to the DP component as the *DP annex*, or just the *annex*. In the following, by 'Pro[with DP]' and 'Pro[with DP] reading' we refer to the construction/reading where formally plural Pro has singular reading.

The grammaticality judgements in the paper are our own, in some cases checked with a few other speakers. They need to be confirmed by experiments and, where possible, corpus data. We leave this for future research.

2. Some general properties of Pro[with DP]
2.1 Constituent or not
The construction can be a constituent, although it is more commonly discontinuous, with Pro typically occupying the standard grammatical subject position (spec of TP) while the annex is in a position lower down in the TP-domain, outside vP (see sections 2.3 and 6 for more details).

(3)   **Fenno-Swedish**
    a. **Vi   med Anna** har   aldrig   varit   till   Lanzarote.
       We   with Anna   have   never   been   to   Lanzarote
       'Anna and I have never been to Lanzarote.'

    b. **Vi**   har   **med Anna** aldrig   varit   till   Lanzarote.
       We   have   with Anna   never   been   to   Lanzarote
       'Anna and I have never been to Lanzarote.'

(4)   **Finnish**
    a. **Me   Annan   kanssa** ei   olla   koskaan   oltu
       We   Anna.GEN   with   not   have   ever   been

       Lanzarotella.
       Lanzarote.ADE
       'Anna and I have never been to Lanzarote.'

    b. **Me**   ei   **Annan   kanssa** olla   koskaan   oltu
       We   not   Anna.GEN   with   have   ever   been

       Lanzarotella.
       Lanzarote.ADE
       'Anna and I have never been to Lanzarote.'

The position of the annex in the discontinuous version is a complicated matter which we will mainly leave for future research. It may be noted, though, that the position of the annex in relation to adverbs and auxiliaries in the TP-domain is somewhat free. For example (5) and (6) are acceptable as well, alongside (3) and (4).

(5)   **Fenno-Swedish**
    Vi   har   aldrig   **med Anna** varit   till   Lanzarote.
    We   have   never   with Anna   been   to   Lanzarote.
    'Anna and I have never been to Lanzarote.'

(6)   **Finnish**
    Me ei   olla   **Annan   kanssa** koskaan oltu Lanzarotella.
    We   not   have   Anna.GEN   with   ever   been Lanzarote.ADE
    'Anna and I have never been to Lanzarote.'

In (7), the annex is predicate-internal. This, too, is possible.

(7)   **Fenno-Swedish**
        Vi har   aldrig varit **med Anna** till Lanzarote.
        We have never been with Anna to Lanzarote.
        'We have never been to Lanzarote with Anna.'
        'Anna and I have never been to Lanzarote.'

(8)   **Finnish**
        Me ei   olla koskaan oltu **Annan   kanssa** Lanzarotella.
        We not have ever   been Anna.GEN with   Lanzarote.ADE
        'We have never been to Lanzarote with Anna.'
        'Anna and I have never been to Lanzarote.'

In all of these sentences 'we' can be interpreted as singular or plural, but with a difference in preferences. The singular reading is preferred in (3) and (4), while the plural reading is at least equally preferred to the singular in (7) and (8).

2.2 No reversal
The construction cannot be reversed, the DP annex occupying the subject position and the pronoun the lower position. Here and in the following '#' signifies that the sentence is grammatical but lacks the (singular) inclusory coordination reading. Thus (9, 10) cannot mean that Anna and I went into town.

(9)   **Fenno-Swedish**
        #**Anna** for   **med oss** till stan.
         Anna went with us to   town.DEF
         'Anna went into town with us.'

(10)   **Finnish**
        #**Anna** meni **meidän kanssa** kaupunkiin.
         Anna went we.GEN with   town.ILL
         'Anna went into town with us.'

This is also characteristic of Pro[DP] (S&W).

2.3 The highest argument condition

Pro[with DP] is most typically subject, preferably subject of a finite clause. This is just a tendency, though. The more precise characterization of the place of Pro[with DP] in the structure turns out to be a complex matter, particularly in Finnish, due to the greater flexibility of sentential word order in Finnish. The following is a set of observations and a hypothesis, to be tested in future research based on grammaticality judgment experiments and, where possible, corpus data.

Some positions seem impossible as hosts for Pro[with DP]. It cannot, for instance, be possessor in a possessive DP. In this respect Finnish and Fenno-Swedish Pro[with DP] is different from Icelandic Pro[DP]; according to S&W, Pro[DP] is free to occur in all grammatical functions.

(11)   **Fenno-Swedish**

    a. *Det här   är **vår med Annas**   katt.
       This here is our with Anna.GEN cat

    b. *Det här   är **vår** katt **med**   **Anna**.
       This here is our cat   with   Anna

(12)   **Finnish**

    a. *Tämä on **meidän Annan   kanssa** kissa.
       This is   our   Anna.GEN with   cat

    b. *Tämä on **meidän** kissa **Annan   kanssa**
       This is   our   cat   Anna.GEN with

In (13a,14a) Pro[with DP] is object of a transitive verb. In (13b, 14b) it is object of a ditransitive object control verb. The singular Pro[with DP] reading 'Anna and I' appears not to be possible.

(13)   **Fenno-Swedish**

    a. #Såg du   **oss med Anna** där?
       Saw you us   with Anna there
       'Did you see us there with Anna?'

    b. #De   bad   **oss** fara **med Anna**   till stan.
       They asked us   go with Anna   to   town.DEF
       'They asked us to go into town with Anna.'

(14) **Finnish**

    a. #Näitkö   **meidät Annan**   **kanssa** siellä?
       Saw.2PL.Q we.ACC Anna.GEN with   there
       'Did you see us there with Anna?'

    b. #Ne   pyysi **meitä** tulemaan **Annan**   **kanssa**
       They   asked we.PTV come   Anna.GEN with

       kaupunkiin.
       town.ILL
       'They asked us to come into town with Anna.'

In (15), the construction is the subject of an infinitival clause with exceptional case marking (ECM). Our judgment is that it is marginally better than the object cases in (13) with a singular reading of 'we'.

(15) **Fenno-Swedish**

    ?Panelen   ansåg   **oss** nog **med Anna** vara allt för
    Panel.DEF considered us PRT with Anna be   all too

    oerfarna.
    inexperienced
    'The panel considered us/me and Anna to be too inexperienced.'

Finnish does not have ECM-infinitivals, but (16) exemplifies a participial complement clause, a non-finite clause type functioning as object of verbs of saying, thinking, and wanting (Kiparsky 2018).

(16) **Finnish**

    ?Paneeli ajatteli **meidän Annan**   **kanssa** olevan liian
    Panel   thought we.GEN Anna.GEN with   be.PTC too

    kokemattomia.
    inexperienced
    'The panel considered us/me and Anna to be too inexperienced.'

As with (15), we consider it marginally better than (14a,b) with a singular reading of 'we', consistent with the generalization that Pro[with DP] must be subject.

    Consider the following sentences, though.

(17) **Finnish**

    a.   #Se nuori tarjoilija   palvelee **meitä   Annan   kanssa**.
       The young waiter.NOM serves   we.PTV Anna.GEN with
       'The young waiter and Anna are serving us.'

    b.   **Meitä   Annan   kanssa** palvelee se nuori tarjoilija.
       We.PTV   Anna.GEN   with   serves   the young waiter
       'Anna and I are served by the young waiter (not the old one).'

These examples show that subjecthood in the sense of 'highest thematic argument' is not crucial. In (17a) the Pro[with DP] reading of *meitä Annan kanssa* is not available; the reading is that the waiter and Anna served us. But in (17b), where the object is fronted, the Pro[with DP] reading is possible. The fronted object is in the 'T-position' (suggesting 'topic') of Vilkuna (1989), called spec-F(inite)P in Holmberg & Nikanne (2002). This is the position that the thematic subject occupies, in unmarked cases, but which may be, and in some cases has to be, filled by a non-subject, interpreted as topic, as in (17b), where the subject remains in a low focus-position. It is identified as a mixed A- and A-bar position by Holmberg & Nikanne (2002); see also Brattico (2018). A simple test that this position is the same position as is occupied by the subject in the unmarked case is that it inverts with the verb, moved to C in yes-no questions (see Holmberg & Nikanne 2002 for other tests).

(18) **Finnish**

    a. Palveleeko se   nuori tarjoilija **meitä   Annan   kanssa**?
      Serves.Q   the young waiter   we.PTV Anna.GEN with
      'Is the young waiter serving us and Anna?'
      'Is the young waiter and Anna serving us?'

    b. Palveleeko **meitä   Annan   kanssa** se   nuori tarjoilija?
      Serves.Q   we.PTV Anna.GEN with   the young waiter
      'Is the young waiter serving me and Anna?'

The contrast between (17a,b) indicates that the Pro[with DP] reading is associated with the structurally highest, rather than thematically highest argument position.

In Fenno-Swedish, as in the Scandinavian languages generally, object fronting is clearly movement to A-bar position in the C-domain (Holmberg 1986; Holmberg & Platzack 1995; Vikner 1995). As might be expected, the (singular) Pro[with DP] reading appears not to be available. In (19a), the object 'us with Anna' is in situ, in (19b) it has been fronted. In neither case is the Pro[with DP] reading available.

(19) **Fenno-Swedish**

    a. #Den unga   servitören   serverade   **oss**   **med**   **Anna**.
       The young   waiter   served   us   with   Anna
       'The young waiter served us with Anna.'
       'The young waiter and Anna served us.'

    b. #**Oss med Anna**   serverade   den unga   servitören.
       Us   with Anna   served   the young   waiter
       'It was the young waiter who served us and Anna.'

The relevant syntactic difference between Finnish and Fenno-Swedish is, then, that Finnish has a position hosting the subject *or* a topicalized object or adverbial, with A-position properties, absent in Fenno-Swedish.

    (20) exemplifies another condition.

(20) **Finnish**

    Verkkosivusto palvelee kyllä **meitä**   **Annan**   **kanssa**
    Website   serves   PRT we.PTV Anna.GEN with

    (vaikka   sitä   kaikki muut   moittiikin).
    (although it.PTV all   others criticize.even)
    'The website does serve me and Anna
    (even though everyone else criticises it).'

The Pro[with DP] reading is available here even though it is not the structurally highest argument. The difference between (20) and (17a) is that the structurally highest argument (the subject) in (20) is inanimate. This suggests the following generalization:

(21)   Pro[with DP] is possible if and only if it is the structurally highest human argument.

Finnish has a number of constructions in which a non-nominative argument shows up in a high argument position, including the following ones. As shown, in all of them Pro[with DP] is available for that argument.[4]

(22)   **Finnish**

    a. **Meitä   Annan   kanssa** harmittaa, että myöhästyttiin.
       We.PTV Anna.GEN with   annoys   that were.late.1PL
       'It annoys me and Anna that we were later.'

    b. **Meille   Annan   kanssa** on selvää, että matkustelu   on
       We.ALL Anna.GEN with   is clear   that travelling   is

       kallista.
       expensive
       'It's clear to me and Anna that travelling is expensive.'

    c. **Meistä**   tuntuu **Annan   kanssa** suorastaan pahalta
       We.ELA feels   Anna.GEN with   outright   unpleasant

       se   meteli.
       that   noise
       'To me and Anna that noise feels outright unpleasant.'

    d. **Meistä**   tulee **Annan   kanssa** isoina   laulajia.
       We.ELA come Anna.GEN with   big.ESS singers
       'Anna and I will become singers when we grow up.'

Whether the initial phrase in all of them is the subject or not may be debatable, but it is uncontroversially in the T-position, as can be verified by the 'yes-no inversion test'. As such they allow the Pro[with DP] reading.
    (22a,b,c) have the alternative word orders (23a,b,c,d).

(23)   **Finnish**

    a. Se että myöhästyttiin   harmittaa **meitä   Annan   kanssa**.
       It that were.late.1PL   annoys   we.PTV Anna.GEN with
       'It annoys me and Anna that we were late.'

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[4]   The verb form *myöhästyttiin* in (22a) and (23a,b) is strictly speaking an impersonal-passive form widely used as 1PL in colloquial Finnish. The standard Finnish form would be *myöhästyi-mme*, with a 1PL suffix *-mme*. The judgments would be the same with that form, except for a slight stylistic incongruity. We have chosen to gloss the colloquial form as 1PL.

b. Se harmittaa **meitä** **Annan** **kanssa** että myöhästyttiin.
It annoys we.PTV Anna.GEN with that were.late.1PL
'It annoys me and Anna that we were late.'

c. Että matkustaminen on kallista on **meille**
That travelling is expensive is we.ALL

Annan **kanssa** selvää.
Anna.GEN with clear
'That travelling is expensive is clear to me and Anna.'

d. Meteli tuntuu **meistä** **Annan** **kanssa** suorastaan
Noise feels we.ELA Anna.GEN with outright

pahalta.
unpleasant
'The noise feels outright unpleasant to me and Anna.'

As predicted by (21), they all allow the Pro[with DP] reading, since the initial phrase in the T-position, the highest argument position, is inanimate.

(24a,b) suggest that condition (21) holds in Fenno-Swedish as well.

(24) **Fenno-Swedish**
a. Det retade **oss** nog **med Anna** att vi kom för sent.
It annoyed us PRT with Anna that we came too late
'It did annoy me and Anna that we were late.'

b. Att vi kom för sent retade **oss** nog **med Anna**.
That we came too late annoyed us PRT with Anna
'It did annoy me and Anna that we were late.'

As already pointed out, these judgments need to be confirmed by proper grammaticality judgment experiments and, where possible, corpus data.

3. Properties of the pronoun in Pro[with DP]
3.1 We, you, they
Our impression is that the most common instantiation of Pro[with DP] is with 'we', but it can be 'you.PL' or, perhaps more marginally, 'they', in Finnish as well as in Fenno-Swedish.

(25) a. **Fenno-Swedish**
         När   var   **ni**   sist **med Anna** till Lanzarote?
         When were you.PL last with Anna   to   Lanzarote
         'When were you and Anna in Lanzarote the last time?'

      b. **Finnish**
         Milloin **te**   viimeksi olitte   **Annan   kanssa**
         When   you.PL last   were.2PL Anna.GEN with

         Lanzarotella?
         Lanzarote.ADE
         'When were you and Anna in Lanzarote the last time?'

(26) a. **Fenno-Swedish**
         Question: Var   är Hasse?
                    Where is Hasse
                    'Where is Hasse?'
         Answer: **De**   for   **med**   **Anna** till   stan.
                    They went with   Anna   to   town.DEF
                    'He and Anna went into town.'

      b. **Finnish**
         Question: Missä Hasse on?
                    Where Hasse is
                    'Where is Hasse?'
         Answer: **Ne**   meni **Annan   kanssa** kaupungille.
                    They went Anna.GEN with   town.ALL
                    'He and Anna went into town.'

The reason why 'we' is most common could be simply that it is more common to make a statement about one's own pursuits together with somebody than the addressee's or someone else's pursuits with somebody.

The plural component has to be a pronoun, though.

(27) **Fenno-Swedish**

      Question: Var   är Elsa?
                      Where is Elsa
                      'Where is Hasse?'

      Answer: **Flickorna** for **med Anna** till stan.
                      Girls.DEF went with Anna to town.DEF
                      'The girls went into town with Anna.'

(28) **Finnish**

      Question: Missä Elsa   on?
                      Where Elsa   is
                      'Where is Elsa?'

      Answer: **Tytöt**   meni **Annan**   **kanssa** kaupunkiin.
                      Girls.NOM went Anna.GEN with   town.ILL
                      'The girls went into town with Anna.'

(27) and (28) cannot mean 'The girls Elsa and Anna went into town'; the reference of the initial DP is necessarily plural: 'The girls went into town together with Anna'.

3.2 Pro drop in Pro[with DP]

Like other Germanic languages, Fenno-Swedish does not have pro drop except under highly restricted conditions: topic drop, expletive drop, diary drop (Haegeman 1990, 2013; Holmberg 2003; Sigurðsson 2011). It is possible, in fact, that topic drop and expletive drop are even less commonly employed in Fenno-Swedish than in (some) other varieties of Swedish. We cannot construct a natural sentence with pro drop of vi 'we' under any reading, so it is not surprising that we do not find it with Pro[with DP] (as shown by S&W, Icelandic Pro[DP] does not allow pro drop, either). However, Finnish is a pro drop language, with optional pro drop of 1st and 2nd person pronouns (see Vainikka & Levy 1998; Holmberg 2005). As shown by the examples in (29), pro drop can apply in Pro[with DP].[5]

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[5] In standard Finnish the 1PL form of the verb has a suffix *–mme*; see note 4. The standard form appears not to be impossible, either, with pro drop.

(i)   (Me)   olemme   Juhon   kanssa   pyöräilemässä.
        we   be.PRS.1PL Juho.GEN with   cycling
        'Me and Juho are out cycling.'

(29) **Finnish**

    a. Menittekö   **(te)**   **Annan**   **kanssa**   eilen
       Went.2PL.Q   *you.PL   Anna.GEN   with*   *yesterday*

       kaupungille?
       town.ALL
       'Did you and Anna go into town yesterday?'

    b. **(Me)** ollaan   **Juhon**   **kanssa**   pyöräilemässä.
       (We) are.1PL   Juho.GEN   with   *cycling*
       'Me and Juho are out cycling.'

3.3 No expansion of Pro

As S&W note for Icelandic Pro[DP], Pro cannot be expanded in Pro[with DP].

(30) **Fenno-Swedish**
    #**Vi   på   Grannas** for   **med   Anna** till   stan.
    We   at   Grannas   went   with   Anna   to   town.DEF
    'We at Grannas went into town with Anna.' (Grannas a farm)

(31) **Finnish**
    #**Me raisiolaiset**   mentiin   kaupungille **Annan**   **kanssa**.
    We   Raisio.people went.1PL town.ALL   Anna.GEN   with
    'We Raisioites went into town with Anna.'

(30) and (31) cannot mean 'Me and Anna, who are from Grannas/Raisio, went into town'.

    The interplay of the pronoun and the quantifier 'both' is somewhat complex, and will be left for future research. However, when forming a constituent with the plural pronoun, the two cannot function as Pro in Pro[with DP].

(32) **Fenno-Swedish**
    #**Vi   båda** for   **med   Anna** till   stan.
    We   both went   with   Anna   to   town.DEF
    'We both went into town with Anna.'

(33) **Finnish**

   #**Me molemmat** mentiin **Annan   kanssa** kaupungille.
   We   both   went.1PL Anna.GEN with   town.ALL
   'We both went into town with Anna.'

5. Properties of the annex

The annex is typically a proper name or a kinship term (as S&W note for Pro[DP]), but need not be: It can be a definite DP based on a common noun, and even an indefinite DP as long as it is specific. It can be plural or singular.

(34) **Fenno-Swedish**

   a. **Vi** for   **med mamma** till stan.
      We went with mother to   town.DEF
      'Me and mother went into town.'

   b. **Vi** satt **med pojkarna** och diskuterade framtiden.
      We sat with boys.DEF and discussed   future.DEF
      'Me and the boys sat down and discussed the future.'

   c. **Vi** stod **med en annan passagerare**
      We stood with one other passenger

      och väntade på   en   buss som aldrig kom.
      and waited on   one bus   that never came
      'Me and another passenger stood waiting for a bus that never came.'

(35) **Finnish**

   a. **Me** mentiin   äidin   **kanssa** kaupunkiin.
      We went.1PL mother.GEN with   town.ILL
      'Me and mother went into town.'

   b. **Me** istuttiin **pomon   kanssa** ja   keskusteltiin
      We sat.1PL boss.GEN with   and   discussed.1PL

      tulevaisuudesta.
      future.ELA
      'Me and the boss sat down and discussed the future.'

c. **Me** siinä **yhden   toisen   matkustajan   kanssa**
   We there one.GEN other.GEN   passenger.GEN   with

   odotettiin bussia, joka   ei   tullutkaan
   awaited   bus.PTV which   not   came.even
   'Me and another passenger waited for a bus that didn't come in
   the end.'

(36) does not have the Pro[with DP] reading (see S&W). The reason would
seem to be that a bare indefinite plural can only be interpreted as non-
specific.

(36) **Fenno-Swedish**
     #**Vi**   for   **med lingvister** till Oslo.
     We   went with linguists   to   Oslo
     'We went with linguists to Oslo.'

In Finnish the distinction between plural definite and indefinite cannot be
made in this construction, as Finnish lacks articles.
     The annex cannot very well be a 2nd person pronoun.

(37) **Fenno-Swedish**
     ?#Jag kommer ihåg   när **vi** var **med dig** på teater.
     I   come   in.mind when we   were with you on theatre
     'I remember when we went with you to the theatre.'

(38) **Finnish**
     ?#Mä muistan   sen kun **me** oltiin **sun   kanssa**
     I   remember it   when we   were you.SG.GEN   with

     teatterissa.
     theatre.INE
     'I remember when we went with you to the theatre.'

This sentence seems not to have the 'me and you' interpretation. This may
be a redundancy effect rather than a grammatical condition. The annex
does not provide any information that is not already part of the unmarked
interpretation of inclusive 'we': 'me and you'.

A 3rd person pronoun may also be somewhat unusual as annex, but examples can be constructed which sound natural enough, in Finnish as well as Fenno-Swedish.

(39) **Fenno-Swedish**
Vet du Hasse? **Vi** var en gång **med honom**
Know you Hasse We were one time with him

helt ensamma på bussen till Helsingfors.
all alone on bus.DEF to Helsinki
'You know Hasse, right? We were once all alone, him and me, on the bus to Helsinki.'

(40) **Finnish**
Sinä tiedät Hassen? **Me** oltiin kerran **hänen**
You know.2SG Hasse? We were.1PL once he.GEN

kanssa kahestaan Helsingin bussissa.
with two.of Helsinki.GEN buss.INE
'You know Hasse, right? We were once all alone, him and me, on the bus to Helsinki.'

6. The syntactic derivation of Pro[with DP]

S&W propose that the structure of Pro[DP] and Pro[with DP] is essentially the same, based on the observation that they have the same meaning, in addition to obvious lexical and linear correspondences. We will adopt part of this hypothesis here.

Following S&W (see also Vassilieva & Larson 2005 and Dékány 2009) we assume that plural pronouns are composed of two variables {X, Y}. In the case of 'we', the first variable has the value 'speaker', hence XSP(EAKER). The second variable is context-dependent. To put it simply, 'we' means 'I and some contextually determined person or group' (but see Sigurðsson 2017 for some qualification of this analysis). However, in the case of Pro[(with) DP] it can be assigned a value (an interpretation) by the DP annex. This is how *vi…med Anna* (Fenno-Swedish) and *me…Annan kanssa* (Finnish) end up denoting 'me and Anna'. So, what is the syntactic relation between Pro and the annex?[6] The fact that the pronoun cannot be expanded (see 3.3) indicates that the pronoun is a head, a D. On the other hand, the fact that the pronoun in

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[6] At the time of writing, S&W is still under revision. We therefore cannot represent or discuss the precise version of the analysis of Pro[(with) NP] in S&W.

Fenno-Swedish and Finnish can move to the subject position, stranding the PP, indicates that it is a DP. We propose that it is, indeed, a DP, made up of D and a PP, as shown in (41). The verb undergoes movement from V to v (as standardly assumed), and subsequently from there to T.[7]

(41) **Fenno-Swedish**
       a. Vi såg med Anna en varg.
          We saw with Anna a   wolf
          'Me and Anna saw a wolf.'

       b.
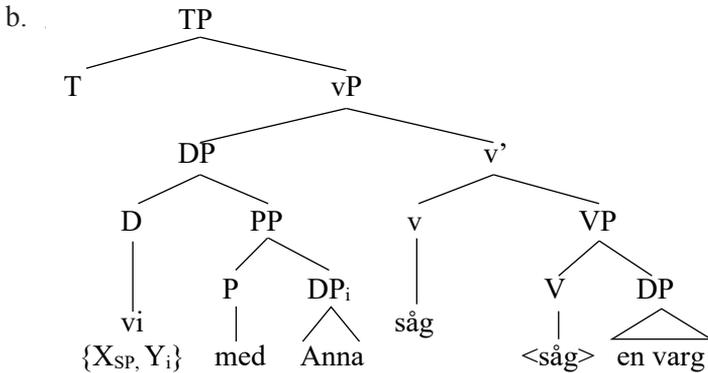
The Finnish tree is identical, except that the PP is head-final. In (41), the Y-variable has been assigned the referential index of the DP *Anna*. Now the DP *vi med Anna /me Annan kanssa* can undergo movement as such to spec-TP. This has happened in (3) and (4). Alternatively (and more commonly), the PP first undergoes movement out of the DP, adjoining to vP, or, if there are other constituents between T and vP such as adverbs or auxiliary verbs, the PP may move higher up, adjoining to the phrase dominating the adverbs or auxiliaries. Subsequently the remnant DP moves to the subject position, and the verb, if it is the highest verb, moves to T. Compare (42, 43): In (42) the annex PP has adjoined to the lowest vP, below the adverb *en gång* 'once', before the remnant subject has moved to spec-TP and the verb to T.

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[7] Copies of moved constituents are represented within angled brackets. As standardly assumed for V2 languages, the finite verb in main clauses moves on to C and the subject to spec-CP (Vikner 1995; Holmberg 2015). We ignore this here

(42) **Fenno-Swedish**

a. Vi såg en gång **med Anna** en varg.
We saw one time with Anna a wolf
'Me and Anna once saw a wolf.'

b.

```
                    TP
           ┌─────────┴─────────┐
          DP                   T'
       ┌───┴────┐         ┌─────┴─────┐
       D      <PP>      såg+T         vP
       │                        ┌──────┴──────┐
       vi                      Adv            vP
                             ┌──┴──┐      ┌────┴────┐
                          en gång  PP    DP  <DP>   v'
                                ┌──┴──┐   |      ┌───┴───┐
                                P    DP  Anna    v       VP
                                |    |        <såg>    ┌──┴──┐
                               med  Anna             <såg> en varg
```
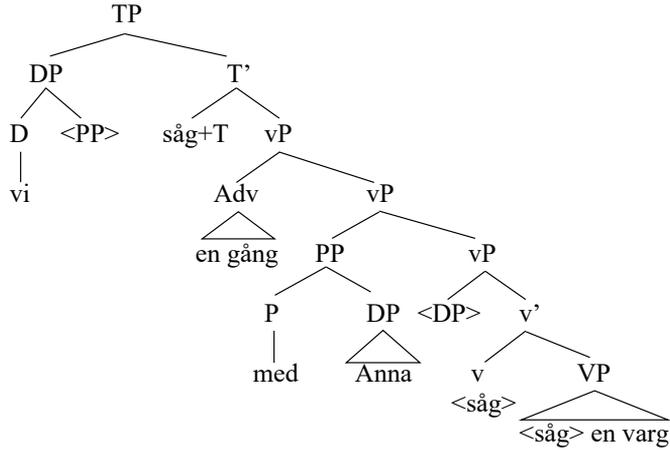
In (43), the annex PP has adjoined to the vP dominating the adverb.

(43) **Fenno-Swedish**

a. Vi såg **med Anna** en gång en varg.
We saw with Anna one time a wolf
'Anna and I once saw a wolf.'

b.

```
                    TP
           ┌─────────┴─────────┐
          DP                   T'
       ┌───┴────┐         ┌─────┴─────┐
       D      <PP>      såg+T         vP
       │                        ┌──────┴──────┐
       vi                      PP             vP
                            ┌───┴───┐      ┌───┴───┐
                            P      DP     AdvP     vP
                            |      |       |    ┌───┴───┐
                           med    Anna  en gång <DP>    v'
                                                     ┌───┴───┐
                                                     v       VP
                                                  <såg>    ┌──┴──┐
                                                        <såg> en varg
```
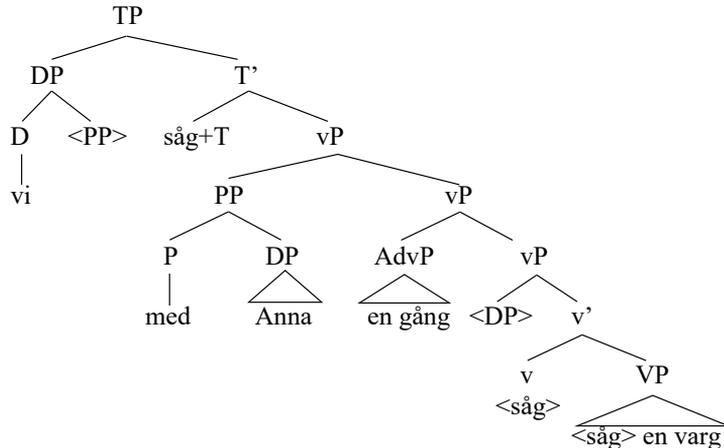
In this way we can explain the apparently free placement of the annex PP in the space between T and the verb in the two languages. Example (44) seems to show that the placement of the annex PP is even freer in Finnish than in Fenno-Swedish: In Finnish but not in Fenno-Swedish, the PP can occur between the non-finite verb and the object.

(44) a. **Finnish**

       Me ollaan   jo   syöty **Annan**   **kanssa** päivällistä.
       We have.1PL already eaten Anna.GEN with   dinner
       'Anna and I have already had dinner.'

    b. **Fenno-Swedish**

     *Vi har   redan   ätit **med Anna** middag.
     We have already eaten with Anna   dinner

This is predicted, however, under the analysis, discussed in Holmberg et al. (1993) and Holmberg (2001), according to which the non-finite main verb optionally undergoes movement out of vP in Finnish, possibly to an Aspect head. The structure of the relevant section of (44a) would be (45).

(45)
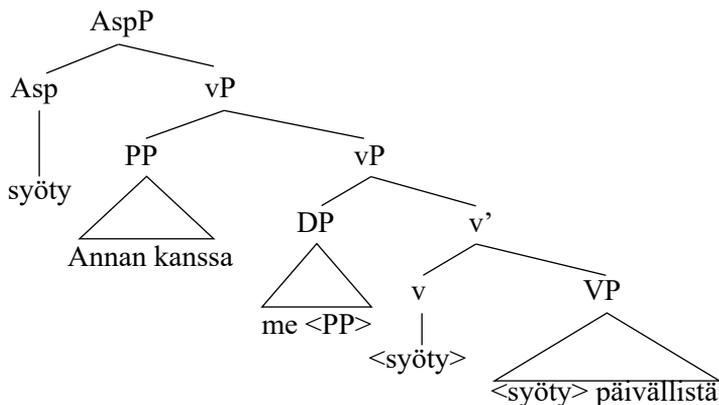
Here the PP has moved out of the DP, adjoining to vP, while the verb has moved first to v, and then to Asp. Subsequently the rest of the constituents in (44a) are merged, and the remnant subject moves to spec-TP, deriving the word order in (44a). In Fenno-Swedish there is no head-movement of

the non-finite verb out of vP, so the word order in (44b) cannot be derived.

Why Pro cannot be expanded can also be understood if the relation between the Y-variable in Pro and the annex NP/DP is a 'probe-goal' relation (Chomsky 2001): The variable can only be valued by a local DP in its c-command domain. In (30, 31) the PP *på Grannas* and the NP *raisiolaiset* 'Raisio.people', respectively, are sisters of Pro, meaning that the presumptive annex is not c-commanded by Pro.

Why (36), with a non-specific annex, is ungrammatical can also be explained: the non-specific annex does not have a referential index that could value the Y-variable. It is an NP, a predicate, not a DP (a reason for calling the grammatical annex [(with) DP] rather than [(with) NP], as in S&W).

We may have at least the beginning of an explanation of generalization (21): Pro[with DP] is possible if and only if it is the structurally highest human argument. What we can observe is that sentence (17a), which violates the generalization, is ambiguous: the PP *Annan kanssa* 'with Anna' can be construed with the object *me* 'we' or the subject *se nuori tarjoilija* 'the young waiter'. The alternative (17b) where Pro[with DP] is fronted does not have this ambiguity. If the Pro[with DP] reading is a marked option, this could be the explanation why that reading is unavailable in (17a). In (20), as well, there is no ambiguity, and the Pro[with DP] reading is available. This explanation also fits with the observation that the Icelandic Pro[DP] construction is as good in object as in subject position. In Icelandic, the annex DP always forms a constituent together with Pro, thus cannot be construed with any other head or argument. Whether the explanation from ambiguity can be extended to all other cases of ungrammatical or unavailable Pro[with DP] in object position is a question we shall leave for future research. For one thing, we need more confirmation of our intuitions regarding the availability of the Pro[with DP] reading in various contexts.

7. Conclusions

Finnish and Fenno-Swedish both have a construction which, partly following S&W, we have dubbed Pro[with DP], called 'the inclusory construction' in some of the literature. In Pro[with DP] a plural pronoun, usually 'we', is in construction with a comitative preposition and an object, called the annex, but is interpreted as a singular pronoun coordinated with the annex. The aim of the paper is mainly descriptive: We have described

its syntactic properties, including properties of the pronoun, the DP annex, and the structural relation between the two parts when they are separated, as they very often are. We have proposed a generalization characterising the syntactic conditions on the Pro[with DP] interpretation: Pro[with DP] has to be the structurally highest argument with human reference. Following S&W, we have assumed that 'we' is a set of two variables {X,Y}. One is valued 'speaker', while the other is contextually determined. In Pro[with DP], however, the second variable is valued by the annex DP. This yields the reading 'Anna and I' for Finnish *me…Annan kanssa* and Fenno-Swedish *vi…med Anna*. We have also presented a formal account of the movements which Pro[with DP] undergoes, when the pronoun is separated from the annex. The formal account can explain at least a subset of the properties that the construction exhibits. Our findings so far indicate that the Finnish and the Fenno-Swedish construction have very similar properties. Where they differ, this can be explained in terms of the greater flexibility of word order (movement) in the TP domain in Finnish, compared with Fenno-Swedish.

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English vocabulary in L1 Danish and L1 Finnish learners: Vocabulary sizes, word frequency effect, and cognate facilitation

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Abstract

The study presents vocabulary sizes in native (L1) Danish and L1 Finnish learners of English differing in second language (L2) immersion. The estimated vocabulary sizes suggest that some L2 learners have vocabulary sizes within the L1 English range, and that all participants should be lexically equipped to understand spoken English. The article moreover examines the effect of word frequency and cognateness on L2 lexical knowledge and how these two effects are mediated by L2 immersion. Word frequency was found to significantly affect word definition. Contrary to the prediction, this effect was larger for L1 English speakers than for L2 learners and for immersion learners than for non-immersion learners. Significant cognate facilitation was also observed and was found to be larger for non-immersion learners than for immersion learners, as predicted.

1. Introduction[2]

Native speakers vary in their vocabulary size, but a conservative estimate is that adult native speakers know approximately 16,000-20,000 word families. A word family consists of a lexical root along with its derivations and inflections (Schmitt 2010: 8). The word family unit is considered more appropriate for vocabulary estimates than the lemma unit (the lexical root and its inflections), because learners beyond a minimal proficiency

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[1] This article presents part of my PhD project, which was conducted at Aarhus University.
[2] Many thanks to Johanna Wood for help and advice in the choice of test and for comments and suggestions concerning the analysis.

level show some knowledge of word formation and are able to use this
knowledge in deducing word meaning within a word family (Bertram,
Laine & Virkkala 2000). Variation in L1 vocabulary sizes are primarily
related to age and education (Zechmeister, Chronis, Cull, D'Anna & Healy
1995; Diack 1975: 12). It is estimated that L2 learners need a vocabulary
size of 6,000 to 7,000 word families to understand spoken English and a
vocabulary size of 8,000 to 9,000 word families to be able to read a novel
or a newspaper unaided in English (Nation 2006).

The finding that highly frequent words are recognised faster than low
frequency words is commonly referred to as the *Word Frequency Effect*
in psycholinguistics. Word frequency effects are typically explained in
terms of implicit learning. Repeated exposure to high frequency words is
believed to strengthen the lexical representation of these words, thereby
making them more readily accessible (Whitford & Tytone 2012). Word
frequency effects have been found in a number of lexical tasks in the L1
(Schilling, Rayner & Chumbley 1998) and in speakers from different L1
backgrounds in their L2 (Lemhöfer, Dijkstra, Schriefers & Baayen 2008).
Interestingly, research suggests that the effect of word frequency is stronger
for L2 learners than for L1 speakers (Van Wijnendaele & Brysbaert 2002;
de Groot, Borgwaldt, Bos & van den Eijnden 2002). Moreover, Whitford
& Tytone (2012) found that the effect of word frequency on L2 reading
is larger in relatively inexperienced L2 learners compared to relatively
experienced L2 learners, suggesting that the effect of frequency in L2
lexical tasks is mediated by L2 experience.

Another word characteristic that affects the learnability of a word is
Cognateness. Comensaña, Sánchez-Casas, Soares, Pinhero, Rauber, Frade
& Fraga (2012: 75) define cognates as 'equivalent translations that share
both form and meaning (e.g. *papel* in European Portuguese and *paper*
in English)'.[3] Such word similarities across languages may stem from
common origins, from borrowings, or from sheer chance. A large body
of research (e.g. Lemhöfer et al. 2008; Dijkstra, Miwa, Brummelhuis,
Sappelli & Baayen 2010; Balling 2012) suggests that the presence of
cognates facilitates lexical tasks in the L2. Moreover, Casaponsa, Antón,
Pérez, & Duñabeitia (2015) found that cognate facilitation in a lexical
decision task was larger for relatively inexperienced L2 learners than

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[3] This is a psycholinguistic definition of cognateness, since the focus is on the psycholin-
guistic status of a word for L2 learners and not on the historical origin of the word as in
the use of the term in historical linguistics (e.g. van Gelderen 2006: 34).

for relatively experienced L2 learners, suggesting that reliance on L1-L2 similarities plays a bigger role at lower proficiency levels. Although the value of such transparent words for L2 learners is priceless, it comes with a number of pitfalls, since not all words that look cognate indeed are so. Such pitfalls are commonly known as *False Friends* (Davidsen-Nielsen, Færch & Harder 1982: 69). The word *actually*, for instance, is a false friend for L1 Danish learners of English, as it resembles the Danish word *aktuelt* (English: 'currently'), but the correct Danish translation is *faktisk*, which resembles the English word *factually* (Danish: 'faktuelt').

This study examines vocabulary sizes in L1 Danish and L1 Finnish learners of English. These two L1 backgrounds offer an interesting comparison due to the fact that Danish and Finnish differ considerably in their linguistic similarity with English (see Section 2), while Denmark and Finland present comparable learning environments for English as a foreign language. All participants had received English instruction from 3rd to 9th grade of elementary school and were exposed to a fair amount of English on a daily basis through Anglophone TV series and films, since both countries make use of interlingual subtitling of foreign TV programmes instead of dubbing (Preisler 1999; Leppänen & Nikula 2007). A comparison of the vocabulary sizes in L1 Danish and L1 Finnish learners is thus a good way to examine the effect of linguistic similarity while keeping the influence of learning environment as constant as possible.

The study also aims to investigate how amount of L2 experience, operationalised as plus/minus L2 immersion, mitigates the above-mentioned effects of word frequency and cognateness. Specifically, the study investigates 2 hypotheses:

The word frequency hypothesis: *A positive relationship between word frequency and correct word definition is expected. The word frequency effect is expected to be larger for L2 learners compared to native speakers, and for non-immersion learners compared to immersion learners.*

The cognate facilitation hypothesis: *Cognates are expected to be defined correctly more often than non-cognates by L2 learners. The cognate facilitation effect is expected to be larger for non-immersion learners compared to immersion learners.*

2. The lexicons of English, Danish, and Finnish

As any other lexicon, the lexicon of English can be divided into a native part and a borrowed part. The English lexicon is unusual, however, with respect to the large size of its borrowed part. Nevertheless, while borrowed lexemes are vast in quantity, native Anglo-Saxon lexemes dominate everyday speech, as they are the most frequent, and as most function words and affixes are original Anglo-Saxon lexemes. Throughout its history, English has borrowed words from over 350 languages, of which Latin, Old Norse, and French are the languages that have contributed the most to the English lexicon. Borrowings from Latin and Greek are especially extensive in the domain of science and academia (Crystal 2003: 24-26).

The core of the Danish vocabulary consists of lexemes from Old Norse. Since Old Norse and Old English both descend from Common Germanic, Danish and English share a substantial number of common Germanic words, most of which are still alike in both meaning and form, though semantic change has also led to false friends among the cognates. Danish is similar to English in being quite open to borrowings, though the number of loanwords in Danish is markedly lower than in English. The language from which Danish has borrowed the most is undoubtedly Low German, but French and Latin have also contributed considerably to the Danish lexicon. Similar to the situation in English, Danish words of Graeco-Latinate origin play an important part in the domain of science and academia. Importantly, borrowings into Danish since the 1950s have primarily been from English (Katlev 2013; Haberland 1994).

As a Finno-Ugric language, Finnish shares no historic cognates with English, yet lexical similarities between English and Finnish do exist due to direct and indirect borrowings. Most borrowings into Finnish come from neighbouring Germanic languages, especially from Swedish (Karlsson 1999: 1-3). Like in Danish, borrowings from English have recently increased in Finnish (Pulkkinen 1989). However, unlike in English and Danish, loanwords are usually not absorbed directly but adjusted in form, so borrowings may not be easily recognisable. The Finnish word *ranta* ('beach'), for instance, stems from the Germanic *strand*, but is rather different in form due to the phonotactics of Finnish (Sulkana & Karjalainen 1992: 369-370).

3. Methods
3.1 Participants
41 L1 Finnish learners of English (6 M, 35 F, mean age = 25.17 years) participated. They lived in and around Jyväskylä, Central Finland. The L1 Finnish participants were divided into two groups: 1) 21 immersion learners: participants who had lived in an English-speaking country (range: 2.5 months to 3 years, mean = 10.02 months), and 2) non-immersion learners: participants who had not lived in an English-speaking country.

41 L1 Danish learners of English (8 M, 33 F, mean age = 24.71 years) participated. They lived in and around Aarhus, East Jutland, Denmark. The L1 Danish participants were also divided into two groups: 1) 20 immersion learners: participants who had lived in an English-speaking country (range: 4 months to 2.17 years, mean = 10.73 months), and 2) 21 non-immersion learners: participants who had not lived in an English-speaking country.

14 L1 English speakers (2 M, 12 F, mean age = 20.65 years), participated. They lived in and around Bangor, Wales.

3. 2 The Vocabulary Size Test
The Vocabulary Size Test (Nation & Beglar 2007; Nation 2012), which is based on word family frequency counts from the British National Corpus (BNC), is a multiple-choice definition test of English vocabulary. The tested word is presented in a simple, non-defining context, and four different but semantically related definitions are supplied, of which one is correct. As far as possible, all words used in the definitions are of a higher frequency than the tested word. The simple, non-defining context reflects the most frequent use of the word. The participant's task is to choose the right definition among the four options. An example is presented here:

soldier: He is a **soldier**.
a.   person in a business
b.   person who studies
c.   person who uses metal
d.   person in the army

Correct answer: d

The Vocabulary Size Test comes in a 14,000 word version and two 20,000 word versions (A and B). The 20,000 word version A was chosen in order to be able to measure the full range of vocabulary sizes. Recall that according to prior estimates, native speakers know 16,000-20,000 word families. Frequency bands 1 and 2 were left out in order to reduce fatigue (the vocabulary test was part of a larger test battery), since it was assumed that all participants knew these extremely frequent words. Since each frequency band, from 3 to 20, was tested with 5 words, the test had a total of 90 items. The test items were presented in randomised order.

All test words were judged for cognateness and false friendship with Finnish by a linguist who is an L1 speaker of Finnish[4] and for cognateness and false friendship with Danish by the author, who is an L1 speaker of Danish. 32 cognates with Finnish and 37 cognates with Danish were found among the 90 test words. This corresponds to a cognate proportion of 41% for Danish and 36% for Finnish. Such a small difference in cognate proportion was unexpected and does not seem plausible given language history. The test words included one false friend for L1 Danish learners, namely *panzer*, which is similar to the Danish word *panser* (slang for 'police'), but the correct Danish translation is *tank*. For this item, the response option *policewomen* was chosen by three L1 Danish participants and by no L1 Finnish or L1 English participants, thus showing a small effect of false friendship. No false friends for L1 Finnish learners were observed among the test words.

3. 3 Statistics
The data was analysed by means of mixed effects models in the software program R (R Core Team 2015). The R packages used were *lme4* (Bates, Maechler, Bolker, Walker, Chrisentensen, Singmann, Dai & Grothendieck 2015) and *optimx* (Nash 2014) for the construction of mixed effects models. Graphs were also constructed in R, by means of the package *ggplot2* (Wickham 2009).

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[4]   Many thanks to Hanna Kivistö de Sousa for these judgements.

4. Results

A test-taker's vocabulary size can be estimated by multiplying the test-taker's total number of correct answers in the 20,000 version of the Vocabulary Size Test by 200. Since the first two frequency bands were left out in the present study, based on the assumption that all participants would define these first 10 items correctly, 10 points should be added to each participant's vocabulary score before multiplying by 200. The results of these calculations are presented in Table 1.

Table 1. Vocabulary sizes

Group	Mean	Range	Standard Deviation
Native English speakers			
All	15,971	14,600-18,200	1,247
L1 Danish learners			
All	14,527	9,200-17,000	1,726
Immersion	14,150	9,200-16,200	1,601
Non-immersion	14,886	10,600-17,000	1,801
L1 Finnish learners			
All	13,341	8,600-16,800	1,985
Immersion	14,590	12,200-16,800	1,251
Non-immersion	12,030	8,600-14,600	1,763

Figure 1. shows mean percent correct word definition at each frequency band (higher frequency bands corresponds to lower word frequency) for all the groups. The figure suggests a general tendency of decrease in percent correct definition as a function of increase in frequency band (decrease in word frequency) for all the groups.

Figure 1. Mean percent correct performance at each frequency band
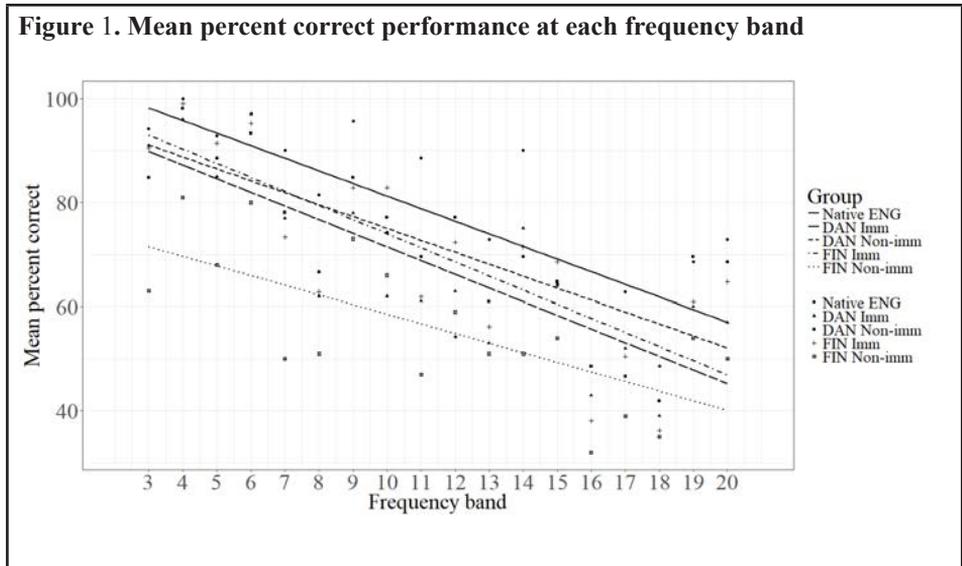
The data was subjected to a logistic mixed effects model (Model 1) with *L1* and *Frequency Band* as fixed effects, random intercepts for *Subject* and *Word*, random subject-slopes for Frequency Band and random word-slopes for L1. The model formula was:

```
Model 1 <- glmer (Performance ~ L1 * FrqBand + (L1|Word) +
(FrqBand|Subject), family = "binomial")
```

Model 1 showed that the native speakers were significantly more accurate than the L2 learners (p < 0.0001) and that the L1 Danish learners were significantly more accurate than the L1 Finnish learners (p = 0.0030). Moreover, the model revealed a significant main effect of Frequency Band (p < 0.0001). Words from the lowest frequency band were 66.55 times more likely to be identified correctly than words from the highest frequency band. The significant interaction between L1 and Frequency Band showed that the frequency effect was larger for the L1 English speakers than for the L2 learners (p = 0.0069) and for the L1 Danish learners than for the L1 Finnish learners (p = 0.0264). Table 2. Presents the statistics of this model.

Table 2. Statistics for Model 1. Significant effects (at the 0.05 level) are highlighted in light grey.

	Estimate (log odds ratio)	Odds ratio	Std. Error	z	p
L1 (English vs. Danish and Finnish) Coded as $+^2/_3$ English $– ^1/_3$ Danish $– ^1/_3$ Finnish	1.5315	4.625109	0.3610	4.243	2.21e-05
L1 (Danish vs. Finnish) Coded as $+ ½$ Danish $– ½$ Finnish	0.6521	1.919568	0.2199	2.966	0.00302
Frequency Band	-4.19798	66.55176	0.4174	-5.917	3.29e-09
Frequency Band * L1 (English vs. Danish and Finnish)	-1.1883	3.281498	0.4398	-2.702	0.00690
Frequency Band * L1 (Danish vs. Finnish)	-0.5157	1.67481	0.2322	-2.221	0.02637

Figure 2. shows mean percent correct word definition for cognates and non-cognates for the immersion and non-immersion L1 Danish and L1 Finnish learners. The figure suggests that cognates are correctly defined more often than non-cognates by all the L2 groups.

Figure 2. Mean percent correct performance for cognates and non-cognates
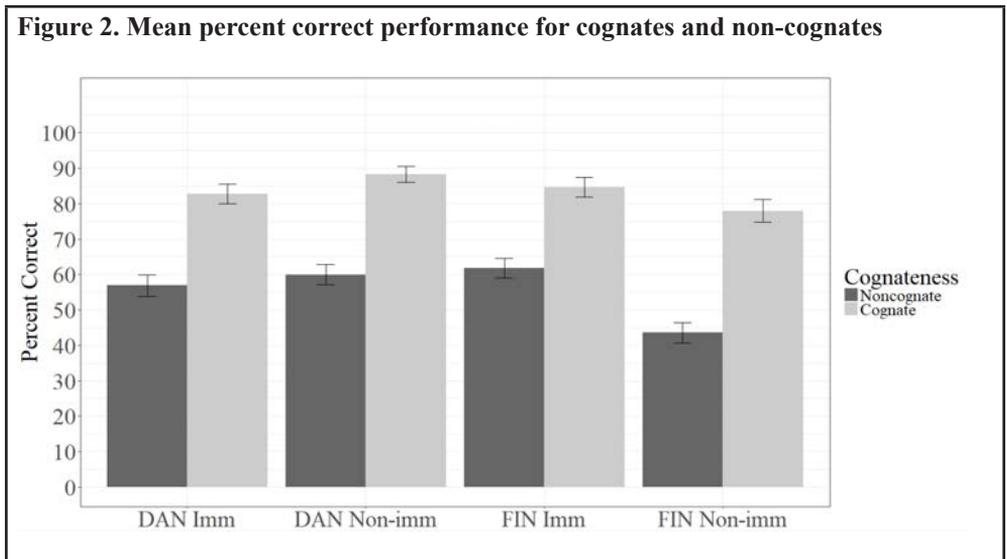
In order to test the effect of cognate facilitation and its interactions with the other predictors, the L2 learner data was subjected to a logistic mixed effects model (Model 2) with *Frequency Band, L1, Immersion*, and *Cognateness* as fixed effects, random intercepts for *Subject* and *Word* and random subject-slopes for Frequency Band, Cognateness, and their interaction and random word-slopes for L1, Immersion, and their interaction. The model formula was:

> Model 2 <- glmer (Performance ~ L1 * Immersion * FrqBand
> * Cognateness + (L1 * Immersion|Word) + (FrqBand *
> Cognateness|Subject), family = "binomial")

Model 2 also showed a significant frequency effect ($p < 0.0001$) and a significant difference between L1 Danish and L1 Finnish learners ($p = 0.0495$). The model moreover revealed a significant main effect of Immersion ($p = 0.033365$) and of Cognateness ($p < 0.0001$). Cognate words were 3.55 times more likely to be identified correctly than non-cognate words. The significant interaction between Frequency Band and Cognateness shows that the frequency effect is stronger for non-cognate words ($p = 0.0005$). The significant interaction between L1 and Immersion shows that Immersion had a larger effect for L1 Finnish learners than for L1 Danish learners ($p < 0.0001$). The significant interactions between Immersion and Frequency Band ($p = 0.0018$) and Immersion and Cognateness ($p = 0.0337$) show that while the frequency effect was stronger for immersion learners than for non-immersion learners, the cognate effect showed the reverse pattern. Finally, Model 2 revealed a significant 3-way interaction between L1, Immersion, and Frequency Band ($p = 0.0009$). The remaining interactions did not reach significance. Table 3. presents the statistics of this model.

	Estimate (log odds ratio)	Odds ratio	Std. Error	z	p
Table 3. Statistics for Model 2. Significant effects (at the 0.05 level) are highlighted in light grey.					
L1 (Danish vs. Finnish) Coded as + ½ Danish – ½ Finnish	0.4337	1.542956	0.2208	1.964	0.049487
Immersion Coded as + ½ Imm. – ½ Non-imm.	0.4478	1.564866	0.2105	2.128	0.033365
Frequency Band	-2.2421	9.413078	0.3746	-5.986	2.15e-09
Cognateness Coded as + ½ Cognate – ½ Non-cognate	1.2680	3.553738	0.2914	4.351	1.36e-05
L1 * Immersion	-1.8163	6.149065	0.4181	-4.344	1.40e-05
L1 * Frequency Band	-0.3890	1.475505	0.2586	-1.504	0.132604
Immersion * Frequency Band	-0.6997	2.013149	0.2237	-3.128	0.001759
L1 * Cognateness	-0.3009	1.351074	0.2859	-1.053	0.292495
Immersion * Cognateness	-0.5211	1.683879	0.2454	-2.123	0.033734
Frequency Band * Cognateness	-1.4670	4.336207	0.4230	-3.468	0.000524
L1* Immersion * Frequency Band	1.4455	4.243974	0.4371	3.307	0.000942
L1 * Cognateness * Frequency Band	-0.4962	1.642468	0.4772	-1.040	0.298430
Immersion * Cognateness * Frequency Band	-0.0490	1.05022	0.3649	-0.134	0.893170
L1 * Immersion * Cognateness	-0.4146	1.513765	0.4847	-0.855	0.392311
L1 * Immersion * Frequency Band * Cognateness	0.8906	2.436591	0.7196	1.238	0.215835

5. Discussion

The vocabulary sizes obtained from the test ranged from 14,600 to 18,200 word families for the L1 English speakers. This is slightly lower than the 16,000-20,000 word families found in previous studies, suggesting that the adopted version of the Vocabulary Size Test slightly underestimates vocabulary size. This possible underestimation may be due to the small number of items per frequency band, which makes it possible for individual items that stick out in some respect to skew the results markedly. It should be noted, however, that the L1 English speakers were young (mean age = 20.65 years), and vocabulary size typically grows throughout the life span (Zechmeister et al. 1995). On the other hand, they were all university students (eight in their third year, five in their second year, and one in her first year), and vocabulary size typically increases with degree of education (Diack 1975: 12).

The vocabulary sizes estimated for the L2 learners ranged from 8,600 to 17,000 word families The range is clearly larger for L2 learners than for L1 English speakers. Although statistical analyses showed that the L1 English speakers significantly outperformed the L2 learners, some L2 learners obtained vocabulary sizes within the native speaker range. The larger range for L2 vocabulary sizes seems to be related to differences in L2 immersion for the L1 Finnish participants. L1 Finnish immersion learners obtained vocabulary sizes between 12,200 and 16,800 word families, while L1 Finnish non-immersion learners obtained vocabulary sizes between 8,600 and 14,600 word families. Surprisingly, L1 Danish immersion learners obtained slightly smaller vocabulary sizes, within the range of 9,200 to 16,200 word families, than L1 Danish non-immersion learners, for whom vocabulary sizes ranged from 10,600 to 17,000 word families. This reverse and less clear pattern observed for L1 Danish learners is plausibly due to the fact that a number of participants in both L1 Danish groups were students of English, while this variable was confounded with L2 immersion in the L1 Finnish participants, so that all L1 Finnish immersion participants were students of English and no L1 Finnish non-immersion participants were students of English.

The L2 vocabulary estimates obtained suggest that all participants are lexically equipped to understand spoken English, which requires a vocabulary size of 6,000 to 7,000 word families (Nation 2006), and that most participants are also lexically equipped to read novels and newspapers

unaided in English, which requires a vocabulary size of 8,000 to 9,000 word families (Nation 2006).

Based on previous research, two hypotheses were stated and tested:

The word frequency hypothesis: *A positive relationship between word frequency and correct word definition is expected. The word frequency effect is expected to be larger for L2 learners compared to native speakers, and for non-immersion learners compared to immersion learners.*

The word frequency hypothesis was partially supported by the present data. A significant effect of word frequency showed that words from the lowest frequency band were 66.55 times more likely to be identified correctly than words from the highest frequency band. However, contrary to expectation and previous research, this frequency effect was found to be significantly larger for native speakers compared to L2 learners and for immersion learners compared to non-immersion learners. This surprising finding may be a result of the corpora used to establish frequency counts not reflecting the language that L2 learners are exposed to. The 12 most frequent bands of the 14,000 word version (Nation and Beglar 2007) are based on frequency counts from the spoken section of the BNC, since these were considered more appropriate for L2 learners than counts based on the entire BNC, due to frequency counts from the entire BNC being heavily influenced by the formal, written nature of the BNC. Nevertheless, the 12 most frequent bands of the 20,000 word versions (Nation 2012) seem to be based on frequency counts from the entire BNC.

The cognate facilitation hypothesis: *Cognates are expected to be defined correctly more often than non-cognates by L2 learners. The cognate facilitation effect is expected to be larger for non-immersion learners than for immersion learners.*

The cognate facilitation hypothesis was supported by the present data. Significant cognate facilitation showed that cognate words were 3.55 times more likely to be identified correctly than non-cognate words. As predicted, this cognate facilitation was found to be significantly larger for non-immersion learners than for immersion learners.

Despite the fact that the adopted version of the Vocabulary Size Test showed an implausibly small difference in cognate proportion between Danish (41%) and Finnish (36%), L1 Danish learners were found to outperform L1 Finnish learners. The statistical analyses showed no

evidence to suggests that cognate facilitation differed between L1 Danish and L1 Finnish participants, so the explanation is unlikely to be found in cognate facilitation. The L1 Danish advantage may nevertheless reflect the closer linguistic similarity between English and Danish vis-à-vis English and Finnish. The shared Germanic origin is not only reflected in cognates but also in a more global phonological resemblance between English and Danish words. Whereas English phonotactics does not differ markedly from Danish phonotactics (Crystal 2003; Grønnum 2001), it does differ markedly from Finnish phonotactics. Important phonotactic differences between Finnish and English include vowel harmony, which is present in Finnish (Karlsson 1999) and absent in English, and consonants clusters, which are much more restricted in Finnish than in English (Sulkana & Karjalainen 1992: 369-370). These global phonological similarities may aid L2 vocabulary learning for L1 Danish learners compared to L1 Finnish learners. In other words, L1 Danish learners be more successful than L1 Finnish learners in learning English vocabulary because even non-cognate lexemes have a more familiar phonological structure for L1 Danish learners than for L1 Finnish learners. This account is in line with Ellis and Beaton's (1995) list of psycholinguistic determinants on L2 vocabulary learning, which includes the factor *pronounceability*. A word's pronounceability depends on how similar it is to the L2 learner's L1 lexicon in terms of segments and phonotactics. Importantly, support for the influence of pronounceability on word learning has been found in word learning studies in which subjects were not asked to pronounce the words (Rodgers 1969).

Summing up, the present data provided support for the cognate facilitation hypothesis but only partial support for the word frequency hypothesis. The lack of support for the word frequency hypothesis may be related to the frequency counts that the adopted version of the Vocabulary Size Test are based on. An L1 Danish advantage unrelated to cognate facilitation was moreover observed. This advantage may be related to phonotactic similarities between English and Danish.

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The differences between Danish determiner and quantity genitives: The essential data set[1]

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Abstract

This paper presents the set of essential syntactic and semantic data pertaining to Danish determiner genitives like *Bos gode digt* ('Bo's good poem'), measure genitives like *to timers hård sejlads* ('two hours' tough sailing') and constitutive genitives like *to retters lækker menu* ('two courses' delicious menu)'. The two latter genitive types are both subtypes of the class of quantity genitives. I lay out a chart of Danish pre-nominal genitives and justify the inclusion of each type and its position in the chart. In a detailed table, the differences are characterised and exemplified to make comparison possible and contrasts transparent. Finally, I discuss a number of issues concerning definiteness, pronominalization, constituency and cliticization raised by a DP-analysis of determiner genitives proposed by Sten Vikner. Since we are still far from understanding the full landscape of Danish genitives syntactically as well as semantically, the aim of this paper is to offer an accurate description of the data in order that the creation of a coherent theory of Danish genitives may be thereby facilitated.

1. Methodological preliminaries

The first major work to explore and explicate generative syntax was Chomsky's *The Logical Structure of Linguistic Theory* in the mid-1950s.[2] Three interdependent goals were set up: First, the construction of grammars for particular languages; second, the construction of an abstract theory of

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[1] My heart-felt thanks are due to professor emeritus Robert E.Wall, UT Austin, for reading and discussing the paper with me.

[2] Later published as Chomsky 1975.

linguistic structure; thirdly, and most ambitiously, the so-called level of "justification of grammars", understood as an explanatory theory of why grammars of natural languages have the exact properties they do (see Chomsky 1975, §3; Chomsky 1964, ch.2; Chomsky 1965, §§4–7). At the lowest level of linguistic description, the focus is on the accurate rendition of the facts pertaining to the language under scrutiny. However, since the three goals are supposed to be systematically intertwined, in principle, the description suggested for the particular language should be in compliance with some abstract theory of linguistic structure, e.g. – to take a long leap to our present day and age – a version of Principles and Parameters theory (P&P).

This paper operates between the two lowest levels, in Chomsky (1964, ch.2; Rizzi, 2016) termed the levels of "observational adequacy" and "descriptive adequacy", respectively. My description transcends "observational adequacy" in that this level does not take into account syntactic structure, but aims only at generating the exact set of strings belonging to the language. The reason why I do not reach the level of "descriptive adequacy", is that this level should capture the structures matching native-speaker intuitions. This, of course, requires a full theory of the language, which is exactly what we do not have. So, what I do offer is a, hopefully, accurate rendition of the observable syntactic and semantic facts pertaining to a theoretically challenging fragment of Danish grammar covering the two major types of pre-nominal genitives, determiner genitives like those in) and quantity genitives like those in):

(1) Bos   mand
    'Bo's   husband'
(2) to   retters   menu
    two   courses.GEN   menu
    'two course menu'

I staunchly support Chomsky's (1957: 5) call for "precisely constructed models for linguistic structure". But let me add a quote from Otto Jespersen, which pre-dates Chomsky by almost two decades:

> […] the complexity of human language and thought is clearly brought before one when one tries to get behind the more or less accidental linguistic forms in order to penetrate to their notional kernel. Much that we are apt to take for granted in everyday speech and consider as

simple or unavoidable discloses itself on being translated into symbols as a rather involved logical process […] (Jespersen, 1937: 15).

It seems fair to say that Jespersen was an early proponent of using formal representations in linguistic description, both with respect to individual languages and as a possible basis for cross-linguistic comparison. His formalisations were not mathematically well-defined as he emphasizes himself, cf. his use of italics in the following quote: "[My system] cannot pretend to the same degree of universality as either the chemical or mathematical symbols […] because of the fact, which it is no use shirking, that *language is everywhere socially conditioned*" (Jespersen, 1937: 13–14). This brings to light the immense difference between the perspectives from which Jespersen and Chomsky each perceive human language. There is absolutely no universalism in Jespersen's philosophy of language[3], whereas universalism is at the very heart of Chomsky's.

I am a universalist in Chomsky's sense. What I borrow from Jespersen, however, is his insistence on establishing systematic correlations between the "notional kernel" and "the more or less accidental linguistic forms". Jespersen's efforts to make syntax and semantics come together in a systematic way is a far cry from chomskyan linguistics and much more in the vein of modern non-transformational, monostratal, sign-based, formal linguistic theories like GPSG, HPSG and LFG, whose express aim was – and is, insofar as the theory is still around – to have a formally well-defined syntax support an explicit, compositional formal semantics. GPSG is now extinct, but the authors' remarks on universals, the syntax/semantics interface and methodology are still very important, see Gazdar et al. (1985: 1–12) and the discussion of the status of semantic compositionality as a part of the Faculty of Language in Del Pinal (2015). For the same reason, the notionally grounded syntactic analysis of another Danish grammarian, Kristian Mikkelsen (1911), will play a central role in the data presentation and the arguments concerning the DP-analysis in section 5.

The structure of the paper is as follows: Section 2 introduces the crucial syntactic test for distinguishing determiner genitives from quantity genitives. Section 3 presents a chart exhibiting the subtypes of the two types of genitives, and each subtype is briefly described. Section 4 details the comprehensive data set distinguishing the two genitive types syntactically

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[3]   See Jespersen's remarks on universal grammar and grammatical categories in Jespersen (1924: 46-53).

as well as semantically, and the semantic differences between measure
and constitutive genitives are laid out as well. Sections 5 and 6 discuss
selected aspects of Sten Vikner's attempts to capture the syntax of Danish
determiner genitives in a DP-analysis. Finally, section 7 summarizes and
concludes my deliberations.

2. The two main types of Danish pre-nominal genitives

Determiner and quantity genitives are readily told apart by a syntactic test
whereby an attributive AP is inserted after the genitive morpheme in each
case, cf. the acceptability patterns in (3) and):

(3)   Determiner Genitive (DG)
      a.   Bos   ven
           'Bo's   friend'
      b.   *Bos   god   ven
           Bo's good$_{[SG;INDEFINITE]}$ *friend*
      c.   Bos   gode   ven
           Bo's   good$_{[SG;DEFINITE]}$ *friend*

(4)   Quantity Genitive (QG)
      a.   to   timer -s   sejlads
           'two hours' sailing'
      b.   to   timer -s   god   sejlads
           two   hours'   good$_{[SG;INDEFINITE]}$ *sailing*
      c.   *to   timer -s   gode   sejlads
           two   hours'   good$_{[SG;DEFINITE]}$ *sailing*

The examples in) illustrate the mandatory definite form of attributive APs
in DGs, cf. the AP head *gode* in   c), whereas QGs require the indefinite
form *god*, as seen in b). For all genitives, this test is sufficient to establish
whether they belong to a subtype of the category DG or of the category QG.
However, there are a considerable number of other syntactic and semantic
differences between the two genitive types as explained in sections 3 and
4 below.

3. A chart of Danish pre-nominal genitives

Having established the crucial syntactic difference between DGs and QGs,
we can now present a "chart" of Danish pre-nominal genitives, cf.):

(5)[4]
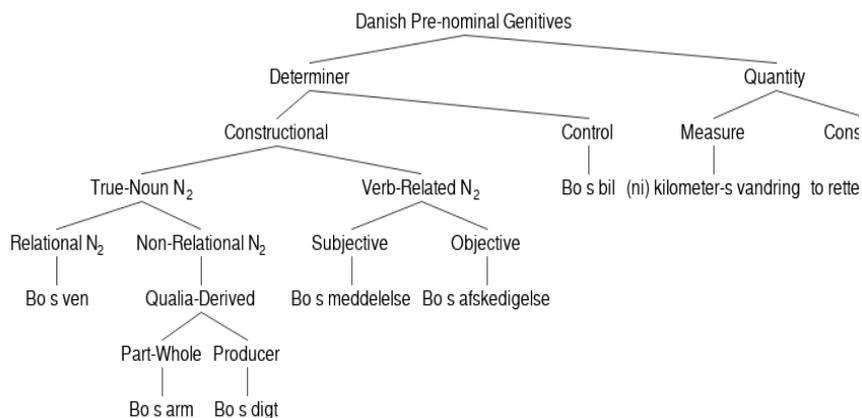
I shall refer to the {s}-morphemes of the two genitive types as "DG *s*" and "QG *–s*", respectively.[5] I take DG *s* to be a free, clitic lexeme, which is why (contrary to the written Danish convention) I occasionally write it as a separate item as in *Bo s bil* ('Bo s car') instead of *Bos bil*. The QG *to retters menu* ('two courses' menu') is, theoretically speaking, correctly written with *-s* as part of the preceding noun to which it mandatorily attaches.

As should be immediately evident from the chart in), most of the designations of subtypes have a semantic rather than a syntactic basis. This is owing to the fact that all DGs share the same syntactic structure, as do all QGs. The syntactic structure of QGs, however, is arguably completely different from that of DGs (cf. Jensen, 2017). We shall now look at the two types in turn.

Determiner genitives. Under the category of DGs on the top left-hand branch of the chart, the major split is between 'constructional' interpretations

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4 English glosses for the phrases at the leaves of the chart from left to right: 'Bo's friend'; 'Bo's arm'; 'Bo's poem'; 'Bo's announcement'; 'Bo's sacking'; 'Bo's car'; '(nine) kilometres' hiking'; 'two courses' menu'. The parentheses around *ni* in the QG *(ni) kilometer-s vandring* indicate optionality of the quantifier, which is an important feature distinguishing measure genitives from constitutive genitives, cf. item 12 in Table 1.

5 Throughout the paper, it is therefore important to notice the notation conventions not only between the two genitive forms DG *s* and QG *-s*, but also the abbreviations 'DGs' and 'QGs', which respectively abbreviate the plural forms 'determiner genitives' (i.e. a full phrase like *en digter s værk* ('a poet's work')), and 'quantity genitives' (i.e. a full phrase like *to retter s menu* ('two courses' menu')).

and 'control' interpretations. This distinction builds on the hypothesis that the 'genitive relation', which is always understood but never explicit in genitive constructions, has different origins in the DGs. The control relation seems to originate from *s* itself, since, in an example like *Bo s bil* ('Bo's car') it seems not to be available from either *Bo* or *bil*. Thus, *s* looks like the only possible lexical source. For a more detailed elaboration of the concept of 'control', see Jensen & Vikner (2004, section 3.5.1). In constructional DGs[6], on the other hand, the genitive relation does not come from *s*. Instead, it is picked up from the meaning provided by the nominal following *s* (henceforth, 'N_2') in the genitive construction. For relational true nouns[7], such as *ven* ('friend') in *Bo s ven*, this hypothesis works fairly well since a relation is immediately available from the argument structure of the head noun of the construction.

   To all intents and purposes, the same holds for genitive constructions with nominal heads derived from verbs, e.g. *Bo s meddelelse* ('Bo's announcement'), where *meddelelse* is derived from the verb *meddele* ('announce') and *Bo s afskedigelse* ('sacking'), where *afskedigelse* is derived from the verb *afskedige* ('sack', 'fire', 'lay off') , and where the derived nominal inherits the relation expressed by the verb stem. In all of these cases, the semantic function of the nominal preceding DG *s* (henceforth, 'N_1') is to provide a semantic argument for the genitive relation.

   Relational interpretations of non-relational (sortal) true nouns like *arm* ('arm') and *digt* ('poem') come about in a more indirect manner. As suggested by Jensen & Vikner (1994) and elaborated in Vikner & Jensen (2002), information about salient relations into which the referents of such nouns enter, may be picked up from the qualia structure of N_2. In the chart, this type of genitive interpretation is therefore designated 'Qualia-Derived'.[8] Empirical investigations into qualia-derived interpretations (see Jensen & Vikner, 2004) show that especially the part-whole and the producer interpretations provided by the Constitutive and the Agentive

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6   The term 'constructional' was suggested by Barbara Partee, see also Borschev & Partee (2000: 179, 192).

7   My use of the term "relational noun" is the one proposed by Löbner (2011: 2): "Relational nouns are binary predicate terms of type $<e,<e,t>>$. Their meanings are binary relational concepts, involving a further argument in addition to the referential argument. Relational nouns characterize their referents in terms of a particular relation to some other object. […] this object is usually specified by means of a possessive construction."

8   See Pustejovsky (1995) for the concept of 'qualia structure'.

roles, respectively, are relevant to the semantics of DGs. An explanation of why the Telic role does not seem to come into play in semantic[9] genitive interpretations (contrary to what is claimed in Jensen & Vikner 1994) is unavailable even today.

The above brief review of interpretations of constructional and control genitives exhausts the DG categories mentioned in the chart. However, a number of other subtypes have not been included even though they clearly belong with the DGs.[10] The reason is that they cannot be straightforwardly incorporated into the analysis of constructional genitives presented above, which relies crucially on the availability of a relation from N_2 and a semantic argument delivered by N_1. One of these subtypes is genitives with a time-denoting N_1:

(6) dagen　　s　　　avis
　　day-the GEN　paper
　　'today's paper'

Jensen & Vikner (2004) proposes an analysis of these appealing to the concept of 'temporal trace' introduced by Krifka (1989). That is, "If *e* is an eventuality, the temporal trace of *e* is the time interval occupied by *e*".[11] In examples like), the temporal element seems to me to relate to some qualia-retrievable relation like the producer-relation 'publish' obtainable from the Agentive role of *avis*, where the N_1 *dagen* anchors the time reference of the publishing/printing event. Further research is needed here.

Another subtype of DGs which does not fit into the interpretation pattern above, is illustrated in):

(7) Danmark　s　　　rige
　　Denmark　GEN　realm
　　'the kingdom of Denmark'

For a recent treatment of this type in languages other than Danish, see Sæbø (2018).

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[9]　The distinction I am making here between "semantic" or "lexical" interpretations on the one hand and "pragmatic interpretations" on the other is due to Briscoe et al. (1990: 42-43).

[10]　For the full range of DGs, see Mikkelsen (1911: 162-63) and Jensen (2014).

[11]　For the formalization of the temporal trace function, see Krifka (1989: 97).

Quantity genitives. The category of QGs on the top right-hand branch of the chart comprises the two subtypes 'measure genitives' and 'constitutive genitives', which share the exact same syntax, totally different from that of DGs. According to Hansen & Heltoft (2011:436)[12], the syntactic role of DG *s* is to rankshift a nominal (indeed, a full DP) from its nominal function to determiner function. Following their analysis, Jensen (2017: 57) argues that the syntactic function of QG *-s* is to rankshift NPs like *to meter* ('two metres') or *to retter* ('two courses') to the syntactic function of attributive APs. In both cases of rankshifting, of course, the consequences for the semantics of the two genitive types are considerable. Indeed, the semantics of QGs differs from that of DGs exactly as radically as the semantics of attributive adjectives differs from that of determiners. In formal semantic terms, the function of QG *-s* is to typeshift the denotation of a nominal (a property of type $<e,t>$) into the denotation of an attributive AP (i.e. a function from a property to a property, that is, the type $<<e,t>,<e,t>>$). This is what happens semantically when one conjoins the meaning of an attributive AP and the nominal it modifies; for instance, 'pretty' is a property and 'girl' is a property; if these properties are conjoined, one gets the property 'pretty (and) girl'. This is roughly similar to what happens when a property like 'length_in_metres_equal to 2' is conjoined with a property like 'fishing rod' to get 'two metres long (and) fishing rod'.

Both measure genitives (MGs) and constitutive genitives (CGs) contribute to the full meaning of the construction with a quantity interpretation. However, while MGs ascribe a numerical value to a lexically determined parameter like length, height, weight, etc., CGs are quite different due to their additional meronymical semantics. CGs specify a value indicating the number of part-items to which N_1 refers; for instance, in the example *en to retters menu* ('a two courses' menu') *to* ('two') indicates the number of courses that constitute the parts of the whole referred to by N_2, in this case *menu*. The fact that CGs express meronymy, crucially relates them semantically to DGs, which have meronymy as one of their core semantic meanings, cf. examples like: *husets tag* ('the house's roof'), *mængdens tal* ('the set's numbers') etc. However, while for DGs both the Constitutive and the Agentive qualia roles are relevant, only the constitutive role comes into play with CGs (hence my choice of the term 'constitutive genitives'). Based on his analysis of the formal semantics of constitutive nouns and, more generally, countable nouns, Jensen (2017)

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[12] Using a concept of 'rank' originally conceived by Jespersen (1924:96).

lays out a proposal as to how the semantic composition of CGs may take place, e.g. for *en to retters menu*, the result comes out as):

(8) $\lambda P[\exists x,y$ (course'(y) $\wedge$ number'(y) = 2 $\wedge$ menu'(x) $\wedge$ has_part'(y)(x) $\wedge$ part_of'(x)(y) $\wedge$ P(x))]

This concludes my summary account of the semantics of the subcategories of pre-nominal genitive types in the chart in). In the following section, I present a thorough overview of all relevant data pertaining to the syntactic and semantic differences between DGs and QGs.

4. The essential data set:
Distinguishing determiner genitives from quantity genitives in Danish

This section presents in a tabular form the syntactic and semantic characteristics of Danish DGs and QGs. The characterization of QGs relies on the argument set out in Jensen (2017).[13] As regards the syntax of Danish DGs, I consider it very much an open issue, to which I return in section 5.

Table 1: Syntactic and semantic characteristics of Danish DGs and QGs.

	Determiner Genitives (DG)	**Quantity Genitives (QG)**
Syntax **1**	**Attributive APs following DG *s* must take the definite form.** Bo s gode digt *Bo GEN good*[DEFINITE] *poem* Bo s *godtdigt *Bo GEN good*[INDEFINITE] *poem* 'Bo's good poem'	**Attributive APs following QG *-s* must take the indefinite form.** to timer-s *hårde sejlads *two hours-GEN tough*[DEFINITE] *sailing* to timer-s hård sejlads *two hours-GEN tough*[INDEFINITE] *sailing* 'two hours' tough sailing' **A**

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[13] The bold-faced letters **A** and **U** in the bottom right-hand corner of each cell in the QG-column respectively indicate whether the item is [A]nalysed or [U]nanalysed in Jensen (2017).

2	DGs may be substituted by possessive pronouns.[14]	QGs may not be substituted by possessive pronouns.
	<u>drengen</u> s hårde sejlads 'the boy's tough sailing' <u>hans</u> hårde sejlads 'his tough sailing'	<u>to timer-s</u> hård sejlads 'two hours' tough sailing' *<u>deres</u> hård sejlads 'their tough sailing' **A**
3	**Stacked DGs cannot permute preserving meaning.**	**Stacked QGs may permute preserving meaning.**

	(i) denne elev s lærer s brev
	    'this pupil 's teacher's letter'
	
	(ii) denne lærer s elev s brev
	    'this teacher's pupil's letter'
	
	(i) ≠ (ii)
		(i) 60 kvadratmeter-s to værelser-s lejlighed
		    '60 square metres' two rooms' flat'
		
		(ii) to værelser-s 60 kvadratmeter-s lejlighed
		    'two rooms' 60 square metres' flat'
		
		(i) = (ii)
		
		A

4	**DG _s_ rankshifts N_1 into a determiner.**	**QG _-s_ rankshifts N_1 into an attributive adjectival[15] allowing it to intersperse with APs.**

	(i) *en bil tag
	    a car roof
	
	(ii) en bil s tag
	    a car GEN roof
	
	'a car's roof'
		(i) 140 kilometer-s flot solokørsel
		    140 kilometer-GEN great solo ride
		
		(ii) flot 140 kilometer-s solokørsel
		    great 140 kilometer-GEN solo ride
		
		'great 140 kilometers' solo ride' **A**

5	**All DGs have the same syntactic structure**	**All QGs have the same syntactic structure** **A**

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[14] Whilst this description is received wisdom in most analyses of DGs, including generative ones, it is challenged by by Vikner (2012) and Vikner (2014); therefore I cannot claim my formulation of this item to be theoretically neutral. For further discussion, see sections 5 and 6 below.

[15] More specifically, QG -s attaches to members of the class of quantity nouns identified by Jensen (2017).

6	DGs with part-whole-interpretation have the whole-denoting nominal preceding *s*. <u>pigen</u> s arm *girl-the GEN arm* 'the girl's arm'	Constitutive genitives have the part-denoting nominal preceding -*s*. to retter-s menu *two courses-GEN menu* 'two course menu' **A**

7	DG *s* attaches to the rightmost phonetically realised word form of N₁ independently of the word class of this word form.
	
	manden med hatten s søn
	man-the with hat-the GEN son
	
	'the man with the hat's son'
		QG -*s* must attach to a preceding quantity noun[16].
		
		(i) to timer-s rejse
		    two hours-GEN journey
		
		(ii) *to timer med båd-s rejse
		     two hours by boat-GEN journey
		
		                                             U

8		Measure genitives[17] may form a constituent in two different syntactic structures. 1) Measure genitives may form part of a DP containing an article agreeing in number and gender with the nominal following the QG: et to timer -s show *a_[NEUT] two hours_[COM]-GEN show_[NEUT]* 'a two hours' show' 2) Measure genitives may form a constituent of a DP whose head agrees in number and gender with the noun to which the measure genitive -*s* attaches: de to timer-s ridt *the_[PLU] two hours_[PLU]-GEN ride_[SG]* 'the two hours' ride' **U**

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[16] Cf. the classification proposed by Jensen (2017, sect. 4.2).

[17] But apparently not constitutive genitives, which allow only the first structure, i.e. (i):

(i)   et   to   motorer-s   fly
    a_[NEUT] two engines_[COM]-GEN   plane_[NEUT]

ii)   *de   to   motorer-s   godt   fly
    the_[PLU]   two   engines_[PLU]-GEN   good_[SG]   plane_[SG]

9	Since DG *s* is preceded by a full DP, it allows the head noun of that DP to assume any definite or indefinite form.	QG *-s* may attach only to a preceding indefinite noun.
	en pige s arm *a* *girl*[INDEFINITE] *GEN* *arm* 'a girl's arm' denne pige s arm *this* *girl*[INDEFINITE] *GEN* *arm* 'this girl's arm' pigen s arm *girl*[SG; DEFINITE]*GEN* *arm* 'the girl's arm' pigerne s arme *girl*[PL; DEFINITE] *GEN* *arms* 'the girls' arms'	timer-s vandring *hour*[PL; INDEFINITE]*-GEN* *hiking* 'hours' (of) hiking' *timerne-s vandring[18] *hour*[PL;DEFINITE]*-GEN* *hiking* 'the hours' (of) hiking' **U**
Seman-tics 10	**DG *s* requires a relation from N$_2$, and N$_1$ delivers an argument to that relation.**[19] (i) Relational nouns provide the genitive relation directly from their argument structure. (ii) Sortal nouns pick up a relation from an available qualia role: The agentive role yields a producer relation; The constitutive role yields a part-whole relation. (iii) DG *s* may itself deliver a 'control' relation.	**Measure genitives denote only measure**. to timer-svandring *two* *hours-GEN hiking* 'two hours' hiking' **A**
11		**Constitutive genitives denote measure and provide the part-term of a part-whole relation.** tre retter-s menu *three* *courses -GEN* *menu* 'three course menu' **A**

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[18] Notice that the reading here is not with *timerne* ('the hours') as subject. That would con-stitute a DG, not a QG, cf. *timernes langsomme vandring* ('the hours' slow wandering'), where *langsomme* is the definite singular form of the adjective *langsom* ('slow').

[19] For a formal semantic account of this theory for English, but also valid for Danish, see Vikner & Jensen (2002).

12		**Measure genitives may lack an explicit quantifier. These genitives express an underspecified, relatively small or relatively large amount of what is denoted by the head noun of the full genitive construction.**
		
		(i) på to kilometer-s afstand
		       from two kilometres-GEN distance
		        'from two kilometres' distance'
		
		(ii) på kilometer-s afstand
		       from kilometres-GEN distance
		        'from kilometres' distance'
		
		                                      A

13		**Constitutive genitives may not lack an explicit quantifier.**
		
		(i) fire døre-s sedan
		       four doors-GEN convertible
		        'four door convertible'
		
		(ii) *døre-s sedan
		       doors-GEN convertible
		        'door convertible'
		
		                                      A

This concludes my presentation of the essential data set showing the differences between DGs and QGs.

5. A DP analysis of Danish determiner genitives

Even though a tremendous amount of energy has been spent trying to account for genitive syntax and semantics across languages, as far as Danish is concerned, quite a few problems still need solving. An important first step is to understand the challenges raised by each item in Table 1. The following section is dedicated to initiating that task. Due to space limitations, only a tiny selection of the challenges can be addressed here. I have therefore chosen to focus on selected issues related to a chomskyan DP-analysis of Danish DGs, indeed, the only serious attempt to understand Danish DGs in a P&P framework, viz. Vikner (2012) and Vikner (2014). The latter is, by and large, a Danish version of the former, and both papers are rejoinders to Jensen (2012). Vikner proposes the following syntactic structure for Danish a DG like *en mands tegnebog* ('a man's wallet'):

(9)

```
                    DP₁
              ┌──────┴──────┐
            DP₂            D₁/₁
         ┌───┴───┐      ┌───┴────┐
       D₀/₂    NP₁    D₀/₁     NP₂
         │      │       │        │
        en    mand      s     tegnebog
```
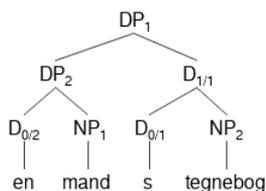
This structure says that DP_1 is headed by *s*, indicated by the subscript $_1$ added to the category D_0. In the specifier position sits another full nominal, DP_2, headed by $D_{0/2}$, the indefinite article *en* ('a').

6. Some challenges for Vikner's DP analysis of Danish determiner genitives

In this section, I shall discuss selected aspects of Vikner's DP-analysis including the crucial assumption of a constituent like [$_{D'}$ *s tegnebog*] (' 's wallet'), which is unique in that the DP projected from [$_D$ *s*] turns out to be ungrammatical in all syntactic contexts in the language. No other constituent exhibits that behaviour. I shall address a number of issues which are less familiar but firmly rooted in the set of Danish data in Table 1: Definiteness in DGs and attributive APs (cf. item 1); DG substitutability by possessive pronouns (cf. item 2); and finally DG *s* and cliticization (cf. item 7). I wrap up each subsection below with a number of questions raised in my discussion of the DP-analysis. I should add that I certainly do not have answers to all of them myself.

6.1. DGs and definiteness

The question of definiteness in Danish DGs is extremely intriguing. Vikner's papers do not address these issues, but they are well worth pursuing when trying to assess the merits of his DP-analysis.

'Internal' and 'external' definiteness in Danish DGs. Any theory of Danish pre-nominal genitives must be able to account for the definiteness feature of attributive APs following *s*. Jensen (1994) is the first to demonstrate that there are two independent definiteness 'systems' involved in DGs: one pertains to the DG internally, called 'internal definiteness', and the other concerns the external syntactic behaviour of DGs, in particular, their behaviour in *der*-constructions ('*there*-constructions'); this feature he

calls 'external definiteness'. The 'internal definiteness' of DGs is seen in examples like 0), where we observe the definite form of the attributive AP:

(10) a. en mand s fede tegnebog
          a man GEN fat[DEFINITE] *wallet*
          'a man's fat wallet'
      b. en mand s *fed tegnebog
          a man GEN fat[INDEFINITE] *wallet*
          'a man's *fat wallet'

The 'external definiteness' of DGs is in evidence in *der*-constructions like 1):

(11) a. der lå [en mand s tegnebog] i Melora s sengebord
          there lay a man GEN wallet in Melora GEN bedside cabinet
          'there lay a man's wallet in Melora's bedside cabinet'
      b. *der lå [mand-en s tegnebog] i Meloras sengebord
          there lay man-the GEN wallet in Melora.GEN bedside cabinet
           'there lay the man's wallet in Melora's bedside cabinet'

I shall start by looking at the external definiteness.

'External definiteness' and DP-heads. Danish *der*-constructions strongly select indefinite over definite nominals. This accounts for the acceptability pattern in). The only difference between the authentic example in a) and the constructed one in b) is that the indefinite article *en* ('a') in a) has been substituted by the definite suffix *-en* ('-the') in b). This shows that it must be the indefinite article that single-handedly determines the external definiteness of the DP *en mand s tegnebog* ('a man's wallet').
    Now, take a closer look at Vikner's DP-structure[20] for *en mands tegnebog* repeated here as 2):

(12)

No one would probably dispute that DP_2 is indefinite because it necessarily
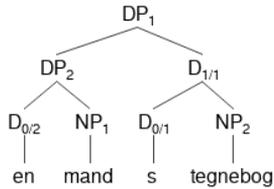
inherits its definiteness value from the indefinite singular common gender article *en*. By the same token, it ought to follow that DP_1 inherits its definiteness value from its head, *s*. But, as I have demonstrated in), it is the article $D_{0/2}$ in DP_2 that determines the definiteness value also of DP_1, not *s*! In fact, *s* seems to have nothing to do with the definiteness of DP_1. The DP analysis in), therefore, needs to answer the following question: By what principle does a DP inherit definiteness from its DP-specifier, when the definiteness of a DP usually percolates from its head, D_0? It seems, then, that *s* does not behave like other members of the category D, in particular, articles and demonstratives like *en* ('a'), *den* ('the'), *denne* ('this') etc. So, what is DG *s* doing in that category?

What does it mean that s is a D? An old saying goes: "If it looks like a duck, walks like a duck and talks like a duck, it probably is a duck!" Now, what if it doesn't? Talking about animals, I'd like to claim that *s* looks much more like a platypus than it does a duck. In addition to the empirical evidence on external definiteness already presented, there is more to back up the view that DG *s* has nothing whatsoever in common with other members of the category D. Compare an assumed lexical entry for *s* to partial lexical entries for the articles *en* ('a) and *det* ('the'):

(13) **en:**   **det:**   **s:**

CAT = D	CAT = D	CAT = ?
NUM = sg	NUM = sg	NUM = ?
GEN = com	GEN = neut	GEN = ?
DEF = indef	DEF = def	DEF = ?

The question marks in the entry for *s* indicate that all the feature values which typically characterize members of the determiner category are void for *s*. Thus, there is no empirical support for the alleged paradigmatic relation of *s* to the standard members of the category D. Due to space

limitations, I cannot go into the semantic differences which should also be part of the entries in), but my brief remarks on the semantics of DG *s* in section 3 should give a hint that the differences between the intricate relational semantics of *s* and the semantics of standard determiners are huge.

So, the next question the DP-analysis needs to answer, is this: What makes *s* qualify for paradigmatic membership of the category D? I now return to the question of the 'internal definiteness' and attributive APs in DGs.

The 'internal definiteness' of DGs. Recall that the internal definiteness of DGs concerns the definite form of possible attributive AP-modifiers. Apart from the provisional DEF-subscripts I have added to the AP and NP constituents, Vikner (2014) would assign the structure in (14) to *Bo s gode digt* ('Bo's good poem'):

(14)
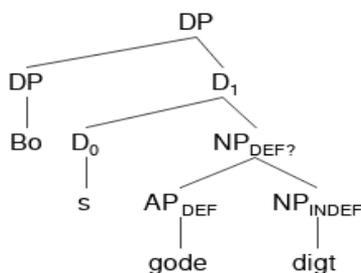
The added subscripts indicate respectively that *gode* is indisputably the singular definite form of the adjective *god*, *digt* is indisputably the singular indefinite form of the noun *digt*, and the 'DEF?' subscript on NP indicates a possible problem here.

Under standard definitions of *c*-command, *m*-command and government[21], the structure in (15) might seem to support the DP-analysis of DGs. In (15), *s* governs its NP complement. It would therefore seem that *s* may directly impose the definite form on the AP inside its complement.

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[21] See e.g. https://en.wikipedia.org/wiki/Government_and_binding_theory#Government and the references there.

However, subcategorization is not about requiring a certain form of a modifier inside a complement. Subcategorization is strictly about the form of the complement, e.g. its syntactic category or the phonetic form of its head without regard to any modifiers, whose occurrence is, by definition, unpredictable.

So, could it be that the definiteness of the AP-modifier is an indirect consequence of *s* requiring not only that the syntactic category of its complement be NP, but also that it be definite? If that were the case, one might argue that the attributive AP agrees with the N-head of *s*'s complement and the two NP nodes forming the adjunction. Unfortunately, the head of the NP complement *digt* ('poem') in (15) is not definite, and therefore the NPs cannot be either. In sum, there can be no definiteness requirement imposed by DG *s* on its complement NP. On top of that, Danish (unlike Norwegian and Swedish) does not allow definiteness agreement between head and modifier. This is hard evidence that the definite form of the AP comes neither from the NP dominating it nor from its NP sister node. It seems that the definiteness has to trickle down to the AP only, not affecting any of its adjacent NP nodes. I therefore sincerely doubt that the definiteness of the attributive AP can be an effect of subcategorization, i.e. complement government.

One last possibility one might consider, is that definiteness agreement holds between DG *s* and the attributive adjective. In other words, let's assume that *s* is specified as definite in its lexical entry, and that the attributive AP agrees with *s*. Since, according to the DP-analysis, *s* belongs to the same category as definite articles and demonstratives like *den* ('the$_{[ART;\ COMMON]}$') and *dette* ('this$_{[DEM;\ NEUTER]}$'), this proposal does not seem at all unreasonable because in Danish both articles and demonstratives do indeed agree with attributive APs wrt. definiteness, cf. 15):

(15)   a.   det   gode   digt
            the$_{[DEFINITE]}$ *good*$_{[DEFINITE]}$ *poem*$_{[INDEFINITE]}$
            'the good poem'
       b.   et   godt   digt
            a$_{[INDEFINITE]}$ *good*$_{[INDEFINITE]}$ *poem*$_{[INDEFINITE]}$
            'a good poem'

Therefore, we might hypothesize a similar pattern for *s* as indicated in 6):

(16)   s   gode   digt
       GEN[DEFINITE]   *good*[DEFINITE]   *poem*[INDEFINITE]
       's good poem'

Apart from the well-known fact that *s gode digt* works terribly badly as a constituent, the problem at hand is yet another serious one: The thing is that if *s* is definite, the DP projected from it must necessarily inherit that definiteness, which will cause a dreadful clash with the indisputable indefiniteness of the DP it projects in examples like), *en mand s tegnebog* ('a man's wallet'). Once again, we note the remarkable platypus-ness of DG *s* compared to the ducks in the D-pen. Thus, the next question for the DP-analysis of DGs is this: What is the principled explanation of how the DP-analysis accomplishes this definiteness assignment to attributive APs?[22]

6.2. Substitutability of genitives by possessive pronouns

The observation that DGs, but never QGs, are substitutable by possessive pronouns, is due to Mikkelsen (1911, §86/254). Despite its considerable seniority, this seminal observation has been completely overlooked in subsequent Danish grammatical literature, even by authoritative reference grammars like Diderichsen (1946) and Hansen & Heltoft (2011).[23]

But what is pronominal substitution about, then, particularly in relation to phrase structure grammar and its notion of constituency? A recent, in-depth study of this topic is Osborne (2018), which covers most of the available literature on the subject. One statement representative of Osborne's conclusions is this: "Pronominalization […] provides us with further evidence for phrases. This is because proforms replace phrases, rather than heads, and are thus words that 'stand for' phrases" (Lobeck , 2000: 53). The use of terms like 'pro-NP', 'pro-VP', and 'pro-DP' reflects this view of the process of pronominal substitution of phrases. Thus, one

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[22] Since this paper addresses both DGs and QGs, a brief remark on the definiteness of QGs is in order here. According to Jensen (2017: 51), QGs belong to a syntactic type which functions exactly like an AP pre-modifier. Thus, QG -s does not affect the definiteness of adjacent adjectival modifiers, and Jensen's hypothesis about the definiteness of QGs and APs should cause no problems for a DP-analysis (cf. Delsing 1993 sect. 3.2.2 and Platzack, 1998, sect. 8.4.2). Note that QGs do not belong to the phrasal category AP since they are not headed by an adjective. The head of a QG is QG -s, which belongs to the singleton category GQ, for details, see Jensen (2017, sect. 3.3).

[23] For a thorough discussion, see Jensen (2017).

would not expect it to be possible to have pronominal substitution of the individual words in the bracketed part of 7.a):

(17)   a. [en dreng s] gode digt
          'a boy's good poem'
       b. [hans] gode digt
          'his good poem'

On the other hand, the construction *en dreng s* ('a boy's') would be a prime candidate for a constituent since it is substitutable by the possessive pronoun *hans* ('his') as illustrated in 7.b). However, this analysis is challenged by Vikner, who analyses the examples in 7) as shown in 8), where *hans* does not substitute for *en dreng s*, but only for *s*:

(18)   a. en dreng $[_{D0}$ s   ] gode digt
          'a boy's good poem'
       b. $[_{D0}$ hans]   gode digt
          'his good poem'

According to Vikner, then, even though he makes a point of the fact that e.g. personal pronouns like English *he* and *one* do replace full phrases like DP and NP (see Vikner 2012:3), possessive pronouns belong to the category D_0 and do not substitute for phrases but for a single lexical item which could never form a phrase on its own. Thus, in his analysis *en dreng s* ('a boy 's') forms neither a constituent nor a phrase, whereas *s gode digt* (*GEN good poem*; i.e. "'s good poem') does. This means, of course, that we can no longer use possessive pronouns for phrasal substitution tests like all other pronouns. The upshot is that this DP-analysis sends most of the time-honoured methodological deliberations on pronominalization and constituency in phrase structure grammars down the drain.

In his analysis in), Vikner calls *hans* a possessive pronoun, while according to his own definition[24] – "determiners have NP complements, pronouns do not" – *hans* looks much more like a possessive determiner. Either way, he has now introduced a novel category into the grammar: a 'pro-D_0', which is clearly referential in its semantics, but which substitutes for an absolutely non-referential lexical item: *s*. Furthermore, this analysis disowns Mikkelsen's important discovery, which makes it

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[24]   Cf. Vikner (2014: 196).

immediately transparent that if *hans* substitutes for *en dreng s*, one gets the referential semantics for free, and, there can be no doubt that we need the male-sex pronoun *hans* rather than the female-sex pronoun *hendes* ('her'), for instance. What we gain by letting *hans* substitute for *s* is, at best, unclear as far as referentiality is concerned.

Three further questions to the DP-analysis have now appeared: Why do possessive pronouns behave differently from all other pronouns with respect to phrasal substitution? Is it methodologically satisfactory to claim syntactic substitutability between syntactic items with referential import like pronouns and non-referential single lexical items like DG *s*? How is the referent of a pro-D_0 like *hans* ('his') semantically retrieved?[25]

6.3. DG *s* and cliticization

Most modern treatments of Danish DGs assume that *s* is involved in a process of cliticization with respect to its preceding nominal, N_1. This assumption seems like an intuitively reasonable consequence of two things: First, the fact that /s/ cannot stand on its own due to rules of Danish phonology, and therefore has to find a host to lean to in order to create a legitimate phonological word form. Second, due to the traditionally accepted substitutability of constructions like *en dreng s* ('a boy's') by a possessive pronoun, the assumption is that N_1 is a complement or, at least, a syntactically close dependent of *s*.

For Vikner (2014) a more complex process is involved. In the DP-analysis, *s* is not in a phrasal construction with the specifier to which it supposed to cliticize, and according to P&P-theory heads cannot place syntactic requirements on their specifiers. It is therefore unclear what should theoretically allow *s* to enter into some kind of structure with N_1. Vikner mentions that clitics are also known from Romance languages, and he further suggests that *s* may behave somewhat like the English clitic negation *n't*. He claims that *n't* seems to select the category of its host, which should account for the acceptability of [*does*]*n't* vis-à-vis the unacceptability of *[*John*]*n't*.

For two reasons, I'm rather skeptical about Vikner's analysis: First, couldn't the unacceptability of *[*John*]*n't* simply follow from the straightforward semantic fact that one cannot meaningfully deny a physical object, but only the occurrence of an event or the truth value of a

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[25]   I'm aware that c-command requirements are met, but that does not explain how one gets the semantics right as when one assumes phrasal substitution.

proposition? Second, in their seminal work on clitics, Zwicky & Pullum (1983: 503) argue that English *n't* is like an affix, not a clitic. Their analysis is that affixes attach to words they are connected to semantically and to a particular part of speech, whereas clitics "exhibit a low degree of selection with respect to their hosts". I think, when one chooses to bring in data from other languages into one's argument, as Vikner does here, one has a very strict obligation to argue how the phenomena brought in are similar to the item investigated. I do not see any similarity between Romance clitic pronouns and DG *s*, even less between DG *s* and English *n't*, and between Romance clitic pronouns and the English contracted negation *n't* there is no similarity, either. Further, the analysis of *n't* as a clitic doesn't seem to hold up under closer scrutiny. So, bringing together Romance clitic pronouns, elements like English *n't* and Danish DG *s* in one argument is, in my opinion, methodologically unsound.

Yet another thing bothers me about the relationship of DG *s* to its specifier under a DP-analysis: It follows from the analysis of possessive pronouns as belonging to the category D that they project full DPs. The theory therefore erroneously predicts the grammaticality of expressions like 19) with structures like (20):

(19) a. *min s   bil
          'my's   car'
      b. *hans s   bil
          'his's car'

(20)
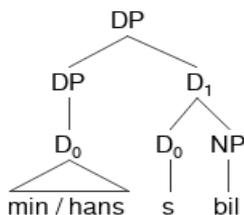
It is a mystery to me factually, syntactically, semantically and cliticization-ally what is supposed to be going on here.

7. Conclusion

On the basis of the methodological and theoretical stances of Noam Chomsky, Otto Jespersen and Kristian Mikkelsen, I have charted the landscape of Danish pre-nominal genitives and described in detail the syntactic and semantic differences between determiner genitives and quantity genitives. I have tried to present the differences neutrally, not relying on theoretical assumptions. Based on a small selection of the data, I have addressed a number of issues raised by a DP-analysis of determiner genitives proposed by Sten Vikner (2014). In particular, I have demonstrated how Vikner's proposal runs into problems explaining the patterns of definiteness, pronominalization, referentiality and cliticization. The overall conclusion of this discussion is that the DP-analysis is less than convincing. Further, the method of mixing disparate data from different languages in the argumentation is a cause for concern.

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Principle C[1]

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Abstract

A widely made observation is that there is something that disfavors repeating names, and name-like terms, when they are intended to corefer. This paper investigates the sentence internal version of this penalty. I begin by relating it to a more general condition in Tom Wasow's MIT dissertation that disallows an anaphor from having more information in it than that anaphor's antecedent. I attempt to sketch how that condition can be viewed as a consequence of how the presuppositions of definite descriptions are accommodated. I then argue that Principle C is a related version of this process, but one that holds of function application rather than anaphora strictly speaking. This is an idea of Ed Keenan's, which I modify so that it is related to the repeated name condition.

1. Introduction

Chomsky (1981) formulates a constraint on the referential relationships among what he calls "referring expressions." As a simplifying, though I believe equivalently good, way of formulating that condition, I will frame it in terms of definite descriptions. Here is a simple version of that condition, which he dubs "Principle C."

(1) Principle C
    A non-pronominal definite description must be disjoint in reference
    from a DP that c-commands it.

Principle C is designed to capture the contrasts between (2) and (3).
(Understand underlined DPs to corefer, i.e. not be disjoint in reference.
And understand coindexation to indicate that one DP is a variable bound
to the other.)

(2) a.   <u>The woman</u>'s father met someone who admires <u>the woman</u>.
     b.   No woman$_1$'s father met anyone who'd vote for the woman$_1$.

(3) a.   *<u>The woman</u> met someone who admires <u>the woman</u>.
     b.   *No woman$_1$ met anyone who'd vote for the woman$_1$.

I would like to try to take some steps towards understanding why Principle
C exists. My hope is to explain some of its particularities along the way.
    Often Principle C effects are illustrated by somewhat simpler examples
than the ones I've provided in (3). My examples involve putting the
definite description that triggers a Principle C effect (what I'll call "the
trigger" from now on) in a relative clause. Other examples said to illustrate
Principle C effects put the trigger into a complement clause, as in (4).

(4) a.   *<u>The woman</u> said that someone admires <u>the woman</u>.
     b.   *No woman$_1$ said that anyone admires the woman$_1$.

I will not consider these environments because they trigger disjoint
reference effects that seem to be independent of Principle C. That can be
seen by considering what happens with epithets, which trigger a disjoint
reference effect in contexts like (4), see (5), but don't trigger Principle C
effects, as the comparison between (3) and (6) indicates.

(5) a.   *<u>The woman</u> said that someone admires <u>the idiot</u>.
     b.   *No woman$_1$ said that anyone admires the idiot$_1$.

(6) a.   <u>The woman</u> met someone who admires <u>the idiot</u>.
     b.   No woman$_1$ met anyone who'd vote for the idiot$_1$.

Dubinsky and Hamilton (1998) argues that epithets are subject to a disjoint reference effect that targets logophoric contexts. Epithets cannot corefer with arguments that would be the logophoric center for a logophoric anaphor in that position. Complement clauses are generally related to a logophoric center, while relative clauses aren't. This, they argue, is what explains the contrast between (5) and (6). If other definite descriptions are also subject to the kind of disjoint reference effect that epithets are, then the disjoint reference effect in (4) could have that as its cause. I'll remove this possible confound and use relative clauses throughout when seeking Principle C effects.[2]

This introduces one of the peculiarities of Principle C that we should try to explain. Why do the definite descriptions it applies to not include epithets? If we treat pronouns as definite descriptions – and this seems reasonable given their meanings – then we have two kinds of definite descriptions that aren't Principle C triggers: epithets and pronouns. One of my goals will be to explain this.

A second goal should be to explain why c-command seems relevant. There is a glitch with the c- command condition that should be understood. We can see that glitch by looking carefully at the syntax for (2b) and (3b). The surface syntax for these two sentences is as indicated in (7).

(7)   a.
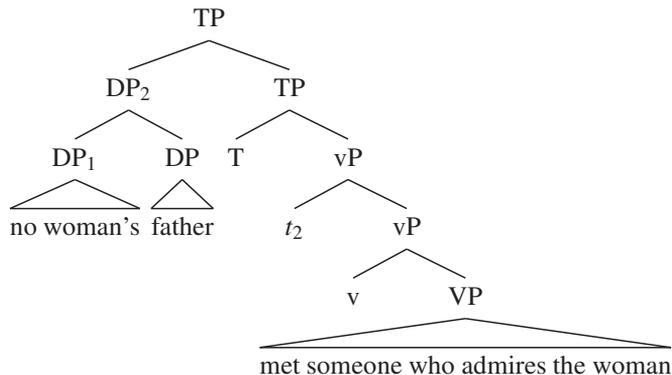
I'm taking the gamble, then, that relative clauses represent the whole gamut of contexts in which anti-logophoric effects are not at play. A more complete paper would see if that is correct, and consider adjunct clauses, as well as other kinds of complement clauses, that embed the trigger.

b.
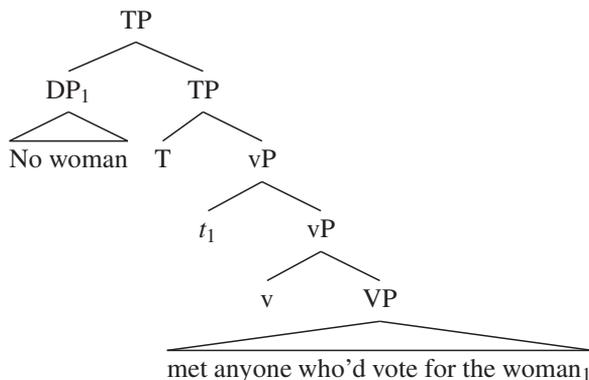
The DP *no woman* c-commands *the woman* in (7b), and for this reason Principle C is violated. But in (7a), *no woman* doesn't c-command *the woman*, and for this reason Principle C is satisfied. However, in many circumstances, for a term to be interpreted as a variable bound by another it must be c-commanded by that binder. This isn't always the case, of course, as there are several ways for something to be construed as a variable. Definite descriptions in particular are capable of being so construed even when c-command doesn't hold. One kind of example is in (8)

(8) In old timey movies, everyone who is introduced to a woman kisses the woman's hand.

