Object Shift in spoken Mainland Scandinavian: A corpus study of Danish, Norwegian, and Swedish

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Recent work on Object Shift (OS) suggests that this is not as uniform an operation as traditionally assumed. In this paper, we examine OS in the spontaneous speech of adults in large Danish, Norwegian and Swedish child language corpora in order to explore variation with respect to OS across these three languages. We evaluate our results against three recent strands of accounts of OS, namely a prosodic/phonological account, an account in terms of cognitive status, and an account in terms of information structure. Our investigation shows that there is both within-language and across-language variation in the application of OS, and that the three accounts can explain some of our data. However, all accounts are faced with challenges, especially when explaining exceptional cases.

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1. INTRODUCTION

The phenomenon of Object Shift (henceforth OS) has been studied extensively in the Scandinavian languages (see e.g. Holmberg 1986, 1999; Vikner 1994; Hellan & Platzack 1995; and Thráinsson 2001 and Vikner 2006 for overviews). Traditionally it has been assumed to apply to all 'weak' or unstressed pronominal objects in the Mainland Scandinavian languages (Danish (Dan), Norwegian (Nor), and Swedish (Swe)), but not to full DPs. This difference is illustrated in the Norwegian examples in (1), where the full DP *huset* 'the house' in (1a) has

to remain in situ, while the pronominal object *det* 'it' in (1b) shifts across negation.

(1) a. Jon så ikke **huset**. / *Jon så **huset** ikke. (Nor)
    Jon saw not house.DEF   Jon saw house.DEF not
    'Jon didn't see the house.'
   b. Jon så **det** ikke.
    Jon saw it not
    'Jon didn't see it.'

In recent years, however, it has become increasingly clear that OS is not as uniform an operation as traditionally assumed. On the basis of grammaticality judgments and written language, respectively, Josefsson (2003, 2010a) and Andréasson (2008, 2009, 2010) have shown that Swedish occasionally allows objects like unstressed *honom/henne* 'him/her' to remain in situ. Drawing on data from the Scandinavian Dialect Syntax Project, which includes both the Nordic Syntax Database (NSD), consisting of grammaticality judgments, and the Nordic Dialect Corpus (NDC), containing spontaneous corpus data, Bentzen (2013) shows that even though grammaticality judgments indicate that there is a high acceptance for unshifted pronominal objects in Danish, Norwegian, and Swedish, data from the NDC reveal that pronominal objects are much more likely to undergo OS than to remain in situ.

As has been pointed out in several works (see e.g. Lødrup 1994, Borthen 2003, Houser, Mikkelsen & Toosarvandani 2008, Josefsson 2010b), the neuter pronoun *det* 'it' may refer to the content of several other constituents besides neuter nouns, such as type DPs, adjectives, VP-anaphors, and full clauses. Andréasson (2008, 2009, 2010) also points out that pronominal object *det* 'it' typically remains in situ in Danish and Swedish when its antecedent is a clause or a VP in her written material.[1] For Norwegian, Anderssen & Bentzen (2011, 2012) similarly argue that these *det* pronouns tend to remain in situ in the NDC spoken data. This is illustrated in (2) (from Andréasson 2010:4), where *det* refers to '(that) Agnes bought the book'.

(2) Agnes köpte boken. Förstod du inte **det**? (Swe)
   Agnes bought book.DEF understood you not that
   'Agnes bought the book. Didn't you understand that?'

In this paper, we investigate how OS is employed in spontaneous spoken Mainland Scandinavian through a corpus study on OS in Danish, Norwegian, and Swedish based on the adult speech in five child language corpora. We have investigated 210,000 adult utterances of which 704 contained the relevant combinations of negation and pronominal objects. To our knowledge this is the most extensive empirical study of OS in spoken Mainland Scandinavian. For four of the corpora studied, we unfortunately do not have access to the audio files, and thus our analyses are based on transcripts of the speech. For the one corpus where we do have

access to audio files, we have listened through relevant examples to determine stress patterns.[2] Our aim is to explore variation with respect to OS across the Mainland Scandinavian languages, and to evaluate our results against three recent strands of accounts of OS, namely a prosodic/phonological account (primarily focusing on the proposal by Josefsson 2001, 2003, 2010a, but see also Erteschik-Shir 2005, Vogel 2006 and Hosono 2010), an account in terms of cognitive status (Andréasson 2008, 2009, 2010, 2013 this issue), and an account in terms of information structure (primarily focusing on the proposal by Anderssen & Bentzen 2011, 2012, but see also Holmberg 1999 and Mikkelsen 2011). As we will see, our data present different types of challenges to the various accounts.