In the most salient interpretation of this sentence, *the woman* is a variable whose value is determined by the value *a woman* gets. It's clear that *a woman* doesn't c-command *the woman*, and in fact because *a woman* falls within the scope of *everyone*, it also cannot have *the woman* in its semantic scope. We should determine whether or not this is the way that *the woman* gets its variable interpretation in (7a), because otherwise we would have grounds for thinking that *the woman* in this example actually is c-commanded by the quantifier it varies with.

I think it is unlikely that the bound variable interpretation of *the woman* in (7a) comes about in the same way that it does in (8). One of the features of the process involved in giving the bound variable interpretation in (8) is that it (often) becomes unavailable when negative quantifiers are involved. In (9), for instance, the variable interpretation for *the woman* is not available.

(9) In old timey movies, everyone who is introduced to no woman kisses
the woman's hand.

And yet, the quantifier in (7a) is negative and still successfully binds *the
woman*. Note also that the scope of *no woman* in (7a) is outside of the
definite description it is part of. The interpretation this sentence gets is
parallel to that of (10a) and not (10b).

(10)   a.   There is no woman, x, is such that x's father met someone who
            admires x.
       b.   The father that no woman, x, has met someone who admires x.

For these reasons, I suggest that Quantifier Raising puts the quantifier in
(7a) into a position where it does c-command *the woman*. From (7a) is
derived (11).

(11)
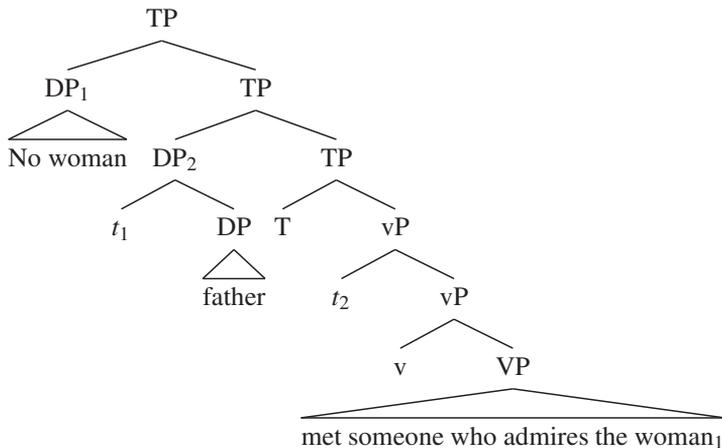
But, of course, if this is the solution to the problem of understanding
how *the woman* in this sentence is bound by *no woman*, it also predicts
that this example should violate Principle C. The suggestion that Chomsky
had for this kind of problem was to rely on a way of segregating syntactic
positions that DPs occupy into two classes. What makes those classes of
positions different is whether the general principles of anaphora see them or
not. Those that are seen, he called "Argument positions" (A-positions), and

the rest he called "A-positions." Principle C, along with those principles that govern which things various pronominals can be anaphoric to, only see DPs in A-positions. This is also something that I will strive to derive.

A final property of Principle C that is less frequently discussed is that its strength seems dependent on the particular definite descriptions that are involved.[3] This can be seen by considering the examples in (12).

(12)   a.   The woman met someone who admires her.
         b.   ??The woman met someone who admires the woman.
         c.   ??Jane met someone who admires the woman.
         d.   ??The best student met someone who admires the student.
         e.   ??The widow met someone who admires the woman.
         f.   ??The tall woman met someone who admires the woman.
         g.   *The woman met someone who admires Jane.
         h.   *The student met someone who admires the best student.
         i.   *The woman met someone who admires the widow.
         j.   *The woman met someone who admires the tall woman.

The same cline shows up even when c-command doesn't hold between one DP and the other:

(13)   a.   The woman's father met someone who admires her.
         b.   ?The woman's father met someone who admires the woman.
         c.   ?Jane's father met someone who admires the woman.
         d.   ?The best student's teacher met someone who admires the student.
         e.   ?The widow's father met someone who admires the woman.
         f.   ?The tall woman's father met someone who admires the woman.
         g.   *The woman's father met someone who admires Jane.
         h.   *The student's father met someone who admires the best student.
         i.   *The woman's father met someone who admires the widow.
         j.   *The woman's father met someone who admires the tall woman.

Principle C, then, describes the fact that whatever is responsible for the disjoint reference effects in (13) is magnified in situations where c-command from an A-position is involved.

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[3]   An exception is Lasnik (1989).

2. The Repeated Name Condition

I'll begin by trying to account for the difference in grammaticality that the last four examples in (12) and (13) have with the other examples in (12) and (13). This effect is sometimes called the "repeated name condition," and it can be found across sentences as well.

(14)   a.   *<u>The student</u>'s teacher was talking about her classes the other day. She told me that <u>the young student</u> is interested in linguistics.
       b.   <u>The young student</u>'s teacher was talking about her classes the other day. She told me that <u>the student</u> is interested in linguistics.

I will assume that the repeated name condition is a function of how discourses are organized. Unlike Principle C, it does not seem to be a property of sentence grammar.

   A simple observation is that the definite descriptions that invoke the strongest violation of the repeated name condition are more informative than the DPs they cannot corefer with. For instance, in *the woman's father met someone who admires the widow*, *the widow* provides more information about its referent than does *the woman*. The information about the referent that *the woman* provides is just that it is an adult female, whereas *the widow* says that its referent is an adult female that has also lost a spouse by death.

   Wasow (1972) studied this phenomenon, and he proposed The Novelty Constraint for it.

(15)   **Novelty Constraint**
       An anaphor may not introduce any presuppositions not associated with its antecedent.
       (Wasow 1972: 178)

The presuppositions of definite descriptions are given by the NP within them; *the woman,* for example, presupposes that there is a unique x in the common ground that is a woman. Wasow's Novelty Constraint allows *the woman* to be anaphoric on either *the widow* and *the woman* because its presupposition (that there is a unique woman) is already associated with its antecedent. By contrast, *the widow* cannot be anaphoric to *the woman*, because *the widow* invokes a presupposition concerning the death of a spouse that is not associated with *the woman*. Similar observations hold for each of the other pairs of DPs in (12) and (13). I will take the Novelty

Constraint to be essentially correct, and seek an explanation for it. Why shouldn't a definite description used anaphorically be able to introduce new information about its referent?

    An interesting thing about the NP associated with a definite description is that it can also be used to introduce a referent into the discussion. In (16), for instance, the subjects can introduce the individuals they describe into the conversation; these sentences can be the first in a discourse.

(16)   a. My daughter studies neuroscience.
       b. The college student in my family studies neuroscience.

Lewis (1979) described these as cases in which the presuppositions of the definite descriptions are "accommodated." In Stalnaker (2002)'s model, accommodation can be modeled as using the existential quantification within the presupposition to introduce an entity into the common ground. Not all definite descriptions invoke presuppositions that are equally capable of being accommodated, however. A factor in making them capable of being accommodated is how much information they contain. The sentence in (17), for instance, feels much more dependent on a common ground that satisfies the presupposition of its subject than does the subject of (16a).

(17)   The woman studied neuroscience.

This sentence cannot be the first in a discourse. Its presupposition requires that the common ground have been provided with a unique adult female, perhaps by the prior utterance of a sentence that explicitly introduces that woman (e.g.: *A woman enrolled in my class today*). I suggest that the sensitivity that accommodation has to informativity plays a role in the Novelty Constraint.

    I'll give a toy model of when the presupposition of a definite description can be accommodated. Let's call the predicate that a definite description's presupposition is derived from, that DP's "kernel." In all of the cases we will examine, this predicate is the denotation of the NP that the definite description is built upon.

(18)   The kernel (K) of "the NP" is $\lambda x \, [\![\text{NP}]\!](x) = 1$

The presupposition of a definite description is the existential closure of its kernel, along with the uniqueness information. For *the widow*, the

presupposition is $\exists!x$ widow(x), and the presupposition for *the tall woman* is $\exists!x$ tall$(x) \wedge$ female$(x) \wedge$ adult(x).[4] In the "normal" case, the presupposition of a definite description requires that it be uttered with a common ground that provides a unique entity that the definite description's kernel holds of. I'll say in this case that the kernel lives on the common ground (CG).

(19)   *K* lives on CG iff CG entails $\exists!x\ K(x) = 1$

To say that the kernel of a definite description lives on a common ground is just to say that kernel invokes a presupposition. A presupposition is accommodated when the kernel is used to introduce an entity into the common ground.

(20)   *K* is accommodated by CG iff it updates CG to CG′ by adding $\exists!xK(x)$ to CG. For *K* to be accommodated by CG, the speaker and hearer must tacitly agree that *K* is sufficient to identify a unique *x* in CG such that $K(x) = 1$.

Finally, to ensure that a kernel has an effect on the sentence it lives within:

(21)   A kernel must either be accommodated by a common ground or live on a common ground.

Let me rehearse how this is meant to work. Consider first (22).

(22)   The shortest linguistics professor at the University of Massachusetts is very strong.

The kernel for the subject is:

(23) $K = \lambda x$ [shortest_linguistics-professor_at-UMass$(x)=1$]

If this is the first sentence of a discourse, the common ground will not entail that there is a unique individual that satisfies the kernel in (23). But (23) has enough information to locate an individual that meets its description so it can be accommodated by the common ground, as long as that common ground: (a) is compatible with there being linguistics professors at the

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4   $\exists!x$ means "there exists exactly one *x*."

University of Massachusetts, and (b) disallows there being two or more linguistics professors at the University of Massachusetts who are the shortest. Default background assumptions about the distribution of heights of a small number of individuals is indeed that their heights will not be identical, and so in this case the kernel is accommodated by the common ground.

   Consider next (24).

(24)   The short linguistics professor at the University of Massachusetts is very strong.
       $K = \lambda x$ [short_linguistics-professor_at-UMass(x)=1]

The kernel of the subject in this example (=K) also cannot live on the common ground. But like (23), it is capable of identifying a unique individual that meets its description: if (a) the University of Massachusetts houses linguistics professors, and (b) the heights of the linguistics professors at the University of Massachusetts have an outlier at the short end of the scale. Unless this distribution of heights is part of the common ground before this sentence is uttered, accommodation here will not be perfect. The imperfection of (24), then, derives from the kernel of its subject being (slightly) insufficient to the task of identifying a unique referent under normal, default, assumptions. The hearer of (24) infers that the speaker's understanding of the common ground included information about the distribution of heights that makes the K in (24) sufficient to identify a unique referent.

   A similar, but slightly more dramatic, effect is found in (25).

(25)   The linguistics professor at the University of Massachusetts is very strong.
       $K = \lambda x$ [linguistics-professor_at-UMass(x)=1]

The kernel in (25) lives on a common ground only if there is just one, unique, linguistics professor at the University of Massachusetts. That is also required of the common ground before (25) is uttered if it is to accommodate K, since only in that case will K be capable of locating a unique individual. (25) is predicted to be anomalous in all but the strange common grounds in which the University of Massachusetts has just one linguistics professor. Background assumptions are at odds with that common ground: if a university has one linguistics professor then it is

probable that it has more. This is the source of (25)'s oddness. The kernel of its subject can neither live on the common ground nor be accommodated by it. Exactly the same reasoning accounts for the even worse (26).

(26) The professor at the University of Massachusetts is very strong.
      $K = \lambda x$ [professor_at-UMass(x)=1]

This sentence requires a prior common ground in which the University of Massachusetts is lethally understaffed.

Finally, consider (27).

(27) She is very strong.
      $K = \lambda x$ [female(x)=1]

The kernel in (27) requires that the common ground supply a unique individual that is female. Unless the context supplies a unique individual that is female, (27) cannot be the first sentence in a discourse.[5] It will have to be preceded by something that changes the common ground appropriately; for instance, (27) could follow the sentence *Do you know Kristine Yu?*, thereby introducing a unique individual female into the common ground. That is required if the kernel of *she* is to live on the common ground, because only in that case will $\exists!x$ female(x) be entailed. But it is equally required if the kernel of *she* is accommodated by the common ground. For only if the common ground has just a unique female in it will the K in (27) be sufficient to identify a unique individual.

My hypothesis is that it is not accidental that the sensitivity to the informativity of a definite description influences both the accommodation of a definite description's presupposition and whether it is construed as disjoint in reference with previous DPs. A theory about how presuppositions of definite descriptions are accommodated should, I suggest, connect with the repeated name condition. I will attempt to derive the repeated name condition and Wasow's Novelty Constraint from the conditions that determine whether a definite description's presupposition is accommodated. Indeed, I will try to strengthen Wasow's condition so

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[5] A famous counter-example is from Partee (1973): a despondent-looking man utters "she left me." This example has only an idiomatic-like meaning; it reports that the man's female lover is no longer his lover. It cannot have a more transparently compositional meaning, and that, I speculate, is relevant to its ability to use the pronoun in a context that doesn't support its presupposition.

that it not only prevents a term from being anaphoric to something with weaker presuppositions, it causes those terms to invoke the repeated name condition. To do that, I will strengthen the definition of accommodation to (28).

(28) K is accommodated by CG iff it updates CG to CG′ by adding that there is a unique x in CG′ such that $K(x) = 1$. For K to accommodate CG, the speaker and hearer must tacitly agree that K is <u>necessary</u> and sufficient to identify a unique x in CG such that $K(x) = 1$.

This has the same consequence that the original definition of accommodation has. It requires a definite description's kernel to be sufficiently informative to uniquely identify an individual, given the common ground. The stronger condition in (28) is intended to cause the kernel of a definite description to be disjoint in reference with other DPs if the kernel of that definite description is more informative.

   That the repeated name condition arises because the definite descriptions that violate it are more informative than necessary is not a new idea. It is the leading idea in Schlenker (2005), and there is considerable experimental evidence on behalf of such a constraint (e.g. Altmann and Steedman (1988), Crain and Steedman (1985), Tanenhaus, Spivey-Knowlton, Eberhard, and Sedivy (1995), Sedivy, Tanenhaus, Craig, and Carlson (1999), and Sedivy (2003)). The notion of "necessary" I have in mind is one that compares K to alternatives that are equally sufficient at identifying a unique x and determining whether K contains something irrelevant for this goal when compared to those alternatives. I am thinking of Grice's Maxim of Quantity. A fuller account than I can give here would spell this out. (See Marty (2018) for an idea.) Instead, I will rely on the simple observation that the cases at hand involve two definite descriptions whose kernels can be directly compared. If both of those kernels are sufficient for identifying a unique individual, but one does so with more descriptive content, then we can safely conclude that the more descriptive kernel does not meet the necessary-clause in (28).

   Let's see how (28) can produce the repeated name condition. Consider first the contrast in (29).

(29)   a.   ?The widow's father met someone who admires the woman.
         b.   *The woman's father met someone who admires the widow.

The kernels of the two definite descriptions in (29a) are (30).

(30) a. *the widow's father*
$K = \lambda x \lambda y$ [widow(x)=1 $\wedge$ father_of_$x(y)$=1]
CG $\ni \lambda w \forall x$ [widow$(x) \rightarrow$ [female$(x) \wedge$ adult(x)]] in w

 b. *the woman*
$K = \lambda x$ [female(x)=1 $\wedge$ adult(x)=1]
CG $\ni \lambda w \forall x$ [widow$(x) \rightarrow$ [female$(x) \wedge$ adult(x)]] in w

For each of these DPs, I also show the state of the common ground before they are uttered. A common ground is a set of worlds, and so we can characterize them with the propositions that describe those worlds. I will indicate the relevant worlds that make up a common ground with propositions that describe worlds that are elements of that common ground. Common grounds are sometimes changed by the utterance of the DPs. What is shown here is the state of the common ground before the utterance of the first definite description. The common ground at this point has no information in it beyond common background assumptions about the world that interlocutors bring to the conversation. One of those background assumptions that will be relevant concerns the meaning that *widow* has. Upon confronting the first definite description, there is no alternative but to accommodate its kernel. Doing so does not conflict with common background assumptions about the world, and so there is no perception of oddness that accompanies the accommodation. The result of speaking *the widow's father* thereby updates the common ground in the way indicated in (31).

(31) a. *the widow's father*
$K = \lambda x \lambda y$ [widow(x)=1 $\wedge$ father_of_$x(y)$ = 1]
CG $\ni \lambda w \forall x$ [widow$(x) \rightarrow$ [female$(x) \wedge$ adult(x)]] in w

 b. *the woman*
$K = \lambda x$ [female(x)=1 $\wedge$ adult(x)=1]

$$\text{CG}' \ni \lambda w \begin{cases} \forall x \text{ [widow}(x) \rightarrow \text{[female}(x) \wedge \text{adult}(x)\text{]] in } w \wedge \\ \exists!x\exists!y \text{ widow}(x) \wedge \text{father\_of\_}x(y) \text{ in } w \end{cases}$$

The kernel of *the woman* can live on CG′, if CG′ entails $\exists!x$ woman$(x)=1$. It doesn't. That there is a unique widow in the situation being described does not ensure that there is a unique woman in that situation. As a consequence, *the woman* will have to be accommodated. If the individual that *the woman* refers to is the same as that referred to by *the widow*, then arguably its kernel, *woman*, is sufficient to identify that individual. There has been only one individual introduced into the common ground that makes λx woman(x) true, and that is the widow. If *woman* is necessary to identify this individual, then it will pass the requirements of (28) and the common ground will be updated to (32).

(32)

$$\text{CG}' \ni \lambda w \begin{cases} \forall x\,[\text{widow}(x) \to [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w \wedge \\ \exists!x \exists!y\ \text{widow}(x) \wedge \text{father\_of}\_x(y) \text{ in } w \wedge \\ \exists!x\text{woman}(x) = 1 \text{ in } w \end{cases}$$

Is *woman* necessary to identify the relevant individual? It is if there is no alternative NP that is sufficient at identifying the widow in this context and has less information in it than *woman*. Candidate alternatives are *the female* and *she*. I believe use of *the female* invites the inference that the referent is not human, which disqualifies its use here.[6] By contrast *she* is less informative – since it does not entail that the referent be an adult as does *woman* – and it should therefore be preferred. It is, and this may be why use of the *the woman* here is not perfect. Note that it improves if a non-restrictive, expressive, adjective is added such as *poor*, with its pitiable meaning.

(33)   The widow's father knows someone who admires the poor woman.

To use *poor* requires a common noun such as *woman*, and this could make *her* no longer an alternative. Note that *poor*, in this example, does not make a contribution towards identifying the referent of the definite description. It is, for this reason, not part of the calculation of whether its meaning is necessary to identify a unique referent for a common ground.

        Consider next (29b). The two definite descriptions in this sentence, and the state of the common ground before either have been uttered, is as in (34).

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[6]   This follows from Heim (1991)'s maximize presupposition.

(34) a. *the woman's father*
$$K = \lambda x \, \lambda y \, [\text{female}(x) = 1 \wedge \text{adult}(x)=1] \wedge \text{father\_of\_}x(y) = 1$$
$$\text{CG} \ni \lambda w \, \forall x \, [\text{widow}(x) \rightarrow [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w$$

  b. *the widow*
$$K = \lambda x \, \text{widow}(x) = 1$$
$$\text{CG} \ni \lambda w \, \forall x \, [\text{widow}(x) \rightarrow [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w$$

Upon utterance of *the woman's father*, there is no choice but to accommodate its kernel, and this updates the common ground as indicated in (35).

(35) a. *the woman's father*
$$K = \lambda x \, \lambda y \, [\text{female}(x) = 1 \wedge \text{adult}(x)=1] \wedge \text{father\_of\_}x(y) = 1$$
$$\text{CG} \ni \lambda w \, \forall x \, [\text{widow}(x) \rightarrow [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w$$

  b. *the widow*
$$K = \lambda x \, \text{widow}(x) = 1$$
$$\text{CG}' \ni \lambda w \begin{cases} \forall x \, [\text{widow}(x) \rightarrow [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w \wedge \\ \exists! x \, \exists! y \, [\text{female}(x) \wedge \text{adult}(x)] \wedge \text{father\_of\_}x(y) \text{ in } w \end{cases}$$

Because CG$'$ does not entail $\exists! x \, \text{widow}(x)$, the kernel associated with *the widow* cannot live on CG$'$. If the kernel of *the widow* is accommodated, then CG$'$ will become CG$''$.

(36)
$$\text{CG}'' \ni \lambda w \begin{cases} \forall x \, [\text{widow}(x) \rightarrow [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w \wedge \\ \exists! x \, \exists! y \, [\text{female}(x) \wedge \text{adult}(x)] \wedge \text{father\_of\_}x(y) \text{ in } w \wedge \\ \exists! x \, \text{widow}(x) \text{ in } w \end{cases}$$

If the individual that *the widow* refers to is the same that *the woman* refers to, then the requirement that the kernel of *the widow* be necessary for the purposes of identifying its referent is violated. Clearly, the speaker deemed *woman* sufficient for that purpose, and *widow* is stronger. On the other hand, if the individual that *the widow* refers to is different than the individual that *the woman* refers to, it will be at odds with CG$''$'s entailments. CG$''$ entails that there is a unique woman and a unique widow, and that requires that

$$CG'' \ni \lambda w \begin{cases} \forall x \, [\text{widow}(x) \to [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w \wedge \\ \exists! x \, \exists! y \, [\text{female}(x) \wedge \text{adult}(x)] \wedge \text{father\_of\_}x(y) \text{ in } w \wedge \\ \exists! x \, \text{widow}(x) \text{ in } w \end{cases}$$

they be the same. To get the disjoint reference effect, we need a method of making the referents of *the widow* and *the woman* be able to differ and yet remain consistent with the common ground that accommodates them.

One possibility involves letting definite descriptions come with referential indices. We've already seen in (11) that this is necessary to capture the fact that definite descriptions can be bound variables. When referential indices are not bound by a quantifier, they get their value by an assignment function, g, which assigns to that index a referent in the discourse model. The denotation and presupposition of a definite description with a referential index attached is (37).

(37)   a. $[\![\text{the NP1}]\!] = \iota x \, [\![\text{NP}]\!](x) \wedge g(1) = x$
      b. $K = \lambda x \, [\![\text{NP}]\!](x) = 1 \wedge g(1) = x$

The referential index adds to the meaning of the definite description that the individuals it refers to must be given by the assignment function. Assume that assignment functions are defined so that they do not assign to different indices the same referent.

(38) $n \neq m \to g(m) \neq g(n)$

This gives us the ability to distinguish the referents of two definite descriptions by giving them different referential indices.

Reconsider now (29b) with the assumption that the two definite descriptions come with different referential indices. After the utterance of the first definite description, we'll have the situation described by (39).

(39)   a.   *the woman₂'s father*

      $K = \lambda x \, \lambda y \, [\text{female}(x) = 1 \wedge \text{adult}(x) = 1 \wedge g(2) = x] \wedge \text{father\_of\_}x(y) = 1$
      $CG \ni \lambda w \, \forall x \, [\text{widow}(x) \to [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w$

      b.   *the widow₃*

      $K = \lambda x \, \text{widow}(x) = 1 \wedge g(3) = x$
      $CG' \ni \lambda w \begin{cases} \forall x \, [\text{widow}(x) \to [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w \wedge \\ \exists! x \, \exists! y \, [\text{female}(x) \wedge \text{adult}(x) \wedge g(2) = x] \wedge \text{father\_of\_}x(y) \text{ in } w \end{cases}$

$$CG'' \ni \lambda w \begin{cases} \forall x \, [\text{widow}(x) \to [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w \wedge \\ \exists! x \, \exists! y \, [\text{female}(x) \wedge \text{adult}(x) \wedge g(2) = x] \wedge \text{father\_of\_}x(y) \text{ in } w \wedge \\ \exists! x \, \text{widow}(x) \wedge g(3) = x \text{ in } w \end{cases}$$

$$K = \lambda x \, \text{widow}(x) = 1 \wedge g(3) = x$$

Principle C

$$CG' \ni \lambda w \begin{cases} \forall x \, [\text{widow}(x) \to [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w \wedge \\ \exists! x \, \exists! y \, [\text{female}(x) \wedge \text{adult}(x) \wedge g(2) = x] \wedge \text{father\_of\_}x(y) \text{ in } w \end{cases}$$

The presupposition introduced by the widow can be accommodated without creating an inconsistency:

(40)

$$CG'' \ni \lambda w \begin{cases} \forall x \, [\text{widow}(x) \to [\text{female}(x) \wedge \text{adult}(x)]] \text{ in } w \wedge \\ \exists! x \, \exists! y \, [\text{female}(x) \wedge \text{adult}(x) \wedge g(2) = x] \wedge \text{father\_of\_}x(y) \text{ in } w \wedge \\ \exists! x \, \text{widow}(x) \wedge g(3) = x \text{ in } w \end{cases}$$

In this scenario, then, *the widow* and *the woman* must bear different referential indices, or the kernel introduced by *the widow* can neither live on its common ground nor be accommodated by it. This is the disjoint reference effect.

This carries over to all of the other cases in (12) and (13). It captures the same cases that Wasow's Novelty Constraint is designed for. It also works better for a case that Wasow's Novelty Constraint seems to fail on. That case arises when a pronoun is bound by a term whose presuppositions do not include those of the pronoun. One such case is (41).

(41)   Every student$_1$ in my class thinks she$_1$ will get an A.

The kernel associated with *every student*$_1$ is (42a), and the presupposition associated with *she*$_1$ is (42b).

(42)   a. $\lambda x \, \text{student\_in-my\_class}(x) = 1 \wedge g(1) = x$
        b. $\lambda x \, \text{female}(x) = 1 \wedge g(1) = x$

When referential indices are involved in binding, the values are no longer given by the assignment function, but are given instead by the quantifier involved in the binding. This has the effect of causing the kernel of the variable to live on or be accommodated by a common ground that allows the quantifier to identify the binder and variable. In (41) this has the effect of forcing a common ground in which all the students in my class are understood to be female. This is a scenario, then, in which the presupposition of the anaphoric *she* does seem to introduce new information not associated with its antecedent, in violation of the Novelty Constraint. But anaphora would be allowed on the scheme presented here as long as the common ground contains the proposition that every student in my class is female,

since that will entail for every value given to the index of *she* that there is exactly one female that has that value of the index. This accommodation satisfies (28) if there is no less contentful way of identifying the referential value of *she*₁. To the extent that all personal pronouns in English are gendered, there will be no less contentful alternative. To the extent that *they* or *he* aren't gendered, the system here predicts a slight knock on the use of *she* here. It will be analogous to (24), in which *the short linguistics professor* requires an accommodation to the proposition that the heights of linguistics professors are not distributed normally.

3. Principle C

Let's now see how this account can be extended to capture Principle C. Recall that Principle C is responsible for sharpening the distinction between the good and bad cases of the repeated name constraint. That sharpening arises when the first definite description is in an A-position that c-commands the second definite description. In many of the cases that we've examined, there is no sharpening associated with the Principle C environment. The repeated name penalty is already sufficient to describe the effect.

(43) a. *The woman's father met someone who admires Jane.
      b. *The woman met someone who admires Jane.

(44) a. *The student's teacher met someone who admires the best student.
      b. *The student met someone who admires the best student.

(45) a. *The poor woman's father met someone who admires the widow.
      b. *The poor woman met someone who admires the widow.

(46) a. *The woman met someone who admires the tall woman.
      b. *The woman's father met someone who admires the tall woman.

We needn't design Principle C to govern these cases.

A less clear case arises when the anaphoric definite description is identical to the definite description it is anaphoric to, as in (47).

(47) a. The woman's father met someone who admires the woman.
      b. The woman met someone who admires the woman.

(48)   a.   No woman₁'s father met anyone who admires the woman₁.
        b.   No woman₁ met anyone who admires the woman₁.

My consultants agree that the contrast between the cases in (47) and (48) is less dramatic than the contrasts in (43)-(46). But my consultants do not agree on whether there is any contrast between (47) and (48). I will put aside these cases until the end of this paper.

   This leaves the contrast in (49).

(49)   This is Sandra
        a.   Her father met someone who admires the woman.
        b.   She met someone who admires the woman.

I've embedded (49a) and (49b) into a discourse that provides a common ground which includes the propositions in (50).

(50)

$$CG \ni \lambda w \begin{cases} \forall x \text{ named\_Sandra}(x) \rightarrow \text{female}(x) \text{ in } w \wedge \\ \exists! x \text{ named\_Sandra}(x) \text{ in } w \end{cases}$$

The first proposition in (50) expresses a convention about the name Sandra and the second is introduced upon utterance of *This is Sandra*. This context allows the pronouns that start (49a) and (49b) to be accommodated by the common ground that exists when they are uttered. Consider first what happens in (49a).

       When the first definite description in (49a) is pronounced, it will introduce the kernel in (51).

(51)   her : K = [λ x female(x) = 1]

This can be accommodated by the common ground in (50) if *her* is taken to have Sandra as its referent. The kernel in (51) is both sufficient and necessary to identify the individual named Sandra in the common ground. The accommodation here consists in adding that Sandra is the unique female; we get from (50) (52).

(52)

$$CG' \ni \lambda w \begin{cases} \forall x \text{ named\_Sandra}(x) \rightarrow \text{female}(x) \text{ in } w \land \\ \exists! x \text{ named\_Sandra}(x) \text{ in } w \land \\ \exists! x \text{ female}(x) \text{ in } w \end{cases}$$

When the subject of (49a) is uttered, (52) is the common ground to which the kernel in (53) must be assimilated.

(53) her father : K = λ x [father_of_Sandra(x) = 1]

The kernel in (53) cannot live on CG′, but it can accommodate it. This causes the state of affairs before utterance of *the woman* to be as (54) indicates.

(54) the woman

 a. $K = [\lambda x \text{ female}(x){=}1 \land \text{adult}(x) = 1]$

 b. $CG'' \ni \lambda w \begin{cases} \forall x \text{ named\_Sandra}(x) \rightarrow \text{female}(x) \text{ in } w \land \\ \exists! x \text{ named\_Sandra}(x) \text{ in } w \land \\ \exists! x \text{ female}(x) \text{ in } w \land \\ \exists! x \text{ father\_of\_Sandra}(x){=}1 \text{ in } w \end{cases}$

The kernel in (54a) does not live on CG″, because CG″ does not entail $\exists! x$ female(x)=1 ∧ adult(x)=1. (There is nothing in CG″ that entails that the woman Sandra refers to is an adult.) But the kernel associated with *the woman* can be accommodated when *the woman* refers to Sandra; CG″ will be changed to CG‴.

(55)

$$CG''' \ni \lambda w \begin{cases} \forall x \text{ named\_Sandra}(x) \rightarrow \text{female}(x) \text{ in } w \land \\ \exists! x \text{ named\_Sandra}(x) \text{ in } w \land \\ \exists! x \text{ female}(x) \text{ in } w \land \\ \exists! x \text{ father\_of\_Sandra}(x){=}1 \text{ in } w \land \\ \exists! x \text{ female}(x){=}1 \land \text{adult}(x){=}1 \; w \end{cases}$$

If *the woman* is taken to corefer with *Sandra*, then arguably the kernel *the woman* introduces is sufficient to identify the referent of *the woman* as Sandra. If *the woman* is not understood to corefer with *Sandra*, then its kernel is arguably not sufficient to identify its referent. For this reason, *the woman* is preferred to be understood as coreferent with *Sandra*. On the other hand, *woman* is arguably not necessary to identify Sandra. That could be done with an expression that had less information in it, like for instance *her*. For this reason, an anaphoric interpretation of *the woman* in (49a) is judged less good than an anaphoric interpretation that uses *her* instead. This corresponds to the fact that speakers prefer (56) to (49a) to express coreference.

(56)   *Uttered after "This is Sandra"*:
        <u>Her</u> father met someone who admires <u>her</u>.

Note that this system will also favor anaphoric epithets to regular definite descriptions in this case. This is because epithets come with no presuppositions. The NP part of an epithet is a not-at-issue comment, one that projects like presuppositions do but doesn't engage in accommodation like presuppositions do. It asserts that the speaker has a particular kind of attitude to the referent of the epithet. This makes epithets very weak pronouns (see Patel-Grosz 2012). As expected, (57) compares favorably to (49a).

(57)   *Uttered after "This is Sandra"*:
        <u>Her</u> father met someone who admires <u>the idiot</u>.

The account therefore works for cases, like (49a), in which a pronoun preceding a stronger definite description is able to corefer with it. This happens when, as in (49a), the pronoun does not c-command the other definite description.

This system does not distinguish (49a) from (49b), where the pronoun c-commands the second definite description, and so (49a) and (49b) should have the same status. Our system does, however, explain why (49b) is disfavored relative to (58).

(58)   *Uttered after "This is Sandra"*:
        a. <u>She</u> met someone who admires <u>her</u>.
        b. <u>She</u> met someone who admires <u>the idiot</u>.

This is just the same phenomena that arises when c-command of the Principle C trigger doesn't hold. We have provided, then, an account for one of the properties I highlighted about Principle C that was in need of explanation. We have an account for why the definite expressions that trigger Principle C do not include pronouns or epithets. What is missing is understanding what makes (49b) worse than (49a). Why is c-command from an A-position relevant?

   For this, I would like to adopt an idea in Keenan (1974). The goal of his work was to understand why sentences like (59) are ungrammatical.

(59) <u>Each other</u> insulted <u>the men</u>.

Keenan's suggestion hinged on the observation that the denotation of *insulted the men* is a function that takes *each other* as its argument. He suggested that what goes wrong in (59) is that the argument's value depends on resolving the denotation of the function that applies to it. The semantic value of *each other* depends on *the men*, which is part of what determines the function. He suggested that what ails (59) is a violation of what he called the Functional Principle, which disallows just this dependency between function and argument.

(60) **The Functional Principle**
      The reference of the argument expression must be determinable
      independently of the meaning or reference of the function symbol.
      (Keenan 1974, (i) p. 298)

He suggested that this condition on natural language function application could be used to understand a variety of other effects. There are now other explanations for the ungrammaticality of (59), as well as the other effects Keenan credited it with, and the success of these explanations makes me doubt that we can safely ascribe the ungrammaticality of (59) to the Functional Principle. But the Functional Principle does seem well built for our project: distinguishing (49a) from (49b).[7]

      Principle C arises just in cases where the Principle C trigger is part of the function that applies to the first definite description.

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[7] My thanks to Petr Kusily and Barbara Partee for bringing Ed Keenan's paper to my attention.

(61)
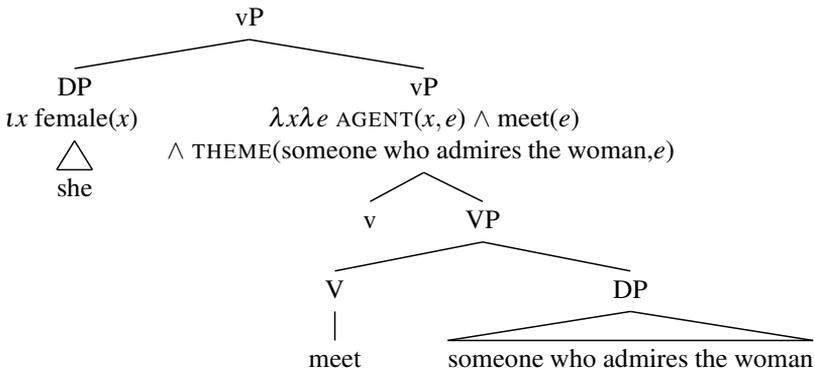
The vP's denotation in (61) is a function that takes the DP in its Specifier as an argument. In a context where a unique female individual is made salient, as in the contexts we were considering for the sentence, the referent of *she* can be determined independently of the referent of *the woman*. Strictly speaking, then, this will not violate Keenan's Functional Principle. But if we consider the presuppositions involved, something close to the spirit of Keenan's condition arises. The subject DP comes with the kernel in (62a), and the kernel from *the woman*, in (62b), will be projected to the vP containing *the woman*.

(62) a. $K = [\lambda x \text{ female}(x) = 1]$
      b. $K = [\lambda x \text{ female}(x) = 1 \wedge \text{adult}(x) = 1]$

As we saw in our examination of (49a), the kernel introduced by the pronoun lives on the common ground and the kernel introduced by *the woman* is accommodated by that common ground when *the woman* and the pronoun corefer. That accommodation adds the information that the referent of the pronoun is an adult. If we compare the two kernels, the one associated with *the woman* (=(62b)) does a better job of identifying the referent than does the one associated with the pronoun (=(62a)). There is nothing wrong with a function adding information about the referent of its argument, of course; (63) is fine.

(63) Do you know Sandra? She is an adult.

What should be blocked is when this happens by way of presuppositions. Presuppositions set the conditions under which functional application is permitted. The function *f* can apply to the argument *a* only if the presuppositions of both *a* and *f* are either accommodated by or live on the common ground. A way of expressing Keenan's idea is to make his Function Principle hold just of the conditions that allow both the function's denotation and the argument's denotation to be defined. We could frame Keenan's condition so that it requires of the background setting for function application that the conditions that define when the argument has a value cannot be weaker than the conditions that define when the function has a denotation. More particularly, the relevant conditions which determine when the function's denotation is defined must be just those that involve determining whether the argument's value is defined. That is, the presuppositions that determine when the argument's value is defined cannot be stronger than the presuppositions that determine the value of that argument and also determine when the function is defined.

Here's a stab at that.

(64)   **Function application definedness (FAD)**
       Let P*f* be the kernel provided by a DP within the function *f* and P*a* be the kernel for the argument *a*. If *f* applies to *a*, then P*f* cannot more strongly identify the referent of *a* than P*a*.
       P*x* more strongly identifies a referent than P*y* iff the entity they hold of is the same and the existential closure of P*x* entails the existential closure of P*y*.

(61) violates FAD because the existential closure of (62b) (= $\exists x$ female(x) $\wedge$ adult(x)) entails the existential closure of (62a) (= $\exists x$ female(x)), and both (62a) and (62b) hold of the same individual when *she* and *the woman* corefer. Because FAD only arises when an argument is coreferent to something that has a kernel in the function that applies to that argument, it won't arise in cases like (49a), where the argument contains the coreferent pronoun, but isn't the coreferent pronoun.

For FAD to explain why Principle C effects only show up in cases where the Principle C trigger is c- commanded by the term it is anaphoric to will require ensuring that all of the cases of c-command work out to be cases of function application instead. This isn't trivial. Direct objects, for instance, cause Principle C style disjoint reference effects for definite descriptions that follow them; (65) is an example.

(65)   I introduced her to someone who admires the woman.

For FAD to apply here, explaining why *her* cannot corefer with *the woman*, there must be a function that contains *the woman* which takes *her* as its argument. In many common treatments of the semantics of this example, this is not the case. But there are semi-successful semantics for (65) that do have that property. In Larson (1988), for instance, *introduce* combines with the indirect object first, forming a function that then takes *her* as its argument, as in (66).

(66)

```
                        VP
            ┌───────────┴───────────┐
           DP                       VP
           △            λx.λe introduce(e) ∧ THEME(x, e)
          her           ∧ GOAL(someone who admires the woman, e)
                              ┌────────┴────────┐
                              V                 PP
                              │            ┌─────┴─────┐
                          introduce          to someone
                                          who admires the woman
```

On Larson's view, the syntax involves a movement operation that brings *introduce* into a position to the left of *her*. The semantics, however, tracks the parse in (66). If FAD is correct, it will require that examples such as (65) work in a way similar to Larson's proposal.

Finally, let's consider cases involving bound variable interpretations of definite descriptions. For some, there is a contrast between the examples in (67).

(67)   a. ?No woman$_1$'s father met anyone who'll vote for the woman$_1$.
       b. * No woman$_1$ met anyone who'll vote for the woman$_1$.

Let's consider the syntactic representations that are relevant for determining the meanings of these sentences. We will look, therefore, at the representations that arise when QR has done its job. I will also adopt the copy theory of movement (any movement theory which gives its traces presuppositions will do). The representation for (67a) is (68).

```
                        TP
            ┌───────────┴───────────┐
          DP₁                       TP*
          △              ┌──────────┴──────────┐
       No woman         DP₂                     TP
                    ┌────┴────┐            ┌─────┴─────┐
                  DP₁        DP           T           vP
```

(68)

```
                              TP
                    ┌─────────┴─────────┐
                  DP₁                  TP*
                 ╱─────╲         ┌──────┴──────┐
              No woman         DP₂             TP
                             ╱────╲        ┌────┴────┐
                          DP₁     DP       T        vP
                         ╱──╲    ╱─╲            ┌────┴────┐
                    the woman  father        DP₂        vP
                                            ╱─────╲   ┌──┴──┐
                                       the woman's  v     VP
                                          father        ╱──────╲
                                                  met someone who admires the woman₁
```

On the copy theory of movement, a DP leaves a matching definite description in the position it moves from and this definite description is coindexed and bound by the moved DP. (See, e.g., Engdahl 1980, Fox 2002, 2003, and Sauerland 1998). Depending on what kind of movement is involved, the moved phrase will be pronounced in the position it is moved to, or in the position that the definite description it binds resides in. I've indicated which positions include spoken material by leaving them unshaded. Note that in the position of the bound definite description resulting from QR is the quantificational phrase: *no woman*. On standard treatments of quantifiers, no woman is a function that takes TP* as its argument. The FAD will not look at this combination partly because *no woman* has no presuppositions relevant to identifying its referent and partly because *no woman* has no referent. For a similar reason, the combination of *the woman's father* with either TP or vP does not raise the spectre of FAD since *the woman's father* will not be coreferent with *the woman*.

Consider by way of contrast, now, (67b), whose syntactic representation is (69).

(69)

TP

DP₁   TP*

No woman   T   vP

DP₁   vP*

the woman   v   VP

met anyone who'd vote for the woman₁
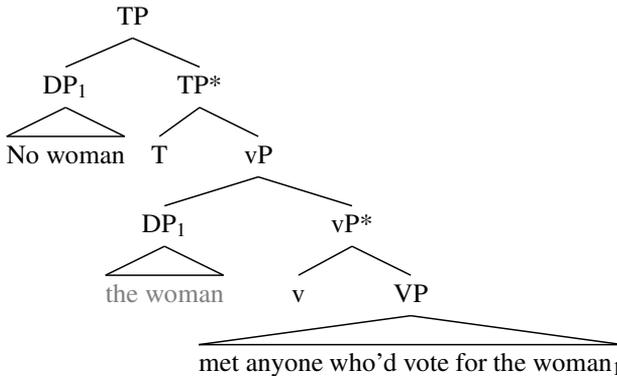
As with (68), FAD will not play a role in determining whether the DP *no woman* can apply to TP*. But it will play a role in determining whether vP* can apply to *the woman*₁. The kernel associated with *the woman*₁ is in (70a), and the kernel that vP inherits from *the woman*₁ within it is the identical (70b).

(70)   a. λx female$(x) = 1 \wedge$ adult$(x) = 1 \wedge g(1)$
       b. λx female$(x) = 1 \wedge$adult$(x) = 1 \wedge g(1)$

Because the existential closure of (70b) entails the existential closure of (70a), FAD is violated. For those speakers who find a contrast between these examples, this is what the proposal here predicts. Note that we have now derived the fact that it is the position from which QR happens that matters for Principle C, and not the position the QRd DP moves to. This is how I believe we can derive Chomsky's proposal that Principle C sees only A positions. Perhaps Chomsky's A positions are just those positions that are arguments of functions that FAD applies to.

   For those speakers who do not find a contrast between (67a) and (67b), we can adopt a different definition of "more strongly identifies." The present formulation of FAD prevents function application if the relevant kernel in the function entails the kernel of the argument, when they are

existentially closed. This requires, as just seen, that the relevant kernels not be equivalent. For those idiolects that find the cases of binding like (67b) grammatical, but still disallow pronouns from coreferring with c-commanded definite descriptions, I suggest a slightly more stringent definition of "more strongly identifies."

(71) P_x more strongly identifies a referent than P_y iff the entity they hold of is the same and the existential closure of P_x entails the existential closure of P_y and the existential closure of P_y does not entail the existential closure of P_x.

This version of "more strongly identifies" will allow the two presuppositions that are being compared to be identical (because in that case there will be mutual entailment under existential closure), and this will allow (69). But it will continue to block cases where the existential closure of the function's presupposition asymmetrically entails the existential closure of the argument's presupposition. That is what happens in cases where the argument is a pronoun coreferent with a non-pronominal or epithetic definite description within the function that applies to it.

4. Summary

I have tried to sketch out a way to formulate the penalty that arises when a definite description is taken to be coreferent with a previous referring expression. I've focused on how this "repeated name" condition is sensitive to the semantic content of the NPs they contain. I've suggested that this sensitivity to the content of the NPs arises because the relevant condition is one on how presuppositions are used. I've tried to make the engine that determines when presuppositions introduced by NPs are accommodated or enforced responsible for the repeated name condition. Seating the condition in the realm of presuppositions explains why epithets, which do not invoke presuppositions or the need to accommodate them, do not invoke the repeated name condition.

        With this idea about the repeated name condition in place, the view of Principle C changes. It is no longer a blanket condition on pairs of referring expressions. Many of the cases Chomsky credited to Principle C are nothing more than the repeated name condition. The cases of Principle C that remain are ones in which the Principle C trigger is richer in semantic content than its putative antecedent. Principle C is one that disallows a

richer DP from being c-commanded by a coreferent, but less rich, DP. This image of Principle C is very close to the one that Lasnik (1989) arrives at for Thai. I discuss how an idea of Ed Keenan's can be modified to derive this narrower Principle C. The modification again places the action at the level of presupposition accommodation, and thereby explains why epithets also escape Principle C effects.

Because both the repeated name condition and Principle C involve judging when presuppositions can and cannot be accommodated given the presuppositions of previously occurring DPs, they both invoke the same sensitivity to the semantic content of the NPs within those DPs. The repeated name condition and Principle C are formally distinct. But their causes come from the same engine that compares the unfolding effects on the common ground that the presuppositions of definite descriptions have. This explains, I hope, the similar sensitivity each has to the semantic content of the DPs whose coreference is being blocked.

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The XP-*þá*-construction and V2

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Abstract

This paper discusses a relatively unexplored construction in Icelandic that displays linear V3/V4 and I will refer to as the XP-*þá*-construction. In this construction, a left-peripheral adjunct is followed by adverbial *þá* 'then' before the finite verb. The complementizer *að* 'that' can occur between the adjunct and *þá*, an important fact that distinguishes the XP-*þá*-construction from the superficially similar *så*-construction in Norwegian and Swedish (Eide 2011; Holmberg 2018). It will be argued that *þá* spells out the trace of the moved adjunct, following Grohmann's (2003) analysis of Copy Left Dislocation in German. This analysis entails that only one phrasal category moves to left periphery in the XP-*þá*-construction, as required by the Bottleneck Hypothesis (Haegeman 1996; Roberts 2004). The proposed analysis is also consistent with the view that the V2 constraint is satisfied in FinP, the lowest projection in the left periphery.

1. Introduction

Icelandic is known to be a fairly strict Verb Second (V2) language, displaying linear V2 in declaratives and wh-questions and embedded clauses as well as main clauses. The second fact sets Icelandic apart from the Mainland Scandinavian languages whereas the first one provides a contrast to partial V2 languages like Modern English. In spite of this, Icelandic has a number of constructions that exhibit linear V3 or V4 although they have not received much attention in the theoretical literature. This can be seen e.g. in clausal exclamatives (Jónsson 2010, 2017).

In this paper, I will discuss an understudied construction that features linear V3/V4 and where a left-peripheral adjunct is followed by adverbial *þá* 'then' before the finite verb. In addition, the complementizer *að* 'that' may optionally intervene between the adjunct and *þá*. For convenience, I will refer to this as the XP-*þá*-construction. The left-peripheral adjunct and the adverbial *þá* will be referred to as the antecedent and resumptive *þá*, respectively, although this is a fairly broad and non-standard use of these terms.

The XP-*þá*-construction is exemplified in (1), where the comma marks the short intonation break that often separates the antecedent from the rest of the clause.[1] These examples display linear V4 or V3 depending on the presence or absence of the complementizer *að*.[2]

(1) a. Vegna   óveðurs,   (að) þá var   leiknum   frestað
         due.to   bad.weather   that ÞÁ   was   the.game   postponed
         'Because of bad weather, the game was postponed.'

     b. Samkvæmt   nýjustu   rannsóknum, (að) þá er kaffi gott í hófi
         according.to the.latest research   that ÞÁ   is coffee good in moderation
         'According to the latest research, coffee is good in moderation.'

     c. Eins og ég hef   áður   sagt, (að) þá eru allir   velkomnir
         as   I   have before said   that ÞÁ   are all   welcome
         'As I have said before, everybody is welcome.'

     d. Á morgun,   (að) þá verða   tónleikar í   Laugardalshöll
         tomorrow   that ÞÁ   will.be concert   in Laugardalshöll
         'Tomorrow, there will be a concert in Laugardalshöll Arena.'

My analysis of the XP-*þá*-construction will be cast within the cartographic approach to the left periphery, initiated by Rizzi (1997). The data discussed here clearly call for an expanded CP-domain to host all the different items

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[1] There is clearly some variation in this as neither Thráinsson (2005: 577–578) nor Rögnvaldsson (1982: 65–69) puts a comma after the antecedent in their examples of the XP-*þá*-construction.

[2] Linear V5 is possible if resumptive *þá* is immediately followed by certain adverbs, e.g. *bara* 'just', *kannski* 'maybe' and *náttúrulega* 'of course'. However, no adverb can intervene between *að* and *þá*.

preceding the finite verb. I assume that the XP-*þá*-construction satisfies the V2 constraint as the finite verb moves to check the verbal feature of Fin and Fin has its EPP feature checked through a phrasal category in Spec,Fin (Roberts 2004; Holmberg to appear). This means that the finite verb must follow the phrase in Spec,Fin and all deviations from linear V2 must be due to syntactic elements above FinP; see further discussion in 4.3 below.

To the best of my knowledge, the presence or absence of *að* makes no difference for the syntactic or semantic properties of the XP-*þá*-construction but the possibility of placing *að* between the antecedent and resumptive *þá* gives an important clue about the status of *þá* and the structure of the XP-*þá*-construction. It is interesting to note that the superficially similar *så*-construction in Norwegian and Swedish does not allow a complementizer before *så*:

(2) a. I morgon så har vi öppet som vanligt (Swedish, Holmberg 2018: 30)
         tomorrow SÅ have we open as usual
         'Tomorrow, we are open as usual.'

    b. * I morgon att så har vi öppet som vanligt (Filippa Lindahl, p.c.)
         tomorrow at SÅ have we open as usual

This suggests that *så* heads a projection hosting the antecedent as a specifier (see Eide 2011; Holmberg 2018 for an analysis of this kind). By contrast, I will argue that *þá* is not a functional head in the CP-domain but rather a full phrase that spells out the trace of the antecedent, following Grohmann's (2003) analysis of Copy Left Dislocation in German. As discussed in more detail below, this derives many important facts about the XP-*þá*-construction, including restrictions on possible antecedents. The proposed analysis will also be shown to be consistent with the view that the V2 constraint is satisfied in FinP, the lowest projection in the left periphery.

2. The basic facts

In this section, the basic syntactic facts about the XP-*þá*-construction will be reviewed, i.e. restrictions on possible antecedents as compared to the *så*-construction in Norwegian and Swedish and similarities with Copy Left Dislocation. However, I will not be concerned with the pragmatics of this construction and how it might differ from topicalization (but see Eide 2011;

Nordström 2010 for discussion on the pragmatics of the *så*-construction in Norwegian and Swedish).

2.1 The adjunct restriction

The antecedent in the XP-*þá*-construction must be an adjunct of some kind. Thus, DP, PP and clausal arguments are excluded as well as predicative phrases even though all these elements undergo topicalization in Icelandic (see Einarsson 1949: 174, Thráinsson 2005: 577–578; Rögnvaldsson 1982: 65–69). In addition, negative adjuncts, including clausal negation, cannot be antecedents in the XP-*þá*-construction:

(3) a. * Þessa   mynd, (að) þá hafa   flestir séð
        this   movie   that   ÞÁ   have   most   seen
        'This movie, most people have seen.'

     b. * Hvaðan   þessi hugmynd kemur, (að) þá veit   ég ekki
        where.from   this   idea   comes that ÞÁ know   I   not
        'Where this idea comes from, I don't know.'

     c. * Drykkjumaður,   (að) þá hefur hann lengi verið
        drinker   that   ÞÁ has   he   long   been
        'A heavy drinker, he has been for a long time.'

     d. * Ekki, (að) þá   hafa nemendur stolið   ostinum
        not   that   ÞÁ   have students   stolen   the.cheese
        'Students have not stolen the cheese.'

     e. * Á engan hátt, (að) þá vil   ég gera   lítið   úr
        in no   way that   ÞÁ want I   make little out.of this
        'In no way do I want to treat this lightly.'

In contrast to these examples, the corresponding examples with topicalization are fully acceptable as shown in (4):[3]

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[3] Admittedly, predicative NPs are rarely fronted in Icelandic and examples of this kind have a highly formal flavor. The crucial point here, though, is that there is a clear contrast between (3c) and (4c).

(4) a.   Þessa mynd hafa   flestir séð
           this   movie have   most   seen
           'This movie, most people have seen.'

     b.   Hvaðan   þessi hugmynd kemur veit   ég ekki
           where.from this   idea   comes   know I   not
           'Where this idea comes from, I don't know.'

     c.   Drykkjumaður hefur hann lengi verið
           drinker   has   he   long   been
           'A heavy drinker, he has been for a long time.'

     d.   Ekki   hafa nemendur stolið ostinum
           not   have   students   stolen   the.cheese
           'Students have not stolen the cheese.'

     e.   Á engan hátt vil   ég gera lítið úr
           in no   way   want   I   make little out.of this
           'In no way do I want to treat this lightly.'

A further restriction is that *wh*-phrases cannot be antecedents, including
wh-adjuncts. This is exemplified in (5) below.

(5) a. * Hvers vegna,   (að) þá   var   leiknum   frestað?
           why   that ÞÁ   was   the.game   postponed
           'Why was the game postponed?'

     b. * Samkvæmt hvaða rannsóknum, (að) þá er kaffi   gott   í   hófi?
           according.to which research   that ÞÁ is coffee good in moderation
           'According to which research is coffee good in moderation?'

     c. * Hvenær, (að) þá   verða   tónleikar í   Laugardalshöll?
           when   that ÞÁ   will.be   concert   in Laugardalshöll
           'When will there be a concert in Laugardalshöll Arena?'

Anticipating the analysis presented in section 4, I take these examples to
show that resumptive *þá* lacks the features [+wh] to match wh-antecedents

and [+neg] to match negative antecedents. There is also a feature mismatch
in (3a-c) but these examples can be salvaged by the appropriate resumptive
proforms (see examples in 2.3 below).

2.2 The XP-*þá*-construction vs. the *så*-construction

The XP-*þá*-construction patterns with the *så*-construction with respect to
examples like (3) - (5) (see Nordström 2011; Eide 2011; Holmberg 2018
and references cited there).[4] However, possible antecedents are more
restricted in the XP-*þá*-construction and this is most clearly seen in that
locative adjuncts are fully acceptable in the *så*-construction:

(6)   I   byen   så   trefte   eg   nokre   kamerater   (Faarlund 1980: 123)
       in town SÅ   met   I   some   buddies
       'In town, I met some buddies.'

This is not the case for the XP-*þá*-construction as shown by the following
example from Rögnvaldsson (1982: 218):

(7) ?? Á   Akureyri,   (að)   þá   eru   fjöldamörg   söfn
       in Akureyri   that   ÞÁ   are   quite.many   museums
       'In Akureyri, there are a lot of museums.'

If *þá* is replaced by the locative adverb *þar* 'there', this example becomes
fully acceptable:

(8)   Á   Akureyri,   (að)   þar   eru   fjöldamörg   söfn
       in Akureyri   that   there are   quite.many   museums
       'In Akureyri, there are a lot of museums.'

Salvesen (to appear) divides adverbial resumptives in Germanic into
two classes, specialized remsumptives and generalized resumptives. She
claims that Icelandic *þá* belongs to the first class whereas Norwegian
and Swedish *så* falls into the second one. While resumptive *þá* is more
restrictive with respect to possible antecedents than resumptive *så*, it is
hardly very specialized. Salvesen's view seems to rest on the assumption

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[4]   An exception is Fenno-Swedish, which allows all kinds of antecedents with resumptive
      så; see Holmberg (2018) for examples and discussion.

that *þá* cannot resume what she calls general adverbials but this does not accord with my judgments.[5] This can be seen e.g. in (1a-b). As further illustrated in (9), I find adjunct phrases like *þess vegna* 'therefore' or *samt sem áður* 'nevertheless' fully acceptable as antecedents of resumptive *þá*:

(9) a. Þess vegna, (að) þá erum við hér   í kvöld
        therefore   that ÞÁ are   we   here   tonight
        'Therefore, we are here tonight.'

   b. Samt sem áður, (að) þá hefur enginn afsannað   þessa kenningu
        nevertheless   that ÞÁ has   nobody disproved   this   theory
        'Still, nobody has falsified this theory.'

Of course, my judgments on resumptive *þá* may be more liberal than those of the native speakers that Salvesen consulted. It is also possible that native speakers reject examples like (9a-b) when they see them in written form because resumptive *þá* is very much a trait of spoken Icelandic, especially with non-clausal antecedents. It is also worth noting that a search in the Risamálheild Corpus (on August 10, 2019) returns 114 examples of *samt sem áður* 'nevertheless' as an antecedent in the XP-þá-construction, including 106 examples without *að*, but only 19 examples with *þess vegna* 'therefore', including 16 without *að*. This suggest that there might be speakers who find (9b) more acceptable than (9a).

2.3 The XP-*þá*-construction and Copy Left Dislocation
The XP-þá-construction in Icelandic is like Copy Left Dislocation (CLD) in that a left-peripheral constituent is followed by a resumptive proform.[6] Moreover, the complementizer *að* can occur before the resumptive proform, although this is rather uncommon with CLD and marginal if the left-peripheral constituent is an object DP. This can be seen in the following examples, which are identical to the examples in (3a-c) except that *þá* has

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[5] Still, I agree with her claim that the XP-þá-construction, in contrast to the *så*-construction, does not allow the proximal adverbial *nú* 'now' as an antecedent. Note, however, that *núna* 'now' is a possible antecedent, but this may have to do with the fact that *núna* has a purely temporal interpretation whereas *nú* has some other uses, e.g. as a discourse particle.

[6] The terms Copy Left Dislocation and Hanging Topic Left Dislocation as used here correspond to the older terms Contrastive Left Dislocation and Left Dislocation, respectively.

been replaced by an appropriate resumptive proform, *hana* 'her' in (10a) and *það* 'it' in (10b-c):

(10) a. Þessa   mynd,   (?að) hana   hafa   flestir séð
       this.FEM.ACC movie.FEM.ACC   that   FEM.ACC   have   most   seen
       'This movie, most people have seen it.'

     b. Hvaðan   þessi hugmynd kemur, (að) það veit   ég   ekki
        where.from   this   idea   comes that it know I   not
        'Where this idea comes from, I don't know that.'

     c. Drykkjumaður,   (að) það hefur hann lengi verið
        drinker   that it   has   he   long been
        'A heavy drinker, that he has been for a long time.'

The contrast between (10a-c) and (3a-c) shows that resumptive *þá* is an adjunct and thus incapable of resuming arguments and predicates. A resumptive proform in CLD must match the gender, number and case of a DP argument, as in (10a), but for complement clauses and predicative phrases, the appropriate proform is the unmarked neuter pronoun *það*, as in (10b-c).

The examples in (3a-c) and (10a-c) suggest that *að* occupies a head position in the CP-domain, whose specifier is either the antecedent of the XP-*þá*-construction or a copy-left-dislocated element. Thus, the conclusion is that both constructions share the same basic structure (but see section 4.3 for details).

The similarities between the XP-*þá*-construction and CLD are also reflected in their syntactic distribution. As shown by the following example from Thráinsson (1979: 64), CLD can occur in clauses embedded under bridge verbs like *segja* 'say':

(11) Jón   segir að þessum   hring,   honum   hafi Ólafur
     John   says that this.MASC.DAT ring.MASC.DAT MASC.DAT has Olaf
     lofað   Maríu
     promised Mary
     'John says that this ring, Olaf has promised it to Mary.'

The XP-*þá*-construction patterns with CLD in this respect. One representative example of this from the Risamálheild Corpus is shown below:

(12) við erum nú   að vonast til þess að með meiri tíma og betra samtali,
      we are   now   to hope   to it   that with more time and better discussion
      að þá leysi menn   þetta nú
      that ÞÁ solve people this   now
      'We are now hoping that, with more time and improved negotiations, this will
      be solved.'

With non-bridge verbs in the matrix clause, both CLD and the XP-*þá*-construction are degraded:

(13) a.?? Jón efast um að   þessum   hring,   honum   hafi Ólafur
          *John doubts that this.*MASC.DAT *ring.*MASC.DAT MASC.DAT *has Olaf*
          lofað   Maríu
          promised Mary
          'John doubts that this ring, Olaf has promised it to Mary.'

     b.?? Ég efast um að samkvæmt   rannsóknum, (að) þá sé kaffi   gott
          I   doubt   that according.to research   that ÞÁ is coffee good
          í   hófi
          in   moderation
          'I doubt that according to research, coffee is good in moderation.'

This shows that the XP-*þá*-construction and CLD behave very much alike with respect to embeddability. Embedded topicalization in Icelandic is also sensitive to the contrast between bridge and non-bridge verbs (see Angantýsson 2011 for an in-depth investigation) but I will have nothing further to say about this here.

Hanging Topic Left Dislocation (HTLD) differs from CLD with respect to the properties discussed above. As illustrated in (14) (from Thráinsson 1979: 63), HTLD is not possible in subordinate clauses even if they are complements of a bridge verb.

(14) * Jón   segir   að   þessi   hringur,   Ólafur hafi lofað
     *John   says   that   this.*MASC.NOM *ring.*MASC.NOM *Olaf   has   promised*
     Maríu   honum
     Mary   MASC.DAT
     'John says that this ring, Olaf has promised it to Mary.'

HTLD is also incompatible with the complementizer *að*. This is exemplified in (15) where the dislocated nominative DP resumed by a non-nominative pronoun in situ is an unambiguous marker of HTLD (see Thráinsson 1979: 59-70 on the contrast between CLD and HTLD in Icelandic):

(15) Þessi   mynd,   (*að) ég hugsa að   flestir hafi séð   hana
     *this.*FEM.NOM *movie.*FEM.NOM *that I think that most   have seen* FEM.ACC
     'This movie, I think most people have seen it.'

Zaenen (1985: 4-20) argues that HTLD in Icelandic involves base-generation of the hanging topic rather than movement. Since such topics occupy a very high position in the left periphery (see 4.3 below), the ungrammaticality of (15) suggests that it is too high to fulfill the requirement of the complementizer *að* to have its specifier position filled.

3. Movement vs. base-generation

In this section, the issue of movement vs. base-generation of the adjunct antecedent and resumptive *þá* will be addressed.[7] I will argue that the adjunct antecedent undergoes movement out of TP and this is the only movement that takes place.

    Resumptive *þá* shows no evidence of movement to the C-domain. As Rögnvaldsson (1982: 66–67) points out, resumptive *þá* cannot occur inside TP, as shown in (16b-c).

(16) a.   Ef þetta gengur vel, þá   gerum við lengri samning
         if this goes   well ÞÁ   make we longer contract
         'If this goes well, we will extend the contract.'

    b. * Ef þetta gengur vel, gerum við þá   lengri samning
         if this goes   well make we ÞÁ   longer contract

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[7] I prefer the more traditional terms movement and base-generation to the Minimalist terms internal and external merge but this does not entail any theoretical committment on my behalf.

c. * Ef þetta gengur vel, gerum við lengri samning ÞÁ
      if *this* *goes* *well* *make* *we* *longer* *contract* *þá*

Turning to the adjunct antecedent, there is clear evidence of movement as seen by reconstruction effects with respect to Binding Principles A and B:

(17) a. María$_i$ lagaði eldhúsið   með hjálp mömmu sinnar$_i$/*hennar$_i$
        Mary *fixed* *the.kitchen* *with* *help* *mother* REFL/*her*
        'Mary fixed the kitchen with the help of her mother.'

   b. Með   hjálp mömmu sinnar$_i$/*hennar$_i$ að   þá lagaði
      With   *help* *mother* REFL/*her*   *(that)* *ÞÁ* *fixed*
      María$_i$ eldhúsið
      Mary   *the.kitchen*

The reflexive possessive in (17a) inside the PP adjunct obeys Principle A since it is bound by a clause-mate subject and the pronoun inside the same adjunct violates Principle B by being bound by the subject. As shown in (17b), movement of this PP to the left periphery makes no difference for binding: The reflexive still satisfies Principle A and the pronoun violates Principle B. Thus, the PP in (17b) behaves as if it had not moved out of TP at all.

The adjunct antecedent can also have an embedded reading. For instance, the temporal phrase *á morgun* 'tomorrow' denotes the time of John's birthday in (18b), just as in (18a). Due to the present tense in the matrix clause, there is no other possible interpretation of (18b). This is clear evidence that *á morgun* is base-generated inside the embedded clause in (18b).

(18) a. Ég held að Jón eigi afmæli   á morgun
        I   *think* *that* *John* *has* *birthday* *tomorrow*
        'I think that John has a birthday tomorrow.'

   b. Á morgun, (að) þá held ég að Jón eigi afmæli
      tomorrow   *that* *ÞÁ* *think* *I*   *that* *John* *has* *birthday*
      'Tomorrow, I think that John has a birthday.'

It should also be noted that the antecedent shows sensitivity to strong islands, a traditional diagnostic of movement. This is exemplified in (19a-b):

(19) a. Ég var veikur meðan María lagaði eldhúsið   með hjálp Siggu
         I   was sick   while   Mary   fixed   the.kitchen with help Sigga's

    b. * Með   hjálp Sigga (að) þá   var ég veikur meðan María
         With   help   Sigga's that ÞÁ   was I   sick   while   Mary
         lagaði eldhúsið
         fixed   the.kitchen

The critical example here is (19b), which is derived by movement of the adjunct PP (*með hjálp Siggu*) from a temporal clause. Since temporal clauses are strong islands, this example is expected to be ungrammatical.

With respect to the data illustrated in (16) – (19), the XP-*þá*-construction behaves very much like CLD in Icelandic. Thus, fronting the resumptive proform is strongly preferred to no movement (Thráinsson 1979: 67-68) and CLD in Icelandic also involves movement of the dislocated element, as shown by Zaenen (1985: 45–61). As discussed in section 4 below, these and other similarities between the XP-*þá*-construction and CLD make it possible to employ Grohmann's (2003) analysis of CLD in German to account for the basic properties of the XP-*þá*-construction.

4. Analysis
4.1 The status of *þá*
The crucial issue to be addressed here is whether resumptive *þá* occupies a head position or a specifier position in the left periphery in the XP-*þá*-construction. Østbø (2006), Eide (2011), Holmberg (2018) argue that Norwegian and Swedish *så* is a functional head in the *så*-construction, but this cannot be right for *þá* for at least two reasons. First, *þá* can easily receive full stress, in contrast to typical functional heads like the complementizer *að* that precedes *þá* or Norwegian and Swedish *så* in the *så*-construction. Second, *þá* can be a clause-initial element triggering V2. This is true for all kinds of *þá*, including *þá* expressing a consequence, as in (20a), or the addition to a list of previously mentioned propositions, as in (20b):

(20) a. María sagði upp í gær.   **Þá** hlýtur Hanna að gera það líka
       Mary resigned yesterday then must Hanna to do   it   too
       'Mary resigned yesterday. Then, Hanna must do the same.'

   b. Jón hefur marga kosti.   Hann   er heiðarlegur og alltaf
      John has many good.qualities he   is honest   and always
      tilbúinn að   hjálpa öðrum. **Þá** hefur hann ákaflega   gott minni.
      ready to   help others ÞÁ has he   incredibly good memory
      'John has many good qualities. He is honest and always ready to help
      others. Moreover, he has an incredibly good memory.'

Moreover, the V2 constraint can be satisfied by fronting *þá* that refers to an
adjunct and is therefore very similar to resumptive *þá*:

(21) a.   A: Hvernig   unnu   þeir   leikinn?
             how   won   they   the.game
             'How did they win the game?'

   b.   B: Með   sterkum   varnarleik
             with   strong   defensive play

   c.   A: En **þá**   er allt   hægt
             but ÞÁ   is everything   possible
             'But everything is possible with strong defensive play.'

As shown by the translation in (21c), *þá* is interpreted as referring to the
PP in (21b). Moreover, the finite verb must immediately follow *þá* in (21c),
yielding a V2 structure.

4.2 The XP-*þá*-construction as CLD

Having established that resumptive *þá* is a full phrase, the next step is to
determine the syntactic structure associated with the XP-*þá*-construction
in Icelandic. In view of all the similarities between the XP-*þá*-construction
and CLD that have been discussed, I will adopt a slightly modified version
of Grohmann's (2003) analysis of CLD in German. The central points of
this analysis are shown in (22), based on Grohmann (2003: 155), where RP
stands for a resumptive proform:[8]

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[8]   I have replaced Grohmann's CP, TopicP and IP by Force-TopicP, FinP and TP but this
      does not affect the essentials of the proposal.

(22)   [Force-TopicP XP$_i$ [Force-Topic' (að) [FinP **RP**$_i$ [Fin' V-Fin [TP...t$_i$]]]]]

This configuration has two projections in the left periphery. I will follow Eide's (2011) analysis of the *så*-construction by assuming head stacking in the highest projection, i.e. Force-Topic (see also Holmberg 2018). Force-TopicP hosts the clause-initial XP, the antecedent, as its specifier and the resumptive proform spells out the trace of the moved XP in the specifier of FinP. This follows from Grohmann's (2003) Anti-Locality Hypothesis, which proscribes phrasal movement within a prolific domain unless the relevant trace is phonetically realized. One of these domains is the CP-domain, the discourse layer hosting pragmatic features like topic and focus. The other two domains are the TP-domain, which determines agreement and the vP-domain, which defines thematic relations. Anti-Locality requires the trace of the initial XP in (22) to be spelled out by a resumptive pronoun because the XP moves within the CP-domain, i.e. from Spec,Fin to Spec,Force-Topic.[9] Thus, resumptive structures arise because of movement that is too local in the sense of being within the same prolific domain.

The structure in (22) derives many important properties of the XP-*þá*-construction. First, since resumptive *þá* is chain-linked to the antecedent, *þá* must be a full phrase just like the antecedent. That this prediction is borne out was already shown in 4.1. Second, it also follows that the antecedent can only be an adjunct. This is so because *þá* lacks the appropriate features to spell out the trace of an argument or a predicate, as exemplified in (3a-c). Moreover, as shown in (3d-e) and (5a-c), *þá* lacks the features [+neg] and [+wh] to lexicalize the traces of negative adjuncts and wh-adjuncts, respectively. Third, the structure in (22) correctly rules out XP-*að* without *þá* but rules in XP-*þá* without *að,* as shown in (23):

(23)   a.   Á morgun,   að   þá   verða   tónleikar   í   Laugardalshöll
             tomorrow   that ÞÁ   will.be concert   in Laugardalshöll
             'Tomorrow, there will be a concert in Laugardalshöll Arena.'

        b.   Á morgun,   þá   verða   tónleikar   í   Laugardalshöll
             tomorrow   ÞÁ   will.be concert   in Laugardalshöll

---

[9]   Note that *þá* may spell-out a trace of a fronted XP base-generated in Spec,Fin. This is presumably the right analysis for clause-initial adjuncts in the XP-*þá*-construction that do not originate within TP; see Holmberg (to appear) for discussion of some cases like that relating to the *så*-construction.

c. * Á morgun,   að   verða   tónleikar   í   Laugardalshöll
      tomorrow   *that will.be   concert   in   Laugardalshöll*

d.   Á morgun   verða   tónleikar   í   Laugardalshöll
      tomorrow   *will.be   concert   in   Laugardalshöll*

The presence of *að* in (23c) shows that this example cannot be analyzed as topicalization like (23d). This example violates Anti-Locality as the trace of the adjunct movement from Spec,Fin to Spec,Force-Topic is not overtly realized. By contrast, no principle of grammar is violated by the absence of *að* in (23b); hence, the difference between (23b) and (23a) is just a matter of phonetic realization of the highest head in the XP-*þá*-construction.

At this juncture, it is worth pointing out one potential problem with the proposed analysis: Given the structure in (22) one might expect topicalization to involve CP-internal movement from Spec,Fin to Spec,Topic, but this would incorrectly predict that topicalization triggers resumption. One possible solution is to assume that Topic never projects independently in Icelandic; instead it always forms a complex head with the highest adjacent head in the CP-domain. On this view, the landing site for topicalization would be Spec,Topic-Fin with no further movement inside the CP-domain but this will have to be an issue for future investigation.

4.3 V2, FinP and the Bottleneck Hypothesis

I have adopted here the common view that Fin, the lowest head in the articulated left periphery, is the landing site for the finite verb in V2 languages like Icelandic (Roberts 2004). Thus, the V2 requirement is fulfilled by (a) movement of the finite verb to Fin and (b) the checking of the EPP features of Fin in Spec,Fin (Holmberg 2015). There is strong evidence that the finite verb never moves beyond Fin in Icelandic. For one thing, it is a valid generalization for Icelandic and the other V2 languages that the finite verb in the CP-domain only moves to the left of the subject. This follows immediately if Fin is the landing site of the finite verb. Under a Force-V2 analysis, some auxiliary assumptions would be required to derive this generalization since a finite verb in Force precedes some specifier positions in the left periphery. Moreover, the XP-*þá*-construction shows quite clearly that the finite verb sits in a low position in the left periphery where it can be preceded by three elements, the adjunct antecedent, the complementizer *að* and resumptive *þá*.

The Force-V2 analysis mentioned above (see Poletto 2002; Walkden 2015; Wolfe 2016 among others) is plausible for V2 languages or varieties where (a) the finite verb may precede a subject in the CP-domain, or (b) only one phrase within ForceP can precede the finite verb. Since (b) does not hold in Icelandic, as shown by the XP-*þá*-construction, and there is no evidence for (a) that I know of, this is not a viable analysis of V2 in Icelandic (see also Holmberg to appear for arguments against the Force-V2 analysis for Swedish).

Despite the linear V3/V4 in the XP-*þá*-construction, the analysis in (22) entails that only the adjunct antecedent moves past the finite verb in this construction. This is consistent with the generalization that V2 languages only allow one phrase to move to the left periphery. To account for this ban, the so called Bottleneck Hypothesis has been proposed (Haegeman 1996; Roberts 2004; Holmberg to appear). This hypothesis dictates that all movement to the left periphery in V2 languages must pass through the lowest specifier position, Spec,Fin. Once a phrase has moved to Spec,Fin, no other phrase can move to the left periphery, thereby skipping Spec,Fin. Roberts (2004: 316–317) suggests that such a movement violates Relativized Minimality (Rizzi 1990) because the phrase in Spec,Fin, attracted by the EPP feature of Fin, would be an intervener for any kind of higher movement. Be that as it may, the analysis of the XP-*þá*-construction advanced here is consistent with the Bottleneck Hypothesis as the fronted adjunct moves through Spec,Fin on its way to Spec,Force-Topic.

The validity of the Bottleneck Hypothesis is shown e.g. by the fact that the XP-*þá*-construction is incompatible with wh-movement to a position between the antecedent and resumptive *þá*. This is exemplified in (24):

(24) a. * Á morgun,   hvaða bók   þá ætlar   hann að lesa?
         tomorrow   which book ÞÁ intends   he   to read

   b. * [Force-TopicP Á morgun$_i$ [FocusP hvaða bók [FinP þá$_i$ [Fin' V-Fin [TP...t$_i$]]]]]?

For concreteness, we can assume that the wh-phrase occupies Spec,Focus between Force-TopicP and FinP. In this configuration, the wh-phrase must have moved to the left periphery without stopping in Spec,Fin because that position hosts the trace of the moved antecedent, spelled out as *þá*. Thus, the wh-movement in (24) violates the Bottleneck Hypothesis. As shown in

(25), this example is acceptable if the wh-phrase remains in situ, resulting in an echo-question:

(25) Á morgun,   (að) þá ætlar   hann að lesa hvaða bók?
     tomorrow   that ÞÁ intends he   to read which book

It must be stressed that the Bottleneck Hypothesis only restricts movement to the CP-domain. Thus, it is possible to combine HTLD with the XP-*þá*-construction, as in (26) below, because the only phrase moved to the left periphery in such examples is the adjunct antecedent. The hanging topic is base-generated in a position above ForceP, e.g. in the Frame field of Beninca & Poletto (2004).

(26) Þessi   bók,   um helgina,   (að) þá ætla ég að
     this.FEM.NOM book.FEM.NOM on the.weekend that ÞÁ plan I   to
     lesa   hana
     read   FEM.ACC
     'This book, over the weekend I plan to read it.'

Although examples like (26) are clearly rather stilted, presumably due to the number of maximal projections preceding the finite verb, they sound grammatical to me. As shown in (27), the base position of the hanging topic is too high for it to follow the adjunct XP:

(27) * Um helgina,   þessi   bók,   (að) þá ætla ég að
     on   the.weekend this.FEM.NOM book.FEM.NOM that ÞÁ plan I   to
     lesa hana
     read FEM.ACC

Theoretically, it should also be possible to base-generate more than one phrasal category above Spec,Force-Topic. I am not sure about the acceptability of this option in Icelandic but see e.g. Grohmann (2003) on HTLD stacking in German.

5. Conclusion

In this paper, the basic properties of the XP-*þá*-construction in Icelandic have been presented. This construction has been shown to be very similar

to the *så*-construction in Norwegian and Swedish, but crucially different in that the complementizer *að* may occur between the fronted adjunct and resumptive *þá*. I have argued that *þá* is a full phrase, spelling out the trace of the moved adjunct in Spec,Fin, following Grohmann's (2003) analysis of Copy Left Dislocation in German. The adjunct moves to a position that has been identified as Spec,Force-Topic where it may be followed by complementizer *að*. This analysis is consistent with the view that V2 is satisfied in the lowest projection of the left periphery and the Bottleneck Hypothesis, which blocks movement of more than one phrasal category to the left periphery in V2 languages.

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Acknowledgements

Some remarks on the position of adverb phrases (mainly in Danish)

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Abstract

This paper draws up some general questions concerning the adverbs as a part of speech and the question of their linear surface order. Drawing on Danish examples, the paper suggests that investigation into adverb phrases and the implications of their position rules might lead to new and unexpected results concerning syntax, learnability, and cognition.

1. Introduction

Somewhere between 'some years ago' and 'many years ago', Sten Vikner and I had finished a project on object positions seen from a formal and functional point of view. A follow-up seemed natural, and I suggested that we should go on with adverb phrase positions. Sten liked the idea, but no sponsor could be found. Therefore, the world is still waiting for a solution to the problems concerning the position of adverb phrases. As a small greeting to Sten's anniversary, a brief overview of these unsolved problems seems appropriate. In my paper, I am going to present the problems mainly with Danish examples. Danish has a fascinating and wide repertoire of different adverbs used in widely varying styles, so it is tempting to show the whole span of possibilities with these examples.[1]

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[1] This paper draws on material presented in two lectures, one at the annual convention of the Grammatics Network in Slagelse (oct. 2015), another at the memorial for Svend Østergaard in May 2018. I am grateful to the audiences at both places for comments and suggestions.

2. The paradoxes of adverbs

In a project trying to span both formal and functional aspects of grammar, it is natural to start out with the content side and reach out from there for the formal aspects of grammar. The adverb phrases have adverbs as their central element, and hence, the semantic and pragmatic aspects of the adverbs are a relevant starting point.

As a part of speech, the adverbs contribute to the content side of speech in many complex ways. Their impact may be drawn up in two paradoxes:

I: The adverbs are always recognisable to the receivers of the text[2] in both semantic and pragmatic respects, although their phonetic form regularly varies considerably.

II: The adverbs are normally built on simple monomorphemic relations between phonological and semantic form, even though their pragmatic content regularly implies quite complex pragmatic factors.

Concerning paradox I, some factual observations may be adduced to support it.

One is the fact that quite many adverbs in Danish may vary considerably in their phonetic realisation. Heegaard & Mortensen (2014) observe that the adverb *faktisk* ('in fact'[3]) occurs both in monosyllabic and disyllabic versions, and Heegaard (2015) shows that *egentlig* ('in reality') similarly may be reduced from a full trisyllabic form to an almost monosyllabic version. Other parts-of-speech may not be reduced this way, e.g. nouns or proper names. The fact that the realized phonetic versions vary so much indicates that the meaning is recognized at the slightest cue, and consequently, that rather reduced cues may be sufficient to convey the meaning.

Another fact to support paradox I is that sometimes even unrecognisable phonetic material may be understood as having some kind of adverbial function. I suppose that native speakers will recognize the functional character of the item *pente* in the following quotes from a dialect transcription as a (adverbial) swearword, in spite of the fact that this is

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[2] I use the word 'text' to denote any kind of actual statement in any kind of communication, whether in written or in spoken form.

[3] Glossings of the Danish adverbs is to be taken with great precaution since their meaning often is quite complex, cp. Paradox II.

an almost unrecognisable version of a swearword, spelled *pinedød* in the standard language:

(1) **Danish (dialect)**
Men –"det   vil jeg **pent**   fandneme   it   ha"
But –"That will I   <swearword1> <swearword2> not have"
–de   så: han ålti:
 – that   said he   always
'But – 'that I damn well cannot accept' – so he always said.'

(2) **Danish (dialect)**
"I   skal **pente**   tage det hele med" sagde han så.
"You shall <swearword> take it   all   with", said   he   then.
–Han så: ålti   "pente".
–He   said   always "<swearword>".
–"Få   de kåste **pente**   skjellenge" så: han.
–"Because it   costs   <swearword> shillings", said he.
'You must damn well pick it all up, he then said. –He always said "damn well" –"because it does damn well cost money".'
(see https://dialekt.ku.dk/dialektkort/#Gammel-Rye)

The meta-comments from the narrator shows that the specific swear word *pente* is not current to him, either; it is a verbal quote of a darkened phrase used to characterize the old man. Nevertheless, the function is completely transparent.

A final fact is that at least one particular group of adverbs, namely swearwords, are phonetic reductions of complex meta-phrase. This goes for the above-mentioned *pinedød*, which is a reduction of *ved Vorherres pine og død* ('by the suffering and death of our Lord'), but also for several others, like the ubiquitous *sgu*, a reduction of *så sandt Gud hjælpe mig* ('so truly God help me'). The road from being a meta-sentence to being an adverb shows that the phonetic form as such may not be the most important clue to the complexity of the meaning.

Concerning the second paradox, normal Danish adverbs like *nu* ('now')*, da* ('then', 'indeed')*, jo* ('yes', 'just', 'actually')*, vel* ('surely') etc. are obviously mono-morphemic and hence, constitute a semantic unity on the content side. At the same time, such adverbs are pragmatically rather complex. Consider e.g. the word *jo* ('yes', 'indeed'), described in detail by Hansen & Heltoft (2011). While the meaning as such in all its uses seems

consistent enough, the discussion around the pragmatic content shows that the word may be used in a broad spectrum of actual uses. Ditte Boeg Thomsen (2015: 142-3) quotes Davidsen-Nielsen for the general function as a label for "what may or should be seen as established knowledge" and continues to discuss the polyphony of the word. She goes on to discuss the question whether the appeal to already established knowledge is contained in the meaning. On one hand, *jo* may be understood as an order not to contradict the speaker (see Hansen & Heltoft 2011: 1051); on the other, *jo* may also be understood as an instruction that there is no conflict between the understanding of the situation between the speaker and the hearer. As Thomsen (2015: 143) points out, there is a dilemma between these two interpretations; either common knowledge is central, but difficult to observe for the linguist, or common knowledge is not central, and the situations where *jo* refers to explicit knowledge are superimposed on a pragmatic structure. An adverb like *jo* thus contains references to speaker and hearer, to the context and maybe also to the previous discourse. Since these references are not explicit, the best way to describe them would seem to be to see them as pragmatically implied. Furthermore, the adverb conveys an illocutionary act, either at statements concerning identity of opinions between the speaker and the hearer, or an instruction that perseverance in a disagreement will not be accepted. Rather than choosing one of these understandings as the semantic core, it seems more reasonable to describe the semantic aspect as the minimal common ground between these understandings and then describe the pragmatic possibilities as superimposed.

This single example is hopefully sufficient to explain what the implications of paradox II are.

In her discussion of an empirical investigation of the use of adverbs among young Danish-speaking children, Thomsen (2015) points to yet another paradox concerning adverbs: On one hand, their meaning is rather complex, and their pragmatic possibilities quite wide-ranging, but at the same time, these words are present even in the speech production of little children, even in a usage that converges well with the grown-up usage (Thomsen 2015: 152). This paradox is sharpened by another observation, namely that adverbs are usually unfocused and appear in the middle of the sentence where they are more difficult to distinguish. Nevertheless, as her investigation into adverb forms among Danish-speaking children shows, they are acquired correctly and in sufficiently well-formed versions.

3. A formal semantic and syntactic framework for adverbial meanings

In 1974, Ebbe Grunwald made an experiment with a generalized definition of adverb phrases as some kind of meta-statements, using a generative semantic framework. The inspiration for this came from authors like Bartsch (1972) and Vennemann (1973). In such a framework, adverb phrases were to be seen as meta-predicates on sentences. Let us take a sentence with an adverb phrase like this:

(3) Unfortunately, he doesn't come tomorrow

Under this approach it would be paraphrased like this:

(3')It is unfortunate that he doesn't come tomorrow.

This approach would call for a transformation rule that will turn a meta-predicate into an adverb phrase and at the same time elide the main clause frame containing the meta-predicate and lift the former object clause to main clause status:

(4)
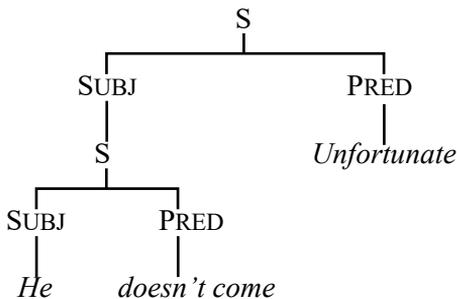
Generative grammar has since given up this kind of very complex transformations as theoretically inadequate. Also, from a purely descriptive approach, the solution does not work. In a response to this, Peter Harder (1975) pointed out that this solution cannot be generalized:

(5)   Indeed, he doesn't come

(5')   *It is indeed that he doesn't come

The theory of adverb phrases as meta-predicates is a possible semantic (but not syntactic) explanation of certain structures, but definitely not all. For those that do not work well as predicates, Harder suggested that they should be seen as accompanying messages to the receiver on how to handle the core message.

Looking at the whole range of adverb types, Harder's approach seems to work well as a general definition. So, in a functional approach, what adverb phrases do is that they instruct the enunciatee how to handle the message. Using adverb phrases to convey such instructions may be paraphrased as meta-predicates, but this explanation only fits certain types. The approach analysing the adverbials as parts of the phatic communication has been carried further by polyphonic semantics.

But how could a formal approach handle Harder's suggestion? A more suitable approach seems to be to follow Cinque (1999) in his description of the adverbs as specifiers on functional nodes. If adverbs are seen as specifiers, they control the meaning of a given node at the A'-position. Specifier structures control and delimit the semantic scope of the whole construction, which is also what an intuitive approach to adverb phrases would expect them to do.

4. Where to place adverb phrases?

At a first glance, this question seems trite. Adverb phrases with superordinate semantic effects, like those built around evidential or performative adverbs, are placed in the middle of the sentence, while heavier types, like adverbs of place and time, and manner adverbs, are placed at the end of a sentence. This is equally true for English and Danish.

However, there are interesting twists in these matters. In Danish, clusters of adverbs are not infrequent, especially in colloquial style. Such clusters are always ordered quite strictly; few, if any deviations from a conventional order are acceptable. This conventional order was in fact first established inductively by Kristian Mikkelsen in 1911, simply from investigation into clusters in written standard Danish (see Jørgensen 2014: 100). Although this order cannot be identified fully with the general ordering rules in Cinque (1999), there is enough similarity to conclude that there must be a connection. This implies that Cinque's claim that some

superordinate ordering rules of a universal nature are at play gains some inductive support from this observation.

But if such ordering rules are of a universal nature, it is tempting to assume that they are somehow also responsible for the acquisition of the adverbs and their meaning. This could explain why the adverbs are learnt anyway, in spite of their complexities in expression and meaning (cf. Thomsen 2015). If this is true, adverb phrase positions provide clues to some important aspects of the interface between language and cognition.

Another indication that such universal rules may be at play are the obvious grammaticalisations of adverbs in Danish. The development of *sikker* ('certain', 'sure') into an epistemic adverb (Jensen 2000) comes about because the effect of the adverb is different when moved from a position with a characterising function into a position with an epistemic function.

Danish *sikkert* has two meanings: 'presumably' (epistemic) and 'safely' (manner). If the position of the adverbial is doubtful, the epistemic meaning prevails:

(6) Han   ankommer **sikkert**   kl.   8.
    He   arrives   surely   o'clock 8
    'Presumably, he will arrive at 8 o'clock.'

When the adverb phrase is in final position, the manner reading prevails:

(7) Han   er ankommet **sikkert**   kl.   8
    He   is arrived   surely   o'clock   8
    'He has arrived safely at 8 o'clock.'

If moved to the central position, the epistemic reading returns:

(8) Han   er **sikkert** ankommet kl.   8
    He   is surely   arrived   o'clock   8
    'He has presumably arrived at 8 o'clock.'

Such superordinate sequences of adverb phrases are evidently the basis for interesting observations concerning polysemous adverbs in Danish (see Jensen 2000).

Some linearisation rules of Danish adverbials are posed in Jørgensen (2014). The first model represents these rules as a box model where

the adverb phrases of each type follow one another as boxes in a line (Diderichsen 1946; see also Bjerre et al. 2008 and Vikner & Jørgensen 2017):

(9)

adverbial zone					
particles				sentence adverbs	negations
phatic	proximal	argumen-tative	evidential		

While the first four positions are narrowly defined by a close set of related semantic and pragmatic meaning effects caused by phonetic material in this position, the position named "sentence adverbs" is a mere cover term, which may be subdivided even further (Jørgensen 2014: 111). Since this discussion only deals with the general principles, there is no need to go into detail concerning this.

The model given above is in principle completely equivalent with a tree structure where all the functions of the particles are attached as specifiers to IP nodes in the same way as Cinque does.

Within the adverbial zone, there are some focus position, not bound by their content, but by their discourse function (Hansen & Heltoft 2011: ch. IX & XX; Jørgensen 2014):

(10)

adverbial zone							
particles				sentence adverbs	SECONDARY THEME POSITION	nega-tions	FOCUS POSITION
phatic	proxi-mal	argumen-tative	eviden-tial				

It seems as if there is also a possibility to focus adverbs by moving them to a position in front of the particles. The fact that there are particular focus positions that may be filled with material from other adverb phrase positions may look like an loophole to account for apparent counter-examples.

While such a use would definitely be out of bounds, the possibility of focus positions seems undeniable, the focusing function making itself felt strongly in actual examples. Furthermore, the focusing function also seems to be a source of grammaticalisation in situations like the development of one single adverb into a pair of homonyms, like *sikker* discussed above.

In order to demonstrate which adverbs may occur in which orders, here is a repetition of the first model now filled with the relevant examples (see Jørgensen 2014: 103):

(11)

adverbial zone					
particles				sentence adverbs	negations
phatic	proximal	argumen-tative	evidential		
jo, mon, vel, sgu	*nu, da, så*	*altså, ellers, da, dog*	*vel, vist, nok, vistnok*		

5. Linearisation at work.

The rules stated above may be tested against empirical data. An excellent testbed were the weekly comments by the Danish author Bent Vinn Nielsen in the newspaper *Information*, regrettably discontinued since 2018 due to age. His style strongly leaned on oral patterns and often mocked the opinions of his opponents by confronting their speech habits with ironic twists. Due to this, he excelled in the use of adverbs and often delivered quite complex clusters.

In Jørgensen (2014), I investigated his linearisation of adverbs in clusters, using the patterns described above. It turned out that in almost all cases, the linear order followed the schemata for clusters set up in sect. 4. Here are two examples:

(12) Men bevares,   det er der **jo**   **indtil videre heller**
But by.all.means, that is there indeed until further neither
ikke noget,   der tyder på, at   det gør.
not anything that hints on that it   does
'But anyhow, so far, nothing seems to suggest that it does.'

(13) Jeg vil læne mig   tilbage i yndlingslænestolen
     I   will lean   myself back   in favourite-armchair-DEF
     derhjemme og   nippe til min lille single malt og vedtage med
     at-home   and sip   at my little single malt and decide   with
     mig selv, at   jeg **jo   nu engang ikke** kan   løse alle
     myself   that I   indeed   now anyway not   can solve all
     verdens   problemer.
     world-DEF's problems
     'I will lean back in my favourite armchair at home, sip at my little
      single malt and decide for myself that I can't solve all problems in
      this world.'

In both (12) and (13), we have some rather elaborate adverb clusters. Their linear order conforms in both cases with the models for the adverbial zone given in (9)-(11) above. Even though these adverb clusters are primarily used in oral, non-academic styles, there seems to be no single example that does not follow the rules of the linear order.

Such negative results may seem frustrating. The researcher works his/her way through a huge number of examples, and the conclusion is simply that there seem to be no interesting deviations; everything works completely in accordance with the theoretical model that was set up at the beginning. Nevertheless, their actual impact lies at another level. The negative conclusion actually points to the fact that there is a regularity in this matter. The adverbs do not appear in any random order, on the contrary. But the existence of such a regularity calls for new lines of thought: Why is this so? This is the relevance of the original proposal. And an important part of the challenge is that neither strictly formal approaches nor strictly functional ones will be able to find their way into the core of the problem. A formal approach may describe structures and regularities, but a functional approach may point to the forces behind the structures.

6. Conclusion

Many interesting questions concerning the adverb phrases and their meaning seem to hide in the question of linearisation. First of all, the linear order seems to be rather constant and rather universal, as also argued by Cinque. Whether this is due to any kind of top-down rationality (implicit in all attempts to explain linearisation through scope), or whether there is some less restrictive ordering principle behind it, is difficult to answer.

Furthermore, such a question opens a Pandora's box of metaphysical problems. Nevertheless, a linguist may illuminate some of these problems in a completely sound and safe way by looking into the interface between the pragmatic effects. This is why it would have been interesting to work in detail with the linearisation of adverb phrases and also apply the results across different languages.

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Not all processing difficulties are created equal

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Abstract

A slowdown in reaction time in self-paced reading is typically interpreted as a sign of processing difficulty. Similarly, a low acceptability rating can, among other things, be caused by processing difficulty. The question examined in this article is whether a slowdown in reaction time always affects acceptability negatively. To investigate this, an acceptability study was performed, comparing sentences that only differ regarding the main verb (*Mia noticed/presumed the pig in the pen needed water*) and where the word-for-word reaction time data in reading is known from previous research. The reaction time data show that both types involve a slowdown, but at different locations in the sentence (at the embedded subject vs. at the embedded verb) and for different reasons (missing complementizer vs. reanalysis). The acceptability ratings show that the two types of slowdowns are not equally costly: The slowdown due to reanalysis causes a significantly lower rating than the slowdown due to a missing complementizer. The result illustrates that not all processing difficulties (measured as a slowdown in self-paced reading) have the same adverse impact on acceptability judgments.

1. Introduction

In self-paced reading experiments reaction time (RT) is measured and a slowdown is typically interpreted as a sign of increased processing difficulty (cf. Aaronson & Scarborough 1976; Baayen & Milin 2010; Cai, Sturt & Pickering 2012; Jegerski 2014). In acceptability judgment experiments, it is assumed that low acceptability can be caused by several factors, including ungrammaticality, low frequency of the lexical items, and processing difficulty (Schütze 2016: 160–162). The question is if all slowdowns lead

to reduced acceptability or if there are "cost free" processing difficulties: slowdowns in on-line processing that do not adversely affect acceptability.[1]

Let us first look at a number of examples demonstrating the link between processing difficulty (slowdown) and reduced acceptability. Kizach & Balling (2013) conducted a speeded acceptability study where double object constructions with indefinite-definite and definite-indefinite order as in (1) and (2) were compared.

(1) **Danish**
     Direktør   Clausen   lovede   [manden] [et arbejde]. [DEF-INDEF]
     President   Clausen   promised   man-the   a job
     'President Clausen promised the man a job.'

(2) **Danish**
     Direktør   Clausen   lovede   [en   mand] [arbejdet]. [INDEF-DEF]
     President   Clausen   promised   a   man   job-the
     'President Clausen promised a man the job.'

Based on similar studies of English (Brown, Savova & Gibson 2012; Clifton & Frazier 2004), the examples with indefinite-definite order (INDEF-DEF) were expected to be harder to process, and indeed, the RT was around 600 ms slower on average for the INDEF-DEF condition, illustrated in (2), compared to the DEF-INDEF condition, illustrated in (1) (Kizach & Balling 2013: 1162). Interestingly, the rejection rate (participants either accepted or rejected the sentences) was 16% for the INDEF-DEF condition, but only 4% for the DEF-INDEF condition (Kizach & Balling 2013: 1164). Despite the fact that both orders (definite-indefinite and indefinite-definite) are perfectly grammatical in Danish, participants decided to reject INDEF-DEF sentences in 16% of the cases – this appears to be an example of processing difficulty affecting acceptability.

Another example is from Christensen, Kizach & Nyvad (2013) where long and short *wh*-movement, as in (3) and (4) below, were compared in an acceptability judgment experiment.

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[1] I call an RT-slowdown which does not result in reduced acceptability 'cost free', but clearly there *is* a cost since RT is slower. In this article I use cost free processing difficulty in this way instead of the more precise, but cumbersome term 'processing difficulty which is not reflected in acceptability scores'.

(3)   **Danish**
      Hvad ved   hun godt at   man kan   leje dér?
      What knows she well that one can   rent there
      'What does she know that one can rent there?'

(4)   **Danish**
      Ved   hun   godt hvad man kan   leje   dér?
      She   knows well what one can   rent   there
      'Does she know what one can rent there?'

Various processing theories predict that the longer the distance between a
wh-element and a gap is, the harder processing should become (cf. Gibson
1998; Gibson 2000; Gibson 2003; Hawkins 1994; Hawkins 2004). In
other words (3) should be harder to process than (4). Both are completely
grammatical Danish sentences, but nevertheless (4) was judged to be
significantly more acceptable than (3) – mean acceptability (on a 1 to 5
scale) was 4.76 and 3.66 respectively (Christensen, Kizach & Nyvad 2013:
57). Again, this is an example of processing difficulty having an adverse
effect on acceptability.

    In Fanselow & Frisch (2006), the contrast between (5) and (6) was
investigated, and it turned out that (5) was judged to be better than (6) even
though both are grammatical in German.

(5)   **German** (Fanselow & Frisch 2006: 312 (15.21a))
      Was   denken Sie, dass die Entwicklung   beeinflusst   hat?
      What think   you that the development   influenced   has
      'What do you think influences the development?'

(6)   **German** (Fanselow & Frisch 2006: 312 (15.21b))
      Wer   denken Sie, dass die Entwicklung   beeinflusst   hat?
      Who   think   you that the development   influenced   has
      'Who do you think influences the development?'

Fanselow & Frisch (2006) interpreted this result as evidence for processing
difficulties *increasing* acceptability. Their reasoning was that in (5) there
is a temporary misanalysis because the reader initially takes *was* 'what' to
be the object of *denken* 'think', but as soon as the embedded verb *beein-
flusst* 'influenced' is parsed, the correct analysis is reached (where *was* is
the object of *beeinflusst*, not *denken*). In (6) on the other hand *wer* 'who' is

nominative and cannot be analyzed as the object of *denken* 'think', which means that there is no temporary misanalysis of *wer* 'who'. The higher acceptability of (5) could then suggest that the temporary misanalysis of *was* 'what' actually increases the acceptability. The reason for this facilitating effect of misanalysis is, according to Fanselow & Frisch (2006: 312–313), that the parser prefers as short a distance as possible between the *wh*-element and the gap – and during the temporary misanalysis, the *wh*-element *was* 'what' is closer to the gap than *was* 'what' and *wer* 'who' ultimately turn out to be.

I will note that there is another possible interpretation of this result, which is that the parser follows the *Active Filler* strategy (Frazier & Clifton Jr 1989; Frazier & d'Arcais 1989) or the *Attach Anyway* principle (Fodor & Inoue 1998). Both would lead to the result that the *wh*-element is attached as the object of *denken* 'think' – the difference would be that *was* 'what' is an acceptable object, whereas the attachment of *wer* 'who' leads to an anomaly. This temporary anomaly is then the cause of the reduced acceptability. Interpreted this way the results from Fanselow & Frisch (2006) are not evidence for a facilitating effect of processing difficulty, but another example of the adverse effect of processing difficulties.

In an attempt to determine precisely which of these two explanations is the right one, Kizach, Nyvad & Christensen (2013: 3) looked at the following contrast:

(7) **Danish**
   Hvilket   sprog   har studenten   lært   at tale?
   Which   language has student-the learnt to speak
   'Which language has the student learnt to speak?'

(8)   **Danish**
   Hvilket   afløb   har   studenten   lært   at rense?
   Which   drain   has   student-the learnt to clean
   'Which drain has the student learnt to clean?'

The *wh*-element in (7), *hvilket sprog* 'which language', is a plausible object for the matrix verb, *lært* 'learnt', but the *wh*-element in (8), *hvilket afløb* 'which drain', is not. If only the plausible *wh*-element is temporarily misanalysed as the object of the matrix verb, then we would expect reanalysis at the embedded verb only in the plausible condition. If on the

other hand both *wh*-elements are temporarily misanalysed, we would expect reanalysis in both conditions. Kizach, Nyvad & Christensen (2013: 3–4) conducted a self-paced reading experiment and found an RT-difference at the matrix verb, *lært* 'learnt', where (8) is slower than (7). This is readily explainable by the temporary anomaly found in (8) and not in (7) – *learning a drain* is strange but *learning a language* is not. Crucially, no RT-difference was found at the embedded verb, suggesting that reanalysis occurred in both conditions.

This matrix verb compatibility effect has also been observed in another experiment where sentences such as (9) and (10) were compared in an acceptability study (Christensen, Kizach & Nyvad 2013).

(9) **Danish**
Hvilken båd foreslog naboen   at vi skulle sælge
Which   boat suggested neighbor-the that we should sell
ret   billigt?
rather   cheap
'Which boat did the neighbor suggest that we sell rather cheap?'

(10) **Danish**
Hvor   billigt foreslog naboen   at vi skulle sælge
How   cheap suggested neighbor-the that we should sell
vores båd?
our   boat
'How cheap did the neighbor suggest that we sell our boat?'

In (9) the fronted object, *hvilken båd* 'which boat', is a possible object for the matrix verb *foreslog* 'suggested', but in (10) the fronted adverbial, *hvor billigt* 'how cheap', is not a plausible modifier of the matrix verb. The result showed that (9) was judged to be significantly more acceptable than (10), which suggests that the temporary anomaly during processing has a negative effect on acceptability.

By now it should be clear that processing difficulty – measured as a slowdown in RT – typically leads to reduced acceptability. The question to be investigated in this article is whether a slowdown that is not caused by a temporary anomaly or reanalysis also lowers acceptability.

To test this, the following contrast were examined:

(11) **Danish**
      Mia bemærkede grisen i stalden manglede vand. [DP/CP]
      Mia noticed   pig-the in pen-the needed   water
      'Mia noticed the pig in the pen needed water.'

(12) **Danish**
      Mia formodede grisen i stalden manglede vand. [CP-ONLY]
      Mia presumed   pig-the in pen-the needed   water
      'Mia presumed the pig in the pen needed water.'

The only difference between (11) and (12) is the matrix verb – the verb *bemærkede* 'noticed' can take either a nominal or a sentential complement (DP/CP), whereas the verb *formodede* 'presumed' can only take sentential complements (CP-ONLY). In a self-paced reading study, Kizach et al. (2013: 7–8) demonstrated that there is reanalysis at the embedded verb only in (11). In other words, the subject of the embedded clause, *grisen i stalden* 'the pig in the pen', is temporarily misanalysed as an object in (11), whereas there is no such temporary misanalysis in (12).
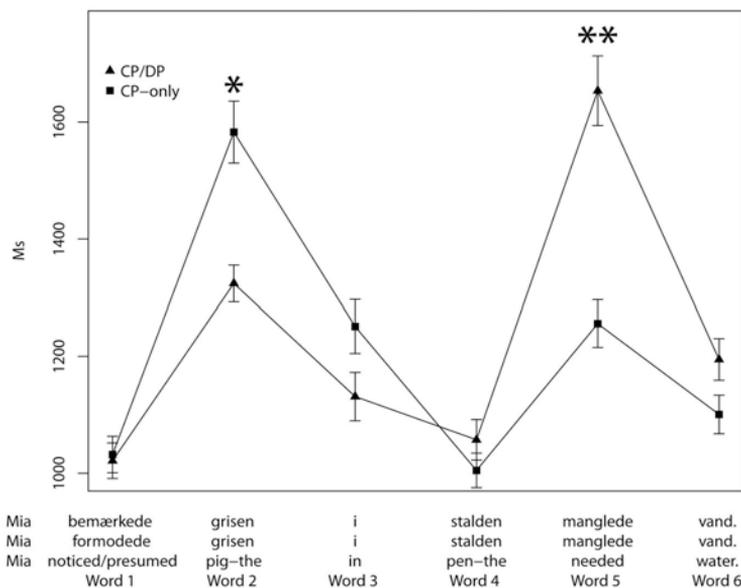
Figure 1: Mean RT, word-for-word, from Kizach, Nyvad & Christensen (2013: 8; experiment 3). Error bars ± 1 SE, *p<0.05, **p<0.001.

The 1654 ms slowdown due to reanalysis at the embedded verb, *manglede* 'needed', is quite clear (see Figure 1), but notice that there is a large 1583 ms slowdown at the word *grisen* 'pig-the' in the CP-ONLY condition. Kizach, Nyvad & Christensen (2013: 8–9) argued that this slowdown reflects the increased processing load needed to construct not only the DP *grisen* 'pig-the' itself, but also the embedded clause, and since the verb *formodede* 'presumed' can only take CP-complements, the parser has no choice but to 'spend time' adding this structure to the parse tree. The interesting thing is that this processing difficulty is not due to some temporary misanalysis or reanalysis – it is simply an unavoidable hurdle. In both conditions a slowdown in RT can be measured, and the question is if both of these will decrease acceptability.

2. The acceptability judgment experiment

The idea was to see if the slowdowns we see in Figure 1 have any effect on acceptability. It is conceivable that they both have the same effect, in which case no acceptability difference is expected. Alternatively only one of them has an adverse effect, in which case there will be an acceptability difference between the two conditions, repeated below in (13) and (14) for convenience.

(13) **Danish – CP/DP condition**
       Mia bemærkede grisen i   stalden   manglede vand.
       Mia noticed   pig-the in pen-the   needed   water
       'Mia noticed the pig in the pen needed water.'

(14) **Danish – CP-ONLY condition**
       Mia formodede grisen i   stalden   manglede vand.
       Mia presumed   pig-the in pen-the   needed   water
       'Mia presumed the pig in the pen needed water.'

Based on the previous research the condition where the slowdown is due to reanalysis, i.e. (13), is predicted to have a reduced acceptability, but whether or not the unavoidable slowdown in (14) also reduces acceptability is unknown.

2.1 Participants, Materials and Methods

The 10 sentence pairs used in Kizach, Nyvad & Christensen (2013) were used in the experiment, because the word-for-word mean RT is known for

these stimuli (see Figure 1). The only difference between the conditions were the matrix verb, and to control for lexical frequency effects, the token frequency of each verb was calculated using the Danish on-line corpus KorpusDK, available at https://ordnet.dk/korpusdk, and the two sets of frequencies were compared using the TOST-test for equivalence (Juzek 2016; chapter 4). Both t-tests were significant ($t_1(18) = -2.45$, $p \leq 0.05$; $t_2(18) = 4.02$, $p \leq 0.05$) suggesting that the two samples are equivalent – in other words, the frequencies of the matrix verbs in the two conditions are comparable.

The 10 experimental sentence pairs were divided into two lists, so that no participant saw the same item in both conditions, and 15 fillers were added to each list. The fillers ranged from completely acceptable (15) to completely unacceptable (16) sentences. Google Forms on Google Drive was used to create the lists and collect the data.

(15) **Danish**

Sonja talte i telefon med en veninde.
Sonya spoke in phone with a friend
'Sonya talked on the phone with a friend.'

(16) **Danish**

*Omend ham så gik det jo alligevel.
Although him so went it nevertheless anyway
'Even though him it went ok nevertheless anyway.'

Links to the lists were made available on-line on the Facebook site *Psycholab* (a forum for students at Aarhus University interested in syntax) and sixty-four people participated (21 males). The mean age was 24.6 years with a range from 20 to 48.

The following instructions (in Danish, but here translated into English) were shown at the beginning of each list: "Judge the sentences on a scale from 1 (completely unacceptable) to 7 (completely acceptable). Try to follow your immediate intuition, and do not be affected by what you have been taught in school – there are no right or wrong answers here."

2.2 Results

The CP-ONLY condition was judged to be more acceptable than the CP/DP condition (see Table 1).

Condition	Mean	SE
CP/DP (notice)	4.51	0.11
CP-ONLY (presume)	5.16	0.10

Table 1. Mean acceptability

To test if the observed difference was statistically significant, the data was analyzed with a linear mixed-effects model following common practice in the field (Gibson, Piantadosi & Fedorenko 2011; Sprouse 2008). To perform the analysis the software *R* and the R-package *lmerTest* were used (Kuznetsova, Brockhoff & Christensen 2015; R Development Core Team 2015).

The acceptability score was the dependent variable and condition was the independent variable (neither gender nor age had any effect, and both variables were excluded from the final model reported here). The so-called maximal model was fitted to the data (Barr et al. 2013), and since comparisons with the zero-correlation-parameter model did not justify a simpler model (Bates et al. 2015) the maximal model is reported.

The result showed that the CP-ONLY condition was more acceptable than the CP/DP condition (see Table 2). The modest difference between the means (0.65) was indeed significant (p=0.047).

	Estimate	Std. Error	*t*-value	*p*-value
Intercept	5.162	0.317	16.272	0.000
CP/DP	-0.650	0.284	-2.291	0.047

Table 2. Summary of results of the linear mixed-effects model.

2.3 Discussion

The result shows that reanalysis is costly as predicted – the CP/DP condition is consistently judged to be less acceptable than the CP-ONLY condition despite the fact that both types of sentences are perfectly grammatical in Danish. It makes sense that when the parser has to alter an established structure (changing *the pig in the pen* from being the direct object of *observed* into being the subject of *needed*) a price has to be paid, so to speak. This additional processing effort can be measured both in RT (as shown in Figure 1) and in acceptability. It is interesting that the reanalysis from direct object to subject after verbs such as *observe* has been discussed as cost free reanalysis in earlier literature on parsing (Fodor & Inoue 1998: 120; Pritchett 1992: 109–110), but evidently even this low cost can be measured.

It is tempting to interpret the result as if the slowdown in the CP-ONLY condition *is* cost free, but logically it is only possible to conclude that the cost for this slowdown is less than for the one caused by reanalysis. Ole Togeby (personal communication) has pointed out that the RT contrast is greater for reanalysis (398 ms) than for the unavoidable structure building (259 ms), so it is possible that the acceptability difference reflects this difference. The result seems to suggest that the relation between a slowdown in RT and acceptability is not completely linear: A reanalysis slowdown is at least more costly than an inevitable slowdown. Building a representation of an embedded clause requires more structure than simply adding a direct object, and the increase in processing load in this situation may not be cost free, but at least it is less costly than reanalysis – a difference that can be detected in acceptability, but not in self-paced reading where both induce a significant slowdown (1583 ms and 1654 ms respectively).

3. Conclusion

As it turns out, all slowdowns are actually not created equal. Reanalysis affects RT as well as acceptability. Slowdown caused by inevitable syntactic structure building has a smaller effect on acceptability, or perhaps no effect. Hawkins (2004: 51–52, 155–156) suggests that the addition of a complementizer will greatly improve the processing ease of sentences like (14), and demonstrates in a corpus study that the omission of the complementizer *that* in English is correlated with the length of the embedded subject – i.e. if the subject is a nominative pronoun, *that*-omission is the norm, but with DP-subjects longer than 2 words *that*-omission is much rarer. If the constraints on complementizer omission are (at least) similar in Danish, it would be possible to test if the slowdown in the CP-ONLY condition affects acceptability or not. First it would have to be established that the slowdown observed in the CP-ONLY condition at the embedded subject disappears when a complementizer is added. If this is the case, then one could compare CP-ONLY conditions with and without a complementizer in an acceptability judgment experiment, and any difference would then reflect the cost of the slowdown. Perhaps someone decides to test this in the future. For now it is at least certain that inevitable structure building and reanalysis both increase RT, but measured in terms of acceptability, reanalysis is more costly.

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The range of quantifiers: An empirical investigation of set size

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Abstract

In this paper we present the results from a large-scale estimation study on Swedish Quantified Expressions (QEs). The size of seventeen different QEs, eight positive (monotone increasing) and nine negative (monotone decreasing), was rated by 596 participants. The results show that both positive and negative QEs can pick out large and small quantities and that some QEs are indistinguishable in size. One QE, *ett antal* ('a number of') has a bimodal distribution, meaning that some speakers interpret it as picking out a large quantity and other speakers as picking out a small quantity. In addition, the results raise interesting questions about the internal structure of QEs and about scalar inferences, among other things.

1. Introduction

It is a well-known property of quantifying expressions (QEs) that they operate on sets of entities (Barwise and Cooper 1981; Westerståhl 1985; Keenan & Stavi 1986). That is, they specify the proportion or quantity of entities of a given set for which some property holds. In (1), for example, 'some members' and 'two members' from the set of students are in the set of people who listened carefully:

(1)   a. Some of the students listened carefully.
        b. Two of the students listened carefully.

The QE *some* differs from *two* in being vague as to how many members are in the intersection of the relevant sets. Interestingly though, although QEs like *some* are less exact than QEs like *two*, they are often more informative, since they convey other types of relevant information, as discussed in Moxey and Sanford (1993a) (see also Westerståhl 1985; Keenan & Stavi 1986). In their example, for someone wondering whether to book at train ticket or not, it is more useful to be told that there are *few* tickets lefts, than that there are *45* tickets left. Unless the person knows how many tickets are usually left at this point (i.e. whether *45* is in fact a lot or not many), the information that there are 45 seats left won't be helpful (Moxey & Sanford 1993a: 4).

Although QEs like *some* differ in what approximate number they indicate to depending on the context where they are used and the expectations that come with it (see e.g. Moxey & Sanford 1993a: 27), speakers tend to agree as to how the different QEs relate to each other in size. Nouwen (2010, 236) reports that, when asked to order pairs of QEs in terms of their relative size, speakers generally shared the same intuitions, although some QE pairs showed more variation. In an earlier study where speakers did not compare different QEs, but were simply asked to state what percentage a specific QE corresponded to in a particular context, the 'small' QEs (e.g. *very few*, *few* and *not many*) turned out to be indistinguishable in size (Moxey & Sanford 1993b). Comparing QEs and deciding what proportions they refer to on their own are thus in part different things.

The size of QEs[1] is relevant both directly, when interpreting statements using them, and more indirectly, when referring back to QEs using anaphoric expressions (Moxey 2006). Previous research on the size of QEs has focussed on English. As QEs are lexical expressions, they are likely to show differences across languages. Studies targeting other languages are therefore called for, not least so that cross-linguistic comparisons can be made. In this paper, we report the results from a large-scale estimation study investigating the size of seventeen QEs in Swedish.

2. Background
The examination of the size of different types of quantifying expressions can have practical implications. Both frequency adverbs (e.g. *rarely*, *sometimes*) and modal adjectives (e.g. *probable*, *likely*) resemble QEs

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[1] For simplicity, we will henceforth refer to QEs with large REFERENCE SETS, i.e. with many members in this set, as 'large QEs', and QEs with small REFERENCE SETS as 'small QEs' (see Fig. 1).

in their vagueness. The former categories often appear in psychometric studies, in which participants are asked to indicate how often a statement applies to them, ticking boxes labelled with these adverbs or adjectives. To interpret the results, it is important to have a fairly precise idea of how participants interpret these expressions (see Moxey & Sanford 1993a and references therein). There are similar situations where it is important to know how speakers interpret QEs. The size of QEs can also have more indirect relevance, as it can affect the interpretation of anaphoric expressions referring back to QEs.

The meaning of QEs extends beyond the approximate proportion they pick out. For instance, although QEs like *few* and *a few* both refer to similarly small proportions, they differ in polarity; *few* is a NEGATIVE (monotone decreasing) QE, while *a few* is a POSITIVE (monotone increasing) QE (e.g. Barwise & Cooper 1981; Peters & Westerståhl 2006). Positive and negative QEs differ in their entailment patterns. For positive QEs, there is entailment from a subset (*yellow socks*) to a superset (*socks*), (2a), while for negative QEs, there is entailment from the superset to the subset, (2b):

(2)   a. Most students were wearing yellow socks. *entails* Most students were wearing socks.
        b. Not all students were wearing socks. *entails* Not all students were wearing yellow socks.

Unlike positive QEs, negative QEs also license NPIs, such as *anymore* (see e.g. Peters & Westerståhl 2006):

(3)   a. Not all students wear socks anymore.
        b. Most students wear socks *anymore.

Both negative and positive QEs pick out the intersection between two sets, stating that some property B holds for members of a set A. In Figure 1 below, Set A is the set of students, and Set B is the set of people listening carefully. The intersection between the two sets is known as the REFERENCE SET (Moxey & Sanford 1987). When referred back to, positive and negative QEs differ in what set is in focus. For positive QEs, it is still the REFERENCE SET, as illustrated in (4a), while for negative QEs, the focus is often switched to the part of Set A that is *not* in Set B, known as the COMPLEMENT SET. These would be the students *not* listening carefully, as illustrated in (4b):
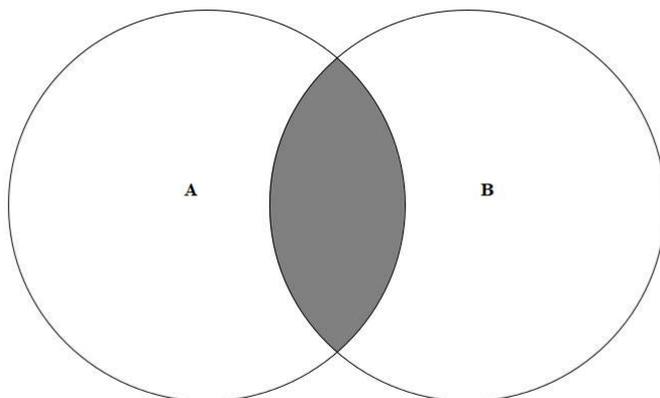
Figure 1. Set A: Students; Set B: People listening carefully; Set A∩B: Students listening carefully, Set A-B: Students not listening carefully

(4)   a. A few students listened carefully. They were very interested in
           the topic.
        b. Few students listened carefully. They dozed off right away.

Although the main factor determining which set can be targeted when referring back to a QE is whether the QE is positive or negative, it has been suggested that contextual expectations as well as the size of the QE can also play a role for what set is in focus (Moxey 2006, see also Zulaica-Hernández 2018). For example, a positive QE referring to a small proportion (*a small number* in (5) below) can license a COMPLEMENT SET continuation if the predicate was expected to hold for a much larger proportion (for instance *all*). In (5), thus, *they* can refer to the students who didn't come to the party (example from Moxey 2006: 429).

(5)   Mrs. Smith expected all the children to finish the essay. A small
        number of them completed the work. They ran out of ideas and
        decided to throw the paper around instead.

    The size of QEs can be looked at from at least two perspectives: how different QEs compare to each other in size, and what proportions they pick out in context but not in comparison to other QEs. Nouwen (2010) conducted an online survey, where participants were asked to decide

whether a given relation between QEs held or not. In general, most participants had the same intuition. However, for *lots* vs *many* and *a couple* being equal to *exactly two*, there was no consensus (2010, 236):

(6) **QE - QE**   **(agree–don't agree)**
    oodles > lots   (24–2)
    lots > many   (16–7)
    many > several   (23–1)
    several > a few   (24–1)
    a few > a handful   (2–21)
    a handful > a couple   (27–0)
    a couple = exactly two   (18–16)
    a pair = exactly two   (34–0)

In an earlier study, Moxey and Sanford (1993b) looked at different QEs in context, asking participants to decide what percentage they thought the QE corresponded to. Each participant (450 in total) only looked at one single scenario and one single QE, and thus did not compare different QEs to each other. There were three different scenarios, pre-tested to establish that they corresponded to situations where the expected proportions were different. The scenario in (7), below, for example, was found to represent a relatively large proportion (65.86%) in the pre-test, whereas the other two scenarios were found to represent a mid-range proportion (50.01%) and a small proportion (27.3%), respectively (1993b: 76):

(7) The residents' association's annual Xmas party was held last night in the town hall. *Question*: What percentage of the residents do you think enjoyed the Xmas party?

In the main test, a sentence containing one of the QEs (*few*, *a few*, *very few*, *only a few*, *quite a few*, *not many*, *many*, *very many*, *quite a lot*, *a lot*) was added (1993b: 77):

(8) The residents' association's annual Xmas party was held last night in the town hall.
    QUANT of those who attended the party enjoyed what might be called the social event of the year.
    Question: What percentage of the residents do you think enjoyed the Xmas party?

There were two main findings: Firstly, QEs denoting large proportions (i.e. the large QEs *quite a lot*, *many*, *a lot*, *very many*) showed quite a lot of variation across the scenarios (the low expectancy scenario resulting in significantly lower estimations than the other two), while QEs denoting small proportions (i.e. the small QEs *very few*, *few*, *not many*, *a few*, *quite a few*) did not. Secondly, QEs denoting small proportions did not differ significantly in size in relation to each other. In other words, small QEs did not differ in relation to each other and also did not differ across the scenarios, while large QEs differed in both ways.

As QEs are lexical items, the properties of QEs in one language do not necessarily carry over to their translation equivalents in another language. In this paper, we therefore switch the focus to Swedish and investigate what size QEs have in this language.

3. The size of QEs in Swedish

In order to find out what size different QEs in Swedish have, we conducted a large-scale estimation study. As in Moxey and Sanford (1993b), the participants considered only one single scenario, with one QE each, and thus did not compare different QEs to each other. Unlike in Moxey and Sanford (1993b), we only had one context, but we specified the total number of members of Set A (see (11) below). The QEs chosen for inclusion in the study were the ones that we intuitively considered to pick out large and small quantities, representing both positive and negative QEs (for the latter categorization, see the Pre-test section below).

3.1 Material and method
3.1.1 Pre-test
The QEs (see Table 1) used in the main test were also tested in a separate questionnaire to determine whether they are positive (monotone increasing) or negative (monotone decreasing). Eight participants completed the questionnaire in which the tasks were to state whether they thought an entailment relation, as in (9) below, was valid or not, and grade sentences with QEs and NPIs on a scale from 1 (totally unnatural) to 5 (completely natural), as in (10):

(9) a. Om nästan alla tjejer hade skor på sig innebär det att nästan alla
        tjejer hade gympaskor på sig.
        JA   NEJ
        (*If almost all girls were wearing shoes it means that almost all girls
        were wearing sneakers*.)

    b. Om nästan inga tjejer hade skor på sig innebär det att nästan inga tjejer hade gympaskor på sig.
JA   NEJ
(*If almost no girls were wearing shoes it means that almost no girls were wearing sneakers.*)

(10) a. Nästan alla studenter har lämnat in uppgiften än.
      1   2   3   4   5
      (*Almost all students have handed in the assignment yet.*)

    b. Nästan inga studenter har lämnat in uppgiften än.
      1   2   3   4   5
      (*Almost no students have handed in the assignment yet.*)

The results from the pre-test led to the division of QEs that is shown in Table 1.

3.1.2 Participants

645 self-reported native speakers of Swedish, all undergraduate students at Lund University or Linnæus University, took part in the estimation study. 47 of them (7%) were excluded due to illegible handwriting, being non-native speakers, or misunderstanding the task. The results presented below are based on the remaining 596 responses.

3.1.3 Material

We constructed one experimental item in seventeen different versions, differing only in what QE was used. Each version consisted of a context sentence stating the total number of set members, followed by a sentence containing one of the seventeen QEs, and finally a question about the number of individuals for which the property holds:

(11) Det var 100 studenter i den stora föreläsningslokalen. QE av dem hade varit där förut. Hur många studenter hade varit där förut? (svara med siffror)
(*There were 100 students in the auditory. QE of them had been there before. How many do you think had been there before? (Give your answer in numbers)*)

The QEs that were tested are the ones in Table 1 below. The QE *färre* än *90* ('fewer than 90') was included in order to investigate whether giving a definite higher limit (a precise number) would affect the range in the answers.

Positive QEs[2]	Negative QEs
det stora flertalet ('the great majority')[3]	*få* ('few')
ett antal ('a number of')	*färre* än *90* ('fewer than 90')
i stort sett alla ('virtually all')	*inte alla* ('not all')
många ('many')	*inte exakt alla* ('not exactly all')
några ('some')	*inte många* ('not many')
några enstaka ('a small number of')	*inte precis alla* ('not precisely all')
några få ('a few')	*inte riktigt alla* ('not quite all')
nästan alla ('almost all')	*inte så många* ('not so many')
	nästan inga ('almost no')

Table 1. Positive and negative QEs

3.1.4 Procedure
The questionnaire was administered before or after classes. Oral instructions specifying that answers should be given in numbers were provided to make sure that the participants wrote precise numbers rather than relative sizes (such as 'more/less than…'). The participants were under no time pressure to complete the task, but were instructed to write down their immediate intuition.

3.2 Results
Figure 2 presents the results from the estimation of the positive QEs. The mean values for each QE is given in the plot. The QEs *det stora flertalet* ('the the great majority'), *i stort sett alla* ('virtually all'), *några* ('some') and *nästan alla* ('almost all') have mean values above 50 and are thus large QEs. The QEs *ett antal* ('a number of'), *några* ('some'), *några enstaka* ('a small number of') and *några få* ('a few') have mean values below 50 and are thus small QEs.

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[2]   Six of the QEs (*många* 'many', *några* 'some', *nästan alla* 'almost all', *få* 'few', *inte alla* 'not all', and *inte många* 'not many') were tested in a first run, and eleven in a second run. The results from the first run have been reported in Heinat and Klingvall (2019).

[3]   The English expressions are approximate translations only.

Starting with the large positive QEs, a statistical analysis shows that they are all significantly different, except *i stort sett alla* and *nästan alla* which are statistically indistinguishable.[4] All the small positive QEs are also significantly different from each other, except for *några enstaka* and *några få*, which are statistically indistinguishable.

Estimation of positive quantifiers
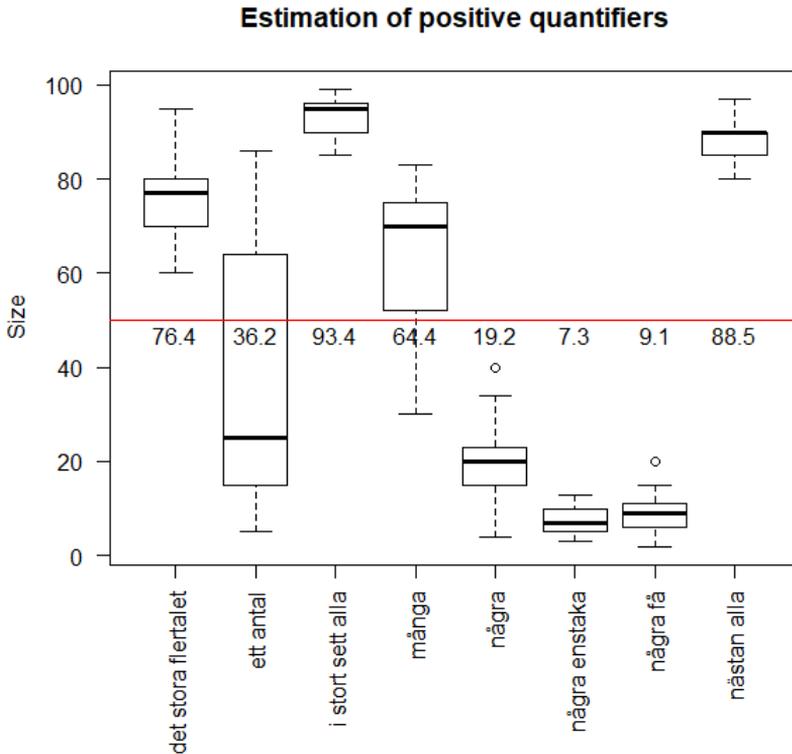
Figure 2. Positive QEs

The QE *ett antal* ('a number of') stands out among the positive QEs because the estimations vary more than for any of the other ones, ranging from 5 to 86. A closer look (see Figure 3) reveals that this QE has in fact a bimodal distribution. That is, some participants interpret *ett antal* as picking out some number between 10 and 20% and while other participants interpret it as referring to some number between 70 and 80%.

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[4] We fitted a linear model using the lm-function in R (R Core Team 2018) and using the emmeans-package for pairwise comparison of the QEs (Lenth 2018). The p values reported as significant here are < 0.05.
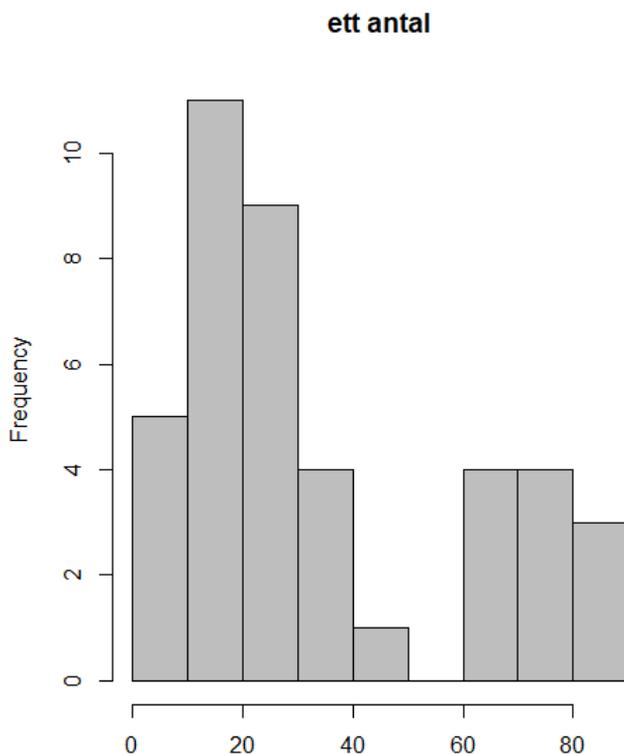
ett antal

Figure 3. Distribution for *ett antal* ('a number of')

Figure 4 presents the results from the estimation of the negative QEs. The mean values for each QE is given in the plot. The QEs *färre* än *90* ('fewer than 90'), *inte alla* ('not all'), *inte exakt alla* ('not exactly all'), *inte precis alla* ('not precisely all') and *inte riktigt alla* ('not quite all') have mean values above 50 and are thus large QEs. The QEs *få* ('few'), *inte många* ('not many'), *inte så många* ('not so many') and *nästan inga* ('almost no') have mean values below 50 and are thus small QEs.

As for the large negative QEs, the results are rather complex. A statistical analysis shows that the QE *färre* än *90* is indistinguishable from *inte alla*, but different from all other large negative QEs. The QEs *inte exakt alla*, *inte precis alla* and *inte riktigt alla* are also indistinguishable from each other. The QE *inte alla* is also indistinguishable from *inte precis*

alla and *inte riktigt alla*, but it is significantly different from *inte exakt alla*. In other words, the large negative QEs form three partly overlapping groups: A. *färre än 90* and *not all*; B. *inte alla, inte precis alla* and *inte riktigt alla*; C. *inte exakt alla, inte precis alla* and *inte riktigt alla*. All the small negative QEs are statistically indistinguishable except for *inte så många* and *nästan inga*, which are significantly different from each other.

Estimation of negative quantifiers
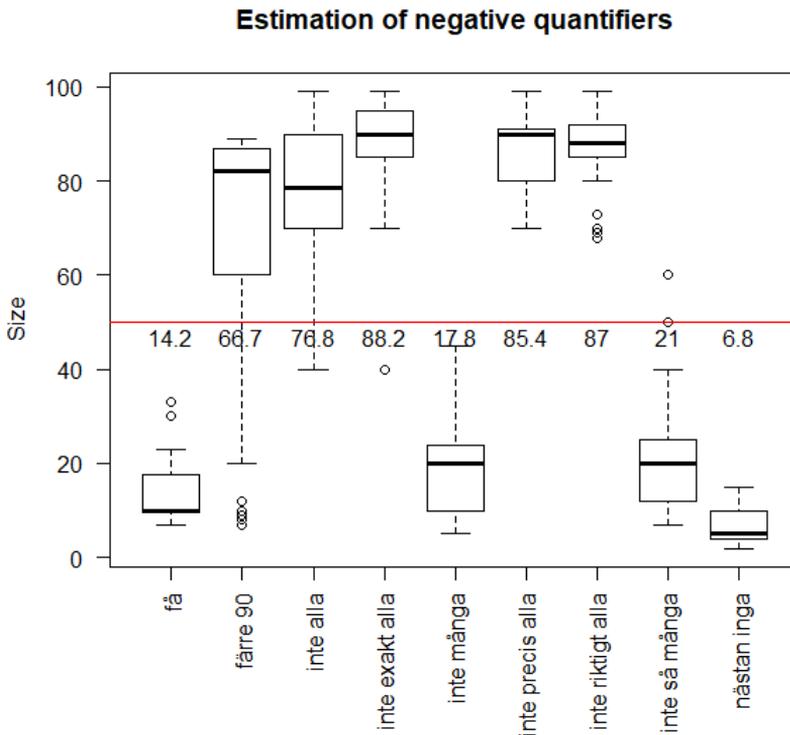
Figure 4. Negative QEs

As mentioned in section 3.1.3, the QE *färre* än *90* ('fewer than 90) was tested in order to see whether specifying an upper limit, in this case 90, would affect the ratings. As seen in Figure 5, the ratings range from very small values (7) to almost 90 (89). However, the great majority (24 of 38, 63%) rates the QE as 80 or higher.

färre 90
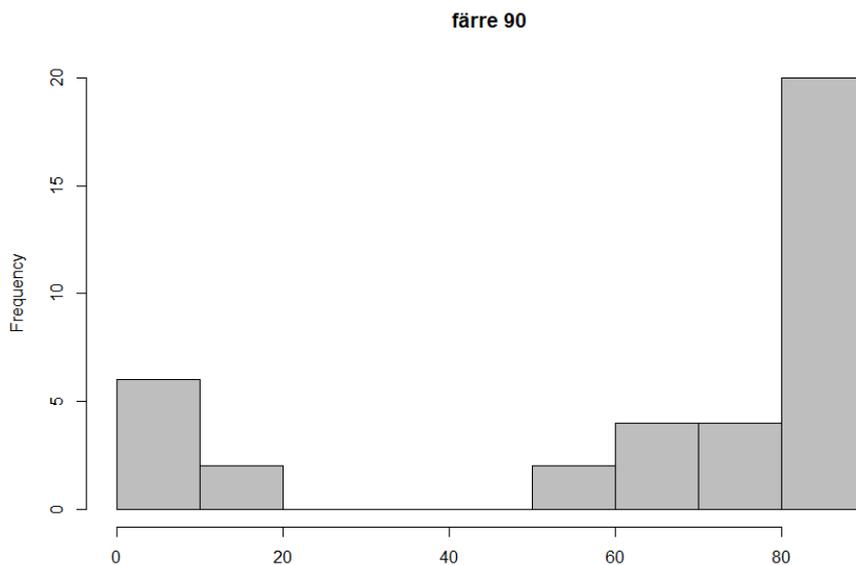
Figure 5. Distribution for *f*ärre än *90* ('fewer than 90')

4. Discussion

The results from this study are in part similar to those found for English by Moxey and Sanford (1993b). In their study, the small QEs were indistinguishable in size while the large ones were significantly different in size. This is more or less what we find for small negative QEs and large positive QEs, but not for large negative and small positive ones. It should be noted, though, that the large QEs used by Moxey and Sanford (1993b) were positive and the small ones were negative (with the one exception of *a few*.[5] Thus it seems that positive QEs pick out more clearly defined quantities than do negative QEs. Obviously, this can depend on the individual QEs we have tested, but we think that we have actually looked at the great majority of large and small QEs, both positive and negative. It is therefore possible that the distinction is really tied to polarity. At this point it is unclear why this should be the case, but it might be related to the

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[5] Moxey and Sanford (1993b) also included the positive QE *only a few*. The focusing element *only* made the behaviour of this QE very odd, and we do not think it is comparable to the small QEs used in the present study. The reader is referred to Moxey and Sanford (1993b) for details

fact that positive polarity is the default. In an out of the blue question, the positive QE *many* would be used, as in *How many times have you been to Paris?*, rather than the negative *few*, as in *How few times have you been to Paris?*

The fact that some of the QEs are indistinguishable in the estimation study made us conduct a small follow-up investigation. Twelve participants rated pairs of QEs in terms of their relative size, i.e. whether one of the members of the pair is larger, smaller or equal to the other member, as in (12):

(12) A: *inte alla* — B: *inte exakt alla*

A is larger than B
B is larger than A
A and B are equal in size

Some of the QEs that were indistinguishable in the estimation task were rated as follows, in the follow-up investigation:[6]

A	B	A > B	A = B	A < B
i stort sett alla	*nästan alla*	7	4	1
några enstaka	*några få*	0	8	4
inte alla	*inte precis alla*	1	3	8
inte exakt alla	*inte precis alla*	6	5	1
inte precis alla	*inte riktigt alla*	4	6	2
få	*inte många*	3	7	2
inte många	*inte så många*	0	8	4

Table 2. Relative size of some QEs

As seen in Table 2, the ratings vary quite a lot and there is no pair that everyone agrees on. Also in this follow-up investigation, some of the pairs are judged as representing QEs of the same size by a majority of the participants (*några enstaka – några få, få – inte många* and *inte många – inte så många*). In light of Moxey and Sandford's discussion (1993a) about

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[6]   The follow-up investigation included a sub-selection of the QEs that had the same rating in the estimation task.

the informativeness of using QEs instead of absolute numbers (see Section 1), it is unclear to us exactly what different information these QEs convey, but it is a question for future research.

One result worth highlighting is the bimodal distribution of the QE *ett antal* ('a number of'). As we saw, some participants ascribe a small number to this QE, whereas others ascribe it a high number. The estimation study gives us no clues as to the reason for the result. As shown by Moxey and Sanford (1993b), the context is very important for the interpretation of QEs. Expectations and real-world knowledge influence the size of the REFERENCE SET of a QE; *many female doctors* would pick out a smaller number than *many male doctors* and *many ants* would pick out more individuals than *many elephants*. In the present study we tried to make sure that the test sentence does not induce any strong expectations tied to individual participants.

As we see it, there are two possibilities for the bimodal distribution of *ett antal*. Either the QE *ett antal* is unambiguous for speakers of Swedish, and people fall into one of two categories; one category that ascribes *ett antal* a small number, and one category that ascribes it a large number. Or this QE is ambiguous and can pick out a small and a large number for all speakers of Swedish. Our findings seem to support the first possibility, i.e. that *ett antal* is not ambiguous for individual speakers. In the task, participants can only choose one interpretation, irrespective of whether the QE is ambiguous to them or not. If this QE was ambiguous for speakers in general, the number of people rating it as large should be more or less equal to the number of people rating it as small, since, all things being equal, there is a chance of fifty percent of choosing one over the other. Given the participants' preference for rating it as a small QE, we therefore favour the first assumption (that speakers fall into one of two categories). If this is the case, it raises interesting questions about how this QE is used. The following is a quote from an Op-Ed in *Sydsvenska dagbladet* (Feb. 24, 2019) about the possibilities of extracting vanadium in Österlen in Skåne:

(13)   Men om det förekommer finns det i vanlig jord och kan därför tas
        fram betydligt enklare och med små ingrepp på ytor som motsvarar
        ett antal fotbollsplaner.
        ("But if it is there, it is in ordinary soil and can therefore be extracted
        much easier and with minor operations on areas corresponding to a
        number of football fields.")

Whether "a number of football fields" is around two, three or around twenty, twenty-five is arguably crucial for an informed decision on this matter.

Including a specific number as an upper limit, as in the QE *färre* än *90* ('fewer than 90'), made most participants give ratings quite near the upper limit. In our view, this is the expected behaviour and it is in line with a so-called pragmatic interpretation of this QE. In the literature there is distinction between logic and pragmatic interpretations of QEs (Horn 1972). The latter interpretation is known as a SCALAR IMPLICATURE. In our scenario, the pragmatic interpretation is that if the information was available that there were as few as 20 students present (which is compatible with 'fewer than 90'), then providing the information that there were 'fewer than 90' present would flout the Gricean maxim of quantity (Horn 1972). That is, if 90 is specified, there is reason to believe that the number is very close to 90.

In the literature, the QEs that have received most attention regarding scalar implicature are *some* and *not all* (see e.g. Sperber & Wilson 1986; Chierchia 2004; Horn 2006; Nieuwland et al. 2010; Spychalska et al. 2016). The logic interpretation of the QE *some*, for example, is "*at least* some", while the pragmatic interpretation is "*at most* some". On its logic reading, the sentence *some students were at the lecture* is thus compatible with the interpretation "some, in fact all, students were at the lecture" while on the pragmatic reading it is rather "some, but crucially not all, students were at the lecture". This pragmatic interpretation of *some* involves a narrowing, and even negation, of the stronger expressions *all* (Nieuwland et al. 2010: 325). Investigating scalar implicature was not part of the aim of the present estimation study, but since both the corresponding Swedish expressions *några* ('some') and *inte alla* ('not all') are included in the study we will briefly discuss them. Not only are *några* and its corresponding scalar implicature *inte alla* of different polarity, but they also pick out very different numbers, as seen in Figures 6 and 7.
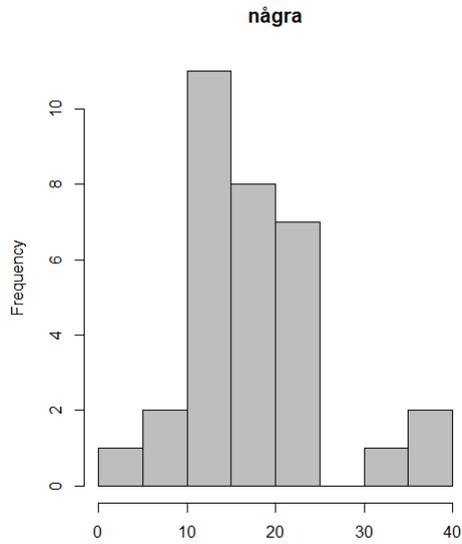
Figure 6. Distribution for *några* ('some')
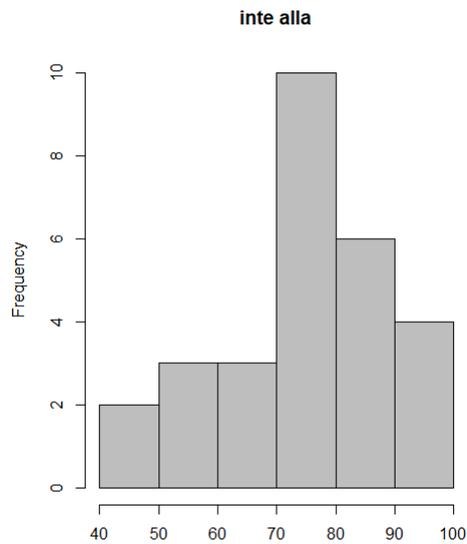
Figure 7. Distribution for *inte alla* ('not all')

The QE *några* is small and the QE *inte alla* is large. Thus, the two QEs have mean values below and above 50, respectively, although there is a small overlap between the two with 2 participants giving *några* and 1 participant giving *inte alla* an estimate of 40. From these results we draw the conclusion that in Swedish, the pragmatically inferred *inte alla* does not correspond to *några* in a numeral sense. In fact, in a previous study we show that *några*, which is a positive QE, shows no signs of being treated as a negative QE, which *inte alla* is (Heinat & Klingvall 2019). The fact that the two QEs show such different qualities in both size and polarity obviously raises important questions about what kind of interpretation scalar implicatures is. It is obviously not just a matter of turning one QE, *några*, into another QE, *inte alla*, as claimed by Nieuwland et al. (2010). Instead the interpretation of *några* as *inte alla* must take place at another level of interpretation than where QEs get their interpretations. This semantic-pragmatic relation between quantificational and inferred quantificational interpretations is something that needs further investigation and cannot be resolved based on the present study.

 A final note on the internal structure of QEs. We find that the interaction between quantifiers raises interesting issues for their compositional semantics. In our pretest targeting the monotonic properties of the QEs, we found that for all QEs consisting of an overt negation plus a QE, such as *inte många* ('not many'), and one QE combined with another QE, *några få*, the full expression always gets the polarity of the first operator. While *många* is a positive QE, *inte många* is negative because *inte* is a negative operator, and, conversely, although *få* is negative, *några få* is positive because *några* is a positive operator. As is well-known, in sentences with more than one QE, it is possible to get reverse scope. Sometimes this is even the only sensible interpretation, as in the following sentence:

(14) Servitören la en sked på alla borden.
   'The waiter put a spoon on all the tables'

In this example, an interpretation where the universal quantifier (*alla* 'all') takes scope over the existential quantifier (*en* 'a') is the only sensible one: *every table is such that the waiter put a spoon on it*. The interpretation with surface scope is nonsensical: *there is a spoon such that the waiter put it on every table*. Looking at the interaction of QEs in the complex

QEs described above, we never find reverse scope relations. Instead, the first QE always determines the polarity of the whole QE. For some reason, which we will not try to find out here, we thus cannot get reverse scope inside complex QEs, for example letting the negation in *få* scope out of the QE *några få*.

5. Conclusion

In a large-scale estimation study, we investigated the size of the REFERENCE SET for seventeen different QEs in Swedish. The estimations from 596 participants showed that, in general, positive QEs pick out more clearly defined quantities than negative QEs. One particular QE, *ett antal* ('a number of'), turned out to have a bimodal distribution, being rated as either large or small. In a small follow-up study, some of the indistinguishable QEs could be ordered in size relative to each other, but most of them could not and were rated as of the same size.

It is not clear why we got the distinction between positive and negative QEs regarding significant differences in size, and this requires further research. Regarding the bimodal distribution of the QE *ett antal*, we hypothesized that speakers fall into one of two categories. Either they ascribe the QE a small size, which a majority of the participants did, or they ascribe the QE a large size. Based on the differences between the number of participants giving it a large or a small rating, we find it less likely that the QE itself is ambiguous.

Regarding the QE *några* and its corresponding scalar implicature *inte alla*, we found that they pick out very different sizes and that the interpretations of scalar implicature is most likely different from the interpretation of QEs.

We also noted that even though QEs can give rise to reversed scope readings at the clausal level, there is no indication that this is possible inside complex QEs such as *några få* and *inte alla*. The first operator always determines the polarity of the complex QE.

This investigation, though strictly empirical and descriptive, gives rise to many questions, theoretical and psycholinguistic, all of which require further research.

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Pronominale Referenz im Jiddischen und Deutschen im 21. Jahrhundert

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Abstract

Osteuropäisches Jiddisch und Deutsch gehören von Hause aus zu denjenigen germanischen Sprachen, die bei pronominaler Referenz strenge Genuskongruenz wahren: Als Faustregel galt bisher, dass auf jedwedes Bezugswort stets mittels der Formen *er/er*, *zi/sie* und *es/es* verwiesen wurde, gleichgültig, ob das Bezugswort einen Menschen, ein Tier oder sonstiges Lebewesen, einen Gegenstand oder ein Abstraktum bezeichnete.[1] Die vorliegende Arbeit ist der Frage gewidmet, wie sich die beiden Sprachen in jüngerer bzw. jüngster Zeit von dieser gemeinsamen Grundlage entfernt haben. Als spezieller Vertreter des Jiddischen dient das vorrangig in den USA beheimatete charedische (ultraorthodoxe) Satmarer Jiddisch, das im 21. Jahrhundert die sprecherstärkste Varietät des Jiddischen ausmacht. Anhand ausgewählter Belege aus den letzten 100 Jahren für das Jiddische bzw. dem letzten Jahrzehnt für das Deutsche werden sowohl Gemeinsamkeiten als auch Unterschiede hinsichtlich der Art und des Umfangs dieser Neuerung in den zwei Sprachen herausgearbeitet.

1. Der Stand der Dinge im ausgehenden 20. Jahrhundert

Unter pronominaler Referenz ist die Verbindung zu verstehen, die der Sprecher beim Rückverweis, Vorwärtsverweis sowie in deiktischer Verwendung (mit oder ohne Begleitgeste) zwischen einem Pronomen und dem Bezugswort herstellt, das vom fraglichen Pronomen ersetzt wird. Bei deiktischer Verwendung braucht das Bezugswort nicht explizit geäußert worden zu sein; es kann auch lediglich mitgedacht sein. In

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[1] Die Transkription des Ostjiddischen folgt der Umschrift des YIVO Institute for Jewish Research (Weinreich 1999: 26).

allen germanischen Einzelsprachen galt ursprünglich das aus dem Urgermanischen ererbte Prinzip, wonach ein Personalpronomen auf jedwedes maskuline, feminine und neutrale Bezugswort verwies. Die Referenz erfolgte unabhängig davon, ob mit dem fraglichen Bezugswort ein Mensch, ein Tier oder sonstiges Lebewesen, ein Gegenstand oder ein Abstraktum bezeichnet wurde.

Bisher gehören das osteuropäische Jiddisch (hinfort: Jiddisch) und das Deutsche zu den vergleichsweise wenigen germanischen Sprachen, die das ererbte Verweissystem bis in die Gegenwart weitergeführt haben. So referieren jidd. *er*, *zi* und dt. *er*, *sie* nicht nur auf Menschen wie im Falle von jidd. *man* ‚Mann‘, *froy* ‚Frau‘, dt. *Mann*, *Frau*, sondern auch auf Tiere wie jidd. *vorem* ‚Wurm‘, *shlang* ‚Schlange‘, dt. *Wurm*, *Schlange*, Sachen wie jidd. *tish* ‚Tisch‘, *brust* ‚Brust‘, dt. *Tisch*, *Brust* und Abstrakta wie jidd. *gloybn* ‚Glaube‘, *freyd* ‚Freude‘, dt. *Glaube*, *Freude*. Mithin lässt sich mit der Frage jidd. *vu iz er/zi?*, dt. *Wo ist er/sie?* der Aufenthaltsort nicht nur von Menschen, sondern auch von anderen Bezugsgrößen erfragen, die in der betreffenden Sprechsituation erscheinen oder erschienen sind. Ausnahmen von dieser eisernen Regel können insbesondere im Bereich der *Constructio ad sensum* auftreten, und zwar dann, wenn Genus und Sexus auseinandergehen. So besteht bei jidd. *meydl* ‚Mädchen‘, dt. *Mädchen* neben der stets grammatikalisch korrekten Genuskongruenz, die hergestellt wird, indem mit jidd. *es*, dt. *es* verwiesen wird, auch die Möglichkeit, mit jidd. *zi* bzw. dt. *sie* auf das Bezugswort zu verweisen. *Constructio ad sensum* kann in diesem Fall auf eine lange Vorgeschichte zurückblicken (dazu mit reichhaltigem historischem Belegmaterial Behaghel 1928: 38–39).

Es folgt nun eine Reihe authentischer Belege aus beiden Sprachen, mit denen die Festigkeit des ererbten Verweissystems exemplarisch vorgeführt werden soll (Bezugswort und Pronomen in **Fettdruck**):

A. Verweis auf Tiere:

(1)   **Jiddisch**

*azoy, zog ikh, ihr meynt dos ernst? vifiel, lemoshl, kost ayer **sus**? in vifiel, zogt er, shatst ihr **ihm**? [...] tselakht er zikh un zogt, az **er** kost mehr fun dray mol azoy fiel* (Sholem Aleykhem 1925: 152). ‚Ach so, sage ich, meinen Sie das ernst? Wieviel kostet zum Beispiel Ihr Ross? Auf wieviel, sagt er, schätzen Sie es? Dann bricht er in Gelächter aus und sagt, dass es mehr als dreimal so teuer ist‘.

(2) **Jiddisch**

*oft iz oysgekumen tsu shlepn a **ku** un **zi** tsu shlogn mit a palke* (Bashevis 1980: 72).

‚Oft musste man eine Kuh hinter sich herziehen und sie mit einem Stock schlagen'.

(3) **Deutsch**

Nur wenige Vögel überleben den Crash. Zwar flattert **der ein oder andere** noch fort ins Gebüsch, meist aber stirbt **er** dort an seinen Verletzungen (*Der Spiegel*, 2, 07.01. 2017: 110,2).

(4) **Deutsch**

Schmuckschildkröte. Eine der am häufigsten gehandelten Schild-kröten überhaupt - in der EU ist **sie** als Schädling eingestuft worden und soll in den Mitgliedsländern bekämpft werden (*Die Zeit*, 03.08. 2017: 32,1).

B. Verweis auf Gegenstände

(5) **Jiddisch**

*[…] alts breyter iz gevorn der **taykh**. **er** hot zikh oysgeshpreyt vi a shpigl* (Bashevis 1980: 247).

‚[…] umso breiter wurde der Fluss. Wie ein Spiegel breitete er sich aus'.

(6) **Jiddisch**

*me vet mir ophaken di hand, di **hand**, vos **zi** hot ge'ganve't* (Sholem Aleykhem 1927: 21).

‚Man wird mir die Hand abhacken, die Hand, die gestohlen hat' (mit *zi* als Resumptivum).

(7) **Deutsch**

Chambers durfte den **Speer** ansehen, **ihn** sogar halten. "**Er** war schwerer, als ich gedacht hätte, und **er** wirkte richtig alt." Für genauere Untersuchungen mitnehmen durfte er **ihn** dann aber doch nicht   (*Die Zeit*, 28.05. 2014: 37,4).

(8) **Deutsch**

Auf dem Weg zum Treffen hatte er in einer großen Buchhandelskette versucht, den Bestseller der Saison zu erwerben, die kommentierte **Ausgabe** von "Mein Kampf". "Die Verkäuferin sah mich an, als hätte ich nach Kinderpornografie verlangt!" Er hat **sie** natürlich nicht bekommen, **sie** war nicht vorrätig (*Der Spiegel*, 19, 07.05. 2016: 126,1).

C. Verweis auf Abstrakta

(9) **Jiddisch**

*mit aza **kuk**, vos ikh vel **ihm** eybig nisht fargesen* (Sholem Aleykhem 1925: 113).

‚Mit einem Blick, wie ich ihn niemals vergessen werde' (mit *ihm* als Resumptivum).

(10) **Jiddisch**

*zi iz shoyn geven a vaybl un hot nokh alts nisht gekrogn di **tsayt**. shpeter, az zi hot **zi** gekrogn, hot zi geblutikt vi, lehavdl, a beheyme tsu der skhite* (Bashevis 1980: 53).

‚Sie war schon eine verheiratete Frau, hatte aber noch nicht ihre Menstruation bekommen. Als sie sie später bekam, blutete sie – man möge mir den Vergleich verzeihen – wie ein Tier auf der Schlachtbank'.

(11) **Deutsch**

Den Japanern aber geht es gut, materiell gesehen. Ihr **Wohlstand** bleibt groß, nur wächst **er** nicht mehr (*Die Zeit*, 05.06. 2014: 13,1).

(12) **Deutsch**

Das Schöne an **Geschichte**, sagt Altmaier, sei, dass **sie** im Gegensatz zur Politik abgeschlossen ist (*Die Zeit*, 07.03. 2019: 4,4).

D. Fälle, in denen Genus und Sexus des Bezugswortes nicht übereinstimmen

(13) **Jiddisch**

er hot nokh rekht nisht gehat gezen zayn **kind** *un er hot gegart* **es** *ontsukukn* (Bashevis 1980: 261).

‚Er hatte sein Kind noch nicht wirklich gesehen, und er sehnte sich danach, es zu betrachten'.

(14) **Jiddisch**

dayn **kind***, zogt er, rayst zikh in eyn ander velt arayn, un du farshtehst* **zi** *nit* (Sholem Aleykhem 1925: 128).

‚Dein Kind, sagt er, wirft sich in eine andere Welt, und du verstehst es nicht'.

(15) **Deutsch**

Dann habe er das **Mädchen** getötet, um zu verhindern, dass **es** ihn anzeigt (MOZ.de Das Nachrichtenportal für Brandenburg).

(16) **Deutsch**

Tag und Nacht schrie das **Mädchen**. Das einzige Mittel, **sie** zur Ruhe zu bringen, war das Fläschchen (Facebook).

(Jidd. *kind*, dt. *Mädchen* sind beide Neutra. In den obigen Belegen wird teils mit, teils ohne Genuskongruenz auf sie verwiesen).

2. Neue Wege pronominaler Referenz

Der Forschung ist es bereits seit einigen Jahren gut bekannt, dass das charedische (ultraorthodoxe) Satmarer Jiddisch, die jiddische Varietät, die heute von den meisten Muttersprachlern des Jiddischen gesprochen wird, nicht mehr dem obengenannten ererbten Verweisprinzip gehorcht. An seine Stelle ist ein System pronominaler Referenz getreten, das auf den ersten Blick an dasjenige des modernen Englisch erinnert: Die Formen *er* und *zi* referieren wie engl. *he* und *she* fast ausschließlich auf menschliche Bezugswörter, während alle anderen Substantive durch die Neutrumformen *es* und *dos*[2], parallel zu engl. *it*, ersetzt werden (dazu zuletzt Krogh 2015: 398–401). Die in und um New York City beheimatete

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[2] *dos* fungiert in solchen Fällen z. T. als Personalpronomen.

Presse der charedischen Satmarer Juden bietet eine Fülle von Belegen für dieses Verweisprinzip. Man vergleiche z. B. (Bezugswort und Pronomen in **Fettdruck**):

(17) *ven a mentsh kumt tsum heyligen khoyze, nemt er zayn **neshome** un vasht **dos** oys un reynikt* [sic] ***dos** fun yede shmits un rost* (*Die vokh*: 19,1).
,Wenn ein Mann zum Heiligen Seher kommt, nimmt er seine Seele, wäscht sie und säubert sie von jedem Schmutz und Rost'.

(18) *,ikh bin oyf aykh goyzer az als pikuekh nefesh zolt ir esn dem **zup**', der rebe hot keyn breyre nisht gehat un er hot **dos** gegesn* (*Der idisher gedank*: 29,1).
,Ich befehle Ihnen, gemäß dem Gebot, menschliches Leben zu retten, die Suppe zu essen. Der Rabbiner hatte keine Wahl und aß sie'.

(19) *ir vet trefn nokh a farmakhtn **briv** inem konvert. git **es** iber ,perzenlikh' far mr. lindberg* (*Der blat*: 58,4).
,Sie werden noch einen versiegelten Brief in dem Umschlag finden. Übergeben Sie ihn Herrn Lindbergh persönlich'.

(20) *nokh an interesante teve vos di **vol** farmogt, dos ven **es** tsit arayn in zikh **flisigkayt**, blaybt **es** nisht ineveynig oyf lang, un es geyt oykh nisht tsurik aroys di **flisigkayt** fun vu **es** kumt orginal* (*Der id*, A: 31,3).
,Noch eine interessante Eigenschaft, die Wolle besitzt, [ist,] dass wenn sie Flüssigkeit in sich zieht, diese nicht lange darin bleibt, und die Flüssigkeit geht auch nicht dorthin zurück, woher sie ursprünglich kam'.

Von den obengenannten Bezugswörtern ist *briv* von Hause aus maskulin, während *neshome*, *zup*, *vol* und *flisigkayt* feminin sind. Heute tritt die historische Genuszuweisung dieser Substantive morphologisch nicht mehr in Erscheinung.

Auf den ersten Blick böte es sich an, die veränderte pronominale Referenz auf den umfassenden Genussynkretismus im charedischen Satmarer Jiddisch zurückzuführen. Es handelt sich dabei in erster Linie um den Verlust von Genusmarkierungen in der Flexion des bestimmten Artikels, attributiver Adjektive, gewisser Pronomina und des Zahlwortes

eyner ‚einer'. In der gesprochenen Sprache ist der Synkretismus nicht nur von Genus-, sondern auch von Kasusunterschieden so weit fortgeschritten, dass der bestimmte Artikel einheitlich [də] lautet und die anderen vorher genannten Wörter ebenfalls einheitlich auf [ə] enden. Demnach wäre anzunehmen, dass wenn Genusunterschiede verschwinden, die gewöhnliche Genuskongruenz zwischen einem Pronomen und dessen Bezugswort ihren Sinn verliert, und eine neue Differenzierung zwischen menschlich und nichtmenschlich entsteht, die es natürlich erscheinen lässt, mit einer Neutrumform auf nichtmenschliche Bezugswörter zu verweisen.

Einer derartigen Ansicht von der Abfolge der Ereignisse widerspricht freilich die von Corbett (1979: 204, 216, 218) aufgestellte Allgemeingültigkeit beanspruchende Kongruenzhierarchie. Ausgehend von in vielen Sprachen gesammelter Evidenz zieht Corbett den Schluss, dass der Verlust von Genuskongruenz bei pronominaler Referenz im Regelfall dem Verlust der Genusflexion attributiver Wörter zeitlich vorausgeht. Der Grund dafür ist Corbett zufolge in dem Umstand zu suchen, dass die faktische Entfernung zwischen Kopf (*controller*) und Dependens (*agreeing element*) bei pronominaler Referenz normalerweise größer ist als in anderen Fällen, in denen Genuskongruenz realisiert wird oder werden kann. Die Auffassung, nach der im charedischen Satmarer Jiddisch der Wandel in pronominaler Referenz der Nivellierung von Genus- und Kasusunterschieden bei attributiven Wörtern zeitlich vorausgegangen sein muss, scheint durch die Untersuchungen von Krogh (2012: 496–504) zur europäischen Ausgangmundart des charedischen Satmarer Jiddisch, dem sogenannten unterländischen Jiddisch (dazu grundsätzlich Weinreich 1964), eine vorläufige Bestätigung erfahren zu haben. Damit wäre auch die Annahme hinfällig, wonach Veränderung im Bereich pronominaler Referenz im charedischen Satmarer Jiddisch auf Einfluss seitens der englischen Umgebungssprache zurückzuführen ist. Dem Englischen wäre demnach nur eine einen schon im Gang befindlichen Wandel beschleunigende Einwirkung zuzubilligen.

Der germanistischen Fachwelt dürfte jedoch weniger bzw. gar nicht bekannt sein, dass sich ein Wandel wie der oben dargelegte in Ansätzen auch im heutigen Deutsch anzubahnen scheint. Dieser Sachverhalt ist der Aufmerksamkeit der bisherigen Forschung zur modernen Syntax im Allgemeinen und zum Thema pronominale Referenz im heutigen Deutsch im Besonderen anscheinend komplett entgangen (Marga Reis, brieflich; man vergleiche auch: Bærentzen 1987: 344; Askedal 1990: 214 (dort auch die vorgängige Spezialliteratur zu dt. *es*); Zifonun [u. a.] (Hgg.)

1997: 544–550; Engel 2009: 455–456; Eisenberg 2013: 173; Hentschel/ Weydt 2013: 223; Wöllstein (Hg.) 2016: 1011; Helbig/Buscha 2017: 543). Uns dafür sensibilisiert hatte die besonders im gesprochenen Deutsch immer häufiger anzutreffende Erscheinung, dass *das* als Demonstrativ- und Personalpronomen bisweilen satzübergreifend auf nichtmenschliche Bezugswörter im Maskulinum oder Femininum verweisen kann. Als erste Stufe einer gegenwärtig nur auf dem Reißbrett befindlichen großangelegten Untersuchung haben wir eine Reihe von muttersprachlichen Gewährsleuten aus Nord- und Süddeutschland sowie Österreich und der Schweiz im Alter zwischen 25 und 60 Jahren befragt, die alle bestätigen, dass ein derartiger Verweis in Situationen wie der folgenden möglich ist: Sprecher A zeigt mit dem Finger auf einen Apfel (Maskulinum) und sagt zu Sprecher B: *Nimm das!* Ebenso wie wenn auf die Frage: *Spanischer Rotwein?* geantwortet wird: ***Das*** *trinke ich nicht*. Im ersten Fall wird deiktisch, im zweiten Fall generisch auf die Bezugsgröße verwiesen. Mit dem Terminus generisch wird der nicht auf ein Einzelexemplar, sondern auf die Gattung fokussierende Gebrauch der Anapher bezeichnet.

Skeptischer waren unsere Gewährsleute hingegen, als danach gefragt wurde, ob in solchen Situationen (ohne Topikalisierung) nicht *das*, sondern *es* als Anapher (oder Katapher) eingesetzt werden könnte. Unter Sprechern aus Österreich und der Schweiz scheint eine größere Akzeptanz in Bezug auf diese Konstruktion zu herrschen als unter Sprechern aus Deutschland. Ersterer Sprechertyp scheint auch das obige *das* häufiger zu verwenden bzw. zu akzeptieren als aus Deutschland stammende Sprecher.

Da Art und Häufigkeit des hier interessierenden Verweisprinzips für das Deutsche wie erwähnt noch völlig unerforscht sind, befinden sich unsere Gedanken darüber gegenwärtig auf der Stufe von Vorüberlegungen, und es mögen die hier vorgelegten Belege und geäußerten Vermutungen einstweilen Genüge tun. Es sollen nun die folgenden von uns festgehaltenen zugegebenermaßen wenig zahlreichen Hör- und Schriftbelege präsentiert werden (Bezugswort und Pronomen in **Fettdruck**):

A. Belege für phorisches *das*

(21) Den **Becher** [mit dem Konterfei Karl-Theodor zu Guttenbergs] habe ich gerade nachträglich zur Disputation von einer Freundin geschenkt bekommen. Direkt nach der Disputation wollte sie mir **das** nicht schenken, aus Angst, ich würde es nicht lustig finden (Hörbeleg vom 19.06. 2014).

(22) […] nein, aber L[…] hat sich ausführlich damit beschäftigt (und eine **Rezension** verfasst/bzw. soll verfassen, die in dr [sic] ZDL erscheinen soll). Vielleicht fragst du sie, ob sie dir **das** schickt?
(Auszug aus einer E-Mail vom 30.08. 2017).

B. Belege für phorisches *es*

(23) Der erste **Käse**. In Polen fanden sich die ältesten Spuren – aber wer hat'**s** erfunden? (*Die Zeit*, 13.12. 2012: 39,5). (Überschrift; *wer hat's erfunden* ist womöglich eine Anspielung auf den bekannten gleichlautenden Werbespot des Schweizer Bonbonherstellers Ricola).

(24) Wenn **es** eine glatte Schale hat, die **Orange**, dann ist sie sehr viel saftiger (kataphorisch, audiovisueller Beleg auf *Markt* (ndr.de), 03.02. 2014, 20:15 Uhr).

(25) Der **Zentralfriedhof** – kommt **es** gleich? (Hörbeleg vom 20.03. 2019).

(26) Post ist leider keine angekommen - wann hast du **es** denn abgeschickt? (mit Bezug auf ein als implizites Bezugswort anzusetzendes *Post-sendung*, Chatbeleg vom 04.04. 2019).

Als besonders aufschlussreich betrachten wir den folgenden Beleg, in dem beide Verweistypen anscheinend gleichberechtigt nebeneinanderstehen:

(27) Knapp gesagt: Für **Mord** braucht es einen triftigen Grund und die Gelegenheit, **das** zu verwirklichen. Um zum Mörder zu werden, braucht es ein Selbstkonzept, das einem die **Tötung** erlaubt, **sie** rechtfertigt und womöglich schönredet (*Die Zeit*, 14.02. 2019: 12,2).

Beim Rückbezug von *das* und *sie* auf *Mord* bzw. *Tötung* handelt es sich um generische Referenz. Bezeichnet werden damit nicht Einzeltaten, sondern die Verübung von Mord und Totschlag im Allgemeinen. Die meisten muttersprachlichen Gewährsleute, denen der Beleg vorgelegt wurde, betrachten im ersten Fall (*das → Mord*) *das* und *ihn* als mehr oder weniger gleichberechtigte Anaphern, begegnen aber im zweiten Fall (*sie → Tötung*) der Ersetzung der Anapher *sie* durch *es* oder *das* mit Skepsis bis Ablehnung. Der Grund dafür ist nicht unmittelbar einleuchtend. Nach Ansicht eines der Befragten könnte die topologische Nähe der Anapher zum Bezugswort *Tötung* ein Hindernis darstellen.

Gemeinhin wird in Sätzen, in denen *das* so viel wie ‚so etwas‘ / ‚dergleichen‘ bedeutet und die Bezugsgröße als entsprechend unscharf erscheint (vgl. Bærentzen 1987: 345–346), der Gebrauch des Neutrums von Muttersprachlern des Deutschen zumeist nicht nur akzeptiert, sondern geradezu als einzige Möglichkeit angesehen; man vergleiche z. B.:

(28) Vor ein paar Jahren hatten wir die Debatte um **Vergewaltigung** in der Ehe, und die Union vertrat den Standpunkt, **das** gäbe es gar nicht (*Die Zeit*, 16.05. 2013: 6,5).

Diese Art pronominaler Rückbezug könnte gut den Ausgangspunkt dafür gebildet haben, dass der Gebrauch von *das* und *es* als auf maskuline und feminine Bezugswörter verweisenden Anaphern (oder Kataphern) in der deutschen Gemeinsprache überhaupt erst möglich wurde und jetzt, wie es scheint, immer stärker um sich greift.[3]

In den oben angeführten signifikanten Belegen für phorisches *das/ es* (21–26) wäre dessen Ersetzung durch *so etwas / dergleichen* kaum möglich. *das/es* scheint in allen angeführten Fällen mit dem Bezugswort deckungsgleich zu sein.

In einer Hinsicht, die in der vorliegenden Studie bisher unerwähnt geblieben ist, unterscheidet sich das hier interessierende alternative Verweisprinzip im charedischen Satmarer Jiddisch frappant von seinem Gegenstück im Deutschen: beim Verweis auf ein Bezugswort im Plural. Während das klassische Ostjiddisch und das Deutsche hier nur eine Pluralform des phorischen Pronomens erlauben, folgt das charedische

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[3] Man vergleiche etwa folgendes Statement der Gewährsperson E.L., 53jährige Lehrerin aus dem südlichen Niedersachsen, vom 10.08. 2019: „Ja, diese Erscheinung gibt es – und ich selber verwende sie oft genug. Bei meinen Schülern allerdings finde ich sie in einer Form gehäuft vor, dass es weh tut“.

Satmarer Jiddisch einem Usus parallel zu demjenigen im Singular. Wenn das Bezugswort menschlich ist, steht das phorische Pronomen auch im Plural; wenn es dagegen eine nichtmenschliche Bezugsgröße bezeichnet, besteht zumindest die Möglichkeit, mit *es*/*dos* als Anapher (oder Katapher) darauf zu verweisen. Man vergleiche folgende Belege:

Jiddisch

(29) *tsulib dem hoben zikh di **mashinen** asakh shneler tsibrokhen hot men **dos** gebrengt tsu farekhten* (*Die vokh*: 14,5).
,Deshalb gingen die Autos viel schneller kaputt. Dann gab man sie in Reparatur'.

(30) *ikh hof az m'vet mekabl zayn di **verter** vos m'hot do geshmuest, m'vet **es** mekabl zayn tsu farbesern di maysim* (*Der idisher gedank*: 19,2).
,Ich hoffe, dass man die Worte beherzigen wird, die man hier gesprochen hat. Man wird sie beherzigen, um die Taten zu verbessern'.

(31) *geyendig aroys fun ofis hot er zikh dermant az di oybershte **shuflodn** hot er nisht unterzukht. er efnt **dos** oyf* (*Der blat*: 56,2).
,Als er das Büro verließ, erinnerte er sich daran, dass er die obersten Schubladen nicht untersucht hatte. Er öffnet sie'.

(32) *ven der mentsh vert elter, farlirn di **disks** a teyl funem vaser vos ligt gevenlikh derin. dos makht **es** mer boygzam un mer oysgeshtelt az **es** zol zikh tseraysn* (*Der id*, A: 36,4).
,Wenn der Mensch älter wird, verlieren die Bandscheiben einen Teil der Flüssigkeit, die sich gewöhnlich darin befindet. Das macht sie biegsamer und reißanfälliger'.

(33) *zey hobn etlikhe mol gezen fun dervaytns gantse stades **,bizons'**, di amerikaner rufn **es** bufel oks* (Berman 2001: 316).
,Mehrmals sahen sie von Weitem ganze Herden ,Bisons'; die Amerikaner nennen sie Büffel'.

Wie (33) zeigt, kommen hier auch Tiere als Bezugswörter in Frage. Mit dieser Art pronominaler Referenz steht das charedische Satmarer Jiddisch im Rahmen des Ostjiddischen nach dem Stand unserer bisherigen Ermittlungen allein. Die Tatsache, dass dem unterländischen Jiddisch, der europäischen Vorstufe des charedischen Satmarer Jiddisch,

pronominale Referenz mittels der neutralen Pronominalformen *es* und *dos* bei pluralischen Bezugswörtern komplett abgeht, lässt darauf schließen, dass diese Art pronominaler Referenz im charedischen Satmarer Jiddisch erst in den Jahren bzw. Jahrzehnten nach der Gründung der Siedlung der charedischen Satmarer Juden in New York im Jahre 1947 entstand. Im Englischen, das in Sachen pronominaler Referenz bei singularischen Bezugswörtern typologisch in jeder Hinsicht mit dem charedischen Satmarer Jiddisch übereinstimmt, fehlt von einer Übertragung besagten Prinzips auf pluralische Verweissituationen jede Spur.

3. Zusammenfassung und Ausblick

Beim Thema pronominale Referenz bietet sich ein Vergleich zwischen Jiddisch und Deutsch nicht zuletzt deshalb an, weil es sich bei Jiddisch und Deutsch um zwei sehr eng verwandte Sprachen handelt. In der vorliegenden Studie wurde anhand eines Belegmaterials gezeigt, wie pronominale Referenz speziell auf nichtmenschliche Bezugsgrößen im Maskulinum und Femininum teils nach der aus dem Urgermanischen ererbten strengen Genuskongruenz, teils mittels neutraler Pronominalformen in den zwei Sprachen erfolgt bzw. erfolgen kann. Trotz aller Gemeinsamkeiten in Bezug auf Entwicklungstendenzen in beiden Sprachen in den letzten Jahrzehnten bleibt festzuhalten, dass was sich im charedischen Satmarer Jiddisch, auf das oben ein spezielles Augenmerk gerichtet wurde, als Regel herausstellt, sich im Deutschen lediglich als eine Tendenz beschreiben lässt, deren Domäne derzeit eher in der gesprochenen als in der geschriebenen Sprache liegt. Ob diese Tendenz zukunftsweisend ist, bleibt ungewiss. Eine großangelegte Untersuchung der Erscheinung im gesprochenen wie geschriebenen Deutsch steht noch aus.

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The third construction and strength of C: A gradient harmonic grammar approach[1]

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Abstract

This paper addresses the third construction in German, i.e., sentences that combine clause-internal movement from a control infinitive with extraposition of that infinitive. I argue that conflicting evidence regarding the degree of bi-/mono-clausality of the extraposed infinitive (as evidenced by Santorini & Kroch's 1991 observation that long-distance scrambling is possible whereas wide scope of negation is not) is best captured by assuming that it qualifies as a CP with a C head that has more strength than the C of a preverbal restructuring infinitive embedded under a control verb, but less strength than the C of a non-restructuring infinitive (or a finite clause). This presupposes an approach to syntax in which a number of different strength assignments to a given type of category (like C) can be postulated, and can have a direct effect on the (non-) application of syntactic operations. I will show that a version of minimalist syntax incorporating the Phase Impenetrability Condition (Chomsky 2001; 2013) that is embedded in a gradient harmonic grammar approach (Smolensky & Goldrick 2016) can account for the variable strength of C in a principled way.

1. A Paradox

The third construction in German involves a combination of scrambling or unstressed pronoun fronting from an infinitive embedded by a restructuring control verb on the one hand, and extraposition of that infinitive on the other hand; see Besten & Rutten (1989), Geilfuß (1991), Santorini &

Kroch (1991), Wöllstein-Leisten (2001), Wurmbrand (2001; 2007), Reis & Sternefeld (2004), and Lee-Schoenfeld (2007), among others. A relevant example illustrating the transparency of the extraposed infinitive (Γ_1) for fronting of an unstressed pronoun (*ihn$_2$*) is given in (1-a); (1-b) is a minimally different example of such movement with the restructuring infinitive Γ_1 in situ.

(1) **German**
    a. dass sie   ihn$_2$ t$_1$ versucht [r$_1$ PRO t$_2$ zu küssen]
       that she$_{nom}$ him$_{acc}$ tries   to kiss
       'that she tries to kiss him.'

    b. dass sie   ihn$_2$ [r$_1$ PRO t$_2$ zu küssen] versucht
       that she$_{nom}$ him$_{acc}$ to kiss   tries
       'that she tries to kiss him.'

Given that scrambling from a (finite or non-restructuring, non-finite) CP (unlike, say, *wh*-movement) is impossible in German (see Ross 1967), the transparency of the extraposed infinitive for this movement operation is often taken to indicate that Γ_1 is not a CP in either (1-a) or (1-b). However, there is also conflicting evidence that supports a CP status of Γ_1 in the third construction. An indirect argument for this is that lower projections in the clausal spine (TPs, vPs, VPs) can otherwise never undergo extraposition in German (see Müller 2017), with the *Ersatzinfinitiv* construction an exception that, upon closer inspection, proves the rule (see Schmid 2005). And a very clear and direct argument for a CP status of the extraposed infinitive Γ_1 is that scope of negation is strictly clause-bound in the third construction, in stark contrast to what is the case with non-extraposed restructuring infinitives. This observation goes back to Santorini & Kroch (1991). The asymmetry is illustrated in (2-a) (with only narrow scope of negation available in the third construction) vs. (2-b) (where wide scope of negation is possible with standard restructuring infinitives).

(2) **German**
    a. dass ich seinen neusten Roman$_2$ t$_1$ versucht habe
       that I his   newest novel$_{acc}$ tried   have
       [r$_1$ PRO t$_2$ nicht zu lesen]
               not   to read
    'that I have tried not to read his newest novel.' (only narrow scope)

b. dass ich seinen neusten Roman$_2$
    that I his newest novel$_{acc}$
    [$_{r_1}$ PRO t$_2$ nicht zu lesen] versucht habe
                 not to read tried have
    'that I have not tried to read his newest novel.' (wide scope possible)

Thus, a paradox arises: The availability of unstressed pronoun fronting and scrambling in the third construction in (1-a) and (2-a) suggests that Γ_1 is not a CP; and the unavailability of wide scope of negation in (2-a) suggests that Γ_1 is a CP. It is the main goal of the present study to resolve this paradox in a principled way, by postulating that C is somewhat weaker in the third construction than in non-restructuring (and finite) contexts (so that scrambling and unstressed pronoun fronting from CP are possible), but slightly stronger than in standard restructuring contexts (so that CP can undergo extraposition in the first place, and wide scope of negation becomes impossible).

2. Background: Strength in Grammar

It is an old idea in syntactic theory that a functional category X can be strong or weak (see, e.g., Rizzi 1986 and Koster 1986). On this view, some syntactic operations may require a strong X, and others may require a weak X; yet others are compatible with any X. A more recent application of this general hypothesis involves complementizer-trace effects. *Wh*-movement of a subject DP from a declarative clause embedded by a bridge verb is ungrammatical in English if it takes place across a C realized as *that* (see (3-a)), but is possible if C is phonologically zero (see (3-b)).

(3)   a.   [$_{CP}$ Who$_1$ do you think [$_{CP}$ t′$_1$ [$_C$ Ø] t$_1$ saw John]] ?
      b.   *[$_{CP}$ Who$_1$ do you think [$_{CP}$ t′$_1$ [$_C$ that] t$_1$ saw John]] ?

To account for this, Chomsky (2013) suggests that "deletion of *that* [...] might leave only a *weakened* form of C" (my emphasis); this implies that the non-overt realization of C makes it possible to satisfy a constraint on movement that must be violated if the overt realization of C as *that* is chosen. Notwithstanding the issue of how such an idea is to be formally implemented, it can be noted that it raises a problem if a post-syntactic morphological realization of (at least) functional categories is adopted, as is the case in Distributed Morphology (see Halle & Marantz 1993). On the

one hand, a complementizer *that* cannot be assumed to be deleted in the syntax – *that* is in fact only inserted post-syntactically. On the other hand, if the difference between (3-a) and (3-b) only arises post-syntactically, how can it be the crucial factor for extraction?

There are many other areas where strength of functional categories has been invoked. A well-known example involves subject pro-drop; see, e.g., (4-a) in Spanish vs. (4-b) in English.

(4) a. **Spanish**
     [$_{TP}$ Hemos   [$_{vP}$ *pro* trabajado todo el   día]]
         have-3.PL   worked   all   the day
     'They have worked all day.'

   b. **English**
     *[$_{TP}$ *pro*$_1$ Have [$_{vP}$ t$_1$ worked all day]]

A traditional assumption has been that the strength of T is decisive for allowing *pro* (see Rizzi 1986): A strong T licenses *pro*, a weak T does not. More recently, Chomsky (2015) makes use of essentially the same distinction when he claims that in some languages, "T is too weak to serve as a label", and that "Italian T, with rich agreement, can label TP [...] for English, with weak agreement, it cannot".

A further widespread assumption instantiating the very same idea of strength concerns V-to-T movement; see, e.g., (5-a) in English vs. (5-b) in French.

(5) a. **English**
       John often kisses$_1$ Mary

   b. **French**
       Jean   embrasse$_1$ souvent t$_1$ Marie
       John kisses   often   Mary
       'John often kisses Mary.'

In what is arguably still the standard approach (Pollock 1989; Roberts 1993; Vikner 1997; 2001a;b; Holmberg & Platzack 1995; Rohrbacher 1999), it is postulated that a strong T licenses V-to-T movement (as in French), whereas a weak T (as in English) does not.

In all these cases, it is typically assumed that strength correlates in one way or another with the extent of morphological realization (with zero realization as the limiting case). However, as observed by Bobaljik (2002), all these analyses face the problem of being incompatible with post-syntactic morphology that I have illustrated for complementizer-trace effects above. For instance, as regards V-to-T movement, properties of the morphological inventory cannot be held responsible for whether such movement can apply in the syntax or not if inflectional morphology is post-syntactic.

I conclude from all this, first, that there is some evidence that functional categories can have different degrees of syntactic strength; and second, that such strength cannot be determined on the basis of morphological realization if this latter information is not yet present in the syntax. Given this state of affairs, it looks as though two ways out suggest themselves naturally. One is to abandon the idea of post-syntactic morphological realization. The other one is to conclude that strength is an *abstract inherent property* of functional categories that (i) determines whether or not syntactic operations can apply, and that (ii) also determines post-syntactic morphological realization. I will pursue this latter approach in what follows. From this perspective, the task at hand is to show how syntactic building blocks (in the sense of operations, constraints, or rules) can be sensitive to different degrees of strength. *Gradient Harmonic Grammar* (see Smolensky & Goldrick 2016) is a new grammatical theory designed to implement effects of this type. The particular minimalist version that I will adopt is laid out in the next section.

3. Serial Gradient Harmonic Grammar

I would like to contend that Gradient Harmonic Grammar, which is introduced in Smolensky & Goldrick (2016) mainly on the basis of phonology, offers a new perspective on how to derive three different types of asymmetries as they can be observed with long-distance dependencies in the world's languages: first, asymmetries between movement types (e.g., movement types that are clause-bound vs. movement types that can apply long-distance); second, asymmetries between types of moved items (e.g., subjects vs. objects, or arguments vs. adjuncts); and third (and most importantly in the present context), asymmetries between types of local domain (e.g., VP typically permits extraction from it, CP often does not – and certain types of CPs will be shown to be different from certain other

types of CPs, too). More specifically, the version of Gradient Harmonic Grammar that will be relevant in what follows combines properties of three subtheories: (i) Harmonic Grammar; (ii) Gradient Symbolic Representations; and (iii) Harmonic Serialism. I will address these in turn.

3.1. Harmonic Grammar
Harmonic Grammar (Smolensky & Legendre 2006; Pater 2016) is a version of optimality theory (Prince & Smolensky 1993) that abandons the strict domination property (according to which no number of violations of lower-ranked constraints can outweigh a single violation of a higher-ranked constraint) and replaces harmony evaluation by constraint ranking with harmony evaluation based on weight assignment to constraints. This makes it possible to derive some (but not all) kinds of cumulative effects in syntax. The central notion of harmony is defined in (6) (see Pater 2009).

(6)   *Harmony*:

$$H = \sum_{k=1}^{K} s_k w_k \qquad \begin{array}{l} w_k = \text{weight of a constraint} \\ s_k = \text{violation score of a candidate} \end{array}$$

Thus, the weight of a constraint is multiplied with the violation score of a candidate for that constraint, and all the resulting numbers are added up, thereby determining the harmony score of a candidate. For present purposes, we can assume that constraints assign negative scores throughout (e.g., −1 if the candidate violates a constraint once), and that constraint weights are always nonnegative (e.g., 2 or 3). Thus, if a candidate violates constraint A (with weight 2.0) once (−1) and constraint B (with weight 3.0) twice (−2), the harmony score of the candidate would be −8 if there were no further constraints in the grammar. Finally, an output qualifies as optimal if it is the candidate with maximal harmony in its candidate set; i.e., if it has the value closest to zero (or the lowest penalty).

3.2. Gradient Harmonic Grammar
Against this background, the main innovation of Gradient Harmonic Grammar is that Smolensky & Goldrick (2016) postulate that it is not just the constraints that are assigned weights. Rather, symbols in linguistic representations are also assigned weights; i.e., they are not categorical either. The weights in question are encoded by assigning some real number

between 0 and 1. This way, the concept of varying strength of syntactic categories can be formally implemented in the grammar. For example, suppose that some category X can have three different kinds of weights in a given grammar: X:[0.4], X:[0.7], and X:[1.0]. Suppose further that X violates some constraint Γ that is associated with a weight of 2, and that it does so once (−1). Then, the first X will give rise to a −0.4 violation of Γ, yielding a (partial) harmony score of −0.8; the second X induces a −0.7 violation of Γ, which results in a (partial) harmony score of −1.4; and the third X triggers a −1.0 violation of Γ, which produces a (partial) harmony score of −2.0. Of course, there will be constraints counter-acting Γ, which may then imply that the violation of Γ incurred by X is tolerable in an optimal candidate if X has a weight of [0.4] but not tolerable in an optimal candidate if X has a weight of [1.0].

So far, most of the work on gradient harmonic grammar has been in phonology; but cf. Smolensky (2017), Lee (2018), and Müller (2019) for applications in syntax.[2]

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[2]   As it turns out, there is a fairly obvious predecessor of gradient harmonic grammar in syntax (not mentioned in Smolensky & Goldrick 2016), viz., Squishy Grammar, which was developed by Ross (1973a;b; 1975). Ross argues that there is constituent class membership to a degree, and presupposes that instead of standard category symbols like [X], there are weighted category symbols like [αX] (where α ranges over the real numbers in [0,1]). Rules, filters, and other syntactic building blocks are given upper and lower threshold values of α between which they operate. And indeed, closer inspection reveals that Ross's (1975) concept of "clausematiness" is extremely similar in all respects to the concept of "strength of C" that the present paper will focus on in its account of the properties of the third construction in German. Incidentally, it seems that among those who remember it, Squishy Grammar is widely perceived to have been proven to be on the wrong track (see, e.g., Newmeyer 1986). However, closer scrutiny reveals that the literature contains hardly any substantive criticism; and what little there is (see in particular Gazdar & Klein 1978) is far from convincing from the perspective of current grammatical theory.

Furthermore, as noted by the anonymous reviewer, the approach to differential argument encoding in terms of local conjunction plus harmonic alignment of prominence scales developed in Aissen (2003) may to some extent also be viewed as a predecessor, in the sense that different positionings of linguistic expressions of some given type X along some dimension may give rise to effects that are similar to postulating different strengths for the X's in the present approach. However, there are important differences. For one thing, in contrast to Gradient Harmonic Grammar, Aissen's approach invariably gives rise to an infinite set of constraints. For another, it presupposes that different types of X can always be identified by reference to some independently verifiable property (typically, some morpho-syntactic feature); in contrast, strength is a *primitive* of different types of X in Gradient Harmonic Grammar. The analysis to be developed below will make crucial use of this latter assumption: Different types of infinitival C will be postulated that differ in nothing but abstract strength.

3.3. Harmonic Serialism

In addition to Harmonic Grammar and Gradient Representations, Harmonic Serialism is a third important ingredient of the present approach. Harmonic serialism is a strictly derivational version of optimality theory. (7) illustrates how it works (see McCarthy 2008 and Heck & Müller 2013, for phonology and syntax, respectively).

(7)   *Harmonic serialism*:
    a. Given some input I_i, the candidate set $CS_i = \{O_{i1}, O_{i2}, ... O_{in}\}$ is generated by applying at most one operation to I_i.
    b. The output O_{ij} with the best constraint profile is selected as optimal.
    c. O_{ij} forms the input I_{ij} for the next generation step producing a new candidate set $CS_j = \{O_{ij1}, O_{ij2}, ... O_{ijn}\}$.
    d. The output O_{ijk} with the best constraint profile is selected as optimal.
    e. Candidate set generation stops (i.e., the derivation converges) when the output of an optimization procedure is identical to the input (i.e., when the constraint profile cannot be improved anymore).

Harmonic Serialism was already identified as a possible alternative to standard parallel optimization in Prince & Smolensky (1993). However, it has been pursued in depth only over the last decade or so (see, e.g., McCarthy 2008, 2016, Torres-Tamarit 2016, and Elfner 2016 for phonology; Caballero & Inkelas 2013 and Müller 2018 for morphology; and Heck & Müller 2013, Georgi 2012, Assmann et al. 2015, and Murphy 2017 for syntax). As shown in McCarthy & Pater (2016) and Murphy (2017), the combination of Harmonic Grammar and Harmonic Serialism is a natural one. As far as syntax is concerned, Harmonic Serialism can be viewed as a version of minimalist approaches employing sequential bottom-up structure-building (Chomsky 1995; 2001; 2014) that incorporates optimization procedures (like Merge over Move). The main empirical arguments here concern phenomena which provide evidence that (i) there is syntactic optimization, but (ii) this optimization can only take into account information that is accessible in an extremely local syntactic domain (from the current root down to the closest phase edge), and it can only distinguish between a finite (and small) number of operations that can in principle be carried out

at any given step. In the present context, a Harmonic Serialism perspective ensures that the scores of constraint violations resulting from combining the weights of the constraints and the weights assigned to the linguistic expressions are consistently fairly small and manageable, and are forgotten again once the derivation moves on to the next cycle.

Taken together, the three sub-theories can be referred to as *Serial Gradient Harmonic Grammar*.

4. Proposal
4.1. Constraints and Weights
In the analysis of extraction from CP to be developed below, three constraints turn out to be important. First, there is the Phase Impenetrability Condition (PIC; Chomsky 2001; 2008; 2013), which demands that all operations involving some item α_i in a phase and some other item outside the phase requires α_i to be in the edge (specifier or head) domain of the phase. In (8), the PIC is formulated as a constraint on heads.

(8)   *Phase Impenetrability Condition* (PIC):
        For all heads Y: *Y that c-commands α_i of a dependency δ but does not m-command α_{i-1} of δ.

The PIC in (8) is a strengthened version of Chomsky's original PIC since it acknowledges a potential barrier status of *all* XPs: Every phrase is a phase. In this respect, it resembles concepts proposed by Riemsdijk (1978), Koster (1978; 1987), Sportiche (1989), and Legendre et al. (2006), among others.

For movement steps leaving a phase, the PIC in (8) thus demands that extraction takes place via the specifier of the phase head. Crucially, I assume that the PIC is an inviolable constraint of the GEN component of the grammar (see Prince & Smolensky 1993).[3]

In contrast, the remaining two constraints are violable, and are assigned weights. These are the Merge Condition and the Anti-Locality Condition. The Merge Condition (MC) can be formulated as in (9) (see Chomsky 1995; 2001); and Heck & Müller (2013) for the particular [•F•] notation for features triggering structure-building.)

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[3] This follows without further ado if one follows Chomsky in assuming that the PIC is derivable from cyclic spell-out of the phase head's complement after completion of the phase; under this assumption, material that is not in the edge domain is literally irrevocably gone after spell-out.

(9)   *Merge Condition* (MC):
       For all features [•F•] and XPs with a matching [F]: [•F•] triggers
       Merge of XP.

(9) presupposes that each head is associated with a set of structure-building
features [•F•] which are discharged by individual Merge operations one
at a time.[4] MC is formulated here as a constraint on two items: structure-
building features on the one hand, and XPs with a matching feature on the
other. This makes it possible to determine violations of the constraint (with
its own weight) relative to the weights of these items (i.e., the attracting
feature *and* the moved item).

    The second violable constraint is the Anti-Locality Condition (see
Bošković 1997, Abels 2003, Grohmann 2003a;b; 2011, Pesetsky 2016, and
Erlewine 2016 for different implementations of this general idea), which
is formulated in (10) in a maximally strict way that is made possible by
assuming violability.

(10)   *Anti-Locality Condition* (AL):
       For all heads Y: *Y that c-commands α_i of a dependency δ and
       m-commands α_{i-1} of δ.

As regards links of movement dependencies, (10) is violated by all heads
which c-command a (base or derived) position from which movement
takes place and also m-command the landing site of this movement. The
prototypical scenarios for this are (i) that movement has taken place from
the specifier of some phrase ZP, across ZP's sister Y, to a specifier of Y,
as in $[_{YP} \alpha_{i-1} [_{Y'} Y [_{ZP} \alpha_i [_{Z'} ...]]]$; or (ii) that movement has taken place from
the complement of Y to Y's specifier, as in $[_{YP} \alpha_{i-1} [_{Y'} Y \alpha_i]]$.[5] Given the
PIC in (8) as a constraint on all phrase heads, *all* movement violates AL
(movement originates either in the complement position of some head Y, or
in the specifier position of Y's complement). Thus, whereas MC is a trigger
for movement, AL acts as a potential blocker: If AL cannot be violated
in an optimal candidate, the PIC will subsequently ensure that movement

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[4]   Alternatively, these features may be assumed to show up as members of a list (rather than
      a set); while ultimately important, this issue is negligible in the present context.
[5]   Strictly speaking, a third scenario might involve the configuration $[_{YP} Y [_{ZP} \alpha_{i-1} [_{Z'} Z ...$
      $\alpha_i ...]]]$, where Y also c-commands α_i and m-commands α_{i-1}. However, it is not clear
      whether this scenario needs to be excluded by modifying AL (e.g., by adopting *minimal*
      c-command), given that α_i will never be accessible to Y because of the inviolable PIC (α_i
      will fail to be c-commanded by Y if it is not even part of the representation anymore at
      this point; see footnote 3 above).

cannot take place. Note that unlike a general economy constraint blocking movement (e.g., *Trace, as in Grimshaw 1997, Legendre et al. 2006), AL has different effects depending on the nature of the head crossed in the course of movement. A head Y with a larger weight (i.e., more strength) will give rise to a more severe violation of AL than a head Y with a lower weight (i.e., less strength).

This approach depends on the availability of edge features that may trigger intermediate movement steps via MC. Following Abels (2012), I assume that intermediate movement steps are brought about by duplicates of criterial features, which can freely be assigned to any head Y. For instance, a feature like [•wh•] that is an inherent property of interrogative C in German can show up on all heads (C, T, V, v, etc.) intervening between the base position and the ultimate landing site $\text{SpecC}_{\text{wh.}}$

Summarizing so far, it emerges that weight (i.e., relative strength) plays a role for three different kinds of items that are subject to the constraints MC and AL. First, some Y heads give rise to stronger violations of AL than other Y heads if movement takes place across them. This derives asymmetries between types of local domain. For instance, VP typically permits extraction from it, and vP often does so; but CP in many cases does not. As will be shown below, this also accounts for the difference between restructuring and non-restructuring infinitival C in German, where the former but not the latter permits scrambling and unstressed pronoun fronting to the matrix domain. For concreteness, I will assume the following weights for Y heads involved in AL violations in German:

(11)   *Strength of Y*:
    a.   V: [0.45]
    b. $C_{[-fin]}$: [0.6] (restr.)
    c. $C_{[-fin]}$: [0.8] (non-restr.)
    d. $C_{[-wh,+fin]}$: [0.9]
    e. $C_{[+wh,+fin]}$: [1.0]

Thus, V does not bear a lot of weight; consequently, an AL violation induced by movement to SpecV is usually tolerable in German.[6] Similar

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[6]   See, however, Müller (2019), where I argue that the ban on splitting up particularly opaque kinds of idioms by certain kinds of movement can be traced back to an AL violation with movement to SpecV that is fatal in the presence of a moved item with extremely little strength (giving rise to a less severe MC violation if movement does not take place).

considerations apply for v and T (where the weights are not shown here). According to (11), C has more weight.[7] More generally, the underlying hypothesis is that the weight increases from bottom to top with functional heads in the clausal spine. Furthermore, all control infinitives in German are assumed to have CP status throughout. Abstracting away from the third construction for now, the infinitival C head comes in two varieties, a non-restructuring version that has nearly the same weight as finite declarative C ([0.8]), and a restructuring version that has less weight ([0.6]).[8] It is a property of restructuring control predicates that they can select either version of non-finite C (whereas other control predicates can only select the non-restructuring version).

Second, some movement-related features [•F•] give rise to stronger violations of MC (i.e., are stronger triggers of movement) than other movement-related features. This derives asymmetries between movement types. For instance, *wh*-movement can leave a finite CP in German whereas scrambling cannot do so. Concrete weights assigned to structure-building features that trigger movement in German include those in (12); [•wh•] is involved in *wh*-movement, and [•scr•] is involved in scrambling and unstressed pronoun fronting.[9] Again, the increase in strength corresponds to the relative position of the head(s) bearing the feature in the tree: The landing site of *wh*-movement is SpecC, the landing site of scrambling is Specv or SpecV.[10]

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[7]   Also, a finite interrogative C has more weight than a finite declarative C ([1.0] vs. [0.9]); this ultimately accounts for wh-islands; see Müller (2019).

[8]   I will eventually argue that infinitival C as it shows up in the third construction has a weight that is between the weights of restructuring C and non-restructuring C ([0.7]). At this point, it can be noted that under the present analysis, there is no way how the difference in strength of infinitival C could be correlated with the number (and/or type) of independently motivated features characterizing C (as envisaged as a potential option by the reviewer) – the three infinitival Cs at issue here differ only with respect to strength.

[9]   There are in fact several differences between scrambling of non-pronominal items, as in (2-b), and unstressed pronoun fronting, as in (1-b). Still, to simplify matters I pretend here that [•scr•] covers both movements; a more detailed analysis would postulate two separate features with sufficiently similar weights.

[10] Topicalization can leave wh-islands in German with objects (but not subjects), whereas *wh*-movement (or scrambling) cannot do so. In Müller (2019), this is modelled by assuming that the feature [•top•], which triggers topicalization, has more weight than the features triggering *wh*-movement and scrambling (viz., [0.65] vs. [0.5], [0.2]).

(12)   *Strength of* [•F•]:
    a   [•scr•]: [0.2]
    b   [•wh•]: [0.5]

Third, some XPs give rise to stronger violations of MC than other XPs if they do not undergo movement. This accounts for asymmetries between moved items (e.g., unmoved objects may induce stronger violations of MC than unmoved subjects, and thus make MC violable less easily in optimal outputs). For German, I assume that an object DP has a weight of [0.9], whereas a subject DP only has a weight of [0.8]. However, I will be exclusively concerned with object DPs in what follows.[11]

    With these assumptions in place, let me next illustrate the mechanics of the resulting system on the basis of some data involving extraction from different domains, and by different movement types.

4.2.   Two Extraction Asymmetries in German
4.2.1. Asymmetries between Types of Local Domain

Scrambling can target SpecV in German, either as a final landing site, or as an intermediate escape hatch for further movement to Specv required by the PIC; see (13-a) and (13-b), respectively.

(13)   a.   dass sie [$_{VP}$ [$_{DP2}$ das Buch] [$_{V'}$ [$_{DP1}$ dem Karl] [$_{V'}$ t$_2$ [$_V$ gegeben
       that she   the book$_{acc}$ the Karl$_{dat}$ given
       hat]]]]
       has
       'that she has given Karl the book.'

    b.   dass [$_{vP}$ [$_{DP2}$das Buch] [$_{v'}$ [$_{DP1}$ keiner] [$_{v'}$ [$_{VP}$ t$'_2$ [$_{V'}$ t$_2$ gelesen
       that   the book$_{acc}$ no-one$_{nom}$ read
       hat]] v]]]
       has
       'that no-one has read the book.'

However, as noted above, scrambling is clause-bound in German (Ross 1967): A finite CP cannot be crossed. From the present, PIC-based

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[11] See Müller (2019) for discussion of asymmetries between types of moved items.

perspective, this can be taken to indicate that SpecC cannot be targetted as an intermediate landing site by this movement operation; see (14).[12]

(14)   *dass sie [$_{DP2}$ das Buch] gesagt hat [$_{CP}$ t$'_2$ [$_{C'}$ dass] [$_{TP}$ t$_2$ sie
       *that she   the book$_{acc}$ said   has   that   she
       gelesen hat]]]]
       read   has
       'that she has said that she has read the book.'

This asymmetry between VP and CP with respect to scrambling follows from the current assumptions about weight assignments. On the one hand, given that what is moved is an object DP ([0.9]), and given that the feature responsible for the (intermediate or final) movement step is [•scr•] ([0.2], a relatively weak trigger), there will be a −1.1 violation of MC in both environments if movement does not take place. Assuming MC itself to have a weight of 2.0, this produces a harmony score of −2.2. On the other hand, if movement takes place, an AL violation will be generated. Suppose that the intrinsic weight of AL is 3.0. Then, since V, by assumption, has a weight of [0.45] (see (11)), movement of any item to SpecV gives rise to a −0.45 violation of AL, and thus (abstracting away from other constraint violations that are irrelevant in the present context) to a harmony score of −1.35. Consequently, the output candidate O$_2$ employing a local scrambling step to SpecV emerges as optimal, and the output candidate O$_1$ which fails to carry out movement is suboptimal. This is illustrated by the tableau in (15) (where H stands for the overall harmony score of a candidate).

(15)   *Object scrambling via VP*:

I: [$_{VP}$ ... DP$_{obj:[0.9]}$ V$_{[0.45],[•scr•]:[0.2]}$]	MC	AL	*H*
	w = 2.0	w = 3.0	
O$_1$: [$_{VP}$ ... DP$_{obj:[0.9]}$ V$_{[0.45],[•scr•]:[0.2]}$]	−1.1		−2.2
☞O$_2$: [$_{VP}$ DP$_{obj:[0.9]}$ [$_{V'}$ ... t$_{obj}$ V$_{[0.45],[•scr•]:[0.2]}$]]		−0.45	−1.35

In contrast, if object scrambling wants to leave a finite declarative CP, intermediate movement to SpecC, across an intervening C with weight [0.9], produces a much more severe violation of AL: This time there is

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[12] In contrast, there would be nothing wrong as such with the subsequent movement step to matrix SpecV. Such a step is often excluded by some specific constraints against improper movement (see Müller 2014 and Keine 2016 for recent overviews), but in the present approach based on variable weights, such constraints can be dispensed with; cf. 4.2.2. below.

a −0.9 violation of AL, which ceteris paribus leads to a harmony score of −2.7. The candidate without movement (in the presence of [•scr•] and an object DP) has a harmony score of −2.2, exactly as before; but this MC violation now emerges as optimal, and intermediate scrambling to SpecC is therefore blocked. Ultimately, the PIC then ensures that long-distance scrambling cannot take place from the lower SpecT position in the embedded clause that we can assume to have been reached by prior intermediate scrambling-movement. This competition is shown in (16).

(16) *Object scrambling via finite declarative CP*:

I: [$_{CP}$ C$_{[0.9],[•scr•]:[0.2]}$ [$_{TP}$ DP$_{obj:[0.9]}$ [$_{T'}$ ... T]]]	MC w = 2.0	AL w = 3.0	*H*
☞O$_1$: [$_{CP}$ C$_{[0.9],[•scr•]:[0.2]}$ [$_{TP}$ DP$_{obj:[0.9]}$ [$_{T'}$ ... T]]]	−1.1		−2.2
O$_2$: [$_{CP}$ DP$_{obj:[0.9]}$ [$_{C'}$ C$_{[0.9],[•scr•]:[0.2]}$ [$_{TP}$ t$_2$ [$_{T'}$ ... T]]]]		−0.9	−2.7

Next, if different kinds of Cs ([±finite], [±restructuring], [±wh], etc.) can have different weights, it can be derived that one and the same movement type (e.g., scrambling) may leave CPs with a weak C head (restructuring infinitives) but not CP with a stronger C head (finite clauses or non-restructuring infinitives). A relevant pair of examples illustrating the lexically governed restructuring effect with control infinitives in German is given in (17).

(17) a. dass [$_{DP2}$das Buch] keiner
          that   the book$_{acc}$ no-one$_{nom}$
          [$_{CP}$ t′$_2$ [$_{C'}$ C [$_{TP}$ PRO t$_2$ zu   lesen]]] versucht hat
                                       to   read   tried   has
          'that no-one has tried to read the book.'

       b. *dass [$_{DP2}$ das Buch] keiner
          that   the book$_{acc}$ no-one$_{nom}$
          [$_{CP}$ t′$_2$ [$_{C'}$ C [$_{TP}$ PRO t$_2$zu lesen]]] abgelehnt hat
                                      to read   rejected has
          'that no-one has rejected to read the book.'

By assumption, restructuring C in (17-a) has a weight of [0.6], whereas non-restructuring C in (17-b) has a weight of [0.8]. Consequently, non-restructuring infinitival C blocks scrambling from it in basically the same

way as finite declarative C in (16) (with a suboptimal harmony score of -2.4 if movement applies, violating AL); but with restructuring C, the AL violation incurred by movement is not so severe anymore (the overall harmony score is -1.8), and successfully blocks the candidate that fails to carry out movement (in violation of MC, with a harmony score of -2.2); see (18).[13]

(18)   *Object scrambling via restructuring infinitive CP*:

I: $[_{CP}$ C$_{[0.6],[\bullet scr\bullet]:[0.2]}$ $[_{TP}$ DP$_{obj:[0.9]}$ $[_{T'}$ ... T $]]]$	MC	AL	*H*
	w = 2.0	w = 3.0	
O$_1$: $[_{CP}$ C$_{[0.6],[\bullet scr\bullet]:[0.2]}$ $[_{TP}$ DP$_{obj:[0.9]}$ $[_{T'}$ ... T $]]]$	-1.1		-2.2
☞O$_2$: $[_{CP}$ DP$_{obj:[0.9]}$ $[_{C'}$ C$_{[0.6],[\bullet scr\bullet]:[0.2]}$ $[_{TP}$ t$_{obj}$ $[_{T'}$ ... T $]]]]$		-0.6	-1.8

The present approach makes it possible to uniformly assume a CP status of restructuring infinitives embedded under control verbs. This is arguably conceptually attractive in view of the implicational generalization that there is no control verb that permits restructuring which would not also permit a non-restructuring clausal complement. In approaches where the two complement types have a different categorial status (e.g., vP vs. CP; see Haider 1993, 2010, and Wurmbrand 2001), this state of affairs is purely accidental; in the present approach, it only requires the assumption that there is an unmarked strength of infinitival C items (viz., [0.8]) which can optionally be reduced (and which then is tolerated only by a subset of control predicates). However, there is also empirical evidence for CP in restructuring infinitives embedded by control verbs; see Baker (1988), Sternefeld (1990), Müller & Sternefeld (1995), Sabel (1996), Koopman & Szabolcsi (2000), and Müller (2017). For instance, one argument from the last-mentioned study relies on the generalization that unstressed pronoun fronting to the left edge of vP (which is obligatory in German) must be licensed by a higher C phase head. And whereas such movement is impossible in structures clearly lacking a CP (verb-auxiliary combinations as in (19-a), raising environments as in (19-b)), it *is* possible in restructuring contexts embedded by control verbs (as in (19-c)).[14]

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[13] There is considerable variation among speakers of German as to which matrix control predicates permit restructuring, and which ones do not. For some speakers, (17-b) may be possible, but this does not affect the analysis: *ablehnen* just tolerates a weaker C here.

[14] In these examples, *mir*$_1$ undergoes fronting to the matrix domain, thereby indicating transparency of the complement of the higher verb; *es*$_1$ is fronted string-vacuously in the complement.

(19) a. *dass sie   mir$_1$ schon   letzte Woche [$_{vP}$ es$_2$ t$_1$ t$_2$ gegeben] hat
         that   she$_{nom}$ me$_{dat}$ already last   week   it$_{acc}$ given   has
         'that she gave it to me last week already.'

   b. *dass sie   mir schon   letzte Woche [$_{vP}$ es$_2$ t$_2$ zu lesen] schien
        that   she$_{nom}$ me$_{dat}$ already last   week   it$_{acc}$ to read   seemed
        'that she seemed to me to read it last week already.'

   c. dass sie   mir$_1$ schon   letzte Woche [$_{CP}$ es$_2$ PRO t$_1$ t$_2$ zu
        that she$_{nom}$ me$_{dat}$ already last   week   it$_{acc}$ to
        geben] versucht hat
        give   tried   has
        'that she tried to give it to me last week already.'

From a slightly more general perspective, under present assumptions there can be a lot of variation as far as the transparency of projections in the clausal spine for extraction is concerned (depending on the weights assigned to the heads in the extended projection of V). However, the variation is principled in the sense that it must obey an implicational universal: If an XP α can undergo Σ-movement across a Y head $δ_1$, and $δ_1$ has more weight than another Y head $δ_2$, then α can ceteris paribus also undergo Σ-movement across $δ_2$. Given the ancillary assumption that weight increases from bottom to top in the clausal spine, it is then predicted that if a given movement type affecting some particular item can take place across CP, it can also take place across TP; if it can leave TP, it can ceteris paribus leave vP; and similarly for vP and VP. I take this prediction to be correct.

4.2.2. Asymmetries between Movement Types

If a given head Y blocks a movement type triggered by a (intermediate or final) feature $Σ_1$ because the AL violation incurred by movement has a lower harmony score than the relatively weak MC violation incurred by not moving the item, this does not necessarily mean that Y will also block another movement type triggered by a different feature $Σ_2$: Not satisfying $Σ_2$'s demand by leaving the item in place may give rise to a much more severe violation of MC if $Σ_2$ has greater strength than $Σ_1$, and this can then make the AL violation optimal. Such a situation obtains with *wh*-movement (triggered by [•wh•]) vs. scrambling (triggered by [•scr•]). Recall from (12) that the former feature is associated with a weight of

[0.5] in German, and the latter with a weight of [0.2]. And indeed, for most speakers of German, *wh*-movement can leave a finite declarative CP where scrambling cannot (for reasons discussed in the previous subsection); see (20-a) (with *wh*-movement) vs. (20-b) (= (14)).

(20) a. (Ich weiß nicht) [$_{CP}$[$_{DP2}$welches Buch] sie gesagt hat
           I   know not   which   book$_{acc}$ she said   has
           [$_{CP}$ t$'_2$ [$_{C'}$dass] [$_{TP}$ t$_2$ sie   gelesen hat]]
                    that   she read   has
       'I don't know which book she said that she read.'

      b. *dass sie [$_{DP2}$ das Buch] gesagt hat
           that she   the book$_{acc}$ said   has
           [$_{CP}$ t$'_2$ [$_{C'}$dass] [$_{TP}$ t$_2$ sie   gelesen   hat]]
                    that   she read   has
       'that she has said that she read this book.'

As shown in (21), *wh*-movement of an object DP via VP (as in O$_2$) is entirely unproblematic; as was the case with scrambling (see (15)), an AL violation is tolerable because the overall harmony score is closer to zero than that of a candidate that does not carry out movement in violation of MC (cf. O$_1$).