A note on terminology is in order before we proceed. In the literature on OS, the notions of 'weak' and 'strong' pronouns are often employed. However, as these terms are used in many different contexts, with somewhat different definitions, we will avoid using them. In the following, we will refer to pronominal objects with nominal and non-nominal antecedents. An example of the former is provided in (1b) above, where the pronominal object *det* 'it' refers to 'the house'. An example of the latter is in (2) above, where pronominal object *det* 'it' refers to the (content of the) complete previous proposition '(that) Agnes bought the book'. We will adopt the terms 'stressed' and 'unstressed' to characterize prosodic prominence.

The paper is structured as follows. In Section 2 we discuss central aspects of the above-mentioned approaches to OS. In Section 3 we outline our methodology and in Section 4 we present our data. Section 5 contains a discussion of our results in light of the approaches presented in Section 2, and Section 6 provides a brief conclusion.

2. APPROACHES TO OBJECT SHIFT IN MAINLAND SCANDINAVIAN

In the generative literature, OS is generally regarded as the leftward movement of pronominal objects past negation and adverbs, and studies have to a large extent focused on the question of what kinds of mechanisms drive this operation. For example, OS of pronominal objects has been argued to be related to case assignment (Holmberg 1986, Vikner 1994, Holmberg & Platzack 1995). It has also been claimed that OS is the result of a requirement for the order of the verb and the object within the vP phase to be preserved (Fox & Pesetsky 2005).

In this section we will focus on three accounts within different types of approaches that we perceive as prominent in the current OS debate: (i) a prosodic/phonological account (ii) an account in terms of cognitive status, and (iii) an account based on information structure. In Section 5 we evaluate our data against these three approaches.

2.1 A prosodic/phonological account

The general observation that OS is limited to unstressed pronominal objects has made prosody a natural place to look for an explanation for the phenomenon (see Erteschik-Shir 2005; Vogel 2006; Hosono 2010; Josefsson 2003, 2010a, 2011, 2012). In this section we consider Josefsson (2010a, 2011, 2012) as an example of a prosodic account of OS.

Considering grammaticality judgments from 26 Swedish-speaking informants, Josefsson (2003) argues that OS is not obligatory in Swedish. Subsequently, using the same data, Josefsson (2010a, 2011, 2012) provides a statistical analysis of the grammaticality judgments and proposes an explanation of the observed optionality. In Josefsson (2010a), she shows that even though lack of OS is acceptable, monosyllabic pronouns such as *den* 'it' are significantly less acceptable in situ than disyllabic pronouns such as *honom* 'him'. She argues that this is because the latter is prosodically heavier.[3]

To account for these patterns, Josefsson (2010a, 2011, 2012) investigates the prosodic structure at the sentence level. Even though she takes OS to be triggered by the information-structure requirement that given information should precede new information, the optionality of OS is explained by reference to the prosodic characteristics of pronominal objects. What Josefsson refers to as weak object pronouns are clitics, which generally attach to the verb, as in (3a) or to a noun, such as the subject, as in (3b):

(3) a. Damen   [såg den] inte.   (Swe)
       lady.DEF saw   it   not
       'The lady didn't see it.'
    b. Därför   såg [damen den] inte.
       therefore saw lady.DEF it   not
       'Therefore the lady didn't see it.'

However, in some languages, these clitic pronouns may also attach to an adverb. This leads to a surface word order without OS. According to Josefsson, this is an option in Swedish, and this explains why her informants accept examples such as (4) (from Josefsson 2010a:6):

(4) Jag gillar inte honom.   (Swe)
    I   like   not   him
    'I don't like him.'