(21) *Object wh-movement via VP*:

I: [$_{VP}$ ... DP$_{obj:[0.9]}$ V$_{[0.45],[•wh•]:[0.5]}$]	MC w = 2.0	AL w = 3.0	*H*
O$_1$: [$_{VP}$ ... DP$_{obj:[0.9]}$ V$_{[0.45],[•wh•]:[0.5]}$]	−1.4		−2.8
☞O$_2$: [$_{VP}$ DP$_{obj:[0.9]}$ [$_{V'}$ ... t$_{obj}$ V$_{[0.45],[•wh•]:[0.5]}$]]		−0.45	−1.35

However, things are different when it comes to extraction via CP. As shown in (22), the output candidate that moves the object DP to SpecC (i.e., O$_2$) now still has a better constraint profile than the candidate that does without such movement (i.e., O$_1$): The reason is that C's [•wh•] feature in (22) (with a weight of [0.5]) ceteris paribus gives rise to a much stronger violation of MC if movement does not take place than C's [•scr•] feature in (16) (with a weight of [0.2]) does.

(22)   *Object wh-movement via finite declarative CP*:

I: [$_{CP}$ C$_{[0.9],[•wh•]:[0.5]}$ [$_{TP}$ DP$_{obj:[0.9]}$ [$_{T'}$ ... T]]]	MC	AL	*H*
	w = 2.0	w = 3.0	
O$_1$: [$_{CP}$ C$_{[0.9],[•wh•]:[0.5]}$ [$_{TP}$ DP$_{obj:[0.9]}$ [$_{T'}$ ... T]]]	−1.4		−2.8
☞O$_2$: [$_{CP}$ DP$_{obj:[0.9]}$ [$_{C'}$ C$_{[0.9],[•wh•]:[0.5]}$ [$_{TP}$ t$_{obj}$ [$_{T'}$ ... T]]]]		−0.9	−2.7

Again, the approach predicts a lot of variation, but as before, such variation is principled: A second implicational universal can be derived which states that if an XP α can undergo Σ_1-movement across a Y head δ, and Σ_1 has less weight than another movement type Σ_2, then α can also undergo Σ_2-movement across δ, other things being equal. And, also as before, the relative weight of the features that bring about movement via MC is not arbitrary but corresponds to the relative position of the heads bearing the features in the tree.[15]

Needless to say, the approach to extraction in German sketched so far needs to be extended in many directions, and with a broader empirical coverage, it must be subject to many further ramifications. However, I will leave it at that here. Instead, I will now turn to the main goal of the present paper, which is to solve the paradox with the third construction outlined in section 1 above.

5. The Third Construction
In many respects, the extraposed infinitival complement in the third construction in German behaves like the non-extraposed restructuring infinitive counterpart analysed in subsection 4.2.1. above. First, as noted in section 1, the extraposed infinitival complement is transparent for scrambling and unstressed pronoun fronting if it would be transparent for these movement types in the pre-verbal base position – i.e., if the matrix predicate licenses restructuring.[16] Some relevant examples that document this are given in (23-a), (23-b) (= (1-a)), and (23-c).

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[15] Concerning variation, it is also worth noting that by slightly increasing the weight of finite declarative C, *wh*-movement from CP will become impossible. As a matter of fact, such a scenario comes close to the situation in certain Northern varieties of German, which do not easily permit *wh*-movement from finite declarative clauses headed by a C with *dass*.

[16] Of course, this holds true virtually by definition – movement from an extraposed restructuring infinitive is *the* constitutive property of the third construction.

(23) a. dass das Buch$_2$ keiner t$_1$ versucht hat [$_{CP1}$ PRO t$_2$ zu lesen]
          that the book$_{acc}$ no-one$_{nom}$ tried   has   to read
          'that no-one has tried to read the book.'

     b. dass sie   ihn$_2$ t$_1$ versucht [$_{CP1}$ PRO t$_2$ zu küssen]
          that she$_{nom}$ him$_{acc}$ tries   to kiss
          'that she tries to kiss him.'

     c. dass es$_2$ Fritz   ihr t$_1$ empfohlen   hat
          that it$_{acc}$ Fritz$_{nom}$ her$_{dat}$ recommended has
          [$_{CP1}$ PRO im   Zug   t$_2$ zu lesen]
          on-the train   to read
          'that Fritz recommended to her to read it on the train.'

As with restructuring infinitives in situ, this might initially be taken to suggest that extraposed restructuring infinitives in the third construction do not have CP status. But as before, there are conceptual and empirical arguments for the presence of a CP shell here. For instance, the third construction provides a C-licensed landing site (at the left edge of the embedded vP) for unstressed pronoun fronting, just like restructuring infinitives in situ do (cf. (19)); see (24) (where fronting of *mir*$_3$ into the matrix domain indicates transparency of the extraposed infinitive, and string-vacuous movement of *es*$_2$ indicates the presence of C as a licensor for unstressed pronoun fronting in the infinitive).

(24) dass sie   mir$_1$ schon letzte Woche versucht hat
      that she$_{nom}$ me$_{dat}$ already last   week   tried   has
      [$_{CP}$ es$_2$ PRO t$_1$ t$_2$ zu geben]
       it$_{acc}$ to give
      'that she tried to give it to me last week already.'

However, there are also differences between standard (i.e., pre-verbal) restructuring control infinitives and the third construction. In particular, there is Santorini & Kroch's (1991) observation that a negation showing up in the extraposed infinitive can never take wide scope; cf. (2-a), repeated here in (25) (with CP$_1$ replacing the original Γ$_1$ as the label of the infinitive, and some other information added).

(25) dass ich seinen neusten Roman$_2$ t$_1$ versucht habe
      that I   his   newest novel$_{acc}$ tried   have
      [$_{CP1}$ PRO nicht zu lesen t$_2$]
                not   to read
      'that I have tried not to read his newest novel.'(only narrow scope)

Thus, we end up with the paradox that extraposed infinitives in restructuring contexts are transparent for scrambling but not transparent for scope of sentential negation. This paradox arguably poses a non-trivial problem for standard approaches.[17] From the present perspective, a simple solution suggests itself: The C head of the extraposed infinitive in the third construction has more strength than the C head of a restructuring infinitive in situ but less strength than the C head of a non-restructuring infinitive (or a finite C). More specifically, I would like to suggest that the C head of an extraposed infinitive in the third construction has a weight of [0.7] (as opposed to [0.8] for a non-restructuring C and [0.6] for a regular restructuring C; cf. (11)).

    A first consequence of this weight assignment to non-finite C in the third construction is that it patterns with restructuring C as far as scrambling or unstressed pronoun fronting to the matrix domain is concerned, rather than with non-restructuring (or finite) C. Thus, the outcome of the competition in (26) parallels that of (18) (where the optimal output candidate violates AL by applying the intermediate movement step to SpecC required by the PIC), and not that of (16) (where the optimal output candidate violates MC by not carrying out movement); see (26).

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[17] One might think that *directionality* could be the relevant factor determining obligatorily narrow scope of negation in the third construction, especially since there is some evidence that pre- vs. postverbal position can play a role for scope assignment in German when focus particles are involved (see Bayer 1996). However, for the case at hand, this seems unlikely. As shown in (i), a universal quantifier embedded in an extraposed PP can easily take wide scope (as a matter of fact, wide scope of the universal quantifier produces the only reading that is compatible with world knowledge).

(i) dass der Polizist   eine Bombe   t$_1$ gefunden hat [$_{PP}$ hinter jedem Haus]
    that the policeman$_{nom}$ a bomb$_{acc}$ found   has   behind every house
    'that the policeman found a bomb behind every house.'

(26) *Object scrambling via extraposed infinitive CP in the third construction*:

I: $[_{CP}$ C$_{[0.7],[•scr•]:[0.2]}$ $[_{TP}$ DP$_{obj:[0.9]}$ $[_{T'}$ ... T]]]	MC	AL	*H*
	w = 2.0	w = 3.0	
O$_1$: $[_{CP}$ C$_{[0.7],[•scr•]:[0.2]}$ $[_{TP}$ DP$_{obj:[0.9]}$ $[_{T'}$ ... T]]]	−1.1		−2.2
☞O$_2$: $[_{CP}$ DP$_{obj:[0.9]}$ $[_{C'}$ C$_{[0.7],[•scr•]:[0.2]}$ $[_{TP}$ t$_{obj}$ $[_{T'}$ ... T]]]]		−0.7	−2.1

The AL violation incurred by DP movement to SpecC in O$_2$ is more severe in (26) (−2.1) than it was in the case of restructuring infinitives in situ in (18) (−1.8), but the harmony score is still better than the harmony score of the competing output O$_1$ where movement fails to apply, and MC (with weight 2.0) gets a combined −1.1 violation incurred by the [•scr•] feature ([0.2]) and the object DP ([0.9]), yielding a fatal −2.2 overall.

On the other hand, the larger weight of [0.7] for this type of non-finite C can be held responsible for differences to standard restructuring infinitives. First of all, suppose that CP extraposition in German targets the next higher CP domain (a right-peripheral specifier or adjunct) if extraction from the extraposed CP needs to take place.[18] This implies that in order to permit a combination of CP extraposition and extraction from CP, an infinitive must have sufficient weight to outweigh the AL violation automatically incurred by all movement across a finite C; as we have seen, the latter has a harmony score of −2.7. Assuming a feature [•ex•] involved in extraposition to have a strength of [0.7], it is correctly predicted that an infinitival CP with a C head with strength [0.7] can undergo extraposition to the next higher CP domain, in optimal violation of AL: If movement does not take place, the resulting MC violation leads to a harmony score of −2.8. All of this is shown in (27).

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18 See Müller (1998) for arguments to this effect. If there is no extraction from CP, extraposition can also target a lower position, and then participate in VP topicalization. This accounts for the contrast in (i-a) (without extraction from the extraposed infinitive) and (i-b) (without extraposition) vs. (i-c) (with extraction from the extraposed infinitive).

(i) a. $[_{VP3}$ t$_2$ Versucht $[_{CP2}$ dem Peter das Buch$_1$ zu geben]] hat sie nicht t$_3$
        Tried   the Peter$_{dat}$ the book$_{acc}$ to give   has she$_{nom}$ not
    'She has not tried to give Peter the book.'

  b. $[_{VP3}[_{CP2}$ Dem Peter t$_1$ zu geben] versucht] hat sie das Buch$_1$ nicht t$_3$
        The   Peter$_{dat}$ to give   tried   has she$_{nom}$ the book$_{acc}$ not
    'She has not tried to give Peter the book.

  c. ??$[_{VP3}$ t$_2$ Versucht $[_{CP2}$ dem Peter t$_1$ zu geben]] hat sie das Buch$_1$ nicht t$_3$
         Tried   the Peter$_{dat}$ to give has she$_{nom}$ the book$_{acc}$ not
    'She has not tried to give Peter the book.'

(27) *Infinitive extraposition in the third construction*:

I: $[_{CP}$ C$_{[0.9],[•ex•]:[0.7]}$ ... CP$_{[0.7]}$ V$_{restr}$]	MC w = 2.0	AL w = 3.0	*H*
O$_1$: $[_{CP}$ C$_{[0.9],[•ex•]:[0.7]}$ ... CP$_{[0.7]}$ V$_{restr}$]	−1.4		−2.8
☞O$_2$: $[_{CP}$ C$_{[0.9],[•ex•]:[0.7]}$ ... t$_{cp}$ V$_{restr}$ CP$_{[0.7]}$]		−0.9	−2.7

Under these assumptions, it is clear that if the infinitival CP has a smaller weight of [0.6], it can never be affected by extraposition to the CP domain – in this latter case, the harmony score of −2.6 amassed by the MC-violating output is better than the harmony score of the AL-violating candidate that applies extraposition (which continues to be −2.7).

Finally, the lack of wide scope for negation in the third construction (and the concurrent availability of wide scope for negation in regular, preverbal restructuring infinitives) can also be tied to the different weights ([0.7] vs. [0.6]). I assume that scope of negation is in general the consequence of an Agree relation between an abstract operator position high in the clause and an overt negative item, which is typically in a much lower position in German (see Stechow 1993 and Zeijlstra 2004, among others). Agree is subject to an Agree Condition (AC; see Heck & Müller 2013) that requires probe features ([*F*]) to participate in Agree with appropriate goal features ([F]). In the case at hand, there is a probe feature [*neg*] on the overt negation (*nicht* in (25)), and a goal feature [neg] in the left periphery of the matrix clause. Suppose furthermore that to bridge the distance in a local way that is compatible with the strict PIC employed here, Agree must take place cyclically (Legate 2005). Such cyclic Agree will then also give rise to an AL violation for every head that it involves on the path to the ultimate target position in the matrix clause.[19] On this basis, it can be concluded that the harmony score of an output that does not carry out cyclic Agree for a [*neg*] feature across a CP and thereby violates AC must be better than −2.1 (so as be optimal vis-à-vis the harmony score of −2.1 resulting from AL if cyclic Agree across C applies in the third construction), but worse than −1.8 (so as to be suboptimal vis-a-vis the harmony score of

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[19] Strictly speaking, given the definition of AL in (10), this presupposes that if there is a (cyclic) Agree dependency between [(*)neg(*)] on some head Y and [*neg*] on an item c-commanded by Y, the former feature must be *m-commanded* by Y to generate an AL violation. Depending on the exact nature of feature insertion in cyclic Agree contexts and the precise definition of m-command, this may either follow directly, or it may require a generalization of the concept of m-command (e.g., along the lines of Chomsky's 1995 notion of minimal residue).

−1.8 resulting from AL if cyclic Agree across C applies with regular restructuring infinitives). This result is achieved if, e.g., [*neg*] has a weight of [1.0], and AC has a weight of [2.0]. The competition underlying failed wide scope of negation in the third construction is illustrated in (28).

(28)   *Wide scope of negation in the third construction*:

I: $[_{CP} \, C_{[0.7]} \, ... \, [*neg*]{:}[1.0] \, ... \,]$	AC	AL	H
	w = 2.0	w = 3.0	
☞O_1: $[_{CP} \, C_{[0.7]} \, ... \, [*neg*]{:}[1.0] \, ... \,]$	−1.0		−2.0
O_2: $[_{CP} \, C_{[0.7]} \, [*neg*] \, ... \, [*neg*]{:}[1.0] \, ... \,]$		−0.7	−2.1

Thus, the PIC will block any non-local transmittance of [*neg*], and an Agree relation with the target position in the matrix clause cannot be established in the third construction. Of course, with a lower C weight of [0.6] (as in regular restructuring infinitives), the candidate that carries out (intermediate) cyclic Agree with the C head (as required by AC) becomes optimal: Now the violation of AL is less severe (yielding a harmony score of −1.8).[20]

6. Strength and Morphological Realization

In section 2 above, I concluded that strength is an abstract property of heads that can have two different consequences: First, it determines whether or not syntactic operations can apply, and second, it also determines post-syntactic morphological realization. In the present study of strength of C in German I have focussed on the former issue; to end this paper, let me make a few remarks on the latter one.

   In Lee (2018), it is argued that finite declarative C in English comes in two versions distinguished only by their strength. Strong C blocks *wh*-movement of subjects (but not of objects, which are themselves stronger than subjects); weak C does not. Transferring this analysis to the present

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[20] Ultimately, a bit more will have to be said. E.g., it is generally held that narrow scope of negation is in fact impossible in standard restructuring infinitives. This does not yet follow from the analysis; an obvious possibility here might be to assume that a certain strength of C is required to license an interpretable [neg] feature. In this context, it is worth pointing out that the present approach to scope of negation in terms of cyclic Agree is by far not the only one that can be entertained. One could, e.g., assume that AC-driven Agree does not obey the PIC (cf., e.g., Bošković 2007), and then let the strength differences of the two infinitival C heads (restructuring vs. third construction) interact with a violable intervention constraint.

approach in terms of MC and AL, this follows if weak C has a weight of [0.5] in English, strong C has a weight of [1.0], [•wh•] has a weight of [0.8], and subject and object DPs have weights of [0.4] and [0.8], respectively. Crucially, Lee (2018) shows that these different weight assignments to declarative finite C in English can also be assumed to govern post-syntactic morphological realization. A strong C:[1.0] gives rise to a severe (and fatal) violation of a constraint demanding vocabulary insertion if it is not post-syntactically realized by *that*; in contrast, with a weak C:[0.5], the violation of this constraint is not so severe anymore, and the violation of a Dep constraint prohibiting vocabulary insertion that is incurred by the presence of *that* becomes fatal. Thus, the complementizer-trace effect in (3-b) (vs. (3-a)) is derived without giving up the assumption that the morphological shape of C is determined only post-syntactically.

In the same way, the fact that finite declarative C can be morphologically realized by *dass* in German whereas the non-finite Cs of control infinitives are not realized by morphological exponents does not emerge as fully accidental under present assumptions: The former kind of C is stronger than the latter ones ([0.9] vs. [0.6], [0.7], [0.8]). Thus, whereas one might abstractly conceive of a variety of German where, e.g., Cs of non-restructuring infinitives are also overtly realized in some way whereas Cs of the third construction and restructuring infinitives are not, the prediction clearly is that it would ceteris paribus be impossible to have a variety of German where the Cs that are more transparent to movement are overtly realized, and Cs that are less transparent remain without morphological exponence. I take this to be a non-trivial and welcome result.

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On some postpositional elements in Danish[1]

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Abstract

This paper investigates the distribution of a number of postpositional elements in Danish. The main findings are the following:

(i)   Some postpositional constructions are used for abstract notions such as temporal relations rather than literal, spatial relations.

(ii) The head nouns of postpositional complements are often semantically bleached nouns such as *sted* 'place', *vej* 'street', *vegne* 'streets' (an archaic plural form of *vej*).

(iii) Some postpositional elements have the function of adding referents to or subtracting them from a set of referents.

(iv) There is not always free variation between the prepositional and postpositional construction. This is because there is often a semantic difference between the two constructions, and because the preposition and the postpositional element differ in what kinds of complement they can select.

1. Introduction

Given that Danish is a VO language, it is of no surprise that it is a prepositional language. There are, however, some elements which could be classified as postpositions or which have certain postpositional properties. A preposition occurs before its complement; a postposition occurs after it. In other words, postpositional and prepositional phrases presumably have the same hierarchical structure, but differ in their linearization.

This paper deals with elements that could be regarded as postpositions. Note I do not make the claim that they are in fact postpositions; rather my goal here is to bring some data to bear to point out that they might be analyzed as such.

In the Danish literature, only few remarks are made on postpositions. Hansen & Heltoft (2011: 37, 437) do not examine or discuss postpositions in any greater detail (apart from whether the genitive *-s* is an enclitic postposition). Similarly, neither Christensen & Christensen (2009) nor Diderichsen (1976) make any mention of the term 'postpositions', although Diderichsen does mention a number of fixed constructions that involve some kind of adpositional/adverbial/particle/adjectival element following the noun (Diderichsen 1976: 228). To my knowledge, apart from scattered remarks on postpositional constructions (Falk & Torp 1900: 313; Hansen 1967: III, 210, 213–214; Mikkelsen 1911: 370–371), no detailed description exists.

Two main aspects of these postpositional constructions will be examined. The first aspect is how **productive** these postpositional constructions are. This concerns the complement that can be selected by the postpositional element.[2] The second aspect is whether there is **free variation** between the prepositional and postpositional construction. This is relevant given the assumption that all postpositional elements are formally identical to their prepositional counterparts.[3] The elements I tested for postpositionhood

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[2] I refer to the constituent preceding the postpositional element as the complement of that element, although I do not necessarily claim that the postpositional element is indeed a postposition.

[3] If one accepts this assumption, that would leave potential postpositions that do not have a prepositional counterpart out of consideration. For instance, *rundt* 'around' in its typical use is a verb particle and not a preposition, i.e. it has no prepositional counterpart. But in *Jorden/verden rundt* 'all around the world', *rundt* might be a postposition, taking the preceding nominal as its complement.

Some properties of *rundt* suggest that it could be a postposition: For instance, *Jorden/verden + rundt* can satisfy the requirement that *bo* 'live' takes an adpositional phrase, see (i) and (ii), and due to the fact that it can modify nominals, just like other adpositional phrases, see (iii):

(i)   Nikolaj […] bor **verden   rundt**   på Airbnb[…]
      N.   lives world around on Airbnb
      'N. lives all around the world, using Airbnb'
      (https://www.euroman.dk/kultur/nikolaj-og-hans-kareste-bor-verden-rundt-pa-airbnb-vi-har-fundet-en-alternativ-made-at-leve-pa)

(ii) Alle   mine   venner bor **jord-en rundt**[]
      All   my   friends live Earth-the   around
      'All my friends live all over the world'
              (Oral data from a focus interview in Nielsen & Kristensen 2010: 28)

are assigned the category 'præposition' in *Retskrivningsordbogen* (Dansk Sprognævn 2012), the official spelling dictionary of Danish.

The data to be discussed are mainly from the Danish text corpus *KorpusDK* and from Google searches. In KorpusDK, I primarily used a code that searched for strings containing a noun followed by the postpositional element in question and by some punctuation character. This method is not bulletproof. On the one hand, it yielded many irrelevant results, and on the other hand, it did not extract all examples of postpositional constructions; more specifically, not all potential complement types would be extracted. Thus, various other codes were also used.

In the following, when relevant, I use the term P-ELEMENT to be neutral with respect to the categorial status of the element in question, including elements that may be particles.

2. The data and some preliminary analysis
2.1 Verb particle or postposition?
In order to render the postpositional status of a P-element plausible, cases of non-postpositional uses are to be excluded. One such case is that of verb particle constructions where the particle is formally identical to uncontroversial adpositions, such as *igennem* 'through':

(1) Han læste bog-en   igennem.
    He   read   book-the   through
    'He read through the book.'

This is a problem given that the object always precedes the particle in Danish (Diderichsen 1976: 184ff, 236ff; Vikner 2017). In order to distinguish between verb particle constructions and postpositional constructions, a number of tests may be conducted. It is important to keep in mind that the

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(iii) **Flygtningestrømme   verden   rundt**   taler   deres   barske   sprog
      Refugee.waves   world   around   *speak*   *their*   *harsh*   *language*
      om   en misbrugt frihed […].
      about   a misused   freedom
      'Refugee waves all over the world tell their own tale about a misused freedom [...].'
                                                                                    (KorpusDK)

Moreover, *Jorden*/*verden* can be regarded as the Ground element, which is cross-linguistically realized as the complement of the adposition (Svenonius 2007). If the above considerations are on the right track, *Jorden*/*verden rundt* is possibly a postpositional phrase.

tests may falsify or render either structure more probable, but logically, the falsification of either structure does not imply that the other is present.

One way of distinguishing particles and postpositions would be to interpolate some element between the nominal and the P-element (without fronting the nominal). In verb particle constructions, manner adverbials may intervene between the nominal and the particle, as pointed out in recent works couched in the Diderichsen tradition in Danish linguistics (Heltoft 1992: 33–35 and Jørgensen 2014: 98–99). For instance, *ud* is uncontroversially a particle, and an adverbial may therefore intervene between the nominal and the particle:

(2) Han   smed   Peter   **hurtigt** ud.
    He   *threw*   *P.*   *quickly out*
    'He quickly threw P. out.'

Assuming that postpositions do not strand without fronting of the complement, parallel to **pre**position stranding, nothing can intervene between the complement and the postposition. If the test of inserting an adverbial yields a grammatical result, the P-element in question is most likely not a postposition. Thus, *igennem* in (1) is most likely not a postposition:

(3) Han   læste   bog-en   **hurtigt**   igennem.
    He   *read*   *book-the* *quickly*   *through*
    'He quickly read through the book.'

Contrast this with (4), where an adverbial cannot intervene:

(4) * Hun   sov   hele   forestilling-en   **tungt**   igennem.
     She   *slept* *whole* *play-the*   *deeply*   *through*
     'She slept deeply through the whole play.'

This indicates that *igennem* is plausibly not a verb particle in (4).

Another way of distinguishing particles and adpositions is to test for constituency. It is well-known that a preposition and its complement conform to constituency tests, whereas the object and the particle do not (Svenonius 2003). Assuming that prepositions and postpositions behave alike, the topicalization test in (5) and (6) indicates that *igennem* in (1) and (5) is not a postposition, whereas it is not a particle in (4) and (6).

(5) * Bog-en   igennem   læste   han.
       Book-the   *through*   *read*   *he*

(6)   Hele   forestilling-en   igennem   sov   hun.
       Whole   *play-the*   *through*   *slept* *she*

It is, however, not always a trivial matter to distinguish verb particles from postpositions.[4] In this paper, we will see both more convincing as well as doubtful cases of what seem to be postpositions.

2.2 Postpositional P-elements and their distribution

In this subsection I show the distribution of a number of P-elements that exhibit postpositional properties. The following division of P-elements is based on their formal properties, i.e. being prefixed with an *i-* (Section 2.2.1), as well as their semantics, i.e. adding or subtracting one or more referents to/from a set of referents (Section 2.2.2). Moreover, a group of P-elements do not belong to either of those groups (Section 2.2.3).

2.2.1 *I*-prefixed P-elements

In Nguyen (2019), I discuss a group of P-elements that are near-synonymous, at least when used as prepositions. They can be divided into *i*-prefixed P-elements and non-*i*-prefixed elements:[5]

Non-*i*-prefixed P-elements	*i*-prefixed P-elements
Blandt 'among'	*Iblandt* 'among'
Gennem 'through'	*Igennem* 'through'
Mellem 'between'/'among'	*Imellem* 'between'/'among'
Mod 'toward'/'against'	*Imod* 'toward'/'against'

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[4] In particular, the P-elements *nær* 'near' and *foruden* 'without' are difficult to analyze, and I have to leave them out of the discussion. Likewise, the P-element *inklusive* 'including' is not discussed either. When it follows a pronoun, the pronoun can either be in the Nominative or the Oblique case. In the KorpusDK data, it seems that the Nominative case is used when the pronoun is linked to the subject, whereas the Oblique case can be used when the pronoun is linked to any syntactic function.

[5] The *i*-prefixed P-elements seem to be the result of univerbation processes, i.e. the diachronic formation of one element out of more elements. Thus, diachronically, these P-elements (maybe except for *igennem*) consist of a preposition *i* plus one or more elements, see *Den Danske Ordbog* 'The Danish Dictionary'.

The members of both groups can be used prepositionally, but only the
i-prefixed P-elements can be used postpositionally (see also Hansen 1967,
III: 213–214), although I found no convincing cases of postpositional uses
of *iblandt* and *imod*.

2.2.1.1 *Igennem* 'through'

The complement of postpositional *igennem* is mostly headed by nouns
which denote a time span or have a duration (as noted by Falk & Torp
1900: 313). For instance, a book has a duration in the sense that it has a plot
with a certain time frame, see (7), and a night lasts an unspecified number
of hours, see (8), etc. The complement also often contains the adjective
hele 'whole', as in (9).

(7) […] havde han ikke ladet hende optræde, som   hun   gør
       had he   not let   her   appear as   she   does
       hele bog-en   igennem.
       whole book-the through
   '… would he not have let her appear, as she does all the way through
   the book.'

(8) […] ved at opholde sig i samme   seng **en nat   igennem**.
       by   to stay   REFL in same   bed   a night through
   'by staying in the same bed throughout a whole night.'

(9) […] at   selskab-et   […] giver os ret **hele vej-en   igennem**.
       that company-the […] give us right whole street-the through
   'that the company agrees with us all the way through.' (i.e. 'through-
   out all this time')

(10) […] mange nye fisk,   der   vil   stå   ind   fra
        many   new fish   that   will   stand   in   from
       Østersøen   **sommer-en igennem**.
       The.North.Sea   summer-the through
   'many new fish that will come in from The North Sea throughout the
   summer.'

                                                  (- are from KorpusDK)

In (9), *vejen* 'the street' indicates a time span or a process, throughout which the given event takes place. It is only when *vejen* precedes *igennem* that it is used in this way. If *vejen* follows *igennem*, it cannot mean 'process' or denote a time span. It can only mean 'street':

(11) **#/*** Hun kede-de   sig   **igennem hele   vej-en**
         She   bore-PAST REFL   through   whole   street-the
    Intended: 'She was bored all the way through/throughout the whole time.'

The prepositional counterparts of (8) and (10) are slightly degraded, whereas the prepositional counterpart of (7) is grammatical (it is not clear to me whether there is a semantic difference between (7) and (14)):

(12) ? […] ved at opholde sig   i   samme seng **igennem en nat**.
         by   to stay   REFL in   same   bed   through   a   night
   'by staying in the same bed throughout a whole night.'

(13) ? […] mange nye fisk, der   vil   stå   ind   fra
         many   new fish   that   will   stand in   from
         Østersøen   **igennem sommer-en**.
         The.North.Sea   through   summer-the
   'many new fish that will come in from The North Sea throughout the summer.'

(14) […] havde han ikke   ladet hende   optræde, som hun   gør
         had he   not   let   her   appear   as   she   does
         igennem   hele   bog-en.
         through   whole   book-the

(Compare (12) to (8), (13) to (10) and (14) to (7).) In any case, there is not always free variation between the prepositional and postpositional construction.

2.2.1.2 *Imellem* 'among'/'between'

The complement of postpositional *imellem* can be realized as a regular nominal (15) as well as a pronoun (16) (the latter cannot be the complement of postpositional *igennem*):

(15) […] det   kommende økonomiske   samarbejde, **DDR**
   the   upcoming   economic   cooperation East.Germany
   og   Vesttyskland   imellem.
   and   West.Germany   between
 'the upcoming economic cooperation between East Germany and
 West Germany.'

(16) […] at følge embedsmænd-ene-s   forklaringer   og
   to follow officials-the.PL-GEN   explanations   and
   de modsigelser,   som kommer til **udtryk   dem imellem.**
   the contradictions that come   to expression them between
 'to follow the officials' explanations and the contradictions that come
 to light between them.'

                (KorpusDK)

Both (15) and (16) allow for prepositional use of *imellem*:

(17) […] det kommende økonomiske samarbejde   **DDR**
   the   upcoming   economic   cooperation East.Germany
   og Vesttyskland   imellem.
   and West.Germany   between
 'the upcoming economic cooperation between East Germany and
 West Germany.'

(18) […] at følge embedsmændenes   forklaringer   og   de
   to follow officials-the.PL-GEN   explanations   and   the
   modsigelser,   som kommer **til   udtryk   imellem dem.**
   contradictions   that come   to expression between them
 'to follow the officials' explanations and the contradictions that come
 to light between them.'

Imellem in its **pre**positional use means either 'among' or 'between', in
which case it can denote either a spatial or an abstract relation between a
number of referents. The **post**positional construction of *imellem*, however,
can typically only denote some kind of personal relationship between the
referents. In this case, *imellem* takes animate referents as its complement,
metonymic extensions included. Thus, inanimate referents, such as trees,
cannot be realized as the complement of postpositional *imellem* (unless the
trees are endowed with some sort of animacy):

(19) * træer-ne   imellem
        trees-the   between/among
     'among/between the trees'

(20) imellem   træer-ne
     between   trees-the
     'between the trees'

The asymmetry in semantics between the prepositional and postpositional constructions means that they are not interchangeable.

2.2.2 P-elements which add or subtract referents
The common denominator of this category of postpositional P-elements is that they presuppose a set of referents. These P-elements add referents to or subtract them from this set. This should become clear in the following.

2.2.2.1 *Fraset* 'except for'
I found one postpositional example of *fraset*, which is the perfect participle form of the archaic verb *frase*. In this example, *fraset* excludes the genre *kirkemusikken* 'the church music' from a set of music genres:

(21) […]   den   myreflittige […]   komponist,
                the   hardworking   componist
        der skrev i alle genrer, **kirkemusikk-en   fraset**.
        that wrote in all   genrer, church.music-the   except.for
     'the hardworking componist who wrote in all genres, except for the church music genre.'

                                                        (KorpusDK)

Prepositional *fraset* can take nominals (22) as well as clauses (23). Postpositional *fraset* can only take nominals, see (21) above, but not clauses, see (24) below.

(22) Alle,   **fraset   professionelle   syltetøj-s-fabrikanter**,
     Everybody, except.for professional   jam-LINK-manufacturers
     kan   således   deltage.
     can   therefore   participate
     'Everybody, except for professional jam manufactures, can therefore participate.'

(23) Men **fraset,   at   de nærmeste medarbejdere kun   har**
   But   except.for that the closest   co-workers   only have
   positivt at sige om   den 58-årige   […]   er der […]
   positive to say about the 58.year.old   is there
   'But disregarding the fact that the closest co-workers only have posi-
   tive things to say about the 58-year old, there is …'

   ((22) and (23) are from KorpusDK)

(24) * Men **at   de nærmeste medarbejdere kun har   positivt**
   But that the closest   co-workers   only have positive
   at sige om   den 58-årige [...] fraset   er der [...]
   to say about the 58.year.old   except.for is there
   Intended: 'But disregarding the fact that the closest co-workers only
   have positive things to say about the 58-year old, there is …'

2.2.2.2 *Med* 'with'/'including'

Med 'with'/'including' can take nominals when used postpositionally, and
the whole construction, which is quite archaic, is almost always prefaced
with *og* 'and':

(25) Og   Herren-s   ild   […]   fortærer   ikke blot   ofr-et,
   And   Lord-GEN fire   consumes not just   offering-the
   men **altr-et   med.**
   but altar-the including
   'And the fire of the Lord not only consumes the offering, but the altar
   too.'

(26) […] hold øje med døtre-ne,   ja   og   **vor hustru med**.
   keep eye with daughters-the, yes, and our wives   including
   'keep an eye on the daughters, yes, and keep an eye on our wives as
   well.'

   (KorpusDK)

Note that an elliptical analysis in which *med* takes a deleted complement is
not tenable. This is because the non-elided source is difficult to reconstruct
without a change of meaning. In (27), the alleged deleted complement is
realized overtly:

(27) # Hold øje med vor   hustru med   døtre-ne   /   dem.
       Keep eye on   our   wife   with   daughters-the /   them
       'Keep an eye on our wife with the daughters/them.'

The difference between (25) and (27) is that in (25), it is *vor hustru* that is added as a referent, whereas it is *døtrene* or *dem* that is added in (27). The fact that it is hard to reconstruct a well-formed non-elided source renders the elliptical analysis less plausible.

     With respect to *med* in its prepositional use, it usually means 'with', e.g. *Jeg danser **med ham*** 'I am dancing with him'. This does not correspond to its meaning when used postpositionally. Thus, the prepositional and postpositional construction are not interchangeable, compare (25) and (28):

(28) #/* Og Herren-s   ild […]   fortærer   ikke blot   ofr-et,
        And Lord-GEN fire   consumes   not   just   offering-the
        men **med   altr-et**.
        but with   altar-the
        Intended: 'And the fire of the Lord not only consumes the offering, but the altar too.'

2.2.2.3 *Undtaget* 'except for'

Undtagen 'except for', but not *undtaget*, is categorized as a preposition in *Retskrivningsordbogen*. One difference between *undtagen* and *undtaget* is that the former is identical to the supine form of the verb *undtage* 'except', whereas the latter is identical to the perfect participle. Assuming that *undtagen* is correctly classified as a preposition, there is no a priori reason why *undtaget* cannot be an adposition.

     I found some postpositional instances of only *undtaget*, not of *undtagen*. Two of these are given below:

(29) […] Kamal Nath meddeler, at   det   gør
       KN   reports   that DEM   do
       u-landene […]   også,
       developing.countries-the also,
       de   to   nævnte   u-lande   undtaget.
       the   two mentioned developing.countries-the except.for.
      'KN informs that so do the developing countries, except for the two mentioned developing countries.'

<div align="right">(KorpusDK)</div>

(30) Der   er totalt konsensus (**mig   undtaget**) om,   at   […]
     There is total consensus   me   except.for PREP   that
     'There is a consensus (which does not include me) that …'
     (http://mitsaakaldtlesbiskeliv.dk/author/admin/page/14/)

Again, an elliptical analysis is not plausible, for the same reasons as for
med. It is difficult to reconstruct the unelided source; see the attempts of
reconstructing the non-elided source of *mig undtaget* in (30):

(31) * Mig   blev   undtaget.
        Me   was   exempted
        Intended: 'I was exempted.'

(32) Jeg   er   undtaget.
     I   am   exempted
     'I was/have been exempted.'

(33) # Nogen   har   undtaget   mig   fra   konsensus.
        Somebody   has   exempted   me   from   consensus

In (31), the alleged unelided source is ungrammatical. In (32), the pronoun
is not in the same case as in (30). As for (33), the both the meaning and
the word order deviate from that of (30): Semantically an action is implied
in (33), whereas no action is implied in (30). In terms of word order, the
pronoun precedes *undtaget* in (30) but follows it in (33). For these reasons,
an ellipsis analysis is less plausible.
    Undtaget can also be used prepositionally, but there does not seem to
be any semantic difference between the prepositional and postpositional
construction. When used prepositionally, it can take prepositional phrases
as complements in addition to nominals:

(34) Alle   var   fyret [...], **undtaget   fire   mand** […].
     Everybody   was   fired,   except.for   four   man
     'Everybody was fired, except for four men.'

(35) Overalt   blev jeg berørt,   **undtaget   i   mit   skød**.
     Everywhere   was I   touched,   except.for   in   my   lap
     'I was being touched everywhere, apart from in my lap.'
                                                              (KorpusDK)

One difference between *undtaget* and *fra-set*, diachronically 'from-seen', is that the verbs from which they are formed, are not equally productive: The verb *undtage* 'exempt' is still in use, whereas the verb *frase* 'disregard' is no longer in use. One could imagine *undtage(n)* developing in the same direction as *frase* to be devoid of verbal content.

It is an open question whether the constructions involving *undtaget* and *fraset* are postpositional phrases or absolute participial constructions. First, Kobayashi (2012: 25–28) argues that verbs, and thus participles, do not have to be present in English absolute constructions. This leaves open the option of analyzing all constructions involving P-elements in this section as absolute constructions. Second, Kobayashi rejects both the postpositional phrase analysis and the absolute analysis. Here I take no stance on this question.

2.2.3 Other P-elements
2.2.3.1 *Fra* 'from'

Postpositional *fra* is used with *sted* 'place', *vegne* 'streets' and *vej* 'street', where *vegne* is an archaic plural form of *vej*:[6]

(36) Der   lugter   af mad **et   eller   andet   sted   fra**.
    EXPL   smells   of food one or   another place   from
    'There is a smell of food coming from somewhere.'

(37) […] der   er   bud   efter hende **alle vegne   fra.**
    there be.PRES call after her   all   streets from
    'There are many people who want to contact her.'

(38) Lige   da   hun   var   trådt   ind   af   dør-en,
    Right   when   she   was   stepped into of   door-the,
    kom   overlæge-n   styrtende **den anden vej   fra**.
    came   chief.surgeon-the running   the other way   from
    'Just as she came inside by the door, the chief surgeon came from the other direction.'

                     ((36)–(38) are from KorpusDK)

There seems to be a slight meaning difference between the prepositional and postpositional use. Compare the translations of (36) and (39):

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[6] Interestingly, these nouns can be used in nominal adverbials without being introduced by prepositions (Larson 1985; Nguyen 2018). In English, such an instance would be *He went that way*.

(39) ? Der lugter af mad **fra et eller andet sted**.
  'there is a smell of food coming from some other place (than this place).'

Focusing on the P-complement headed by *sted*, it is indefinite in (36) and (39). If it is definite, the complement can most often only follow *fra*:

(40) * Jeg kommer **det   smukkeste   sted   fra**
     I   come   the   most.beautiful   place   from

(41) Jeg kommer **fra det smukkeste sted.**
  'I am from the most beautiful place.'

2.2.3.2 *Over* 'over'/'throughout'/'all over'

Postpositional *over* is primarily used with various time units, e.g. *sommeren/vinteren over* 'throughout the summer/winter', *weekenden over* 'throughout the weekend', *julen/påsken over* 'throughout Christmas/ Easter' and *natten over* 'overnight'. It is also used in *kloden over* 'all over the world' and its synonymous variants *verden/Jorden over*. See examples below:

(42) […] tunneler,   der   er   bygget **klod-en**   **over**.
     tunnels   that   are   built   world-the   throughout
  'tunnels that are built all over the world.'

(43) Læg   et   stykke   klipfisk […] i vand   **natt-en**   **over**.
     Put   a   piece   clipfish   in water   night-the   over
  'Put a piece of clipfish into some water, and leave it overnight.'

(44) […] og   så   ligger sne-en   jo   **jul-en**   **over**.
     and   then   lies   snow-the PART   Christmas-the   over
  'and then the snow will stay over the course of the Christmas days.'
                                                          (KorpusDK)

In the postpositional construction, the given event takes place throughout the whole given time span, see (45). This is not implied in the prepositional construction (46):

(45)   Han   var   hjemme   **jul-en**   **over**.
        He   was   home   Christmas-the   over
     'He was at home for the whole Christmas time.'

(46) Han var hjemme **over jul-en**.

'He was at some point home during Christmas time.' (not necessarily for the whole Christmas time)

Julen over presupposes an event that takes place over the whole given period of time, whereas *over julen* does not presuppose this. In this light, it is of no surprise that postpositional *igennem* 'through' (Section 2.2.1.1) is often combined with a complement containing the element *hele* 'whole', since the postpositional construction presupposes that the given event lasts throughout the whole denoted time span.

The semantic contrast between the prepositional and the postpositional construction seems to be similar to that of adverbials such as *hele mandagen* 'all day Monday' and *om mandagen* 'on Monday', where the former presupposes that the given event takes place throughout Monday, and the latter presupposes that the event takes place on Monday:

(47) Han   var   hjemme   hele   mandag-en.
     He   was   home   whole   Monday-the
     'He was at home all day Monday.'

(48) Han   var   hjemme   om   mandag-en.
     He   was   home   on   Monday-the
     'He was at home on Monday.' (not necessarily for the whole day)

Note that the same semantic notion also applies to spatial relations, e.g. *Jorden over*, which means something like 'all over the world': Whatever is predicated applies to the **whole** world.

3. Summary

I have examined a number of elements which could be regarded as postpositions. The following patterns can be observed:

i.   In some cases, the postpositional constructions are used for abstract notions such as temporal relations rather than spatial relations.
ii. The head noun of the postpositional complement is often semantically bleached nouns such as *sted*, *vej*, *vegne* (an archaic plural form of *vej*).
iii. The postpositional elements *med*, *fraset* and *undtaget* have the function of adding referents or subtracting them from a set of referents.
iv. There is not always free variation between the prepositional and postpositional construction. This is because there is a semantic difference

between the two constructions and because the P-element selects different types of complements, depending on its position.

The last point raises the question whether the differences between pre- and postpositional use is related to similar phenomena, such as that of attributive adjectives in Romance languages, where the meaning depends on the order of the adjective and the noun.

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On the role of syncretism in finiteness marking for verb second in diachrony and acquisition[1]

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Abstract

This paper explores the long-debated interaction between inflectional morphology and syntactic verb movement, more specifically the role of morphological finiteness marking in the presence vs. absence of V2-structures in English, Danish and French. It will be argued that the cross-linguistic variation found in these languages may be accounted for by viewing finiteness as a feature that cuts across tense, mood and agreement, following Eide (2016). Whereas the productive morphological rule generating regular verb forms in English collapses the finiteness distinction, this type of syncretism is not found in Danish and French, and this appears to have major consequences in diachrony, language variation and language acquisition.

1. Introduction

In traditional generative accounts of verb placement, syntacticians have argued that morphological markings on the finite verb are tightly connected to its ability to undergo syntactic movement operations. In one of the strongest instantiations of the Rich Agreement Hypothesis, a causal and bidirectional relation between agreement marking and V°-to-I°-movement is hypothesized (Rohrbacher 1999). In a similar vein, Vikner (1997: 190) argues that "there is a link between the 'strength' of verbal inflectional morphology and the obligatory movement of the finite verb

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to I°'" and that "[a]n SVO-language has V°-to-I° movement [iff] person morphology is found in all tenses" (see also Bobaljik & Thrainsson 1998). However, in more recent years, the Rich Agreement Hypothesis has been challenged on the basis of empirical data from languages, such as Icelandic and Älvdalen Swedish, which appear to be exceptions to the proposed generalization (e.g. Wiklund et al. 2007 and Garbacz 2010). In addition, as suggested by the mutual exclusivity between V°-to-I°-movement and Verb Second (henceforth V2), the trigger for the latter appears to hinge upon an independent factor (see e.g. Vikner 1995; Rizzi 1996).

   Through a comparative analysis of morphological differences between English, Danish and French, this paper will argue that V2-movement is triggered by a morphological finiteness feature in C°, which is tied to synchronic and diachronic syntactic verb movement patterns. It will be argued that e.g. V2 phenomena in diachrony, language variation, and language acquisition in these three languages cannot be accounted for with reference to tense, mood or agreement markings, not least due to the fact that Danish and English are quite parallel in terms of the morphological leveling that has taken place in the verb inflectional paradigms. Instead, following Eide (2016), it will be proposed that the loss of a productive morphological *finiteness* distinction due to syncretism is at the heart of (i) the loss of V2 in English, (ii) the collapse of preterit and participle forms in English varieties, and (iii) the fact that, unlike their French and Danish peers, English-speaking children produce non-finite *wh*-questions around the age of two. The motivation for the claim that morphological finiteness (i.e. the distinction encoding a paradigmatic opposition between overtly finite and non-finite forms in Danish and French, but not in English) plays a major role in the synchronic dimension is thus offered (sections 2.1-2.3), before the focus turns to hypothesized corollaries in diachrony (section 2.4), language variation (section 2.5) and language acquisition (section 3).

1.1 V°-to-I°-movement
Modern varieties of English, Danish and French differ in terms of verb movement in two major respects: Presence versus absence of V°-to-I°-movement in embedded clauses on the one hand and V°-I°-C°-movement in main clauses on the other. The former type of movement is said to have taken place when the finite verb (believed to be base-generated in V°) appears to the left of a sentence-medial adverbial or negation, as in French main and embedded clauses, e.g. (1a). English and Danish, on the

other hand, are not thought to have V°-to-I°-movement, (1b) and (1c), in embedded clauses, as the finite main verb stays to the right of the sentence-medial adverbial:

(1) a. **French**
Que Pierre *souvent mange / mange souvent
That Pierre often   eats / eats   often

la   même chose au déjeuner (ne   surprend plus
the same thing at lunch   NEG surprises more

personne).
no.one
'That Pierre often eats the same thing at lunch (no longer surprises anyone).'

b. **English**
That Peter often eats/*eats often the same thing at lunch (no longer surprises anyone).

c. **Danish**
At Sten   ofte spiser / *spiser ofte
That Sten   often eats / eats   often

det   samme til frokost (overrasker ikke længere nogen).
the same at lunch   surprises   not longer   anyone
'That Sten often eats the same thing at lunch (no longer surprises anyone).'

While Present-Day Danish (PDD) and Present-Day English (PDE) are assumed no longer to have V°-to-I°-movement in embedded clauses, they both did at earlier stages, cf. examples (2) and (3), but by the end of the 1500s, this type of verb movement was no longer required, (4) and (5):

(2) **Middle Danish** (Uldaler & Wellejus 1968: 54, cited by
Vikner 2004: 384)
tha   bøtæ han bondæn   tolf   øræ foræ
then pays he peasant-DEF twelve øre therefore

um thrællæn   **takær ey**   atær gen
if   servant.DEF takes   not back again
'Then he pays the peasant twelve øre (≈ pennies) if the servant does not fight back'
(c. 1300, *Valdemars sjællandske lov, yngre redaktion,* ch. 86)

(3)   **Middle English** (Davis 1971: 164)
…and he swore   that he **talkyd neuer** wyth no   man
…and he swore   that he talked never with no   man
(1460, William Paston I, *Letter to John Paston I*)

(4)   **Early Modern Danish** (Ruus et al. 2001: 215, cited by
Vikner 2004: 384)
Som en Spyflue **icke springer** vdi   den gryde
As   a blowfly   not   jumps   into the pot

som er hed, men   flyer derfra
that is hot but   flees therefrom
'As a blowfly does not jump into the pot that is hot, but flees from there'
(1572, Niels Hemmingsen, *Om Ecteskab*)

(5)   **Early Modern English** (Roberts 2007: 353)
Or if there were, it **not belongs** to you
(1600, William Shakespeare, *Henry IV,* IV, i, 98)

Arguing for a version of the Rich Agreement Hypothesis, Vikner (1997, 1999, inter alia) suggests that V°-to-I° movement is connected to person agreement in all tenses, cross-linguistically. In Middle Danish, the plural ending *-æ* was syncretic with the infinitive, while the singular, *-ær* (cf. (2) above), had a distinct morphological suffix until the latter generalized to the plural (Vikner 1997: 194) and simply became a morphological marker for tense, or, crucially for the present purposes, *finiteness*. According to Bertelsen (1905: 95-97, 171-172), the loss of person agreement on regular verbs happened already around 1350 (see Vikner 1997 for more details), but the erosion was presumably not completed for irregular verbs until around the transition between Late Middle Danish and Early Modern Danish, i.e. circa 1500 (Brøndum-Nielsen 1974: 277). Similarly, Roberts

(1993: 302) asserts that English lost V°-to-I° movement "around 1575", while the Early Modern English inflectional system had taken over at the beginning of the 16th century.

These data thus suggest that morphological leveling preceded, and may have triggered, a syntactic change in the option of V°-to-I° movement in Danish and English. French still has distinctions in person agreement in all tenses and the fact that this language has retained V°-to-I° movement is thus predicted by the account in Vikner (1997, 1999). However, verb movement in main clauses in Danish, English and French cannot be explained with reference to person agreement distinctions in all tenses, as present-day varieties of French and English pattern together (and counter to Danish) in this instance, as we will see now.

1.2 Verb Second (V2)
Unlike in PDE, lexical verbs were able to move out of VP in Old English, (7), and Middle English, (8). In fact, they were able to move all the way to C° in declarative main clauses, as was the case in Middle French, (6). This syntactic verb movement operation still applies in main clauses in Danish, (9):

(6)   **Middle French** (Lemieux & Dupuis 1995: 81)
       [Longtemps]   **fu** ly   roys   Ellnas en la   Montaigne
       [For a long time] was the king   Elinas on the mountain
       'King Elinas was on the mountain for a long time'
       (ca. 1390, Jean d'Arras, *Mélusine*, p. 14)

(7)   **Old English**
       [Þas ðreo ðing]   **forgifð** God   his   gecorenum
       These three things gives   God   his   chosen
       'God gives these three things to his chosen people'
       (circa late 10th century, OED: ÆCHom. I 18.250.12)

(8)   **Middle English**
       [Yet] **saw** I nevere, by my fader   kyn…
       Yet   saw I never,   by my father's kin…
       (1380, Geoffrey Chaucer, *The Reeve's Tale*, line 184)

(9)   **Present-Day Danish**
       [Den her   sofa] **er** der   ingen,   der   kan få   mig ud af.
       This here sofa is there nobody who can get me out of
       'Nobody's going to get me out of this sofa.'

This phenomenon is known as Verb Second (V2), because the finite verb is
found in the second position (i.e. as the second constituent) of the clause,
as the result of V°-I°-C°-movement (see Schwartz & Vikner 1996). Even
though Danish no longer has V°-to-I° movement in embedded clauses, the
finite verb systematically undergoes V°-I°-C°-movement in declarative
main clauses, cf. (9), unlike in English and French. The latter two languages
no longer have generalized V2, but rather so-called "residual V2" (Rizzi
1996), as a finite verb moves to C° in questions, inverting with the subject
in IP-Spec, as in (10):

(10)   a. **French**
          [Quel   fromage] **a**-t-il   mangé? / [Que] **mange**-t-il?
          Which cheese   has-Ø-he eaten?   / What eats-Ø-he?

       b. **English**
          [Which cheese] **has** he eaten? /[What] **does** he eat?

       c. **Danish**
          [Hvaffor'n   ost]   **har** han spist? / [Hvad] **spiser** han?
          What.for.one cheese has he eaten? / What   eats   he?

McWhorter (2005: 287) asserts that there appears to be a general consensus
that V2 was a Proto-Germanic feature. Generalized V2 eroded around the
15th century in English (Roberts 2007: 58) and the 16th century in French
(Roberts 2007: 331; Yang 2000), when the V2 cue $[_{CP}$ XP $[_{C°}$ V]] (cf.
Lightfoot 2006) became facultative for children acquiring language. This
paper will argue that the loss of V2 happened for different reasons in
English and French, but that changes in verb morphology was ultimately
the trigger in both instances. Given that the timing of the loss of generalized
V2 in English appears to roughly coincide with the demise of V°-to-I°

movement, one might *prima facie* assume that the same trigger may be at the root of these changes in the recorded history of English. However, this paper will argue that while distinctions in agreement morphology may well be at the heart of V°-to-I° movement phenomena, V2 is tied to the notion of morphological finiteness, which will now be outlined.

2. The interaction between morphology and syntactic movement

Lasser (1997: 77) proposed the term M(orphological)-finiteness as a means of emphasizing the morphosyntactic nature of finiteness, i.e. "the overt form that finiteness takes", as a contrast to the semantico-pragmatic, "invisible function that finiteness serves". This paper follows Eide's (2016) observation that while PDE still marks finiteness morphologically on auxiliaries, it no longer productively applies the finiteness distinction on lexical verbs, and relates it to specific syntactic traits – more specifically, to differences in patterns of verb movement to C° between English, Danish, and French.

2.1 Morphological finiteness

Traditionally, finiteness has been thought of as tense and agreement, but this paper will follow Eide (2016: 149) in *not* considering agreement part of finiteness in the Germanic languages. In general, there has been an impoverishment in the inflectional paradigms of English and Danish (and, to a lesser extent, French), as specific morphosyntactic features have been deleted, but not in parallel fashion: Even though the inflectional paradigm of Danish verbs, in comparison to that of e.g. French (see Vikner 1997 for details), is poor in terms of person and number agreement, given that there is no morphological marking on the verb distinguishing these features, the verb forms are still overtly finite in Danish and the other Mainland Scandinavian languages, cf. Table 1 below. The situation is quite different in English where "*all* distinctions […] have been declining for the past thousand years" (Pinker 2000: 87). In OE and ME, however, any verb form still productively encoded [± Past] and [± Finite] morphologically, as in Present-Day Danish:

+Past Present-Day English:	**Preterit/Participle:** *helped, healed*
- Past Present-Day English:	**Present/Infinitive:** *help, heal*

Table 2: The collapsed finiteness paradigm in PDE

Even though they are not morphologically specified for finiteness, English main verbs can still encode the logophoric anchoring of the clause when they are the structurally highest verb (Eide 2016: 148-149).

The English auxiliaries are more complex: Modals and dummy *do* only occur in finite form, *be* has a morphological finiteness distinction, in contrast to *have*, which patterns with weak verbs (Eide 2016: 150). This fundamental difference in M-finiteness may have consequences for verb movement in PDE, as we will see next.

2.2 Moving auxiliaries and main verbs

Whereas verb movement ability is not tied to the status of a verb as either auxiliary or main verb in Danish and French (which might be related to a more or less uniform inflectional paradigm across these verb types), PDE has a split between auxiliaries on the one hand and main verbs on the other: Only finite auxiliaries can move out of V° in English, aside from main verb *be.* This exception cannot be explained with reference to morphology, as the inflectional paradigm (both in terms of agreement and M-finiteness) is identical for auxiliary *be* and main verb *be.* However, main verb *be* may be starting to follow in the way of the language change that main verb *have* has undergone in Standard English in terms of movement abilities (although there may be English variety differences): Searching for the string [I just was] in an exploratory sampling in the *Corpus of Contemporary American English* (COCA) and the *British National Corpus* (BNC) yielded 570 tokens in COCA (compared to 9382 tokens for the string [I was just]), and 23 in BNC (where [I was just] returned 1093 hits). This tells us that finite *be* may occur to the right of a sentence-medial adverb, presumably in V°, although it is far more frequently found to the left of "just", i.e. in I°. More interesting, however, is the distribution of auxiliary *be* and main verb *be* in the two strings (after having filtered out false starts, pauses, etc.):

BNC	Main verb *be*	Auxiliary *be*
[I just was]	55% (12/22)	45% (10/22)
[I was just]	24% (242/1010)	76% (768/1010)

Table 3: Distribution in BNC of main verb *be* and auxiliary *be* in V° and I°.

COCA	Main verb *be*	Auxiliary *be*
[I just was]	59% (325/555)	41% (230/555)

Table 4: Distribution in COCA of main verb *be* and auxiliary *be* in V°.

Looking exclusively at the results in BNC, 76% of the tokens with the string [I was just] represented auxiliary *be*, whereas 24% had main verb *be*, which may suggest that auxiliary *be* is more frequent than main verb *be* overall. This would not be surprising, given that it is used for both the progressive aspect and the passive voice. However, the majority of the hits for [I just was] involved main verb *be* (55% in BNC, and 59% in COCA). Given the size of the sample, this may just be a coincidence. However, future research of a more rigorous nature may reveal whether these data alternatively signal that that main verb *be* is more inclined to stay in V° than auxiliary *be*, in which case we could be seeing the very beginning of a change in the syntactic abilities of main verb *be*. This would presumably also spill over into its ability to move to C° in V2-structures.

2.3 M-finiteness and V2
In the generative literature, V°-I°-C°-movement or V2 is generally assumed to be related to the WH-Criterion (Rizzi 1996), whereby the finite verb moves to C° in order to enter into a Spec-head agreement configuration with the fronted element in CP-Spec. Vikner (1995: 64) argues that the trigger for V2 could be a particular feature in C° (agreement, [+Finite] or [+I]), which forces C° to be filled (where possible fillers include both the feature [+Wh] and overt lexical material, e.g. a complementizer or a finite verb).

What is argued for in the present paper is that the relevant feature in C° in V2-clauses is [+M-Finite], such that only the [+M-finite] verb can

move there (cf. Eide 2016: 150-151).[3] Even a main verb that is lexically marked as finite (e.g. the irregular verb *went*) by having a [+Past] and [+Finite] form may still be blocked from undergoing V2-movement, as the finiteness distinction on main verbs is no longer productive in PDE. Similarly, auxiliary *have* can move to C° without encoding [±Finite] in its morphological paradigm. In other words, whether a verb possesses the M-finiteness feature relevant to syntactic movement is not necessarily directly visible from the overt markings on its lexical form, i.e. its "lexical finiteness" (or L-finiteness). This distinction, due to Eide (2016: 151), allows strong lexical verbs to be [+L-finite] but [-M-finite], as e.g. ablaut is no longer a productive morphological rule in the generation of verb forms. These "fossils of the long-dead rules" (Pinker 2000: 53), which are memorized, stand in opposition to the output of the productive morphological operation that just adds the suffix *-ed* (realized as [t], [d] or [Id], depending on the phonetic environment) for a [+Past] verb form. The split may even have reflexes in the neurobiology of language, cf. Lely & Pinker's (2014) division between the discrete neural networks underpinning Basic and Extended Morphology and Syntax.

Eide (2016: 152) speculates that there may be a causal chain, whereby the erosion of L-finiteness leads to the loss of productive M-finiteness for English main verbs. This has resulted in this category of verbs not having M-finiteness encoded, regardless of their L-finiteness, while the English auxiliaries, by Eide's stipulation, still have M-finiteness encoded. Danish and French, on the other hand, have inflectional suffixes that intrinsically link M-finiteness and L-finiteness in this analysis, and hence, all verbs are assumed to encode M-finiteness, as the productive morphological rule must refer to finiteness in the formation of verb forms.

2.4 The loss of generalized V2 in English and French
Eide (2016: 158) proposes that the relevant inflectional feature that caused the loss of V2 in English is M-finiteness and not the erosion of (a subset of)

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[3] There is an asymmetry between main clauses and embedded clauses in languages such as English, French and Danish, however, in that an embedded *wh*-clause does not trigger verb movement to C°. This asymmetry may be accounted for under the CP-recursion analysis proposed by Nyvad, Christensen & Vikner (2017), which distinguishes between a "lexical" CP, found in V2-clauses and thus conceivably requiring a [+M-finite] verb, and the "functional" *c*P, hosting subordinating conjunctions.

mood, agreement and/or tense inflections. Main verbs (but not auxiliaries and lexical *be*) in English have presumably lost the M-finiteness feature, while this is not the case in Danish or French, and this has consequences for verb movement in the three languages: Where all Danish main clauses require a [+M-finite] verb in C°, this is only the case for interrogative main clauses (and declaratives with negative topics in CP-Spec) in English and French, possibly as a result of the WH-Criterion (Rizzi 1996). French and English differ, however, in that all French verbs can move to C° in the relevant structures, because they are [+M-finite], while only auxiliaries and main verb *be* have this feature in English (although main verb *be* may be starting to lose it, cf. section 2.2).

 Pro-drop and V2 in combination within one language make the grammar "intrinsically unstable" (Yang 2000: 243), not least because null subject structures "punish" the V2 grammar in probabilistic terms, as this type of data may counter the linguistic evidence for verbs being in the second position. This is supported by Benincà (2006: 61), who claims that the V2 property was characteristic of many, perhaps even all, the Medieval Romance languages. Disregarding French, these were and still are *pro*-drop languages and none of them are V2 today in their standard varieties. French lost its *pro*-drop property in the Middle French period, probably due to an impoverishment (homophony) in the inflectional paradigm, not found in the other Romance languages. Crucially, however, V2 was arguably lost before that: Yang (2000: 243) shows that *pro*-drop was still prevalent in 16th century French when the preponderance of V2 had almost reached the Modern French level.

 Thus, loss of V2 can seemingly occur for more than one reason: While English may have lost its V2 property due to erosion in morphological finiteness, French conceivably lost it due to another morphosyntactic factor: The rich inflectional system of Old French gave way to *pro*-drop, which in turn undermined the V2 system. Danish has not lost V2, as it is does not have null subjects (possibly due to the lack of person and number agreement morphology on its verbs) and it has productively retained the morphological finiteness distinction.

2.5 M-finiteness and synchronic variation

Another empirical observation that the collapse of the finiteness distinction [±Finite] in the verbal paradigm of English may explain is the "preterit-participle mix-ups" in irregular verbs (Eide 2016: 140). As Sampson

(2002: 19) asserts, "[d]ialect usage frequently has the same form for past tense and past participle of an irregular verb which has distinct forms in the standard language", e.g. *I should have went to the party* or *Peter gone to school*.[4]

This phenomenon is "absolutely standard outside the upper and middle classes" in American English (Pinker 2000: 86) and it is found all over the English-speaking world (cf. features 130 and 131 in the *Electronic World Atlas of Varieties of English*). This suggests that its explanation is probably not sociolinguistic in nature, but should instead be found in the grammatical language system. Speakers thus appear to be trying to impose regularity in the inflectional system, aligning the irregular verbs with the regular paradigm, cf. Table 2 above:

	+Finite	**-Finite**
+Past Modern English	Preterit: *went, saw drove*	Participle: *gone, seen, driven*
-Past Modern English	Present: *go, see, drive*	Infinitive: *go, see, drive*

Table 5: The irregular verbs in Standard English (adopted from Eide 2016: 248)

+Past Non-standard English	**Preterit/participle:** *gone, seen, drove*
-Past Non-standard English	**Present/infinitive:** *go, see, drive*

Table 6: Leveling of irregular verbs in some English vernaculars (adopted from Eide 2016: 248)

The collapsed paradigm in Table 2 illustrates what the productive paradigm of regular verbs in English has been like for centuries, but irregular strong verbs in Standard English have conserved [± Finite], as the preterit and the participle have distinct forms. However, this finiteness distinction is undergoing morphological leveling in many English vernaculars, such that the preterit and the participle become syncretic and hence align with the system of the regular verbs, retaining [±Past] and losing [± Finite]

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[4]   The leveling of the past tense/past participle verbs forms may thus result from the preterit replacing the past participle or vice versa, but what is of principal importance for the analysis presented here is that only irregular verbs are subjected to this type of leveling because they, unlike regular verbs, maintain an M-finiteness distinction.

(Eide 2016: 159-160). In OE, there were at least 325 strong verbs, and according to Pinker (2000: 89), PDE has approximately "164 irregular verbs: 81 weak (ending in *t* or *d*), 83 strong [i.e. with ablaut]". Only these strong verbs distinguish the preterit and the participle (the present and the infinitive are identical), and very few verbs thus overtly encode finiteness morphologically in PDE. Language-acquiring children very often overgeneralize the productive morphological rule and inflect their preterits according to the regular paradigm, and over time, the remaining irregular verbs will probably gradually defect from their paradigms and align with the collapsed paradigm in Table 6 in adult speakers as well.

If the specific type of paradigmatic leveling taking place in English and its consequent lack of M-finiteness is indeed the cause of this phenomenon, that would explain why we do not find it in languages such as Danish or French, which have retained a productive morphological rule generating a finiteness distinction, and hence the computational system would not be prone to muddling up the two [+Past] forms.

3. M-finiteness in language acquisition

According to Holmberg & Roberts (2013: 112), children are "highly sensitive to morphology, particularly inflectional morphology", and it may thus represent a significant cue in the acquisition of syntax. In this section, it will be argued that the lack of a productive M-finiteness distinction in English described above also generates an exceptional pattern found in English-speaking children's early interrogative structures.

3.1 The distribution of finite and non-finite clauses

In typical language development, a child acquiring a Germanic language like English or Danish will generally go through a phrase around the age of two where she produces both finite and non-finite root clauses, known as the Optional Infinitive (Wexler 1999) or Root Infinitive (Rizzi 1993) phase. Hamann & Plunkett (1998) observed two Danish-speaking children, Anne and Jens, from the age of one to six. They found that they did not start by producing infinitives. In fact, finite clauses comprised the majority of their utterances from the very start:

(11) **Finite**   (12) **Non-finite**[5]

   a. Det lukker   a. Du tegne   (Anne 1;7,18)
     It   close-PRES   *You draw-INF*

   b. Her   er koppen   b. Køre   bil (Anne 1;8,22)
     Here is cup.DE   *Drive-INF car*

   c. Det gider   ikke   c. Nej, ikke have   (Jens 1;10,14)
     That want-PRES not   *No, not   have-INF*

However, the acquisition of English strikingly stands out: While the pro-
duction of non-finite main clauses extends to *wh*-questions in English-
speaking children, non-finite *wh*-questions and topicalization structures
are virtually absent in child data from Germanic V2-languages, such as
Danish. The two Danish-speaking children from Hamann & Plunkett's
(1998) study almost exclusively produced finite *wh*-questions (1.5% and
4.7% non-finite, respectively), while around a fourth of their utterances
overall were non-finite (27.4% and 23.6%).[6] The English data presented
here are from the Brown corpus (Brown 1973) and the Manchester corpus
(Theakston et al. 2001) in the CHILDES database (MacWhinney 2000),
cited by Westergaard (2016: 267-268):

(13) **Non-finite**
   a. What he doing?   (Adam 3;0.11)
   b. Where my spoon gone?   (Warren 2;0.17)
   c. Where me sit?   (Anne 2;3.28)
   d. Why you get another one?   (Liz 2;8.14)
   e. What you looking for?   (Ruth 2;7.24)

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[5] Note that while the verb in (12a) is unambiguously non-finite (the pronunciation of
tegne, ['tɑjnə], is different from the finite form *tegner*, ['tɑjnʌ]), the transcriber must
have had another reason for categorizing the verb *køre* in (12b) as non-finite, given
that the finite and the non-finite forms are homophonous here ([køːʌ]), because the last
grapheme in the stem is <r>, cf. section 2.3 above.

[6] As for the acquisition of French, Crisma (1992) reports that approximately 20% of the
declarative main clauses in French-speaking Philippe's sample in CHILDES (Suppes,
Smith & Leveillé 1973) are non-finite, while his *wh*-questions were all finite, and this
pattern is replicated in three other corpora examined by Phillips (1995).

Functional elements are generally acquired relatively late (Westergaard 2016: 259), so it is not surprising that English-speaking children tend to omit auxiliaries for quite a while, as illustrated in (13). However, when they are present in child data, they tend to be target-consistently inverted with the subject. Rizzi (1993) argues that when CP-spec is filled by a *wh*-element, consequently projecting a CP-layer, the lower projection IP, containing finiteness, cannot be truncated. Hence, whereas non-finite root clauses are VPs, finite *wh*-questions are CPs. The data in (13) may thus be explained with reference to a late setting of the V2 parameter, which requires a finite verb in C° (cf. Wexler 1999). In a similar vein, Clahsen (1986) asserts that the mastery of verbal inflections and in particular agreement marking is a developmental prerequisite for the acquisition of V2 in German. However, Clahsen & Penke (1992: 215) concede that, given the lack of agreement marking in the Mainland Scandinavian languages, this causal relationship cannot apply universally. As opposed to agreement marking, it will be argued in the following section that the notion of M-finiteness is of primary importance in the acquisition of verb movement to C° in English, Danish and French.

3.2 A possible explanation for the cross-linguistic variation based on M-finiteness

What separates the productions of English-, French-, and Danish-speaking children is simply the propensity to move a verb to C° in *wh*-questions and topicalized structures, which may be due to M-finiteness being encoded for all verbs in the grammars of Danish and French, but not in that of English. If there is a [+M-finite] feature in C°, this would force any verb that moves there to be spelt out as finite. The verb picks up the finiteness inflection in I° on its way to C°, so it is not surprising that children produce finite clauses when the verb is in C°. When the verb is in V° (which has not merged with the inflectional features in I°), it should be non-finite (the default infinitive form), which is also what we see cross-linguistically. In English, there appears to be a phase where the [+M-finite] feature in C° in *wh*-structures can be left unrealized, not unlike English subject questions which do not have subject-auxiliary inversion and allow a main verb to stay finite in V°. If we assume that subject questions in English are IPs and not CPs, this is explained, as no C° requiring a [+M-finite] verb is projected. The noise in the system engendered by syncretism in the verbal forms in English (blurring the finiteness distinction), compounded by the fact that only auxiliaries

and main verb *be* can move to C°, may delay the acquisition of V°-I°-C°-movement in English. In other words, the non-finite *wh*-clauses in child English may well be the expression of a problem in the implementation of their morphological, not necessarily syntactic, knowledge.[7]

This leaves us with another question: Why are clauses without *wh*-movement to CP-Spec not obligatorily finite in the child grammars of V2-languages like Danish? That is, why doesn't C° demand a [+M-finite] verb in subject-initial declarative clauses? The answer appears to be that language-acquiring children may optionally truncate functional projections (cf. Rizzi's 1993 truncation model above), because their grammar lacks an axiom, which is not acquired until around the age of two and a half years, namely that a root clause is a CP. A non-subject fronted constituent (a *wh*-element or a topic) must, however, activate a CP-layer which then selects the IP-projection below it. A sentence-initial subject does not have this effect.

The proportion of non-finite root clauses is reduced very gradually (Phillips 1995: 8), which aligns with the basic tenets of Yang's (2000) variational model. He views language acquisition as "a variational process in which the distribution of grammars changes as an adaptive response to the linguistic evidence in the environment" (Yang 2000: 234). This may account for differences found between English, Danish, and French: The lack of correspondence between L-finiteness and M-finiteness in English (see section 2.3) might pose a problem in language acquisition. Compared to Danish- and French-speaking children, a child acquiring English will have a delay in the acquisition of the syntactic requirement that C° needs to be filled by a [+M-finite] verb: Whereas Danish- and French-speaking children have plenty of positive evidence for the syntactic behavior of verbs in main clause questions, as the finite verb in C° in all the relevant structures is [+M-finite], English-speaking children are not aided by morphology, due to widespread syncretism in the main verbs and irregularities in their auxiliaries. It thus takes longer to converge on that setting.

One theoretical, albeit unfeasible, way to substantiate the claim that the syncretisms in the verbal paradigm of English influence the acquisition of finite *wh*-questions would be to analyze language acquisition data from the OE and Early ME periods. All verbs were [±M-finite] at these earlier

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[7]   However, given the syncretic verb forms in English, it is not even clear that the verbs in the productions of English-speaking children are root infinitives to the extent reported; a large proportion of them could in principle be bare stems (present tense forms without agreement marking).

stages of English and we would thus expect the child *wh*-question produc-
tions at this time to pattern with Present-Day Germanic V2-languages in
being finite.

4. Conclusion

In this paper, Eide's (2016) interpretation of morphological finiteness was
explored in connection with V2-structures in English, Danish, and French,
and it was applied to syntactic facts in diachrony, language variation and
language acquisition. The data presented support the view that the syn-
cretism resulting from a collapse in the [±Finite] distinction in English
may have had a role to play in all three areas. While the Rich Agreement
Hypothesis proposed for V°-to-I° movement by e.g. Vikner (1997, 1999) is
not able to account for the patterns observed in relation to V2-movement, it
may thus be that a weaker version based on finiteness morphology has that
potential, as both language-internal and cross-linguistic patterns in verb
movement to C° (or lack thereof) can receive a unified account within such
a framework.

The types of variation found are not surprising: Exposed to positive
evidence, a child slowly converges on her target grammar, while non-target
grammars are accessed in the process through probabilistic mechanisms
that may result in the non-uniformity observed in child data. This situation
is similar to the co-existence of multiple grammars, prompted by the het-
erogeneity introduced by e.g. the steady erosion of inflectional paradigms
or the optional application of V2, witnessed in e.g. historical texts. These
reflect varying internal representations of positive linguistic data and they
are the very basis of language change.

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Notes on the map of the left periphery in Danish

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Abstract

Vikner (1991) showed that certain complex complementizer sequences, in particular the *som at der* sequence in subject relatives, are possible in Danish. In this note, I argue that such sequences are naturally amenable to a cartographic analysis, in which the *som* particle expresses the highest structural layer in relative clauses, the *at* particle occupies the position in which this element normally occurs in embedded declaratives, and *der* occupies the Fin position in subject relatives. Such a nominal specification of Fin licenses subject movement much as *-i* in *qui* French relatives according to the analysis presented in Rizzi & Shlonsky (2007). I argue that the high "analyticity" (in (Huang's 2015 sense) of the Danish complementizer system offers interesting evidence for the general map of the left periphery.

1. Introduction

Vikner (1991) (henceforth V91) analyzes sentences displaying different complementizer particles cooccuring in the left periphery in certain Danish constructions.[1] Two or even three complementizer particles can co-occur,

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[1] All the Danish examples in this paper are taken (or minimally adapted) from Vikner (1991), which was published well before the cartography of the left periphery, and in fact was among the papers suggesting that there is more in the C system than just a single X-bar schema. This and other papers identifying sequences of complementizer particles in different languages encouraged me to undertake the study of the fine structure of the clausal periphery in a fully systematic way. The preparation of this text led me back to many enriching discussions Sten and I had in Geneva during his graduate studies. I hope Sten will enjoy reading these notes based on his work.

giving rise to sequences such as *som at der*, marginally acceptable in subject relatives[2]:

(1) ?Vi kender mange lingvister **som at der** vil læse denne bog.
  We know many linguists which that there will read this book
  'We know many linguists who will read this book.' (V91: 112, (5))

Such complex sequences traditionally evoked some notion of "CP recursion".[3] But clearly this notion must be constrained. We do not have free recursion, as only certain orders are permitted: Any permutation of the *som at der* order leads to ungrammaticality.

Cartographic studies of the left periphery of the clause offer a natural framework for structuring the notion of CP recursion. Current analyses of the cartography of the left periphery of clauses have put forth the hypothesis that the complementizer system is populated by a sequence of functional heads, which

1. express general properties of the clause, such as its force (or clause type) and finiteness, or
2. host various kinds of operators (relative, interrogative, exclamative, …), or
3. create articulations for discourse-related properties such as topic–comment and focus–presupposition.

See Rizzi (1997) for the original proposal, and Rizzi & Bocci (2017) and Rizzi & Cinque (2016) for recent overviews.

In what follows I will try to capture some of Vikner's (1991) empirical discoveries in terms of a cartographic analysis, and sketch out a map of the Danish left periphery consistent with these findings. Let me proceed by reviewing the individual properties of the complementizer particles which can give rise to the observed sequences, and then consider the possible combinations that can arise.

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[2] Vikner (1991, fn. 13) attributes the marginality of (15a-b) to a "prescriptive rule … regarding the co-occurrence of *som* and *at*".

[3] As in Vikner (1994) in the context of embedded V2 phenomena. See also Nyvad, Christensen & Vikner (2017) and Vikner, Christensen & Nyvad (2017) for a left-peripheral map based on the c/C distinction, which I will not discuss here.

2. Der

Der is the complementizer particle which occurs in subject relatives and embedded subject questions:

(2) Vi kender de lingvister (**som**) **der** vil læse denne bog.
    We know the linguists will read this book
    'We know the linguists who will read this book.' (V91: 115, (14a-b))

(3) Vi ved ikke hvilke lingvister **der** vil læse denne bog.
    We know not which linguists there will read this book
    'We don't know which linguists who will read this book.'
    (V91: 115, (14c))

In Vikner's analysis (building on Taraldsen 1986) this instance of *der*, homophonous with existential expletive *der* (akin to English *there*) is a manifestation of the C-system licensing a subject trace. Vikner establishes a parallel with the *que>qui* rule in French and the *da>die* rule in West Flemish (Bennis & Haegeman 1983), and interprets the role of this element as a proper governor for the subject trace in terms of the ECP-based account proposed in Rizzi (1990). Much as *qui* and *die*, *der* also licenses extraction from an embedded declarative, alleviating a *that*–trace (or, in Danish, *at*–trace) effect:

(4) a. *Jeg ved ikke hvem du tror **at** __ vil læse
       I know not who you believe that __ will read
       denne bog.
       this book

    b. Jeg ved ikke hvem du tror **at** **der** vil læse
       I know not who you believe that there will read
       denne bog.
       this book

Der is homophonous with expletive *der*, occurring in subject position in existential sentences. Could it be that *der* in (4b) also occurs in subject position, much as expletive *der*, thus eliminating the offending trace? More precisely, one could make the hypothesis that, if *der* occurred in subject position, satisfying classical EPP (expressing the obligatoriness of subject positions in clauses, as in Chomsky 1981), extraction of the subject

from a lower position would be permitted. Under these assumptions, the analysis of the alleviating effect in (4b) would be fully parallel to the approach proposed in Rizzi (1982, 1990) to account for the lack of *that* - trace effects in Null Subject Languages, except that in Danish (a non-Null Subject language) the expletive would be overt, rather than *pro*.[4]

But things are more complicated. Vikner argues that the occurrence of *der* is (4b) is in fact the realization of a head in the complementizer zone, rather than a DP occurring in subject position. A straightforward piece of evidence for the head analysis comes from the fact that it appears in embedded questions, but not in main questions. Compare (3) and the following:

(5)   Hvilke lingvister (*der) vil læse denne bog?
        Which linguists   there will read this   book
        'Which linguists will read this book?'

Danish being a V2 language, the inflected verb (the auxiliary in (5)) must move head to head to the C-system, hence V2 is inconsistent with an overtly realized C-particle (this follows from virtually all approaches to V2 involving movement of the inflected V to the C-system, from Den Besten 1977/83 to Vikner 1990, 1995 to the recent cartographic approach in Samo 2018). *Der* can occur in embedded questions like (3) because V2 does not apply in such embedded environments. So, the asymmetry (3)–(5) follows from the root character of V2, but this requires analyzing *der* as a C-head, rather than as a DP.

3. Recasting ECP effects in terms of Criterial Freezing

Another issue that requires discussion is the reliance on the ECP of classical analyses of *that* – trace effects. The ECP of GB theory does not have a natural place in the principled typology of principles introduced by the Minimalist Program, and is inconsistent with Minimalism for other more technical reasons, such as the reliance on government.

In the last decade or so, the classical ECP approach to *that*-trace effects has been recast in terms of criterial freezing through the following ingredients (on which see Rizzi 2006, Rizzi & Shlonsky 2007, Rizzi 2016 among many other references):

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[4] Of course, independent differences would remain, such as non-availability in Danish of the low focus position utilized for subject focalization in Italian (Belletti 2009).

(5)   a. Criterial freezing: a phrase meeting a Criterion is frozen in place, and becomes unavailable to further movement.[5]

b. There is a Subject Criterion, triggered by the Subj head, an obligatory component of the clausal spine.

The obligatoriness of the subject position, the extended clause of the Projection Principle (EPP) of the GB framework, is expressed in this way, and is akin to the obligatoriness of other heads of the IP system, such as T.

So, for instance, the derivation of (4a) would go through a derivational stage in which the *wh*-element *hvem* is attracted to the Spec of Subj:

(4')   a. …at hvem   Subj   vil   læse   denne   bog.
       …*that who   will   read   this   book*

At this point *hvem* satisfies the Subject Criterion, hence it is not further movable to a higher position under Criterial Freezing. This captures the *at*-trace effect.

Languages use different kinds of devices to overcome the freezing effect and make subject movement possible (Rizzi & Shlonsky 2007). According to this reference, French *qui*, or rather *-i*, fusing with the regular force marker *que* and yielding *qu-i*, is a special nominal realization of the lowest head of the CP system, Fin(iteness). Such an element can be merged directly with Subj, thus formally satisfying the Subject Criterion, and allowing the thematic subject to be extracted from a lower position, without having to pass through the freezing position (which would make the continuation of movement impossible; see Rizzi & Shlonsky 2007 for a more precise characterization, and Berthelot 2017 for various refinements and developments of this analysis):

(6)   **French**
      Qui   crois-tu   qu-i$_{+N}$ Subj   viendra __?
      Who   think-you   qu-i   will.come
      'Who do you think will come?'

So, the nominal finiteness head formally satisfies the Subj criterion: It is not in a Spec-head configuration with Subj, rather it is in a head-head configuration; but the two configurations are formally close enough to

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[5]   The freezing effect may in turn be derived from the labeling algorithm and a maximality principle, along the lines proposed in Rizzi (2016).

unify them, as far as criterial satisfaction is concerned (both configurations involve strictly local c-command, c-command without any intervening material, which can be considered the configuration involved in criterial satisfaction).

In conclusion, *der* may be seen as a nominal realization of Fin, locally satisfying the Subject Criterion and permitting subject movement, e.g. in (4b), which will have the following representation[6]:

(4') b. Jeg ved   ikke hvem du   tror
       I   know not   who   you believe

       [$_{ForceP}$ at [$_{FinP}$ der$_{+N}$ [$_{SubjP}$ Subj vil læse denne bog.
         that   COMP   will read this   book
       'I don't know who you belive will read this book.'

From the viewpoint of this analysis, the *at der* sequence shown in (4'b) is akin to French *qu-i*, except that the two complementizer elements are not morphologically fused together in Danish, and more transparently express force (*at*) and finiteness (*der*).

Analyzing *der* as a particular realization of the Fin head immediately captures its incompatibility with V2 because *der* occupies a head position which the inflected verb must move to in V2; this analysis also captures the other pieces of evidence presented in Vikner (1991) for distinguishing *der* in (1), (4b), etc., from existential *der*, occupying the subject position (consistent with V2, requiring the indefiniteness of the associate, limited to occur with certain verb classes, whereas *der* qua nominal marker of finiteness has none of these properties).

As for the position of *der* in the map of the left periphery, if the role of *der* in (1), (4b), etc. is to permit subject movement by formally satisfying the Subject Criterion, it is expected that *der* should appear in the lowest position of the CP system, close enough to Subj to satisfy the Subject Criterion. That is why *der* closes the complementizer sequence downward in (1), and cannot occur in any other position.

The possible occurrence of (this instance of) *der* is strictly limited to

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[6] As for main questions (*Hvem læste bogen? "Who read the book?"*), various options are considered in Rizzi & Shlonsky (2007) for similar cases in other languages. One possibility is that the inflected verb, moving to the C-system, takes along the Subj head, thus creating via head-movement a complex head including both Q and Subj, so that both the Subject Criterion and the Q Criterion are fulfilled simultaneously by *Hvem* in its left peripheral landing site.

the cases in which the moved element is the subject. In all other cases, e.g., of object relatives or questions, *der* cannot appear, neither alone nor preceded by other C particles:

(7)   …der DP V DP …

Why does this constraint hold? Vikner adopts and extends to these cases the agreement approach of Rizzi (1990). In terms of the approach I am adopting here, one could adapt that analysis as follows: The +N feature of *der* must be checked by a nominal expression in its Spec, and *der* attracts the closest expression endowed with +N, the subject. So, the derivational step indicated by the arrow in (7) can never occur because of locality. Therefore, *der* is limited to occur in cases of local subject extraction.

4. At

In examples like (4)b, *at* clearly occupies the highest position of the complementizer space, expressing declarative Force. *At* is unable to formally satisfy the Subject Criterion, whence the *at*-trace effect, much as English *that*, French *que*:

(8) **Danish**
     *Jeg ved   ikke hvem du tror   at   __ vil   læse denne bog.
      I   know not who you believe that __ will read this   book

(9) **English**
       *Who do you believe that __ will read this book?

(10) **French**
      *Qui crois-tu   que __ lira   ce livre?
       Who believe-you that   will.read this book?
      'Who do you believe will read this book.'

The element corresponding to that does not have this property in all languages. (I am putting aside here null subject languages, which systematically lack *that*-trace type effects: Rizzi 1982, 1990): Norwegian permits the equivalent of (8), much as certain varieties of English (Sobin 2002), so that some parametrization must be assumed, a topic which I

will not address in this paper (see Rizzi & Shlonsky 2007 for an approach consistent with the current assumptions).

Elements like English *that* and Romance *que* manifest a considerable versatility, appearing in distinct positions of the complementizer space (sometimes with the possibility that two instances may co-occur in distinct positions: Villa-Garcia 2012, Radford 2013). Nevertheless, the unmarked hypothesis, to be adopted in the absence of evidence to the contrary, is that when an element appears in different constructions in the same language, it occupies the same position. I will follow this logic and assume that *at* occurring after *som* in relative clauses like (1) occupies the same position it occupies in embedded declaratives like (4b), hence the position of declarative Force.

5. Som

Som is a complementizer head specialized for relative clauses. It cannot co-occur with a relative with an overt *wh*-operator, as in the genitive relative (11a), but it is allowed in object and subject relatives, in which no overt *wh* operator occurs, as in (11b-c):

(11) a. Jeg kender en pige hvis   hund (***som**) spiser æbler.
          I   know   a girl whose dog   eats   apples
          'I know a girl whose dog eats apples.' (V91: 111, (2))

      b. Jeg kender en bog   **som**   denne lingvist har skrevet.
          I   know   a book which this   linguist has written
          'I know a book which this linguist has written.' (V91: 111, (4d))

      c. Vi   kender de   lingvister **som** vil   læse denne bog.
          We know   the linguists   who   will   read this   book
          'We know the linguists who will read this book.'

                                                              (V91: 125, (43d))

Following Vikner (1991), I will assume that *som* is the relative complementizer co-occurring with a null relative operator, i.e., when the Relative Criterion is satisfied by a null operator in its Spec.[7] The distribution is thus similar to English relative *that*, or Italian relative *che*, except that a dedicated form appears in Danish, distinct from the declarative complementizer.

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[7] If a raising analysis is adopted, some other assumption should be made, which I will not try to develop here. For concreteness, I will continue to adopt the null operator analysis in this paper.

That relatives may be introduced by dedicated heads is not at all an unusual situation. What is special in Danish is that such a dedicated complementizer cooccurs with, and precedes, the unmarked declarative complementizer *at*. This provides important evidence on the shape of the CP system of relative clauses.

In Rizzi (1997) it was observed that the CP layer hosting relative pronouns is the highest layer of the system, in that it can (and must) precede topic(s) and focus, as in (12a); the same ordering properties hold for subject or object relatives, which plausibly involve a null operator and the overt declarative complementizer *che*, as in (12b):

(12) **Italian**

   a. Questa è la   persona a cui,   la commissione, quest' anno,
      This   is the person to whom the committee,   this   year;

      IL   PRIMO   PREMIO dovrebbe   dare.
      THE   FIRST   PRIZE   should   give
      'This is the person to whom this year the committee should give
      THE FIRST PRIZE.'

   b. Questa è la   commissione   che a Gianni,   quest' anno,
      This   is the committee   that to Gianni, this   year;

       ANCHE IL   PRIMO PREMIO gli potrebbe   dare.
       EVEN   THE   FIRST   PRIZE   could   give
       This is the committee that, this year, could give EVEN THE
       FIRST PRIZE to Gianni.'

It was then assumed that the criterial position defining relatives, hence the locus of the relative criterion, corresponded to the highest position postulated for the CP system, the Force layer in that system.   This assumption is non-optimal though: In particular, it appears to conflict with the "one property, one feature, one head" guideline, which in principle rules out heads endowed with more than a single categorial feature (see Rizzi 2017 for some necessary qualifications of the guideline, which nevertheless leave its heuristic force intact).

Such examples as (1), and the fact that the dedicated relative complementizer *som* precedes *at*, now suggest a different map, one in which the Rel head and its projection precedes and is higher than the (declarative) force head, expressed by *at*:

(13)   ?Vi   kender mange lingvister
         We   know   many   linguists
         [$_{RelP}$Op **som**   [$_{ForceP}$ **at** [$_{FinP}$ **der** vil læse denne bog]]].
                which   *that*   *there will read this   book*
         'We know many linguists who will read this book.'

Representation (13) now complies with the guideline. If we look at it under cartographic lenses, the highly analytical structure of the Danish complementizer system, far from being a quirk of a particular language, may reveal deep properties of the general structure of the left periphery. What remains "special" about the Danish C (compared, e.g., to the English C) is that distinct overt particles can co-occur. Nevertheless, this is far from unusual in comparative terms: see, e.g., the discussion of the point in Rizzi (2013: sec. 6). Under a cartographic perspective, rich functional sequences are the general case, a major element of superficial variation being located in the spell-out properties of the distinct heads, a low-level parametric property.

6. Conclusion: the Danish C sequence

According to Vikner (1991) analysis, Danish admits the following sequences of overt C-elements:

(14)   a. som at der
         b. som at
         c. som der
         d. at der

The permissible sequences are illustrated by the following examples[8]:

(15)   a. ?Vi   kender mange lingvister **som at der** vil læse denne bog.
                We   know   many   linguists   will read this   book
                'We know many linguists who will read this book.'

                                                                      (V91: 112, (5))

         b. ?Vi   kender en bog **som at** denne lingvist vil   læse.
                We   know   a book   this   linguist will read
                'We know a book that this linguist will read.'

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[8]   Again, with the slight marginality of (15a-b) possibly due to the violation of a prescrip-
      tive rule. See fn. 2.

c. Vi kender de lingvister **som der** vil læse denne bog.
  We know   the   linguists   will read this   book
  'We know the linguists who will read this book.'

<div align="right">(V91: 115, (14b))</div>

d. Jeg ved ikke hvem du tror   **at der** vil læse denne bog.
  I   know not who you believe   will read this   book
  'I don't know who you believe will read this book.'

<div align="right">(V91: 134, (64c))</div>

This supports a partial map like the following:

(16)
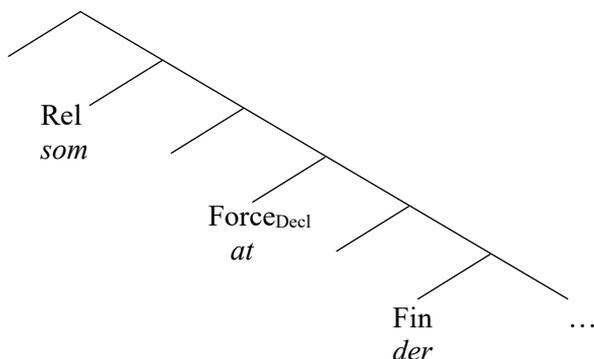
Som necessarily opens the sequence, as it must be adjacent to the relative head; *der* necessarily closes the sequence, as it must be adjacent to the first layer of the IP space, the SubjP, in order to make subject extraction possible in spite of Criterial Freezing.[9] *At* thus occurs in the middle. A declarative Force marker normally occurs in the highest position in an embedded clause (e.g. in (15d)), so that the information that it encodes is immediately accessible to the higher selector. But in a relative clause it may be embedded under an even higher layer hosting the relative operator and expressing the Relative Criterion. The high "analyticity" (in Huang 2015's sense) of the Danish C-system offers interesting evidence for this conclusion, which is also in line with a fundamental cartographic guideline.

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[9] Ken Ramshøj Christensen (p.c.) raises the question of what structural representation can be assigned to subject relatives simply introduced by *der* (one option in (2)). I cannot fully address the point here, but let me simply say that the case is reminiscent of French subject *qui* relatives, which Berthelot (2017) analyzes as involving a "reduced" CP system, an option to be explored for the case at issue.

Acknowledgment

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Hvordan en gammel kontrakt kan kaste nyt lys over hollændernes skriftsprog på Amager i 1600-tallet

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Abstract

This article investigates the linguistic characteristics of the written language used by the Dutch community on the Danish island of Amager in the 17th century. It does so on the basis of a hitherto unexamined text, a contract from 1664 between the minister and the inhabitants of the village of Store Magleby. Until now, the written language used by the Dutch community on Amager in the 17th-century has been viewed as Low German with a minor Dutch component. However, the text analyzed in this article can be more accurately described as Dutch with a minor Low German component. The article will argue that this apparent discrepancy can be explained by viewing the written language of the Dutch community on Amager as a Low German-Dutch continuum whereby each concrete linguistic expression is dictated by the communicative situation: documents for internal use (i.e. use within the Dutch community) are predominantly Dutch, whereas documents for external use (i.e. use outside the Dutch community) are predominantly Low German.

1. Indledning

Det er et velkendt faktum, at i perioden 1515-1521 bosatte en større gruppe nederlandske bønder sig på Amager. På opfordring af kong Christian 2. (1513-1523) kom de til øen, hvor de opnåede en høj grad af administrativ og juridisk autonomi. Den nederlandske koloni – med Store Magleby som administrativt centrum – overlevede Christian 2.s afsættelse i 1523 og havde sin egen særlige styreform helt frem til 1817. Denne styreform kaldes for *schout*-styret, eftersom den såkaldte *schout* ('oldermand'), der

blev valgt på livstid, var den øverste myndighed i byen (Pedersen 1968, 23).[1]

Desuden udviklede de nederlandske kolonister et sprog, som Erik Pontoppidan (1747, 141) kaldte for et 'Miskmask af Hollandsk, Plattydsk og Dansk'. Dette sprog betegnes for første gang som 'Amager Hollandsk' af Laurids de Thurah (1758, 18). Selvom det ikke mere er muligt at undersøge det 'amagerhollandske' talesprog, så er det dog muligt at undersøge, hvilket skriftsprog de nederlandske kolonister benyttede sig af. Den hollandske koloni havde nemlig en egen 'skriver' til administrative dokumenter, der havde en fast rolle i koloniens retsvæsen (Nicolaisen 1909, 35-36). Retten i Store Magleby var indrettet efter nederlandsk mønster og bestod af 9 mænd, nemlig selve *schouten*, som var dommer, og skriveren, begge fast ansatte, samt 7 *scheppens* eller meddomsmænd, der valgtes eller ansattes hvert år at til at stå ved *schoutens* side. Skriveren var gerne en af byens mænd, som senere indtrådte i *schout*-embedet (Nicolaisen 1909, 35-36). Denne tradition blev holdt vedlige til det allersidste: Dirch Cornelissen (1743-1817) var byens skriver fra 1780 til 1797 og *schout* fra 1797 til 1817, hvorefter *schout*-embedet ophævedes (Riber 1975, 66).

Indtil videre er kun få af amagerhollændernes tekster blevet udforsket, og disse giver anledning til den antagelse, at kolonisternes skriftsprog i 1600-tallet var hovedsageligt nedertysk med nogle få nederlandske relikter (Winge 1992, 343). I denne artikel undersøger jeg dog en tekst fra 1664, hvis sprog kan bestemmes som hovedsageligt nederlandsk med en mindre nedertysk andel – altså det modsatte af det, man på grundlag af de andre tekster forventer. Denne modsætning er dog ikke uløselig. Den kan løses ved at forestille sig amagerhollændernes skriftsprog i 1600-tallet som et nederlandsk-nedertysk kontinuum, hvoraf det konkrete udtryk afhænger af den specifikke kommunikative situation: Indadtil – inden for Store Magleby – brugte man et sprog, der var hovedsageligt nederlandsk, medens man udadtil – i forhold til omverdenen – anvendte et sprog, der var hovedsageligt nedertysk.

Først præsenterer jeg de enkelte tekster, der hidtil er blevet udforsket. Derefter introducerer jeg den tekst, der står centralt i denne artikel, nemlig en kontrakt mellem præsten og beboerne i Store Magleby fra 1664. Ved en grundig sproglig analyse vil jeg påvise, at sproget i denne tekst

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[1] Jeg oversætter *schout* med 'oldermand' i overensstemmelse med *Encyklopædien* (artiklen Amager, bd. 1). Ordet *schout* har i øvrigt selvstændig artikel i *ODS*, og sættes dér i forbindelse med det nedertyske *skultus*. Både *schout* og *skultus* nævnes også i Skautrup 1947, 138f.

– imod alle forventninger – faktisk kan bestemmes som hovedsageligt nederlandsk med en mindre nedertysk andel. Til sidst sammenligner jeg resultaterne af den sproglige analyse af denne tekst med resultaterne af den sproglige analyse af de andre tekster og introducerer hypotesen om amagerhollændernes skriftsprog i 1600-tallet som et nederlandsk-nedertysk kontinuum.

2. En vedtægt og to indskrifter

Pontoppidan (1747, 141) opfattede de nederlandske kolonisters sprog som en kuriositet og ville meget gerne give sit publikum mulighed for at stifte bekendtskab med det. Til det formål henviste han først og fremmest til den i 1715 udgivne *Psalme-Bog* og en ukendt udgave af den nederlandske menigheds *Catechismus*.[2] Disse bøger blev til i Danmark sidst i 1600-tallet (Winge 1992, 341). Forfatteren er Thomas Harder (1645-1691), der var præst i Store Magleby i perioden 1682-1691. Imidlertid virker sproget i *Psalme-Bog* og *Catechismus* som rent nedertysk (Winge 1992, 341).[3] Derudover gav Pontoppidan en ekstra prøve, nemlig sin egen transskription af en vedtægt mellem Store Magleby og nabobyen Dragør fra 3. december 1663 (Pontoppidan 1747, 138-9; se også Nicolaisen 1909, 205-207 og Winge 1992, 341-342). Denne transskription på lidt under 500 ord (se bilag 1) blev genoptrykt af de Thurah (1758, 23-24), således at – med de Thurahs ord – 'Liebhaverne deraf kan erfare deres [dvs. kolonisternes] nu brugelige Sprog' (1758, 18). Ordet 'nu' skal forstås ret udstrakt, eftersom de Thurah skrev næsten et århundrede efter den originale teksts tilblivelse. Desuden skal man være opmærksom på ikke at sammenblande tale- og skriftsprog. Sproget i vedtægten er ikke nødvendigvis det sprog, kolonisterne faktisk talte.

Pontoppidans transskription af vedtægten blev underkastet en detaljeret sproglig analyse af Vibeke Winge med hjælp fra Robert Peters (Winge 1992, 342-343). Winge bestemte teksten som hovedsageligt nedertysk (Winge 1992, 342). Nedertyske træk findes ifølge Winge især i basisordforrådet inden for pronominer, konjunktioner, adverbier og verber. Højtyske træk synes at indtage andenpladsen. De danske træk er af ortografisk art og begrænser sig til <nd> og <aa> i *Indvaaners* og <æ> i *Vorælders*, *Præster* og (*Krigs*) *Wæsen*. Endelig findes i teksten også enkelte nederlandske

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[2] Denne *Catechismus* er bevaret i udgaver fra 1734 og 1735; desuden kendes til nu tabte udgaver fra 1685 og 1709 (Appel 2001, 173).

[3] En undersøgelse af, om der også findes spor af nederlandsk eller dansk i teksterne, venter jeg at kunne gennemføre i nærmeste fremtid.

'relikter' (Winge 1992, 343). Disse omfatter det nederlandske substantiv *grond* 'jord' og fagudtryk som *schout* og *briggeld* 'bropenge' (jf. *WNT*, *brêge*) samt den bestemte artikel i neutrum *(h)et* 'det' og konjunktionen *ende* 'og' (ved siden af nedertysk *unde* og højtysk *und*). Vedtægtens sprog er således næsten gennemgående nedertysk med kun få nederlandske træk (Winge 1992, 343).

Winge (1992, 343) nævner også en anden tekst fra 1600-tallet, nemlig følgende indskrift i kirken i Store Magleby, der står på en mindetavle på kirkens nordmur:

> *Anno 1611 hebben deisse keirsspels menn laten deisse kerck verbeteren wp eirre eigene wnkosste.*

> I moderne dansk oversættelse: 'I året 1611 lod dette sogns mænd denne kirke udbedre for egen regning'.

Denne sætning kan bestemmes som danskpåvirket nedertysk, med fuldstændig typisk slut-1500-tals/1600-tals ortografi: $<i>$ brugt som længdemarkør efter $<e>$, dobbeltkonsonanter så som $<nn>$ samt $<w>$ for $<u>$. Den danske påvirkning ses ved den foranstillede genitiv *deisse keirsspels* samt ved det danske substantiv *wnkosste* (jf. *unkost* i Kalkar 1892-1901 IV).[4]

Det samme kan siges om en anden indskrift, som *schout* Cornelis Cornelissen lod anbringe i kirken i Store Magleby i 1731 (Rasmussen 1968, 50; Winge 1992, 344):

> *Anno 1731 is dese Kerck omgebouwet up unse Egen Bekostning. Dit selve Jahr als den 6 Juny is Koning Christian de 6 gekroont. Cornelis Cornelissen Skoudt.*

> I moderne dansk oversættelse: 'I året 1731 den 6. juni blev denne kirke ombygget for vores egen regning. Samme år blev kong Christian 6. kronet. Oldermand Cornelis Cornelissen.'

Også i dette tilfælde er der – bortset fra det nederlandske udtryk *Skoudt* – tale om danskpåvirket nedertysk, medens den danske påvirkning ses ved suffikset -*ning* i *bekostning*.

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[4] Se også Winge 1992, 344 og Rasmussen 1968, 49-50. Rasmussens transskription er ikke helt korrekt, idet *keirsspelsmenn* ikke er ét, men to ord, så at *keirsspels* skal betragtes som foranstillet genitiv.

    På grund af vedtægten og de to ovenfor anførte indskrifter kan man således fristes til at konkludere, at kolonisternes skriftsprog i 1600-tallet først og fremmest var nedertysk med kun en meget ringe nederlandsk indflydelse.

3. En kontrakt

I Store Maglebys *Liber daticus* 1738-89 (København, Rigsarkivet, nr. EC-043, side 5) findes en kopi af en kontrakt fra 1664 mellem præsten i Store Magleby, Jørgen Harder (1608-1682) og byens borgere om kirkens udredning af præsternes kongelige skatter, navnlig ekstraskatter samt kvæg-, tiende- eller kornskat. Denne kopi fra 1700-tallet blev affattet af Jørgen Gottfriedsen Røbel (1704-1760), der var præst i Store Magleby fra 1735 til sin død i 1760. Røbel var født i Kalundborg som søn af kirurgen Gottfried Røbel og dennes hustru Margrethe Røbel, født Weihe. Han blev student i København i 1722 (Rasmussen 1981, 105). Kopien findes også trykt i Nicolaisen (1915, 354-5) og – delvist – i Winge (2001, 302), dog med mange transskriptionsfejl og uden sproglig analyse.

    Helt konkret er kontrakten opstillet mellem præsten Jørgen Harder som den ene og Dirch Cornelissen (*schout* 1652-1666) som den anden part. Nedenfor følger min transskription og oversættelse til moderne dansk:

> Anno 1664 d. 24. Junij is tusschen den Preester en den Schout Dirch Cornelissen en syne drie jaars Schæpen in voller en vaster contract gesloten worden om den Præster Schatt; wanneer namelyk Syne koninglyke Majestet den Præstern im Lande Schatt opleydt, so sal de Kerke nae oude gebruyk ende gewoonte alle schatting ('t zy hooftschatt, geldschatt, Madtschatt, Ruyterschatt, Kooper, Tin, edder Kornschatt, wat name 't ook hebben mag) voor den Præster uthleggen, doch subsidien gelder, so den armen Preestern tot hulpe gegeven worden, sal de Præster sulvest erleggen. En terwyl even in desen jaer stryd was wegens der Princessinnen Stuyr, daer de Kerke van haere Tienden sowel geven moeste als de Preester, is 't so veraccordeert ende bewilliget, dat wanneer de Kerke van haeren egen Tienden mede schatten sal, so sal se dem Præster niet meer als de halve part tot synen schatt tot hulpe komen, en de Præster sal selven de andere halve part van synen schatt geven als te sien uyt der Kerken rekeninge Anno 1665 en Anno 1667. Insgelyken is de Kerke nae ouden gebruyk schuldig

dem Preester een Vrywoonhuys en Residence te verschaffen en jaerlyks te onderhouden; de oorsake van dese twee laeste posten zyn dese: Terwyl de Preester aan dese plaetse niet heeft akker of enge by synen deenste, insgelyken geene Tiende vam Veh (als süst im gantzem Ryke dem Preestern nae der ordinantie gebeurt) so is 't hem daerintegen van de Gemeente van allem ouden tyd her belooft en versproken worden Vrywoonhuys en uthlegginge aller koninglyke schatting voor hem.

Tot getuygenisse der Waerheyt.

M. Jürgen Harder

Richtige copie uyt het Kerken-Rekeninge-boek

test[*e*] J.G. Röbel

I året 1664 den 24. juni er der mellem præsten og oldermand Dirch Cornelissen og hans 'tre års meddomsmænd' [se nedenfor, JR] i fuld og fast kontrakt blevet truffet en beslutning om præsteskatten. Når nemlig Hans Kongelige Majestæt pålægger præsterne i landet en beskatning, så skal kirken efter gammel skik og brug udlægge al skat (enten kopskat, rentepengeskat, madskat, rytterskat, kobber-, tin-, eller kornskat, hvad det så end måtte hedde) for præsten, men bistandspenge, der gives til de fattige præster, skal præsten selv betale afgift af. Og fordi der netop i år har været diskussion om 'prinsessestyren' [se nedenfor, JR], til hvilken både kirken og præsten skulle afdrage af deres tiende, blev der aftalt og bekræftet, at når kirken af sin tiende skal medbetale, så skal kirken ikke hjælpe præsten mere end med halvdelen af hans præsteskat, og præsten skal selv give den anden halvdel, og det vil fremgå af kirkeregnskabet fra årene 1665 og 1667. Ligeledes bør kirken efter gammel skik give præsten frit hus og bopæl og årligt underholde denne. Årsagerne til disse sidste to poster er følgende: Fordi præsten her på stedet hverken har ager eller eng for sin embedsgerning eller tiende for kvæg (som dette sker for præsterne i hele riget ifølge kongeligt dekret), så er ham for længe siden blevet lovet af kommunen et frit hus og betaling af al kongelig skat for ham.

Som vidnesbyrd for sandheden

M. Jürgen Harder

Sandfærdig kopi fra kirkeregnskabsbogen

Test[e] J.G. Röbel

Det mærkelige udtryk 'tre års meddomsmænd' kan forklares ved, at, når større eller vigtigere kommunale afgørelser forelå (som i vores tilfælde), toges også de to foregående års *scheppens* med på råd (Nicolaisen 1909, 35-36). Udtrykket 'prinsessestyren' relaterer sig til rigets skattevæsen. Her er der nemlig tale om en særlig skat, som skulle betale prinsesse Frederikke Amalies (1649-1704) medgift, da hun i 1667 blev formælet med Christian Albert (1641-1695), hertug af Slesvig-Holsten-Gottorp (jf. *Prinsesse-styr* i *ODS*). Det kongelige dekret, der henvises til, er sandsynligvis kirkeordinansen fra 1539 (jf. Skautrup 1947, 139; *Kirkeordinansen* i *Encyklopædien*, bd. 10).

Kopien omfatter 270 ord i latinsk håndskrift. I betragtning af det korte tidsinterval mellem vedtægten og kontrakten (næppe mere end syv måneder) må man undres over de store sproglige forskelle. Den eneste fællesnævner mellem begge tekster synes at være, at de danske træk ikke er særlig udprægede. I kontrakten omfatter disse kun ortografien *Schæpen* og *Præster* med <æ> (ud over *Preester* med <ee>) og de leksikale lån *Madtschatt* 'mad(t)skat' (Kalkar 1892-1901, III, 3-4) – dog med den nederlandsk-tyske ortografi <sch> – og *enge* i udtrykket *akker of enge*.

Ellers er de indbyrdes forskelle meget store. I modsætning til vedtægten er kontrakten affattet på et sprog, der er gennemgående nederlandsk med hensyn til pronominerne, konjunktioner, adverbier og verber, medens vedtægten – som sagt – netop på disse områder er nedertysk. Også for den nutidige læser af moderne nederlandsk kan kontraktens sprog stadigvæk gå for at være et (omend lidt besynderligt) nederlandsk. Dertil kommer, at de ord, denne moderne læser måtte opfatte som 'tyske', mest nok er helt normale nederlandske ord i historisk forstand. Et godt eksempel derpå er adverbiet *her* i udtrykket *van allem ouden tyd her* 'for længe siden', der ikke var ualmindeligt i ældre nederlandsk, men som nu er forsvundet ud af sproget (jf. *WNT, her²*).

Specifik nedertysk ortografi ses dog ved præfikset *uth* 'ud' i verbet *uthleggen* 'betale, udrede' og det af dette verbum afledte substantiv *uthlegginge* 'betaling, udredning'. Dette gælder i øvrigt kun for præfikset; præpositionen *uyt* 'ud' staves konsekvent som på nederlandsk (jf. den moderne nederlandske stavemåde *uit*). Dertil kommer stavemåden af substantiverne *Preester* 'præst' og *deenst* 'embede'. Denne ortografi vidner om en nedertysk – i modsætning til nederlandsk og højtysk – lydudvikling fra senfællesgermansk **iu* – over oldsaksisk *io* – til den middelnedertyske monoftong ê⁴, hvorimod senfællesgermansk **eo* har udviklet sig til den middelnederlandske og middelhøjtyske diftong *ie* (Van Loey 1970, §§

67, 81-82). Samme ortografi ses i øvrigt også i vedtægten ved samme substantiv *Denst* 'embede' og pronominet *nemand* 'ingen'. Rent nedertyske ord i teksten er pronominet *sulvest* 'selv' (ved siden af det nederlandske *selve*(*n*)), konjunktionen *edder* 'eller' (ved siden af det nederlandske *of*) og adverbiet *even* (i betydningen 'netop').

Specifik højtysk ortografi ses ved substantivet *Veh* 'kvæg' og adjektivet *gantzem* 'hel' med henholdsvis <*h*> og <*tz*>, og i det hele taget ved, at substantiverne gennemgående, men ingenlunde konsekvent, skrives med stort begyndelsesbogstav.

De andre tyske træk kan ikke bestemmes nærmere som enten neder- eller højtyske. Ortografien med identisk dobbeltkonsonant i udlyd i substantivet *Schatt* er tysk og ikke nederlandsk (i modsætning til stavningen af f.eks. verbalformen *opleydt* 'pålægger', der ender på to forskellige konsonanttegn). Verbet *erleggen* 'erlægge' er oprindeligt (høj)tysk, men sandsynligvis hentet fra det danske kancellisprog. Det samme gælder *Majestet* og (*Princessinnen*) *Stuyr*.

Med hensyn til substantivernes pluralisdannelse springer den tyske pluralisform *gelder* 'penge' som andet led i sammensætningen *subsidien gelder* 'bistandspenge' i øjnene. Ved adverbiet *süst* 'sådan' røber omlydstegnet og det epentetiske *t* ordets tyske oprindelse, selvom *sus* 'således' – uden omlydstegn og *t* – var ret almindeligt i nederlandsk i det 16. århundrede (se *WNT, sus[1]*). Dette ord er i øvrigt – bortset fra egennavnene *Jürgen Harder* og *J.G. Röbel* – det eneste ord med omlydstegn i kontrakten.

Et andet påfaldende fænomen er brugen af den tyske relativpartikel *so* i sætningen *doch subsidien gelder, <u>so</u> den armen Preestern tot hulpe gegeven worden, sal de Præster sulvest erleggen* 'men bistandspenge, <u>der</u> gives til de fattige præster, skal præsten selv betale afgift af'. De første eksempler på relativpartiklen *so* 'der, som' – der historisk kun kan forekomme som subjekt og direkte objekt – stammer fra 1100-tallet, men de fleste hører hjemme i højbarokken (mellem 1630/50 og 1700/20), dvs. i den tid, kontrakten blev affattet (jf. Behaghel 1928, 730; Ágel (i trykken), 3). Relativpartiklen *so* brugtes overregionalt og var tendentielt forbundet med kancellisproget og den højere diskurstradition (Brooks 2006, 135). Samme relativpartikel forekommer i øvrigt også i vedtægten i *alle de jenige <u>so</u> up Dragöe wohnhaft sind* 'alle dem, <u>der</u> bor på Dragør' (Winge 1992, 342).

Den mest overraskende tyske indflydelse vedrører imidlertid kasusbrugen. Hvad det talte sprog angår, kan det nævnes, at de tidligste nederlandske kolonisters modersmål ikke havde et fungerende kasussystem

mere, eftersom nominativ og akkusativ var faldet sammen (synkretisme), og dativ og genitiv – på nær nogle få uproduktive levn – var så godt som forsvundet fra nederlandsk i 1500-tallet (Crena de Iongh 1959, 94; De Korne & Rinkel 1987, 31; Geerts 1966, 171; Van den Toorn e.a. 1997, 300). Hvis teksten fremviser et fungerende kasussystem, kan dette således i hvert fald ikke stamme fra de tidligste kolonisters (talte) modersmål.

For at undersøge kasusbrugen skal man først og fremmest identificere de forskellige adnominale endelser. Til vores formål – identifikation af et funktionelt kasussystem – er det tilstrækkeligt at se på pronominers endelser og adjektivers stærke endelser. Traditionelt skelnes mellem funktionel kasus (dvs. kasus i nominativisk, akkusativisk, dativisk og genitivisk funktion) og præpositional kasus (dvs. kasus styret af en præposition). Først identificeres de adnominale stærke endelser i funktionel kasus, derefter i præpositional kasus.

I teksten forekommer nominativisk funktion i 10 tilfælde:

(1)　Wanneer (…) *Syne* koninglyke *Majestet* (…) Schatt opleydt.
　　　Når Hans Kongelige Majestæt pålægger en beskatning.
(2)　So sal *de Kerke* (…) uthleggen.
　　　Så skal kirken udlægge.
(3)　Subsidien gelder (...) sal *de Præster* sulvest erleggen.
　　　Bistandspenge skal præsten selv betale afgift af.
(4)　Daer *de Kerke* (...) sowel geven moeste als de Preester.
　　　Til hvilken både kirken og præsten skulle afdrage.
(5)　Daer de Kerke (...) sowel geven moeste als *de Preester.*
　　　Til hvilken både kirken og præsten skulle afdrage.
(6)　Wanneer *de Kerke* (...) mede schatten sal.
　　　Når kirken skal medbetale.
(7)　*De Præster* sal selven (...) geven.
　　　Præsten skal selv give.
(8)　Insgelyken is *de Kerke* (...) schuldig (...) te verschaffen.
　　　Ligeledes bør kirken give.
(9)　*De oorsake* (...) zyn dese.
　　　Årsagen er følgende.
(10)　Terwyl *de Preester* (...) niet heeft akker of enge.
　　　Fordi præsten hverken har ager eller eng.

I alle disse tilfælde er der tale om subjektsfunktion. Både i maskulinum (3,5,7,10), femininum (1,2,4,6,8) og pluralis (9) bruges endelsen *-e.*

Akkusativisk funktion forekommer i 5 tilfælde:

(11) So sal de Kerke (...) *alle schatting* (...) uthleggen.
      Så skal kirken udlægge al skat.
(12) So sal (de Kerke) dem Præster niet meer als *de* halve *part* (…) tot
      hulpe komen.
      Så skal kirken ikke hjælpe præsten med mere end halvdelen.
(13) De Præster sal selven *de* andere halve *part* (...) geven.
      Præsten skal selv give den anden halvdel.
(14) De Kerke (is) schuldig dem Preester *een Vrywoonhuys* (...) te ver-
      schaffen.
      Kirken bør give præsten fri bolig.
(15) Insgelyken (heeft de Preester) *geene Tiende* vam Veh.
      Ligeledes har præsten ingen tiende for kvæg.

I alle disse tilfælde er der tale om direkte objektfunktion. Både i femininum
(11,12,13) og pluralis (15) bruges endelsen *-e*. Den ubestemte artikel
een (14) i neutrum singularis har ingen endelse. Desværre er der ingen
eksempler på maskulinum singularis. I nominativisk funktion bruges
således konsekvent endelsen *-e*, medens vi ikke ved, om endelsen *-n* bruges
i akkusativisk funktion.
    Dativisk funktion forekommer i 5 tilfælde:

(16) Wanneer (...) Syne koninglyke Majestet *den Præstern* (…) Schatt
      opleydt.
      Når Hans Kongelige Majestæt pålægger præsterne en beskatning.
(17) Subsidien gelder, so *den* armen *Preestern* (...) gegeven worden.
      Bistandspenge, der gives til de fattige præster.
(18) So sal (de Kerke) *dem Præster* (...) tot hulpe komen.
      Så skal kirken hjælpe præsten.
(19) Insgelyken is de Kerke (...) schuldig *dem Preester* een Vrywoon-
      huys en Residence te verschaffen.
      Ligeledes bør kirken give præsten frit hus og bopæl.
(20) Als süst (…) *dem Preestern* nae der ordinantie gebeurt.
      Som dette sker for præsterne ifølge (kongeligt) dekret.

I alle disse tilfælde er der tale om indirekte objektfunktion. I maskulinum
singularis (18,19) bruges *-m*, i pluralis (16,17,20) både *-m* og *-n*. Endelsen
-m og markeringen af dativ pluralis ved substantiverne med *-n* er tysk og

ikke nederlandsk. I modsætning til tysk bruges *-m* dog også i pluralis, nemlig i variation med *-n*. Denne variation er ikke fonologisk betinget, eftersom eksemplerne (16) og (20) viser, at både *-n* og *-m* kan forekomme foran samme konsonant.

Genitivisk funktion forekommer i fire tilfælde:

(21) wegens *der Princessinnen* Stuyr
      på grund af prinsessestyren
(22) uyt *der Kerken* rekeninge
      af kirkeregnskabet
(23) uthlegginge *aller* koninglyke *schatting*
      betaling af al kongelig skat
(24) tot getuygenisse *der Waerheit*
      som vidnesbyrd for sandheden

Eksemplerne (23) og (24) er utvetydige. Her er der tale om genitiviske attributter med endelsen *-r* i femininum singularis. Derimod er eksemplerne (21) og (22) tvetydige: *der Princessinnen* (21) og *der Kerken* (22) kan ses som genitiviske attributter til henholdsvis *Stuyr* (21) og *rekeninge* (22) med endelsen *-r* i henholdsvis pluralis og femininum singularis, men samtidig kan *Princessinnen Stuyr* (21) og *Kerken rekeninge* (22) også ses som ikke-sammenskrevne sammensætninger. I dette tilfælde står den ikke-sammenskrevne sammensætning *Princessinnen Stuyr* (21) i genitiv (femininum singularis) på grund af præpositionen *wegens*, der styrer genitiv, og den ikke-sammenskrevne sammensætning *Kerken rekeninge* (22) står i dativ (femininum singularis) på grund af præpositionen *uyt*, der styrer dativ.

De endelser, der findes i de ovenstående eksempler, kan gengives i følgende paradigme (med forbehold for tvetydigheden ved eksemplerne (21) og (22)):

	Singularis			pluralis
	maskulinum	femininum	neutrum	m./f./n.
N	*-e*	*-e*	-	*-e*
A	-	*-e*	-	*-e*
D	*-m*	(*-r*)	-	*-n, -m*
G	-	*-r*	-	(*-r*)

Fig 2: Adnominale stærke fleksionsendelser ved funktionel kasus

Desuden findes i teksten følgende præpositionalfraser:

(25) tusschen *den Preester*
     mellem præsten
(26) (tusschen) *den Schout*
     mellem oldermanden
(27) (tusschen) *syne drie jaars Scheepen*
     mellem hans tre års meddomsmænd
(28) in *voller* (*contract*)
     i fuld kontrakt
(29) (in) *vaster contract*
     i fast kontrakt
(30) om *den Preester Schatt*
     om præsteskatten
(31) i*m Lande*
     i landet
(32) voor *den Preester*
     for præsten
(33) in *desen jaer*
     i år
(34) van *haere Tienden*
     af sin tiende
(35) van *haeren* egen *Tienden*
     af sin egen tiende
(36) tot *synen schatt*
     til hans skat
(37) van *synen schatt*
     af hans skat
(38) nae *ouden gebruyk*
     efter gammel skik
(39) van *dese* twee laeste *posten*
     til disse sidste to poster
(40) aan *dese plaetse*
     her på stedet
(41) by *synen deenste*
     for sin embedsgerning
(42) va*m Veh*
     af kvæg

(43) i*m* gantzem *Ryke*
      i hele riget
(44) nae *der ordinantie*
      ifølge kongeligt dekret
(45) van *de Gemeente*
      af kommunen
(46) van *allem* ouden *tyd* her
      for længe siden
(47) uyt *het Kerken-Rekeninge-boek*
      fra kirkeregnskabsbogen

Historisk set styrer præpositionerne *by*, *nae*, *tot*, *uyt* og *van* dativ (jf. nyhøjtysk *bei*, *nach*, *zu*, *aus* og *von*), medens *om* styrer akkusativ (jf. nyhøjtysk *um*), og *aan*, *in*, *tusschen* og *voor* både dativ og akkusativ (jf. nyhøjtysk *an*, *in*, *zwischen* og *vor*).

Præpositioner, der historisk styrer dativ, styrer i kontraktteksten dog både dativ og akkusativ. Præpositionen *van* styrer f.eks. akkusativ i *van de Gemeente* (45), *van haere Tienden* (34) og *van dese twee laeste posten* (39), men dativ i *van haeren egen Tienden* (35), *vam Veh* (42) og *van allem ouden tyd her* (46). Også i andre tilfælde optræder akkusativ, hvor der forventes dativ, f.eks. i (*tusschen*) *syne drie jaars Scheepen* (27), *aan dese plaetse* (40) eller *uyt het Kerken-Rekeninge-boek* (47). Vi kan med andre ord gå ud fra, at akkusativ og dativ ikke optræder systematisk efter præpositioner, der historisk styrer akkusativ og/eller dativ. Efter disse præpositioner konkurrerer *-n* (25,26,30,32,36,37,41) og *-m* (46) i maskulinum singularis, *-e* (40,45) og *-r* (28,29,44) i femininum singularis, *-n* (33,38), *-m* (42,43) og *-t* (47) i neutrum singularis, og *-n* (35) og *-e* (27,34,39) i pluralis. Desuden viser en sammenligning mellem *van haeren egen Tienden* (35) og *van allem ouden tyd her* (46), at variationen mellem *-n* og *-m* ikke er fonologisk betinget, eftersom begge endelser forekommer foran vokal.

De fleksionsendelser, der findes i de ovenstående eksempler, kan gengives i følgende paradigme:

Præpositioner med A/D	*-n, -m*	*-e, -r*	*-t, -n, -m*	*-e, -n*

Fig 3: Adnominale stærke fleksionsendelser ved præpositionel kasus

Joost Robbe

Med udgangspunkt i en syntese mellem fig. 2 og 3 kan følgende paradigme opstilles:

	Singularis			pluralis
	maskulinum	femininum	neutrum	m./f./n.
N	*-e*	*-e*	*-*t*	*-e*
A	*-*n*	*-e*	*-t*	*-e*
D	*-n, -m*	*-r*	*-n, -m*	*-n, -m*
G	*-*s*	*-r*	*-*s*	*-r*

Fig. 4: Adnominale stærke fleksionsendelser ved funktionel og præpositionel kasus

Asterisken angiver, at de respektive endelser ikke forefindes i selve teksten. Til gengæld kan de let rekonstrueres. Eftersom endelsen *-t* forekommer efter præposition i akkusativ neutrum singularis (47), kan man gå ud fra, at *-t* også er endelsen i nominativ neutrum singularis. Det stemmer også overens med den pronominale endelse *-t* i *'t zy* 'medmindre, højtysk: *es sei* (*denn*)'; *wat name 't ook hebben mag* 'hvad det så end måtte hedde'; *is 't so veraccordeert* 'blev det aftalt'; og *is 't hem (…) belooft* 'er det blevet lovet ham'. Endelsen *-n* i akkusativ maskulinum singularis er ligeledes let at rekonstruere, eftersom der ingen historiske forskelle er mellem nederlandsk og tysk på dette punkt. Det samme gælder endelsen *-s* i genitiv maskulinum og neutrum singularis.

Nøglen til forståelsen af kasusparadigmet er imidlertid den særlige dativbøjning. I kontrakten konkurrerer den tyske dativendelse *-m* frit med den (historiske) nederlandske dativendelse *-n*, der dog – i talesproget – kun eksisterede i uproduktive levn, da kolonisterne slog sig ned på Amager. Dette lader formode, at amagerhollænderne i deres skriftsprog har udviklet et nyt kasussystem med forbillede i tysk. Resultatet er et selvstændigt kasussystem, der hverken set fra et tysk perspektiv eller fra et (historisk) nederlandsk perspektiv er grammatisk. Set med tyske øjne er den adnominale endelse *-m* ikke grammatisk i pluralis (jf. Lasch 1914, 102), og set med (historisk) nederlandske øjne er hverken den adnominale endelse *-m* i maskulinum og neutrum singularis og pluralis eller den nominale endelse *-n* i pluralis grammatisk (jf. Van Loey 1976, 27-32). Imidlertid kunne udviklingen af dette kasussystem kun ske hos sprogbrugere, der havde et omfattende kendskab til tysk bøjningsmorfologi.

Ironisk nok har amagerhollændere hermed opnået, hvad de nederlandske renæssancefilologer drømte om, men ikke kunne opnå: en genoprettelse af kasussystemet – i hvert fald i skriftsproget – efter tysk forbillede, der kunne konkurrere med det græske og det latinske. Det var f.eks. et af de vigtigste formål med den første nederlandske grammatik, Hendrik Laurensz Spiegels (1549-1612) *Twe-spraack van de Nederduitsche letterkunst*, der udkom i Leiden i 1584.

4. En sammenligning
Winge (1992, 342-243) bestemte vedtægtens sprog som hovedsageligt nedertysk med højtyske ortografiske og leksikale træk (deriblandt også funktionsordene *welche*, *unsere* [ved siden af nedertysk *unse*] og *jeder*), medens de danske træk var rent ortografiske. Desuden fandtes i teksten nogle få 'nederlandske relikter'.

Analysen af kontraktens sprog i nærværende studie vender Winges konklusion på hovedet. I modsætning til vedtægtens sprog er kontraktens sprog gennemgående nederlandsk med en begrænset ortografisk og leksikal neder- og højtysk andel samt en meget begrænset ortografisk og leksikal dansk andel. Den store overraskelse – set med nederlandske øjne – er dog forekomsten af et fungerende kasussystem efter tysk forbillede.

Det betyder, at analysen af vedtægten fra 1663 og kontrakten fra 1664 leder frem til to modsatte bestemmelser af amagerhollændernes skriftsprog i 1600-tallet: dels som 'hovedsageligt nedertysk med en mindre nederlandsk andel', dels som 'hovedsageligt nederlandsk med en mindre nedertysk andel'.

5. En hypotese
Disse to modsigende bestemmelser af amagerhollændernes skriftsprog kan dog forenes ved, at man betragter sproget fra et synkront variationsperspektiv. Min hypotese er således, at amagerhollændernes skriftsprog omkring 1663/64 er karakteriseret ved et nederlandsk-nedertysk kontinuum. Til interne dokumenter (inden for Store Magleby) brugte man et sprog, der kan bestemmes som nederlandsk med nedertysk islæt, medens man til eksterne dokumenter (f.eks. mellem Store Magleby og Dragør) brugte et nedertysk, der var så rent som muligt, og som i denne periode fungerede som *lingua franca* i hele Østersøområdet. Inden for dette kontinuum spiller kasussystemet en afgørende rolle, idet dette adskiller de nederlandske kolonisters skriftsprog både fra nederlandsk og nedertysk.

Den kommunikative kontekst definerer således sprogforholdene inden for det nederlandsk-nedertyske kontinuum: Kontrakten fra 1664 mellem præsten og oldermanden tjener et internt formål, Til gengæld tjener vedtægten et eksternt formål, idet den skal regulere forholdene mellem Store Magleby og nabobyen Dragør. Også indskrifterne tjener et eksternt formål, idet de taler til besøgende udefra. Sproget i vedtægten og indskrifterne skal således forstås som forsøg på et skrive et nedertysk, der er så rent som muligt. Set på den måde er det næsten ironisk, at Pontoppidan (og derefter de Thurah) brugte vedtægten som skoleeksempel på 'amagerhollandsk', da vedtægtens sprog snarere repræsenterer et yderpunkt i kontinuummet, nemlig det punkt, der befinder sig længst væk fra nederlandsk og tættest på nedertysk.

Forhåbentligt vil en omfattende undersøgelse af flere tekster gøre det muligt at drage endnu mere præcise konklusioner om de nederlandske kolonisters skriftsprog på Amager og dettes udvikling.

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Bilag 1: Pontoppidans transskription af vedtægten mellem Store Magleby og nabobyen Dragør fra 3. december 1663

Anno 1663. Donnertages den 3 Decembr. dat Recht geholden van Schultes Didrich Cornelesen und de gemene Schepens namentlig Jacob Clausen und Didrich Weibrandsen. De sölwen Dages heft Schultes Didrich Cornelesen alle Indvaaners op Dragöer vor et Rath stevnen laten, unde wegen de vorige Contract so ere Vorfahren mit unse Vorælders heben gemacht unde ingegangen, efte si dörbi wollen bliwen, hier na als si toforn heben gedan, welche Contract in det vorgangne Krigs Wæsen unde Fürs-Noth is to nichte geworden. To welcher Citatorschrevne Dragöers Lüde alle samtlich vor it Rath sind gemöttet, und hebben dar to geantwortet, dat se bi ere vorige Contract wolten bliwen herna als se toforne gedan hetten, welcher Indhaldt also lüttet: 1) Vor het erste, wat se den Præster schöllen gewen vor sin Denst, dat he se underricht in de Kirche. 2) Dat se nemand van unse Gemeende ut er Kirchestule sollen drengen. 3) Dat se vor ein olde dode Schöllen gewen, der hier in et Kirchhoff begraben wird 8 Schill. und vor ein Kind 4 Schill. 4) Dat se nemand van unse Gemeende schöllen uddrengen, even dar ein Schip an de Grond komt unde nemand van unsere schölen de Dragöer Lüde ud drengen. 5) Dat se belowet hebben, vor jeder paar Perde dat se hier op se Weide hebben, to gebben 2 Rixdal. 6) Und ein Kühe ein Schlechdaler. 7) Vor ein Færken 4 Schill. unde er Færkens to ringen, nach de Königs Mandat, als behörigist [= behörig ist, JR]. 8) Dat alle de jenige so up Dragöe wohnhaft sind, unde Perde unde Wagens hebben, schölen to Brig Geld gewen jærlig jederman 4 Schill. unde de dar Perde und Wagens hebben schölen gewen gelich mit uns hier in Dörp. 9) Dat se de Bosmand schölen lehnen wen der Udschrift falt gelich alse ere Vorfahren gedan hebben. 10) Wen der Königs Schatt upkomt in de Stede vor de Königs Schatt, dat se vor 4 Höffe schollen gewen, gelich als ere Vorfahren alle Tidt hebben gedan. 11) Dat se den Schout schölen anspreken um Vorlof wanneer dat se kley efte sade van unse Wide nödig hebben. dert Dat dit in der Wahrheit ende unwiderröplik

van uns ende unse Nachkömlinge schal geholden werden wo bowen vermeldt, hebben wi nachgeschribenen Mons Nielsen, Christen Nielsen, Thomas Mathiesen, Piter Hendrichsen, Palm Hendrichsen, Peter Asmussen, Joen Svendsen und Söeren Paulsen up de gemene Dragöer Manne wegen, dat met unse egen Hande efte Boemerke bekræftiget unde undergeskreven up Amak im Hollænder dorpe geschrewen Jar und Dag wo bowen vermeldt.

Whoever that likes relatives…

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Abstract
In this paper we will deal with some aspects of free relative clauses (FRC) in English, showing that there are certain differences between restrictive relative clauses (RRC) featuring *whoever* on the one hand and *whichever / whatever* on the other in terms of both their syntax and their semantics. In particular, we will focus on solving a long-standing puzzle that involves paradigms where the opposite of what the venerable *that-t filter would predict obtains.

1. Introduction: overview

Consider to begin with the following examples:

(1) a. Whoever leaves last must turn the lights off. = INDEFINITE
  b. Whoever that leaves last must turn the lights off. = INDEFINITE

(2) a. Whoever Bill likes will get the scholarship.
  b. Whoever that Bill likes will get the scholarship.

(3) a. *Whoever that likes Bill will go out with him.
  b. Whoever likes Bill will go out with him.

(4) *I'll buy whatever that he's selling.
  (adapted from McCawley 1998: 455)

(5) Whatever difficulties that she should encounter, she'll solve them.

The only difference between the (a) and (b) examples in (1–3) is the presence of an overt COMP *that*. Provided that in contemporary generative grammar the head C / COMP must be present regardless of whether it is phonologically manifested or not (because the features in C play a number of roles in the derivation), in principle we would expect no syntactic differences between *that* and *that*-less relative clauses. However, as has been extensively studied, in some dialects of English there is a condition against subject extraction across an *overt* COMP, the so-called **that-trace filter* (Perlmutter 1968: 204; Chomsky & Lasnik 1977: 451):

(6) $*[_{S'}$ *that* $[_{NP}$ *e*$]$ . . . $]$, *unless S' or its trace is* [sic] *in the context:* $[_{NP}$ NP ___ …$]$

It is crucial to note that, even if the filter was as robust as the early literature would have us think, it does *not* imply that subject extraction across a *covert* COMP (~~that~~, Ø, …) will result in a grammatical string; however, it is not clear how the grammar would remain consistent if both configurations (7a) and (7b) had to be excluded selectively:

(7)   a. $[NP_i … [_{S'} that[_S e_i …]]$
          b. $[NP_i … [_{S'} Ø \quad [_S e_i …]]$

Here we will present paradigms where configuration (7b) (which we will refer to as a *contact relative clause*, following Jespersen 1933: Chapter XXXVI, §34.3) results in ungrammaticality and configuration (7a) results in a grammatical and acceptable sentence, the mirror image of what is conventionally held to obtain for English.[1] We will argue that there are syntactic and semantic reasons to refine the locality conditions that restrict reordering transformations in relative clauses, and to revisit the structural descriptions that are adequate for different kinds of free relatives.

2. Free relatives, transparent relatives, and (mostly) everything in between

We need to distinguish two main kinds of antecedent-less relative clauses for the first part of this paper:

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[1] I want to thank Barry Schein for putting up with me badgering him about this observation some 40 years ago. His encouragement and comments have kept this going as an earworm all this time [JDS].

    A. Free relative clauses, including
        i. Bare *wh*-relatives
        ii. *Wh-ever* relatives
    B. Transparent relative clauses

Let us now very briefly summarize some aspects of the syntax and semantics of relative clauses. For purposes of this paper, it is essential to ask whether the *wh*-element has been reordered outside a cyclic node or not[2]; this restricts the class of constraints that can be invoked to account for the data. In this respect, there are two main proposals: in one, the *wh* is inside the maximal projection that is identified with the relative clause (say, CP / S'), as in Jacobson (1995), Hirschbühler (1976), among many others; there is no reordering that crosses a cyclic node (see also McCawley 1998: Chapter 13). In the other, the *wh* does not belong to the maximal projection of the free relative, but rather occupies a position in the NP which the free relative modifies (e.g., Bresnan & Grimshaw 1978; Larson 1987 1998), thus crossing a cyclic node via either reordering (Kayne, 1994) or indexing (since the relative pronoun still has a grammatical function inside the CP; *subject* in the examples below). Both options are schematized below:

(8)   a. $[_{NP}\, \emptyset\, [_{CP}$ who(ever) thinks John is funny]]
           wouldn't know a joke if it hit him over the head.
    b. $[_{NP}$ who(ever) $[_{CP}$ thinks John is funny]]
           wouldn't know a joke if it hit him over the head.

As usual, the specifics vary (see, e.g., Grosu 1994; van Riemsdijk 2017 for discussion), but this is a good enough approximation. In order to make a proper separation between these two proposals, we have taken into consideration D-Structure, before any movement rule applies. This is done for illustrative purposes, since if relative pronouns move from Spec-C to NP (as in Kayne 1994), and we looked at the structure *after* that movement, then it wouldn't be particularly easy to make a proper distinction between these two proposals (see also Izvorski 2000: Chapter 1 for discussion).

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[2] This cyclic node, in the nominal domain, will be assumed to be NP. However, as a reviewer pointed out, there are arguments to claim that DP is the relevant cycle (e.g., Grosu 1994; Huddleston and Pullum 2002): the structure would then go along the lines of (i):
      i)   [DP Ø [CP *Op*…]]
  Here we will use NP to refer to a nominal cyclic node without further ado.

We also need to consider aspects of the semantics of antecedent-less relatives. Bare *what* free relatives get a *definite* or *universal* reading rather than an indefinite reading (Jacobson 1995; Wilder 1998):

(9)   What you ordered is on the desk.
       (= the thing(s) which you ordered, ≠ something you ordered)

Wh-ever free relatives, on the other hand, have an *indefinite* reading (Jacobson 1995: 454):

(10)   Whatever books he defaced were priceless.
       (= any books he defaced,
        ≠ the specific books he defaced) (McCawley 1998: 457)

(11)   John will read whatever Bill assigns.
       (= anything Bill assigns) (Jacobson 1995: 457)

The third kind of free relative structure we need to consider, apart from *bare-wh* and *wh-ever* relatives, are *transparent relative clauses*. Transparent free relatives (henceforth TFR; Kajita 1977; Wilder 1998; McCawley 1998: 757–758; van Riemsdijk 2000; Grosu 2002) have the form of *wh-* free relatives, but always contain a predicative structure inside, with the *wh-*operator being displaced from a small clause-like structure:

(12)   Mary presented [what$_i$ appeared to be t_i a radical new proposal].

Transparent free relatives are *endocentric* in the sense that there is a predicative XP that determines the distribution of the whole construction, such that [what you might call stupid] has *adjectival* distribution: thus, it cannot appear in subject or object position:

(13)   a. *[What you might call stupid] just walked in.
       b. *I won't tolerate [what you might call stupid].

However, it can appear as a nominal modifier or a predicative expression:

(14)   a. A [what you might call stupid] decision can ruin your life.
       b. John is [what you might call stupid].

Note, incidentally, that identifying all free relatives as CPs without further considerations would obscure this distributional fact.

We can now start comparing the three kinds of antecedent-less relative clauses we have identified so far. TRF can appear in *there*-existentials, but garden-variety free-relatives cannot:

(15)   There is $\left\{ \begin{array}{l} \textit{what you might call food} \\ *\,\textit{what you bought yesterday} \end{array} \right\}$ on the table

In this respect, *wh-ever* relatives behave more like TFR than garden-variety free-relatives:

(16)   There is [whoever Bill likes] at the door.
        (OK only in a definite reading)

(17)   There is [whatever you cooked yesterday] in the fridge (idem ant.)

Ever-relatives, possibly due to their indefinite interpretation, allow for a restrictive relative clause taking the whole *ever*-relative as an antecedent:

(18)   Whoever Bill likes that is not a complete idiot
        will get the scholarship.
        (= any person who Bill likes who is not a complete idiot,
        ≠ any person who is not a complete idiot)

(19)   Whoever likes Bill that is desperate for a date will go out with him
        (= any person who likes Bill who is desperate for a date,
        ≠ any person who is desperate for a date)

However, not all *wh-ever* relatives behave the same. Consider the contrast between (20) and (21):

(20)   John read whatever Bill assigned - although I don't remember what
        it was, but I do know that it was long and boring. (Jacobson 1995:
        457)

(21)   ?Whoever$_i$ Bill likes will get the scholarship –I'm sure he$_i$'s a smart
        chap

Initially, we could make the following (rather coarse-grained, admittedly) tripartite classification (see also McCawley 1998: 454, ff. for a discussion of the differences between bare-*wh* free relatives and *wh–ever* free relatives):

Transparent free relatives (TFR):
(adapted from Wilder 1998: 192; see also van Riemsdijk 2000; Grosu 2002: 156)
– Indefinites (thus can appear in indefinite-only positions)
– Plural agreement possible with bare *what*
– *wh*-phrase can only be bare *what*
– Endocentric

Type 1 free relatives (FR 1):
– Definites
– Singular agreement with bare *what*
– *wh*-phrase can (but need not) be *wh-ever*
– Exocentric (sort of)
– Strong islands

Type 2 free relatives (FR 2):
– Indefinites
– *wh*-phrase is always *wh-ever*
– Weak islands

In the remainder of this paper, we will focus on some puzzling properties of FR 2, particularly related to the *wh*-operator of choice and consequences that this choice has for the syntax and semantics of free relatives, including aspects of locality and quantification. We will see that all Type 2 free relatives are equal, but some are more equal than others…

3. No man is an island; [whichever of the men] is, too

As is well-known, FR 1 generate island effects, which can be blamed on either (i) a violation of Ross' (1967: 127) Complex NP Constraint[3] if FR 1 are considered to be adjuncts to NP (a position defended in Bresnan and Grimshaw 1978 and much subsequent work) or (ii) *wh*-island effects if

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[3] *The Complex NP Constraint*
No element contained in a sentence dominated by a noun phrase with a lexical head noun may be moved out of that noun phrase by a transformation (Ross 1967: 127).

the operator in FR is considered to be an interrogative pronoun (McCawley 1998: 455, ff.; see also Schiel 2018 for some related discussion). Some relevant examples follow:

(22) *The student$_i$ that Mary invited whoever likes t_i (Wilder 1998: 194)

(23) *Which student$_i$ did Mary invite whoever likes t_i?

(24) *Which student$_i$ did whoever Mary invited t_i pass the test?
(intended: whoever Mary invited, that student passed the test, I want to know which student it was)

In contrast, TFR do not always constitute strong islands, unlike restrictive relatives or garden-variety *wh*-free relatives:

(25) The professor who$_i$ I met [what you might call a fan of t_i]
(TFR)

(26) *Who$_i$ did you meet the professor [that was the advisor of t_i]?
(Restrictive RC)

(27) *Who$_i$ is [what you bought for t_i] on the desk?
(FRC 1)

Less clear are the facts regarding the reordering of constituents *within* the relative clause (as opposed to extracting something *from* the relative clause). Recall that we very briefly summarized three positions about the internal structure of relative clauses: (i) there is cyclic movement of what we will call the *wh-operator*[4] to COMP, (ii) post-cyclic movement to NP (which dominates COMP), or (iii) base-generation on NP and indexing of an empty operator in COMP. We will leave the base generation proposal aside for this paper, because it does not allow us to test constraints on extraction (because in a base-generated approach there is no extraction and wherever is the fun in that). So, we will assume that there is a reordering rule applying in the cases that interest us so as to have something to poke with a grammatical stick. Consider, to begin with, the following paradigm:

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[4] Transparent free relative intended.

(28)   a. [Whoever likes Bill] stole the car
       b. *What$_i$ did [whoever likes Bill] steal t_i?
       c. What$_i$ did [whoever that likes Bill] steal t_i?

There is something curious about this paradigm, and that is that whatever causes the difference between (b) and (c) cannot pertain to the relation between *what* and its trace, because that relation is identical in all structural aspects in both sentences. It seems that we need to look at the free relative closer:

(29)   a. [whoever likes Bill]
       b. [whoever that Ø likes Bill]

Following Gazdar (1981: 161) and George (1982: 80), we will assume that there is no movement of *whoever* in (29a), because such movement would be vacuous: there is, to our knowledge, no theory-independent way of distinguishing between (30a) and (30b) at least in English if COMP = Ø:

(30)   a. [$_{S'}$ Subj$_i$ COMP [$_S$ t_i …VP]]
       b. [$_{S'}$ COMP [$_S$ Subj …VP]]

However, in (29b) there is at least one reason to think some reordering has taken place: the overt COMP *that* appears between the subject and the verb. Assuming that COMP itself cannot move (because there is no structural place to which it could do so, or because its trace would not be properly governed; this does not concern us now), we need to account for the fact that the subject appears now before (and, by assumption, above) COMP. In order to do this, we assume further that the Ø in S is identified as the trace of *whoever*. A preliminary approach to the relevant configuration thus looks like this[5]:

(31)   [$_{S'}$ whoever$_i$ that [$_S$ t_i likes Bill]]

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[5]   A reviewer has pointed out that (31) is the kind of configuration banned by the *Multiply Filler COMP* Filter (MFCF; Chomsky and Lasnik, 1977), by virtue of having an overt *wh*-operator and an overt C head. This is an interesting puzzle, since it is in principle possible to (i) multiply the CPs / S's and thus avoid the MFCF violation (as done in, e.g., Donati and Cechetto 2011), or (ii) assume that *whoever* in (31) is in N and not within the S' which defines the FRC.

Which is *exactly* the kind of configuration that is predicted to be ungrammatical by the *that-t filter (regardless of the structural position of *whoever*, there is displacement/indexing crossing an overt COMP). We can provide some further examples of this puzzling phenomenon in the pair (32a-b)[6]:

(32) a. *Whatever difficulties should present themselves to her, she'll solve them.
      b. Whatever difficulties that should present themselves to her, she'll solve them.

Remarkably, the situation illustrated by (32) is the mirror image of the paradigms that *that-t was created to describe.

Let us take a look at what happens when the *wh-operator* is the *object* of the relative clause:

(33) Whoever Bill likes stole the car.

(34) a. What did whoever Bill likes steal?
      b. ?What did whoever that Bill likes steal?

Here things are more or less as expected, with the version with an overt COMP being degraded with respect to the empty-COMP version. We thus have a conundrum in our hands.

3.1 Whatever the plot, it thickens

Recall that we, following the literature, said that FR 1 generate island effects. Also, that FR 2 behave differently from FR 1. But just how differently? In order to properly address this question, we need to consider the full paradigm of forms that can appear in these configurations. We have nominative forms,

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[6] It may or may not be relevant to note that (32a) is perfect without *to her*, and (32b) is ungrammatical without *to her*. At least one of the authors has proposed that there are in fact two verbs written *present* in English, homophonous but distinct syntactically and semantically. Only one of those allows for a *–self* complement (in fact, it is required); we are talking about that one in (32). For purposes of looking at the mirror *that-t effect this note may or may not be relevant, but now we have a clean conscience.

(35)   Whoever (that) likes Bill…

…and accusative forms,

(36)   Who(m)ever (that) Bill likes…

…both of which are arguments (subjects and objects, respectively). However, is it possible to have *wh-ever* forms as *modifiers*? It would seem so, in the light of examples like

(37)   *Whosever book* this is better come up and claim it

(38)   *Whoever's idea* it was to do this game mode you need a raise sir[7]

(39)   *Whosever room* this is should be ashamed! (from 'Messy Room', by Shel Silverstein)

These sentences feature not just one, but *two* variants of genitive *wh-ever*, where they modify a noun. In these cases, the *wh-ever* denotes the possessor of the entity denoted by the N. From the perspective of the theory of locality and phrase structure, it is interesting to note that the referential index of the FRC is given by the *wh-ever* element, *not* by the N (*book*, *idea*, and *room* in (37), (38), and (39) respectively). As a matter of fact, if we try to give the FRC the N's index, the result is ungrammatical:

(37')   **Whosever book* this is is a first edition

(38')   **Whosever idea* it was to do this game mode was discussed at a meeting
        (ungrammatical if what was discussed was the idea to do the relevant game mode)

(39')   **Whosever room* this is has dirt in the corners

An obvious question to address at this point is, 'what kind of structural description captures this behaviour?' The answer is far from trivial. Whereas the cases analysed above, with *whoever* and *whatever*, may

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[7] https://www.reddit.com/r/Pacybits/comments/akbz9h/whoevers_idea_it_was_to_do_
     this_game_mode_you/

receive a straightforward analysis in which the *wh-ever* element is the head of the subject / object NP, an extension of this analysis to *whosever / whoever's* directly clashes with a big part of the literature on the syntax of genitive phrases. We may cite some examples:

> *In the preposed construction* [e.g., *John's friend*], *the genitive phrase is generated as* **an NP in spec position** *within the containing NP:* $[_{NP} NP N]$ *- and is assigned genitive Case by virtue of this position* (Lyons 1985: 125. Our highlighting)

A similar representation is proposed in Vikner & Jensen (2002)
(40)
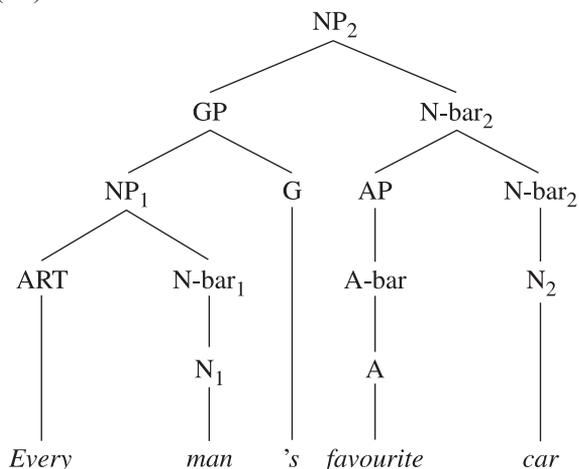
(Vikner and Jensen 2002: 193)

Once again, the genitive phrase is the specifier of the NP whose head determines the referential index of the construction; in the example provided in Vikner and Jensen, this index percolates from *car*, all the way up to NP (they keep track of the indexes by assigning integers to the NPs). We can trace the idea that genitives are DP/NP specifiers back to Abney's influential (1987) thesis, where genitive agreement was a Spec-Head relation:

(41)

```
              DP
             / \
           DP    D'
           |    / \
        John's  D   NP
                |   |
               AGR  N
                    |
                  book
```
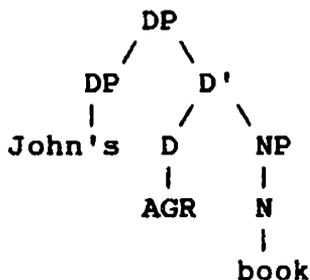
(Abney 1987: 25)

It is important to note that in Abney's representation, the 'matrix' DP is a projection of AGR, which in turn takes the referential index from *book*, with the genitive DP *John's* being the specifier of AGR. In Abney's terms, the DP is the *s-projection* ('semantic projection') of *book*, where '*A node's s-projection path is the path of nodes along which its descriptive content is "passed along"*' (Abney 1987: 57). Formally, (Op. cit.)

> *β is an s-projection of α iff*
> a. *β = α, or*
> b. *β is a c-projection of an s-projection of α, or*
> c. *β f-selects an s-projection of α*

In the structures under consideration, the highest DP/NP label is always an *s-projection* of a lexical N which is assigned Case independently, never of the genitive phrase. But examples like (37–39) pose an interesting challenge to these structures.

Note that in all three examples the predicate refers back to the *who* (i.e., the possessor), not to the N (i.e., the possessed). This seems to argue against a structure in which the possessor *whosever* is in a specifier position, as it would be inaccessible: the referential index percolates to the phrasal level from the head of the phrase, not from the Spec (as in Abney's *s-projections*); that is the gist of an endocentric structure. We can flesh this observation out a bit. If the relation between the *wh-ever* form and the V was to be modelled in terms of Agreement (Chomsky 1986, 1995, and much related work), then *stricto sensu* we would be in the presence

of 'Spec-Head' agreement… but with the not-so-small caveat that it is not a head agreeing with *its* specifier, it's a head (the V) agreeing with *its subject's specifier* (in purely configurational terms, the *specifier* of a *specifier*). The Spec of a Spec should not be visible for the head of the XP of whose Spec we are talking about. It cannot be an instance of agreement under government either (since a head does not c-command its Spec). And even if we ventured into the realm of Reverse Agree (Zeijlstra 2012; Wurmbrand 2014), it still does not explain how we *require* a dependency between the V and the specifier of its specifier specifically in the case of *whosever* / *whoever's* but not in the others. Too many problems.

   To add insult to injury, we may also point out that the configuration that would arise violates -at least- the following conditions / constraints / filters:

Strict Cycle	(Chomsky 1973)
A-over-A	(Chomsky 1964, 1973; Bresnan 1976)
Minimal Link	(Chomsky 1995)

And possibly some others (e.g., *i-within-i*, depending on the specific definition).
Just to be perfectly clear: The cases we are looking at are the equivalent of having the NP in (42):

(42) Every man's favourite car

as a subject in a wider structural context, like (43)

(43) *Every man$_{POSSESSOR}$'s favourite car$_{POSSESSED}$ loves a smart woman

where, of course, the lover is *every man*, not his favourite car (if we allow *car* to be the subject of *loves*, then the judgment should be #, not *). (43) is parallel to (43'), repeated from above:

(43')   Whosever$_{POSSESSOR}$ room$_{POSSESSED}$ this is should be ashamed

The relevant dependencies can be illustrated as in (44):

(44)
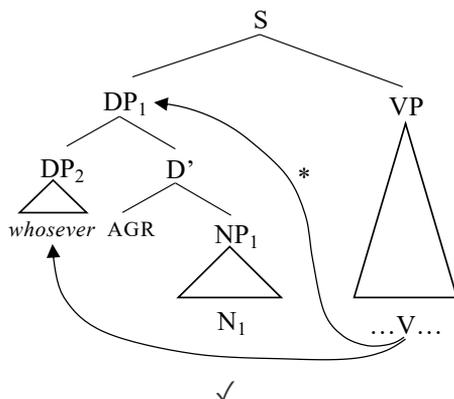
In (44), DP_1 is the *s-projection* of N_1 (NP_1 being its *c-projection*). If we are to follow the authors cited above in their syntactic account of genitive phrases, then we would be forced to say that *whosever* / *whoever's* must generate in DP_2, the Spec of DP_1, with all concomitant accessibility issues.

We can examine the structure of *wh-ever* FRC in more detail, and ask whether all indeed receive the same structural description. One possible solution, which we will briefly toy with, would be to assume that all *wh-ever* constructions have the same structure, in which the quantificational requirements of *wh-* are met within its own minimal phrase, without the need to take an N complement. This approach flips the story around, because in this case it is the N (book, room, etc.) that needs to be adjoined to the NP headed by *wh-ever*.[8] The theory that the categorial and semantic head of the highest NP (i.e., its *c-* and *s*-head) is *wh-ever* would also predict that in

(45)   Whichever game you buy will be overpriced.

(46)   Whatever stunt you're planning won't end well.

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[8]   We hear the reader ask: '*why adjoined and not be a complement?*' Let us try to sketch an answer to that perfectly legitimate question. If, as we are suggesting, the quantificational requirements of *wh-* are satisfied *within* the *wh*-complex *wh*+N+ever, then it didn't make much sense to us to have a complement position, which are usually reserved for arguments and other valency-satisfying objects.

The subject of *will be overpriced* is *whichever*, not *game*; and the subject of *can't end well* is *whatever,* not *stunt*. In other words,

(47)   [$_{NP}$ [$_N$ whichever] [$_{NP}$ game]] *and not* [$_{NP}$ [$_{NP}$ whichever] [$_N$ game]]

(48)   [$_{NP}$ [$_N$ whatever] [$_{NP}$ Ø]] *and not* [$_{NP}$ [$_{NP}$ whatever] [$_N$ Ø]]

Note that we are still assuming that all relative clauses receive the same structural analysis. However, this is too strong a hypothesis, in the light of the contrast between (49) and (50):

(49)   Whosever movie plays at the Avon makes a lot of money, …
       a.   …be it Robert De Niro's, Al Pacino's, or Anthony Hopkins'.
       b.   …*be it Taxi Driver, The Godfather, or Silence of the Lambs.
       (see also Šimík 2018a, b)

In this respect, *whosever / whoever's* differs from *whichever / whatever*:

(50)   Whatever movie plays at the Avon makes a lot of money, …
       a.   …be it Robert De Niro's, Al Pacino's, or Anthony Hopkins'.
       b.   …be it Taxi Driver, The Godfather, or Silence of the Lambs.

Note that *whosever* only allows for one reading: that in which the predicate pertains to the possessor and not to the possessed. *Whatever / whichever* behave differently, allowing for both readings. Modifying our assumptions about what FR 2s are *s-* and *c-projections* of while holding the assumption that all relative clauses are structurally identical (i.e., that *whoever* and *whatever/whichever* clauses have the same underlying phrase marker) wreaks havoc elsewhere in the grammar. It seems thus to be the case that *whosever / whoever's* FR cannot receive the same structural analysis as *whatever / whichever* FR. We can now explore what happens when the assumption of structural identity between RRC is ditched.

       Let us retrace our steps briefly: the problem with *whosever* was that it cannot be generated as a specifier of the highest NP; it needs to be its head. Revising the tree in (44) in this light gives us a structural description along the lines of (51):

(51)
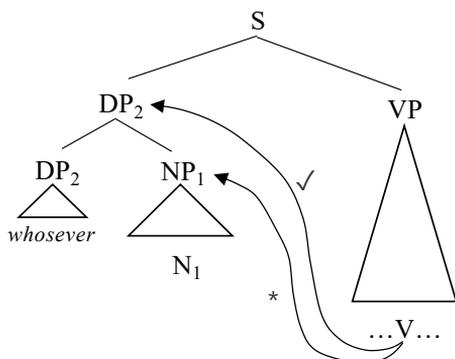
This structural description is rather coarse as a semantic analysis, but it should suffice for our present purposes. The aim, adopting a syntactic perspective, is to show that it is not entirely implausible that *whichever / whatever* FR and *whoever* FR do not receive the same structural description.

From the point of view of locality effects, we may note the following contrast:

(52) Whichever you buy of those games will be overpriced.

(53) *Who(m)ever I have a crush on of these women already has a boyfriend.

Whichever / whatever may appear in a partitive construction, and may also be reordered without incurring a violation of the *Left Branch Condition* (Ross 1967: 207). *Who(m)ever*, on the other hand, cannot appear in the same configuration, as shown in (53). A more detailed look to the distributional differences between *whatever / whichever* and *whoever* is thus required. For convenience, we will now start referring to '*whoever* relatives' to cover free relative clauses whose operator is *whoever, whomever, whosever,* or *whoever's,* and use '*whatever* relatives' as an umbrella term covering free relative clauses featuring *whatever* or *whichever*.

The differences between *whoever* relatives and *whatever* relatives seem to extend beyond the phrase marker that best captures their properties. *Whatever* relatives come in two semantic flavours: *definite* and *universal*

(Elliot 1971; Šimík 2018b); of these, only *definite* RC can become the pivot of a cleft sentence. The reading can be forced one way or the other by manipulating temporal and aspectual features, as in the following examples from Šimík (2018b):

(54) a. Whichever movie (it is that) is now playing at the Avon is making a lot of money.
      ≈ **The movie** that is now playing at the Avon is making a lot of money.
  b. Whichever movie (*it is that) plays at the Avon makes a lot of money.
      ≈ **Every movie** that plays at the Avon makes a lot of money.

The question now is, wherever do *whoever* relatives come from such that they present the properties they do?

  Whoever relatives, we argue, derive from pseudo-cleft sentences at a rather deep structure. Before the reader raises up in arms, we are fully aware of the fact that (55) is ungrammatical as a pseudo-cleft:

(55) Whoever (*it is that) plays at the Avon makes a lot of money.

But *clefting* seems to be required to account for the semantics of *whoever* relatives in the cases we have examined in this paper. The observation that inspired this work, which goes back to the 80's, was an unexpected preference for *that*-relatives over contact relatives with *whoever*. We may now ask where it is that that that that appears in those relatives[9] comes from… and in order to answer this question, we need to look at a full paraphrasis of the relevant sentences (in what follows, italicised pronouns are used *à la* Montague 1973, Rule S_{14}):

(56) a. Whoever$_i$ it is such that Bill likes *him*$_i$ will win the prize.
  b. Whoever$_i$ it is such that *he*$_i$ likes Bill will win the prize.
  c. *Whoever$_i$ it is *he*$_i$ likes Bill will win the prize.
  d. *Whoever$_i$ it is Bill likes *him*$_i$ will win the prize.

What we would like to put forth is that that that comes from the derivational remnants of a pseudo-cleft (see also Higginbotham 1984, 1985). If there is

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[9]   See also Hudston (1972).

no cleft, there is no *that*, and the sentence is ungrammatical (56c, d), in this case we cannot just pull a *that* out of a hat to yield (56 c' and d'):

(56)   c'. Whoever$_i$ that *he$_i$* likes Bill will win the prize.
       d'. Whoever$_i$ that Bill likes *him$_i$* will win the prize.

If there is a *that*, it must come from somewhere. But not just anywhere. An important consequence of our analysis is that, if that *that* is not a relative COMP, then it cannot be freely deleted like other COMPs in the context $[_{NP} \ldots [_{S'} that \ldots]]$ (an operation that Ross 2012:10 refers to with the rather self-explanatory name *That-deletion after a head noun*).

The derivations proposed here also make interesting predictions for the semantic differences between *whatever*-relatives and *whoever*-relatives. Consider the following generalisation pertaining to the interpretation of scope in *wh*-quantifier interactions:

> *A quantifier can be interpreted as wide w.r.t. a wh-term in matrix COMP if the quantifier (i) c-commands the wh-trace and (ii) is within the governing category of the wh-trace* (Sloan 1991: 228)

For all present intents and purposes, the reader may substitute 'governing category' in the quotation above with 'cyclic category' (or even 'phase'); the second clause of the generalisation invokes locality which transcends models.

Now, recall that we have identified the following ambiguity (following Šimík 2018a, b):

(50')   Whatever movie plays at the Avon makes a lot of money, …
        a.   …be it Robert De Niro's, Al Pacino's, or Anthony Hopkins'
        b.   …be it Taxi Driver, The Godfather, or Silence of the Lambs

We also noted that this ambiguity does not arise in *whoever*-relatives: we would like to suggest that this is a consequence of combining the structural descriptions proposed here for *whatever*-and *whoever*-relatives with Sloan's Scope Statement (SSS). If the derivation of *whoever*-relatives goes along the quasi-Higginbothamian lines sketched above, then the *wh*-operator is excluded from the cycle where scope should be reconstructed for the ambiguity to arise (i.e., the complement of *such that…*, an embedded COMP). This predicts, in consonance with observations in the

literature, that *whoever*-relatives should not be scope-ambiguous. But since whatever-relatives are not related to clefts, the SSS is respected and there is a scope ambiguity between the possessor and the possessed (note that the SSS states that a quantifier *can* be interpreted as having wide scope with respect to a *wh-* if conditions (i) and (ii) hold, not that it *must*); it can be bound in either position, because the *wh*-operator and the NP it quantifies over belong in the same cyclic domain.

To summarise, our analysis makes the following two points:

- *Whoever* is not a specifier of an NP headed by an empty N. In this respect, *whoever* relatives differ from their argumental siblings *whichever* and *whatever* relatives: only the latter can take N complements.
- The semantic interpretation of *whoever* relatives involves a pseudo-cleft structural description; this has consequences for the syntax in terms of the phrase marker that is assigned to these structures.

We would like to think that a combination of these two points effectively accounts for the reverse **that-t* effects first observed by Saddy some 40 years ago, and thus the present paper can provide appropriate grammatical closure.

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Shared objects in conjoined VPs in Germanic[1, 2]

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Abstract

I discuss a construction involving conjoined VPs, in which an object in the first conjunct is intuitively shared into the second conjunct, where it is phonologically null. The construction as a phenomenon appears in all of the Germanic languages, with some variation. Building on Sadock (1998) and Vikner (2003) I investigate the shared object structures in several languages from the family, making new or slightly nuanced proposals about the points of cross-linguistic variation.

1. Introduction

Vikner (2003) has two main themes. Starting with the idea of there being conjoined VP structure in German in which an object in the first conjunct is shared into the second conjunct, he argued that this structure is paralleled in the relevant senses in Yiddish, building on Sadock's (1998) account of the shared object construction in that language. Vikner used this as part of an argument that Yiddish is underlyingly an OV language, like German,

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even though its surface strings often show VO order. The second aspect of Vikner's paper is the question of how much variation there is in closely related languages (e.g. languages belonging to the same family, such as Germanic). He argued that while the Scandinavian languages also have what appears abstractly to be the same kind of shared object construction, they have quite a different syntax for it, which he related to them being VO languages.

What I will call the "shared object construction" seems to be present in all the Germanic languages – though entirely absent in English – and is possibly a familial property. I will argue here that while there are differences between German and Mainland Scandinavian, they are smaller than Vikner (2003) suggested, with Yiddish falling in between. As we move geographically further, Icelandic differs to a greater degree, and perhaps has the properties Vikner attributed to all Scandinavian.

The construction in question is illustrated by the German examples in (1b). Examples like this were originally discussed in Sadock (1998).

(1) **German**

a. die Frau   hat   [eine Gans]$_i$ herausgenommen   und sie$_i$ auf
    the woman   has   [a goose]$_i$ out.take.PTCP   *and her$_i$ on*
    den Tisch gestellt.
    the table put.PTCP
    'the woman took out a goose and put it on the table.'

b. die Frau hat   [eine Gans]   herausgenommen   und __ auf
    the woman has   [a goose]   out.take.PTCP   *and __ on*
    den Tisch gestellt.
    the table put.PTCP

(1a) is the full expression, with an overt pronoun in the second conjunct agreeing with its antecedent in the first conjunct. Of specific interest is the fact that the object in the second conjunct can also be null, which I will indicate by '__'; this null object construction is found in some form throughout Germanic. (1b) means the same as (1a), and the object *eine Gans* is intuitively shared in(to) both VPs.

Briefly, this chapter is organized as follows. Section 2 concerns the properties of the shared object construction in Continental Germanic. In section 3, I move on to Mainland Scandinavian and the main points of difference with Continental Germanic. In section 4, I make a proposal for

the analysis and look more at the interpretation of the construction. Section 5 brings in Icelandic, which appears to have conflicting properties. Section 6 is a conclusion with pointers to future research.

2. Continental Germanic

2.1 German

In contrast to examples like (1b) with a periphrastic tense, examples with simple present or past tense do not allow the null object:

(2) die Frau   nahm eine Gans heraus und stellte *(sie) auf den Tisch.
     *the woman took   a   goose out   and put   *(her) on the table*

The generalization noted by Sadock and Vikner is that the German examples involve VP conjunction and are grammatical only if each conjoined VP contains a verb. (2) is ungrammatical as each verb is clearly in its main clause V2 position. On the assumption that the main verb is generated as the head of VP but appears on the surface in C in a V2 clause, whatever is conjoined in (2) does not involve VPs headed by V, in the surface structure. In contrast, (1b) has two surface VPs: one headed by the participle *(heraus) genommen* and the other by the participle *gestellt*.

   Example (2) is grammatical with the pronoun retained in the second conjunct, and that would involve coordination at some clausal level higher than VP. Repositioning the second verb, to create a surface VP, makes the example completely ungrammatical regardless of the presence of the pronoun:

(3) *die Frau nahm eine Gans heraus und (sie) auf den Tisch   stellte.
     the woman took a goose   out   and (her) on the table   put

It is not necessary that the conjoined verbs be non-finite, only that they be within their VPs. Hence, while the null object version of (2) is ungrammatical, exactly the same set of words is fine, in an embedded clause without V2, and with the verbs in their base position in VP.

(4) a. ...weil die Frau   [eine Gans herausnahm] und [sie auf den
          because the woman [a goose   out.took]   and [her on the
          Tisch stellte].
          table put]

b. ...weil die Frau   [eine Gans herausnahm] und [__ auf den
   because the woman   [*a goose   out.took*]   *and* [__ *on the*
   Tisch stellte].
   table put]

The acceptability of (4b) supports the idea that the finite verb does not
leave the VP in German, except for V2 contexts (i.e. there is no V-to-T for
tense, independent of V2).

   As we will see for several languages, there is a preference that what is
conjoined should be a "small VP", so (5b) is preferred to (5a), though (5a)
is somewhat acceptable:

(5)   a. er soll   [eine Gans herausgenommen haben   und __ auf den
         he should [*a goose   out.take*.PTCP   *have   and* __ *on the*
         Tisch gestellt haben].
         table   put.PTCP *have*]
         'he should have taken a goose out and put (it) on the table.'

      b. er soll   [[eine Gans herausgenommen   und __ auf   den Tisch
         he should [[*a goose   out.take*.PTCP   *and* __ *on   the table*
         gestellt]   haben].
         put.PTCP]   *have*]

In (5b), *haben* heads the infinitival complement to *soll*, and within that the
participial complement to *haben* is the VP which is internally conjunct.
Hence, the smaller VP for the domain of conjunction is preferred. The
overt-pronoun versions of the examples in (5) are both fully and equally
acceptable.

   We can make two other observations about the German data. First, the
object that is shared with both VPs may be quantified:

(6)   a. er hat alle Dosen herausgenommen   und __ mit   einem
         he has   all   cans   out.take.PTCP   *and* __ *with   a*
         Messer geöffnet.
         knife   open.PTCP
         'he has taken out all (the) cans and opened (them) with a knife.'

b. er hat jede Dose   herausgenommen   und   __   mit einem
   he has all cans   out.take.PTCP   *and* __ *with a*
   Messer   geöffnet.
   knife   open.PTCP
   'he has taken out every can and opened (it) with a knife.'

I take these data as evidence that the object is outside the first conjunct and
thereby c-commands the empty position in the second conjunct, essentially
derived as Across-The-Board movement out of the conjoined VPs.

   Second, the following examples support the same structural
assumption, as they show that the surface position of the object defines the
left edge of the conjoined VP. (7b) is strange as *gestern* must scope over
both conjuncts but *heute* falls within that scope, in the second conjunct.
In contrast, (7a) is fully acceptable, presumably involving ellipsis within
a conjoined structure larger than VP. So the oddness of (7b) is due only to
the shared object construction. Reversing the order of object and adverbial
in the first conjunct gives the corresponding examples in (8) which are both
fully acceptable.

(7) a. er   hat gestern   dieses Buch gelesen   und es heute
        he has yesterday this   book read.PTCP   *and it today*
        weiterempfohlen.
        recommend.PTCP
        'he read this book yesterday and recommended it today.'

    b. ??er hat gestern   dieses Buch gelesen   und __ heute
        he has yesterday this   book read.PTCP   *and __ today*
        weiterempfohlen.
        recommend.PTCP

(8) a. er   hat dieses Buch gestern gelesen   und   es   heute
        he has this   book yesterday read.PTCP *and   it   today*
        weiterempfohlen.
        recommend.PTCP
        'he read this book yesterday and recommended it today.'

    b. er   hat dieses Buch gestern   gelesen   und __ heute
        he has this   book yesterday   read.PTCP *and __ today*
        weiterempfohlen.
        recommend.PTCP

Crucially, (7b) shows that *dieses Buch* marks off the conjoined structure, which entails that *gestern* is above the conjoined structure, and therefore scopes over both. This leads to the interpretive clash with *heute*. In (8b), each adverbial is within its own VP. All the data considered so far are consistent with (9), which is effectively what is proposed in Sadock (1998) and taken over in Vikner (2003):

(9)   The construction in German involves an object just external to and shared into a conjoined VP structure, within which each VP must be headed by V.

The intuition that I will follow for the rest of the paper is that such an object is effectively a "secondary topic" within the clause – a "secondary" topic on the assumption that the initial phrase in a V2 clause is the primary topic. In German, the secondary topic properties of the shared object are structural as well, for the object c-commands precisely the syntactic material that it has scope over, which is a conjoined VP. The object is represented as OBJ in (10), the structure for German. It is perfectly transparent: within the clause, an object is extracted from and shared into two conjoined VPs. This analysis also entails that there is no derivational relationship between the pronoun-object examples and the null-object examples (i.e. a null-object example is not derived by ellipsis from pronoun-object example). This is correct, as none of the constraints on the null-object examples holds for the corresponding pronoun-object ones.

(10) $[_{VP} \text{OBJ}_i [_{VP} [\dots t_i \dots V] \text{ Conj } [\dots t_i \dots V]]$

In main clauses, it is only possible to have symmetric VP coordination with non-finite verb forms, such as in the examples involving modals and auxiliaries (e.g. (1b) and (5b)). In simple tenses, the single verb must be external to VP, in C, thereby disrupting the symmetric coordination. In (2) the second conjunct must be larger than VP, and (3) appears to be a violation of the Coordinate Structure Constraint: the head of the first VP has moved out, but the head of the second VP is in-situ. In embedded clauses, the finite V remains in VP, and hence (4b) contrasts with the null-object versions of (2)/(3), as both conjuncts in (4b) are VPs headed by a V.

   A final point to be made about these structures involves case. An accusative object in the first conjunct can be related to a dative pronoun in the second, but the dative pronoun cannot be dropped:

(11) a. Ich habe einen$_{ACC}$ frierenden Mann gesehen und ihm$_{DAT}$
         I   have   a$_{ACC}$freezing.cold man   seen   and   him$_{DAT}$
         eine Mütze geschenkt.
         a   cap   given
         'I met a freezing cold man and gave him a cap.'

      b. *Ich habe   einen$_{ACC}$ frierenden Mann gesehen und ___$_{DAT}$
         eine Mütze geschenkt.

However, if both objects would be accusative, a null second object is perfectly acceptable:

(12) a. Ich habe   einen$_{ACC}$ frierenden Mann gesehen und ihn$_{ACC}$
         I   have   a$_{ACC}$freezing.cold man   seen   and him$_{ACC}$
         auf eine Suppe eingeladen.
         to   a   soup   invited
         'I met a freezing cold man and offered him some soup.'

      b. Ich habe einen$_{ACC}$ frierenden Mann gesehen und ___$_{ACC}$ eine
         Suppe eingeladen.

In the mixed-case examples, no matter in what order the dative- and accusative-governing verbs come, the example with a null object is unacceptable:

(13) a. Ich habe   einem$_{DAT}$ Mann eine Mütze   geschenkt und
         ihn$_{ACC}$ auf eine Suppe eingeladen.

      b. *Ich habe   einem$_{DAT}$ Mann eine Mütze   geschenkt und
         ___$_{ACC}$ auf eine Suppe eingeladen.

In other words, case-matching is only required in the shared object construction. The simplest way to account for this is through an analysis in which the overt object directly "belongs" in both object positions, exactly as structured in (10).

    The idea that I develop is that most other Germanic languages differ from German only in surface syntactic properties: the shared object does not, or at least need not, c-command over the conjoined VPs, but it still has the information-structure status of a secondary topic. I will show that the

conjoined VP structure (VP and nothing larger) holds in Yiddish and in the mainland Scandinavian languages, until we get as far as Icelandic, which is perhaps one further step removed from German.

2.2 Dutch

For the sake of completeness, I note that Dutch behaves exactly like German in the respects above, with the same contrast in simple tenses between main/V2 clauses and embedded/non-V2 clauses:

(14) De vrouw heeft een gans   gebraden   en (hem) op tafel gezet.
      the woman has   a   goose roast.PTCP *and* (*him*) *on table put*.PTCP

(15) De vrouw braadde een gans   en   zette   *(hem) op tafel.
      *the woman roasted a   goose   and   put   *(him) on table*

(16) Ik zag dat [de vrouw een gans braadde   en (hem)   op tafel zette].
      I   saw that [the woman a goose roasted   and (*him*) *on table put*]

2.3 Yiddish

While German is fairly strictly head-final in its clausal syntax, with the exception of V2 in main clauses, Yiddish shows more freedom of constituent order. Nevertheless, Vikner (2001) argues that major generalizations about Yiddish clausal syntax align it much more closely with Continental Germanic (OV) rather than Scandinavian (VO), once independent conditions on the placement of the finite verb are factored out. The original shared object construction examples are from Sadock (1998). (17b) is slightly modified here from his original (thanks to Sadock p.c.), for ease of presentation:

(17) a. Di yidene   hot aroysgenumen   eyn gandz un___
         the woman   has out.take.PTCP   *one goose and* __
         avekgeleygt   af'n   tish.
         down.put.PTCP *on the table*
         'The woman has taken out one goose and put (it) down on the table.'

     b. Di yidene hot genumen   eyn   gandz un __ gevorfn
         the woman has take.PTCP *one   goose and* __ *throw*.PTCP
         oyf der tsveyter.
         onto the second
         'The woman has taken one goose and thrown (it) onto the second.'

As in German (3), main clause examples with only finite verbs are unacceptable:

(18) ??Di yidene nemt aroys eyn gandz un leygt __ avek af'n tish.
    the woman   takes out   one goose and puts __ down on the table
      'The woman takes out one goose and puts (it) down on the table.'

Sadock notes (1998: 224): "I have never found a textual example of a missing pronoun with a finite verb." Now this generalization extends to embedded clauses, in contrast to German: examples with complex tenses and conjoined participial VPs are fine, but examples with conjoined verbs in simple tense are bad:

(19) ... vayl   er hot   genumen aroys a   ganz un __ gestellt
    because he has   take.PTCP *out one goose and __* put.PTCP
    af'n tish.
    on the table

(20) *... vayl er nemt aroys a   ganz   un __ stellt af'n tish.
    because he takes out   one goose and __ puts on the table

(20) contrasts with German (4b) and Dutch (16). The reason for the difference is that the finite verb raises to (clause-medial) T in all finite clauses in Yiddish (Vikner 1995, 2001), so the strings *nemt aroys a ganz* and *stellt af'n tish* in (20) are not surface VPs. Due to this raising to T, Yiddish contrasts with German in that a finite verb may never be final, even in an embedded clause:

(21) a. ... vayl   er est   keyn treyf   nisht.
       because he eats   any kosher.food not

    b. *... vayl   er keyn treyf   nisht est.
       because   he any   kosher.food   not eats

This follows from the fact that Yiddish has V-to-T in all finite clauses, and T precedes VP. (V2 clauses perhaps further involve V-to-C.) The fact that Yiddish (20b) is bad while (4b) is good in German shows that the construction involves VP-coordination, which is disrupted if the finite verb

leaves VP and surfaces in T or in C. If the null object in any of (17–20) is replaced by the correct overt pronoun, the example involves clause-level conjunction of some kind, and is acceptable.

Compared to German, constituent order within VP is more flexible in Yiddish, leading to the famous debate about whether Yiddish is fundamentally OV or VO. One of the points of Vikner (2003) is to argue that Yiddish patterns with German in ways that support the OV analysis of Yiddish. To account for examples like (22) (Sadock's original example), he assumes that the shared object *eyn gandz* is lowered/extraposed into the first conjunct VP, from a VP-external position such as in (10).

(22)   Di yidene hot   [aroysgenumen eyn gandz]   un
       the woman has   [out.take.PTCP *one goose*]   *and*
       [__ avekgeleygt   af'n tish].
       [__ *down.put*.PTCP *on the table*]
       'The woman has taken out one goose and put (it) down on the table.'

As we will see shortly, the surface form of the VPs in (22), in which the shared object is *within* the first VP, is a surface form which also appears throughout Mainland Scandinavian. The minimal difference between German and Yiddish is that the status of the shared object as a secondary topic is overt in German (as in (10); and Dutch), but is an abstract relation in Yiddish and the other languages.

(23) $[_{VP} [_{VP} \ldots OBJ_i \ldots]$ Conj $[_{VP} \ldots t_i \ldots]]$
       where each VP has an overt head

Yiddish shares with German and Dutch the fact that each VP must be headed by V, but does not share the transparent overt positioning of OBJ.

3. Mainland Scandinavian
3.1 General overview – Mainland Scandinavian contrasted with German

The shared object construction is well-documented in Mainland Scandinavian (MSc), going back at least to Falk & Torp (1900) for Danish (cited in Vikner 2003: 372). Faarlund et al. (1997: 715) comment on it for Norwegian, and it is mentioned for Swedish in Egerland (1996: 290) and in Teleman et al. (1999: 914, 948, 962). The construction in Norwegian is

discussed from a more theoretical perspective in Åfarli and Creider (1987), Johnsen (1988), and in detail in Larson (2005). Unlike in Continental Germanic, there are quite strong pragmatic constraints on the construction in MSc. From the literature just cited, it seems that these restrictions vary slightly by language, variety, and even perhaps speaker. I do not attempt to discriminate between varieties, and in this section, examples are drawn from Danish and Norwegian.

Vikner reports for Danish that the first VP should provide an immediate pre-condition for the second: it describes a situation "where the two actions are very closely connected such that the first forms the basis for or the introduction to the second" (Falk & Torp 1900: 268, in Vikner 2003), as in (24).

(24)   **Danish** (Falk & Torp 1900: 268, in Vikner 2003)
        Så   skrev jeg et surt klagebrev   og   sendte (det) til dem.
        then wrote I   a angry complaint.letter   and   sent   (it) to them
        'Then I wrote an angry letter of complaint and sent (it) to them.'

The reader will have noticed that (24) is acceptable as a shared object example with simple-tense verbs, yet it is a main clause example. This is one data point on which Scandinavian differs from Continental Germanic. Like (24), the Danish example in (25) is grammatical, unlike its direct counterparts in the languages previously discussed (see (2), (15), (18)).

(25)   **Danish** (Vikner 2003: 372)
        Kvinden   tog   en gås   frem og   lagde (den) på bordet.
        the.woman took a goose out and put   (it) on the.table
        'The woman took a goose out and put (it) on the table.'

My proposal will be that examples like (25) actually do still involve VP-coordination, and that the *second* conjunct is a VP headed by a (finite) verb. It is worth noting explicitly that whatever is going on in the first conjunct is not Object Shift – which is present in Scandinavian but not in Continental Germanic – as Object Shift does not apply to full NPs in MSc, and Object Shift only applies in main clauses with simple tenses. The shared object construction involves full NPs (as in (25)), and compound tenses (28a) below.

In addition to the object which appears in the first conjunct, the other 'marker' of the construction is the specific conjunction, *og* in Danish

or Norwegian. Even adding in *både* ('both') renders the shared object construction ungrammatical (Åfarli and Creider 1987: 343). Larson (2005: 21) notes that "nothing can intervene between the conjunction and the verb of the second conjunct". It is possible to have adjuncts in the second VP, as long as they follow the head verb:

(26)   **Norwegian (**Larson 2005: 20)
       Han tar   en mynt   og   legger __ raskt/forsiktig   på plass.
       he   takes a coin   and   lays   __ quickly/carefully in place

What is interesting about the MSc examples is that the structures are partially asymmetric, to a degree that I cannot claim to fully understand, while also being symmetric enough to allow the shared object interpretation. This is perhaps related to their underlying VO property, and differs from German.

       The asymmetry in the structure is this: in a V2 clause it is the verb from the first conjunct which raises out of VP to T, and then C, while the second conjunct – which is a VP immediately preceded by *og* – behaves somewhat like an adjunct. The Norwegian examples below from Johnsen (1988; examples (15)) illustrate this (see also Larson 2005: 45). The examples are notated as follows. The initial bracketed phrase is a non-subject whose base position is marked by [__]. The examples also involve the shared object construction, and the overt object in the first conjunct is <u>underlined</u>. In the second conjunct, an overt pronoun or __ marks the (intended) element coreferential with that object.

(27)   **Norwegian** (Johnsen 1988; examples (15))
     a. [Hylla]   tok han <u>en bok</u> fra   [__] og la *den/OK __ på bordet.
        [*the.shelf*] *took he   a book from* [__] *and put *it/OK __ on the.table*

     b. [Bordet]   tok han <u>en bok</u>   og   la *den/?? __ på [__].
        [*the.table*] *took he   a   book   and   put *it/??   __   on* [__]

(27a) is fully acceptable with the shared object construction. However, the initial phrase *hylla* is only extracted from the first conjunct, as indicated, and has no syntactic role in the second conjunct. If the conjoined structure in (27a) were fully symmetric, we would expect the Coordinate Structure Constraint to rule the example out; so we must conclude that the second conjunct *og la på bordet* is more like an adjunct. Johnsen points out that the overt-pronoun version of (27a) is probably not ungrammatical, but rather

that there is an overwhelming preference to take the fronted topic *hylla* as the antecedent of the overt pronoun *den*, leading to a strange interpretation.

In (27b), the topicalization of *bordet* comes from the second conjunct. Once again the overt pronoun is out, but importantly, the shared object version is also not very good, which suggests that the second conjunct has an adjunct-like status – as a shared object construction the example should be fine, and has the (degraded) status of extraction out of an adjunct.

3.2 Mainland Scandinavian – VP-level conjunction

Danish examples corresponding to the basic German examples are given in (28). As we have seen, in Scandinavian, there is no requirement that each conjunct, which is a notional VP, should be headed by a V itself. Hence, (28b) is grammatical, even with a null object in the second conjunct.

(28)   **Danish** (Vikner 2003: 371)
    a. Kvinden   har taget   en gås frem   og lagt   (den)
      the woman has take.PTCP *a goose out   and put*.PTCP (*it*)
      på bordet.
      on the.table

    b. Kvinden   tog en gås frem og lagde (den) på bordet.
      the woman took a goose out and put   (it)   on the table
      'The woman took a goose out and put (it) on the table.'

As (28b) is a V2 clause, the first verb *tog* cannot be in its base position in VP, but must be in T or C, depending on the particular analysis of subject-initial V2 clauses. It is exactly this positioning of the finite verb which renders the corresponding examples out in Continental Germanic. Vikner (2003) assumed that the second conjunct of such examples also shows main clause structure – a CP in his analysis – and from that concluded that the shared object construction in Scandinavian involves coordination at the CP level, to allow for examples like (28b). I want to re-evaluate this conclusion. The string *lagde (den) på bordet* can of course be a surface VP in Danish (e.g. in embedded clauses).

There seems to be straightforward evidence that the shared object construction cannot have a domain larger than VP in the MSc. For although both examples in (28) are acceptable, (29) is not (also noted for Norwegian by Larson 2005), if the second object is null:

(29) **Danish**
Kvinden   har taget   en gås frem   og har lagt
the.woman   has take.PTCP   *a goose out   and has put*.PTCP
*(den) på bordet.
**(it)   on the.table*

If the shared object construction is assumed to operate on a domain larger than VP, it is not obvious how to rule (28) in and (29) out. By that assumption, the conjunction would operate at clausal level, somewhere around CP, and whatever licenses (28b) should license (29). (29) appears to be strong evidence that the shared object construction in Danish does not involve clausal coordination (TP or CP), and this is confirmed by (30). This example shows that if there are multiple verbs, only the main verb can appear in the second conjunct with the missing object:

(30) **Danish**
Kvinden   må   have taget   en gås   frem og
the.woman must have take.PTCP   *a   goose out and*
(*have) lagt   __ på bordet.
(**have*) *put*.PTCP __ *on the.table*

Again, the right conjunct sequence *have lagt på bordet* is a perfectly fine non-finite VP, but it cannot appear in the shared object construction. In fact, what is coordinated must be quite a "small" VP – basically, the smallest kind of VP possible.

Another important observation is that negation can only occur in the first conjunct (Larson 2005: 19). (31) has negation in the second conjunct, and is only grammatical with the overt pronoun. (31) contrasts with (32), with negation in the first conjunct, and which Larson reports prefers the null-object version of the second conjunct in preference to the overt-object version:

(31) **Norwegian** (Larson 2005:18-19)
Jens rettet   et brev og sendte   *(det) ikke til   England.
*Jens corrected   a letter and sent   **(it)   not   to   England*
'Jens corrected a letter and did not send it to England.'

(32) Jens rettet   ikke noe brev   og   sendte (det) til England.
      Jens corrected not   any letter and sent (it)   to   England
      'Jens didn't correct any letter and send it to England.'

What is wrong in (31) as a shared object example is that there is no
way to linearize the right conjunct string *sendte ikke til England*, on the
assumption that the constituent can be no larger than VP. To derive the
order in which the verb precedes negation, the verb must raise out of VP at
least to T, but then the conjunct must be larger than VP. If the verb *sendte*
remains in VP, *ikke* would have to be VP-internal, which is not possible.
As the overt-pronoun version of (31) is acceptable, there is no obvious
pragmatic account of why the null-object version should be bad. Hence
this seems to be further evidence that the second conjunct in the shared
object construction is a VP.

4. The analysis – Secondary Topic
4.1 Secondary topic
My proposal is that the shared object is a secondary topic in the clause, and
due to this status may be shared into the second VP conjunct. Essentially,
what is directly structurally represented in German is covertly encoded
only through information structure in the other languages. The notion of
secondary topic as it has been articulated in Nikolaeva (2001: 26) and
Dalrymple and Nikolaeva (2011: 55), given in (33), does seem quite
appropriate here:

(33) A secondary topic is "an entity such that the utterance is construed
      to be ABOUT the relationship between it and the primary topic"
      (Nikolaeva 2001: 26).

It is notable that most of the examples of the shared object construction are
subject-initial (and V2) clauses. As such, the subject would be the primary
topic, and then the relation to secondary topic given in (33) looks very
similar to what Falk & Torp (1900) observed (see the text above (24)).
     It would be remarkable if the shared object construction were restricted
to subject-initial clauses, and there is no such strong restriction (see (24)
and (27a) above). However, it seems that the subject-initial examples
are most natural. Examples which have a non-subject in initial position
typically involve a locational or temporal first phrase. Norwegian speakers

find examples like (34) and (35) relatively acceptable, but perhaps not quite fully acceptable:

(34) **Norwegian**
Hver jul   har Jens skrevet   brev   og
every Christmas   has Jens   write.PTCP *letters   and*
sendt   __ til vennene sine.
send.PTCP __ *to friends* REFL
'Every Christmas Jens has written letters and sent (them) to his friends.'

(35) Selv om høsten har vært   svært travel, har   Jens
although autumn has be.PTCP *very busy*,   *has   Jens*
skrevet   julebrev   og sendt   __ til England.
write.PTCP   *Christmas.letters and send*.PTCP __ *to England*
'Although Autumn has been very busy, Jens has written Christmas letters and sent (them) to England.'

In these examples, 'Jens' is not formally the syntactic topic, but it is clear that the examples are 'about Jens' (and what he has done). In her observation about the shared object construction Larson (2005: 24) notes for Norwegian that the first VP must "express an action in which an agent takes possession of or control over an object".

   One interesting property of MSc is that the shared object construction is quite degraded if the first object is itself a pronoun, as seen in these Danish examples:

(36) **Danish**
a. Han tog den ned   fra   hylden og lagde   ??(den)
   he   took it   down from   the.shelf and put   ??(it)
   på bordet.
   on the.table

b. Han har taget   den ned   fra hylden   og
   he   has take.PTCP *it   down from the.shelf   and*
   lagt   ??(den) på   bordet.
   put.PTCP ??(*it*) *on   the.table*

However, such examples can be improved with a fuller context:

(37) A: Where is the cloth? I can't find it anywhere!
      B: Måske har han taget   den ned fra   hylden
          perhaps has he   take.PTCP *it   down from   the.shelf*
          og   lagt   ?(den) på   bordet.
          and put.PTCP ?(*it*) *on   the.table*

If the secondary topic must be interpreted in some way relative to the primary topic/agent, it may be that there is not enough information in the examples in (36) for a successful interpretation in the absence of a more descriptive NP.

   One consideration that is obviously relevant here is the Empty Left Edge Condition of Sigurðsson & Maling (2010), a general condition which makes clause-internal gapping or ellipsis contingent on that clause having an "empty" left edge. Simple recipe-style object-drop examples illustrate the general phenomenon; an object cannot be missing unless the subject is:

(38) Take three eggs. *(You) beat in a bowl.

The condition that they argue for extensively is (39), as a descriptive generalization:

(39) Empty Left Edge Condition (Sigurðsson & Maling 2010: 62)
      The left edge of a clause containing a silent referential argument
      must be phonetically empty (in a language or construction X).

They discuss the shared object construction as part of a range of different contextually-reduced clauses, including (40) from Norwegian:

(40) **Norwegian** (Sigurðsson & Maling 2010: 73)
      Han hogg   juletre   og   selde __ i byen.
      he   cut.down Christmas.tree   and sold __ in town
      'He cut down a Christmas tree and sold it in town.'

Clearly all shared-object examples which involve VP-coordination necessarily respect the ELEC. Its significance to the topic of this paper becomes particularly relevant when we come to consider Icelandic, in section 5 below.

4.2 Interpreting the null object

Larson (2005: 37) proposes that the null object is interpreted as an E-type pronoun (Evans 1980). The object position in the second conjunct is not c-commanded by the overt object in the first conjunct, so this suggests that there is some anaphoric relation between the two surface positions. Larson argues that the interpretation of a shared object example shows the "maximality effect" which is the hallmark of an E-type interpretation.

(41) **Norwegian** (Larson 2005: 37)
       Jens skrev tjue   brev   og   sendte __ til England.
       Jens wrote twenty letter and   sent   __ to England
       'Jens wrote twenty letters and sent (them) to England.'

Larson's observation is that (41) is infelicitous if Jens wrote twenty letters but only sent ten to England: the example must mean that Jens wrote twenty letters and what he sent to England were the twenty letters he had written. In other words, the object does not have wide scope over the whole example, as one might expect, say, from QR. This interpretation is seen more clearly if the object is explicitly quantified:

(42) Jens skrev bare to   brev   og sendte (dem)   til England.
       Jens wrote only two letter and sent (them)   to England
       'Jens wrote only two letters and sent them to England.'

Larson's observation is that with or without the overt pronoun in the second conjunct, what the example means is that Jens wrote only two letters and what he sent to England are just those two letters he had written. The example does not mean 'there are only two letters which Jens both wrote and sent to England', allowing that he wrote other letters that he did not send. Even without invoking the E-type interpretation, the secondary topic idea put forward here should also capture the relevant property as it necessarily entails that the object's interpretation is subordinate to the subject's. (41) effectively means 'Jens wrote twenty letters and what he did with them is send them to England'.

Larson's E-type proposal and the secondary topic proposal both founder on examples where the shared object is a negative quantifier, taken up in the following subsection. On the basis of either proposal, we would expect negative quantifier examples to be bad, but in fact they are good. Evans (1980) showed that a negative quantifier cannot antecede a pronoun

with an E-type interpretation; and it seems implausible that something like *ingen brev* ('no letter') could be a topic, albeit a secondary one, if the term "topic" is to mean anything.

Larson's specific proposal for examples like (41) and (42), given here in (43a), is that the second conjunct contains an empty operator Op which raises to the edge of that conjunct, binding in a trace in argument position. The Op is the E-type pronoun: it takes its interpretation from the preceding conjunct. In addition, for the negative quantifier examples, Larson proposes a secondary 'last resort' structure in which the first conjunct's object raises and scopes over both conjuncts, and therefore directly binds Op:

(43) a.   preferred structure, E-type interpretation for Op:
           [… OBJ …] Conj [Op$_i$ … t$_i$ …]

      b.   last resort structure, OBJ binds Op:
           [… OBJ$_i$ [… t$_i$ …] Conj [Op$_i$ … t$_i$ …]]

To be more consistent with the secondary topic idea, I will propose a slightly different structure for (43a). With regard to (43b), this last-resort structure does not need to be invoked, as negative quantifiers in Scandinavian already have the necessary positional properties (see section 4.3 below).

I provide only an outline analysis here. The secondary topic is only overtly positioned outside the coordination in German and Dutch (see (10)), which means for all the other languages that we need a covert representation. I suggest reimagining Larson's analysis, with the empty operator now representing the secondary topic, shown in (44) as Op$_{ST}$. If this were the emptiest of operators, we could assume that it binds the OBJ in the first conjunct, taking all its features and its reference from OBJ, and at the same time binds an empty object position in the second conjunct, represented here as a trace. With an index, the operator is represented as Op$_{ST-i}$. It is important for the case-matching facts in German ((11–13) above) and Icelandic ((51–54) below) that the null position in the second conjunct is a trace, so that the case properties are present in or inherited to both object positions.

(44) Secondary Topic structure:
      Op$_{ST-i}$ [$_{VP}$ [$_{VP}$ … OBJ$_i$ …] Conj [$_{VP}$ V … t$_i$ …]]

Effectively, Op$_{ST}$ is a scope-marker for the OBJ. (44) is somewhat is similar to the structure proposed (for Icelandic) in Ximenes (2007: 11), for similar reasons. Relevant here is the fact that the OBJ can be in first position in a V2 clause (Larson 2005: 45):

(45) **Norwegian** (Larson 2005: 45)
Tre	brev	skrev	Jens	og	sendte __	til England.
three	*letter*	*wrote*	*Jens*	*and*	*sent* __	*to England*
      'Jens wrote three letters and sent them to England.'

The first-position OBJ still licenses the shared object construction. We know that a VP-internal constituent from the first conjunct can be topicalized directly to first position (see (27a) above). Starting with (44), the OBJ moves to first position, and from this high position, OBJ binds Op$_{ST}$, which in turn binds the two traces as in (46):

(46) $[_{CP}$ OBJ$_i$ … Op$_{ST-i}$ $[_{VP}$ $[_{VP}$ … t$_i$ …] Conj $[_{VP}$ V … t$_i$ …]]]

In Larson's structure (43a), the correct semantics are intended to follow because the Op in the second conjunct is interpreted as an E-type pronoun taking its reference from the description in the first conjunct. While the gist of the proposal is clear, formally it is not so straightforward how the E-type interpretation is calculated, as the right conjunct is actually a sub-clausal constituent (TrP) embedded within the first clause (Larson 2005: 175). The alternative structure which I propose, (44), can also give the right semantics for e.g. (42). The point is that the example should entail that Jens wrote only two letters, not that Jens wrote and sent to England only two letters.

As noted above, the secondary topic idea entails that the object is interpreted under the scope of the subject and some action that the subject is taking. In addition, as I noted at the end of section 3.1, the coordinate structure is actually partially asymmetric, with the second conjunct having some adjunct-like properties. Hence the semantics of (42) are possibly quite close to something like *Jens wrote only two letters (to send (them) to England)*, which entails that Jens wrote only two letters.

4.3 Negative quantifiers–scope over both VPs

It is also possible to have the shared object construction when the object is a negative quantifier:

(47) **Norwegian** (Johnsen 1988; example (14a))

    a. Han tok ingen mynter og   kastet (*dem) på   sjøen.
        *he took no   coins   and   threw (*them) into   the.sea*

        Norwegian (Larson 2005: 41)

    b. Han skrev   ingen   brev og sendte (*den) til England.
        *he   wrote   no   letter and sent   (*it)   to   England*
        'He wrote no letter and sent it to England.'

These examples would appear to be inconsistent with the 'secondary topic' analysis, as one might expect that something topical would have some positive reference. However, there is an alternative analysis which generates the examples directly. It is clearly established that (object) negative quantifiers in Scandinavian may appear in a surface position that is external to VP, somewhere in TP around where the clausal negation (e.g. *ikke*) would appear (subject to some restrictions; see e.g. Christensen 1986, Svenonius 2000, Sells 2001). Effectively, this allows the German analysis for precisely this class of elements: from a mid-clause position the negative quantifier c-commands both VPs, and appears to be extracted across-the-board out of both. It is notable that the variant of the examples in (47) with the overt pronoun is completely bad, showing that there is no discourse-antecedent for a pronoun, nor the option of binding by the negative quantifier.

    Larson notes that examples with a quantified object in the first conjunct tend to resist a pronoun in the second conjunct but a pronoun is not as bad as in the negative quantifier examples:

(48) **Norwegian** (Johnsen 1988; example (14b))

    a. Han tog hver boks og åpnet   (??den) med kniven.
        he   took every can   and opened   (??it)   with the.knife
        'He took every can and opened (it) with the knife.'

    b. Han tog   hver boks og han åpnet   (??den/*__) med kniven.
        *he   took every can   and he   opened (??it/*__)   with the.knife*

The null-object version of (48a) is perfectly acceptable, and the overt-pronoun version is low in acceptability. (48b) is a similar example which I have created, except with an overt subject in the second conjunct. This rules out the shared-object construction, and with a null object also violates the ELEC (see (39) above). Hence the null-object version of (48b) is completely ungrammatical. However, the overt-pronoun version of (48b) is no better than its equivalent in (48a), which suggests that – for whatever reason – the quantifier *hver boks* cannot take scope over the conjunction and bind a pronoun in the second conjunct. But if *hver boks* cannot take scope, something must be licensing the null-object version of (48a) – namely, the shared object construction involving coordination at the VP level.

5. Icelandic

Icelandic appears to have the shared object construction (see Larson 2005: 26, Rögnvaldsson 1990, Pouplier 2003, Ximenes 2007). It does not involve the pragmatic restrictions found in MSc, and there is no oddness with a pronoun in the first conjunct (e.g. (51) below). However, there is conflicting evidence as to the correct analysis.

On the one hand, like Yiddish, Icelandic shows V-to-T raising in all finite clauses, even embedded clauses, in which the finite verb should precede medial adverbial elements (e.g. *ekki* and *aldrei* respectively in (49); examples from Holmberg 1986), showing that it has raised to T:

(49)   a.   Það var gott   [$_{CP}$ að   [$_{TP}$ hann   keypti   ekki bókina]].
             it was good   [$_{CP}$ that [$_{TP}$ he   bought   not the.book]]
             'It was good that he did not buy the book.'

       b.   Ég veit ekki [$_{CP}$ hvers vegan   [$_{TP}$ Sigga setur aldrei hlutina
             I   know not   [$_{CP}$ why   [$_{TP}$ Sigga puts never the.things
             á   réttan   stað].
             in   the right   place]
             'I do not know why Sigga never puts the things in the right place.'

The shared object construction is possible in simple-tense finite clauses (Thráinsson 2007: 479):

(50)   Ég tók   bókina   og   færði   (hana) eiganda sínumi.
       I   took the.book   and   brought (it)   owner   REFL
       'I took the book and brought it to its owner.'

(50) should not be possible as a shared-object example involving VP-coordination, given that *færði* must be in T. It should have the same status as Yiddish (18). As (50) is grammatical, it would appear that the shared object construction in Icelandic involves clausal coordination, at the TP or CP level. However, there are other data which are inconsistent with clausal coordination, and which argue again for VP-coordination. I present these data in the rest of this section, leaving Icelandic as a puzzle.

Like German, Icelandic requires case-matching in the shared-object construction. Pouplier (2003) reports both versions of (51) as fully grammatical. Each verb selects for a dative object.

(51) Ég hótaði   honum_DAT og skipaði (honum_DAT) að PRO fara.
      I   threatened him_DAT   and ordered (him_DAT)   to PRO leave
      'I threatened him and ordered him to leave.'

Ximenes (2007: 3) provides more evidence in favor of case-matching. In each example below, the object-case requirements of the two verbs differ, and while the overt-pronoun version is grammatical, the null-object version is not.

(52) Ég_NOM keypti sjónvarp_ACC og   skilaði   *(því_DAT)
      *I_NOM bought the.TV_ACC   and returned *(it_DAT)*
      til eiganda sins.
      to owner REFL
      'I bought the TV and returned it to its owner.'

(53) Þeim_DAT finnst   stelpan_NOM aðlaðandi og   vilja   giftast
      they_DAT find.3SG the.girl_NOM attractive and   want.3PL marry
      *(henni_DAT).
      (her_DAT)
      'They find the girl attractive and want to marry her.'

(54) Þeir_NOM   sjá   stúlkuna_ACC   og   finnst
      they_NOM   see.3PL the.girl_ACC   and find.3SG
      *(hún_NOM) álitleg.
      (her_NOM)   attractive
      'They see the girl and find her attractive.'

(52) is the simplest example – one verb requires an accusative object and the other a dative object, and so the null-object version of the example is bad. The grammatical versions of examples like (53) and (54) were used by Rögnvaldsson (1990) to argue that what might look like VP-coordination in Icelandic, or even T′-coordination, must actually be TP-coordination with a *pro* subject before the verb in the second conjunct. The argument is this, and seems strong: the verb *finna* takes a dative subject and a nominative object, and in its finite form *finnst* shows 3sg agreement. The verb in the other conjunct takes a nominative subject, and as the subject is chosen to be grammatically plural, the verb shows 3pl agreement. It cannot be the case, then, that the subject 'they' in (53) and (54) is the subject of both verbs, as those verbs put conflicting case constraints on the subject, and the subject controls different agreement sets on the verbs. The examples must involve clausal coordination with a *pro* subject in the second conjunct.

While Rögnvaldsson (1990) showed that Icelandic must have clausal (TP) coordination in some examples, such coordinations do not intersect with the shared object construction. The null-object versions of (53) and (54) are bad. In fact, as observed by Ximenes (2007), such examples *must* be bad. In order to create the structures which require the TP-coordination analysis, we need two verbs which impose different case constraints on their subjects, but then of necessity they will also impose different case constraints on their objects, and so must violate the case-matching constraint on the shared object construction.

Further, if the coordination is above VP, it is not obvious why (55b) is bad (Ximenes 2007: 6):

(55) a. Ég elska ekki Maríu og   dyrka   __ .
          I   love   not   Mary   and admire   __

      b. *Ég elska ekki Maríu og   dyrka __ ekki.
          I   love   not   Mary   and admire __ not

      c. Ég elska ekki Maríu og   dyrka hana ekki.
          I   love   not   Mary   and admire her   not
          'I don't love Mary and (don't) admire her.'

(55c) is grammatical and could be generated as T′- or TP-coordination. Specifically, in the second conjunct, the finite verb *dyrka* would be in T, followed by the object *hana* in the object-shift position (somewhere

within TP, but external to VP), followed by the negation *ekki* in its base position, also external to VP. This is all perfectly straightforward in Icelandic syntax. The problem is then that there is no way to account for why (55b) is bad: the example satisfies the ELEC ((39) above), and the structure and interpretation would be the same as (55c) except that the second object is null. Ximenes (2007) concludes that Icelandic must also require VP-coordination for the shared object construction. (55b) shows that a combination of T′- or TP-coordination and the ELEC is not enough to account for Icelandic (see also Danish (29)).

In summary, the examples in (49) have been taken to show that a finite verb never surfaces within VP in Icelandic, which would mean that (50) should involve coordination above VP. However, the examples in (55) seem to show that the shared object construction involves VP-coordination.

6. Conclusion

I have argued here that fundamentally the shared object construction involves VP-coordination, and that the shared object fits the profile of a secondary topic (see (33)). In German and Dutch, the shared object is external to the conjoined VPs, as schematized in (10). In both these languages and Yiddish, each conjunct VP must be headed in the surface syntax. However, in Yiddish, the shared object is located within the first conjunct VP.

Mainland Scandinavian also involves VP-coordination. As in Yiddish, the shared object is within the first VP. However, there is no requirement that that VP be headed in surface syntax – only the second VP has that requirement. The structure for Mainland Scandinavian is given in (44). Finally, Icelandic seems to show conflicting properties – facts of finite verb positioning suggest that the coordination should be at some clausal level (CP or TP), but facts of case-matching and clausal negation suggest that the coordination is at the VP level, as in the other languages.

There are at least three puzzles that I have left for future research. The first concerns the asymmetry in the structure in MSc (section 3.1). Why does the requirement that each VP be headed hold for Continental Germanic but not for MSc? How does that relate to the fact that the second VP seems to be more adjunct-like in MSc?

The second puzzle concerns the relation between the conjunction word 'and' and one of the verbs. In German and Dutch, the conjunction is immediately adjacent to a preceding verb, which heads the first conjunct

VP. In Scandinavian, the conjunction is immediately adjacent to a following verb, which heads the second conjunct VP. Yet with regard to this property, Yiddish patterns with Scandinavian – constituent order is somewhat flexible within VP, yet in all the examples, the conjunction is immediately adjacent to a *following* verb, which heads the second conjunct VP. Why does Yiddish pattern with Scandinavian in this regard?

The third puzzle concerns the syntax of the construction in Icelandic: if Icelandic has V-to-T in all finite clauses, as in (49), then the null-object version of (50) should be ungrammatical, just like (18) in Yiddish – but (50) is good. How and why do the languages differ in this regard?

So, Sten, over to you …

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Non-nominal arguments and transitivity in Romance and Scandinavian[1]

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Abstract

This squib considers the notion of objecthood and its relation to transitivity in a number of Romance and Scandinavian languages and argues that it does not easily reduce to the notion of being nominal. The Romance data come from the *faire*-infinitive in Catalan and Italian, where dative causees are found only where the embedded predicate is transitive. The Scandinavian data are from pseudo-passives and expletive-associate constructions, both of which are also sensitive to transitivity. In these contexts, in addition to DPs, (non-nominalised) CPs and PPs can count for transitivity, though this is subject to variation across languages. These patterns present challenges for approaches to objecthood and transitivity based on case/Case, both traditional analyses and more recent dependent case approaches, both of which afford a privileged status to nominals.

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[1] This paper was inspired by Sten Vikner in three different ways. First, we offer it as a simple token of our respect for him and his work on the occasion of his 60th birthday. Second, it was directly inspired by the questions he asked at a talk we gave at University of Cambridge on this topic. Finally, it is more generally inspired by Sten's wonderful careful comparative syntactic work which serves as a model of methodical comparison for all scholars of language.

1. Introduction

In both traditional and recent approaches to objecthood and transitivity, DPs are considered to have a privileged status, distinct from other categories. In early generative approaches, based on their different distribution from clauses and prepositional phrases (PPs), DPs, it was claimed, require licensing by Case, unlike PPs and CPs (Chomsky 1981, Stowell 1981). This basic idea is retained in recent approaches to case, notably dependent case theory (Marantz 1991, Baker 2015 and many others). The core idea of the dependent case approach is that morphologically overt cases are assigned in contexts where two DPs are found in a local configuration, potentially to aid differentiation of the two arguments. This kind of analysis is particularly appealing as an account of transitivity-sensitive morphological cases, such as dative in the Romance *faire*-infinitive (see Folli & Harley 2007, Pitteroff & Campanini 2013).

In this squib, we note that although dative case in the *faire*-infinitive is indeed a transitivity-sensitive case, it is triggered not only by DPs but also by CPs and, in some cases, PPs. We then turn to data from pseudo-passives and expletive-associate constructions in Scandinavian languages, which are also transitivity-sensitive, where CPs/PPs again sometimes count for transitivity. Section 2 introduces the *faire*-infinitive. Section 3 describes the behaviour of CP and PP objects in this context. Section 4 extends the discussion to the Scandinavian patterns. Section 5 outlines the problems these patterns pose for case/Case theory. Finally, Section 6 concludes and raises some questions for future research.

2. Background: transitivity in causative contexts

In many Romance languages (e.g., French, Italian, Catalan, European Portuguese) causees surface with dative case in the *faire*-infinitive construction only where the embedded predicate is transitive (Kayne 1975, Burzio 1986, amongst others), as exemplified here for Italian:

(1) Gianni **gli/*l'**   ha   fatto   lavare   i   piatti. [Italian]
     Gianni him.DAT/*ACC= has made   wash.INF the dishes
     'Gianni made him wash the dishes.'

Conversely, where the embedded predicate is intransitive, dative is not (generally) available in these languages. Thus, in Italian (2) and Catalan

(3), where the embedded predicate is *parlare/parlar* 'speak', the causee is obligatorily accusative for the speakers we have consulted:[2]

(2) **L'/*gli**   ho   fatto   parlare.   [Italian]
     him.*ACC/*DAT*=   *I.have* *made*   *talk.INF*
     'I made him talk.'

(3) **L'/*li**   he   fet   parlar.   [Catalan]
     him.*ACC/*DAT*=   *I.have* *made*   *talk.INF*
     'I made him talk.'

This is what we will call a transitivity-sensitive case pattern: dative is possible only in transitive contexts. In the particular case of Catalan, this pattern may be obscured by: (i) Exceptional Case Marking (ECM) where clitics are involved (Solà 1994:§9.3, Torrego 1998:§3); and (ii) differential object marking (DOM) where full DPs rather than clitics are involved (though this is proscribed in standard Catalan and therefore stylistically marked, e.g. Alsina 2016: 380). In relation to the former, our survey data confirm that a significant minority of speakers allow ECM with *fer* 'make' so that transitive subjects like the one in (1) can also be accusative for some Catalan speakers (4). ECM is not possible with full DPs, however, for any speakers. This, we attribute to the fact that ECM requires raising to object and, in some languages, this is only possible with clitics (see Sheehan 2019):

(4) **%L'**   he   fet   escombrar   el   menjador.
     him.*ACC*   *I.have* *made*   *sweep.INF*   *the*   *dining room*
     'I have made him sweep the dining room.'

                                                        [10/25 speakers]

DOM obscures the pattern with intransitive causees when they are full DPs (rather than clitics, as in (2)-(3)). The availability of DOM means that accusative DP causees can optionally be introduced by *a* in Catalan (5), in contrast with (Northern) standard Italian (6):[3]

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2   Our sincere thanks to Norma Schifano for help collecting the Italian data. Rita Manzini (personal communication) notes that dative is available for her even in intransitive contexts. This pattern is also found in many Spanish varieties, as noted below. In such contexts, dative is clearly no longer sensitive to transitivity.

3   Note that Southern Italian speakers often allow DOM, which again complicates the picture and introduces one of the confounds we discuss for Catalan.

(5) El   psicòleg   va fer   parlar   **(a)** la   Maria.
     the psychologist made.3SG   talk.INF (DOM) the   Maria
     'The psychologist made Maria talk.'   [no DOM=42/57,
                                                          DOM = 44/57]

(6) Ho   fatto   parlare   **(*a)**   Gianni.
     I.have   made   talk.INF   DOM   Gianni
     'I made Gianni talk.'

Our survey data show that the further away a causee is from *fer*, the more likely it is to receive DOM in Catalan. We attribute this to a processing effect. Once we control for these factors, both Italian and Catalan are ultimately like French and European Portuguese in having transitivity-sensitive dative causees and *unlike* many Spanish varieties which also permit dative causees in intransitive contexts (Company 2003, Ordóñez & Roca 2017).

3. Non-nominal arguments and transitivity in Romance

Thus far we have shown that dative case in Romance *faire*-infinitive causatives is sensitive to transitivity in Italian and Catalan. That is, we have seen that whenever the embedded verb has a DP internal argument, the causee will/can be marked dative, whereas if there is no internal argument, the causee must bear accusative case. In this section, we consider what happens when the embedded verb has a non-nominal complement, namely a CP or PP complement. Do such contexts count as transitive or intransitive in terms of the case which surfaces on the causee?