Furthermore, the cliticization of disyllabic pronouns to the left of the negation also results in longer sequences of unstressed syllables, which is dispreferred by many speakers. While the prosodic weight of the pronominal element itself is used to explain within-language variation in the approach advocated in Josefsson (2010a, 2011, 2012), cross-linguistic variation is said to depend on how strictly

a given language adheres to prosodic patterns, and which types of elements may function as the hosts of clitic pronouns. Moreover, Josefsson (2012) suggests that in Danish, demands on rhythmic alternation are stricter than in Swedish. In addition, cliticization onto adverbs is not an option in this language. Thus, according to this prosodic account, this explains why OS is obligatory in Danish but not in Swedish. With respect to pronominal objects with non-nominal antecedents, Josefsson (2012) argues that these pronouns are prosodically more prominent than objects with nominal antecedents in Swedish. As they are considered 'strong' (stressed) and non-specific, they are not clitics. Consequently they do not need to cliticize onto a verb or a noun. Moreover, they do not cliticize onto the adverb in the unshifted position. This explains why such pronouns in general refrain from undergoing OS in Swedish.

However, as noted in the introduction, even these pronouns may sometimes occur in the OS position. Although Josefsson (2011, 2012) does not state this explicitly, it seems that these pronouns are clitics in those cases when they shift. Moreover, she links the possibility of OS with these pronouns to (contrastive) stress on the verb.

Thus, in this approach, the prosodic prominence of the pronominal object, as well as the prosodic pattern of the clause, determines the placement of these objects.

2.2 An account in terms of cognitive status

A second recent approach to OS is that developed by Andréasson (2008, 2009, 2010). Based on written corpora from Danish and Swedish, Andréasson investigates the position of pronominal objects. Importantly, she considers not only the shifted and unshifted in situ positions, but also the clause-initial position as well as null-realization of pronominal objects. As our study is restricted to the shifted and unshifted positions, we will focus on the results for these two positions in Andréasson's study.

Andréasson's (2008) study supports the findings in Josefsson (2003, 2010a) that unstressed pronominal objects with nominal antecedents only optionally undergo OS in Swedish, and that they occasionally remain in the unshifted position. For Danish, on the other hand, the study shows that these objects obligatorily shift across negation. Moreover, Andréasson also investigates the placement of pronominal object *det* 'it' with a clausal or VP antecedent, and finds that these elements remain in situ much more frequently than pronouns with nominal antecedents (see also Lødrup 1994 for similar observations for Norwegian).

Andréasson proposes an account of these observations in terms of cognitive status, building on the Givenness Hierarchy in Gundel, Hedberg & Zacharski (1993:275):

Givenness Hierarchy (Gundel et al. 1993)

in focus	>	activated	>	familiar	>	uniquely identifiable	>	referential	>	type identifiable
it		*this/that/ this N*		*that N*		*the N*		*indefinite this N*		*an N*

According to the Givenness Hierarchy, personal and demonstrative pronouns have the highest cognitive status, IN FOCUS and ACTIVATED, respectively. Clausal entities are often referred to by demonstrative pronouns such as 'that'; much more so than pronouns with nominal antecedents. Borthen, Fretheim & Gundel (1997) explain this by arguing that a referent's cognitive status is influenced partly by syntactic structure. For instance, the subject of a matrix clause is highly likely to bring its referent into focus of attention (allowing subsequent reference with a personal pronoun) whereas this is not the case for elements in subordinate clauses or prepositional phrases. Entities such as facts, events, and propositions are usually represented in terms of full sentences or VPs when first mentioned and will seldom occupy a prominent syntactic position. Consequently, such entities will only rarely achieve the cognitive status *in focus* – typically when mentioned more than once. This explains the tendency for clausal entities to be referred to with demonstratives such as 'that' rather than 'it'. Borthen et al. (1997) argue that the Norwegian counterparts to *it* and *that* are unaccented and accented *det* 'it', respectively.[4] Following this, Andréasson (2008, 2009, 2010) argues that pronominal objects with a nominal antecedent are more typically *in focus* while *det* 'it'/'that' referring to the content of a clause or a VP is generally only *activated*. Thus, she proposes that OS only applies to pronominal objects that are *in focus*.