3.1. Clausal complements

With respect to clausal complements, in both Italian and Catalan, finite and non-finite CP complements obligatorily count for transitivity, always triggering dative on the causee. This is easy to show for Italian, where all clausal complements of non-restructuring verbs behave alike, regardless of mood, finiteness, or the kind of subordinator (zero, *di*, *a*, *che*):

(7) **Le/*la**   fecero   promettere   [di   cantare].
     *her.DAT/*ACC   made.3PL   promise.INF   of   sing.INF*
     'They made her promise to sing.'

(8) **Gli/*L'**   hanno   fatto   pensare   [che si   sbagliava].
     him.DAT/*ACC=have.3PL made   think.INF   that REFL was.wrong
     'They made him think he was wrong.'

Catalan is more complex. Firstly, many Catalan speakers strongly prefer the predicate which is the complement of *fer* to take a finite complement here, even where these same predicates accept a non-finite complement elsewhere. In such contexts, dative is the most widely accepted option, with accusative only being possible for the subset of speakers who permit ECM with *fer*:

(9) **Li/%L'**   han   fet   prometre   [que cantaria].
     him.DAT/%ACC= have.3PL made   promise.INF that would.sing.3SG
     'They made her promise to sing'.

Where speakers do allow the embedded non-restructuring verbs to take a non-finite complement, dative is again generally accepted (10) (again modulo the availability of ECM for some speakers), as in Italian (7)–(8):

(10) **Li/ %l'**   han   fet   admetre   [haver   mentit]
      him.DAT/%ACC have.3PL made   admit.INF   have.INF   lied
      'They made him admit he had lied.'

With restructuring verbs, like *començar* 'start', however, DAT becomes possible in both languages only where the complement of the most embedded verb is transitive (11b). We illustrate this only for Catalan here, but Italian is broadly speaking the same (see Sheehan and Pineda 2019):

(11) a. [...] **l'/*li**   han   fet   començar a plorar a mitja classe.
          her.ACC/*DAT= have.3PL made start.INF to cry.INF in half class
          'They made her start crying in the middle of the class.'
      b. %[...] **li/l'**   han   fet   començar a escriure una queixa.
          him.DAT/ACC= have.3PL made start.INF   to write.INF a complaint
          'They made her start writing a complaint.'   [DAT=33/57,
                                                                 ACC=24/57]

Essentially, such examples are optionally monoclausal: clause union between 'make' and its complement (and thus clitic climbing of the

causee) is forced, whereas restructuring is optional between 'start' and its complement. Where restructuring takes place, the case of the causee is determined by the transitivity of the next clause down. Crucially, where no restructuring takes place, the clausal complements of these restructuring verbs cannot trigger dative, and so do not behave like full CPs. If the clausal complements of restructuring predicates were CPs, then dative causees would be acceptable also in examples like (11a), contrary to fact. The implication is that only complete clausal complements count for transitivity. With restructuring clausal complements which are presumably smaller than CP, the embedded predicate counts as intransitive. These facts show that the notion of transitivity which is relevant here is more nuanced than is often thought and is not easily accommodated under theories of case/Case which connect transitivity to the presence of a local DP.

3.2. PP complements

This impression is reinforced when we consider the behaviour of PP arguments. For many Catalan speakers, PP arguments can also count for transitivity, triggering dative case on causees, but with substantial interspeaker variation (12). The same is not true of Italian, where PP complements do not seem to count for transitivity in the same way (13).

(12) Com que el professor **la/%li**   va fer   parlar
     since   the teacher   her.ACC/%DAT made.3SG   talk.INF
     dels   seus problemes, […]
     of.the   her   problems
     'Since the teacher made her talk about her problems, […]'
                                              [acc = 45/57, dat = 21/57]

(13) Siccome   il professore **la/*le**   fece   parlare
     since   the teacher   her.ACC/DAT   made.3SG   talk.INF
     dei   suoi problemi, […]
     of.the   her   problems
     'Since the teacher made her talk about her problems, […]'

This variation recalls the fact that DP objects with inherent case count for transitivity in some ergative languages, but not others (Legate 2012, Baker 2015), though the interspeaker variation is problematic. For example, in our Catalan survey, 21/57 speakers accepted the dative in (12) and 45/57 the accusative. This is the opposite pattern to that usually attested in transitive

contexts featuring a DP object, in which almost all speakers accept dative and a substantial minority also accept accusative (due to ECM). Rather, it seems that for many Catalan speakers, the context in (12) is treated as intransitive, with only a minority allowing the PP complement to count for transitivity.

What (12) seems to indicate is that argumental PPs (such as *dels seus problems* 'about her problems') count for transitivity for a large minority of Catalan speakers. This is true only of argument PPs; non-argumental PPs (such as *durant més de dues hores* 'for more than two hours') do not count for transitivity, and so are incompatible with DAT for all speakers:

(14) *El   psicòleg   **li**   va fer   parlar   durant
      de*the psychologist her.DAT*   *made.3SG   talk.INF*   *for*
      més   de   dues   hores.
      more than   two   hours
      'The psychologist made her talk for more than two hours.'

Note that, so far, we have given examples containing cliticised causees, since using DP causees would obscure the facts, due to the availability of DOM for many Catalan speakers, as discussed above (see (5)). The possibility of having dative causees with argumental PPs is also discussed by Villalba (1992: 362–365), when dealing with word order issues in Catalan causatives. Villalba does not take DOM into consideration, as it is banned from standard Catalan. Thus, when he gives an example of a DP preceded by *a*, such as (15a), he takes it to be a dative argument. Crucially, when dative is banned because the argumental PP is not intervening (15b), Villalba considers ungrammatical the use of *a*. The example would be fine for speakers using DOM, though, as already noted, this is not accepted in standard Catalan. In sum, in (15a) *a* is necessary, otherwise the sentence is ungrammatical. This suggests that causees surfacing to the right of a PP complement either *must* obligatorily take DOM, or be headed by the dative marker *a*.

(15) a. Farem   creure/confiar   en   l'   atzar   *(a)
          will.make.1PL believe/rely.INF in/on the   chance   to/DOM
          la   Maria.
          the   Mary
          'We shall make Mary believe in/rely on chance.'

b.   Farem   creure/confiar   (*a)   la   Maria   en
      will.make.1PL believe/rely.INF   to/DOM   the   Mary   in/on
      l'   atzar.
      the   chance
      'We shall make Mary believe in/rely on chance.'

(Villalba 1992: 364)

Examples parallel to (15a) with full DP causees were also tested in our survey. The results show that *a* marking is strongly preferred in such examples. Example (16) is accepted by 53/57 speakers:

(16)   El   psicòleg   va fer   parlar   dels   seus   problemes
            the   therapist   made.3SG   talk.INF   of.the   her   problems
            a   la   Maria.
            to/DOM   the   Maria
            'The therapist made Maria talk about her problems.'

As can be seen, we gloss *a* in (15)–(16) as either a dative marker or DOM, as speakers vary on how they treat it. As we saw in (12), there is a group of speakers who can replace the causee *a la Maria* with a dative clitic, thus indicating that the argumental PP counts for transitivity making the causee a dative argument; we also saw that many speakers also like, or prefer, to replace *a la Maria* with an accusative clitic, thus indicating that this is a differentially-marked accusative argument.

    In fact, *a* is preferred on causees in Catalan whenever any material intervenes between the embedded verb and the causee; more speakers accepted (17) with *a* (53/57) than without (38/57) and this example involves a non-argumental PP. In this case, *a* is not a dative marker, but DOM. This is shown by the fact that the vast majority of speakers (47/57) rejected the corresponding sentence with the causee represented by a dative clitic, as shown in (14) above. This suggests that *a* is generally treated as DOM in examples such as (17) rather than dative marking.

(17)   El psicòleg   va fer   parlar   durant   més   de   dues
            the therapist made.3SG   talk.INF   during   more than   two
            hores   %(a)   la   Maria.
            hours   DOM   the   Maria
            'The therapist made Maria talk for more than two hours.'

So the facts in Catalan are complex but it seems clear that, for a sizeable minority of speakers, PP complements also count for transitivity, whereas this is not true in Italian.

So far we have seen that CP and PP complements may count for transitivity in Romance causatives, raising challenges for traditional accounts of transitivity connected to case/Case. Before stating more clearly what these challenges are, we first show that similar issues arise in Scandinavian languages, drawing on work by Vikner. This suggests that this is a more general fact about European languages.

4. Non-nominal arguments and transitivity in Scandinavian

In this section, we show that non-nominal arguments also appear to count for transitivity to varying degrees in Danish, and possibly also Norwegian and Swedish in pseudo-passives/expletive-associate constructions.

4.1. CP complements

Vikner (1995:246; 2017:381–383) argues that CPs also count for transitivity in Danish. The evidence for this comes from the behaviour of pseudo-passives which are permitted in Norwegian and Swedish with DP complements of P (as in English), but not in Danish (Vikner 1995: 246, citing Herslund (1984:70, fn. 7):

(18)   *… at   Peter$_i$ blev grinet   af t$_i$ [Danish]
              that Peter was   laughed   at
         '…that Peter was laughed at.'

                                                              (Vikner 1995:246)

To account for this contrast, Vikner proposes that, in Norwegian and Swedish (like English), prepositions do not assign case to their complements, whereas in Danish they do. For this reason, when the verb loses the ability to assign accusative case (in passive contexts), the complement of a preposition can be promoted to subject in Norwegian and Swedish (and English) but not Danish. Vikner notes, however, that impersonal passives are possible with verbs selecting a PP complement in Danish as long as the preposition selects a CP, as in (19). In such contexts, the subject is a non-thematic 'there' expletive *der*. It follows then that in (19) the preposition *with* must assign accusative to its CP complement, suggesting that CPs participate in the case system. Note that Danish has impersonal passives,

and so allows passivisation of intransitive verbs, unlike English (see below on the behaviour of CPs in English passives):

(19)   ... at   *det/der blev regnet   med [at du   ville   komme]
                                                                    [Danish]
       ... that it/there   was   counted with that you   would   come
       '... that *it/there was counted on [that you would come]'
                                                      (Vikner 1995:247)

Vikner proposes, furthermore, that the expletive *der* 'there' is assigned NOM as the subject of a finite clause. This leads to a well-formed sentence because the non-thematic 'there' expletive in (19) simply absorbs nominative case. Note that the 'it' expletive *det* is not possible in (19). In Vikner's terms this is because this kind of quasi-thematic expletive would be base generated with the CP clause, reciving accusative case. Moving it to subject position therefore leads to a situation in which the same pronominal element has both accusative and nominative case and this leads to ungrammaticality.

    Vikner further notes that these kinds of examples are also well-formed if the CP is topicalised, as long as *der* 'there' still occupies the subject position:

(20)   [At   du ville   komme]$_i$ blev der   regnet   med t$_i$ [Danish]
       that you would   come   was there counted with
       'That you would come was counted on.'
                                    (Vikner 1995:249, translation added)

On the other hand, (21) is ill-formed. This again falls out if the CP receives accusative case from the preposition as this would prevent it from transiting through the (nominative) subject position on the way to the initial topic position. Danish has a strong EPP requirement and overt expletives, so the subject position in (21) must be taken to contain a trace/copy of the CP, Vikner claims.

(21)   * [At   du ville   komme]$_i$ blev t$_i$ regnet   med t$_i$ [Danish]
         that you would   come   was   counted   with
       'That you would come was counted on.'
                                    (Vikner 1995:243, translation added)

As Vikner shows, the Norwegian and Swedish versions of (21) are well formed: see (22), where pseudo-passive is possible, and the trace/copy thus does not receive ACC in the complement-of-P-position, but only NOM by moving through the subject position:

(22) a. [At   du   ville   komme]$_i$ blev t$_i$ regnet   med t$_i$ [Norwegian]
         that   you   would   come   was   counted   with
         'That you   would come   was   counted   on'
     b. [Att   du   skulle komma] räknades t$_i$ med t$_i$ [Swedish]
         that   you   would come   counted.PASS   with
         'That you would come was counted on'

                                   (Vikner 1995:251, translations added)

Taken together, Vikner claims that these patterns suggest that CPs are assigned case in Danish, Swedish and Norwegian. The evidence is most compelling for Danish, but the contrasts between Danish and Norwegian/ Swedish follow if CPs have case in all three languages and what differs is the ability of prepositions to assign case (in passive contexts).

    Further evidence for this claim in relation to Danish comes from the behaviour of complements of adjectives. As Stowell (1981) pointed out, in English, while nominal complements of adjectives and nouns must be introduced by a preposition, CP complements need not. In Danish, however, CP complements of adjectives must also be introduced by a preposition (Sten Vikner, p.c.):

(23) a. Henrik   er   misundelig * (på) dem.
         Henrik   is   envious   on   them
                        'Henrik is envious of them.'
     b. Henrik   er   misundelig * (over) at   de   er   glade.
         Henrik   is   envious   over   that they   are   happy
         'Henrik is envious that they are happy.'

This suggests that in Danish, CPs have a more nominal status than in English. In fact, the Danish facts in particular raise potential challenges for traditional approaches to case/Case, as we discuss in section 5. The parallel with the Romance facts is obvious: in both cases CPs look like DPs in terms of their syntactic behaviour.

4.2. PP complements

In Mainland Scandinavian, in addition to unaccusative verbs, unergative verbs can appear with an expletive subject. The use of the auxiliary *har* 'has' shows that that 'dance' is an unergative verb:

(24) ... at   der   har danset   nogen   i   haven
         that there has danced   someone   in   garden.DEF
      '…that someone has danced in the garden.'

                                      (Vikner 1995:203, translation added)

Expletives are not possible with transitive verbs and the Danish data in (25b) show that they are also banned with verbs which select a PP complement. This can be contrasted with examples like (25a), which contain a PP adjunct, and which are fully acceptable:

(25) a. Der   dansede mange mennesker til festen   [Danish]
         there danced many   people   at party.DEF
         'Many people danced at the party.'
      b. *Der snakker mange folketingsmænd med journalister hver dag
         there talk   many congressmen   with journalists every day
         'Many MPs talk to journalists every day.'

                                                    (Vikner 1995:205)

The ungrammaticality of (25b), as compared with (25a), suggests that the selected PP in (25b) counts for transitivity, replicating the patterns observed in Catalan above. Once again, then, Danish behaves like Catalan in terms of the behaviour of its non-nominal arguments.

5. Discussion

Our discussion of Romance and Scandinavian languages has established that CPs generally count for transitivity and that certain kinds of PPs also do so in some languages. This poses obvious challenges for case/Case theory both in its traditional instantiation and in more recent dependent case approaches. We briefly review these problems here but stop short of proposing an alternative account of the patterns.

Traditional Case theory holds that DPs, unlike CPs, PPs and reduced predicative nominals, require Case licensing. While there are many different formulations of this idea, the dominant minimalist view is that

Case is an uninterpretable feature which needs to be valued during the course of the derivation. Even in a model which allows default valuation for other features, it has been argued that Case is what Preminger (2014) termed a 'derivational time-bomb', a feature which, if not valued, will lead to a derivational crash. If this feature is taken to be a feature of D (realised morphologically in many languages), then it is not expected to be required by CP/PP arguments, or even (predicative) nominals lacking a D-layer. Indeed, Case theory was developed in order to account for the differing distributions of DPs vs. other arguments, as documented by Stowell (1981). In English, for example, as noted above, categories such as adjectives require nominal complements to be introduced via a preposition, whereas CP/PP complements need not (in contrast with the pattern observed in Danish above). A crucial aspect of Agree-based Case theory is the activity condition, which requires DPs to bear a Case feature in order to be active and able to participate in phi-feature valuation. Empirically, this is grounded in the observation that Case and phi-feature valuation often go hand in hand, especially in European languages.

So how can we deal with the facts discussed here? It is possible to stipulate, of course, that in some languages C and P also bear unvalued Case features. As we have seen, there is some evidence for this is Danish where CP complements of adjectives must also be introduced by a preposition. If this preposition is there for case-related reasons, then it can be taken as evidence that CPs require Case and we can model variation across language by simply parameterising the distribution of unvalued Case features. The same could be said for Catalan. Inherently reflexive verbs like *acostumar-se* 'to get used to' and *queixar*-se 'to complain' cannot combine with a DP complement, presumably because they cannot assign accusative case (see Zaring 1992 for a parallel discussion of French):

(26) a. Es   va acostumar   ***(a)** la   seva   manera   de   fer.
           REFL get.used.PST.3SG to   the   her   way   of   do.INF
           'He got used to her manners'
      b. Es   queixava   ***(de)** el   seu   comportament.
           REFL complain.IPFV.3SG   of   the   their   behaviour
           'He complained about their behaviour'

In standard Catalan, CP complements of these verbs are not introduced by a preposition:

(27) a. No s' acostuma   que li   parlin   anglès.
                                                                [Standard Cat.]
         no REFL get.used.PRS.3SG that to.him talk.SBJV.3PL English
         'He does not get used to people talking to him in English'
    b. Es   queixava   que li   parlaven   anglès.
         REFL complain.IPFV.3SG that to.him talk.IPFV.3PL   English
         'He complained that people talked to him in English'

However, in colloquial Catalan, these CP complements also tend to be introduced by the preposition *a*:

(28) a. No s' acostuma   **a** que li   parlin   anglès.
                                                                  [Coll. Cat.]
         no REFL get.used.PRS.3SG to that to.him talk.SBJV.3PL   English
         'He does not get used to people talking to him in English'
    b. Es   queixava   **de** que li   parlaven   anglès.
         REFL complain.IPFV.3SG of that to.him talk.IPFV.3PL   English
         'He complained that people talked to him in English'

This suggests that for many Catalan speakers, these CPs are treated essentially like DP arguments. This cannot be the whole truth, however. CPs count for transitivity in the *faire-infinitive* also in Italian and French where the equivalents to (28a-b) are ungrammatical, as far as we have been able to ascertain.

In more recent approaches to case, and in particular transitivity, an alternative analysis has become popular in terms of dependent case. Though this approach is not all that new (see Anderson 1976, Yip, Maling & Jackendoff 1987, Marantz 1991) it has become increasingly popular in recent years (see McFadden 2004, Baker & Vinokurova 2010, Baker 2015, Levin & Preminger 2015, Nash 2017). The crucial claim of such approaches is that overt morphological case is triggered not via a dependency between a DP and a functional head, but by the presence of two DPs in a local domain. In Baker's (2015) phase-based approach, where two DPs are spelled out in the same phase, the higher, the lower, or, in some cases, both receive a special morphological marking, labelled 'case'. The facts presented here also pose a challenge for this approach. While Baker discusses instances where PPs count as 'case competitors', he is explicit in stating that the dependent case approach does not expect non-nominalised CPs to count for transitivity in the same way, as non-nominalised CPs are

never recipients of case (Baker 2015: 197). The challenge posed by these Romance and Scandinavian facts therefore carries over to this approach. In essence, the challenge is the same. For CPs to be nominal and count as case competitors, they should also behave like DPs in other ways, and while this may be true in Danish and to some extent Catalan, it is not always the case. There are instances where CPs and PPs count for transitivity without obviously being recipients of case/Case and stipulating that they are in some way nominal is at best a restatement of the observation and at worse an account which makes incorrect predictions for other aspects of the grammar.

In fact, the fact that CPs and PPs can count for transitivity is not limited to Romance and Scandinavian languages. We have mentioned that PPs can sometimes count as case competitors, as this is also discussed by Baker (2015). The fact that CPs can count for transitivity is also something that is observed beyond these two language families. As Bárány and Sheehan (2019) note, the same is true of Tsez (citing Polinsky and Potsdam 2001). Even in English, passivisation (which is transitivity-sensitive) is possible with some verbs selecting a CP complement, but not all (see Sheehan 2011):

(29)   a.   ??It was whinged/complained that it would rain
       b.   It was hoped/wished that it would rain.

The verbs in both (29a) and (29b) require nominal but not CP arguments to be contained in a PP.

(30)   a.   She whinged/complained *(about) the weather
       b.   She hoped/wished *(for) a better life.

This suggests that the CPs in (29b) cannot be straightforwardly nominal, or we would expect to see a preposition if this were the case. Sheehan (2011) shows, however, that the verbs in (29b), unlike those in (29a) can surface with the 'special pronoun' *something* which replaced a CP complement (see Moltmann 2009):

(31)   a.   *She whinged/complained something.
       b.   She hoped/wished something.

We are therefore left with a more nuanced picture whereby whether CP/PP arguments count for transitivity is parameterised and variable, with some CPs displaying some nominal properties. Whether this can be captured by a version of case theory depends on how flexible one is willing to make that theory and whether an alternative, more explanatory account of these patterns can be found.

6. Conclusions

In this squib, we have briefly explored what it means to be transitive in some Romance and Scandinavian languages. Contrary to what is expected given different versions of case theory, including the dependent case approach, DPs do not have a privileged status in this regard. In Italian, Catalan, Danish, Swedish and Norwegian CPs can count for transitivity. In Catalan and Danish, the same can be said of PP complements. These facts, which are not limited to the languages under discussion, show that there is still much to discover about transitivity and how best to model it. More specifically, case theory, even in its dependent case instantiation, is not yet fully able to account for these patterns. Further study is needed of transitivity-sensitive phenomena in other language families to ascertain to what extent CPs and PPs count for transitivity at a broader cross-linguistic level.

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Subject float, low subject trapping, and case in Icelandic

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Abstract

This article describes and discusses two peculiar sets of (in)definiteness facts applying to subjects in Icelandic, here referred to as Subject Float and Low Subject Trapping. *Indefinite* subjects (commonly quantified) in presentational sentences and related clause types may either occupy the complement position within the predicate phrase or "float" into various positions in the middle field. This is Subject Float, yielding variation such as "There would (many farmers) then (many farmers) probably (many farmers) be (?*many farmers) elected (many farmers)". Conversely, and unexpectedly, *definite* NP subjects of some adjectival and verbal predicates must stay in the complement position. This is Low Subject Trapping, yielding orders such as "there is cold radiator-the" and "there cooled radiator-the". It is shown that the licensing of subject NPs in the various positions in Subject Float and in the complement position in Low Subject Trapping is unrelated to specific grammatical cases, thus refuting the widely adopted case approach to NP licensing. Although Icelandic case marking has been widely discussed, Subject Float and Low Subject Trapping have not previously received a detailed scrutiny; these phenomena provide additional and partly new knockout arguments against the case approach to NP licensing and NP movement. While high NP raising to subject (Spec,IP) is unaffected by case, it seems to involve both Person and Topic matching.

1. Introduction[1]

The Definiteness Effect or the *Indefiniteness Requirement* (Thráinsson 2007: 319 ff.) refers to the fact that "late subjects" or expletive associates must be indefinite in examples such as (1) and (2).

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(1) a.   There is **a man** in the garden.
   b. * There is **the man** in the garden.

(2) a.   There has probably been **a farmer** elected to the board.
   b. * There has probably been **the farmer** elected to the board.

See Milsark (1977), Safir (1985), Belletti (1988), Lasnik (1992), among many. Sten Vikner discussed facts of this sort across Germanic and Romance at length in his Oxford volume on verb movement and expletive subjects (1995).

A peculiar fact is that English requires raising of the associate into the vicinity (or the "complement position") of *be*, as illustrated in (3).

(3) a.   There have been **three books**$_i$ written ___$_i$ about this.
                                                    (Holmberg 2002: 86)
   b. * There have been written three books about this.

As discussed by Vikner in his 1995 volume, and also by Holmberg (2002), the Scandinavian languages behave differently. For one thing, they allow the associate to stay in the object position, as illustrated for Swedish in (4a) and for Icelandic in (4b).[2]

(4) a. **Swedish** (Holmberg 2002: 86)
      Det   har   blivit skrivet **tre böcker** om   detta.
      there has   been   written three books   about this
      'There have been three books written about this.'

   b. **Icelandic** (Holmberg 2002: 86)
      Það   hafa verið skrifaðar þrjár **bækur** um   þetta.
      there has been   written   three books   about this
      'There have been three books written about this.'

All the Scandinavian languages observe (a version of) the Indefiniteness Requirement, though. See (5a) for Swedish and (5b) for Icelandic.

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[2]   Swedish has two types of passives, a periphrastic one (e.g., *bli skrivet* 'be written') and a morphological s-passive (e.g., *skrivas* 'be written'). As discussed by Engdahl (2017), the order V-NP, with the associate in the object position, is much rarer and more marked in periphrastic passives than in s-passives; it usually requires rather special contexts. The relevant point is that Scandinavian languages allow indefinite associates to stay in the object position in passives, albeit under somewhat varying conditions.

(5) a. **Swedish**
      * Det   har   blivit skrivet **böckerna/de**.
       there   have been written books-the/they

   b. **Icelandic**
      * Það   hafar verið skrifaðar **bækurnar/þær**.
       there   have been written   books-the/they

The canonical declarative subject positions in Icelandic, as in other Scandinavian languages, are the preverbal position in direct word order ("John arrived yesterday", "John had arrived yesterday") or the position immediately following the finite verb in inverted orders ("Yesterday arrived John", "Yesterday had John arrived"). However, Icelandic displays two sets of peculiar and poorly understood (in)definiteness facts applying to subjects. First, quantified indefinite subjects can "float" and show up in various positions in the middle field above (to the left of) the vP or the predicate phrase.[3] Second, certain definite NP subjects must stay within the predicate phrase, a sort of an anti-definiteness effect. I refer to these phenomena as *Subject Float* and *Low Subject Trapping*. I will describe these phenomena here. Even though they have to some extent been discussed in the extensive literature on Icelandic syntax, a more detailed and precise description is called for. I aim to provide such a description here.

    As we will see, the described facts speak very clearly against the widely adopted assumption that specific cases (abstract or not) account for the positional licensing of NPs; in particular, it has been assumed that subjects move to the canonical subject position (Spec,IP) "in order" to get nominative case, overt or abstract. This assumption, *Vergnaud's conjecture*, goes back to Jean-Roger Vergnaud's famous 1977 letter to Chomsky and Lasnik and was developed in Chomsky's *Lectures on government and binding* (1981). Possibly, though, NPs are partly licensed by having *some* case, regardless of which. However, that is a very general and vague idea, hard or impossible to test. Vergnaud's conjecture, on the other hand, was a scientific hypothesis in the sense that it is possible to test. When put to

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[3] The predicate phrase contains the main verb and its complements, plus non-finite auxiliaries, to the exclusion of sentence adverbials in the middle field. The boundary between the predicate phrase and the middle field is blurred by finite verb raising when the finite verb is the main verb. If we assume that auxiliaries are adjoined to vP, the predicate phrase is larger than vP, but if they are stacked little vs the resulting extended vP is equivalent with the predicate phrase (to the exclusion of the raised finite verb).

a test, however, it fails. This has been argued previously by many, on the basis of Icelandic facts (see H. Sigurðsson 2012 and the references there). This article adds further evidence that Vergnaud's conjecture was on the wrong track and must be rejected; an alternative account of NP licensing must be sought for.[4]

2. Subject Float

A well-known fact is that quantifiers can float, showing up in various positions in the clause (Sportiche 1988; Bošković 2004). This applies to clauses with all major types of verbs in Icelandic, including transitive, unergative, unaccusative/ergative, and passive verbs. I illustrate this for a passive predicate in (6) and (7).

(6) **Icelandic**

    a.   **Allar** stelpurnar mundu þá sennilega hafa verið kosnar.
         all   girls-the would then probably have been elected
         'All the girls would then probably have been elected.'

    b.   Stelpurnar mundu **allar** þá sennilega hafa verið kosnar.
    c.   Stelpurnar mundu þá **allar** sennilega hafa verið kosnar.
    d.   Stelpurnar mundu þá sennilega **allar** hafa verið kosnar.
    e. ?* Stelpurnar mundu þá sennilega hafa **allar** verið kosnar.
    f. ?* Stelpurnar mundu þá sennilega hafa verið **allar** kosnar.
    g. ?* Stelpurnar mundu þá sennilega hafa verið kosnar **allar**.[5]

(7) … would 1__ then 2__ probably 3__ have 4__ been 5__ elected 6__
            ok   ok   ok   ?*   ?*   ?*

The potential positions between non-finite verbs do not easily tolerate lexical material (with the partial exception of negative polarity items, see (14)), so I will largely disregard these in the following. As for the sentence adverbials, one might want to assume that they come from another dimension than arguments and verbs, in a multi-dimensional approach to

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[4] It is not a coincidence that case has played such a central role in generative syntax. Case does not pose immediately obvious or acute problems for the credo that syntax is context free, while other major grammatical categories do, including Person, Tense, Mood, and Gender.

[5] The heavier quantifier *allar með tölu*, lit. "all in number", meaning roughly 'each and every(one)', can be right adjoined to the vP or the clause (yielding the same surface order as (6g)). I set this aside.

phrase structure (see the discussion in Bobaljik 1999, and the references there). I do not take a stand on this issue here. The only thing regarding sentence adverbials that matters for my purposes is that their order is strict, and that quantifiers and quantified subjects can be interspersed between them.

Indefinite subjects that contain a quantifier or consist of a bare quantifier show similar distributional properties as does the quantifier in (6). This is illustrated in (8) and (9).

(8) a.   Það   mundu   **margir bændur** þá   sennilega verða   kosnir
         there would   many   farmers   then probably   be(come) elected

      í   stjórnina.
      in   board-the
      'There would then probably be many farmers elected to the board.'
      'Many farmers would then probably be elected to the board.'

   b.   Það mundu þá **margir bændur** sennilega verða kosnir í stjórnina.
   c.   Það mundu þá sennilega **margir bændur** verða kosnir í stjórnina.
   d. ?*Það mundu þá sennilega verða **margir bændur** kosnir í stjórnina.
   e.   Það mundu þá sennilega verða kosnir **margir bændur** í stjórnina.[6]

(9) a.   Það mundu **margir** þá sennilega verða kosnir í stjórnina.
      'There would then probably be many elected to the board.'
      'Many would then probably be elected to the board.'

   b.   Það mundu þá **margir** sennilega verða kosnir í stjórnina.
   c.   Það mundu þá sennilega **margir** verða kosnir í stjórnina.
   d. ?*Það mundu þá sennilega verða **margir** kosnir í stjórnina.
   e.   Það mundu þá sennilega verða kosnir **margir** í stjórnina.

Expletive *það* 'there, it' is not a subject in Icelandic but a placeholder in the C-domain (see Thráinsson 1979; Platzack 1983, and many others since, including Engdahl et al. 2018). According to the analysis in H. Sigurðsson (2010), the expletive is in the low C-domain in both main and subordinate

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[6]   *Margir bændur* can also be heavy NP-shifted to the right of the vP (or the clause), yield-ing the order "there would then probably be elected to board-the many farmers". I set this aside. I am not concerned with transitive expletive constructions here (see, e.g., Thráins-son 2007), but they show largely similar patterns: "There would (many farmers) then (many farmers) probably (many farmers) have (*many farmers) read (*many farmers) book-the (?many farmers)".

clauses.[7] As we will see, Subject Float is independent of the presence of the expletive. The floating NP in Subject Float constructions is the subject.[8]

Margir in (9) and *margir bændur* in (8) may either have a specific or a non-specific reading. It is difficult to distinguish between these readings, but my intuition is that only the non-specific reading is available in (8e) and (9e), where the subject is in the object position. When the subject is in the highest position, as in (8a) and (9a), I only get the specific reading, while I get both readings for the middle field positions in the b- and c-examples.

Similar facts apply to some other quantifiers, including , *nokkrir* 'a few (people)', *einhverjir* 'some (people)' and numerals like *fjórir* 'four', while other quantifiers, including *sumir* 'some (people)' and *allir* 'everybody, all (people)' behave slightly differently (bare *sumir* and *allir* are for example awkward in the object position).[9] I will not try to sort this out here; it would take us too far.[10]

Bare indefinites behave differently from quantifier subjects; they are usually only "happy" in the object position, as illustrated in (10).

(10) a. ??Það mundu **bændur** þá   sennilega verða   kosnir í
     there would   farmers   then probably be(come) elected in

     stjórnina.
     board-the
     Intended: 'Some (non-specific) farmers would then be elected to the board.'

   b. ?* Það mundu þá **bændur** sennilega verða kosnir í stjórnina.
   c. ?* Það mundu þá sennilega **bændur** verða kosnir í stjórnina.
   d. ?* Það mundu þá sennilega verða **bændur** kosnir í stjórnina.
   e.   Það mundu þá sennilega verða kosnir **bændur** í stjórnina.

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[7] It is often unclear whether to translate expletive *það* as 'there' or 'it' (and, more generally, how to translate Icelandic impersonal constructions). For simplicity, I consistently use 'there' in the glosses.

[8] Alternatively, one might want to assume that impersonal and presentational constructions have an expletive null-subject in Spec,vP that forms a chain with the overt subject NP (and presumably also with the expletive, when it is present, in the spirit of Safir 1985). I do not take a stand on this issue here but see Sigurðardóttir & Eythórsson (2017) and Wood (2017) for discussions of related ideas.

[9] Bare *margir* in (9e) is also a bit marked (while, e.g., *mjög margir* 'very many' feels entirely natural in the object position).

[10] Another complicating factor that I will not discuss here either is that the judgments change if one adds more sentence adverbials in the middle field, for example the hearsay evidentiality marker *víst* 'they say, allegedly' (yielding *þá __ víst __ sennilega __*) and the negation *ekki* (yielding *þá (__ víst) __ sennilega __ ekki __*).

Much the same applies to indefinite subjects that are modified by an adjective, such as *duglegir bændur* 'efficient farmers', *gamlir bændur* 'old farmers'.[11]

The basic structure of vPs in languages like English and the other Germanic VO languages is commonly assumed to be as sketched in (11).

(11)   [$_{vP}$ Spec(ifier) v [$_{VP}$ V Compl(ement)]]

Subjects of unaccusatives and passives are taken to be generated in the complement position, to the right of the main verb. Transitive subjects, in turn, are assumed to be generated in the specifier position, Spec,vP, that is, the position to the immediate left of the main verb. However, as in many other languages (see Alexiadou & Anagnostopoulou 2001), transitive subjects are not usually allowed to surface in Spec,vP in Icelandic. This is illustrated in (12).

(12)   a.   Það mundu **margir (bændur)** hafa keypt bókina.
            there would many   (farmers)   have bought book-the
            'Many (farmers) would have bought the book.'
            'There are many (farmers) who have bought the book.'

       b. *Það   mundu hafa   **margir (bændur)** keypt   bókina.
            there   would have   many   (farmers)   bought book-the

Quantifiers and quantified subjects are usually not "happy" in Spec,vP in passives and unaccusatives either. We see this in the passives in (8d), (9d), and (10d) above, and we see the same for the unaccusative *hverfa* 'disappear' in (13d).

(13)   a.   Það   mundu **margir bílar** þá   sennilega hafa horfið.
            there would many   cars   then probably have disappeared
            'Probably, many cars would then have disappeared.'

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[11] However, in clauses with *vera* 'be' as the main verb, adjectival modification has grammaticality effects. See the discussion in Thráinsson (2007: 318–322) of the different behavior of *köttur* 'a cat' vs. *svartur köttur* 'a black cat'.

    b.   Það mundu þá **margir bílar** sennilega hafa horfið.
    c.   Það mundu þá sennilega **margir bílar** hafa horfið.
    d.   ?*Það mundu þá sennilega hafa **margir bílar** horfið.
    e.   Það mundu þá sennilega hafa horfið **margir bílar**.

However, the negative polarity item *nein-* 'any' behaves differently. When it modifies an NP the two are relatively "comfortable" in Spec,vP, in particular if *nein-* is focalized.[12] See (14).[13]

(14)   a. ? Það   mundu þá   sennilega ekki hafa **NEINIR bændur**
          there would   then probably not   have any   farmers

          keypt   bókina.
          bought book-the
          'Probably, no farmers would then have bought the book.'
          'Probably, the book would then not have been bought by any
          farmers.'

      b.   Það   mundu þá   sennilega ekki   hafa verið **NEINIR**
          there would then probably not   have been any

          bændur kosnir.
          farmers   elected
          'Probably, there would then not have been any farmers elected.'

      c.   Það   mundu þá   sennilega ekki hafa **NEINIR bílar**
          there would then probably not have any   cars

          horfið.
          disappeared
          'Probably, no cars would then have disappeared.'

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[12] This is marked, though. In all three examples in (14) the order "there would then probably not any farmers/cars have …", with "any farmers/cars" in the middle field, is more natural (and does not require strong focus). Also, *nein-* alone is ungrammatical in Spec,vP ("*there would then probably not have any bought book-the", etc.), and so is *eng(i)-* (*enginn*, etc.) "one-no" = 'no one', which incorporates the negation (as in "*there would then probably have one-no bought book-the"). These facts might relate to the fact that negative objects are commonly raised in the Scandinavian languages (see Thráinsson 2007: 82 ff. and the references there), yielding orders like "I have one-no book bought".

[13] More generally, the negation affects judgments of Subject Float clauses (see H. Sigurðsson 2000: 83), but, as this is presumably due to independent scope effects (rather than the float itself), I set it aside.

Spec,vP is commonly accessible for indefinite subjects in passives in for example English and Swedish (usually under a participle number agreement condition in the latter, see Holmberg 2002). The limited access of floating quantifiers and indefinite subjects to Spec,vP in Icelandic is curious.[14] In contrast, in English and Swedish, indefinite subjects cannot usually raise into the middle field, that is, the postverbal I-domain, as opposed to Icelandic (see, e.g., Engdahl et al. 2018).[15] I set these differences aside here.

The Subject Float examples we have looked at so far have the expletive *það* in initial position. However, Icelandic Subject Float is largely independent of the expletive, and, more generally, of the initial position. I illustrate this for only the lowest I-domain position in (15); the sentence in (15c) is a narrative style verb-initial declarative (see H. Sigurðsson 1990, 2018).

(15) a. Því mundu þá   kannski **margir bændur** verða kosnir í
          thus would   then perhaps   many   farmers   be   elected in

          stjórnina.
          board-the
          'Thus, there would perhaps be many farmers elected to the board.'

      b. Mundu þá kannski **margir bændur** verða kosnir í stjórnina?
          'Would there then perhaps be many farmers elected to the board?'

      c. Mundu því kannski **margir bændur** verða kosnir í stjórnina.
          'Thus, there would perhaps be many farmers elected to the board.'

      d. … að þá mundu   kannski **margir bændur** verða kosnir í
          … that then would   perhaps   many   farmers   be   elected in

          stjórnina.
          board-the
          '… that there would then perhaps be many farmers elected to the board.'

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[14] One could say that the participle has an EPP [Extended Projection Principle] feature in English and Swedish, attracting the subject into Spec,vP, while Icelandic lacks such a feature (see Holmberg 2002). However, unless one has a general theory of EPP, that is just a restatement of the facts.

[15] "I" in "I-domain" refers to Infl, the position of the finite verb (when it does not raise to C). The postverbal I-domain is the space between the finite verb and the highest or the first non-finite verb. In "there would then probably not many farmers be elected to board-the", "then", "probably", "not", and "many farmers" are all in the postverbal I-domain, while "be", "elected", and "to board-the" are within the predicate phrase.

Now, reconsider (8), repeated here as (16).

(16) a. Það   mundu **margir bændur** þá sennilega verða   kosnir
         there would many   farmers   then probably   be(come) elected

          í   stjórnina.
          in   board-the
          'There would then probably be many farmers elected to the board.'
          'Many farmers would then probably be elected to the board.'

      b.   Það mundu þá **margir bændur** sennilega verða kosnir í stjórnina.
      c.   Það mundu þá sennilega **margir bændur** verða kosnir í stjórnina.
      d. ?*Það mundu þá sennilega verða **margir bændur** kosnir í stjórnina.
      e.   Það mundu þá sennilega verða kosnir **margir bændur** í stjórnina.

(17)   … would   1__ then 2__ probably 3__ be(come) 4__ elected
             ok   ok   ok   ?*
      5__ to board-the
       ok

It is unclear, to say the least, what licenses all these potential indefinite quantified subject positions (or quantifier subject positions, cf. (9)). Subject Float is at least partly semantically and syntactically regulated, relating to specificity, but the effects are vague and unclear. Partly, the variation seems to be due to mere "PF sloppiness".[16] In particular, there are no clear reading differences between the low I-domain positions.[17] There is a slight preference for a specific reading in (16b), "there would then many farmers probably", and a slight preference for a non-specific reading in (16c), "there would then probably many farmers", but, as far as I can judge, both readings are possible in both positions.

     The Subject Float facts are unrelated to specific cases. The floating subject is nominative in all the examples we have looked at so far, but

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[16] Quite possibly, though, there are some intonation correlates. It would be interesting to test this.

[17] The high I-domain position is the position immediately following the finite verb in main clauses, occupied by definite subjects in inverted orders, as in "Then would farmers-the probably have been elected", and by indefinite subjects in orders like "There would many farmers then probably have been elected". The other positions in the I-domain are low(er) I-domain positions. These are entirely descriptive terms; the high I-domain positions in inverted orders and in presentational sentences are probably distinct (this has been debated, but I set it aside here).

quirky (non-nominative) subjects behave the same.[18] This is illustrated for the dative subject *mörgum bændum* in (18).[19]

(18) a. Það   mundi   **mörgum bændum**   þá   sennilega verða
   there would   many   farmers.DAT then probably   be(come)

   bjargað.
   rescued

   'There would then probably be many farmers rescued.'
   'Many farmers would then probably be rescued.'

  b. Það mundi þá **mörgum bændum** sennilega verða bjargað.
  c. Það mundi þá sennilega **mörgum bændum** verða bjargað.
  d. ?* Það mundi þá sennilega verða **mörgum bændum** bjargað.
  e. Það mundi þá sennilega verða bjargað mörgum bændum.

Since Chomsky (1981), it has been widely assumed that subject movement to Spec,IP, as in *The farmers would then probably be rescued*, is triggered by abstract nominative case ("Case"). Full NPs in English have no morphologically visible case, but they might well have abstract case; abstract case in the sense "covert but active case" is arguably a fact (see, e.g., Sigurðsson 2008; Wood 2017). However, definite subjects move to Spec,IP in Icelandic, much as in English, but this applies to quirky subjects as well as nominative ones: ***Bændunum**.DAT mundi þá sennilega verða bjargað* 'The farmers would then probably be rescued' vs. **Þá mundi* *sennilega verða bjargað **bændunum**.DAT* (see Andrews 1976; Thráinsson 1979; and many others since). On the face of it, this would seem to disprove that subject movement to Spec,IP is triggered by abstract nominative case. One might think that it is possible to get around this problem, though, and thereby save the abstract nominative case trigger hypothesis, by assuming that quirky subjects in Spec,IP are assigned invisible abstract nominative case, on top of the quirky case (see Jónsson 1996, and also the critical discussion in Thráinsson 2007: 192 ff.). However, this has no bearing on

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[18] This has been repeatedly pointed out in previous work (H. Sigurðsson 1989, 2000, etc.). Icelandic quirky subjects have been widely discussed. See for example Thráinsson (2007), H. Sigurðsson (2012), and the references cited in these works.

[19] Parallel facts are found for (much rarer) genitive subjects: "There would (many farmers. GEN) then (many farmers.GEN) probably (many farmers.GEN) be (?*many farmers.GEN) missed (many farmers.GEN)" (miss = *sakna*).

the Subject Float facts.[20] Floating subjects can show up in a number of positions in the middle field, below Spec,IP, and also in the complement position, regardless of case. If abstract nominative case were the factor that licenses subjects in all these positions, then such case would either have multiple sources within the clause or be able to percolate rather freely down the whole clausal structure, which in turn would mean that abstract nominative case has zero explanatory value with regard to NP licensing. It would be available in multiple positions, hence unavailable as an explanation or an account of where subjects can be spelled out.

In this section, we have seen that that there is extensive Subject Float in Icelandic. It has an intriguing relationship to definiteness (and sometimes focus), but it has nothing to do with case, which is not surprising since argument licensing in Icelandic is in general not affected by case (see H. Sigurðsson 1989, 2008, 2012, and the references there).[21] In the next section, we will encounter another intriguing argument-licensing phenomenon that is also unrelated to case.

3. Low Subject Trapping
Definite subjects are excluded in Subject Float constructions. See (19).

(19) a. * Það   mundu **bændurnir** þá sennilega verða   kosnir í
        there   would farmers-the then probably be(come) elected in

        stjórnina.
        board-the
        'The farmers would then probably be elected to the board.'

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[20] Nominative objects and agreement with such objects, as in "Me.DAT would.3PL like these horses.NOM", 'I would like these horses', also pose a problem for the abstract nominative case approach (H. Sigurðsson 1996 and much subsequent work; see also Thráinsson 2007: 232 ff. and the references there)

[21] The high subject position and the object position are also available for indefinite subjects in both regular ECM and experiencer ECM in Icelandic. Regular ECM: "I believed many farmers.ACC have been elected", and "I believed have been elected many farmers. ACC". Experiencer ECM: "Me.DAT seemed many farmers.NOM have been elected", and "Me.DAT seemed have been elected many farmers.NOM". In contrast, definite subjects are licit in only the high subject position of both types of ECM infinitives (the Definiteness Effect). These facts speak strongly against a case-related approach to argument licensing. I must set this aside here, though, but see H. Sigurðsson (2012).

b. *Það mundu þá **bændurnir** sennilega verða kosnir í stjórnina.

c. *Það mundu þá sennilega **bændurnir** verða kosnir í stjórnina.

d. *Það mundu þá sennilega verða **bændurnir** kosnir í stjórnina.

e. *Það mundu þá sennilega verða kosnir **bændurnir** í stjórnina.

However, Icelandic displays a number of exceptions from the Indefiniteness Requirement, discussed by Thráinsson (2007: 317 ff.; see also Rögnvaldsson 1982 [1990], 1984; H. Sigurðsson 1989; Jónsson 2000, 2005; Vagnsnes 2002; Indriðadóttir 2014; Engdahl et al. 2018). One is that definite subjects quantified by *all-* 'all, every' are well-formed in the high and low I-domain (Vangsnes 2002; Thráinsson 2007: 317 ff.), but ungrammatical within the predicate phrase, as illustrated in (20).[22]

(20) a.　Það　mundu **allir bændurnir** þá　sennilega hafa　verið kosnir.
　　　　　there would　all　farmers-the then probably　have　been　elected
　　　　　'All the farmers would then probably have been elected.'

　　　b.　?Það mundu þá **allir bændurnir** sennilega hafa verið kosnir.

　　　c.　　Það mundu þá sennilega **allir bændurnir** hafa verið kosnir.

　　　d.　*Það mundu þá sennilega hafa **allir bændurnir** verið kosnir.

　　　e.　??Það mundu þá sennilega hafa verið kosnir **allir bændurnir**.

The expletive does not seem to be responsible for these patterns. See (21) and the narrative style V1 declaratives in (22).

(21)　a.　Þá mundu sennilega **allir bændurnir** hafa verið kosnir.
　　　　　'Then all the famers would probably have been elected.'

　　　b. * Þá mundu sennilega hafa verið kosnir **allir bændurnir**.

(22)　a.　Mundu því sennilega **allir bændurnir** hafa verið kosnir.
　　　　　'Thus, all the farmers would probably have been elected.'

　　　b. * Mundu því sennilega hafa verið kosnir **allir bændurnir**.

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[22] *Flestir* 'most' and definite partitives, such as *tveir af bændunum*.DAT, *tveir bændanna*.GEN 'two of the farmers', behave similarly.

As seen, these *all*-definites behave partly like plain definites and partly like indefinites. Like plain or bare definites they cannot stay within the predicate phrase, but like indefinites they are licensed in the I-domain.

Another interesting type of exceptions from the Indefiniteness Requirement is illustrated in (23) (see H. Sigurðsson 1989: 294–295; Jónsson 2000, 2005; Thráinsson 2007: 324 ff.; Indriðadóttir 2014). I refer to this construction as *Low Subject Trapping*, **LST**, as it has definite NP-subjects that are stuck or trapped within the predicate phrase, an issue I will return to shortly.[23]

(23) a. Það   er búin   **mjólkin**.
          there is finished milk-the
          'There is no more milk (here)'
          'The milk has run out'.

     b. Það   er kaldur **ofninn**.
          there is cold   radiator-the
          'The radiator is cold.'

     c. Það   er brotinn **diskurinn**.
          there is broken plate-the
          'The plate is broken.'

     d. Það   var bilaður **skjárinn**.[24]
          there was broken monitor-the
          'The monitor was out of order.'

     e. Það   var bráðnaður **snjórinn**.
          there was melted   snow-the
          'The snow had melted.'

LST is largely confined to the spoken language, and it is marked for many speakers. In an informant survey (with 710 and 709 informants,

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[23] A related but a slightly different type pointed out by Rögnvaldsson (1982 [1990], 1984) is cases like "there shines always blessed sun-the", "there got-stuck bus-the on its way to the north", and "there is come guy-the who you met yesterday". See also H. Sigurðsson (1989: 294–295), and Thráinsson (2007: 325).

[24] I find this less natural for plural subjects: ?*Það eru kaldir ofnarnir* "there are cold the radiators", ?*Það voru bilaðir skjáirnir* "there were broken monitors-the".

respectively), the sentences in (23a) and (23d) were accepted by only 18% and 34%, respectively (and rejected by 64% and 45%, respectively) (Þráinsson et al. 2015: 84). LST sentences express some previously unknown event (often unexpected but likely to happen in a given situation), and the subject must be non-topical (i.e., it must not have been spelled out in previous discourse). Thus, in the context "We checked both the stove and the radiator" one could not proceed by saying *Það var kaldur ofninn* "there was cold oven-the" (one would have to say *Ofninn var kaldur* in that case). In the present tense, as in (23a), (23b), and (23c), LST sentences often initiate discourse. I could for example go into the kitchen and open the refrigerator to discover that there is no more milk there and then state (23a) to my partner. Alternatively, if my partner were to ask me 'What is the matter?' I could naturally answer with (23a) (or, in different situations, with (23b) or (23c)). It is thus difficult to create a natural context for present tense LST in a written informant survey. However, this does not extend to the past tense. The past tense sentences in (23d) and (23e) must be part of a larger discourse, where the background of the previously unknown event has been laid. For the sentence in (23d), the context was *Ég komst ekki í tölvuna* 'I could not get into the computer' (Þráinsson et al. 2015: 78). I will not speculate further on why so many informants in Þráinsson et al. rejected LST sentences. The above-cited Icelandic linguists, who have discussed LST, all agree that many LST sentences are fully natural. The following discussion is based on my own intuitions. As far as I can judge, these intuitions are shared by many other speakers.

LST is constrained in various ways. First, it is commonly incompatible with individual level predicates (i.e., predicates that describe permanent properties of the subject): ??*Það er stór skjárinn* "there is big monitor-the", and so on (Jónsson 2005: 457). Second, the subject cannot easily be animate, even with stage level predicates (describing non-permanent properties). See (24).[25]

(24) a. * Það   er veikur **kennarinn**.
         there is sick   teacher-the

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[25] However, as pointed out by a reviewer, examples of this sort are variably marked. Thus, I find ?*Sjáðu, það er grár kötturinn* "Look, there is gray cat-the" much better than **Sjáðu, það er grár maðurinn* "Look, there is gray man-the", even though it seems natural to interpret *grár* 'gray' here as an individual level predicate rather than as a stage level predicate.

   b. * Það   er fótbrotinn **hesturinn**.
       there is leg-broken horse-the

   c. * Það   er reiður   **strákurinn**.
       there is angry   boy-the

Third, the construction commonly requires clause-initial *það* in declaratives, as opposed to questions. See (25). In certain contexts, however, this requirement is lifted, see (25c).

(25) a. ?? Nú   er búin   **mjólkin**.   (OK: Nú er mjólkin búin)
      now   is finished milk-the

   b. ?? Þá   var bilaður **skjárinn**.   (OK: Þá var skjárinn bilaður)
      then   was broken monitor-the

   c.   Ég ætlaði   að nota tölvuna   en þá var bilaður
      I   intended to use computer-the but then was broken

      skjárinn.
      monitor-the
      'I intended to use the computer, but then the monitor was out of order.'

   d.   Er búin   **mjólkin**?
      is   finished milk-the
      'Is there no more milk here?'

   e.   Var bilaður   **skjárinn**?
      was broken   monitor-the
      'Was the monitor out of order?'

Fourth, LST is mainly found in the simple tenses, present and past. As we will see, it is sometimes grammatical in complex tenses (present and past perfects, etc.), but often it is less natural than in the simple tenses. See (26).

(26) a. ? Það   hefur sennilega verið búin   **mjólkin**.
      there has   probably been finished milk-the

  b. ?? Það   hafði sennilega verið bilaður **skjárinn**.
      there had   probably been broken monitor-the

Fifth, the subject must be a definite full NP or DP (including DPs headed by a determiner, such as *þessi ofn* 'this radiator'). It cannot be an indefinite NP, nor can it be a pronoun. See (27).

(27) a. * Það   er búin   **mjólk/hún**.
              there is finished milk/she (= 'it')

     b. * Það   er kaldur   **ofn/hann**.[26]
              there is cold (a)   radiator/he (= 'it')

Sixth, and most symptomatically, the subject is trapped within the predicate phrase; it cannot raise or float into the middle field. See (28) and (29).

(28) a. * Það   er **mjólkin** búin.
              there is milk-the finished

     b. * Það   er **bíllinn** bilaður.
              there is car-the broken

(29) a. ? Það   hefur sennilega verið búin   **mjólkin**. = (26a)
              there has   probably   been finished milk-the

     b. * Það hefur sennilega verið **mjólkin** búin.
     c. * Það hefur sennilega **mjólkin** verið búin.
     d. * Það hefur **mjólkin** sennilega verið búin.

The examples in (23)–(29) all have an adjectival predicate. LST is also found for unaccusative and ergative verbs. See (30).[27]

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[26] The indefinite NP is grammatical in a presentational sentence with a stage setting adverbial (cf. Milsark 1977): *Það er kaldur ofn í húsinu* "there is (a) cold radiator in house-the".

[27] In some cases of this sort (as in, e.g., "there broke plate-the") there is an innocence indication: "I am not responsible, it just happened/happens", but the same applies to "the plate broke".

(30) a. Það   klárast   **mjólkin** (ef þú drekkur hana alla).
         there gets-finished milk-the (if you drink   it   all)
         'The milk will run out (if you drink it all).'

   b. Það   slokknar **ljósið**   (ef þú gerir þetta).
       there goes-out light-the (if you do   this)
       'The light will go out (if you do this).'

   c. Það   kólnaði **ofninn**.
       there cooled   radiator-the
       'The radiator got cold(er).'

   d. Það   bilaði   **skjárinn**.
       there broke   monitor-the
       'The monitor went out of order.'

   e. Það   bráðnaði **ísinn**.
       there melted   ice-the
       'The ice/ice-cream melted.'

   f. Það   brotnaði **diskurinn**.
       there broke   plate-the
       'The plate broke.'

   g. Það   rifnaði **pokinn**.
       there tore   bag-the
       'The bag burst.'

   g. Það   lagaðist **veðrið**.
       there got-better weather-the
       'The weather got better.'

Inasmuch as verbal LST is compatible with the complex tenses, it can be shown that the subject is trapped, cannot raise into the I-domain. See (31).

(31) a. ? Það hefur sennilega bilað   **skjárinn**.
           there has   probably broken monitor-the
   b. * Það hefur sennilega **skjárinn** bilað.
   c. * Það hefur **skjárinn** sennilega bilað.

Unintentional causers in Icelandic are commonly expressed in *hjá-* 'by/ at' phrases (Wood 2013; the preposition *hjá* takes a dative complement). *Hjá*-phrases can also denote a possessor (E. Sigurðsson 2006; Þráinsson, E. Sigurðsson & Rögnvaldsson 2015) or a location. If such a phrase is added to (31a), the clause gains in acceptability (and so do clauses with other complex tenses).[28] As shown in (32), the subject can either follow or precede the *hjá*-phrase.

(32) a. Það   hefur sennilega bilað   hjá henni **skjárinn**.
           there has   probably   broken by   her.DAT monitor-the
           'The monitor has probably broken down on her.'
           'Her monitor has probably broken down.'
           'She has probably unintentionally caused the/her monitor to break down.'

      b. Það hefur sennilega bilað **skjárinn** hjá henni,

The order in (32b) is slightly more marked than the one in (32a), but both are grammatical. This pattern is found for simple tense verbal and adjectival LST as well, as illustrated in (33) and (34).

(33) a. Það   kólnaði hjá mér   **ofninn**.
           there cooled   by   me.DAT radiator-the
           'The radiator at my place got cold(er).'
           'The radiator got cold(er) on me.'
           'My radiator got cold(er).'

      b. Það kólnaði **ofninn** hjá mér.

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[28] For example, clauses with future *mun* 'will' and the complex future *koma til með að* 'will', lit. "come to with to". See (i) for the latter:

(i) a.   Það   kemur   til með að kólna hjá þér   ofninn.
          there comes   to with to cool   by   you.DAT radiator-the
          'The radiator at your place will get cold(er).'
          'The radiator will get cold(er) on you.'
          'Your radiator will get cold(er).'

    b.   Það kemur til með að kólna ofninn hjá þér.

(34) a.   Það   er   kaldur hjá mér   **ofninn**.
          there is   cold   by   me.DAT radiator-the
          'The radiator at my place is cold.'
          'The radiator is (being) cold on me.'
          'My radiator is cold.'

     b.   Það er kaldur **ofninn** hjá mér.'

The *b*-examples in (32)–(34) might involve raising of the subject within the predicate phrase. Alternatively, the *a*-examples might involve raising of the *hjá*-phrase, or there might be two distinct base structures. I will not try to sort this out here (but see Wood 2013 for a discussion of the syntax of clauses with *hjá*-phrases). In any case, neither the subject nor the *hjá*-phrase can move into the I-domain. See (35) and (36).

(35) a.   Það hefur sennilega bilað **skjárinn** hjá henni. = (32b)
     b. * Það hefur sennilega **skjárinn** bilað hjá henni.
     c. * Það hefur **skjárinn** sennilega bilað hjá henni.

(36) a.   Það hefur sennilega bilað **hjá henni** skjárinn. = (32a)
     b. * Það hefur sennilega **hjá henni** bilað skjárinn.
     c. * Það hefur **hjá henni** sennilega bilað skjárinn.

The *hjá*-phrases have a special status. Other PPs cannot normally precede the subject in LST, see (37) and (38).

(37) a.   Það   kólnaði ofninn   í   **stofunni**.
          there cooled   radiator-the in living.room-the
          'The radiator in the living room got cold(er).'

     b. * Það kólnaði í stofunni ofninn.

(38) a.   Það   kólnaði ofninn   í   **morgun**.
          there cooled   radiator-the in morning
          'The radiator got cold(er) this morning.'

     b. * Það kólnaði í morgun ofninn.

All the LST examples we have looked at so far have nominative subjects, but there are also cases of verbal LST with quirky subjects.[29] See (39).

(39) a.   Það   seinkar   **fluginu**.
          there delays   flight-the.DAT
          'The flight will be late.'

     b.   Það   verður flýtt   **klukkunni**   á   morgun.
          there will.be speeded clock-the.DAT *on morrow*
          'The clock will be moved forward tomorrow.'

     c.   Það   fækkar   alltaf   **ferðunum**.
          there get.fewer always   trips-the.DAT
          'The trips are getting fewer all the time.'

Finally, both nominative and quirky subjects are possible in some LST "non-raising raising infinitives", as in (40).[30]

(40) a.   Það   virðist vera   kaldur **ofninn**.
          there seems be   cold   radiator-the.NOM
          'The radiator seems to be cold.'

     b.   Það   virðist hafa   seinkað **fluginu**.
          there seems have   delayed flight-the.DAT
          'The flight seems to be/have been late.'

This (almost) completes my description of LST. It is the most detailed description of the phenomenon to date. The obligatory trapping of the definite subject within the predicate phrase is particularly intriguing. It might be related to two other phenomena, the (non-standard) *New Passive* and the *Ergative-Impersonal Alternation*.[31] In both these phenomena,

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[29] There are no cases of adjectival LST with quirky subjects.

[30] This is excluded in PRO infinitives but only marginally degraded in passive *það*-initial ECM constructions: *?Það var talinn vera kaldur ofninn í stofunni* "there was believed be cold radiator-the.NOM in living.room-the".

[31] Yet another phenomenon that might be related to LST is the so-called Impersonal Modal Construction, as in *Nú/Það verður að banna þessa hegðun*.ACC "now/there must to forbid this behavior" 'This behavior must be forbidden (now)' (see H. Sigurðsson 1989; Wood 2017).

definite NPs that are potential subject candidates must stay within the predicate phrase. Consider the New Passive first (see E. Sigurðsson 2017: 208 ff. and the references there, including Maling & Sigurjónsdóttir 2002). It is illustrated in (41b) and (41c), in comparison with the standard or traditional passive in (41a); as shown in (41d) and (41e), the accusative NP cannot raise into the I-domain. DFT = a default, non-agreeing N.SG form.[32]

(41) a.   Kennarinn   var rekinn.
           teacher-the.NOM   was fired.NOM.M.SG
           'The teacher was fired.'

      b.   Það   var rekið   **kennarann**.
           there was fired.DFT teacher-the.ACC
           'The teacher was fired.'
           'Somebody/They fired the teacher.'

      c.   Var rekið **kennarann**?
      d. * Það var **kennarann** rekið.
      e. * Var **kennarann** rekið?

The Ergative-Impersonal Alternation is illustrated in (42) (for further discussion, see H. Sigurðsson 1989: 236–237, 289–292). The ergative version in (42a) has regular NP-movement to subject, whereas the impersonal version in (42b) and (42c) has the NP embedded in a preposition phrase; as shown in (42d) and (42e), the preposition NP complement cannot raise into the I-domain.

(42) a.   Kertið   slokknaði.
           candle-the.NOM   went.out
           'The candle went out.'

      b.   Það   slokknaði á   **kertinu**.
           there went.out   on candle-the.DAT
           'The candle went out.'

      c.   Slokknaði á **kertinu**?
      d. * Það slokknaði **kertinu** á.
      e. * Slokknaði **kertinu** á?

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[32] Parallel patterns are found for datives: *Það var boðið kennaranum* "there was invited teacher-the.DAT" vs. **Það var kennaranum boðið* "there was teacher-the.DAT invited", and so on.

In both the New Passive and the impersonal PP clauses, though, the low NP is assigned case within the predicate phrase, so its inability to raise into the I-domain might be taken to be an instantiation of (criterial) freezing in the sense of Chomsky (2001: 6) or Rizzi (e.g., 2007), saying roughly that an NP that has checked all its features (case, etc.) gets frozen in place and cannot move any further (a reasonable conjecture). The trapping of the subject in LST relates to information structure; as we have seen the trapped subject must not be topical. Its position might be a criterial focus position, for a non-topical but a situation-given subject, but it is difficult to find any evidence bearing on the issue, apart from the trapping itself. Alternatively, or in addition, the subject cannot raise out of the predicate phrase as it does not match a Topic feature or Topic features high in the clausal structure. In any event, the subject is commonly nominative in LST, so, on widely adopted approaches to NP-movement (e.g., Chomsky 1981), it "should" move into the I-domain to get its case checked in a (more) local relation to Infl. We must conclude that LST is unrelated to specific cases – something different from case is responsible for the trapping. In addition, as we saw in section 2, Subject Float is unrelated to case. In Subject Float, the indefinite subject may raise out of the predicate phrase into the I-domain, but the float applies to subject NPs regardless of their case marking.

A very sharp difference between the New Passive and the impersonal PP clauses on one hand and LST on the other hand is that the predicate phrase internal argument can easily be a pronoun in the former but not in the latter. See the contrasts between (43) and (44).

(43) a. Það   var   rekið **hana**.   New Passive
          there was   fired her
          'She was fired.'
          'Somebody/They fired her.'

      b. Það   slokknaði á   **því**.   Impersonal PP clause
          there went-out   on   it
          'It went out.'

(44) a. *Það   er kaldur **hann**.   Adjectival LST
           there is   cold   he (= 'it')

      b. *Það   kólnaði **hann**.   Verbal LST
           there cooled   he (='it')

This sharp difference has gone unnoticed hitherto, for example in my own works. In H. Sigurðsson (2010), I treated definite NPs on a par with pronouns. Although treating pronouns and definite full NPs alike might be sufficient for English it is evidently not accurate for Icelandic. A possible line of reasoning here is that pronouns in non-transitive constructions differ from full NPs in that they must normally be in the vicinity of Person checking features in the C-/I-domain, an effect that has commonly, and misleadingly, been attributed to case or to the Extended Projection Principle. There are, however, exceptions from this, where the NP is "shielded" from high Person checking by an intervening element, including passive morphology in the New Passive and prepositions (in Icelandic, as opposed to for example English, which has pseudo passives, absent from Icelandic). These intervening elements seem to be heading strong phases, thus having their own Person checking features, thereby blocking matching of Person checking features in the C-/I-domain by regular minimality (see the discussion in H. Sigurðsson 2010, 2011, 2012; Legate 2014; E. Sigurðsson 2017).

NP raising to Spec,IP arguably involves matching of Person checking features in the C-/I-domain. In addition, the Subject Float and LST facts discussed here suggest that it also involves matching of a Topic feature or Topic features high in clausal structure.

4. Concluding remarks
In this article I have described and discussed two sets of perplexing and poorly understood (in)definiteness facts in Icelandic, Low Subject Trapping, applying to some definite subjects, and Subject Float, applying to indefinite subjects in presentational (and related) constructions. The facts described here show that some definite subjects must be spelled out in the complement position within the predicate phrase and that quantified indefinite subjects can be spelled out in a number of positions in the middle field, above the predicate (in addition to the complement position). The licensing of subject NPs in the various positions is unrelated to specific cases, thus speaking loud and clearly against the assumption (Vergnaud's conjecture) in Chomsky (1981) and much subsequent writings that case plays an essential role in NP licensing. Case marking and case agreement in Icelandic infinitives also demonstrate very clearly that the assumption is unfounded (see H. Sigurðsson 2008, 2012, and the references there). It is difficult to test this assumption in languages such as English, with

barely any case marking, but it can be tested in Icelandic, and the results are unequivocal: Case does not account for argument licensing.

In all fairness, it must be added that Chomsky has abandoned his original "case story", albeit only reluctantly in passing ("Case assignment is divorced from movement", 2001: 17). However, the field has not followed in his footsteps (see, e.g., Lasnik 2008; Legate 2008). A much weaker approach, in the spirit of Sapir (1921), might be upheld, namely, that cased NPs are partly licensed by having *some* case, regardless of which, but that is a vague statement with limited predictive power. Nominative case, abstract or not, is unrelated to subject licensing in Spec,IP, which instead seems to boil down to Person and Topic matching.

To partially rescue Vergnaud's conjecture, one might perhaps want to invoke a parametric approach, and pursue the idea that NPs in caseless and case poor languages are licensed by abstract Case, in contrast to NPs in case richer languages. However, such a theory would escape all potential tests, and thus be non-scientific guesswork.

If linguistics were like the natural sciences, Vergnaud's conjecture would have been generally discarded a long time ago, and the whole field would be looking for alternative accounts of NP licensing. Unfortunately, that is not the case, but hopefully it will be.

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Icelandic modal verbs revisited

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Abstract

The syntactic differences between epistemic modals and root modals have often been described in terms of raising vs. control: Epistemic modal verbs are then said to be like raising verbs in not assigning a thematic role to their subject and hence allowing raising of embedded arguments to their subject position, whereas root modals are like control verbs, assigning a thematic role to their subject and hence disallowing raising of embedded arguments. This is, for instance, the analysis proposed for Icelandic modals by Thráinsson & Vikner (1995). In this paper it is argued that the control analysis of root modals is appropriate for the so-called subject-oriented readings of root modals but probably not for non-subject-oriented readings.

1. Introduction

In discussions of modal verbs, it is standardly assumed that they (or their interpretations) fall into two main classes, **epistemic** and **root**.[1] The term *root* is not very transparent in itself. To make things more difficult, the descriptions of these classes and their semantic characteristics vary somewhat in the literature. One of the reasons is that the scholars writing the descriptions have different interests. Some of them are mainly interested in coming up with general semantic or philosophical definitions of the concepts "epistemic" and "root" (or "deontic" and "dynamic", which are often taken to be subclasses of "root" in this context, as will be described below), giving explanatory examples from various languages along the way to illustrate their points. Others concentrate on the linguistic

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[1] Many thanks to the editors and an anonymous reviewer for useful comments and important corrections.

manifestations certain aspects of "modality" in a particular language, e.g. the possible or most common interpretations of modal verbs found in that language. Since there is crosslinguistic variation in this area (see e.g. Palmer 1986), it is not surprising that the descriptions of epistemic modals and root modals will vary in detail. This can be illustrated with a couple of examples from the literature.

As an example of a relatively short description of the differences between epistemic modals and root modals we can take the following (Wurmbrand 1999: 599):

> epistemic modal statements express necessity or possibility relative to some state of knowledge or beliefs; root (sometimes also referred to as deontic) modal statements express forces like permission, obligation etc. relative to some normative system

In a foonote, Wurmbrand (1999: 599) states that these "two classes of interpretations involve a number of subclasses that will not be distinguished here since it will not affect the arguments made in the paper", referring to Palmer (1986) and Brennan (1993) for details. Brennan in turn (1993: 7–9) builds to some extent on Jackendoff's (1972) classification. The following examples are based on Brennan (1993: 8), and they are meant to illustrate the difference between epistemic and root readings (the illustrative paraphrases are mine and E stands for epistemic, R for root):

(1) An aide de camp **may** read the classified reports.
   a. It is possible that an aide de camp will read ...   E: possibility
   b. An aide de camp has the permission to read ...   R: permission

(2) A student **must** ride this horse.
   a. It is necessary that some student rides ...   E: necessity
   b. There is a student who has the obligation to ride ... R: obligation

(3) He **can't** swim after running.
   a. It is not possible that he swims ...   E: possibility
   b. He does not have the ability to swim ...   R: ability
   c. He does not have the permission to swim ...   R: permission

Many studies of modal verbs offer a more detailed classification of modal interpretations than those illustrated above. The syntactic

characteristics of some of these are described in an overview by Barbiers & van Dooren (2017) of previous research on modal verbs in various languages. Their paper includes the following descriptions of epistemic and root interpretations of modals (2017: 1–2, 27 fn. 2; see also Barbiers 2002: 1):[2]

> epistemic interpretations are a class of interpretations involving a speaker-oriented or, in the case of embedded clauses, matrix-subject-oriented qualification or modification of the truth of a proposition, while root interpretations involve the will, ability, permission, or obligation to perform some action or bring about some state of affairs.

> There are two distinct uses of the term "root modality" in the literature: as equivalent to "deontic modality" or as including both deontic and dynamic modality. Deontic modality is about how the world ought to be, while dynamic modality is about a subject's internal capability or willingness to perform some action.

Modal verbs that can have **deontic** root readings would then include English *may* (permission) and *must* (obligation) whereas *can* (ability) and *want* (volition) would have a **dynamic** root reading.

   Deontic modality is often divided into two subclasses, depending on the relationship between the modal verb and the subject. This can be illustrated by the following two examples from Norwegian:

(4) **Norwegian** (Eide 2005: 43, 48)
    a. Jon **bør** være på kontoret.
       *Jon should be.INF on office-th*e
       'Jon should be in his office.'
                          [= Jon has the obligation to be ...]

    b. Skildpadden **bør** være i badekaret.
       turtle-the should be.INF in bathtub-the
       'The turtle should stay in the bathtub.'
                       [= that's the way it ought to be,
                       ≠ the turtle has the obligation ...]

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[2] Page references to the paper by Barbiers & van Dooren are to the pdf-version of it available on the internet.

In (4a) it is stated that the subject, *Jon*, ought to **do** something, in (4b) it is said that a certain state or event ought to **be** or occur. Distinctions of this kind are typically described in terms of subject orientation. The reading in (4a) is then **subject-oriented** (it is about the subject's obligation) whereas the reading in (4b) is **non-subject-oriented** (it is NOT about the subject's obligation).[3]

   Since dynamic root readings are typically about the "subject's internal capability or willingness to perform some action", they will normally be subject-oriented in the sense just described. Eide maintains, on the other hand (2005: 50), that in examples like the following the Norwegian modal *ville* 'will, want' has an "impersonal" dynamic volition reading:

(5)   **Norwegian**

   a. Han   arbeider hardt,   men det   **vil**   bare   ikke
      he   works   hard   but   it   will   simply   not

      lykkes   for   ham
      succeed.INF for   him
      'He works hard, but he simply won't succeed.'

   b. Det   **ville**   ikke slutte   å   regne   denne dagen.
      it   would   not   stop.INF to rain   that   day-the
      'It just wouldn't stop raining that day.'

Example (5a) has an expletive subject and (5b) a weather-*it*, both being non-argumental, so no subject orientation is possible.

   Having gone through the properties of Norwegian modal verbs, Eide ends up with the following classification of their possible readings and their relation to transitivity of the modal verb (adapted from Eide 2005: 52 and 174 with some modifications):[4]

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[3] Borrowing terms from Barbiers (1995), Eide (2005: 48) refers to the former sense as *directed deontic* reading, the latter as *non-directed deontic*. I will use the more common terms *subject-oriented* and *non-subject-oriented* here (a distinction that Eide reserves for the classification of different dynamic root readings, as described presently).

[4] Eide actually uses the terms *root* vs. *non-root* as labels for the basic distinctions of modal readings rather than the more common *root* vs. *epistemic*. The reason is that she wants to be able to subclassify non-root readings into "epistemic proper", metaphysical and evidential (Eide 2005: 82). I will, however, continue to use *epistemic* as a cover term for these three readings, except when a more finely grained classification is needed.

basic type	sub-classification	orientation and transitivity	examples
root	dynamic	subject-oriented dyadic	*ville* 'want to' (volition), *kunne* 'can, know' (ability)
		non-subject-oriented monadic	*ville* 'will' (strong tendency) *kunne* 'can' (weak tendency)
	deontic	subject-oriented dyadic	*burde* 'should, must' (subject's obligation)
		non-subject-oriented monadic	*burde* 'must, should' (the way it should be)
epistemic		non-subject-oriented monadic	*burde* 'must' (necessity)

Table 1: Eide's classification of the readings available for Norwegian modals.

While the distinction between subject-oriented root readings and epistemic readings is very clear, the distinction between non-subject-oriented root readings and epistemic readings is often less clear. Consider the following Norwegian examples:

(6)   **Norwegian** (Eide 2005: 51–52)
        a. Dette **vil**   garantert   bli   et problem for
           this   will   certainly   become.INF a problem for

           salgsavdelingen.
           sales-department-the
           'This will certainly be a problem for the sales department.'

        b. Dette **vil**   vanligvis   bli   et problem for
           this   will   usually   become.INF a problem for

           salgsavdelingen.
           sales-department-the
           'This will usually be a problem for the sales department.'

Eide maintains that (6a) has an epistemic (in her terms the subclass *metaphysical*) reading, being a prediction about the future due to the adverb *garantert* 'certainly, definitely', "a non-root reading, a speaker's commitment to the truth of a future situation". (6b), on the other hand, has a "root reading; it is a statement about recurring states of affairs in the world".

The Icelandic modal *vilja* 'will, want' does not have the simple future reading that English *will* has (and to some extent also the cognate Norwegian *ville*). Statements about the future are typically made with the simple present tense as in (7), where future reference is made clear by the temporal adverbial á morgun 'tomorrow' (see e.g. Thráinsson 2007: 15–16):

(7)   **Icelandic**
       Það   rignir   örugglega   á morgun.
       it   rains.PRS   *definitely   tomorrow*
       'It will definitely rain tomorrow.'

With this in mind, consider the following pair of examples:

(8)   **Icelandic**
       a. Það **vill** örugglega   rigna   af og til   á morgun.
          it   will   definitely   rain.INF *off and on   tomorrow*
          'It will probably tend to rain off and on tomorrow.'

       b. Það **vill** oft   rigna   á 17.   júní.
          it   will   often   rain.inf   on 17th   June
          'It often tends to rain on June 17.'[5]

Here (8a) is clearly "a prediction about the future" and based on that it should be "a non-root reading, a speaker's commitment to the truth of a future situation" according to Eide's argumentation above. But as indicated in the idiomatic translation, it has a "tendency reading", which according to Eide's classification illustrated in Table 1 should be a root reading ("strong tendency").[6] This shows that the distinction between root and epistemic readings is not always straightforward. This will be discussed in more detail in the following sections.

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[5] Iceland became a republic on June 17 1944; hence June 17 it is an important day (National Holiday) in Iceland. Rain is not particularly welcomed that day.

[6] The addition *af og til* 'off and on' makes it easier to get the tendency reading. Eide reports (2005: 85) that a reviewer of her book claims that for "many Icelandic speakers" the verb *vilja* 'will, want' can only have a subject-oriented 'volition' reading. But she gives some examples (from Halldór Ármann Sigurðsson, p.c.) that can only have the 'tendency' reading. They are all completely natural for me. In a quick search in the Icelandic treebank IcePaHC (Rögnvaldsson et al. 2012) I found a similar example from 1628 (það **vill** *kosta nokkuð að reisa í þeim löndum* 'it tends to cost a bit to travel in those countries') and the Icelandic database *Tímarit.is*, which has materials from Icelandic journals and newspapers, has a number of examples of *vilja* in this 'tendency' reading from various times, including this one from 1893: *Mig **vill** gigt og þreyta þjá* 'Rheumatism tends to make me suffer'. But there is clearly some inter-speaker variation here.

In section 2, I will discuss the classification of modal readings presented by Thráinsson & Vikner (1995, henceforth T&V) and show that they failed to distinguish clearly between subject-oriented and non-subject-oriented root modals.[7] In section 3, I will review some characteristics of typical control constructions, comment on their properties with respect to theta roles and case marking and briefly compare them to subject-oriented root modals. In section 4, I argue that most of the criticism that has been levelled against T&V's analysis of root modals only holds for the non-subject-oriented ones. I will further argue that a raising analysis of root modals in general is not viable, contrary to suggestions made by Wurmbrand (1999), Eide (2005), Barbiers & van Dooren (2017) and others. Section 5 contains a few concluding remarks.

2. T&V's classification of modal readings

To clarify what they mean by "epistemic" and "root" T&V give a schematic representation including Icelandic, Danish and English modals. Their classification can be reproduced as in Table 2:[8]

				root			
epistemic				deontic		dynamic	
possibility	necessity	probability	report	obligation	permission	ability	volition
kunna	*hljóta*	*munu*	*munu*	*verða*	*mega*	*kunna*	*vilja*
kunne	*måtte*	*burde*	*skulle*	*skulle*	*måtte*	*kunne*	*ville*
can	*must*	*will*	*?*	*must*	*may*	*can*	*will*

Table 2: T&V's classification of modal verbs in Icelandic, Danish and English.

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[7] T&V mainly discuss Icelandic and Danish modal verbs. They argue that Icelandic epistemic modal verbs are like raising verbs in not assigning a thematic role to their subject and hence allowing raising of embedded arguments to their subject position, whereas Icelandic root modals are like control verbs, assigning a thematic role to their subject and hence disallowing raising of embedded arguments. T&V propose a somewhat different analysis for Danish root modals to account for certain co-occurrence restrictions of Danish modal verbs, but I will limit my discussion for the most part to Icelandic modal verbs in this paper and arguments for and against T&V's analysis of these. – Note that I am not trying to distance myself from my joint work with Sten Vikner by calling it "T&V's analysis" and referring to the authors as *they* rather than *we*. I just found it convenient to refer to our work this way. The cooperation was pleasant and our paper is frequently cited. Thanks, Sten!

[8] As T&V acknowledge, their classification is to a large extent based on work by Davidsen-Nielsen (1990) and Coates (1983). Various other classifications can be found in the literature and the terminology tends to vary. Thus *epistemic report* is sometimes called *hearsay evidentiality*, for instance, as a reviewer points out.

Table 2 is more detailed in some respects than Eide's Table 1 above, especially because it contains more subclasses of epistemic (or non-root) readings. More importantly, however, Table 2 does not distinguish between subject-oriented and non-subject-oriented readings whereas Table 1 does. This has important consequences as we shall now see.

   As T&V point out, Table 2 does not contain all Icelandic and Danish modal verbs. Hence they give a more complete list (1995: 54), plus example sentences in Danish and Icelandic illustrating the different readings as classified in Table 2. They first illustrate the epistemic readings and then the root readings. To give an idea of their classification, I will first present relatively uncontroversial Icelandic examples of epistemic readings, then Icelandic examples of straightforward root readings and finally turn to the more controversial examples and consider what we can learn from those.

2.1 Epistemic readings

To illustrate epistemic readings T&V give the following Icelandic examples among others:

(9)   **Epistemic: possibility**
        a. Mig   **kann**   að vanta   peninga.
           me.ACC *can*   *to lack.INF* *money*
           'I may need money.'

        b. Það   **getur**   rignt   á morgun.
           it   *may*   *rain.SUP* *tomorrow*
           'It may rain tomorrow.'

        c. Það   **getur**   hafa   rignt   í   nótt.[9]
           it   *may*   *have.INF*   *rained* *in night*
           'It may have rained last night.'

(10)   **Epistemic: necessity**
        Það   **hlýtur**   að hafa   rignt   í   nótt.
        it   *must*   *to have.INF* *rained* *in night*
        'It must have rained last night.'

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[9] Normally the modal verb *geta* 'may, can' takes the supine form of the following verb, cf. (9b) and (14b) below. But when it precedes the auxiliary *hafa* 'have' it selects the infinitival form, as modals typically do.

(11) **Epistemic: probability**

    a. Haraldi   **mun** vera   kalt.
       Harold.DAT will be.INF   cold
       'Harold is probably cold.'

    b. Honum **ætti**   að   líka   vel í Stuttgart.
       him.DAT ought.PST.SBJV to   like.INF well in Stuttgart
       'He should be happy in Stuttgart.' [= it is likely that he will be]

    c. Það **ætlar**   að snjóa   mikið í vetur.
       it   intends to snow.INF much   in winter
       'It looks like it will snow a lot this winter.'

    d. Það **skal** hafa   rignt í nótt.[10]
       there shall have.INF   rained in night
       'I'm (pretty) sure that it rained last night.'

(12) **Epistemic: report**
    Sten **mun** vera   Dani.[11]
    Sten will be.INF   Dane
    'Sten is reportedly Danish.'

As the reader will have noticed, most of the examples illustrating epistemic readings (i.e. those in (9)–(11)) either have a weather-*it* subject or a non-nominative subject. This has the effect of making the examples unambiguosly epistemic in sense and ruling out the potential root readings of the verbs. T&V account for this by adopting the (commonly accepted) analysis of epistemic modals as raising verbs: Like raising verbs, epistemic modals do not assign a thematic role to their subject and hence an argument

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[10] In T&V's paper the verb *skulu* in a similar example is written with capital letters to indicate special stress and they point out that the meaning is then very similar to that of *hljóta* in examples like (10) (T&V 1995: 84–85, fn. 8). Dialectally (South-Eastern Iceland) it is also possible to find epistemic *skulu* in a 'reportive' sense, a reading also available for the Danish cognate *skulle* (cf. *Det **skal** have været besluttet* 'It is said to have been resolved').

[11] The verb *kveða* 'say' can be used in the reportive sense 'is said to'. Then it shows up in the past tense form (sg. *kvað*, pl. *kváðu*) although it has a present tense meaning: Það **kvað** *vera fallegt í Kína* 'It is said to be beautiful in China', Þau **kváðu** *vera rík* 'They are said to be rich'. In colloquial speech it is sometimes reduced to *ku*, which then does not show any subject agreement: *Hún/Þau **ku** vera rík* 'She is/They are said to be rich.'

of the embedded infinitival verb can be raised into the subject position of the epistemic modal. Thus an epistemic modal can have a weather-*it* subject licensed by the embedded infinitival complement (as in (9b,c), (10), (11c,d)) or a non-nominative subject selected by the embedded infinitival verb (as in (9a), (11a,b)). To account for the fact that Icelandic modal examples like the ones in (9)–(11) do not have root readings, T&V adopt the (once popular) account that root modals are control verbs and consequently raising of elements from the embedded infinitival complement is not possible. So when it is obvious that the subject of the modal verb must have been raised from the embedded infinitival complement, as in (9)–(11), the root reading is impossible.

Not all the examples T&V give to illustrate epistemic readings are as clear cut as those just considered. Before turning to such examples let us have a look at some examples of root readings.

2.2 Root readings
T&V give the following Icelandic examples to illustrate root readings:[12]

(13)　**Root: deontic obligation**
　　　a. Ég　**verð** að fara　　á　fundinn.
　　　　　I　　must　to go.INF　　on meeting-the
　　　　　'I have to go to the meeting.'

　　　b. Ég　**hlýt** að mótmæla　　þessu.
　　　　　I　　must　to object.INF　　this
　　　　　'I must object to this.'[13]

　　　c. Við　**eigum**　að　hegða　　okkur　　vel.
　　　　　we　　ought　　to　　behave.INF　ourselves　well
　　　　　'We ought to behave.'

　　　d. Þú　**þarft** ekki　að gera　　þetta fyrir　mig.
　　　　　you　need not　to do.INF　this　for　　me
　　　　　'You need not do this for me.'

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[12]　Some of the examples below have been slightly modified for reasons of clarity.

[13]　Although the modal verb *hljóta* has a deontic obligation sense in (13b) (this is something that a politician could say, for instance), it is probably more commonly found in a logical inference sense, as a reviewer points out, e.g. : *Það er ljós í íbúðinni svo að hann **hlýtur** að vera heima* 'The lights are on in the apartment so he must be at home.'

    e. Þú   **skalt** ekki stela.
      you   shall not   steal.INF
      'Thou shalt not steal.'[14]

(14) **Root: deontic permission**
    a. Hún **má** taka   minn bíl.
      she   may take.INF my   car
      'She can take my car.'   [= she is allowed to]

    b. Þú   **getur**   borðað eins mikið og   þú   vilt.
      you   can   eat.SUP as   much as   you   want
      'You can eat as much as you want.'   [= you are allowed to]

(15) **Root: dynamic ability**
    a. Hann   **kann** ekki að synda.
      he   can   not   to swim.INF
      'He cannot swim.'   [= does not know how to]

    b. Hún **getur** ekki talað   dönsku.
      she   can not   speak.SUP Danish
      'She cannot speak Danish.'   [= does not know how to]

(16) **Root: dynamic volition**
    a. Hún **vill**   læra   málvísindi.
      she   wants   study.INF   linguistics
      'She wants to study linguistics.'

    b. Hann **ætlar**   að   læra   sálfræði.
      he   intends to   study.INF   psychology
      'He intends to study psychology.'

As the reader will have noticed, the sentences in (13)–(16) all exemplify subject-oriented root readings. As pointed out above, these are easily distinguishable from epistemic readings since the latter are never subject-

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[14] This example is intended as a quote from the Ten Commandments. Usually the "obligation" expressed by the modal verb *skulu* is weaker, more like a suggestion as in *Þú **skalt** læra málvísindi* 'You should study linguistics'. With a first person subject it can also be an offer or a promise, as in *Ég **skal** koma með rauðvín* 'I'll bring red wine'. These variants could be further subclassified as different types of speech acts, but that is probably irrelevant here.

oriented in the sense described above. But what about non-subject-oriented root modals? We will consider that question in the next subsection.

2.3 Epistemic readings or non-subject-oriented root readings?
Some examples that T&V give as illustrations of epistemic readings are arguably instances of non-subject-oriented root readings. They include the following Icelandic ones:

(17)   **Epistemic necessity or non-subject-oriented deontic root reading (necessity)**
    a. Það **verður** að rigna   í kvöld.
        it   must   to rain.INF to night
        'It must (has to) rain tonight.'
                                      [= otherwise we'll be in trouble]

    b. Það **þarf**   að rigna   duglega.
        it   needs   to rain.INF heavily
        'It is necessary that it rains heavily.'
                                      [= otherwise we'll be in trouble]

    c. Mér   **má**   þá   mistakast   illa.
        me.DAT must   then fail.INF   badly
        'Then I would have to fail badly.'
                        [= for that to happen, I would have to ...]

The first two examples contain a weather-*it* subject and the third one a non-nominative subject, as indicated by the gloss. While T&V classify the reading of these examples as epistemic necessity, Eide (and presumably many others) would probably consider it to be non-subject-oriented (or non-directed) deontic reading (necessity or obligation).

    Another potentially controversial example given by T&V is the following:

(18)   **Epistemic possibility or non-subject-oriented dynamic root reading (tendency)**
    Hana   **vill** oft   vanta   peninga.
    her.ACC will often need.INF   money
    'She often tends to need (lack) money.'

This is obviously similar to the examples in (6b) and (8b) above. As pointed out in the discussion of those, Eide maintains that this kind of reading is a root reading since it is not a prediction about the future but "a statement about recurring states of affairs in the world". But as described in the discussion around (8), the "tendency reading" is not restricted to statements that are appropriately modified by adverbs like *oft* 'frequently' but it can also be found in statements about the future. (19) is a case in point:

(19) Hana   **vill**   áreiðanlega vanta   peninga af og til
      her.ACC *will*   *certainly* *need.INF*   *money*   *off and on*

      þegar hún   er komin   út.
      when she *is come*   *out*
      'She will certainly tend to to need (lack) money off and on once she is abroad.'

Although the tendency reading of *vilja* 'will, want' is probably most natural and common with adverbs like *oft* 'frequently', it is not ruled out with adverbs like *áreiðanlega* 'certainly, definitely' in statements about the future.

Whatever the proper classification of these examples may be, it is clear that the classification of modal readings offered by T&V was too simplistic. As a result, it left their analysis open to the criticism that will be discussed in section 4. But first it is necessary to review some properties of control verbs.

3. Control verbs, theta marking, case marking and subject orientation

Dyadic control verbs assign a thematic role to their subject, often that of an agent. The infinitival complement of such verbs is also typically agentive. Individual-level predicates are very odd in this context whereas stage-level predicates need not be (here # means 'semantically odd'):

(20) a. María   reyndi   að lesa   bókina.
         Mary   *tried*   *to read.INF* *book-the*
         'Mary tried to read the book.'

      b. Sten   reyndi   að vera   #danskur /hjálpsamur.
         Sten   *tried*   *to be.INF*   *Danish/helpful*
         'Sten tried to be helpful.'   ['tried to be Danish' sounds odd]

Now consider the Icelandic non-nominative subjects. As has often been pointed out, they are never agents. Thus *vanta* 'need, lack, be missing' takes an accusative experiencer subject (dative for some speakers) and *leiðast* 'be bored' takes a dative experiencer subject. Both are unnatural in the infinitival complement of control verbs like *reyna* 'try' (I do not give idiomatic translations as the sentences are odd):

(21) a. ?María reyndi að vanta   ekki eina   í tíma.
         Mary   tried   to lack.INF not alone.ACC in class

      b. ?María reyndi að leiðast   ekki í bókmenntatímunum.
         Mary   tried   to be-bored.INF not in literature-classes-the

Interestingly, prepositional control verbs such as *vonast til* 'hope for', *kvíða fyrir* 'be apprehensive about' and several others, typically taking experiencer subjects, are not as restrictive in this respect (see e.g. Thráinsson 2007: 419, 420n):[15]

(22) a. María vonast til að vanta   ekki eina   í tíma.
         Mary   hopes for to be-missing.INF not alone.ACC in class
         'Mary hopes not to be missing alone from class.'

      b. María kvíðir   fyrir   að leiðast   í
         Mary   is-apprehensive about   to be-bored.INF in
         bókmenntatímunum.
         literature-classes-the
         'Mary is apprehensive about being bored in the literature classes.'

Now consider the subclassification of root modals into subject-oriented and non-subject-oriented ones. Given what has been described above, we would a priori expect subject-oriented root modals to behave more like control verbs than non-subject-oriented ones would, cf. the following quote from Wurmbrand (1999: 610):

> The contexts in which (intuitively) the subject does appear to be
> in a thematic relation with the modal are modal constructions that

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[15] As a reviewer points out, this is also true of some "non-prepositional" verbs like *forðast* 'avoid': *María **forðast** að vanta eina í tíma* 'Mary avoids to be missing alone from class.'

involve what has been called a *directed deontic* interpretation (see Barbiers 1995).[16]

Then Wurmbrand (1999: 610) gives the following examples and states that in (23a) "John is in an obligation relation" and in (23b) "Mary is in a permission relation":

(23)   a. John **must** go to Alaska.
       b. Mary **can/may** go to Alaska.

Having presented these examples, Wurmbrand continues by saying "The question, however, is, whether these relations (obligation, permission etc.) are theta-roles." Her main argument against such an analysis is to point out that in certain contexts "the modal forces do not have to be directed towards the subject", i.e. that deontic root modals like *must* and *can/may* sometimes have non-subject-oriented interpretations (or non-directed, as she calls them). They include the following (Wurmbrand (1999: 610):

(24)   a. The traitor **must** die.
       b. John **must** be home when the murder happens.

But the interpretation of non-subject-oriented root modals does not say much about the nature of the subject-oriented interpretations, except that it shows that there can be two variants of root readings for some verbs, subject-oriented and non-subject-oriented. We will return to this issue in the next section.

4. Arguing against arguments against the control analysis of root modals

In their work on modals, Wurmbrand (1999) and Eide (2005) argue against certain aspects of T&V's analysis, especially their claim that certain modal constructions cannot have root readings and that this is because root modals assign a thematic role to their subject, like control verbs do, but epistemic modals are like regular raising verbs in not assigning a theta role to their subject. In the following I will consider the main points of this criticism in the light of the previous description of root and epistemic readings.

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[16] As the reader will recall, Barbiers' term *directed interpretation* is also used by Eide (2005) in her classification of deontic (but not dynamic) readings, but *subject-oriented interpretation* is a more common term and it is used, for instance, by Barbiers & van Dooren (2017) and adopted here.

4.1 The interpretation of modals with non-nominative subjects

Although nominative is by far the most common subject case in Icelandic, many verbs take non-nominative subjects, as already mentioned (for an overview see Thráinsson 2007: 158 ff., with references). Because selection of this non-nominative subject case is determined by the main verb and not by the structural position of the NP (or DP), this case is often referred to as lexical (or inherent) case, as opposed to the structurally determined (or default) case, a distinction going back to Yip, Maling and Jackendoff (1987).[17] As a consequence of this, lexical case is "preserved" in the derivation, e.g. in passives and raising constructions:

(24) a. Stelpurnar   hjálpuðu Haraldi.
          girls-the   helped   Harold.DAT
          'The girls helped Harold.'

      b. Haraldi/*Haraldur   var   hjálpað   (af stelpunum).
          *Harold.DAT/*NOM   was   helped.SUP   by girls-the*
          'Harold was helped (by the girls).'

      c. Haraldi/*Haraldur   virðist   hafa   verið   hjálpað
          *Harold.DAT/*NOM   seems   have.INF   been.SUP   helped.SUP*

          (af stelpunum).
          by girls-the
          'Harold seems to have been helped (by the girls).'

The verb *hjálpa* 'help' in (24a) assigns (lexical) dative to its object. In (24b) we see that this dative is preserved when the object has been "promoted" to the subject position in the passive. In (24c) a passive construction with *help* 'hjálpa' is embedded under the raising verb *virðast* 'seem' and the dative is still preserved on the subject and nominative is impossible.

   Now if epistemic modals are like raising verbs in not assigning case nor thematic role to their subject and hence able to accept "raised" arguments

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[17] Similarly, the structural case of objects (in Icelandic) would be accusative whereas dative (and the rare genitive) case of objects would be lexical. Because some instances of non-accusative object case are partly regular or predictable (see e.g. Barðdal 2001, Maling 2002), and the same is true of certain instances of non-nominative subjects (see e.g. Jónsson 2003; Eythórsson 2002), some linguists maintain that this distinction between lexical and structural case is misleading (see Barðdal 2011). That does not affect the arguments here.

from the embedded infinitival complement, we would expect lexical case to be preserved in epistemic modal constructions. This is indeed the case (no pun intended), as pointed out by T&V. Some of the examples that they use to demonstrate this were shown above and they are explained in more detail below:

(25) *vanta* **'lack, need' takes an accusative subject** (dative for some speakers)

a. Mig vantar peninga.
 me.ACC *needs* *money.ACC*
 'I need money.'

b. Mig **kann** að vanta peninga.
 me.ACC *can* *to* *lack.INF* *money*
 'I may need money.'
 [epistemic possibility only, subject-oriented root (ability) impossible]

c. Hana **vill** örugglega vanta peninga af og til.
 her.ACC *will* *certainly* *need.INF* *money* *off and on*
 'She will certainly need (lack) money off and on.'
 [epistemic probability (tendency) only, subject-oriented root (volition) impossible]

(26) *líka* **'like' takes a dative subject**

a. Honum líkaði vel í Stuttgart.
 him.DAT *liked* *well* *in Stuttgart*
 'He was happy in Stuttgart.'

b. Honum **ætti** að líka vel í Stuttgart.
 him.DAT *ought.PST.SBJV* *to* *like.INF* *well in Stuttgart*
 'He should be happy in Stuttgart.'
 [epistemic probability only, subject-oriented root (obligation) impossible]

T&V argue that the reason examples like the ones above cannot have a root reading follows from an analysis of root modals as control verbs that assign a thematic role to their subject. Hence there is no raising of arguments of

the embedded infinitival complement to the subject position of the root modals, hence no "case preservation". The subject of the root modal is a thematic subject of the root modal and not a raised subject.

Wurmbrand has argued, on the other hand, that all modals are raising verbs (1999). Hence she has to come up with an explanation of facts like the Icelandic ones in (25)–(26). Her account goes like this:

> we believe that this effect [i.e. that modal constructions like the ones in (25)–(26) only have an epistemic reading and not a root reading] is caused by the unnaturalness of a deontic interpretation in these examples. If the context is constructed in a way that favors a root/deontic reading ... the examples are grammatical and again, only quirky case is possible for the subject (1999: 602)

Wurmbrand then gives the following examples to support her claim:[18]

(27) a. Haraldi/*Haraldur   **verður** að líka   hamborgarar.
          *Harold.DAT/*NOM   must   to like.inf   hamburgers*
          'Harold must like hamburgers'   (in order to be accepted by his American in-laws)

      b. Umsækjandann/*Umsækjandinn **verður** að vanta   peninga.
          *applicant-the.ACC/*NOM   must   to lack.INF money*
          'The applicant must lack money'   (in order to apply for this grant)

I agree with the case marking given in Wurmbrand's examples and her idiomatic translations. Crucially, however, these root readings are non-subject-oriented. As pointed out by a reviewer, they could be paraphrased roughly as 'It must hold that ...'. What they show, then, is that non-subject-oriented root readings may have certain properties of raising verbs, a fact overlooked by T&V since they did not distinguish clearly between subject-oriented and non-subject-oriented root readings. In a "revised T&V analysis" they could (i.e., we could!) maintain that subject-oriented root modals are like control verbs but non-subject-oriented root modals are like raising verbs.

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[18] This argumentation and the examples are repeated by Barbiers & van Dooren (2017: 6–7), but they mistakenly state (p. 6) that T&V claim "that modals with a root interpretation systematically pattern with raising verbs".

Now Wurmbrand (and Eide) could argue that if Icelandic subject-oriented root modals are like control verbs, then one would a priori expect that examples like the ones in (27) should be grammatical with nominative subjects and a subject-oriented root reading, but they are not. This is not a serious problem for the revised T&V analysis though, since corresponding examples with regular control verbs such as *reyna* 'try' are also ungrammatical:

(28) a. *Haraldur   reyndi   að   líka   hamborgarar.
       Harold.NOM   *tried*   *to*   *like.INF*   *hamburgers*

    b. *Umsækjandinn   reyndi   að vanta   peninga.
       applicant-the.NOM   *tried*   *to lack.INF*   *money*

But if control constructions with non-agentive complements are just semantically unnatural in some instances and not grammatically impossible (like the ones in (28) are), then the revised T&V analysis of (Icelandic) subject-oriented root modals as control verbs and epistemic modals as raising verbs predicts that it should be possible to find passable pairs of examples of the type illustrated schematically in (29) where the modal V is the same in both constructions, the V.INF is also the same and the case of the non-nominative subject in (29b) is "inherited" from the infinitival complement:

(29) a. nom. subject – subject-oriented root modal V – V.INF that takes a non-nom. subject
    b. non-nom. subject – epistemic modal V – V.INF that takes a non-nom. subject

While such pairs are not easy to come by, for reasons already described, the example in (30) is quite convincing. (Recall that *vanta* 'lack, need' takes an accusative subject; see the discussion around (8) above):

(30) a. Ég   **vil**   ekki   vanta   peninga.[19]
       I.NOM   *want not*   *lack.INF*   *money*
       'I don't want to lack money.'
       [subject-oriented root, volition]

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[19] As a reviewer points out, some examples of this kind are more natural than others. Thus (30a) is probably more natural if the verb *vilja* is stressed and some context added: *Ég VIL ekki vanta peninga, en ég er samt alltaf blankur* 'I don't WANT to lack money, but yet I'm broke all the time.'

b. Mig   **vill**   örugglega ekki vanta   peninga.
    me.ACC *want* *definitely*   *not*   *lack*   *money*
    'I won't tend to lack money.'
    [epistemic, probability (tendency)]

The additional pairs of this kind illustrated in (31)–(33) are modelled on
examples in E. F. Sigurðsson (2012: 88) (recall that *mistakast* 'fail' and
leiðast 'be bored' both take dative subjects):

(31) a. ?Hann   **vill**   alls ekki   mistakast.
         he.NOM   *wants*   *by no means*   *fail.INF*
         'He doesn't want to fail by any means.'
         [subject-oriented root, volition]

     b. Honum   **vill**   örugglega   mistakast   af og til.
         him.DAT *wants*   *certainly*   *fail.INF*   *off and on*
         'He will certainly fail off and on.'
         [epistemic, probabilty (tendency)]

(32) a. ?Ég   **kann**   ekki að leiðast.
         I.NOM   *know*   *not*   *to be-bored.INF*
         'I don't know how to be bored.'
         [subject-oriented root, dynamic ability]

     b. Mér   **kann**   að leiðast.
         me.DAT   *can*   *to be bored.INF*
         'It is possible that I will be bored.'
         [epistemic, possibility]

(33) a. ?Liðið   **ætlar**   að mistakast   viljandi.
         team-the   *intends*   *to fail.INF*   *on purpose*
         'The team intends to fail on purpose.'
         [subject-oriented root, volition]

     b. Liðinu   **ætlar**   greinilega   að mistakast.
         team-the   *intends*   *obviously*   *to fail.INF*
         'It is obvious that the team will fail.'
         [epistemic, probability (tendency)]

None of these example sentences are ambiguous – the ones with the nominative subject can only have the root reading indicated, the ones with the non-nominative subjects can only have the epistemic reading. Hence these sentences constitute counterarguments against a general raising analysis of modals, like the one proposed by Wurmbrand (1999), but the readings are as predicted under the revised T&V analysis of subject-oriented root modals as control verbs and epistemic modals as raising verbs analysis, as explained above. [20]

4.2 Non-argument subjects of root modal constructions

A second type of arguments presented by Wurmbrand (1999) and Eide (2005) against the control analysis of (Icelandic) root modals advocated by T&V has to do with non-argument subjects. Both Wurmbrand and Eide give examples of modal constructions with non-argument subjects that appear to be licensed by the infinitival complement but yet seem to have root readings. A couple of such examples were given above as (17a,b), repeated here for convenience:

(17)   a.   Það **verður** að rigna   í kvöld.
          it   *must*   *to rain.INF*   *to night*
          'It must (has to) rain tonight.'

                           [= otherwise we'll be in trouble]

    b.   Það   **þarf**   að rigna   duglega.
          it   *needs*   *to rain.INF*   *heavily*
          'It is necessary that it rains heavily.'

                           [= otherwise we'll be in trouble]

If the readings of these examples are root readings, it is clear that they are non-subject-oriented. Thus they do not constitute counterexamples agains the revised T&V analysis. Examples like the ones in (35) would be more problematic if Eide is correct in maintaining (2005: 131) that they have a subject-oriented dynamic ability reading (Eide only talks about the Norwegian example, I have added the Icelandic variant of this idiom in (34b) and (35b)):

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[20] E. F. Sigurðsson only gives examples corresponding to the nominative versions in (31)–(33). The question marks are his, since he finds these examples less than perfect (and I agree), but he points out that they all have root readings. He uses this as arguments against Wurmbrand's claim that all modals are rasing verbs but he accepts her claim that some (non-subject-oriented) root modals should be analyzed as raising verbs.

(34) a. **Norwegian**
         Nød   lærer   naken   kvinne   å spinne.
         need   teaches   naked   woman   to spin

      b. **Icelandic**
         Neyðin   kennir   naktri   konu   að spinna.
         need-the teaches   naked   woman   to spin
         'Need teaches a naked woman to spin.'

(35) a. **Norwegian**
         Nød **kan** lære   naken   kvinne   å spinne.
         *need can   teach.*INF*   naked   woman   to spin.*INF*

      b. **Icelandic**
         Neyðin   **getur** kennt   nakinni konu   að spinna.
         *need-the can   teach.*SUP* naked   woman   to spin.*INF*
         'Need can teach a naked woman to spin.'

Contrary to Eide's analysis of the reading of the Norwegian examples as
expressing subject-oriented ability, it seems to me that the meaning is more
like a non-subject-oriented possibility reading: 'It is possible that ...' But
maybe it is deontic rather than epistemic, as T&V would have classified it.

5. Concluding remarks

We have now "revisited" Icelandic modal verbs, mainly by reconsidering
some aspects of T&V's analysis of these. I argued that the main problem
with T&V's analysis was their failure to distinguish clearly between
subject-oriented and non-subject-oriented root modals. Whereas they
claimed that (Icelandic) root modals in general could be analyzed as control
verbs, it has been shown in the literature that this does not hold for all root
modals, assuming common definitions of "root". But if we take differences
in subject orientation of modals into account, then it becomes clear that
the arguments against T&V's analysis of root modals only hold for the
non-subject-oriented ones. Hence it may still be possible and profitable to
analyze subject-oriented root modals as control verbs.

   Having gone over various arguments against the control analysis of root
modals, Barbiers & van Dooren summarize the evidence as follows (2017:
8):

In sum, it does not seem to be possible to account for the differences between epistemic and root interpretations in terms of theta-role assignment or argument structure. The evidence presented here suggests that modal auxilaries are raising verbs, which do not assign a theta-role to the surface subject. The question of whether the two types of root interpretations, namely subject-oriented and non-subject-oriented, can and should be distinguished syntactically is still open. If all modals are raising verbs and if in the subject-oriented interpretation the surface subject gets a theta-role from the modal, subject-oriented root interpretations pose a serious problem for the theta-criterion.

In the light of this, the main conclusions of the present paper could be summarized as follows:

- The evidence suggests that subject-oriented and non-subject-oriented root modals should be distinguished syntactically: The subject-oriented ones show properties of control verbs, the non-subject-oriented ones could be raising verbs.

- Subject-oriented root modals arguably assign a theta-role to their subject. But since they are not raising verbs they do not pose a problem for the theta-criterion.

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The semantics of syntactic constructions

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Abstract

In this paper it is shown that Danish syntactic constructions, such as accusative + infinitive, e.g. *Hun så ham komme* (She saw him come), accusative + to-infinitive, *that*-clauses and preposition + *that*-clauses, have their own type of meaning potential, exactly like lexical items, such as perception predicates: *see, hear*, control predicates: *permit, offer,* and mental NEG-raising predicates: *think, hope*. The types of meaning that syntactic constructions can have as predications are: state of affairs, proposition, illocution and fact. Both lexical items and syntactic constructions are polysemous and disambiguate each other when combined in a clause according to a general rule that may be stated similarly to the way that the rule for a lexical entry may. Some examples such as *Hun bad ham komme* (She asked him to come) and *Hun lod ham begrave* (She let him be buried) are identified and given an explanation.

1. Introduction

Usually, syntax is considered to be about grammatical forms, while semantics is about the meaning of lexical items, but every syntactic construction has a meaning, as does a lexical item, and the meaning of a syntactic construction can be ambiguous exactly as lexical items can. In this article, the meaning of some Danish syntactic constructions containing two semantic predications will be investigated; these are constructions like: verb + accusative + infinitive, verb + accusative + *at*-infinitive, verb + *that*-clause, verb + preposition + *that*-clause. Examples are shown in – .

(1)   **verb + accusative + infinitive (state of affairs)**
      Hun   så   ham   komm-e.
      she.NOM   *see*.PAST *he*.ACC   *come*-INF
      'She saw him come.'

(2)   **verb + accusative + *to*-infinitive (illocution)**
      Hun   forbød   ham   at   komm-e.
      she.NOM   *forbid*.PAST *he*.ACC   *to*   *come*-INF
      'She forbade him to come.'

(3)   **verb + *that*-clause (fact/proposition)**
      a.   Hun   så   at   han   kom.
           she.NOM   *see*.PAST *that*   *he*.NOM   *come*.PAST
           'She saw that he came.'

      b.   Hun   tro-ede   at   han   kom.
           she.NOM   *think*-PAST *that*   *he*.NOM   *come*.PAST
           'She thought that he came.'

 (4) **verb + preposition + *that*-clause (fact)**
      Hun   så   på   at   han   kom.
      she.NOM   see.PAST   on   that   he.NOM   come.PAST
      'She watched him coming.'

The claim in this article is that the four constructions following the verb are of four different types of predications called: State of Affairs, Propositions, Illocutions and Facts. The purpose of this paper is to describe exactly how the semantic units correspond to the syntactic ones.

1.1 The semantic terminology
In the following, a distinction is made between syntactic constructions and semantic predications (Lyons 1977 ch. 16; Leech 1981 ch. 13; Dik 1997 ch. 12; Togeby 2003 §§ 168-173). The semantic terms *predication, predicate* and *argument* correspond roughly to the syntactic terms *clause, verb phrase* and *noun phrase*. A predication is built up of a predicate (**P**) and a number of arguments depending of the type of predicate (A^1 + **P** + A^2 + A^3). The arguments are of one of the three types: agent, experiencer or neutral.

A state of affairs is a predication with a predicate, aspect, arguments and manner adverbs. Predicates are one-place, two-place or three-place; arguments are Agent, Neutral or Experiencer; a state of affairs is indicated by slashes: /**PN**/.

A proposition is a state of affairs + subordinating operator (**sb**) + predicate tense + argument definiteness + propositional adverbs + truth value; a proposition is initiated by a subordinating operator *at* 'that'. Tense = present/past; definiteness = definite (*the lion*), indefinite (*a lion*), nondefinite (bare form): (*lion*); truth value = Asserted /Negated. Propositions are indicated by square brackets **[PN]**.

An illocution is a proposition + illocutionary force; illocution = expressive, constative, normative, hypothetic. An utterance, delineated by full stops, made up of two or more predicates, is in itself an illocution. Illocutions are indicated by round brackets **(PN)**.

A fact is a presupposed true proposition. Facts are indicated by curly brackets **{PN}**.

2. Types of Predicate
2.1 Perception predicates
When governed by predicates denoting perception, the second predicate (what is perceived) is either a state of affairs (1), (5) or a fact (6), (7), (8).

Hun	så	ham	komm-e.
she.NOM	*see*.PAST	*he*.ACC	*come*-INF

'She saw him come.'

(5) | De | hør-te | ham | spill-e | klaver. |
|---|---|---|---|---|
| *they*.NOM | *hear*-PAST | *he*.ACC | *play*-INF | *piano*.NONDEF |

'They heard him play the piano.'

(6) (cf.) | Hun | så | at | han | var | komm-et. |
|---|---|---|---|---|---|
| *she*.NOM | *see*.PAST | *that* | *he*.NOM | *be*.PAST | *come*-PRF |

'She saw that he had come.'

(7)   Hun   hør-te   at   han   vil   komm-e   (i morgen).
       s*he*.NOM *hear*-PAST *that* *he*.NOM *will*.PRS *come*-INF (tomorrow)
       'She heard that he will be coming.' (tomorrow).

P² in (1) and (5) are part of a state of affairs since P² has no tense inflection, cannot be negated and must take place at the same time as P¹:

(8)   *Hun   hav-de   set   ham   ikke   komm-e.
       she.NOM *have*- PAST *seen*   *he*.ACC   *not*   *come*-INF

(9)   *Hun   hør-te   ham   vill-e   komm-e.
       she.NOM *hear*-PAST *he*.ACC   *will*-INF   *come*-INF

P² in   and (8) are facts since P² has tense inflection, can be negated, differs in time from P¹, and is entailed by the asserted as well as by the negated version of P¹ as seen in (12) and .

(10)   (cf)   Hun   så   at   han   ikke   var   komm-et.
                she.NOM *see*.PAST *that* *he*.NOM *not*   *be*.PAST *come*-PRF
                'She saw that he hadn't come.'

(11)   (cf.)   Hun   hør-te   at   han   ikke vil
                she.NOM *hear*-PAST that *he*.NOM *not*   *will*.PRS
                komm-e.   (i morgen)
                come-INF (tomorrow)
                'She heard that he will not be coming (tomorrow).'

(12)   Hun så at han var kommet.   =   Han var kommet.
       'She saw that he had come.'   'He had come.'

(13)   Hun så ikke at han var kommet. =   Han var kommet.
       'She didn't see that he had come.'   'He had come.'

Lexical verbs of perception taking two different syntactic constructions have different semantic meanings in the two occurrences, respectively:

se¹: 'to perceive something that causes the perception.'
se²: 'to realize by means of perception (possibly of something else) that something is the case.'

(14)   Hun så på køreplanen at toget var kørt.
        'She saw on the timetable that the train had left.'

This difference is suspended if the perception predicate itself is governed by a NEG-raising predicate: *Hun troede at hun så ham komme.* (She thought that she saw him coming) is equivalent to *Hun troede at hun så at han kom* (She thought that she saw that he came).

The difference between the two meanings af the perception predicate is explained by Leech (1981) in the following way: In the that-clause construction the PN2 is a fact that is subordinated as the second argument in PN1.

a.   Hun   så   at   han   kom.
      she.   saw   that   he   came
      'She saw that he came.'

$(A^1 + P^1 + A^2 \{sb \quad A^3 + P^2\}_{PN2})$
(SHE   SAW^2 THAT   HE   CAME})

In the accusative + infinitive construction, after verbs of perception, P^2 is 'featurized', i.e. downgraded as a feature in P^1; in , *Hun så ham komme.* (She saw him come), there is only one composite predicate: SEE<COME>. This predication could also have been expressed as *Han kom, set af hende.* (He came, seen by her).

Hun   så   ham   komme.
she   saw   him   come.
'She saw him come.'

$(A^1 + P^1 <P^2> + A^2)$
(SHE   SEE   <COME>   HIM)

2.2 Control predicates
Constructions consisting of verb + accusative + *to*-infinitive normally have so-called control predicates as P^1 and an illocution as A^2. Control predicates are: *forbyde* (forbid)*, tillade* (permit)*, befale* (order)*, tilbyde* (offer).

Hun	forbød	ham	at	komm-e.
she.NOM	*forbid*.PAST	*he*.ACC	*to*	come-INF

'She forbade him to come.'

The A² in a predication with control predicates is an illocution with a normative illocutionary force; the verb *forbyde* (forbid) means 'tell someone that he or she should not do something'. The person referred to by A² of P¹ is coreferential with A¹ of P², and PN² cannot be transformed into a passive, as it can in an accusative + infinitive construction.

(15) Hun   forbød   ham   at   komme.
      she   *forbade*   *him*   *to*   *come.*
      'She forbade him to come.'

$$(A^1 + \quad P^1 + \quad A^2 + \quad A^3(sb + \quad A^1 + \quad shall + \quad not + \quad P^2)_{PN2})$$
(SHE   TELL   HIM   (THAT   HE   SHALL   NOT   COME))

(16) Hun   så   ham spise *æblet.*   ≈   Hun   så   æblet
      'She   saw   him eat   the apple.'   'She   saw   the apple
      blive   spist.
      being   eaten.'

(17) Hun   forbød   ham   at   spise *æblet*   ≠   *Hun forbød
      æblet at blive spist.
      'She   forbade   him   to   eat   the apple.'   *She forbade
      the apple to be eaten.'

Control predicates can be decomposed as:
TELL + SOMEONE + (THAT HE SHALL DO SOMETHING).

2.3 Mental NEG-raising predicates

Some mental predicates that take propositions as their A² have what is called NEG-raising, e.g. *tro* (think), *ønske* (wish), *håbe* (hope). It means that negation of P¹ is synonymous with negation of P², and double negation equals assertion, which does not hold for predicates taking facts as their A². A² of these predicates are not facts, nor events, but possible facts, or thoughts. Neither the asserted nor the negated P¹ entails PN².

b. Hun tro-ede at han kom.
  she.NOM think-PAST *that* *he*.NOM *come*.PAST
  'She thought that he came.'

(18) a. Hun troede at han kom. ≠ Han kom.
   'She thought that he came.'   'He came.'

b. Han troede ikke at han kom ≠ 'Han kom.
  she *thought* *not that* *he* *came*   'He came.'
  'She didn't think that he came.'

(19) Hun troede ikke han kom. = Hun troede han ikke kom.
she thought not he came She thought he not came
'She didn't think he came.'   'She thought he didn't come.'

(20) a. Hun troede ikke at han ikke kom ≈ Hun
  she thought not that he not came   She
  'She didn't think that he didn't come.'
  troede   at han kom
  thought   that he came
  'She thought that he came.'

  Hun vidste ikke at han ikke kom. ≠ Hun vidste
  she knew not that he not came   She knew
  at han kom.
  that he came
  'She didn't know that he didn't come.' 'She knew that he came.'

(21) Hun troede at han kom.
  she thought that he came
  'She thought that he came.'

  (A^1 + P^1 + A^2 [sb A^1 + P^2]$_{PN2}$)
  (SHE THINK   [THAT HE   CAME])

The general problem of factivity of predicates like *know* is not addressed here due to length restrictions.

2.4 Agentive perception

In the construction perception predicate + preposition *på* + Fact, the predicate is imperfective and the argument A^1 is an agent, whereas A^1 in perception predicate constructions with accusative + infinitive and with *that*-clause the predicate is imperfective and A^1 is an experiencer.

Hun så ham komme.
'She saw him come.'
EXPERIENCER

Hun så på at han kom.
'She watched him coming.'
AGENT

(22) Hun hørte på at han spillede klaver.
'She was listening to him playing the piano.'
AGENT

(23) a. Hun holdt op med at høre på   at   han spillede klaver.
          she   held up   with to hear on   that he   played   piano
          'She stopped listening to him playing the piano.'

      b. *Hun holdt op med at høre ham   spille   klaver.
          she   held up   with to hear him   play   piano

      c. *Hun holdt op med at høre   at   han spillede   klaver.
          she   held up   with to hear that he played   piano

(24) (cf)   Hun   hørte   at   han spillede.

          (A$^{1\text{-EXPERIECER}}$+ P^1 + A^2 {sb   A^3 + P^2}$_{PN2}$)
          (SHE   HEAR   {THAT   HE   PLAY})

(25) Hun   hørte på   at   han   spillede.
      She   heard on   that   he   played

          (A$^{1\text{-AGENT}}$ + P^1 + prp   +   {sb   A^3 +   P^2}$_{PN2}$)
          (SHE   HEAR   {THAT HE   PLAY})
      'She was listening to him playing.'

3. Semantics of syntactic constructions

Five types of syntactic constructions involving two predicates correspond to four types of meaning of PN^2 depending of the type of P^1: An acc. + inf. construction denotes a state of affairs, a *that*-clause denotes a fact, an acc. + *to*-inf. construction denotes an illocution, and preposition + *that*-clause denotes a fact. (In this article the problem of factivity is only dealt with in connection with perception predicates in order to keep under the length limit).

P^1 PREDICATE TYPE	PN^2 CONSTRUCTION	PN^2 MEANING
experiencer perception imperfective	acc. + inf.	/state of affairs/
experiencer perception perfective	*that*-clause	{fact}
agent perception imperfective	*på* + *that*-clause	{fact}
control	acc. + *to*-inf.	(illocution)
NEG-raising predicate	*that*-clause	[proposition]

The lexical items have polysemy, e.g. *se* (see) and *høre* (hear) mean 'to perceive the state of affairs that something is causing the perception', when in an acc. + inf. construction, and 'to realize by means of perception (possibly of something else) that something is a fact' in a *that*-clause construction. In this way, the syntactic construction disambiguates the lexical item. *That*-clauses are ambiguous too. Either they refer to a fact, or to a proposition (a possible fact) depending on whether they are governed by a perception predicate or a mental activity with NEG-raising. In this way, the lexical item disambiguates the syntactic construction. Disambiguation goes both ways.

4. Problems

The rule stated above is consistent, and will always yield a necessary disambiguation of a syntactic construction. But, if an acc. + inf. construction is governed by the control predicate *bede* (ask) it does not mean state of affairs.

(26) Hun   bad   ham   komm-e.
      she   asked   him. ACC   *come*-INF
      'She asked him to come.'

Like , , is analysed as a control predicate and the subordinated P^2 is a normative illocution:

(27) Hun   bad   ham   komme.

      $(A^1$ + P^1 +   A2 + A^3(sb A^1 + shall + $P^2)_{PN2})$
      (SHE   TELL   HIM   (THAT   HE   SHALL   COME))

(28) Hun bad   ham spise æblet. ≉ *Hun bad   æblet
      she asked him   eat   the apple   She   asked   the apple

      blive spist.
      be   eaten.

(29) a.   Hun   bad   ham komme.   ≠   Han   kom.
           she   asked   him   come   he   came.
           'She asked him to come.'   'He came.'

      b.   Hun   bad   ham   ikke   komme. ≠   Han   kom.
           she   ask   him   not   come   he   came
           'She didn't ask him to come.'   'He came.'

The verb *bede* (ask) is a control predicate and it takes an acc. + *to*-inf. construction, but without *to* (*at*). The following authentic example is an argument in favour of this analysis since only equivalent syntactic constructions and semantic equivalent predications are coordinated by *og* (and).

(30) Hun   bad   ham være god   ved Maria og   at   sørge
      she   asked him be   good to Maria and to   provide

      for de tre ladyer.
      for the three ladies
      'She asked him to treat Maria well and to take care of the three
      ladies.'
      (Https. Books.google.dk>books: G.J. Mayer 2015: *History*)

Secondly, some examples with *lade* (let) are not accounted for by the rule
of the meaning of syntactic constructions. Even though the predicate *lade*
is not a perception predicate it is constructed like perception predicates
with acc. + inf. and P^2 as a downgraded state of affairs: LET<COME>
HIM.

(31) Hun   lod   ham   komme.

      $(A^1 +$ $P^1<P^2>$ $+$ $A^2)$
      (SHE   LET<COME>   HIM)

(32) a. Hun   lod   ham   komme. = Han kom.
          she   let   him   come   *he   came*
          'She let him come.'   'He came.'

      b. Hun   lod ham   ikke   komme. = Han kom   ikke.
          she   let him   not   come   *he   came not*
          'She didn't let him come.'   'He didn't come.'

(33) a. *Hun   har   ladet   ham   ikke komme.
          she   has   let   him   not   come

      b. *Hun   lod   ham   være   kommet.
          she   let   him   be   come

(34) Hun lod ham spise æblet = Hun   lod   æblet blive spist

      $(A^1 + P^1$ $<P^{2akt} + A^3> +$ $A^2)$ $(A^1 + P^1<P^{2pas}> +$ $A^3)$
      SHE LET <EAT APPLE>   HIM   SHE <LET BE EATEN>   APPLE

But after the predicate *lade* (let) it is possible to find constructions like :

(35) Hun   lod   ham   begrave   i   et   prægtigt   gravmæle . . .
      she   let   him   bury   in a   magnificent monument
      'She had him buried in a magnificent sepulchral monument. . . '

      . . . . .men måtte senere lade   gravmæl-et   fjerne.
             but might later   let   monument-the   remove
      . . . . . 'but later had to have the monument be removed.'
             (http://www.danskeherregaarde.dk/nutid/saebygaardnordjylland).

In these two examples (from the same authentic sentence), P^2 has active form and passive meaning. That is not possible with verbs of perception. It seems as if clauses with P^2 in active form and P^2 in passive form are synonymous, though they must be analysed differently.

(36) Hun   lod   ham   begrave
      she   let   him   bury
      'She   had   him   buried.'   =   'She let (them) bury him.'

      $A^1 + P^1$ $< P^{2act} +$ $A^3 >$
      SHE LET   <BURY   HIM>

(37) Hun   lod   ham   blive   begravet.
      she   let   him   be   buried
      'She had him buried.'

      $A^1 + P^1$ $< P^{2pas}>$ A^3
      SHE LET   <BE BURIED>   HIM

(38) *Hun   så   æbl-et   spis-e
      she.NOM   *see*.PAST   *apple-the*   *eat*-INF

A possible explanation of this suspension of the active-passive opposition could be that A^3 according to the analysis is downgraded as an argument of P^2 in but as an argument of P^1 in , yielding slightly different interpretations:

(39)   Hun lod ham begrave   ≈   'Hun sørgede for at X begravede ham.'

> *she let him bury*
> 'She had him buried.'   'She took care that X buried him.'

(40)   Hun lod ham   blive begravet. ≈   Hun sørgede ikke for at han
>   ikke blev begravet.
>
>   *she   let him   be   buried*
>   'She had him buried.'   'She didn't take care for him
>   to be not buried.'

5. Conclusion

It can be concluded that Danish syntactic constructions, like lexical items, have their own meaning potential that can be described, exactly as with lexical items in a dictionary. The construction accusative + infinitive combined with a perception predicate has the meaning of predication of a state of affairs; the construction accusative + to-infinitive combined with a control predicate has the meaning of a predication of an illocution. *That*-clauses, combined with perception predicates, have the meaning of a predication of a fact, and combined with a mental predicate the meaning of a predication of a proposition. Some examples break this regularity: 1. *Hun bad ham komme* (She asked him to come) where an accusative + infinitive construction combined with a control predicate has the meaning of predication of a illocution. This is explained as an accusative + to-infinitive construction without *to*. 2. *Hun lod ham begrave* (She let him be buried) where the predicate *begrave* in the accusative + infinitive construction has active form but passive meaning. It is explained as a special meaning variant of downgraded predication of state of affairs.

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COMP trace effects across North Germanic varieties[1]

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Abstract

Different varieties of North Germanic allow a left peripheral element to immediately precede the trace of an embedded *wh*-subject that has been moved to the matrix left periphery. Across North Germanic we find varieties that allow the insertion of the declarative complementizer *at*, i.e. similar to English *that*, but there are also varieties in which we encounter relative markers instead. In varieties of Norwegian the complementizer *som* may precede the trace of the *wh*-subject. Faroese is another case, where a group of speakers allows the insertion of the relative marker *ið*. Danish and Western Jutlandic represent yet another case in that the item *der*/*dæ* 'there', an element which is otherwise used as a marker of subject relatives as well as functioning as an expletive, also may appear in the corresponding structure.

1. Introduction

The *that* trace effect has received considerable attention within generative grammar ever since it was first discussed in Perlmutter (1968, 1971) (see Pesetsky, 2016, for a summary). Perlmutter's original observation concerns the ungrammatical status of sentences where the declarative complementizer *that* is followed by the trace of a moved constituent as in (1b).

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(1)   a.   Who$_i$ do you think that Sue met t$_i$?
       b.   *Who$_i$ do you think that t$_i$ met Sue?

The existence of the *that* trace effect in varieties of North Germanic has been demonstrated by many authors, for instance Vikner (1995: 12), who gives the following examples for Danish to show that the declarative complementizer *at* is not viable in the position preceding the trace of an embedded *wh*-subject that has moved to the left periphery of the matrix clause.

(2)   **Danish**
       a.   Hvem   tror   du   ofte   tager   til   Paris?
            who   *think* *you*   *often* *goes*   *to*   *Paris*

       b.   *Hvem   tror   du   at   ofte   tager til Paris?
            who   *think* *you*   *that* *often* *goes to Paris*
            'Who do you think often goes to Paris?'

Yet, several exceptions to the *that* trace effect have been reported for various varieties of the Mainland North Germanic languages. Fenno-Swedish and varieties of Eastern Norwegian in particular seem to allow the presence of the complementizer *at(t)* before a subject trace. An overview of such cases may be found in Lohndal (2007).

   Moreover, for yet other varieties, other complementizers and similar elements may precede the position of a subject trace. A case in point is Danish, which according to Engdahl (1986: 123) allows the item *der* 'there' to precede the subject trace under extraction as in (3) (attributed to Diderichsen 1966: 183).

(3)   **Danish**
       Hvem$_i$ tror   du,   at   der   t$_i$ har gjort det?
       who   *think* *you*   *that* *there*   *has done it*
       'Who do you think has done it?'

Danish *der* functions as an expletive in existential and presentational constructions, just like English *there*, and on this point Danish differs from most varieties of Norwegian and Swedish, which typically use *det* 'it' (see

Engdahl and Laanemets 2015: 312ff for discussion and further references). But Danish *der* also has other functional uses by which it differs from its counterparts in Norwegian and Swedish. One important difference is that it can introduce subject relatives as an alternative to *som,* which otherwise is the only option in non-subject (nominal) relative clauses.

(4) **Danish**
    a. manden,   der/som   kan   tale   dialect
       man-DEF   *there/SOM*   *can*   *speak*   *dialect*
       'the man who can speak dialect'

    b. manden,   som/*der   jeg   talede   dialekt   til
       man-DEF   *SOM/there*   *I*   *spoke*   *dialect*   *to*
       'the man who I spoke dialect to'

This affinity between *der* and *som* in Danish is interesting in that many Norwegian dialects allow *som* to precede a subject trace under long *wh*-movement (Nordgård 1985, 1988). Across Norwegian varieties we may thus encounter the following three structures.

(5) **Norwegian**
    a. Kven   trur   du   __   har   gjort   det?
       who   *think*   *you*   *Ø*   *has*   *done*   *it*

    b. Kven   trur   du   at   har   gjort   det?
       who   *think*   *you*   *that*   *has*   *done*   *it*

    c. Kven   trur   du   som   har   gjort   det?
       who   *think*   *you*   *SOM*   *has*   *done*   *it.*
       'Who do you think has done it?'

An interesting question is, of course, whether the cases of *der-* and *som*-insertion are exceptions to the *that* trace effect, as the complementizer (like) items do not correspond to the declarative complementizer *that*, a fact that can be illustrated by paraphrasing the interrogative sentences in (5) as declaratives as seen in (6).

(6) **Norwegian**

    a. Du   trur   __   Sten   har   gjort   det.
        you   *think*   *Ø*   *Sten*   *has*   *done*   *it*

    b. Du   trur   at   Sten   har   gjort   det.
        you   *think*   *that*   *Sten*   *has*   *done*   *it*

    c. *Du   trur   som   Sten   har   gjort   det.
        you   *think*   SOM   *Sten*   *has*   *done*   *it*
        'You think Sten has done it.'

Still, if we rename the *that* trace effect the COMP trace effect, as is quite normally done (see e.g. Pesetsky 2016), we have an adequate nomenclature for dealing with the various cases under a common approach.

In this paper we will do precisely that. We will take a closer look at various exceptions to the COMP trace effect across varieties of North Germanic, with an emphasis on data collected within the Scandinavian Dialect Syntax project (see Vangsnes 2007; Vangsnes and Johannessen 2019), both as part of the systematic questionnaire-based data collection across an evenly distributed number of locations and as part of focused NORMS[2] fieldtrips to selected areas, notably the ones to Western Jutland and the Faroe Islands in 2008. Section 2 is devoted to a presentation of the systematic data collection carried out for Norwegian and Swedish dialects. In Section 3, data on Faroese are presented. In section 4 data from Western Jutlandic and Danish is compared to Faroese and Norwegian, and we raise the question whether the items used under extraction in these varieties can be regarded as resumptive elements. Section 5 sketches an analysis to capture the various facts encountered and section 6 concludes the paper.

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[2] NORMS is the abbreviation of the *Nordic Center of Excellence in Microcomparative Syntax* which was a five year project jointly financed by NOS-HS and NordForsk between 2005 and 2010. The project was a part of the Scandinavian Dialect Syntax project umbrella and involved groups of researchers at University of Tromsø, the Norwegian University of Science and Tecnhology, University of Oslo, University of Iceland, University of Aarhus, University of Lund and University of Helsinki. During the project period altogether seven dialectological fieldtrips to different areas in the North Germanic language area were organized, see http://websim.arkivert.uit.no/scandiasyn/fieldwork/index.html.

2. *At-* and *som*-insertion in Norwegian and Swedish dialects
2.1 Initial observations

Across varieties of Norwegian we may observe the three structures given above in (5), when an embedded *wh*-subject is extracted to the left periphery of the main clause, i.e. either: (i) no *embedded* complementizer, (ii) the presence of the complementizer *at* in the embedded left periphery, or (iii) the complementizer *som* in the embedded left periphery. We also noted that in the declarative paraphrases of these interrogative sentences only *at* (and not *som*) is possible, cf. (6). The same difference between *at-* and *som*-insertion can be observed under *wh*-extraction of a non-subject. This is illustrated in (7) with a *wh*-object, and in (8) with a *wh*-adverb.

(7) **Norwegian**

    a. Kven$_i$ trur du   __ eg skal møta t$_i$ i morgon?
       who *think* *you*   *I* *will* *meet*   *in morning*

    b. Kven$_i$ trur du at eg skal møta t$_i$ i morgon?
       who *think* *you* *that* *I* *will* *meet*   *in morning*

    c. *Kven$_i$ trur du som eg skal møta t$_i$ i morgon?
       who   *think* *you* SOM *I* *will* *meet*   *in morning*
       'Who do think I will meet tomorrow?'

(8) **Norwegian**

    a. Kor$_i$ trur du   __ eg skal møta Sten t$_i$?
       where *think* *you*   *I* *will* *meet* *Sten*

    b. Kor$_i$ trur du at eg skal møta Sten t$_i$?
       where *think* *you* *that* *I* *will* *meet* *Sten*

    c. *Kor$_i$ trur du som eg skal møta Sten t$_i$?
       where *think* *you* *as* *I* *will* *meet* *Sten*
       'Where do you think I will meet Sten?'

Importantly, whereas *at*-insertion versus *som*-insertion in the case of extraction of a *wh*-subject seems to be a matter of dialect variation, the non-viability of *som*-insertion in the other cases is not: dialects that allow (5c) do not allow (6c), (7c) and (8c). This indicates that *som* is not just a "replacer" for *at* in some dialects. Rather, it suggests that *som* in these dialects has certain properties that facilitate the use of it in one particular context where other dialects may use *at*.

2.2. Mapping the variation

Long distance *wh*-movement of various constituents was systematically tested in the Scandinavian Dialect Syntax project and included in a questionnaire of between 150 and 250 test sentences presented to informants at a range of measure points in Norway, Sweden, Finland (the Swedish speaking parts), and to some extent the Faroe Islands. Unfortunately, the phenomenon was not investigated for Danish dialects. At most locations there were four informants who judged the individual test sentences on a Likert scale from 1 (bad) to 5 (good). The results from the questionnaires can be retrieved from the Nordic Syntax Database (NSD) (Lindstad et al. 2009; Vangsnes & Johannessen 2019, see also list of online resources). Furthermore, the NSD interface has a map function which allows automatic generation of maps that visualize the results, and all maps that follow are such maps unless otherwise stated.

The sentence in (5a), with no complementizer, was accepted at all measure points where it was presented to the informants. This is shown in Map 1, where all the white markers indicate a mean score better than 4 on a 1–5 Likert scale at the measure point in question.

Map 1: Visualization of the NSD scores for no complementizer preceding a subject trace under *wh*-extraction (*Kven trur du har gjort det?* 'Who do you think _ has done it?'): white markers indicate high average score, grey markers indicate medium average score, black markers indicate low average score.

The sentence in (5b) with *at*-insertion comes out differently. This sentence is accepted at relatively few measure points, and the places in question are first and foremost found in Eastern Norway and in (Swedish-speaking) Finland. There are also some measure points where the sentence gets a medium score, which indicates that there is some variation across speakers. The white markers in Map 2 indicate measure points with a high medium score (n > 4), grey markers a medium score (n ≈ 3), whereas black markers indicate a low medium score (n < 2).

Map 2: Visualization of the NSD scores for a *that* complementizer preceding a subject trace under *wh*-extraction (*Kven trur du at har gjort det?* 'Who do you think that _ has done it?'): white markers indicate high average score, grey markers indicate medium average score, black markers indicate low average score.

If we then compare *at*-insertion with *som*-insertion, we see that sentence (5c) is by and large accepted in all of Northern Norway, and also to a considerable extent in Central and Western Norway, whereas, on the most part, it is not accepted in Eastern Norway and the Swedish language area (including the measure points in Finland). There are no data on Faroese for this sentence in NSD.
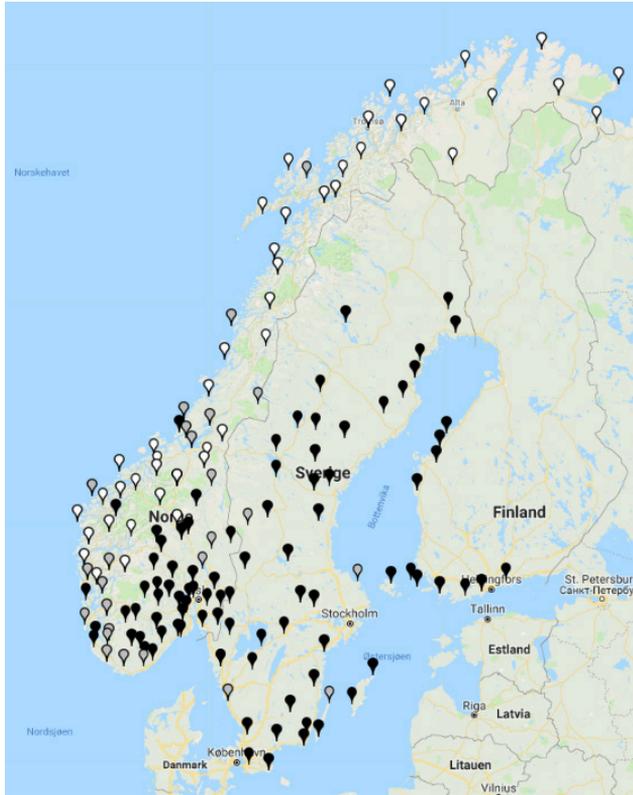
Map 3: Visualization of the NSD scores for a *som* complementizer preceding a subject trace under *wh*-extraction (*Kven trur du som har gjort det?* 'Who do you think SOM _ has done it?'): white markers indicate high average score, grey markers indicate medium average score, black markers indicate low average score.

If we ignore measure points with a medium score and only look at those with a high score for *at*-insertion and *som*-insertion, a fairly clear pattern of complementarity emerges. In Map 4, the grey markers indicate locations with a high score for (5c) (*som*-insertion) whereas the blue markers indicate locations with a high score for (5b) (*at*-insertion).

Map 4: Visualization of high NSD score for *at*-insertion (blue markers) versus *som*-insertion (grey markers) before a subject trace under *wh*-extraction

After the data collection had commenced the sentence in (9) was added to the questionnaire.

(9)   **Norwegian**

Kven	sa	du	at	ikkje	hadde	komme?
who	*said*	*you*	*that*	*not*	*had*	*come*

‘Who did you say hadn’t come?’

In (9), an adverbial follows the complementizer, in this case the negative sentence adverb *ikkje* ‘not’. A higher acceptance for this sentence could be related to the so-called “adverb (intervention) effect”; it has been noted for English that an intervening adverb/adverbial facilitates *that*-insertion, see Lohndal (2009: 208f) and Pesetsky (2016: 12f) who give the following examples from Culicover (1993):

(10) a. Robin met the man who Leslie said that for all intents and
           purposes __ was the mayor of the city.

      b. I asked what Leslie said that in her opinion __ had made Robin
          give a book to Lee.

The sentence in (9) does indeed obtain a higher acceptance rate in Eastern
and Central Norway than (5b) (compare maps 2 and 5).

(11) **Norwegian**

Jon	sa	at	(ikkje)	Per	(ikkje)	hadde	komme.
Jon	*said*	*that*	*not*	*Per*	*not*	*had*	*come*

'Jon said that Per hadn't come.'
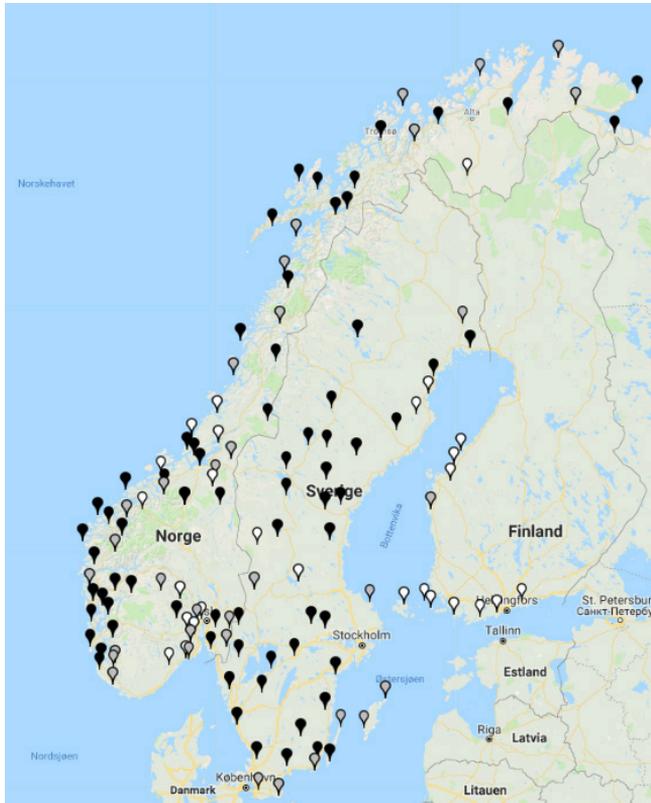
Map 5: Visualization of the NSD score for *at*-insertion before negation under
extraction of a *wh*-subject (*Kven sa du at ikkje hadde komme?* 'Who did you say
that had not come?'): white markers indicate high average score, grey markers
indicate medium average score, black markers indicate low average score.

In Map 6, the high mean scores for both test sentences with *at*-insertion –
(5b) and (9) – are displayed together:

Map 6: Visualization of the NSD high scores for the two sentences with *at*-insertion before a subject trace: *Kven sa du at ikkje hadde komme?* 'Who did you say that hadn't come' (blue) vs. *Kven trur du at har gjort det?* 'Who do you think that has done it? (gray)

Unfortunately, for the test sentence in (9) we do not have a complete data set from Norway (since it was not included from the start). Furthermore, we do not have data for a version with *som*-insertion nor for one with an embedded complementizer. And, importantly, whereas the English adverbial in (10) unequivocally *precedes* the subject trace and hence intervenes between it and the complementizer, we cannot say for sure whether the adverb in (9) precedes or follows the subject trace. As the examples in (11) illustrate, an unmoved subject may either precede or follow the negation.

Accordingly, it is not entirely clear how sentence (9) relates to the adverb effect observed for English. Still, when we consider the geographical area that the sentence "adds" to the picture, namely Central Norway, we may note that this is an area known for allowing negation – in the

form *itj* – to precede subjects to a greater extent than in other varieties of Norwegian (see Hellan 1996, Østbø Munch 2013: 243ff, Garbacz 2014: 308ff), possibly as an effect of cliticization to items in or moved to the left periphery (Hellan 1996). Accordingly it may be the case that the Central Norwegian speakers who accept (9) interpret the structure as one where (i) the negation precedes the subject trace, (ii) is clitic, and (iii) needs an overt complementizer as a host.

In hindsight, the addition of the test sentence in (9) seems to have created more confusion than clarity, and it is quite obvious that several issues need to be investigated further. In any event, Map 7 displays all measure points at which either of the two sentences probing *at*-insertion and/or the one with *som*-insertion receive a high mean score.

Map 7: High mean score for *som*-insertion (gray markers) and *at*-insertion under extraction from a transitive embedded clause (blue markers), and *at*-insertion before negation (black markers).

Despite the noise in the data created by the test sentence in (9), the maps above have shown, on the one hand, that violations of the COMP trace effect appear to be acceptable among a fair number of speakers of Norwegian and Swedish dialects and, on the other hand, that *som*-insertion and *at*-insertion to a high degree are in complementary distribution.

2.3 Nordgård's Condition

The last point relates to the observation in Nordgård (1985) that dialects that allow non-V2 in matrix *wh*-questions, i.e. of the kind given in (12), also allow *som*-insertion under extraction of a *wh*-subject.

(12) **Norwegian**
    a. Kven   som   kom?
       who   SOM   *came*
       'Who came?'

    b. Kva   du   sa?
       what   *you*   *said*
       'What did you say?'

Nordgård (1985: 35) formulates this as the following condition (somewhat adapted here; see also Westergaard, Vangsnes, and Lohndal 2017):

> **Nordgård's Condition:**
> A dialect allows non-inverted word order in matrix wh-questions iff the dialect allows insertion of the complementizer *som* under extraction of the embedded subject.

Notice that the condition is unidirectional. It does not state that a dialect that allows *som*-insertion must allow non-V2 in matrix *wh*-questions too.

The validity of Nordgård's Condition is discussed in Westergaard, Vangsnes and Lohndal (2017). In Map 8, which is taken from that paper, letters A–D indicate areas of Norway where non-V2 is allowed in matrix *wh*-questions, whereas in the areas marked '*' and '?' such constructions are not allowed, or the picture is unclear, respectively. When this map is juxtaposed to Map 3 (with only the Norwegian markers to enhance clarity), which shows the results for sentence (5c) with *som*-insertion under *wh*-extraction, we see that there is a fairly good match, in particular when we also count the locations with a medium score.
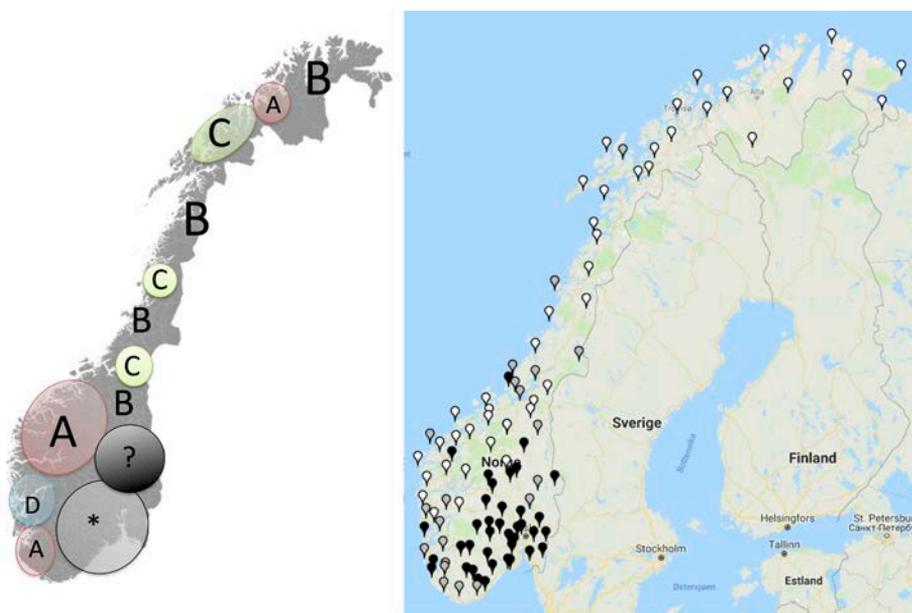
Map 8: Map (left) from Westergaard, Vangsnes & Lohndal (2017) showing the distribution of various types of grammars (A-D) that allow non-V2 in matrix *wh*-questions and not (*) versus map (right) showing varieties that allow *som*-insertion under extraction of an embedded *wh*-subject (white markers = high mean score, gray markers = medium mean score, black markers = low mean score).

Including locations with a medium mean score can be justified by reference to the general tendency that extraction examples with no embedded complementizer are judged better than examples with an embedded complementizer even under object extraction (see Cowart 1997; Hawkins 2004; Bentzen 2014; Schippers 2017).

The relevance of Nordgård's Condition for the present paper will become clearer below, after we have also considered Faroese and Western Jutlandic as well as Danish.

3. Faroese *at-*, *sum-* and *ið-*insertion

In NSD there are two test sentences probing long movement of a *wh*-subject, one with no embedded complementizer and one with the embedded complementizer *at*. The test sentences are:

(13) **Faroese**
Fótboltslandsliðið   fer   til   Skotlands
football-country-team   goes   to   Scotland

Hvør   væntar   tú   fer   við?
who   expect   you   goes   with
'The national football team is going to Scotland. Who do you
expect to go?'

(14) Ein   mynd   er   tikin   úr   Listaskálanum
a   painting   is   taken   from   art gallery-DEF

Hvør   heldur   tú,   at   hevur   gørt   hetta?
who   think   you   that   has   done   this
'A painting has been taken from the art gallery. Who do you think
has   done this?'

The first sentence – with no complementizer – was presented to 42
informants in six locations, and the result is a high mean score at all
locations. At a more detailed level, 33 of the informants give it the highest
score (5), six give it a medium score (3), and three give it low score (1).

In contrast, the second sentence – with *at*-insertion – was presented to
44 informants at the same six locations, and at all locations it obtains a low
mean score. In this case, 33 of the informants give it the lowest score (1),
three give it a medium score (3), whereas eight informants judge it with the
highest score (5). Map 9 indicates where the six Faroese measure points
are from south to north: Tvørøyri, Sandur, Tórshavn, Vágar, Fuglafjörður,
and Klaksvík.
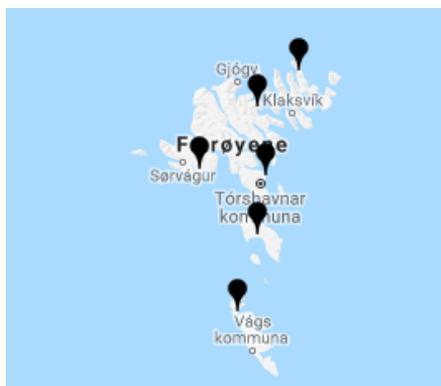
Map 9: *The six Faroese measure points in the Nordic Syntax Database*

During the NORMS fieldtrip to the Faroe Islands in August 2008, other examples of long subject extraction were also tested, including additional complementizers in the embedded left periphery, namely the set given in (15).

(15) **Faroese**

a.	Hvør	trýrt	tú	__	hevur	gørt	tað?
	who	*think*	*you*		*has*	*done*	*it*
b.	Hvør	trýrt	tú	at	hevur	gørt	tað?
	who	*think*	*you*	*that*	*has*	*done*	*it*
c.	Hvør	trýrt	tú	sum	hefur	gørt	tað?
	who	*think*	*you*	SOM	*has*	*done*	*it*
d.	Hvør	trýrt	tú	ið	hevur	gørt	tað?
	who	*think*	*you*	*ið*	*has*	*done*	*it*
All:	'Who do you think has done it?'						

The version in (15a) has no embedded complementizer, indicated by the empty line. In (15b), we find the declarative complementizer *at* corresponding to English *that*. In (15c), we have the complementizer *sum* which corresponds to *som* in Mainland North Germanic (cf. above). Finally, in (15d), the item *ið* appears before the trace position of the extracted *wh*-subject: according to the online dictionary Sprotin (see list of online resources), this item has a variety of complementizer and adverbial uses and, crucially, it is an alternative to *sum* in relative clauses. The use in relative clauses is addressed in Thráinsson et al. (2012: 196) and they also note that *ið* optionally may follow the *wh*-constituent in embedded *wh*-clauses (Thráinsson et al. 2012: 196, 303f). Importantly, not indicated in the dictionary, nor in Thráinsson et al. (2012), but confirmed by Hjalmar Petersen (p.c.), *ið* cannot be used in regular declarative clauses, i.e. as an alternative to *at*.

The sentences in (15) were presented to 43 informants who come from the same six places as the NSD data come from. No scale was used, and

it was simply recorded whether or not informants accepted the sentences. Notes were taken for cases in which the informant expressed uncertainty.[3]

As with the NSD data, no clear geographical patterns were found, and Table 1 summarizes how the four versions of the sentence in (15) were judged by the 43 informants.

(15)	COMP	Test sentence	n of 43 informants	%
a.	*0*	Hvør trýrt tú __ hevur gørt tað?	43	100
b.	*at*	Hvør trýrt tú **at** hevur gørt tað?	2	4.7
c.	*sum*	Hvør trýrt tú **sum** hefur gørt tað?	5	11.6
d.	*ið*	Hvør trýrt tú **ið** hevur gørt tað?	16	37.2

Table 1: Results from the NORMS Føroyar investigation of long *wh*-movement

To little surprise, all informants accepted the version with no embedded complementizer (15a). Only two informants accepted the version in (15b) with *at*-insertion, and this is line with the NSD data mentioned above. Furthermore, very few informants – only five – accepted *sum*-insertion (15c), but interestingly 16 of the 43 informants found example (15d) with *ið*-insertion acceptable. Two of them also accepted *sum*-insertion whereas two others also accepted *at*-insertion. No geographical pattern was detected.

This indicates that Faroese also allows exceptions to the COMP trace effect to some degree, presumably idiolectally rather than dialectally, and typologically speaking we can therefore group Faroese with Western, Central, and Northern Norwegian dialects in that the inserted C-element is an item otherwise used in relative clauses, rather than the regular declarative complementizer.

At this point let us turn to Western Jutlandic and Danish.

4. Western Jutlandic and Danish meets Norwegian and Faroese: complementation or resumption?

As noted in the introduction, Engdahl (1986) pointed out that Danish allows *der*-insertion under extraction of a *wh*-subjects. During the NORMS

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[3] I did the interviews in Tórshavn, Tvøroyri, Fuglafjørður, and Klaksvík myself, and I am indebted to Gunnar Hrafn Hrafnbjargarson for collecting responses from Sandur and Vágar. In the raw data disapproval of the sentences is assigned the value 0 and approval the value 1 whereas uncertainty is rendered as 0.5. Out of the total of 172 judgments (4 x 43) there were only four uncertain cases, one for *at*-, two for *sum*-, and one for *ið*-insertion. The figures in Table 1 reflect the positive judgments only.

fieldtrip to Western Jutland in January 2008, organized by Henrik Jørgensen and Sten Vikner, such *der*-insertion under extraction of an embedded subject to the matrix left periphery was investigated.

   Altogether eight dialect speakers were interviewed on the topic – two from Sevel, four from Spjald, and two from Thorsminde – and all of them accepted the insertion of the item *dæ* (corresponding to Standard Danish *der* 'there') at the beginning of the embedded clause when the embedded *wh*-subject was moved to the front of the main clause as in (16b).

(16) **Western Jutlandic**
     a. Hu   manne trowe du   __   snakke dialect i   Spjald?
        how many   think you   talk   dialect in Spjald

     b. Hu   manne trowe du   dæ   snakke dialekt i   Spjald?
        how many   think you   there speak dialect in Spjald

     c. ??Hu manne trowe du   som snakke dialekt i   Spjald?
         how many think you   SOM talk   dialect in Spjald
        All: 'How many do you think speak dialect in Spjald'

Sentence (16a) with no *dæ*-insertion in the embedded clause was also accepted by all informants, whereas the example in (16c) with *som*-insertion rather than *dæ*-insertion was met with considerable skepticism. The relevance of probing (16c) should be obvious given the Norwegian data.

   In addition to *dæ*-insertion under *wh*-extraction, the informants also accepted *dæ*-insertion under long topicalization.

(17) **Western Jutlandic**
     a. Dem folk   hæ   trowe   a __ snakke jysk.
        them people here think   I   speak jutlandic

     b. Dem folk   hæ   trowe   a dæ snakke   jysk.
        them people here think   I there speak   jutlandic

     c. *Dem folk   hæ   trowe   a som   snakke   jysk.
        them people here think   I SOM   speak   jutlandic
        All: 'These people I believe to speak Jutlandic.'

In fact, when given (16a) and (17a), several of the informants reacted spontaneously by inserting *dæ* in line with (16b) and (17b).

Insertion of *der* under long topicalization is known from Standard Danish too. Engdahl (1985: 21) provides the example in (18).

(18) **Danish**
      Vennen,   (som) han påstod   at   der   havde lånt
      friend-DEF *SOM* *he* *claimed* *that* *there* *had*   *borrowed*

      bogen,   var   forsvundet.
      book-DEF   *was*   *disappeared*
      'The friend that he claimed had borrowed the book had disappeared.'

The fact that *der*-insertion under subject extraction has been noted for Standard Danish might suggest that it is a general property of Danish, and not restricted to just some varieties. Unfortunately, the matter was not investigated in the Danish subproject of the Scandinavian Dialect Syntax project (DanDiaSyn).

Notice, furthermore, that both in (18) and in (3), repeated here for convenience, *der* in fact co-occurs with *at*.

(3) **Danish**
      Hvem$_i$ tror   du,   at   der   t$_i$ har   gjort det?
      who   *think* *you* *that* *there*   *has* *done*   *it*
      'Who do you think has done it?'

On the other hand, co-occurrence of *at* with Norwegian *som* and Faroese *ið* is not acceptable, as illustrated in (19) and (20). The judgment of the Norwegian example is that of the author and Merete Anderssen (p.c.); the % sign marks the Faroese example as idiolectal (cf. above), and the non-viability of *at* in the structure has been confirmed by Hjalmar Petersen (p.c.).

(19) **Norwegian**
      Kven   trur   du   (*at)   som   har   gjort det?
      who   *think* *you*   *that*   *som*   *has* *done*   *it*
      'Who do you think has done it?'

(20) **Faroese**

%Hvør	trýrt	tú	(*at)	ið	hevur	gørt	tað?
who	*think*	*you*	*that*	*ið*	*has*	*done*	*it*

'Who do you think has done it?'

This means that although Danish *der* parallels dialectal Norwegian *som* and idiolectal Faroese *ið*, in that they are all used in relative clauses, Danish *der* is different on at least two points: (i) it can co-occur with *at* in extraction cases, and (ii) it is strongly subject-related and only used in subject relatives (whereas *som* and *ið* can also be used in object relatives). The use of *der* as an expletive may be added as a third distinguishing property, possibly related to the subject property.

Engdahl (1985) interprets Danish *der*-insertion as resumption rather than complementation, i.e. that *der* fills the trace position rather than precedes it. (See also Lohndal 2007: 51ff for discussion.) The partial parallelism with *som*-insertion in Norwegian and *ið*-insertion in Faroese raises the question whether both *som*-insertion and *ið*-insertion are a matter of resumption rather than complementation. If that were the case, the use of these items would not represent exceptions to the COMP-trace effect, and we would also have an explanation for why the items cannot be used in declarative paraphrases of the interrogative sentences in question (see above). In turn, the main challenge would be to understand what makes the items viable for resumption and, furthermore, what prompts resumption in the varieties in question. On that note, let us sketch an analysis.

5. Analysis

An important basic fact is that absence of a COMP element under subject extraction is accepted by everybody, as seen in Map 1. That means that the insertion of a COMP element appears to be optional, even for individuals who accept it. This sheds doubt on the idea advanced in Lohndal (2009: 223) (based on Boeckx 2008) that the COMP-trace effect and lack thereof can be captured by a parameter which either requires or prohibits the insertion of a COMP element. It seems that a weaker statement is called for, whereby insertion of various COMP elements is allowed, but not required, by certain grammars. The basis for this optionality needs to be investigated further, but for the lack of a better explanation we will here assume that what triggers COMP insertion is a pragmatic preponderance in certain cases, to mark the left edge of the embedded clause.

The idea argued for in the present paper is that the variation observed is an effect of the varying properties of the COMP elements that we have encountered, and how they relate to a basic CP-FinP-TP structure. We will employ a distinction between head (X°) and specifier (XP), and, on a fairly traditional view of complementizers, *at*, *som*, and *ið* will be considered X° whereas *der* will be treated as an XP, given its use as an expletive. The latter runs counter to the proposal in Vikner (1991) that expletive *der* is an XP but relative *der* an X° (see also Engdahl and Laanemets 2015), but here we advance a uniform treatment of the item across uses.

In short, *at* will be taken to be merged in C, whereas Norwegian *som* and Faroese *ið* are merged in T and subsequently moved to C (via Fin). Following Engdahl (1985) *der* is considered a resumptive element merged in the position of the subject trace, i.e. in Spec-T. It is subsequently moved to Spec-Fin to license FinP. On this basic approach, with the structures given in (21), *at* may cooccur with *der* in Danish but not with *som* and *ið* in Norwegian and Faroese.

(21)   a.   **Danish**
        wh-subject$_i$ … [$_{CP}$ t$_i$ [$_C$ at]   [$_{FinP}$ *[der*$_{i\text{-}j}$]   [$_{TP}$ t$_{j\ T}$…

    b. **Norwegian/Faroese**
        wh-subject$_i$ … [$_{CP}$ t$_i$ [$_C$ *som/ið*$_{i\text{-}j}$]   [$_{FinP}$ t$_{i\text{-}j}$ [$_{TP}$ e$_i$ [$_T$ t$_{i\text{-}j}$] …

As indicated by the indices, we also entertain the idea that *som* and *ið* are resumptive elements in that they are co-referent with the moved *wh*-subject. When merged in T, this facilitates the interpretation of the moved *wh*-subject in T. This property of *som* and *ið* is necessarily shared by all varieties and reflects their use as relative markers, but what is special in varieties that allow insertion in the case of *wh*- extraction is that *som* and *ið* are also capable of licensing C. Given 'Late Merge' ("move-over-merge") (see van Gelderen, 2008, and references cited there) once *som* or *ið* are merged in T it will render the merger of *at* in C obsolete, as the preferred next step is to move *som/ið* there.[4] A detail concerning relative clauses is that we will take them to be FinPs rather than CPs. On that account, relative *som* will appear in Fin across varieties irrespective of whether we are dealing with subject or object relative clauses.

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[4] An alternative non-movement approach like for instance Nanosyntax (see Baunaz & Lander, 2018) would be to say that *som/ið* spell out both C and T whereas *at* only spells out C, and *som/ið* therefore "wins" over *at* since it is a better match (according to the Elsewhere Principle).

On this approach, the fact that *at* does not co-occur with *som* and *ið* is a matter of competition. In and of itself, that is a grammar internal account which does not automatically explain the complementary distribution of *at*-insertion and *som*-insertion *across* grammars. In varieties where *som* does not license C, but presumably still licenses T and Fin (*qua* relative marker), i.e. in Eastern Norwegian and (Fenno)Swedish, co-occurrence of *at* (in C) with *som* (in T) should, in principle, be allowed.

In order to account for why that does not happen we will again point out the optionality of COMP-insertion. What triggers insertion of *at* or *som* under extraction of a *wh*-subject is not fully understood, but, as noted above, we assume that there exists some pragmatic preponderance of marking the boundary of the embedded clause. As such, the trigger relates to the (embedded) C, not to T (or Fin), and it is the property of the C-licensing element that is important. In dialectal Norwegian and idiolectal Faroese the grammar then offers an item (*som*/*ið*) which can both license C and facilitate the interpretation of the moved *wh*-subject, and this item is therefore chosen over *at*.

Further detailed motivation for this story needs to be worked out, in particular concerning what role the resumptive nature of *som* and *ið* plays. Furthermore, the reason why dialectal Norwegian *som* and idiolectal Faroese *ið* have developed their C-licensing capacity may appear rather mysterious, but as hinted at in Westergaard, Vangsnes & Lohndal (2017)(regarding *som*) it can be seen as a natural development on a grammaticalization cline whereby *som,* over time, starting out as a comparative marker, has extended its use to functions associated with higher parts of the clausal spine.[5] A next step on the cline, argued for by Westergaard, Vangsnes & Lohndal (2017) is the capacity of (dialectal) Norwegian *som* to license matrix C in subject *wh*-questions as in (22), cf. Nordgård's Condition above.

(22) **Norwegian**
      Kem   som   gjorde   det?
      who *SOM* did   it
      'Who did it?'

This approach underscores the unidirectional nature of Nordgård's Condition: the existence of varieties that allow *som*-insertion (and similar) under extraction of a *wh*-subject but not non-V2 in matrix *wh*-questions

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5   See also Brandner (2017) and Brandner & Bräuning (2013) for similar ideas regarding
    (dialectal) German *wo*.

is expected as they represent a particular stage in the grammaticalization process. "Idiolectal Faroese" would be a case in point. However, on the present account, Danish and Western Jutlandic represent a typologically different variety, as the morphosyntactic status of *der/dæ* is different from that of *som/ið*.

6. Conclusion

In this paper we have looked at COMP trace effects across varieties of North Germanic, i.e. cases where an element appears in the left periphery of the embedded clause when an embedded *wh*-subject is moved to the left periphery of the matrix clause. Using the questionnaire data available in the Nordic Syntax Database we have seen that, in some areas of Norway (Eastern) and Sweden, insertion of the complementizer *at(t)* is accepted by the participating speakers, whereas, in a largely non-overlapping area in Norway (Northern, Central, Western), the item *som* is accepted by a large number of the participants. Crucially, all speakers, including those who allow the insertion of a left peripheral element, accept versions of the test sentence with no element, which is an important observation pointing to the fact that the COMP trace structure is optional. In addition to the Norwegian and Swedish speakers, we also saw that some speakers of Faroese allow the insertion of the item *ið* in corresponding cases. We also discussed Western Jutlandic and Danish which appears to allow the item *dæ/der* under extraction of a *wh*-subject.

The analysis developed builds on the observation that COMP insertion is optional: Sometimes, for some speakers, a need to mark the left edge of the embedded clause is prompted, and that leads to the insertion of a COMP element. Furthermore, we pointed out that whereas *at* can cooccur with *der* in Danish, co-occurrence between *at* and *som* (Norwegian) and *ið* (Faroese) is not possible. Given a basic C-Fin-T(-v-V) structure we argued that the incompatibility between *at* and *som/ið* is an effect of the latter two being merged in T and moved to C via Fin in dialectal Norwegian and idiolectal Faroese: when the left edge of the embedded clause is explicitly marked *som/ið* are preferred over *at* in these varieties. The association with Fin for these elements relates to their use as relative markers and their association with C relates to a presumed grammaticalization path. Whereas *at*, *som*, and *ið* all are complementizers and hence heads, Danish *der* is argued to be an XP merged in Spec-T, and like *som* and *ið* it is a relative marker which resumes the moved *wh*-subject. Since *der* does not move, *at*

may be merged in C to mark the left edge of the embedded clause.

  Further details concerning COMP trace effects in North Germanic await elaboration, both when it comes to empirical facts and theoretical treatment. Unveiling further details about Faroese *ið*-insertion would be interesting, and a systematic investigation of the phenomenon across varieties of Danish appears particularly desirable, as it would add potentially valuable comparative data given that the element involved (*der*), at least on the present account, has a different status compared to the elements used in other varieties of North Germanic.

Online resources
The Nordic Syntax Database: https://tekstlab.uio.no/nsd.
Sprotin (Faroese online dictionary): https://sprotin.fo/dictionaries.

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Constructionist OT. The case of German verb inflection[1]

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Abstract

I explore the properties of a variant of OT morpho-syntax that is based on the standard OT mechanism of markedness/faithfulness interaction. For this variant to play out successfully, the idea of universally specified input structures is given up. Instead, language particular input structures are used, as it is generally assumed that there can only be language particular lexicons, not universal ones. For the description of these input structures, a constructionist representation is proposed. The core idea of this approach is that a construction consists in a set of components, both on the form and the meaning side. These components, in fact, are constraints on the form of linguistic expressions that are instances of the respective constructions. Morphological faithfulness, then, is the fulfilment of these component constraints. As it turns out in my exemplary analysis of inflectional patterns in the present tense singular forms of German verbs, the assumption that faithfulness to components is violable leads to a simpler grammatical analysis that avoids the assumption of inflectional subclasses with differing, but regular and predictable patterns. The basic mechanism is an OT-style interaction of phonological and morphological faithfulness.

1. Faithfulness in OT syntax

I got involved with optimality theoretic syntax about 20 years ago when I joined the OT Syntax project on German and the Germanic languages, headed by Sten Vikner and Gereon Müller at the University of Stuttgart. In those days, I shared with Sten Vikner a certain affinity for an approach to OT syntax in terms of markedness/faithfulness interaction, as it had been developed for phonology by the founding fathers of OT (Prince & Smolensky 2004). The guiding idea that faithfulness and markedness are competing forces, where faithfulness has the role of preserving contrasts in form and thus ensuring the expressive power of a language, should be applicable not only to phonology, but also to morpho-syntax. While research in this direction has produced some results[2], the approach has never gained the popularity that would have been necessary to keep it alive and growing. However, as (Müller 2015) analysed, this holds of OT syntax as an own independent branch of theoretical syntax in general. To my mind, one of the reasons is that constraint conflict is not a core characteristic of syntactic rule systems – in this, I perhaps disagree with (Müller 2015). Here is why I think so: Syntax as an empirical domain is characterised by the interaction of a rich array of diverse factors which can potentially conflict. This has long been recognised and is therefore appropriately reflected in most theories and formal models of syntax. But also, the morpho-syntactic patterns that have historically arisen in individual languages, their phrase structure rules, constructions etc., can be seen as already optimal solutions to these conflicts. From such a constructionist perspective, it would be misleading to analyse as constraint violation the fact that a sentence instantiates some construction A rather than construction B.

To give an example: in the case of an English object question, e.g. *What did Mary say?*, one might argue in an OT account that the fronted *wh*-pronoun violates some constraint of the English grammar, as it does not occupy its *in situ* position. In a constructionist account, one could simply assume that this observation was irrelevant, because there is no principled reason to require that *wh*-items in *wh*-questions may fulfil constraints that hold for other clause types, in particular declarative clauses, or constraints that hold for *wh*-clauses in other languages. Given such analytical opportunities in syntactic theory, the claim of the ubiquity of constraint

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[2] Early papers are Keer & Baković (1999) and Legendre, Smolensky & Wilson (1998). Under the correspondence-theoretic interpretation of faithfulness we can summarise work in LFG-OT (Sells 2001a; Sells 2001b; Kuhn 2003). My own contributions in this line are Vogel (2001; 2002; 2004; 2009). For a critical view, see Heck et al. (2002).

conflict in morpho-syntax is to a high degree theory-dependent. This made it difficult to provide a knockdown argument in favour of OT syntax. Still, it has also been recognised in non-OT frameworks that there are syntactic phenomena for which the assumption of constraint violation is unavoidable. For this reason, most non-OT models also incorporate elements that have the flavour of OT-style solutions. So, we may conclude that OT has indeed found its niche in theoretical syntax, as a toolbox for the solution of a particular type of not so central, but still relevant, problems.

Be this as it may. While I do think that the field has been missing a chance here, there is, to my mind, a deeper reason why the standard OT approach to morpho-syntax has its limits. Standard OT has been developed in phonology. A core principle is *richness of the base* – the idea that no language particular input structures should be postulated. It enables us to model the typology of a particular linguistic phenomenon based on OT models of individual grammars. The introductory literature on OT is full of textbook examples of factorial typologies for a broad range of phonological phenomena. The possibility to calculate factorial typologies is a crucial, and very persuasive, advantage of OT. For the phonological lexicon in OT phonology one can reasonably use the same idealised universal segmental inventory for all languages, a finite set as for instance represented by the IPA.

In morpho-syntax, such an approach is not feasible, because no such universal set (i.e. lexicon) can be identified. Consider syntactic categories like the *noun phrase*. Perhaps, we can identify in most, if not all languages a category that we are inclined to call "noun phrase". But those language particular noun phrase categories will differ in all kinds of details. Because of this, the typological notion of noun phrase is more like a *family of phenomena from individual languages* that are sufficiently similar to be identified as noun phrases, but they cannot be assumed to be identical in the same way as we assume that all speakers of all languages articulate e.g. the segment [p] in the same way.[3]

Let me give a further example: English (1a,b) and German (1c,d) both inflect finite verbs (of all tenses, moods and aspects) for the categories person and number. Both languages distinguish three persons and two numbers (sg, pl). Do they, then, have the *same* inflectional categories for finite verbs? The answer might be "yes", when only minimal sentences

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[3] Or, more precisely, we do not assume that inter-speaker variance between languages is larger than within languages in this case.

with pronominal subjects are considered. For instance, the 3rd person plural subject pronoun is incompatible with the 3rd person singular finite verb in both languages, and vice versa:

(1) a.   He sings. They sing.
    b.   *He sing. *They sings.
    c.   Er singt. Sie singen.
    d.   *Er singen. *Sie singt. (for *Sie* = plural)

But there also are differences. The Cambridge grammar of the English language lists a number of interesting complications for subject-verb agreement in English (Huddleston & Pullum 2002:499–510). Some of these do not translate to German with the equivalent verb forms. Here is one example:

(2) a.   **English**   (Huddleston & Pullum 2002: 501)
         (i)   The committee has   not yet come to a decision.
         (ii) The committee have not yet come to a decision.

    b.   **German**
         (i)   Das Kommitee hat   noch keine Entscheidung
               the committee have-3SG *yet   no   decision*

               getroffen.
               make-PRF.PTCP

         (ii) *Das Kommitee haben   noch keine Entscheidun
               the committee   have-3PL *yet   no   decision*

               getroffen.
               make-PRF.PTCP

Nouns like *committee* that are morpho-syntactically singular but semantically plural can be combined with finite verbs in singular or plural. The choice of verbal agreement morphology can thus be guided by semantic criteria in English, while this is obviously impossible in German, at least in cases like these. German here sticks to morpho-syntactic properties of the subject noun phrase.

It is clear from such contrasts that the division of labour between singular and plural forms of finite verbs is different in German and English.

Therefore, there must also be a difference in whatever one may assume to be the meaning of the exponents of those singular and plural forms. For both languages, one may postulate the finite verb forms to have [pl] or [sg] features. But, this would only foster the illusion that these features have the same usage. It would then perhaps be better to avoid language-neutral categories and features, and talk only about the English or German plural. For the typologist, on the other hand, it might be more instructive to consider only clear cases, such as sentences with pronominal subjects. Differences in detail like those illustrated in (2) will then be cleared from the picture, assuming that more contrasts in detail will show up with more languages considered, while there still will be a stable core as exemplified by sentences with pronominal subjects.

In describing the typology of verbal number or the noun phrase within OT, we might wish to skip those idiosyncratic aspects for the same reason. This comes with the price that we cannot ensure that the same constraint system that describes the typology of the "universal" singular/plural distinction or the "universal" noun phrase family category is, in a particular ranking, a *descriptively adequate* account of the noun phrase of a particular language.[4] Haspelmath (2007) has argued for such a view on morpho-syntax in some detail. While I agree with his statement of the problem, I disagree with his conclusion that a typology of morpho-syntactic categories is impossible or useless. As indicated, such categories still are useful, understood as families of similar phenomena from different languages. I do agree with Haspelmath's assessment that, because of this gap between vaguely defined "universal" family categories and precisely describable language particular members of those family categories, doing typological analysis and modelling individual grammars are, in principle, *unrelated tasks* that have to be seen as independent from each other.[5]

The reviewer of this paper objects that while this description might be correct, syntactic categories are not assumed to be universal anyway. Rather, they are analysed as bundles of features where the values of these features and maybe even their presence varies between languages. Still, those features are universal features. I don't think that this really counters

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[4] One way to react to this is to assume a division of labour between universal and language particular aspects, where the latter are presupposed by the former. For instance, in my work on the typology of case conflicts in free relative constructions (Vogel 2001; Vogel 2002), one constraint is formulated as the requirement to respect the language particular case hierarchy.

[5] Whereas grammatical analysis of a particular language is true linguistic analysis, syntactic typology is then almost by necessity a kind of meta-linguistic enterprise.

my objection, simply for the reason that a focus on features wouldn't change the empirical situation. Feature systems need to be stipulated. A descriptively adequate feature system will be quite rich, therefore have little explanatory value and merely reformulate observations about contrasts between languages in a pseudo-formalistic way. A smaller inventory will face the same problems as the idea of universal syntactic categories: it will be vaguer and it will not be able to account for the full range of details to be found in individual languages.

I want to stress that the situation is partially different in phonology. Consider the category of the syllable: there are differences between languages as to the available options of syllable size, syllable-related phonotactics etc., but the universal notion of the syllable is neither vaguer, nor more abstract than any language particular notion of the syllable. The same is true of the segment and segmental inventories. The basis of their analysis are phonological features that are grounded in the articulatory gestures that are used to produce them. These are the same for all speakers of all languages. The range of variation for segmental inventories of languages is comparatively limited. With larger prosodic categories, things get similarly vague as in morpho-syntax, however. Consider the variety of phonetic properties that may constitute what counts as foot, phonological word, phonological phrase, intonation phrase etc. in different languages.

In morphology and syntax, function and meaning come into play. This, together with the arbitrary nature of the form-function connection, provides a tremendously larger range of possibilities for linguistic systems. The general amount of variation in grammatical inventories of languages therefore is much larger than we find it for segmental inventories, in fact unforeseeably large. The assumption of a universal inventory of grammatical units to describe their typology is for this reason no promising line to follow. So, the lexicon from which the input is to be picked in OT morpho-syntax can only be the lexicon of a single language. It thus differs from language to language.

The degrees of freedom for (contrasts between) lexical items within and between languages are enormous. The area of grammar with perhaps the most extreme idiosyncrasies is inflectional morphology – first of all with respect to the form contrasts that can be used to indicate contrasts in inflectional categories, but also with respect to those categories themselves. The most opaque aspect of inflection, from a synchronic and typological perspective, is inflection classes (see below). They are perhaps the clearest case of arbitrary, non-universal, morpho-syntactic properties which play a

crucial role in the grammars of their languages. Consequently, the natural place where information about inflectional patterns is represented in an OT account should be the input, rather than the constraint set, contrary to much of the common practice. One example is the discussion of German plural noun inflection by Golston & Wiese (1996) who postulated the following (universal) constraints:

Son_{pl}

Son$_\text{pl}$

Plurals end in a sonorant.

Non-finality

Inflected words do not end in a stressed syllable.

The first constraint is not even generally relevant in German. While it is true that plural noun inflection for most inflection classes leads to words that end in a sonorant, there is one class, which is not dominant but quite productive, that does not follow this pattern, because it uses 's' as suffixal plural marker, just as in English from which it has been borrowed. Likewise, the s-plural class is an exception to the second constraint, as plurals of this class may be stressed on the final syllable (often they are monosyllabic). Crucially, whether these two constraints are violated by some item is determined by its inflection class. Instead of postulating them as violable constraints, it would be more accurate to assume that they are inviolable constraints for most nominal inflection classes in German, absent for the class with *s*-plurals – and of course absent from most other languages.

Furthermore, some paradigms of verbal inflection obey Non-finality without exception, like the two subjunctives, but neither in the present tense paradigms (of all inflection classes), nor in the past tense paradigm of the so-called strong inflection class is this constraint generally obeyed. So there are systematic exceptions to these constraints that are motivated not by other universal constraints, but by the systematic, but language particular dimension of *inflection class*.[6] Both constraints describe a particular form-function association. Under the assumption of Saussurean arbitrariness, the relation of form and meaning is free in the sense that

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[6] Imagine a "universal" OT constraint on inflection classes that conflicts with SON]_{PL} or NON-FINALITY, e.g. "items of inflection class 5 end in an obstruent". Such a constraint would presuppose the existence of "inflection class 5", whatever that means, in every language. Alternatively, imagine a "universal" constraint that states that nouns of the main German inflection classes have their plurals end in a sonorant.

language communities may arbitrarily choose their means of inflection, what these means express and how they are used (or even whether they inflect at all). Saussurean arbitrariness is thus in plain contradiction with universal constraints like those above.[7] For all these reasons, I assume that the language particular lexicon is a much better starting point for an OT account of such inflectional regularities. Non-finality and final sonority are properties of particular inflection classes and paradigms in German inflection. Their place in an OT analysis should be the input of the OT competition, just as it is the case with inflectional endings which likewise are specified for particular paradigms, paradigm cells and inflection classes. As part of the input, however, these specifications are subject to (violable, ranked, and universal) *faithfulness* constraints. This is the strategy that I pursue here.

The two constraints from Golston & Wiese (1996) are only a random choice for illustration purposes. Many OT analyses of this kind have been developed. The different approach that I want to propose is exemplified on another phenomenon from German inflection which I present in the next section.

2. Palatalisation in German verb inflection

For the description of German inflection, a simple item-and-arrangement approach, following the classification by (Hockett 1954), is not suitable, because often two stem changes occur, affixation and vowel change, which are phonologically independent, but sometimes morphologically dependent. A case of this latter kind will be discussed here.[8]

Verbs in modern standard German (MSG) are inflected for three persons (speaker, addressee, third) and two numbers (singular, plural).[9] The endings for present tense are as shown in Table 1:

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[7]   While it is true that iconicity weakens arbitrariness, as the reviewer also remarks, the particular cases under discussion can hardly serve as examples of iconicity. There simply is no "natural", i.e. non-conventional connection between the semantic concept of plurality and the phonological concept of sonority.

[8]   Of course, as suggested by the reviewer, a non-simple item-and-arrangement approach is possible, where those two stem changes are packed into one abstract morpheme.

[9]   In all paradigms apart from present tense singular, 1st and 3rd person are homophonous, so that it is also an option to assume only one person distinction (non-addressee vs. addressee) and treat present tense singular as exceptional. A deeper discussion of this idea lies beyond the purpose of this paper.

person	SG	PL
1	-(e)	
3	-(e)t	
2	-st	-(e)t

Table 1: Person/number endings in MSG verb inflection, present tense

Because of the use of the same *-(e)t*-ending, syncretism occurs between 3SG and 2PL, but not in all cases (see below). The 1SG ending, an e-schwa, is optional, so that the bare stem also counts as exponent of 1SG in present tense.[10] These endings are the same for all verbs.[11] The shapes of these endings have remained quite constant over the last 1000 years. Paul et al. (2007: 241) provide the forms in Table 2 for the Old High German (OHG) and Middle High German (MHG) periods, for the present tense indicative forms of the verb *nehmen* 'take' (from the so-called *strong* verb class).[12] The forms show alternations in both stem vowels and endings – which is quite typical of German morphology in older stages. Leaving stem vowel changes aside for now, there are two kinds of changes in the endings: i) vowel reduction to schwa and further to zero; ii) in the consonantal endings, there is both reduction (3PL) and enrichment (2SG). Both are regularly occurring processes in the development of grammatical markers.

number	person	OHG	MHG	MSG
sg	1	nimu	nime	nehm(e)
	2	nimis(t)	nimest	nimmst
	3	nimit	nimet	nimmt
pl	1	nëmēm, -en, (-amēs)	nëmen	nehmen
	2	nëmet	nëmet	nehmt
	3	nëmant	nëment	nehmen

Table 2: Present tense indicative forms of nehmen 'take', strong verb class, in MHG and OHG, after Paul et al. (2007:241), and MSG

[10] The reviewer objects to a lack of a theory of syncretism in this paper. Indeed, I do not think that synchronic syncretism usually has deeper functional motivations. Syncretism is generally the result of phonetic reduction, as described below. This is mostly sufficient to explain syncretism and avoids the stipulation of misleading teleologies in diachronic change.

[11] With a few idiosyncratic exceptions.

[12] OHG is dated from 750 AD to 1050 AD, the subsequent MHG period lasts till 1350.

	[laχ(ə)]	[laχt]	[laχst]	'laugh'
strong A	<schlafe>	<schläft>	<schläfst>	*schlafen*

On the one hand, we have phonetic reduction of unstressed inflectional endings, leading here to syncretism of 1PL and 3PL in MSG. This is simply an effect of articulatory economy. The extension of the 2SG ending from -*s* to -*st* during the OHG period appears to be uneconomical. It results from the cliticisation of the 2SG pronoun *tu* 'you' on the verb, followed by reanalysis as part of the inflectional ending (Braune & Heidermanns 2018: 357). Even this process is a case of reduction, but at the prosodic level: the pronoun loses prosodic word status when reanalysed as enclitic to the preceding verb. The enrichment of the inflectional ending is the consequence of this prosodic reduction.

Apart from a small number of special cases, the German verbs belong to one of two groups. The first one is the so-called *strong* class. It uses ablaut for past tense stems and perfective participle formation. The perfective participle has an -*(e)n* ending. This class is the older class containing about 170 simplex verbs in MSG (Duden 2016: 458). The class is closed and loses members occasionally. It is stabilised by the high frequency of use of its remaining members. The ablaut patterns are quite diverse. Some verbs even have idiosyncratic ablaut patterns. The *Duden* reference grammar sorts 160 of these verbs into 23 distinct patterns (Duden 2016: 460–63).[13] The second inflectional class is the so-called *weak* verbs. Vowel changes are not used in this class. It is open and highly productive. It uses a -*(e)t*-suffix on the stem in past tense. The perfective participle is also formed with a -*(e)t* ending.

For the strong verbs, a vowel change occurs systematically in 2SG and 3SG present tense in MSG. In OHG and MHG, it also occurred in the 1SG forms. Three different regular patterns are observed. They are exemplified in Table 3.[14] In contrast to umlaut phenomena in the nominal domain of German inflection (e.g. in plurals like *Vogel* – *Vögel* 'bird(s)') where only fronting occurs, the vowel change here includes raising. To differentiate this umlaut phenomenon from mere fronting, I am using the term *palatalisation*.[15] Type C exemplifies the target structure with an underlying front high stem vowel. It is expected that no change occurs for such verbs.

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[13] While there are attempts of systematising the remaining regularities in these patterns, e.g. Wiese (2008), it is undisputed that the class is in a process of erosion.

[14] Angled and square brackets signal orthographic and phonetic output forms, respectively.

[15] The notion 'palatalisation' is occasionally used to refer to phonological processes where the back of the tongue is moved closer to the hard palate. Such processes usually involve both raising and fronting. This also happens in our case. Nübling (2001) prefers the notion 'Wechselflexion' *changing inflection* which was introduced in earlier literature on this phenomenon – I avoid it here because of its vagueness.

A non-front vowel is only fronted, as in nominal umlaut (strong A), but a non-high front vowel is raised (strong B).[16]

verb class	1SG.PRS	3SG.PRS	2SG.PRS	
weak	<lache>	<lacht>	<lachst>	*lachen*
	[laχ(ə)]	[laχt]	[laχst]	'laugh'
strong A	<schlafe>	<schläft>	<schläfst>	*schlafen*
	[ʃlaːf(ə)]	[ʃlɛːft]	[ʃlɛːfst]	'sleep'
strong B	<helfe>	<hilft>	<hilfst>	*helfen*
	[hɛlf(ə)]	[hɪlft]	[hɪlfst]	'help'
strong C	<ziehe>	<zieht>	<ziehst>	*ziehen*
	[tsiː(ə)]	[tsiːt]	[tsiːst]	'pull'

Table 3: Four classes of German verbs, singular present tense forms

As can be seen in Table 2, the vowel change originally also involved the 1SG form. Umlaut was a phonological process, a rule of vowel harmony triggered by the vowel 'i' in the suffix.[17] With the reduction of the vowels in the suffixes, this phonological motivation got lost, but the palatalisation of the stem vowel remained, apart from the 1SG form, and became morphologised.

It is possible to describe the chain shift that we find here with the same rule, and thus avoid a split of the inflection class, if we assume violable constraints. My OT account uses the following constraints:

Morphological Faithfulness (MFaith)
Morphological requirements are obeyed. (To be detailed below)

Ident(front)
Corresponding segments in input and output have identical values for the feature [±front].

Ident(high)
Corresponding segments in input and output have identical values for the feature [±high].

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[16] A few strong verbs are exceptional in that they show no vowel change, although their stem vowel is not a front high vowel. These are not covered here.

[17] Note the coincidence that the 1SG form that lost the vowel change also lacks an *-i-* in the suffix already in OHG, where we have only a suffixed *-u*.

Ident(front)&$_{seg}$ Ident(high)
No simultaneous violation of Ident(front) and Ident(high) by the same
segment.

Let us assume that MFaith is only fulfilled by front high vowels in our ex-
amples. The combinations [+front,–high] and [–front,+high] yield one vio-
lation of MFaith, and [–front,–high] yields two violations. The constraint
ranking that derives the facts in Table 3, then, is the one in (3).

(3)   Ident(front)&$_{seg}$ Ident(high) » MFaith » Ident(high) » Ident(front)

The top rank of Ident(front)&$_{seg}$ Ident(high) rules out the a → i shift, to
the effect that only one of the stem vowel's features may be changed. The
ranking Ident(high) » Ident(front) gives preference to fronting (a → ɛ, o
→ ø), ensuring that raising only occurs with underlying front vowels (ɛ →
ɪ, e → i).
Thus, in order to keep the strong verb class as one class, it is necessary to
assume violable constraints[18].

    How are violations of MFaith counted? I assume that each cell in an
inflectional paradigm of an inflection class is defined by a *list of constraints*
on the forms for that cell. In (4), this is exemplified with the 3sɢ cell of the
present tense paradigm for the strong verb class.

(4)   *3sɢ cell, present tense paradigm, strong verbs*
       Category: prosodic word

       a.   (stem…)$_{pwd}$
       b.   (… t)$_{pwd}$
       c.   stem vowel: [+front]
       d.   stem vowel: [+high]
       (to be revised)

This is akin to a *constructionist* view on morpho-syntax as described by
Lakoff (1987: 467): "Each construction will be a form-meaning pair (F,M),

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[18] This contradicts an aspect of the account by (Neef 1996), whose morphological analysis
    (labelled "word design") I follow here by and large – especially in section 4 – but who
    claims that such an account of German inflection does not need violable constraints.
    The price for non-violability would be a split of the strong verb class into three classes
    along the patterns illustrated in Table 3. This split would be unmotivated because of the
    predictability of sub-class membership from the stem vowel.

where F is a *set of conditions on syntactic and phonological form* and M is a set of conditions on meaning and use." (Emphasis mine, RV) I will therefore use the term *construction* for lists like (4) and call every element of such a list a *component* of the construction.[19]

How do we discriminate the components? In particular, why don't we collapse (4c,d) into one component consisting of the feature bundle [+front, +high]? The answer is that this is an empirical issue. There must be two components, because one feature may occur without the other in grammatical forms.[20] The feature bundle option would lead to a different outcome. Such an outcome can in fact be observed in another case where a vowel change with the same target structure occurs, but with a different distribution. It is the singular imperative forms of strong verbs. The patterns are exemplified for our four types of verbs in Table 4

verb class	1SGPRS	3SGPRS	SGIMP	
weak	\<lache\>	\<lacht\>	\<lache\>	*lachen*
	[laχ(ə)]	[laχt]	[laχ(ə)]	'laugh'
strong A	\<schlafe\>	\<schläft\>	\<schlafe\>	*schlafen*
	[ʃlaːf(ə)]	[ʃlɛːft]	[ʃlaːf(ə)]	'sleep'
strong B	\<helfe\>	\<hilft\>	\<hilf\>	*helfen*
	[hɛlf(ə)]	[hɪlft]	[hɪlf]	'help'
strong C	\<ziehe\>	\<zieht\>	\<ziehe\>	*ziehen*
	[tsiː(ə)]	[tsiːt]	[tsiː(ə)]	'pull'

Table 4: Four types of German verbs, 1SGPRS, 3SGPRS and SGIMP forms

Only the B group of the strong verbs shows palatalisation here. It does not occur with group A. The reason for this could be that partial realisation of palatalisation is not rewarded in this case. This is expected if the two features are bundled in one construction component, as illustrated in (5).

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[19] I indeed assume that the syntactic inventory of a language can be described in the same way. So what is developed here is a more general model of a *constructionist OT syntax*, in continuation of some of my earlier work (Vogel 2016).

[20] I thus assume that components are non-gradient constraints. They can only be fulfilled or violated, and they are fulfilled, only when they are fulfilled in toto. Candidates with [+front,–high] or [–front,–high] both incur just one violation of MFaith for the component requiring [+front,+high], although the latter differs more from the target structure than the former.

(5)   *SG cell, imperative paradigm, strong verbs*
      Category: prosodic word

    a. (stem …)$_{pwd}$
    b. stem vowel: [+front,+high]
    (to be revised)

Only front high stem vowels avoid a violation of MFaith for (5c). As for group A, the a → i shift that would be necessary to fulfil (5c) requires that two features of the stem vowel have to be changed. This would lead to a violation of the highest ranked Ident(front)&$_{seg}$ Ident(high). Thus, the strong A group is correctly predicted to pattern with the groups without vowel change. Group B has vowel change, because only one feature change is necessary: [–high] → [+high], and this is preferred by the sub-ranking MFaith » Ident(high).

3. Anti-syncretism

As illustrated in Table 4, there are optional schwa-endings for both 1SGPRS and SGIMP. These are not included in (2) and (5). Interestingly, schwa may optionally occur, but for the imperatives only when they have no vowel change. It is ruled out for SG.IMP of the B group (*hilf/*hilfe mir!*, 'help me!'). So schwa only occurs in the imperative endings of a subset of the strong verbs. If we want to avoid a split of the class, we cannot assume that this schwa is a person ending. But what is its function then? And why is it only an option for verbs without vowel change?

    What the vowel change brings about is a change on the stem. If schwa is not allowed in this case, this may be because it has just that function: bringing about a form contrast to the uninflected bare stem. Without the vowel change, suffixing the epenthetic vowel [ə] is the cheapest way to achieve a different form. So, for those cases where schwa occurs, we need a further construction component which requires *anti-syncretism* with the uninflected base form of the stem.[21] This is illustrated in (6).[22]

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[21] Stems may change due to other phonological processes, for instance final devoicing. For this sometimes hypothetical *surface form of the uninflected stem*, which is the relevant form here, I am using the notion "base form". In our case, the base form is identical to the 1SG.PRS and SG.IMP forms without schwa ending or vowel change.

[22] The reviewer suggests that anti-syncretism with respect to the base form could be formulated as a global OT constraint rather than as a component of a cell's description. This would pose complications for the 1SG and the SG.IMP cell which can be syncretic to the bare stem. Furthermore, syncretism is a natural by-product of regular sound change processes like the phonetic reduction of inflectional endings, and it occurs quite frequently. The assumption that cases where syncretism is blocked are exceptional and therefore need to be encoded in the lexicon, as is done here, seems therefore more plausible to me.

(6) SG.IMP *cell, strong verb paradigm*
Category: prosodic word

   a. (stem …)$_{pwd}$
   b. stem vowel: [+front,+high]
   c. ≠ base form

As the schwa ending is optional, we have a situation of free variation. Thus, the lists in (5) and (6) are two, currently available but competing, alternatives. The same holds for the schwa endings in the 1SG.PRS forms (see Table 4). Schwa epenthesis is avoided where possible. It is thus subject to the (low ranked) violable faithfulness constraint Dep (McCarthy & Prince 1995)

Dep
Do no epenthesis

Anti-syncretism also plays a role in the phenomenon to be discussed next.

verb class	1	P	3	P	S	I
weak	\<lache\> [laχ(ə)]	\<lacht\> [laxt]	\<lache\> [laχ(ə)]	*lachen* 'laugh'		
strong A	\<schlafe\>	\<schläft\>	\<schlafe\>	*schlafen*		
strong B	\<helfe\>	\<hilft\>	\<hilf\>	*helfen* 'help'		
strong C	\<ziehe\>	\<zieht\>	\<zieh\>	*ziehen*		

4. Interplay of vowel change, suffixing and anti-syncretism

Syncretism occurs regularly in present tense paradigms of German verbs. For example, the plosive [t] figures in the 2SG (= "-st"), 3SG (= "-t") and 2PL (= "-t") endings. It is also the ending of imperative plural forms. This leads to form identity of those four cells when the stem ends in [s], as with *reisen* 'travel', illustrated in Table 5. Because of this situation, it would be implausible to assume a general ban on syncretism in verbal inflection. Those cases, where it is indeed blocked, are special cases. The most important anti-syncretism requirement seems to be in relation to the base form.

pers.	SG	PL
1	[RaIs]/[RaI.zə]	[RaI.zn]
3	[RaIst]	[RaI.zn]
2	[RaIst]	[RaIst]
imp.	[RaIs]/[RaI.zə]	[RaIst]

Table 5: Present tense and imperative paradigm of German *reisen* 'travel'

Let us next consider a verb with vowel change whose stem ends in "-t", *halten* 'hold' (Table 6).

pers.		
2	[hɛltst]	[haltət]

pers.	SG	PL
1	[halt(ə)]	[haltn]
3	[hɛlt]	[haltn]
2	[hɛltst]	[haltət]
imp	[halt(ə)]	[haltət]

Table 6: Present tense and imperative paradigm of German *halten* 'hold'

The most interesting cell in Table is 3SG. Why do we have [hɛlt] rather than [haltət]? Obviously, the final [t] of the stem is sufficient to fulfil the ending component of the cell's definition. Considering this, it seems in fact to be misleading to call these endings 'suffixes'. The more accurate description is in terms of constraints on surface forms, as carried out here.[23] The word has to end in "-t", but it doesn't matter how this comes about. If the stem ends in "-t", this could be sufficient. But why is the 2PL form [haltət], rather than [halt]? The reason is, as above, that the latter form would be syncretic to the base form. It is the minimal word form that ends in "-t" and differs from the base form. The problem does not arise for 3SG because of the vowel change, so no additional "-t" ending needs to be attached. Attaching material like the "-et" ending in *haltet* is subject to Dep, in the same way as schwa insertion is in the cases discussed above. The ending itself therefore cannot directly be part of the input – only in the form of constraints on the output form as proposed here. The partial constraint ranking in (7) follows from these considerations.

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[23] This is the reason why I am using the notion "ending" rather than "suffix" throughout the paper. Again, such a view on German morphology is not new; see for instance Neef's (1996) theory of "word design". This line of morphological theory can be classified as an amorphous version of a word-and-paradigm model, as currently proposed for instance by Blevins (2016). It has older roots, for instance in Anderson's (1992) "a-morphous morphology", and, more generally, in word-and-paradigm morphology (Robins 1959). The reviewer seems to consider this argument in favour of W&P morphology not to be that forceful. Crucially, in a W&P approach the content of a cell may be dependent on other cells' contents. This would be the case if anti-syncretism was required with respect to the 1SG form. A more forceful argument in favour of W&P is given in Section 5.

(7) MFaith » Dep

The final definition of the 3sg.prs cell of strong verbs is then as in (8).

(8)   *3SG present tense cell, strong verb paradigm*
      Category: prosodic word
      a.   (stem …)$_{pwd}$
      b.   (… t)$_{pwd}$
      c.   stem vowel: [+front]
      d.   stem vowel: [+high]
      e.   ≠ base form

Together with the constraint system for the vowel change we get the ranking in (9).

(9) Ident(front)&$_{seg}$ Ident(high) » MFaith » Ident(high) » Ident(front) » Dep

The ranking summarises the results we have arrived at. The lowest rank of Dep can be motivated with the derivation of *haltet*, illustrated in Table 7.

halt|2PL.PRS	Id(high) &$_{seg}$ Id(front)	MFaith	Id(high)	Id(front)	Dep
⟹ [haltət]					**
[hɛlt]				*!	
[halt]		*!			
[hɛltət]				*!	**

Table 7: Derivation of *haltet* for *halten* 'hold', 2PL.PRS

Dep is crucially ranked below Ident(front), because otherwise a form with a seemingly unmotivated vowel change like [hɛlt] would be optimal, as Table 7 indicates. There are infinitely many potential alternatives to epenthesis as a means for avoiding syncretism with the base form. Dep must therefore be ranked very low in order to derive the status of epenthesis as default repair mechanism. The derivation of *hält* for 3SG, present tense, is illustrated in Table 8, which summarises the results of our discussion.

halt|2PL.PRS	Id(high) &$_{seg}$ Id(front)	MFaith	Id(high)	Id(front)	Dep
⇒ [hɛlt]		*		*	
[halt]		**!*			
[hɪlt]	*!		*	*	
[hʊlt]		*	*!		
[haltət]		**!			**
[hɛltət]		*		*	*!*

Table 8: Derivation of *hält* for *halten* 'hold', 3SG.PRS

The reviewer suggests an alternative treatment of these phenomena in terms of morphological features and exponents, as in distributed morphology. Such an account has been developed by (Müller 2006), though not with respect to the interaction analysed above. I see the W&P account developed here as complementary to a feature-based analysis. All necessary information is provided in the paradigm. However, I have no principal reservations against describing the "meaning" or function of an inflectional form in terms of features. Nevertheless, it is totally sufficient to understand cell labels like 3SG as shorthand for the sets of syntactic contexts in which the respective inflectional form is used, in particular sets of different kinds of grammatical subjects. These sets can be quite disparate. Recall from the discussion in section 1 that e.g. 3PL denotes different syntactic contexts in German and English. The more these sets look like disjunctive lists, the less attractive would be an attempt to code them into agreement features of the finite verb.

5. Syncretism

We have covered most of the peculiarities of these inflectional forms up to here. But one aspect is still to be discussed. Here, we are concerned with *syncretism requirements*. Verbs whose stems end in *-t* can be found in both the strong and the weak inflection classes. As we learned, those verbs with stem vowel change do not have an *-et* suffix in 3SG.PRS, while the other verbs do. Perhaps somewhat surprisingly, this has consequences for the 2SG.PRS forms. This is illustrated in Table 9.

verb class	3SG.PRS	2SG.PRS	
weak	<rettet>	<rettest>	*retten*
	[ʀɛtət]	[ʀɛtəst]	'save'
strong A	<hält>	<hältst>	*halten*
	[hɛlt]	[hɛltst]	'hold'
strong B	<gilt>	<giltst>	*gelten*
	[gɪlt]	[gɪltst]	'be valid/apply to/rate as'
strong C	<bittet>	<bittest>	*bitten*
	[bɪtət]	[bɪtəst]	'ask for'

Table 9: Four types of German verbs, 3SG.PRS and 2SG.PRS forms

Schwa insertion between stem and *-st* ending in the 2SGPRS forms of the weak and strong C classes seems unmotivated, both from a phonological and a morphological perspective. Its occurrence seems to depend on the 3SG.PRS forms: whenever they have an *-et* ending attached to the stem, the 2SG.PRS forms have an *-est* ending, but in those cases where vowel change takes place, and therefore no ending is attached to the 3SG forms, the 2SG.PRS ending is *-st* without schwa. Put differently, the two forms are required to be equivalent in prosodic terms. Schwa insertion introduces a final schwa syllable. The requirement seems to be that the 2SG.PRS form is like the 3SG.PRS form prosodically. We therefore add this requirement for *prosodic syncretism* to the components for the 2SGPRS forms:[24]:

(10) *2SG present tense cell, strong verb paradigm*
      Category: prosodic word

     a. $(\text{stem} \ldots)_{pwd}$
     b. $(\ldots \text{st})_{pwd}$
     c.   stem vowel: [+front]
     d.   stem vowel: [+high]
     e.   ≠ base form
     f.   prosodically = 3SG cell

---

[24] The assumption of a dependence of the 2SG form on the 3SG form is also the solution proposed by (Neef 1996, 173). More surface-based accounts in terms of general output-output-correspondence, as for instance in (McCarthy 2005), might also be an option. The asymmetrical solution that I present here nevertheless seems to me to have a more solid empirical motivation. This intra-paradigmatic dependency is in my mind a strong argument in favour of the W&P approach pursued here.

The version for the weak verb class only differs from (10) in the omission of the vowel change (10c,d). There is something particularly interesting about schwa insertion that can be noted from our discussion. In the case discussed here, schwa insertion is used to enforce syncretism, while in the cases discussed earlier it is used to enforce anti-syncretism. This corroborates the understanding of the function of schwa proposed here (and by others, see for instance Wiese 1986; 2000) as a phonological repair mechanism that may serve diverse morphological or phonological requirements.

6. Constructionist OT

The main purpose of this exercise is a proof of concept for a constructionist OT account of morpho-syntax. To the extent that this programme can be pursued successfully, there is also a central role for faithfulness constraints. In fact, the analysis presented above uses *only* faithfulness constraints![25] While our example belongs to inflectional morphology, a treatment of syntactic phenomena would be very similar. What changes is the kind of object that is being optimised: phrases and sentences rather than phonological words. But apart from that, syntactic constructions, just like cells in inflectional paradigms, can be characterised as lists of construction components in the same way as illustrated here. Plausible candidates for such lists are subcategorisation frames and phrase structure rules.

   Natural playgrounds for OT analyses are *combinations of constructions*, the typical case in more complex expressions. The components of different constructions in such combinations could easily come into conflict. OT provides the tools to deal with such conflicts in those cases where they do not lead to ungrammaticality. Furthermore, the issue of what counts as a single component will also show up in syntax, for instance in differentiating idiomatic from non-idiomatic verb phrases. Detailed considerations of these issues are beyond the limits of this paper in which I hope to have shown why an OT approach to morpho-syntax that is based on faithfulness still is an attractive and promising route to follow, just as it was in those heydays of OT syntax.

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[25]   To be fair, some issues are swept under the rug. One is that the minimal output fulfilling the components of the 2PL cell for *halten* would be [halt:], because it has only one Dep violation – if lengthening of the final [t] counts as insertion of another [t] segment. This structure is ruled out by an undominated *markedness* constraint *Geminates, because German simply does not (better: no longer since about 1000 years) have geminate consonants.

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The asymmetric nature of V2: Evidence from learner languages[1]

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Abstract

In the field of Germanic linguistics, there has been a long-standing debate as to the question of how to analyze sentences with verb second (V2) word order. In particular, the question has been whether or not subject-initial and non-subject-initial main clause declaratives should receive the same structural analysis. Here we review this debate and provide new evidence from learner languages involving Norwegian. This evidence, we argue, supports an analysis whereby subject-initial main clauses are derived differently than non-subject-initial clauses. We outline this analysis and discuss some consequences.

1. Introduction

The proper syntactic analysis of V2 word order has been an issue of controversy. In particular, considerable attention has been devoted to whether subject-initial and non-subject-initial clauses can be given a uniform analysis, more specifically whether subject-initial declaratives exhibit verb

movement to a left peripheral head in the clause (C). In this paper, we address this debate from a point of view different from that typically found in the literature. We focus on data from various learner populations, mainly involving Norwegian, including L1, L2/Ln, heritage languages, and urban vernaculars. We make use of these Norwegian data to argue in favor of an asymmetric account of V2, which means that, unlike non-subject-initial declaratives, subject-initial declaratives do not display verb movement to C. Furthermore, we argue that V2 is non-parametric and emerges as a conspiracy of several factors. The logic of the proposal is that subject-initial and non-subject-initial declaratives behave differently, and crucially, that this difference is due to the placement of the verb. In this paper, the precise position of the verb is not our main concern, rather the *difference* between the two contexts.

This paper is structured as follows: In Section 2, we discuss some background concerning the symmetric and asymmetric analyses of V2. Section 3 provides a review of relevant data from acquisition and attrition involving Norwegian. We discuss the data and offer concluding remarks in Section 4.

2. Background

In this section, we present some relevant background for the analysis of V2 which will serve as a context for the objectives of the present paper. Section 2.1 outlines the symmetric and asymmetric analyses of V2 and their implications. Section 2.2 provides some evidence in favor of the symmetric analysis for Flemish dialects, while Section 2.3 discusses the possibility that languages and even different constituents may vary in terms of whether or not the analysis of subject- and non-subject-initial declaratives are symmetric or asymmetric.

2.1 Symmetric and asymmetric analyses of V2

As is well-known, the analysis of V2 has been hotly debated in the syntactic literature. The main controversy relates to the question of whether subjects as well as other fronted elements (objects and adverbials) occupy the same structural position or not. In other words, is the subject DP *Jon* in the Norwegian example in (1) situated in the same position as the object DP *ost* 'cheese' in (2)?

(1) **Norwegian**

Jon	spiste	ost.	(subject-initial declarative)
Jon	*ate*	*cheese*	

'John ate cheese.'

(2) **Norwegian**

Ost	spiste	Jon.	(non-subject-initial declarative)
Cheese	*ate*	*Jon*	

'Cheese, John ate.'

Den Besten (1983) as well as Koopman (1984); Holmberg (1986); Taraldsen (1986); Schwartz & Vikner (1989); Weerman (1989); Tomaselli (1990); Shlonsky (1994); Holmberg & Platzack (1995); Vikner (1995); Schwartz & Vikner (1996); Haegeman (1996); Platzack (1998) and van Craenenbroeck & Haegeman (2007) adopt the so-called symmetric analysis, according to which both subjects and non-subjects occupy SpecCP. In embedded clauses, according to this analysis, the subject is located lower in the structure, in SpecIP. In contrast, Travis (1984, 1991) and Zwart (1993, 1997) as well as Rögnvaldsson & Thráinsson (1990); Diesing (1990) and Sells (2001) adopt an analysis, according to which the subject is situated in SpecIP in both main and embedded clauses. This type of analysis of V2 is referred as asymmetric, as non-subjects occupy SpecCP, a position different from that of subject DPs.[2]

The symmetric and asymmetric analyses are based on different derivations for subject-initial and non-subject-initial declaratives. That is, the two contexts differ in terms of verb movement: The verb is positioned lower in subject-initial declaratives compared to non-subject-initial declaratives. A straightforward option is then to associate the difference with verb movement to different domains (Platzack 2001; Grohmann 2003). That would provide the following structures, setting aside potential additional argument-introducing functional projections (see, among many others, Lohndal 2014 and Alexiadou, Anagnostopoulou & Schäfer 2015 for discussion).

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[2] Other alternatives involve a) viewing I and C as form-matching categories, as in e.g., Haider (1988); Müller & Sternefeld (1993); cf. the notion of Coalescence in Hsu (2016); b) remnant movement of the *v*P, as in Müller (2004); see also Nilsen (2003) and c) reprojection in the landing site of the verb, e.g., Fanselow (2001, 2004, 2009), see also Bierwisch (1963); Thiersch (1978); Ackema, Neeleman & Weerman (1993); Koeneman (1995, 2000); Bury (2000).

(3) Subject-initial declaratives:

$[_{CP} [_C C] [_{IP} \text{subject} [_I V] [_{vP} t_{subject} t_V \cdots]]]$

(4) Non-subject-initial declaratives:

$[_{CP} XP [_C V] [_{IP} \text{subject} [_I t_V] [_{vP} t_{subject} t_V \cdots]]]$

In (3), the verb moves from V to I, and in (4), the verb moves from V to C, via the I position, clearly demonstrating two different structural representations. However, an asymmetric analysis does not necessarily mean a commitment to the structures in (3) and (4). An alternative cartographic implementation (cf. Rizzi 1997; Cinque 1999; see also Branigan 1996) would be to argue that, in fact, the verb moves to the left periphery in both cases, but crucially to different heads in the left periphery. For example, subject-initial declaratives may have the verb in a low left peripheral position, whereas non-subject-initial declaratives have the verb in a higher left peripheral position.

A symmetric analysis capitalizes on what we may label 'economy of specification'. Roberts (2007: 274), and Biberauer & Roberts (2012, 2015) argue that a child seeks to postulate a grammar which minimizes the number of distinct formal specifications. This perspective would therefore support the symmetric analysis, since it would involve fewer distinctly specified functional heads. A different perspective would focus on the acquisition process and the input evidence available to children when acquiring verb placement. As noted in Holmberg (2015: 364), the symmetric analysis creates an acquisition problem: How would the child ever detect evidence in favor of movement to C, given that this movement does not have any PF effects? Languages that supposedly have V-to-I-to-C in subject-initial main clauses but only V-to-I in embedded clauses may be unlearnable due to lack of overt evidence. This resonates with findings from acquisition, showing that children typically do not generalize across linguistic contexts, e.g., they do not assume that different clause types display the same kinds of movement operations. Rather, when they make mistakes, these mistakes are generally due to economy (Snyder 2007; Westergaard 2009a, 2014), in that they produce *less* movement than what is found in the input. Thus, rather than economy of specification, 'economy of movement' appears to be the relevant guiding principle. As argued in Westergaard & Bentzen (2007), an economy principle is operative in the acquisition process, causing children to move the verb only as high in the structure as there is evidence for in the input. Generalizing this based on the assumption

that there is continuity across the lifespan, it seems natural to assume that monolingual adults also have the same economy principle, causing them to distinguish subject-initial from non-subject-initial declaratives. There is also significant variation in the adult language in terms of how this distinction is implemented into the grammar, i.e., which functional projection the verb moves to, as seen in Bentzen (2014); Wiklund et al. (2009); Haegeman & Greco (2018) and Lohndal, Westergaard & Vangsnes (in press). These different realizations are presumably related to the complex nature of the V2 phenomenon, an issue we return to in section 4.

The symmetric and asymmetric analyses make different predictions. As Holmberg (2015: 364) points out, the asymmetric analysis predicts similarity between subject-initial main and embedded clauses, and no similarity between subject-initial and non-subject-initial main clauses. The reason is that the former two have similar structural representations on the asymmetric analysis, unlike the latter. A way to test this prediction would involve extraction out of embedded V2 clauses. As Holmberg (1986: 109–115) and Vikner (1995: 108–110) have shown, extraction out of embedded V2 clauses is prohibited or at least much more restricted than in the case of embedded non-V2 clauses. Sentence (5) illustrates that when a high verb precedes negation in the embedded clause, extraction is disallowed, whereas if the finite verb follows negation, extraction is possible.

(5) **Swedish** (Holmberg 1986: 111)

Vilken fest$_i$ sa hun [att vi (*behöver) inte
which party said she that we need not
(behöver) köpa roliga hattar til t$_i$]?
need buy funny hats for
'Which party did she say that we don't need to buy funny hats for?'

On the symmetrical analysis, SpecCP is always filled by a constituent, be it a subject or a non-subject. Since SpecCP is assumed to be the escape hatch for extraction, this entails that extraction would be predicted to be impossible in both subject-initial and non-subject-initial clauses. The asymmetrical analysis, on the other hand, only has SpecCP filled by a constituent in non-subject-initial clauses, which then predicts extraction to be possible in subject-initial clauses. Importantly, extraction data from Norwegian confirm the predictions of the asymmetric analysis. Sentence (6) shows that argument extraction out of a non-subject-initial V2 clause is impossible in Norwegian, while (7) shows that extraction out of a subject-

initial clause is indeed possible (Hrafnbjargarson, Bentzen & Wiklund 2010: 303–4). Thus, these data are in line with the predictions made by the asymmetrical analysis, since this analysis holds that there is an escape hatch in subject-initial declaratives.

(6) **Norwegian**

    a. *Hvem$_i$ sa   han at denne boka   hadde t$_i$ ikke gitt Kari?
       who   said he that this   book.DEF had   not given Kari

    b. *Hvem$_i$ sa   han at d enne boka   hadde han ikke gitt t$_i$?
       whom   said he that this   book.DEF had   he not given

(7) **Norwegian**

    a. Hvem$_i$ sa   han at t$_i$ kunne ikke synge   denne sangen?
       who   said he that   could not sing   this song.DEF

    b. Hva$_i$ sa   han at han ikke kunne synge t$_i$?
       what   said he that he   not   could sing

In the next section, we turn to a different argument, demonstrating that in other varieties, the symmetric analysis is required.

2.2 An argument in favor of the symmetric analysis

Zwart (1997: 207–223) offers a comprehensive discussion of the traditional empirical arguments involved in adjudicating between the symmetric and asymmetric analysis of V2. In a more recent contribution, van Craenenbroeck & Haegeman (2007) concede that "[f]inding empirical evidence in favor of either approach is not easy". However, they argue that the logic of the argument should be as follows: Consider a fixed position X at the border between TP and CP. The symmetrical and asymmetrical analyses make different predictions: The former holds that the verb should move to the C-domain, crossing and thereby preceding the element X. The latter makes the prediction that the verb should move to the T domain and thus follow X. Schematic illustrations are provided in (8) (van Craenenbroeck & Haegeman 2007: 169).

(8) a. $[_{CP} [_C C] X [_{TP}$ subject $[_T V] [_{vP} …]]]$

    b. $[_{CP}$ subject $[_C V] X [_{TP} t_{subject} [_T t_V] [_{vP} …]]]$

Van Craenenbroeck & Haegeman then provide evidence from two phenomena that support the symmetric analysis: The object clitic *t* in the Brabant dialect of Wambeek in Belgium and the particle *tet* in the West Flemish dialect of Lapscheure in Belgium. Let us consider each of these in turn.

The object clitic *t* occupies a fixed position on the border between the T and C domains and, as such, it qualifies as the diagnostic element X. This clitic follows the inflected verb and precedes the subject in non-subject-initial main clauses, while it invariably follows both the subject and the finite verb in subject-initial declaratives. This is illustrated in (9)–(10), from van Craenenbroeck & Haegeman (2007: 169, 171).

(9)   **Dutch, Brabant dialect**
    Nou   **wenj-t**   Marie   al.
    now   knows-it   Marie   already
    'Now, Marie already knows it.'

(10)   **Dutch, Brabant dialect**
    a.   Marie   **wenj-t**   al.
        Marie   knows-it   already

    b.   *Marie **t**   **wenj**   al.
        Marie   it   knows   already

The second example involves the particle *tet* in the West Flemish dialect of Lapscheure (Haegeman 1986). The particle has a fixed position: In embedded clauses, it occurs to the immediate right of the complementizer and to the immediate left of the subject DP, as shown in (11) (van Craenenbroeck & Haegeman 2007: 174).

(11)   **Dutch, Lapscheure dialect**
    Kpeinzen   dat   tet   Valère   da   nie   goa willen doen.
    I.think   that   TET   Valère   that   not   go   want   do
    'I think that Valère won't want to do that.'

Given this, the crucial testing ground then becomes the following data set (van Craenenbroeck & Haegeman 2007: 175).

(12)   **Dutch, Lapscheure dialect**

    a. Morgen **goa** **tet** Valère da   niet   willen doen.
          tomorrow goes TET *Valère that not   want   do*
          'Valère won't want to do that tomorrow.'

    b. Valère **goa** **tet** da   morgen   nie   willen doen.
          Valère goes TET that tomorrow not   want   do

    c. *Valère **tet** **goa** da   morgen   nie   willen doen.
          Valère TET *goes   that   tomorrow not   want   do*

Sentence (12a) is a non-subject-initial main clause, and *tet* precedes the subject and follows the finite verb. However, the crucial comparison involves (12b) and (12c), which demonstrate that the particle obligatorily follows the finite verb also in subject-initial main clauses. Van Craenenbroeck & Haegeman argue that the asymmetric analysis would have predicted that the particle should precede the finite verb if the finite verb is in the T domain.

    The evidence reviewed here strongly suggests that the verb moves to the C domain in both subject- and non-subject-initial main clauses in the Brabant and Lapscheure dialects. Crucially, in our view, there is evidence for this in the input, which means that children would acquire this verb movement based on the primary linguistic data.

2.3 Differences across languages

For Dutch the debate between the symmetric and asymmetric analysis has centered on data from *different dialects*. As Haegeman & Greco (2018: 47) point out: "[…] one option not explored at the time of the earlier debate was that both derivations were available and that there might be microvariation in the derivation of subject-initial V2." Following Postma (2011), they argue that different dialects of Dutch rely on how subject-initial declaratives are derived: some move the subject to the same position as non-subjects (symmetric), and others move the subject to a lower position than non-subjects (asymmetric). A somewhat similar proposal is defended by Mikkelsen (2015), who argues that the derivation of subject-initial V2 may vary language-internally depending on the information structure of the subject: Information-structurally distinguished initial subjects are in the CP domain, whereas initial subjects that are information-structurally undistinguished are in the TP domain.

The present paper will side with Mikkelsen (2015) and Haegeman & Greco (2018) in defending a variational perspective: Varieties differ in terms of whether the symmetric or asymmetric analysis of V2 is correct, and the crucial factor is whether there is evidence in the input for verb movement to a higher position. Previous accounts have mostly relied on monolingual data and arguments of theoretical elegance (economy conditions such as a ban on vacuous movement). However, as Holmberg (2015) points out, evidence from acquisition is paramount, and we would like to claim that this evidence ought to be more prominent in order to solve the controversy surrounding the analysis of subject-initial V2 clauses. While the V2 phenomenon has been studied extensively in the acquisition literature, there is relatively sparse data focusing on a possible difference between subject- and non-subject-initial declaratives. In what follows, we review data from learner varieties of Norwegian, providing evidence from L1 and L2 acquisition as well as heritage language bilingualism and ethnolects.

3. Data from acquisition and attrition
3.1 L1 acquisition
We start by considering evidence from L1 acquisition, where V2 word order has been attested from the earliest possible utterances in a number of languages, e.g., German (Clahsen 1986; Poeppel & Wexler 1993), Dutch (Jordens 1990) or Swedish (Santelmann 1995; Waldmann 2008). The examples in (13) and (14) are from Norwegian, showing that target-consistent V2 is found before the age of two in both subject- and non-subject-initial declaratives (Westergaard 2009a).

(13) **Norwegian**
så **tegne** *æ* mamma. (Ina 1;10.4)
then draw.PRES I mommie
'Then I draw mommie.'

(14) **Norwegian**
ho mamma **er** **ikke** på jobb. (Ole 1;10.0)
DET mom be.PRES not on work
'Mom is not at work.'

The question is where the verb has moved to in sentence (14) – to the same position as in (13), i.e. the C head, or only to the position above

negation (I). If the former, then we could argue that children would be generalizing from one context to another, if the latter, their production would be governed by a principle of economy; i.e., they would not move an element any higher in the structure than there is evidence for in the input. We now consider which option is the more plausible one, by looking at typical non-target-consistent production in child language.

As argued in much work on L1 acquisition, young children are characterized as conservative learners, generally producing errors of omission, rather than errors of commission (Snyder 2007).[3] For syntactic movement operations, this means that we typically find lack of movement in early data, e.g., non-V2 in non-subject-initial declaratives, as in examples (15)–(16) from Norwegian and Swedish respectively. Importantly, overgeneralization of V2 to contexts that do not display this word order in the target language is generally non-attested.

(15) **Norwegian** (Westergaard 2004: 117)
      der   **Ina   gjemte**   det.   (Ina 2;1.0)
      there   Ina   hide.PAST   it
      'There Ina hid it.'
          Target: Der **gjemte Ina** det.

(16) **Swedish** (Waldmann 2012: 344)
      sen   **den   skulle** *gå hem*.   (Tea 2;11.07)
      then   it   would go home
      'Then it would go home.'
          Target: Sen **skulle den** *gå hem*.

This can also be shown for subject-auxiliary inversion in English child language. While non-inversion is sometimes attested in the production of young children, as illustrated in (17), over-extension of inversion to other contexts, e.g., from questions to declaratives or from auxiliaries to lexical verbs, is virtually non-existent in child data (Westergaard 2009b, Radford 1992).

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[3] This does not mean that other types of errors do not occasionally occur, e.g., medial *wh*-elements in complex questions in English and other languages (e.g., Thornton 1990; Lohndal 2010). However, the more common non-target-consistent production, as illustrated in examples (5)–(6), simply constitutes the default case and does not need any extra explanation than economy.

(17)   **English** (Westergaard 2009b: 1028)
       Why **he can't** hit?   (Adam 3;4.01)

In Westergaard (2009a), such findings in child language are argued to be due to a principle of structural economy, formulated as in (18).

(18)   Principle of structural economy
           a. only build as much structure as there is evidence for in the input
           b. only move elements as far as there is evidence for in the input

According to this economy principle, the verb in subject-initial declaratives such as (14) should only move to the position immediately above negation. This means that young Norwegian children who produce both (13) and (14) must assume that the target language has *both* V-(to-I-)to-C and V-to-I. If so, we would expect children to produce the word order V-Neg/Adv in all contexts. Since V2 word order will always mask V-to-I movement, evidence for this must be sought in contexts that do not require verb movement at all, e.g., embedded clauses and non-V2 *wh*-questions (which are grammatical in many Norwegian dialects, see e.g., Westergaard 2009c; Lohndal, Westergaard & Vangsnes in press). Such examples are in fact relatively often found in child data of various languages, e.g., Swedish (Waldmann 2008), Swiss German (Schönenberger 2001), Faroese (Heycock, Sorace & Hansen 2010) or Norwegian (Westergaard & Bentzen 2007). Examples of non-target-consistent V-Neg/Adv word order in embedded clauses are illustrated in (19) and (20), from Norwegian and Swedish respectively, while (21) is an example from a non-V2 subject question in a Norwegian dialect.

(19)   **Norwegian** (Westergaard 2009a: Ch. 9, example (50))
           ... at   han   **skjønne**   **ikke**. (Ann 2;3.9)
            that   he   understand.PRES   not
       '... that he doesn't understand.'
           Target: ... at han **ikke skjønne**.

(20)   **Swedish** (Waldmann 2008: 227)

ja ha   en ny   bil nä   ni   **få**   **inte**   mutsa   ner.
                                                                                      (Harry 2;11.29)
I   have   a   new   car   that   you   may   not   dirty   down
'I have a new car that you may not make dirty.'
        Target: jag har en ny bil som ni **inte får** smutsa ner.
                                                                                      (Waldmann 2008)

(21)   **Norwegian, Northern dialect** (Westergaard & Bentzen 2007,
       example (22))
kem   som   **vil ikkje**   være   ilag   med han? (Ina, 3;1,8)
who   that   will not   be   together   with   him
'Who doesn't want to be with him?'
        Target: kem som **ikkje vil** være i lag med han?

Our analysis of the child data leads to the conclusion that Norwegian children assume *both* verb movement to C (in non-subject-initial declaratives) and verb movement to I (in all clauses). Thus, verb movement in examples (13) and (14) targets different heads. This is arguably due to the economy principle operative in the acquisition process, making children avoid syntactic movement if there is no clear evidence in the input. Over the course of acquisition, children clearly unlearn V-to-I movement in contexts such as (19)–(21) where it is not found in the target language (which is a relatively drawn-out process, as backtracking is difficult in acquisition), but an important question is what they do in subject-initial declaratives: Do they eventually start moving the verb to C, or do they keep the original rule? In the next section we turn to data from other populations, suggesting that V-to-I movement is also found in the adult language.

3.2 Second language (L2) acquisition

Despite numerous claims within the Initial Hypothesis of Syntax that V2 word order would not transfer into an L2 (e.g., Platzack 2001), many studies have found evidence of considerable and relatively persistent V2 effects in the L2 (e.g., Robertson & Sorace 1999; Westergaard 2003; Bohnacker 2006; Rankin 2012). An important finding is that subject-initial and non-subject-initial declaratives behave differently in this respect: In the acquisition of L2 English by Norwegian L1 learners, target-consistent non-V2 word order is in place relatively early in non-subject-initial

declaratives, while V-Neg/Adv word order in subject-initial declaratives lasts considerably longer, often into a stage of near-nativeness. In a study of L2 English by L1 Norwegian 7–12-year-olds (n=100), Westergaard (2003) finds that the 6th graders (n=24) produced non-subject-initial declaratives with non-target-consistent V2, such as (22), 51% of the time, while subject-initial declaratives with this word order (23) are significantly different, as they were produced as often as 83%.

(22) **English**
      *Every day plays John soccer. (49% accuracy)

(23) *John plays always soccer. (17% accuracy)

Similar evidence has been attested in an acceptability judgement task (using a Likert scale from 1 to 4) carried out with three age groups of L1 Norwegian learners of L2 English (9–10, 13–14 and 15–16, total n=67) (M. Jensen 2017, I. Jensen 2018). The findings show that there is a stable and significant difference between their judgements of subject- and non-subject-initial declaratives (p=.036): While the difference in score between grammatical and ungrammatical non-subject-initial declaratives was around 1.6 in the oldest age group, it was only around 0.7 in the subject-initial declaratives.

   In our view, these findings indicate that in the process of learning L2 English, L1 speakers of Norwegian have to unlearn two verb movement rules, V-to-I-to-C and V-to-I. Unlearning one of them does not automatically lead to unlearning the other. For a number of reasons related to the frequency and salience of the relevant input, the unlearning of V-to-I will be harder and take longer.

3.3 V2 in heritage languages

Research on heritage language bilinguals is a rapidly expanding field. A heritage language is typically defined as a language learned as a native language in a home environment, in a situation where this is not the majority language spoken in the larger community (e.g., Rothman 2009). As adults, heritage speakers are typically dominant in the majority language, which means that studying heritage languages could reveal what linguistic properties are vulnerable in a situation with reduced input and use. Germanic V2 languages have also been studied as heritage languages spoken in North America, e.g., Heritage Danish (Kühl & Heegård Petersen

2018); Heritage Norwegian (Johannessen 2015; Eide & Hjelde 2015; Westergaard & Lohndal 2019) or Heritage Icelandic (Arnbjörnsdóttir; Thráinsson & Nowenstein 2018). These speakers are highly dominant in English, and it is expected that V2 in declaratives might be affected by the non-V2 word order of the majority language.

For Heritage Norwegian, Eide & Hjelde (2015) point out a clear difference between the word order found in subject- and non-subject-initial declaratives. They investigated spontaneous production of one elderly speaker, who frequently violated V2 in the latter clause type (62%), as illustrated in (24), while consistently producing V-Neg/Adv word order in the former clause type, as shown in (25). This indicates that subject-initial and non-subject-initial declaratives are affected by cross-linguistic influence from English at largely different rates.

(24) **Heritage Norwegian**
    *Og   der   **dem**   **lager**   vin.   (Eide & Hjelde 2015: 89)
    and   *there*   *they*   *make*   *wine*
    'And there they make wine.'
       Target: Og der **lager de(m)** vin.

(25) **Heritage Norwegian**
    Nei,   je   **visste**   **itte**   henner. (Eide & Hjelde 2015: 92)
    No   *I*   *knew*   *not*   *her*
    'No, I didn't know her.'

This discrepancy between subject-initial and non-subject-initial declaratives is also attested in a study of Heritage Icelandic by Arnbjörnsdóttir et al. (2018). The study included an acceptability judgement task carried out with 60 heritage speakers (age range 27–98). The findings show a large and significant difference between their judgements for the two types of structures, as they often accepted both V2 and non-V2 in non-subject-initial declaratives, such as (26), while they clearly preferred the V2 alternative in subject-initial declaratives, such as (27). Arnbjörnsdóttir et al. (2018: 404) conclude from this that "[v]iolations of the V2-constraint in topic-initial structures are much more common than violations of the V2-constraint in subject-initial clauses".

(26) **Heritage Icelandic (**Arnbjörnsdóttir et al. 2018: 397)
Á morgun **sjáum   við/við   sjáum**   það
Tomorrow   see   we/we   see   *it*
'Tomorrow we see it.'

(27) **Heritage Icelandic (**Arnbjörnsdóttir et al. 2018: 395)
Kristín   **talar   stundum/stundum   talar**.
Kristin   speaks   sometimes/sometimes   speaks
'Kristin sometimes speaks ..'

3.4 Urban vernaculars/ethnolects

The last few decades have seen a development of modern urban vernaculars (also called ethnolects) of several V2 languages, spoken by adolescents in multiethnic communities, see e.g., Wiese (2009); Opsahl & Nistov (2010); Quist 2008) or Walkden (2017). A typical finding is that these varieties do not display consistent V2 word order, as illustrated in the following examples from Norwegian and German respectively:

(28) **Norwegian urban vernacular** (Freywald et al. 2015: 84)
med limewire   **det**   **tar**   *én*   to   dager
with Limewire   it takes   one   two   days
'using Limewire it takes one or two days'

(29) **German urban vernacular** (Wiese 2009: 787)
Morgen   **ich   geh**   Arbeitsamt
tomorrow   I   go   *job.center*
'Tomorrow I will go to the job center.'

Both examples (28) and (29) are non-subject-initial declaratives, where an adverbial is followed by the subject, resulting in non-V2 word order. Again, we find a sharp contrast between this clause type and subject-initial declaratives, where the literature does not document any lack of verb movement (across adverbs and negation) in the various urban vernaculars (see also Alexiadou & Lohndal 2018 for further discussion).

To summarize this section, we have seen that subject-initial and non-subject-initial declaratives behave differently with respect to verb movement across a range of different populations: L1 children, L2 children/ adolescents, heritage speaker bilinguals as well as speakers of multi-

ethnolects. The crucial point is that *there is a distinction* between the two, not necessarily the direction of the difference. We interpret these findings as support for an analysis where the two structures differ with respect to the position of the verb and argue that verb movement across the subject (in non-subject-initial declaratives) targets the C position, while verb movement across an adverb or negation (in subject-initial declaratives) only moves to the I position. In the next section, we turn to the issue of how this difference should be modeled syntactically.

4. Discussion and conclusion

On the view advanced here, the precise location to which the verb moves does not matter. Importantly, however, the economy principle operative in the acquisition process (cf. sections 2 and 3) requires that the child postulates movement only to a position for which there is evidence in the input. Based on the data reviewed, we see that different learner languages show that speakers distinguish between subject- and non-subject-initial clauses, a difference whose locus, we argue, is the placement of the verb. However, the data reviewed do not directly identify exactly what the landing sites in question are. Nevertheless, an advantage of this analysis is that the precise head hosting the verb may be different depending on the language or dialect in question, suggesting that languages are not identical in terms of which syntactic position the verb occupies in subject- and non-subject-initial declaratives (cf. Mikkelsen 2015; Haegeman & Greco 2018).

Related to the complex nature of the V2 phenomenon is the question of whether V2 is one big grammatical rule (or macro-parameter) or whether it is a collection of many smaller separate rules. We would argue that V2 needs to be decomposed in several ways, as also claimed in e.g., Weerman (1989); Westergaard (2008, 2009a; Migdalski (2010); Lohndal, Westergaard & Vangsnes (in press). Arguments for this may also be found in models of L2 acquisition, as Amaral & Roeper's (2014) multiple grammar approach (see also Roeper 1999) proposes that only non-complex rules may transfer from an L1 into an L2 (i.e. rules without exceptions or many sub-rules). Given data such as those provided in sections 3.2 and 3.3, this indicates that V2 is not a single overarching rule in languages like German and Norwegian, given that it indeed transfers, affecting different contexts for V2 differently. Thus, we argue that V2 word order is the result of a conspiracy of many smaller separate rules. For declarative clauses we then

have two rules for verb movement, given in (30), which would account for the empirical patterns seen in section 3.

(30) a. V-to-I-to-C in non-subject-initial declaratives
   b. V-to-I in subject-initial declaratives

We now consider some consequences of distinguishing subject-initial declaratives from non-subject-initial declaratives. Roberts (2004) argues for an analysis of V2 whereby a generalized EPP feature on the left peripheral head Fin is responsible for V2 word order. As a result of this feature, SpecFinP needs to be filled with a constituent: a phrase, a particle, or an expletive. This approach predicts that the verb moves to the same position in both subject- and non-subject-initial declaratives. A different analysis is pursued by Holmberg (2015). He defines V2 as in (31) (see also Alexiadou & Anagnostopoulou 1998).

(31) a. A functional head in the left periphery attracts the finite verb
   b. This functional head wants a constituent moved to its specifier
    position

As (31) makes clear, the functional head in question is not part of the definition. As such, this definition makes it possible that the functional head may differ across languages and varieties. It also makes it possible to argue that the finite verb moves to different positions and no single head is responsible as such for the V2 effect. Importantly, though, Holmberg's analysis does not extend to the crucial asymmetry between subject- and non-subject-initial declaratives discussed in this paper (see also Lohndal, Westergaard & Vangsnes in press for other limitations when it comes to data from varieties of Norwegian). Rather, we need a more fine-grained system. The requisite granularity may be provided by the parameter hierarchy in Biberauer & Roberts (2012) or the micro-cue model in Westergaard (2008, 2009a, b, c, 2014).

Biberauer & Roberts (2012) suggest an account of variation across languages with respect to verb movement by way of a hierarchy of four levels: Macro-, meso-, micro-, and nano-parameters. In this model, V2 in English questions is considered a micro-parameter, since it applies at the level of a linguistic subcategory (auxiliaries), while V2 in a language

like German would be a meso-parameter since it applies to the full verbal category. Crucially for Biberauer & Roberts (2012), parameters are not innate; rather, they emerge in the course of acquisition.

Westergaard's (2008, 2009a, b, c, 2014) micro-cue model makes it possible to handle even more fine-grained variation, distinguishing between clause types, verb types, types of clause-initial element, etc. This model is inspired by Lightfoot's (1999, 2006) cue-based approach to acquisition and change. Lightfoot argues that a cue is *a piece of syntactic structure* provided by UG and triggered by relevant input. His cues are typically formulated in terms of major categories, such as the cue for V2 in (32).

(32)   Cue for V2 word order: $[_{CP} \text{ XP } _C V...]$

The formulation in (32) simply says that the finite verb needs to appear in the C-position in all clause types. This means that Lightfoot's cue model is not sufficiently fine-grained to handle the variation we have argued for in this paper. Based on findings from acquisition, Westergaard (2008, 2009a, b, c, 2014) argues in favor of a micro-cue model, where the formulation of the micro-cues incorporates the relevant linguistic context. A few examples of the V2 variation found in Norwegian are provided in (33)–(35).

(33)   Micro-cue for V2 in questions with long *wh*-elements:
$[_{IntP} \text{ XP}_{[+wh] \text{ Int°}} V]$

(34)   Micro-cue for V2 in questions with monosyllabic *wh*-elements:
$[_{IntP \text{ Int°}} wh \; [_{TopP \text{ Top°}} V \text{ XP}_{[+FOC]}]]$

(35)   Micro-cue for word order in subject-initial declaratives with focus-sensitive adverbs: $[_{DeclP} \text{ XP } [_{FocP} \text{ Foc-Adv } _{Foc°}[\text{ V }]]]$

A micro-cue, then, is a piece of abstract syntactic structure in a speaker's I-language grammar. Micro-cues are not provided by UG, but emerge as a result of an interaction of UG, input and third factors in acquisition, such as economy. The structures in (3) and (4) above, repeated here for convenience, can also be thought of as micro-cues for subject- and non-subject-initial declaratives, respectively.

(3') Subject-initial declaratives:
$[_{CP} [_C C] [_{IP}$ subject $[_I V] [_{vP} t_{subject} t_V \cdots]]]$

(4') Non-subject-initial declaratives:
$[_{CP} XP [_C V] [_{IP}$ subject $[_I t_V] [_{vP} t_{subject} t_V \cdots]]]$

In conclusion, we have argued in this paper that in order to fully understand the nature of Germanic V2 we need to analyze this linguistic phenomenon with an appropriately fine-grained grammar to deal with variation, including the difference between subject- and non-subject-initial clauses. We contend that the asymmetric and symmetric analyses of declaratives may both be correct, in that languages may differ in this respect, depending on the possible evidence for verb movement in the input. Thus, we have argued that it is important to consider input data and evidence from learner languages in order to distinguish between the two analyses.

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Formal semantics and functional semantics

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Abstract

This joint article represents an attempt to clarify relations between two rather different approaches to the description of linguistic meaning: truth-conditional semantics (as represented by Peter Widell) and functional semantics (as represented by Peter Harder). The two approaches are anchored in different traditions, are based on different theoretical premises, and have different objectives. Truth-conditional semantics is based on a philosophical tradition with strong relations to logic, while functional semantics is based on a linguistic tradition with borrowings from evolutionary biology (and also from speech acts philosophy). We argue that an integrated picture that accommodates both approaches can be achieved by a mutual recognition of the different aims as well as of a central area in which the different aims give rise to compatible insights about linguistic meaning.

I. The formal approach
1. Introduction

The concept of (linguistic) meaning remains difficult to explain and understand in a consensual way. Ever since antiquity it has been the subject of intensive inquiry. The most familiar and influential discussion is the one based on Plato's doctrine of ideas or forms, as mentioned for example in his *Republic*, book 7. Here, the view is expressed that the reason why we can use the word *cow* (our example) to refer to different cows is that

all cows 'participate' (as Plato says) in the same cow-meaning (= idea or form). According to Plato, this entails that the idea must have independent existence apart from the different instantiations, in a realm of ideas beyond the world of sense impressions. A different proposal goes back to the empiricist philosopher John Locke, who suggests that the conceptual meaning of a word must be found as an idea or mental representation in the mind of the person who uses the word.

Many have been dissatisfied with both explanations, and proposals for alternatives have been put forward throughout the twentieth century. Two suggestions from the beginning of the century have been especially influential; both try to define their way out of the problems.

One is due to structuralism in the Saussurean tradition. The core idea is that linguistic meaning is viewed as a by-product of structural relations in the specific language to which the words and sentences belong, cf. Saussure (1983 [1916]). Meaning is thus defined in a purely language-immanent way as emerging from a system of differences between linguistic signs.

The other proposal we find within analytical philosophy. Here, meaning is defined with the help of logic, based on the concept of truth. (Conceptual) meaning is simply understood as those conditions in the world that make sentences in language true or false.

There are certain parallel views of the nature of language within the traditions of structuralism and analytical philosophy. For instance, the notion of 'implicit definition' in Hilbert (1899) and the syntactic understanding of logic in Rudolf Carnap (2000 [1934]) have striking similarities with the immanent view based on sign differences in Saussure. Nevertheless, there has been little interaction between the two sets of views – although in a Danish context, Hjelmslev tried (with unfortunate consequences, cf. Harder 1974) to introduce notions from logical positivism into his view of the foundations of linguistics, spurred on by parallel ideas about the autonomy of formal description.

In recent decades, however, the linguistic tradition has developed beyond the purely relational approach in classical structuralism. Internationally, this is manifested in cognitive linguistics (in the traditions of George Lakoff and Ronald Langacker), and in functionalist traditions of different types, including those of Dik (1989), Givón (1993), Foley & Van Valin (1984) and others. Truth-conditional semantics has similarly expanded to include dimensions of meaning traditionally associated with the pragmatics of communication, cf. e.g. Sperber & Wilson (1986),

Carston (1988) and Recanati (1989) on semantic underdeterminacy of propositional content and Rooth (1992) on focus assignment.

In Denmark, there has been a development whereby certain key notions from European structuralism have been integrated in a functional approach to linguistic description (cf. Engberg-Pedersen et al. 1996). The move beyond classical structuralism consists, briefly speaking, in recognizing that meanings have a positive content – which enables them to function in communication – while also having structural relations between them. The positive content motivates both the speaker's choices (when she uses the word *cow* instead of *horse*, for instance), and also structural distinctions. The ancient assumption that the grammatical category of substantives reflected the metaphysical category of substances was proved wrong by structuralism, but there is a motivating relationship that goes in the other direction, cf. Lyons (1966): all physical objects like *stone* are denoted by nouns rather than verbs.

Some insights from structuralism continue to be valid, because structures cannot be fully derived from functional properties, and thus have a (partial) life of their own, cf. Harder (1999). The important point in this context is that language, in this approach as opposed to uncompromising structuralism, has relations with the world outside purely structural relations.

This has provided a footing on which it becomes possible to explore mutual relations between the two approaches in the title. This opportunity we would like to take in this article, with Peter Widell taking the perspective of formal semantics and Peter Harder the perspective of functional semantics. While this does not directly address the focal research interests of Sten Vikner, we hope that the discussion below will represent a contribution to the fruitful possibility of dialogue across disciplinary frontiers that is manifested in the broad scope of contributors to this volume.

Our main suggestion is that the two approaches to meaning do not directly contradict one another, but rather could be viewed as complementing one another by asking important but different questions about language and meaning. The focal concerns of the two approaches find their answers in different, but interconnected areas of language. While formal semantics takes its point of departure in truth conditions associated with the propositional core, functional semantics takes its point of departure in the communicative anchoring of linguistic signs in human interaction, ultimately drawing on evolutionary foundations.

A word of warning: Because the point of the paper is to establish a platform on which the two approaches can meet, most of what is said about each of the two approaches below will be very fundamental. By purposely limiting ourselves to the basics, we hope to give an accessible view of the common playing field that is otherwise not easily discernible.

Although we focus on different analytic tasks, there is an essential meeting point in the form of the *assertion*. We see the assertion as the core functional category, which at the same time provides the setting for the proposition with its truth-based relation to the world, and also constitutes the key functional innovation of human language. Although assertive statements about what is the case are one among other types of functional contributions to human interaction as pointed out by Wittgenstein (1953), the capacity to interact by way of exchanging propositional information is an essential part of what makes human language unique. The account therefore aims to transcend the traditional association between 'function' and pre-linguistic relations (on the one hand) and 'logic' and purely formal-mathematical aspects of meaning. Based on this recognition, Peter Widell (in the first half of the paper) will work from the assertion towards the proposition and its truth conditions, while Peter Harder (in the second half of the paper) will work from the assertion towards its links with interactive aspects of meaning.

2. Formal semantics: Conceptual, linguistic meaning = truth conditions

Language is a means of communication. But it must also have an anchoring in the world: linguistic utterances have – as the basic, canonical case – to be TRUE of the facts we find in the world, and this assumption has to be a shared feature between participants in communicative events. Otherwise language would carry no valid meaning. That is the basic point of departure for the theory of meaning on which formal semantics builds.

Let us take an example of communication showing what is at stake: A watches his neighbour C felling a fir tree, and subsequently goes to speak to B, saying:

(1) *C is felling a fir tree*

In this case, A's neighbour must have been engaged in this act (witnessed by A), as a condition of A's utterance being true. In that sense, the linguistic sign – the cited sentence – is related to a previously existing situation in the

world. It is precisely this relation between situation and sentence which has been in focus for formal logic and which it is therefore concerned to (re)construct and provide with an explicit theoretical form. It is this task which has turned out to be in no way simple, on which we will concentrate below.

The German logician and philosopher Gottlob Frege, in his *Begriffsschrift* (1879) has suggested an interesting analogy (which he fully developed in an article from 1892) between a sentence like (1) and the mathematical notion of function, cf. (2):

(2) $y = f(x_1, x_2, ...)$,

In (2), y corresponds to the sentence (1) *C is felling a fir tree* while x_1 stands for the proper name "*C*" referring to the individual object, in this case the person C. In turn, x_2 stands for a particular fir tree, and f stands for the predicate "*[...] is felling [...]*", which is ascribed to respectively C and the fir tree referred to in sentence y.

The analogy between the sentence and the mathematical function directly shows what is at stake in the sentence: the sentence y is not merely a juxtaposition or concatenation of the expressions f and the different x's, in the example the felling, C and the fir tree. The sentence expresses a *judgement* (Frege: *Urteil*) – i.e., a judgment that the object referred to by C is included in the set of objects referred to by the predicate f (of persons engaged in tree-felling). This in effect describes a kind of *act*: to ascribe a predicate f to some x's in fact amounts to *making* an assertion.

The crucial point in Frege's analysis is that assertions are seen as being essential for bringing language into contact with the world and assigning meaning to it. Only when a judgment is made are linguistic sentences brought into contact with those facts in the world that they concern. And only then will it be possible for the proposition expressed by the sentence to be true. Language in its abstract form is not the most important thing about language – it is the actual use of it in concrete speech situations which enables it to express true or false propositions.

Some assertions, as in example (1) above, are simple, and their propositions can be true or false independently of other propositions. Others are complex assertions in which the truth values of the whole proposition can be systematically calculated by reference to the truth values of the simple propositions which they contain. In addition to discovering that the sentence can be seen as a function, Frege is acclaimed for having set

up a complete set of rules for calculating the truth value of any complex proposition, given the truth values of the constituent's simple propositions.[1] This system can be found in its full form in logic textbooks under the heading 'first-order predicate logic' ("first-order" because what logic needs to refer to in order to avoid paradoxes and contradictions, are things in the world, not expressions denoting those things).

Frege's predicate logic from 1879 is in all ways a masterpiece, which virtually all formal semanticists regard as the ultimate canon of logic. During the twentieth century, a succession of logical theories arose, but they are not alternatives to Fregean logic, but rather special applications of his system, which constitutes the only necessary foundational logical theory.

Besides 1879 another epoch-marking year is 1905, when Russell publishes his article "On Denoting". In it, he seeks to provide a more precise answer to what happens when we use a particular form of reference in language, the type expressed by what came to be known as definite descriptions like *the capital of France*. Russell's point about the use of such expressions is that although they are similar in function to proper names, they at the same time provide a description of their referent. Unlike *Paris,* which refers to the same city, *the capital of France* provides a description of the object to which it refers.

Russell believes that this leads to the possibility of contradictions. The problem is best known from the account given by the Austrian phenomenologist Lexius Meinong (1960 [1899]). The problem is that in accounting for statements such as *The Golden Mountain does not exist* it appears that they presuppose the existence of an object whose existence is subsequently denied. Meinong himself believes he has found a solution: There are two modes of existence, one for ordinary objects and one for impossible objects such as *the Golden Mountain* and *the square circle*; these have according to Meinong a mode of existence called "subsistence".

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[1]   It would take us too far to introduce all the rules in Frege's set of rules. It is not our task here to engage in predicate logic. The rules for the so-called quantifiers should, however, be mentioned, namely the rule for use of the *existential quantifier* (indicated in bold): **There exists an x, such that** *x is P*, e.g. *There exists an x, such that x is a living creature*, and the rule for use of the *universal quantifier* (indicated in bold): **For all x, it is the case that** *x is P*, e.g. *For all x, it is the case that x is a human being*. The reason for mentioning the rules is that they represent a simple and elegant completion of predicate logic by allowing multiple use of expressions like *all* and *some*, e.g. *For all x there exists a y, such that if x is P, then y is Q*. From Aristotle to Kant and Mill logicians have lived in blissful ignorance of these rules. That is why logic in their hands has appeared like a torso.

This solution Russell finds just as unsatisfactory as the problem it is meant to solve – it smacks of Platonic 'ideas' or 'forms'.

Instead, Russell points to a quite different take on the problem, one based on logical analysis. Traditionally the verb *exist* is viewed, based on grammatical criteria, as a predicate. But according to Russell this gives a distorted picture. "To exist" does not signify a predicate, but an existential quantifier (cf. note 1). This means that the sentence *the Golden Mountain does not exist* must be re-described as having the following logical form, in order to yield a proper description of its meaning: *There exists an x, where x is a mountain, and x is golden [….]*. Under this interpretation, one will avoid the problem of existence, and what emerges is simply a false sentence: *There is something which is a mountain and is golden.*

It is important to understand that Russell's solution does not merely apply to impossible examples like the Golden Mountain and square circles. The analysis is quite general and applies also to normal cases like *the capital of France*. In addition to existence, the logical form for definite descriptions also includes the 'uniqueness' aspect which distinguishes definite from indefinite descriptions (e.g., **the** *capital of France* from **a** *capital of France),* so that there can be only one referent answering to the description. A definite description can be paraphrased, *there is an x which is the Capital of France, and if any y is the capital of France, then y = x.*

The importance of this analysis for the subsequent philosophical discussion can hardly be overestimated. It is viewed not only as one of the first, but also one of the best examples of conceptual analysis in analytical philosophy, illustrating an important innovation in what doing philosophy means. What Russell's analysis shows is how to analyze any sentence in a way that factors out a purely referential element (a 'logical proper name') from the descriptive content (the predicate). According to Russell, the combination of these two constitutes the essential meeting place between syntax and semantics.

3. Frege's necessary correction

In 1892, i.e. more than ten years before "On Denoting", Frege publishes an article which puts into question the idea of logical proper names, i.e. proper names without descriptive/conceptual content. In contrast to what Russell argues in 1905, Frege claims that proper names always have descriptive content. In his argument Frege refers to various examples of proper names, including a now famous example from astronomy. The example goes: In

ancient Mesopotamia two characteristic features of the night sky had been noticed. One star was always the first to light up after sunset (which was therefore called the *Evening Star*), while another star was always the last to be visible after sunrise (which was therefore called the *Morning Star*). The interesting thing was that it was at one point discovered that they were not stars at all, and only one heavenly body was involved, viz. the planet we now know as *Venus*.

The point of this example is that on closer inspection it appears to demonstrate that in spite of his sophisticated analysis of the proposition, Russell is actually wrong and Frege right. In the example we have one referent and two descriptions. Venus is present to us in one way in the evening and in another way in the morning. But such different 'ways of being given to us' (Frege: *Art des Gegebenseins*) are really omnipresent. For instance, an equilateral triangle can also be an 'equi-angular' triangle. And a block can both be a red block and a square block. This means that the division into a purely referential and a purely descriptive element according to Frege cannot solve the problem that Russell wants to solve. You could, as Russell does, argue that a proper name like the *Evening Star* has a hidden descriptive content and is actually also a definite description separating the referential and the descriptive element. But according to Frege even proper names *without explicit descriptive content* as for instance the proper name *Paris* has a sense according to Frege.

It is evident that Russell and Frege cannot both be right at the same time. There is, however, a way to solve the problem. Russell and Frege are not talking about the exact same thing (a fact under-emphasized in the philosophical discussion). Russell talks about language, about sentences and their component parts – while Frege basically is not talking about linguistic expressions at all. When Frege analyses propositions, he sometimes talks about statements, but when he talks in a more focused way, he instead talks about 'thoughts' (the German word is *Gedanke*). The point is that thoughts do not have to be expressed by a linguistic sentence. Frege points this out rather explicitly in a late article, precisely entitled *Der Gedanke*. Here he writes:

> We may distinguish: 1. the apprehension of a thought – thinking; 2. the recognition of the truth of a thought – judgment; 3. the manifestation of this judgment – assertion (Frege 2008 [1918-1919]: 39).

Hence, Frege marks a difference between the thought and the expression of the thought. Elsewhere in the article he writes, "How does a thought act? By being apprehended and taken to be true. This is a process in the inner world of a thinker (…)" (Frege 2008 [1918-1919]: 48). In other words: For a thought to get expressed by means of language is coincidental. The 'way of being given' is not in the words, but in the thought itself.

This is not to deny that certain more complex thoughts necessarily have to piggyback on linguistic formulations. But it means that thoughts are inherently capable of coming into being independently of language, and also that speech in its early stages probably borrows all of its substance – its empirical content – purely from our state of relatedness to the world through perception, thinking and action (cf. Makin (2000) for a comment on that). To return to Frege's most famous example: Our awareness of the Evening Star is throughout based on that particular 'way of being given' that consists in our perceiving it as a feature of the evening sky.

This perspective is clearly different from that of linguistic semantics. In the radical structuralist version of Saussure as understood by Hjelmslev's 'Copenhagen School', linguistic meaning was assumed to come into being by the combination of a linguistic expression (signifiant) and a conceptual meaning (signifié) – as organized in an autonomous, immanent linguistic system. In contrast, as we can see, according to Frege, the basis for meaning as expressed in language is an awareness based only on perception and action. This awareness is also reflected in our understanding of referential expressions, including proper names.

It is true that forms of (perceptual and actional) practice, represented in the ways of givenness through which the world presents itself to us, get incorporated in the sign systems that languages constitute. But that is not the same as saying that sign systems are *constitutive* of meaning, understood as our awareness of or relationship with the world. Language comes afterwards, as a post-hoc phenomenon. This means that linguistic expressions at the basic level are precisely what Saussure denied (Saussure 1983 [1916]: 75): purely labels for externally given meanings, rather than autonomous entities.

Russell's concept of 'logical proper names' as being purely referential expressions is valid only as a theoretical, formal construction – an operation in a logical calculus with no conceptual content. If thoughts are to have conceptual substance, they must reflect the world as it presents itself to us in perception and action. That is what Frege's theory of 'the thought' has taught us: The thought is not a linguistic construct. Thoughts are basically

constituted by our awareness of the world as it presents itself to us in perception and action.

Unfortunately, Frege views his thoughts as part of an objective 'third realm' besides the empirical world, which is reminiscent of Plato's world of ideas. Frege's motivation for this is his desire to avoid 'psychologism', i.e. the view that thoughts and logic are subject to the vagaries of the empirical world. As a response to psychologism, this appears, however, to be an extreme reaction. To conceive of logic as an empirical process is of course not appropriate. But instead of setting up an ideal world apart from the world of the senses, we can take our point of departure in what may be called 'normative phenomenology'. Essential from this point of view is the realization that human awareness as based on perception and action contains an inherently reflexive aspect. What this entails can be spelled out in the form of 'principles' or 'maxims' that underlie, or are taken for granted, in the way we understand the empirical world.

The level at which such principles belong has been addressed in various ways through the history of philosophy (e.g., by Kant, Heidegger, Grice and Habermas), and it would take us beyond the scope of this paper to discuss it further here.[2] For the purposes of the argument above, the following three principles are basic:

WE ACT IN THE AWARENESS THAT WE CAN DO THINGS RIGHT OR WRONG IN RELATION TO OUR INTENTIONS
(the *normative* point of departure)

GOAL-DIRECTED ACTION REQUIRES KNOWLEDGE OF THE CAUSAL STRUCTURE OF THE WORLD
(*causal* prerequisites as criteria of appropriate action)

INFORMATION ABOUT THE WORLD IS AVAILABLE VIA PERCEPTION, PROVIDING 'WAYS OF GIVENNESS'
(*truth* can be assessed and structured via reference and predication)

All this we have to presuppose as a necessary part of our 'being-in-the world'. A house can be viewed from different directions – but this does not mean that the house itself is merely the sum of these perspectives. Rather, based on our co-ordination of these perspectives, the causally accessible world is gradually appearing as an objective reality – as Venus has come

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2   For a more extensive discussion of some of these matters cf. Widell (2009).

to be the objective astronomical object it is, as a result of co-ordinating the evening and the morning perspectives ('ways of givenness').

All this presupposes perception – otherwise we would act 'blindly' (which really means not being able to act at all). But action additionally presupposes the organisation of information so as to make reference and predication possible, thus enabling the assessment of truth. And finally, the link with meaning as related to language arises when we take the step towards assertion, communicating propositions (based on thoughts) as being true.

At this point, via the crucial link of assertion, meanings enter into the realm of linguistic conventions. Such conventions, as organized into a language system, are what enables us to build up and share all the specific conceptual meanings as part of the complex interactional processes that depend essentially on the availability of meanings that are not always directly anchored in perceptions 'as they are given to us'.

II. Functional semantics
4. The assertion in an evolutionary context

The assertion also has a crucial status in a functional perspective, if functionality is viewed in the context of an evolutionary pattern of thinking – as it must be, in a modern version of functionalism. To show why this is so requires a number of steps, beginning with an account of what is meant by the term 'functional'.

As pointed out above, functional semantics differs from semantics as conceived within the Saussurean, structuralist paradigm, by taking its point of departure in what speakers can *do* with language – hence also in a perspective which sees language as anchored in a wider world beyond language itself. It also differs from the purely cognitive perspective on semantics, in which the human mind is viewed as the sole and privileged context in which language belongs. This is not to say that the functional perspective does not view language as belonging in a cognitive context – rather, it views also cognition as belonging in a wider, functional context.

Functionalism in an informal, intuitive sense has been part of linguistics since Aristotle. However, while the tradition from Aristotle could allow itself to assume that things in nature had inherent functions (so that one could explain the presence of sharp teeth in a lion by reference to the fact that it was a beast of prey), this assumption is untenable in a modern scientific world view.

In an evolutionary perspective, functions arise, cf. Wright (1973), when an organ or tool has causal powers (effects) that contribute to keeping the system to which it belongs in existence. With the beast of prey example, sharp teeth contribute by enabling the lion to kill its prey, thereby allowing it to survive and reproduce. This in turn ensures that there will be lions around also in the next generation. It is this two-step causal relationship that qualifies as a definition of 'function' that can play a role in scientific explanations of how biological features can arise, cf. also Allen, Bekoff & Lauder (1998).

Note that this double causality is not limited to biological entities. It also applies to artefacts, e.g. screwdrivers: they contribute to human practices by making it possible to have objects around that need to be fixed by screws, and this in turn is what makes us keep screwdrivers around.

Teeth from beasts of prey also have other uses, e.g. as means of payment, but that is not what keeps beasts of prey in business, hence not what causes the teeth themselves to be reproduced from generation to generation. Thus the function of an object (in this privileged evolutionary sense of the word) is not just any effect or causal power – only that which contributes to reproducing the system of which it forms part from generation to generation. Hence, functions depend on a complex causal relation that can only arise in systems that depend on reproduction for their continued existence. The Atlantic Ocean therefore does not have a function in the evolutionary sense – it just stays around, whatever uses it may have.

How this view of functions applies to language in general is a question that cannot be addressed here, but cf. Harder (1996); only a few crucial applications can be pointed out. One concerns the question of whether the function of language is essentially to do with communication or with the structuring of thought – an issue that has tended to divide the generative from the functionalist camp, cf. Givón (1993), Jackendoff (1994), Knight et al. (2000).

The combined approach in this paper illustrates why this is a pseudo-question. The question of whether thought or communication is most essential presupposes that the two are necessarily in competition; but there is no reason to assume that it is not a combination of both. Starting from the functional perspective, we can say that whatever the functional role of thought may be in relation to language, in terms of the approach to function described above there can be no serious discussion about whether communication is crucial. Language could not be a feature of the human world unless it was transmitted from generation to generation via

communication. Regardless of the contribution of genetic factors, no one to our knowledge has claimed that language acquisition would be possible without linguistic communication, cf. Harder (1996: 99).

Having established that communication is necessary to keep languages around, let us turn to the role of thoughts. If we view human languages in the context of evolutionary history, after attempts to establish continuity between animal and human communication (cf. Pinker 1994), it has become generally accepted that there remains a clear break between human linguistic abilities and those of even the most successful trained apes. For the purposes of this paper, we shall point to two aspects of what this break consists in.

One aspect is the rise of context-independent, mental meanings. Pre-human forms of communication, cf. Deacon (1997), are anchored directly in the situational environment, and human languages are thus unique in possessing purely symbolic, situation-detachable meanings. Thus alarm calls, cf. Cheney and Seyfarth (1992), are triggered by a danger (e.g., a leopard), present in the situation – not by a leopard that is only part of the sender's mental world. With a rough but illustrative exaggeration, this makes animal communication in principle subject to stimulus control, thus potentially to a behaviourist approach. Meanings in such systems of communication are basically in the environment, not in the mind.

Human languages, in contrast, are distinguished by the presence of purely mental, i.e. conceptual meanings, distilled from but not directly triggered by relations with the environment (along with surviving features shared with animal calls, e.g. *ouch* as an expression of immediate pain). The meaning of the word *leopard* is not inherently associated with a situationally present specimen. The rise of conceptual meaning is thus part of the history of evolution. Before a certain point in evolution, meanings of the kind that are characteristic of human languages did not exist.

If we go back to the role of thoughts in Frege's account, evolutionary history can thus offer to supply the background. Before the rise of the ability to entertain meanings independently of direct environmental triggers, it would not be possible to operate with the core elements in his theory, including the formation of thoughts that could be evaluated as either true or false: a false thought must by definition be one without something to match it in the environment.

While purely mental meanings are necessary to enable the formation of thoughts in the sense assumed by the tradition, including Frege, they are not in themselves sufficient. An inventory of concepts including for

instance *leopard, kill*, and *prey* would not in itself contain anything that could be either true or false. We also need to combine these meanings into thoughts with assertible content and describe what role such assertible thoughts may have in the human world. We therefore need to look at the second aspect of the crucial evolutionary step forward that is associated with human language.

This step was described by Tomasello (2008) as involving the capacity for *joint attention and action.* This capacity involves a number of things, cf. Harder (2010: 75f), but especially it requires that human beings can relate to each other in two ways: (1) by attending to the same thing; (2) by attending to it not because of its inherent interest from a purely individual point of view, but because of the interest it gets by virtue of human subjects *attending to it together*.

This sense of 'togetherness' creates a new status for the object of attention – and this may also cause people to persist even in activities with no apparent goal (Tomasello 2008: 177–78). This engagement in 'being in this together' goes with a species-specific form of altruistic orientation, cf. Warneken & Tomasello (2006), towards shared rather than purely individual access to environmental affordances.

What this means is that human beings are unique in finding it worthwhile to share thoughts with no immediate environmental payoff. With this, we are back at the crucial status of the assertion. The assertion is the basic formula that allows the formation of complex meanings that constitute communicated thoughts.

The appropriateness of this contextualization of assertions as a design feature of human communication can be supported by reference to the finding that one thing that language-trained apes have never been recorded as doing spontaneously is to produce purely declarative, assertive statements. In a pre-human world it is not obvious what enhanced selective fitness would be achieved by providing unsolicited information for free. From the recipient's perspective, in terms of the pre-human animal world there is no apparent role for paying attention to what fellow subjects might want to say about the world – no way for it to be ecologically appropriate to make such utterances. Only in the human world where 'being in it together' has a value in itself does it make sense to share your thoughts. Tomasello has produced a wealth of experimental evidence illustrating this feature of human interaction (examples can be found on YouTube!).

5. The evolutionary rise of content substance

Assertions, as pointed out above, depend on structuring and combining human, conceptual meanings in particular ways. From the point of view of linguistic semantics, this raises the question of how this evolutionarily and philosophically central type of complex sign fits into a general theory of meaning as a property of language.

Some basic features can be illustrated by going back to the primeval stage of the rise of human languages. This rise of conventional meaning must involve a basic step by which certain overt actions (which may have been gestural rather than vocal at the first stage, cf. Tomasello (2008)) became associated with a content that made it relevant to re-use particular actions for conveying that particular content. This instantiates the two-step causal relation associated with evolutionary functions: the *effect* of using such a sign is what *causes* speakers to reproduce utterances of which they form part. When this happens, languages can arise and persist by the same causal mechanism that drives other evolutionary processes.

But we may follow the pathway stipulated by Frege in arguing that this step must be preceded by an even more fundamental step, which is directly linked to the rise of joint attention and action: Before signs can come into being, there must be shared, communicable meaning. It makes no sense to try to invoke a kind of meaning that is not available to the designated addressees. Where animal signals or calls can rely for their efficacy on a shared *environment,* signs with conceptual meaning can only operate in an environment where there is already an emerging pool of shared *conceptual* meaning.

From this it follows that at the pre-linguistic stage of language phylogeny, shared attention and action must have engendered a resource of jointly available mental content among members of the pioneer community. In the pre-human world, individuals can possess a rich mental world – but such mental worlds are strictly private; a pool of shareable meaning is a new evolutionary phenomenon. As discussed above, Frege posits a quasi-Platonic 'third realm' to provide a location for meanings, in order to avoid the vagaries of individual empirical psychology. In the picture outlined here, what underpins the status of meanings as being irreducible to individual psychology is not a realm of ideas, but the presence of shared, co-ordinated meaning creation in the community. It is the obligatory embedding of meaning in a shared set of norms that underpins the 'normative phenomenology' described above. Content substance constitutes meaning

that is endowed with human communicability, and thus available for potential encoding, but viewed in abstraction from particular alternative ways of communicating it by means of linguistic signs.

Like all evolutionary innovations, content substance is not wholly new – it piggybacks on what was there before, i.e. individual mental content. But the innovative step from individual to shared content is essential for human languages to arise – with the word *cow* as an example, unless we could entertain the meaning 'cow' as a *shared* idea, human language would not be viable as an evolutionary innovation. Moreover, once we possess a universe of shared meaning, it can accommodate semantic material that could not arise via the royal road of individual perception and action, including the meanings of words like *unicorn, phlogiston* and *quidditch*.

The role of sharedness as opposed to direct relations with the surrounding world also for quite mundane types of meanings can be illustrated by the way one learned to find one's way round the Nicaraguan capital Managua in 1997. At the time, all directions were given by reference to a point of orientation called 'the yellow cinema', a choice which was rather opaque for newcomers, since the cinema in question had been swallowed up by the ground in a major earthquake several years previously. But once familiar with the site on which it had stood, newcomers learned to adapt their geographical orientation around the yellow cinema, too.

The functional point of view agrees with the formal point of view that meaning is not inherent in the linguistic sign (*pace* the Saussurean tradition). But unlike the referential tradition, functionalism assigns an essential role to human subjects in the picture. It is because human subjects have evolved to understand the world in particular ways, and do it as a community rather than as individuals, that not purely individual and idiosyncratic meaning becomes available – and hence offers the possibility of conventionalization. Without the previous rise of content substance, conventional linguistic meanings would not be conceivable.

6. Assertions in a functional and structural perspective

As the last point in this discussion of where referential and functional semantics meet, we shall now offer what can only be a very sketchy account of the way assertions, as a key issue, are intertwined in a semantics based on linguistic structure.

We saw above that functional linguistics, like referential semantics, differed from the Saussurean tradition in viewing meaning as anchored in the world outside language itself. While a functional approach is sometimes

viewed as antithetical to a structural approach, the Danish (and also more generally the European) functional tradition is based on the assumption that structures are function-based. This means that we can only understand how complex linguistic signs are structured if we simultaneously understand what functions individual elements have in relation to each other as well as in relation to the communication of which they form part.

In a strand of the European tradition, cf. Foley & Van Valin (1984), Dik (1989), Harder (1996), Engberg-Pedersen et al. (2005), Hengeveld & Mackenzie (2008), Engberg-Pedersen et al. (2019) clause structure has been analysed in terms of the so-called 'layered structure'. This model constitutes a hierarchical organization of meanings of different types and embodies important cross-linguistic regularities that have counterparts also in generative linguistics, cf. Siewierska (1992). A key feature is that this hierarchy is broadly divisible, cf. Searle (1969: 122) into a formula for speech acts F(R,P), with an illocutionary force taking scope over a proposition that is constituted by a referential and a predicational part. The difference is that a whole range of other linguistic expressions and categories provide differentiated microstructure around this major division.

Not all utterance meanings reflect this structure. An important exception is the type of utterances that constitute whole interactive acts, e.g., greetings like *hello* and exclamations like *hurrah!* Their meanings consist in acts that feed directly into human interaction without involving propositional content. Hence, they are not obviously addressable in terms of formal, referential semantics; they have no obvious 'thought content'. This should not unduly perturb proponents of the referential approach. Such acts, while being conveyed by conventional human signs, may be regarded as marginal when it comes to the design features of human language – although they enter into human languages, they are analogous to signals in animal communication by virtue of their direct links with the ongoing situational interaction.

Assertions, however, do reflect this structural division, also in a linguistic analysis: They have a propositional core, divisible into a referential and a predicational subpart – and they also, at the top of the hierarchy, involve what Frege calls a 'judgment'. In terms of the tradition of functional linguistics, this judgment belongs in a structural slot designated for illocutionary operators.

In the linguistic tradition, the meanings of these operators have to be pared down to what is strictly conventional, which creates a difference with the philosophical sense of 'illocution', cf. Engberg-Pedersen et al. (2019:

270). Thus, an assertion in the structural-linguistic sense corresponds to what is traditionally called the 'declarative'. This means that it is not necessarily very assertive, but may also have more tentative readings. The similarity, however, is strong enough to justify the claim that there is an essential relation; there is a paradigmatic relation between declaratives and interrogatives, as exemplified in the pair *he is coming/is he coming?* such that the declarative conveys a commitment to the truth of the proposition, while the interrogative does not. Thus, we may assume that a Fregean 'judgment' is conventionally encoded by means of the declarative operator (signalled, in the example, by means of constituent order).

Also, we may choose to regard the two elements of propositional meaning, reference and predication, as inherently functional (propositional *acts*, in Searle's terminology, cf. Searle (1969: 24), and also in the linguistic tradition, cf. Hengeveld and Mackenzie (2008). Reference, as recognized since Strawson (1950), is a *function* that we may achieve by means of linguistic expressions, and only if that function is achieved, is the relation with the referent established.

Under this interpretation, functional clause structure can thus naturally accommodate the elements that are essential in a Fregean truth-conditional semantics. In addition, a functional analysis can throw additional light on the structural build-up of assertions, understood in this context as complex linguistic signs rather than un-encoded thought content.

What is more, the specifically referential properties of linguistic expressions need to be supported by semantic properties that are not in themselves referential, also in order to account for their role in bringing about assertions. I have argued elsewhere, cf. Harder (1976, 2009) that definiteness can be illuminatingly captured in an analysis that highlights the functional-interactive dimension of meaning. If we consider definiteness as constituting the meaning of the definite article *the*, we can use it to illustrate what a functional semantics can add to Russell's reference-oriented description.

Under this approach, what *the* (as opposed to the indefinite article *a*) conventionally signals is an interactive instruction to identify a particular referent as being talked about. If you say *give me the book!*, the addressee has not complied with the instruction unless he has identified the right book – in contrast to what is the case if the indefinite article had been used, as in *a book*. This is fully compatible with Russell's (1905) theory, because identification implies pointing to the one and only object for

which the phrase *the book* stands. The conventional meaning ascribed to the definite article in this analysis stands directly on the shoulders of 'joint attention' as a crucial evolutionary innovation. Only speakers possessing this capacity can meaningfully ask each other to enter into a relationship of joint attention to a particular referent in order to share information about it.

Russell's analysis captures the referential aspect and its entanglement with the existence-and-uniqueness implications, as well as the falseness (the lack of fit with the real world) of statements about *the Golden Mountain*. What it does not capture is the interactive weirdness of statements about non-existing objects (as opposed to statements denying or asserting their existence). That weirdness emerges straightforwardly from assuming that *the* encodes an instruction-to-identify (and hence the whole presuppositional aspect): asking people to do something with a non-existing object (whether to identify, to fetch, or to destroy it, etc.) is clearly deviant.

This interactive link is essential to create an actual assertion with a truth value. You cannot tell whether *the book is illustrated in colour* is true or false, unless you have identified the book in question. This identification is an interactive operation which cannot be captured in terms of what the world is like. It is neither a thought nor a constituent of a thought, but an act that anchors the thought to the world to which it applies. At the next level, going upwards from the structure of a referring expression to the role of reference itself, reference along with predication and assertion can be anchored in structural-functional account of how conventional meanings hang together. The functional and structural dimensions do not contradict the formal-semantic description, but provide it with a context that is beyond its own focal area of interest.

7. Summary and final comments

We have tried to argue that there are significant overlapping elements in the two approaches to meaning, and that the essential difference between them lies in what the aim of the description is. While the formal-semantic, truth-conditional tradition aims to account for meaning in relation to the world that statements are about, functional (-structural) semantics aims to describe meaning as a property of human languages. Both approaches go beyond structuralism in accounting for meaning as part of a wider world beyond the language system itself. In truth-conditional semantics, the essential relations with the surrounding world are reference and truth;

in functional semantics, the essential relation is the function linguistic expressions have in enabling shared conceptualization between speakers as part of maintaining interactive relations.

Some elements of human languages fall outside the scope of truth-conditional semantics, because they are not essentially concerned with propositional meanings that can be assigned a truth value. However, these holophrastic elements (*hello, hurrah!, fuck!*) are arguably not central to what human languages are about.

Other, more interesting elements (the examples are 'declarative' and definiteness) cannot in themselves be captured fully by their truth-conditional properties. However, they have an essential role in accounting for how assertions – the truth-conditionally central type of utterances – come to apply to those situations in the world that they are about. The 'judgment' that is central to Fregean semantics fits into a functional semantics in which we have illocutionary meanings at the top of the hierarchy, in the periphery above the central proposition: reference and predication constitute functions that if achieved, bring about the proposition that constitutes the content of the assertion; and finally, definiteness is an interactive signal that requires the addressee to bring about the referential relationship without which truth values cannot be assigned.

The semantic properties that are fundamental to truth-conditional semantics can thus without contradiction be fitted into a structural-functional semantics, where they enter into paradigmatic relations (assertion ~ declarative has a paradigmatic opposition to the interrogative, and definiteness has a paradigmatic opposition to indefiniteness) and syntagmatic relations (e.g., with operators such as discourse markers) that are not essential to the concerns of truth-conditional semantics.

Just as a referential semantics cannot account for the whole area of linguistic semantics, a linguistic semantics cannot account for those parts of referential semantics that apply to features independent of linguistic coding. The use of formal, logical semantics as a skeleton structure underlying mathematical structure lies outside the purview of linguistic semantics. But if there is clarity both about the areas of overlap and the areas of divergence, an integrated perspective on the two approaches can enrich our understanding of the role and nature of conceptual meaning.

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A couple (of) changes in the 'Brown family': British and US English compared[1]

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Abstract

This investigation uses the 'Brown family' corpora to investigate changes in US and British English involving the noun *couple*, which has developed a quantifier meaning similar to 'few'. The four corpora were developed in order to compare British and US English from the 1960s with data 30 years on, from the 1990s. The main finding is that US English leads the change. Although the corpora give some useful indicators for comparison purposes, *couple* is a low frequency item, and does not occur often enough for quantitative comparisons.

1. Introduction

This investigation employs the 'Brown family' of corpora, four corpora that were specifically created with direct comparison of British and US English in mind, and which have repeatedly been shown to be useful in investigations of language change (cf. Leech 2003; Leech 2011; Leech et al. 2009; Leech & Smith 2005; Mair 2002). The difference/change that I

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[1] During my time in Aarhus, Sten Vikner and I enjoyed collaboration on both research and teaching. One of our most stimulating teaching partnerships was the course 'Current Topics in English Linguistics', in which current topics were linked by several themes running through the semester, including the theme 'Variation and Change'. During class discussions about differences between the British and US varieties of English, students and teachers sometimes resorted to a 'down-and-dirty' method of fact checking by searching the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA). Although general indications can be gleaned, the two corpora are not directly comparable, neither in time of collection nor in type of material. This paper attempts a comparison using directly comparable corpora. With fond memories . . . .

investigate is the grammaticalisation of *couple* in 20th century English; that is, how advanced the change is and whether similar changes are taking place in both varieties. The possibilities for differential language change include lag in one or other of the varieties, innovation in one or other of the varieties or parallel development (Hundt 2009: 32). The types of expressions that I focus on are those in which *couple* is followed by a prepositional phrase introduced by *of*, often termed $[N_1 \, of \, N_2]^2$ constructions as shown in (1).

(1)   A couple of people got on the bus.

In English, the noun *couple* has a number of meanings. The Oxford English Dictionary (OED) (s.v. *couple*) identifies two major meanings: 'that which unites two' and 'a union of two; a pair'. There are a number of sub-meanings, all having to do with twosomes. However, the OED entry, first published in 1893, has not been fully updated to include a more recent semantic change where *couple* can mean 'an indefinite small number, a few'. This sense is mentioned in various newer dictionaries, e.g. Merriam-Webster (online). The OED does, however, mention a recent syntactic change, in which *of* is omitted in $[N_1 \, of \, N_2]$ expressions as in (2), which is cross-referenced with a different lexeme, *coupla,* as in (3), where the *-a* is what remains of the preposition *of*.

(2)   **OED** (1925 S. Lewis Martin *Arrowsmith*)
       A couple months in Italy

(3)   **OED** (1906 H. Green *At Actors' Boarding House*)
       A coupla parties is come for rooms!

Examples from the British National Corpus (BNC) and the Corpus of Contemporary American English (COCA) showing the semantic and syntactic features that I focus on can be seen in (4)–(8). In (4), there is an argument about how many dollars constitute *a couple*; in (5), *couple* is less than twenty, but by implication is more than two; in (5) and (7) *couple* is paraphrased as *few*; in (7) and (8) there is no *of*, and in (8), three examples are given. It appears that the meaning 'a few' is possible regardless of whether *of* is present or absent.

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² The term $[N_1 \, of \, N_2]$ is used as a convenient notation, but I recognise that each noun may or may not be modified and that N_2 is optionally precede by a determiner in the structure: [determiner (modifier) N_1 *of* (determiner) (modifier) N_2].

(4) **US English** (COCA: spoken)[3]
OLIVETTE OLIVER: It's not <u>a couple of dollars</u>. <u>A couple of dollars</u> is $20. Thirty-four is a lot of money.
DAVID PAGAN: No, no. <u>A couple of dollars</u> is like $10, $15, $20. A lot of money is like $60, $70.

(5) **UK English** (BNC: spoken, conversation)
SP: PS50X And it won't take long. . . to move those wardrobes, only about (pause) twenty minutes.
SP: PS50T Oh it'll take us <u>a couple of minutes</u>! It won't take twenty minutes!

(6) **UK English** (BNC: spoken, conversation)
the other one was fucking useless, well, it lasted for <u>a couple of months</u>, a few months
(BNC: conversation)

(7) **US English** (COCA: spoken)
WINFREY: OK. Terence, you've had multiple affairs?
TERENCE: I had <u>a couple affairs</u>, three affairs.
WINFREY: So when you say a couple, a few, what does that really mean?

(8) **UK English** (BNC: spoken, radio broadcast)
I can give you <u>a couple examples</u> of the more tangible advantages . . . One of them is called . . . Another example is the CASE Scheme . . . And finally on the undergraduate side . . . .

Among more recent comprehensive grammars, Biber et al. (1999: 254) admit to the newer meaning of *couple* 'a small approximate number, not just two', including it under the broad heading of "quantifying nouns" (1999: 251), whereas Huddlestone & Pullum (2011: 359–50) discuss *couple* in the context of "number transparent quantificational nouns", so called because they allow the number of the complement to determine the number of the entire DP. Quirk et al. (1985: 316) do not mention *couple*'s quantificational function at all; they discuss it as a collective noun, alongside e.g. *committee* and *audience*, a point that will be returned to later in this discussion. Note

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[3] The spoken data in COCA is all from news broadcasts and all in the same register, unlike the BNC.

that the difference (noun or quantifier?) and the grammatical category of N_1 in this type of expression is at the centre of the questions surrounding *couple*. Part of this investigation, addressed in Section 4, involves testing to assess whether *couple* functions as a typical quantifier.

   The data for the investigation are taken from the Brown family of corpora, two sets of US English data collected in the 1960s and the early 1990s (BROWN and FROWN) and two sets of British English data collected in 1961 and the early 1990s (LOB and F-LOB). The four corpora each contain 500 samples of 2000+ words of running text of edited English prose. This allows comparison of two stages of each variety, 30 years apart, as well as comparison between the two varieties at an earlier and a later stage. Occasionally, the results are checked against other corpora: BNC (Davies 2004–); COCA (Davies 2008–); COHA (Corpus of Historical American English) (Davies 2010); NOW (News on the Web) (Davies 2013) and GloWbE (Global Web-Based English) (Davies 2013).

   In section 2 below, I give the background to the grammaticalisation path of the change, noun to quantifier. Sections 3 and 4 report and discuss the results of the corpus search. Section 3 looks at the collocation patterns, i.e. what types of N_2 are selected most frequently and section 4 discusses syntactic tests. Section 5 addresses the reduction or complete absence of the preposition *of* and Section 6 is the discussion and conclusion.

2. Language change noun > quantifier

The changes described above involving *couple* look similar to other noun > quantifier changes that have been discussed in detail in investigations of grammaticalisation. In this change, N_1 starts as a lexical head, followed by a post-nominal prepositional phrase. However, N_1 may become the modifier, N_2 then functions as the head of the phrase, and N_1 is a quantifier. As is common in grammaticalisation, the original nominal function is often preserved alongside the quantificational one. This can be seen with the noun *lot* as in (9).

(9)   a.   An expensive lot of paintings <u>is</u> for sale.   (lexical head)
        b.   A lot of expensive paintings <u>are</u> for sale.   (quantifier)

Although the earlier lexical head meanings of *lot,* 'portion of land' or 'set of things produced at the same time' or 'set of items sold together at an auction' are still current, as in (9a), the quantificational use may be seen in (9b). Even though *lot* is singular*,* verbal agreement in (9b) is with the plural

paintings, showing that *paintings* is the head. Additionally, in some of these expressions *of* is often represented orthographically as *schwa* as in *a lotta* (and *lotsa*)*,* as seen in (3), indicating the coalescence and phonological reduction typically associated with grammaticalisation (Brems 2001: 115). The change is set out in (10).

(10)   Reanalysis of [N1 *of* N2] expressions
        Re-bracketing from [N_1 [*of* N_2]] to [[N_1 *of*] N_2]

The nouns that typically participate as N_1 in this change are a diverse group, comprising quantities: e.g. *number*, standard measures: e.g. *pound*, partitives: e.g. *piece,* containers: e.g. *cup*, collectives: e.g. *swarm*, quantums: e.g. *lump,* and forms: e.g. *pile* (Koptjevskaja-Tamm, 2001). As mentioned above, categorising this particular group of N_1 nouns as a whole presents a challenge for grammarians and researchers alike. Although they are nouns, they do not always function as typical nouns but may be quantifiers (e.g. *a pile of trouble*) or degree modifiers (e.g. *a bit of a problem*). An early treatment (Lehrer 1986) calls them 'classifiers'. Granted, like classifiers, they allow non-count nouns to be counted, as in *six cups/lumps/piles of sugar/*six sugars*; however, there are clear differences from generalised classifier languages, where all nouns are stored in the lexicon as non-count, and require a classifier in order to be counted (Chierchia 2010). An obvious difference from nouns in classifier languages is that not all nouns of the group in question are restricted to selecting only non-count nouns. Whereas quantums select only non-count nouns (*lump of sugar*), collectives select only count nouns (*swarm of fireflies*) and forms and containers select both (*a pile of beans/rice; a cup of beans/rice*). While these nouns are clearly not classifiers in the traditional sense, neither are they nouns. Researchers use various terms for them, including 'complex nominal determiners' (Mirto & Necker 2007), 'non-numerical quantifiers' (Smith 2009), and 'size nouns' (Brems 2011). I adopt the terms of Quirk et al. (1985), 'open-class quantifiers'. They can be compared and contrasted to the 'closed class' (lower) quantifiers: *many, (a) few, several, much* and *(a) little*. The importance of this contrast will become clear in section 4.
        The grammaticalisation literature has examined a number of specific N_1 nouns, both synchronically and diachronically: *jot of/scrap of/flicker of* (Brems 2007); *bunch(s) heap(s), pile(s), lot(s), load(*s) (Brems 2011); *heaps (of), lots (of)* (Brems 2012); *a lot of/lots of* (Smith 2009); *a piece/bit/ shred of* (Traugott 2007); *a kind/bit/shred* (Traugott 2008). With respect to

the path the change follows, Traugott (2010: 46-48), building on Denison (2002) and on Traugott (2008: 27), identifies 5 general stages of the change, specifically sketching the history of *a bit (of), a piece (of)* and *a shred (of)*. (See also Brems 2012; Claridge & Kytö 2014). The similarities and differences "illustrate well what has become a truism in work on grammaticalization: each string has its own history, but conforms to general schematic change-types in ways that are partly constrained by the particularities of the original meaning-form relationship" (Traugott 2010: 46). As far as I am aware, most diachronic investigations have focussed on British English, although frequency differences for *loads of* and *heaps of* have been noted between Australian and New Zealand English and British English (Smith 2009) and for *bunch of* between American English and other variants (Brems 2011: 180).

The five general stages that Traugott sketched are shown in (11).

(11)   I partitive (binominal); II extended partitive; III quantifier; IV degree modifier; V free adverb.

These may be illustrated with the example, *a bit of*, which is related to *bite* in the sense of 'a mouthful'. Stage I, the partitive (*a bit/bite of bread*) is extended in stage II to non-food items, where the literal meaning 'mouthful' is bleached out and N_2 can be abstract: *a bit of a secret*. The quantifier/ degree modifier use arises in the 18th century where, for example, *a bit of a bastard business* means 'somewhat of a' or 'rather a', and *a bit of a kind of a sword* means 'something like a sword' rather than 'a piece of a sword'. In the final two stages there is syntactic expansion; at stage IV *bit* is found pre-adjectivally as in: *a bit wiser, a bit richer, a bit taller, a bit shorter*, and in stage V as a free adverb as in: *I don't like it a bit*.

Intuitively, the semantics of *couple* do not appear suited to a change of this type. The other lexical items listed above such as *load(s)*, *pile(s)*, *bunch(s),* etc. have impreciseness and vagueness already built in; they have 'ragged edges', so to speak, whereas *couple* is precise in its reference to twosomes, i.e. two items joined, or a pair of items, or a sexual pair. Nevertheless, there appears to be some general tendency for items associated with twoness to extend their meaning to 'two or more'. The cognate of *couple* means 'few' in Irish: *cúpla duine*, 'a few persons'; *cúpla lá*, 'a few days'; *cúpla bliain,* 'a few years' (Foclóir Gaeilge-Béarla); and the expression *the cupla focal* is frequently employed in Irish English to mean the Irish language.

(12) **Irish English** (NOW Corpus: https://www.irishcentral.com/news/
      irishvoice/sinn-fein-gaelic-obsession-an-obstacle-to-brexit-progress).
      Yes, that's right, it's about what people in the south derisively call
      "the cupla focal" (Irish for a couple of words, which is all the Irish
      that most people here can speak).

Of course, another example of an item associated with 'twoness' which has
extended its meaning to mean 'few' is *pair,* the cognates of which in other
Germanic languages can mean 'few'.

(13) **Danish** (Korpusdk; Familie-Journalen)
      så lod hun hænderne glide søgende gennem
      'as she let (her) hands glide, searching through

      de sidste par jordbærplanter.
      the last few strawberry plants.'

(14) **Danish** (1722 Holb.Kandst.IV.2.)[4]
      for din uforskammede Mund faar (du) et par Ørfigen
      'for your rude mouth you get a couple ear-figs [=clip on the ear]

      eller to (ligesom det kand falde sig til).
      or two (as it may happen.).'

(15) **Dutch** (van Riemsdijk 1998:17)
      a. quantificational reading
      Er   staan   een paar schoenen   op de tafel.
      there stand.PL *a   pair shoes   on the table*
      'A few shoes are on the table.'

      b. partitive reading
      Er   staat   een paar schoenen   op de tafel.
      there stand.SG *a   pair shoes   on the table*
      'a pair of shoes is on the table.'

Although Sten and I spent some time discussing the internal and external
reasons why English failed to gramaticalise *pair,* we reached no firm
conclusion. Possibilities include competition between *pair* and *couple,* or

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[4] I am indebted to Sten Vikner for this early example of Danish *par*, 'few', i.e. for his
      indefatigable pursuit of empirical data.

the fact that *pair* is borrowed into English through Anglo-Norman (OED s.v. *pair*) whereas in the sister languages it comes directly from the Latin plural *paria*, (Falk & Torp 1911: 815). For more on *pair* see Wood (2019a) and for a comparison between *pair* and *couple*, Wood (2019b).

With respect to *couple*, the focus in this study is on stages I–III, i.e. partitive noun to quantifier. As was shown above, using *bit* as an example, in the first two stages the partitive noun, N_1, first expands its complements in stages I and II; the quantificational use does not appear until stage III. In Section 3 below, I first give some background to the development of *couple*, taken from Wood (2019b) before reporting the results from the corpus searches with respect to complement selection. Section 4 focusses on syntax and discusses the results of various syntactic tests that distinguish *couple* the noun from *couple* the quantifier.

3. *Couple* and its complements

As previous studies of grammaticalisation have noted, one of the criteria involved is 'host-class expansion' Himmelmann (2004). This was illustrated above with the example *a bit of bread* > *a bit of a secret*, i.e. NP_2 is no longer restricted to concrete lexemes (Traugott 2007: 542). It follows then, that one of the possible differences between British and US English and between the 1960s and the 1990s could be in complement selection.

When the noun *couple* first appears in English in the 13th and 14th centuries, it is used for twosomes that are physically joined to each other, as in (16), referring to wood struts that make up the triangular part of a roof, or metaphorically joined, as in (17) (Middle English Dictionary (MED) s.v. *couple*).

(16) **Middle English (**c1380, *Sir Firumbras*)
       Al   þe coples cipres   were   &   þe raftres wer   al-so
       all the couples cypress   were   &   the rafters were also
       'All the couples were made out of cypress as were the rafters.'

(17) **Middle English** (c1280, *South English Legendary*)
       Þer   nas   couple In ierusalem of so clene lyue.
       there   NEG-was   couple in Jerusalem of so clean life
       'There was not such a clean living couple in Jerusalem.'

Although the first scattered examples of abstract noun complements occur in the 16th century it is not until the end of the 17th century that abstract complements appear with any regularity; notably, in the 19th century, there is a marked increase in temporal (and distance and measure) expressions. I suggest that temporal expressions are an important indicator of the way in which complements of *couple* are expanded (Wood 2019b). In everyday interactions minutes, hours, days and miles are not usually measured with exact precision and invite interpretation as 'approximately'. In the 19th century, these are often accompanied by hedges. Note the upper limit in (18), the lower limit in (19), the approximation in (20), and the uncertainty in (21). The examples below are from the CLMET3.0 corpus (Diller et al. 2011).

(18) (1811, Jane Austen)
      but Miss Steele could not be kept <u>beyond a couple of minutes</u>, from what was uppermost in her mind.

(19) (1839, Charles Darwin)
      Two immense stones, each <u>probably</u> weighing <u>at least a couple of tons</u>.

(20) (1826, Benjamin Disraeli)
      In <u>about a couple of hours</u> Mr. Beckendorff entered.

(21) (1909, Jerome K. Jerome)
      "Well, by the road," I answered, "I daresay <u>it may be a couple of miles</u>."

On the basis of the historical findings (Wood 2019b), briefly sketched above, I searched the four corpora for five different complement types: concrete, abstract, semantically empty (*things/times*), temporal, distance/measure, in order to find whether one variety selects abstract nouns or temporal nouns significantly more frequently than the other. The results are shown in Table 1. Representative sentences from each of the five complement types taken from BROWN are in (22)–(26).

	BROWN (US 1960s)		FROWN (US 1990s)		LOB (UK 1960s)		F-LOB (UK 1990s	
	N	%	N	%	N	%	N	%
concrete N$_2$	42	49.4%	43	57.3%	30	56.7%	42	46.2%
abstract N$_2$	3	3.5%	2	2.7%	2	3.7%	3	3.3%
times/things	3	3.5%	5	6.6%	2	3.7%	8	8.8%
temporal	31	36.5%	23	30.7%	15	28.3%	34	37.3%
distance/ measure	6	7.1%	2	2.7%	4	7.6%	4	4.4%
Total examples	**85**	**100%**	**75**	**100%**	**53**	**100%**	**91**	**100%**

Table 1. Complements of couple (of) in the Brown family corpora

(22) [T]the doctor ordered <u>a couple of ballplayers</u> to carry the catcher into the dressing room.

(23) I shall first indicate <u>a couple of weaknesses</u> in Fromm's analysis.

(24) I could hear my man moving around, heard him cough <u>a couple of times.</u>

(25) A truth-revealing crisis erupted in Katanga for <u>a couple of days</u> this month.

(26) Last year's volume was at the top <u>a couple of inches</u> below the ceiling.

Most striking across the board is the low incidence of abstract nouns of the type in (23). Most of the non-concrete complements are either temporal and measure expressions or vague nouns such as *times* and *things*.
However, given the small size of the sample the actual differences cannot be considered significant in this paper and the results are inconclusive. For the UK, the figures show the percentage of concrete nouns decreasing between the 1960s and the 1990s and the temporal expressions and *times/ things* increasing. Although this could indicate an expansion of the type described above, the figures for US English show the reverse.

   Although the collocates give some indication of how the meaning has extended (Traugott's stage I to II), it is impossible to tell from the

examples whether the meaning is 'two' or 'a few'. This ambivalent or vague use (Brems 2011: 46) is favoured by a less concrete N_2 and, I argue, by examples like (25)–(26), in which speakers and writers appear to be estimating time, distance and measurement. Only the wider context disambiguates between partitive and quantifier, as was seen in extended examples (4)–(8). In order to assess whether *couple* sometimes behaves as a quantifier, i.e. to distinguish between partitive and quantifier, syntactic tests are needed, and I turn to these in Section 4 below.

4. Syntactic Tests
According to (Traugott 2008: 27) there are at least three 'robust criteria' for distinguishing partitive use from quantifier use:

   i)   In the partitive, the initial determiner agrees with N_1 and in the quantifier it agrees with N_2;

   ii)   In the partitive, but not in the quantifier, the second NP may be preposed: *of an apple, a bit*; **of a liar a bit*;

   iii)   In the quantifier construction, the first noun can be replaced by one word: e.g. *a bit of/rather/quite a talker*.

Other indicators include, iv) agreement with the predicate and v) adverbial properties (collocation with adjectives and verbs e.g. *a bit green; I sort of liked it*) (Traugott 2007: 531). I assume that *couple* does not yet have adverbial properties, so the fifth criterion is not applicable.

Replacement by one word would mean replacing the expression *a couple of*, and indeed it would be possible to substitute *several,* or *a few* for most examples, although that does not give an indication as to whether the speaker has two or more in mind. In section 4.1, I briefly explain why the tests involving agreement and movement mentioned above are not ideal either and, in Sections 4.2 and 4.3, I explore two other tests: pre-nominal and post-nominal *more* and pre-modification of N_1.

4.1 Agreement and movement tests
Agreement tests are based on the principle that in a binominal construction, agreement is with the head, which is expected to be N_1, but in the quantifier construction is with N_2.

Verbal agreement tests are in general limited anyway, because the binominal in question has to be in subject position and N_1 and N_2 have to differ in number. However, *couple* is a collective, leading to an

additional complication with verbal agreement. This verbal agreement test is straightforward for *lot*. The quantifier vs the lexical use of *a lot of* was shown in (9). Although *a lot* is arguably singular, considering that the indefinite determiner *a* selects only singular nouns, in the quantifier verbal agreement is with N_2. The test turns out to be problematic for testing *couple* as an N_1 because *couple* is a collective noun that can take singular or plural agreement depending on the point of view, whether the unit or individuals within the unit are the focus (Quirk et al.1985: 748). Hence, *couple* usually has a plural verb when it refers to two persons: *The couple are happily married,* whereas the verb is singular when *couple* denotes a unit: *Each couple was asked to complete a form* (Quirk et al.1985: 759). This notion extends to [N_1 *of* N_2] expressions as can be seen in (27)–(29). Singular verbal agreement indicates the *months* and *days* are considered a unit and plural indicates the *years* are considered individually. This gives no indication of whether the use is quantificational. The three spoken examples below are from COCA:

US English

(27) I'm like, <u>a couple of months is</u> not going to matter with thyroid cancer.

(28) Now, Mr. Hammock, I gather that <u>a couple of days is</u> just about the margin you think that many people have in Ethiopia.

(29) <u>A couple of years were</u> enough for me. I survived.

For these reasons, the verbal agreement criterion will not be considered further.

The other agreement test Traugott mentions is determiner agreement. This also is of limited value. First, open class quantifiers occur most often with the indefinite article and, in English at least, neither the definite nor the indefinite article agree with the noun. Also, as discussed above, the collective *couple* can be singular or plural. In the corpora investigated there are only 3 examples with a demonstrative, all singular, but (30) and (31), at least, could equally well be plural. None of this helps with the question of whether *couple* is a lexical noun or a quantifier.

(30) **LOB** (fiction)
       I learnt quite a lot that was useful in the course of <u>that couple of hours</u> at the Bloomsbury.

(31) **LOB** (press)
For <u>this last couple of weeks</u> he has been shooting off his predictably pursed mouth . . .
(LOB: press)

(32) **F-LOB:** (fiction)
[H]e was talking about turning fully pro but first he needed to lose <u>that couple of stone</u>.

Finally, Traugott (2008: 27) mentions movement tests. These are based on the idea that after rebracketing the structure is $[[N_1 \; of] \; N_2]$, i.e. the preposition *of* incorporates as part of N_1 and there is no longer a prepositional phrase constituent that can be moved. This test should be qualified by adding that this movement is possible if the second nominal is definite, but not if it is indefinite, i.e. the test distinguishes between true partitives and pseudopartitives. The difference is that ordinary partitives involve restricted or contextually bound sets, whereas pseudo-partitives involve unrestricted or unbounded entities (Selkirk 1977, Jackendoff 1977). The difference is summed up as in (33) exemplified in (34).

(33)   partitive elements: make sets accessible for quantification
         ordinary partitives: involve restricted or contextually bound sets
         pseudopartitives: involve unrestricted or unbounded entities

(34)   a. a pile of that mud/a group of my students
             (restricted set: partitive)
         b. a pile of mud/a group of students
             (unrestricted set: pseudopartitive)

It can be seen from (35)–(37) that if N_2 is definite, the movement is grammatical but moving indefinite *a couple of leaflets* is ungrammatical.

(35) **UK English** (BNC: spoken, *Abbey Life: training session*)
I'll leave you a couple of these leaflets which do explain a lot of the areas we've covered tonight.

(36) a. *It was a couple _____ I left of leaflets.
   b. It was a couple _____ I left of these leaflets.

(37)   a.   *Of leaflets I'll leave you a couple _____.
       b.   Of these leaflets I'll leave you a couple _____.

The problem with this test is that preposed prepositional phrases do not often turn up in corpus data and have to be judged by elicitation. Pursuing this further is beyond the scope of this paper. I return to the difference between partitives and pseudopartitives in section 5, in the discussion of the preposition *of*.

Having concluded that the criteria for distinguishing quantifiers suggested by (Traugott 2007, 2008) are not applicable to *couple,* I go on to discuss two other tests, the position of *more* and pre-modification of quantifiers.

4.2 Post nominal more

It was pointed out above that 'few' is the newer meaning of *couple*, and that *few* can often replace *couple*. In this section, I focus on structural and distributional similarities between *couple* and *few* in order to assess whether *couple* has similar quantifier characteristics. In (38) I give a cartographic representation of the nominal functional area (based on Epstein 1999), which I use to highlight that there are (at least) two areas for quantifiers, a higher one (QP) for more determiner-like quantifiers and a lower one (countP) that includes numerals. A number of other researchers have proposed layers in the DP (e.g. Zamparelli 2000) the exact details are not important here, except to highlight that there are structural differences between the lower and higher groups of quantifiers.

(38)

```
                    DP₁
                   /    \
                 D₁      DP₂
                 all    /    \
                      D₂       QP
                      the     /   \
                  this, that  Q     countP
                   my etc.   some   /     \
                            every  count    NumP
                            each   many    /    \
                            no     few   sing/pl  NP
                            any    several  -s
```
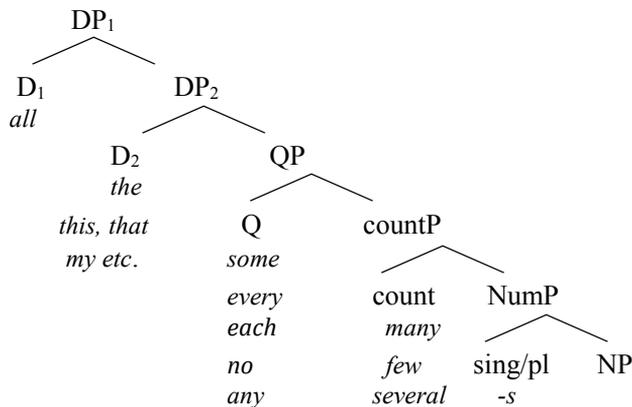
The test that I apply for *couple* as a quantifier in present-day English exploits the position of *more*, meaning 'In addition to what has been specified or implied' and which is "used only after a designation of quantity or number (definite or indefinite)" (OED s.v. *more* C. II 4.b). As is shown in example (39), *more* can precede but not follow a bare noun. (40) shows that with higher (QP) quantifiers, *more* can occur between a quantifier and noun, but is ungrammatical in the postnominal position. (41) shows that with numerals and the lower (countP) quantifiers the postnominal position is fine.

(39) a. After a while, they had   more children.
      b. *After a while, they had   children more.

(40) a. After a while, they had   some/no more children.
      b   *After a while, they had   some /no children more.

(41) a. After a while, they had
              (a) few/many/several/two more children.
      b. After a while, they had
              (a) few/many/several/two children more.

Therefore, the use of *more* following a determiner as in (40) and (41) indicates that the determiner is a quantifier, and the use of *more* following the noun, as in (40) and (41) distinguishes between a higher and a lower quantifier. As shown in the constructed example in (42) and the corpus example in (43), *couple* patterns with the low quantifiers, i.e. is similar to *few*.

(42) a. After a while, they had   a couple more children.
      b. After a while, they had   a couple children more.

(43) **US English** (COCA: spoken)
      And we will have a couple minutes more in some parts of the country
      to continue our chat.

In view of this, I searched the four Brown family corpora for examples of pre- and post-nominal *more* following *couple*. Although both US corpora have pre-nominal examples, there are none in LOB, the earlier British English corpus, although there are examples in the later British corpus, F-LOB. All examples found are shown in .

(44) **BROWN**

[A]nd a couple more cops to hold them at a decent distance.

FROWN

They went through it all a couple more times.

[Y]ou might try picking a couple more boats.

LOB

(No examples)

F-LOB

He wound on and took a couple more shots then politely thanked Marie.

After some thought, tin of Miller Lite, and a couple more guitar solos which sent the audience wild.

For comparison, I also checked for *some more* and *several more,* which I found in all four corpora, although, again, there are few results. For *some more* the numbers are: BROWN (1), FROWN (4), LOB (5), F-LOB (1) and for *several more*: BROWN (3), FROWN (1), LOB (1), F-LOB (1).

(45) **BROWN**

Please find some more reporters like that young man from Denver.

FROWN

We had stopped by and told him to catch some more snakes for us.

LOB

[A]nd joining some more geese on the mud to the west.

F-LOB

Go and get us some more hot water, Heather, love.

(46) **BROWN**

> This is simple enough, but <u>several more points of interest</u> may be mentioned as relevant.

FROWN

> Moral Majority persisted for <u>several more years </u>under new leadership.

 LOB

> [B]ut the specificity should be confirmed by testing against <u>several more examples</u> of D-positive and D-negative red cells.

 F-LOB

> There were <u>several more phone calls</u>, of course, as the evening went on.

The examples in (44) show *couple* has similar syntactic behaviour to higher quantifiers such as *some* and lower quantifiers such as *several*. The absence of examples in LOB could indicate a lag in British English, though with so few examples nothing definite can be proposed. Unfortunately, there are no examples of post nominal *more* with *couple* in any of the four corpora, which would distinguish between higher and lower quantifiers. It seems, however, even in US English the construction is fairly new; a search in COHA (Corpus of Historical American English) reveals that the earliest US example is from 1941.

(47) **US English** (COHA: 1941, fiction)

> you better go to college for <u>a couple years more</u>, that's what I say.

Surprisingly, although (43) and (47) show postnominal *more* with *couple* in US English, I could find no similar examples in BNC. As a further check for [couple N *more*] in British English I searched GloWbe (Corpus of Global Web-Based English), which has about 1.9 billion words of text from twenty different countries. I found no British English examples there either, although there are 12 examples from the US four from Canada and four from Australia. Singapore has two and New Zealand, Sri Lanka and the Philippines one each.[5]

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[5] A reviewer suggests, given the low number of tokens, checking Google Ngrams might be useful. This is indeed a possibility. More insight into what is happening in British English could be found by comparing the earlier and later versions of the British National Corpus: BNC and BNC2014. I leave these many options for future work.

(48) **Philippine English** (GloWbe).
      A few years ago, hubby had to take off his wedding ring because his
      ring finger had an accident. That happened a <u>couple times more</u> so
      he didn't wear the ring for about a year or so.

The absence of examples from British English might indicate that the
construction with *more* following the noun is not found in British English
at all. A check in the BNC for *few* easily dispels that notion.

(49) a. **UK English** (BNC: written, fiction)
          But if you carry on for <u>a few more days</u> on an unofficial basis,
          that's your business.

      b. **UK English** (BNC: written, non-fiction)
          Your beautiful scheme is ruined. You let things lapse for <u>a few
          days more</u>.

In conclusion, it can be noted that in the Brown family data the number of
tokens is low overall, not only for *couple* but also for examples with the
quantifiers, *few*, *several* and *some*. However, the construction [a couple
more N] was found in both the 1960s and the 1990s in US English but
only in the 1990s in British English, giving an indication that British
English may lag behind. This led to a check as to whether the postnominal
construction [a couple N more], which would indicate a low quantifier, is
found in British English at all. Spot checks in GloWbe failed to discover
British English examples.

4.3 Pre-modification

Another way in which the lexical head use and the quantifier use differ is
in the restrictions on pre-modification. If N_1 and N_2 are nouns it should be
possible to freely modify both, but if N_1 is a quantifier, the modification
possibilities are limited (Brems 2011: 195). Table 2 gives a comparison
between the most frequent premodifiers of *few* and *couple* in BNC and
COCA.

	pre-modifiers of *few*		pre-modifiers of *couple of*	
	BNC	**COCA**	**BNC**	**COCA**
1	past (840)	past (5931)	past (102)	past (1100)
2	good (68)	select (310)	good (11)	rough (28)
3	precious (41)	precious (235)	extra (10)	extra (26)
4	previous (32)	lucky (150)	mere (4)	good (26)
5	privileged (30)	final (132)	previous (3)	odd (16)
6	final (22)	privileged (74)	free (3)	tough (15)
7	fair (19)	fortunate (67)	bad (2)	final (14)
8	extra (18)	chosen (65)	busy (2)	long (11)
9	select (17)	previous (52)	final (2)	bad (10)
10	lucky (13)	top (52)	hectic (2)	busy (9
11	following (13)	extra (48)	right (2)	just (9)

Table 2. Comparison of most frequent premodifiers of *few* and *couple* in BNC and COCA

As can be seen, the overwhelmingly most frequent modifier of *few* and of *couple* in both varieties is *past* in temporal expressions. Examples from both varieties are shown in (50) and (51).

(50)   **UK English** (BNC: spoken, meeting)
  a. tremendous resources have gone into the health service over the past few years.
  b. We've done relatively well in the past couple of years.

(51)   **US English** (COCA: spoken)
  a. We've been talking about it the past few days.
  b. We have spent the past couple of days showing some of the devastation it has wreaked.

Here, however, *past* does not modify *few* and *couple* alone, but the entire DP. Its frequency is indicative of the prevalence of temporal expressions.

For the purposes of identifying quantifiers the relevant modifiers are scalar, e.g. *good* and *fair* in (52)–(54), examples selected from Table 2.

UK English (BNC: spoken, conversation)

(52) a fair few roadworks which could hold you up.

(53) Oh yeah we've got <u>a good few mushrooms</u> there.

(54) **UK English**
      She stopped me in town funny enough erm oh <u>a good couple of weeks ago</u> like. . .

Here, the modifier *good* is "Used to emphasize that a quantity, number, etc., is at least as great as, and quite probably greater than, stated" (OED sv. *good* 11a). So, a *good few mushrooms* and a *good couple of weeks ago* do not mean that the *mushrooms* were 'good' or the *weeks* were 'good', but refer to the quantities, *few* and *couple.* In this sense *couple* cannot mean two but means the 'upper limit of *few'*.

In my searches of the four Brown corpora family I found three examples of pre-modification in each of BROWN, and FROWN, one in LOB and six in F-LOB, shown in (55).

(55) **BROWN**
      past couple of hours; last couple of years (2).
     FROWN
      that last couple of years; next couple of days (2).
     LOB
      this last couple of weeks.
     F-LOB
      first couple of nights; past couple of seasons; past couple of years; good couple of minutes; previous couple of months; last couple of pages.

As can be seen, they all refer to temporal expressions. Only in F-LOB, did I find a scalar modifier used in a similar way to (52) and (54), shown in (56):

(56) he spent <u>a good couple of minutes</u> scanning the contract and, at the end, far from being devastated by his losses he wrote out promissory-notes and made a dignified exit.

In conclusion, although there are not enough examples to show any meaningful comparison in the pre-modification data in this section, the

similarities between *few* and *couple* as well as the prominence of temporal expressions have been demonstrated. The particular example in (56), from the later UK corpus shows that *couple* is quantificational.

Section 5 looks at the status of the preposition *of*, which is the other developing feature of *couple* expressions mentioned in the introduction.

5. Preposition reduction/absence

The final feature that has the potential to vary between US and British English and between the earlier and later corpora is the absence of *of* shown in examples (7) and (8) above. Selkirk (1977: 308) specifically points out that "the measure phrase *a couple* optionally permits *of* to be absent". She uses example (57) as part of her argument that pseudopartitives (where the second nominal is indefinite) have a different structure from partitives (where the second nominal is a mass noun or a plural count noun).

(57) **English** (Selkirk 1977. ex. (82))
      Can I borrow a couple (of) sheets of paper?

This general idea of structural differences between partitives and pseudopartitives is supported by data from other Germanic languages where, in general, with the exception of Icelandic, pseudopartitives do not always use a preposition. The difference between partitives and pseudopartitives was already mentioned in connection with (36) and (37) above and examples from Dutch and Danish can be seen in (13)–(15). In Germanic languages other than English, two types of pseudopartitives are easily identified, the DPC (Direct partitive construction), without a preposition and the IPC (Indirect partitive construction) that uses a preposition. This makes English typologically the odd one out among the Germanic languages because it needs a preposition in both constructions. Examples are shown in (58) and (59).

(58) **Danish** (Hankamer & Mikkelsen 2008 ex. 29 & 61)
      a. en   spand   vand   (pseudopartitive, DPC)
         a.$_{COM}$ *bucket.*$_{COM}$ *water.*$_{NEU}$
         'a bucket of water'

      b. en   spand   med   vand   (pseudopartitive, IPC)
         a.$_{COM}$ *bucket.*$_{COM}$ *with/of   water.*$_{NEU}$
         'a bucket of/with water'

(59)   **Dutch** (van Riemsdijk 1998: 15, ex. (18) & (19))
        a. drie   kisten   sigaren   (pseudopartitive, DPC)
           three boxes   cigars
           'three boxes of cigars'

        b. drie   kisten   met   sigaren   (pseudopartitive, IPC)
           three boxes   with   cigars
           'three boxes of/with cigars'

The preposition is generally considered obligatory in English, as it is in the Romance languages.

    A reviewer brings up an interesting point, whether preposition omission as shown in (2) and reduction, as shown in (3), repeated here as (60) and (61), can be treated as the same phenomena.

(60)   **OED** (1925 S. Lewis Martin *Arrowsmith*)
        <u>A couple months</u> in Italy

(61)   **OED** (1906 H. Green *At Actors' Boarding House*)
        <u>A coupla parties</u> is come for rooms!

If they are, then omission can be considered the far end of a grammaticalisation cline that gradually reduces *of* to *schwa* and then zero. If they are not, there are two different phenomena, reduction as a result of grammaticalisation as well as "dropping" the preposition to give something akin to (58) and (59) seen in other Germanic languages. Here, I will assume the most straighforward solution, the former. As *of* is a grammatical lexeme, reduction is expected anyway. Note also that all the data in the Brown family corpora are from written language. When it comes to spoken corpora, transcription conventions in the compilation would also have to be considered.

    In the Brown family corpora, examples without *of* are not found in the UK, only in the two US corpora, shown in (62)–(67). The specific texts show that all the examples come from fiction apart from (67), which is reported speech in a news article. It is likely that in all these examples the author is attempting to depict a non-standard speaker.

BROWN

(62)   (Dell Shannon, *The Ace of Spades*)
bout nine o'clock, I call and see if you got any. <u>A couple decks</u> for me, Mr. Skyros- and ten-twelve to sell, see, I like to have a little ready cash.

(63)   (Richard S. Prather, *The Bawdy Beautiful*)
According to Rose, he arrived here <u>a couple minutes before nine</u> and spotted Thor in the water.

(64)   (Clark McMeekin, *The Fairbrothers*)
We'll have oystchers- <u>couple bar'l oystchers'll</u> fetch in a crowd any time.

FROWN

(65)   (Robert B. Parker, *Double Deuce*).
<u>A couple kids</u> were sitting in the van with the doors open.

(66)   (Thomas Berger, *Meeting Evil: A Novel*)
"You interested in some partying? We'll pick up <u>a couple bottles</u>."

(67)   (News: *The Daily Chronicle*)
"We lost a fire-eater <u>a couple weeks</u> ago, so Red does it now."

The US corpora also have two examples of reduced *of*, (68) and (69). These also are from fiction texts. Note also the non-standard spelling of *oysters* in (64), the non-standard *hisself* in (68), the reduced *have* of *must have* in (69). In these examples, the authors attempt to use orthography to depict a non-standard speaker.

(68)   **BROWN** (Gene Caesar, *Rifle for Rent*)
even after he'd heard about Lewis, even after he'd been shot at a couple o' times hisself"!

(69)   **FROWN** (William de Buys. 'Devil's Highway.' *Story* 40)
Musta been twenty miles. That's a steep mountain too, we had to rest every coupla miles.

Although fiction authors cannot be relied on to always give an accurate representation of natural language, they are often accurate observers of certain stereotypical 'non-standard' features. These results indicate that the absence of *of* is more likely in US English and that the change starts in vernacular speech.

Since no examples were found in the Brown family UK corpora, I checked whether it occurs in the BNC. There are only 14 examples without *of*, 9 of them from the spoken section, including (70). In the written section 4 of the 5 examples are from fiction and one is reported speech from a magazine article, again and indication that the change starts in vernacular/colloquial speech.

(70)   **UK English** (BNC: spoken, conversation)
         A: You been round (*pause*) once?
         B: I've been round <u>a couple times</u> thank you.

Moreover, the N_2s in the spoken examples are all temporal expressions: *minutes*, *days* etc. or *times* or *things*, i.e. there are no concrete nouns.

Finally, returning to the reduced *of,* depicted orthographically as *coupla*, first mentioned in example (3) and found only in the FROWN corpus, as seen in (69), a search in the BNC finds no spoken examples, only written ones. Similarly, *coupla* is only found in the written form in COCA.

(71)   **UK English** (BNC: written, email)
         Gav, <u>a coupla things </u>re: your article Maybe you could include a previous post/thread as an example of the' humour'?

(72)   **US English** (COCA: written, *Denver Post*, sports section)
         House of Cards haven't moved a muscle since clinching division <u>a coupla weeks ago</u>.

This spoken/written difference is noteworthy. It appears that transcribers of spoken corpora, who presumably are transcribing what they hear, detect no phonological remnant, producing transcriptions like (70), whereas the written register favours *coupla*, the *-a* presumably representing a reduced *of* as in *lotsa* mentioned above. My personal perception, when I listen to speakers who leave out *of,* is that I do not hear a *schwa* at all. Maybe is this is what transcribers hear also when they transcribe the language for spoken

corpora, whereas fiction writers work with the orthographic analogy of *sorta* (sort of) *lotsa* (lots of) and *gotta* (got to) when they attempt depictions of non-standard speech.

As suggested by a reviewer, I tried a Google Ngram search (Michel et al. 2011), following up the question of British and US differences with *of* by comparing *couple days* in British and American English 1800–2000. The frequency of *couple days* starts to rise rapidly in British English in 1981, whereas the rise in US English starts earlier, in the mid 1960s; something similar is found with *couple years*. On the other hand, *coupla* behaves very differently, starting to rise in the 1920s in British English and slightly earlier in US, reaching a peak in the mid 1940s before falling off.

In conclusion, regarding the absence of *of,* the investigation into the Brown family corpora reveals this feature is much more likely to be found in US English than in British English, as no British examples are found. However, follow-up searches in the BNC find a few examples in British English, but only in conversation and fictional texts. These finding are consistent with what was found in Brown and Frown. When a new feature appears in the language, it usually starts in casual speech and moves into the written registers later (if at all). Early in the change, it is more likely to appear in speech and in fictional dialogue rather than in more formal written text types.

6. Conclusion

This investigation uses four corpora consisting of two sets of US data from the 1960s and early 1990s and comparable sets from British English, collected in the same time periods, to investigate the change in the lexical item *couple*. These corpora were chosen with the aim of using completely comparable data. The data is approached in two different ways, first collocation patterns are investigated and then syntactic tests are applied to find whether *couple* functions as a quantifier. The main differences observed are between British and US English, and between 1960s and 1990s British English. There are few differences between earlier and later US English.

Collocation patterns are similar in both varieties and the main finding here that temporal expressions are very frequent. I suggest that in every-day interactions people 'guesstimate' time and distance and this reinforces the meaning 'an approximate low number, a few'. The syntactic tests aim to find whether *couple* behaves as a quantifier. The robust criteria

usually employed to find the headedness of [N$_1$ *of* N$_2$] expressions are not applicable to *couple* as a collective noun. I suggested two other tests, the position of *more* and pre-modification. The low token count is not such a critical issue with the syntactic tests. Presence of a feature indicates a high likelihood that it occurs (although the absence may just be due to the limilations of the corpus.. The premodification test found only one example (from 1990s UK English) as evidence of the quantifier *couple*, but it did show that couple has a very similar premodification pattern as the low quantifier *few*. The most significant findings involve the examples from both early and later US English and later British English in which *more* follows *couple,* which indicates that it is a quantifier, and indicates that US English leads in the change. US English is also leading in the omission of *of.* Some interesting questions were raised as to the relationship between *of* absence and reduction (*coupla*).

It must be acknowledged that although the corpora in the Brown family have a million words each and have been used successfully for a number of comparisons of verbal features, e.g. modal verbs, *couple* is found to be a low frequency item and larger data sets are needed for further investigation.

List of corpora used
BNC – British National Corpus (BrE, 1980s-1993)
BROWN – (AmE 1961)*
COCA – Corpus of Contemporary American English (US 1990-2015)
COHA – Corpus of Historical American English (US 1810s-2000s)
CLMET3.0 – Corpus of Late Middle English Texts (BrE 1720-1920)
F-LOB – Freiburg-LOB Corpus (BrE 1991)*
FROWN – Freiburg-Brown Corpus (AmE 1992)*
GloWbE – Global Web-Based English (Web, 20 countries)
LOB – Lancaster-Oslo-Bergen Corpus (BrE 1961)*
(Corpora marked * are members of the Brown family of corpora. Further particulars of corpora may be found at http://www.helsinki.f/varieng/CoRD.)

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