On closer investigation of her results, Andréasson (2009, 2010) finds that there is some variation concerning the placement of *det* 'it' with clausal antecedents, both within and across the languages. In non-declarative contexts, these elements tend to remain in situ both in Swedish and in Danish. In declarative contexts, on the other hand, this pronominal object *det* 'it' hardly ever remains in situ in Danish. However, in Swedish, both positions are used. Andréasson argues that the position of these elements is affected by the factivity of the predicate taking them as complements. In short, while *det* 'it' remains in situ when it is the complement of a non-factive verb, like *tro* 'think', it tends to shift when it is the complement of a factive verb, like *förstå* 'understand'. Following Hegarty (2003), Andréasson claims that complements of factive predicates are easier to process than non-factive complements, and are therefore associated with the highest cognitive status *in focus*.[5]

Finally, Andréasson argues that even *det* in a non-factive environment may undergo OS under certain conditions: (i) when the relevant clause has already been referred to by a pronoun prior to the potential OS context (see also Gundel, Borthen & Fretheim 1999), and (ii) when there is contrastive focus on an element other than the pronoun. Most (though not all) instances of 'unexpected' OS with *det* as the

complement in a non-factive environment in her Swedish and Danish data fall into one of these two categories.

Thus, in this approach, the cognitive status of a pronominal object determines the structural position of the object.

2.3 An information structure account

The third type of approach we will outline in this section is based on information structure. One early account that associates OS with information structure is Holmberg (1999). Holmberg argues that unstressed pronominal objects with nominal antecedents have to shift out of the VP to avoid being left in the default focus domain. On this account, OS is a defocusing operation. Consequently, strong (i.e. contrastively focused) pronouns and DPs remain in situ. See also Mikkelsen (2011) for a proposal in which OS is a defocusing operation.

Inspired by the accounts proposed by both Holmberg (1999) and Mikkelsen (2011), and also Andréasson (2008, 2009, 2010), Anderssen & Bentzen (2011, 2012) propose that the common denominator for pronominal objects that undergo OS in Norwegian is that they are topical elements that have to shift to an IP-internal TopP.[6] They argue that while the focus-based approaches by Holmberg (1999) and Mikkelsen (2011) can account for OS of unstressed pronominal objects with nominal antecedents, it is harder to explain why the pronominal object *det* 'it' with clausal/VP antecedents does not shift within these approaches. These pronominal objects do not have the typical characteristics of focus elements. They may be unstressed, they are not new information, and they are not (necessarily) associated with any contrastive interpretation. In fact, they quite frequently occur in the clause-initial topicalization position (as shown in Andréasson's study, and as illustrated in Anderssen & Bentzen 2012:16–17). Thus, Anderssen & Bentzen take these pronouns as well as pronominal objects with nominal antecedents to be topics. In order to account for this difference in placement of these two types of pronominal objects, Anderssen & Bentzen suggest that it is necessary to distinguish between DIFFERENT TYPES OF TOPICS. Assuming the Topic Hierarchy proposed in Frascarelli & Hinterhölzl (2007), they differentiate between FAMILIAR TOPICS, ABOUTNESS TOPICS, and CONTINUING TOPICS. Familiar topics are typically informationally given or accessible, destressed and realized as pronouns. Aboutness topics, on the other hand, are what the sentence is about (Reinhart 1981). They have typically been 'newly introduced' (Frascarelli & Hinterhölzl 2007:88, from Givón 1983) and are 'a matter of standing and current interest or concern' (Frascarelli & Hinterhölzl 2007:88, from Strawson 1963). Anderssen & Bentzen adapt these definitions to various types of pronominal objects. They argue that pronominal objects with nominal antecedents have the typical characteristics of familiar topics according to these definitions. Such objects are indeed given information, and also accessible according to e.g.

Andréasson (2008), and Anderssen & Bentzen thus expect pronominal objects of this type to consistently undergo OS. In contrast, along with Andréasson (2008, 2009, 2010), they assume that pronominal objects with clausal/VP antecedents are less accessible than objects with nominal antecedents. However, they may constitute the topic of the sentence or discourse. They may also function as aboutness shifting elements. Anderssen & Bentzen therefore argue that they have the characteristics of aboutness topics. Based on this, Anderssen & Bentzen propose that OS only applies to familiar topics. Aboutness topics, on the other hand, frequently occur in the clause-initial position. However, pronominal objects in situ have a discourse status very similar to these elements when they occur in the initial position. This observation is one of the main reasons why Anderssen & Bentzen argue that these elements are aboutness topics both clause-initially and in situ.[7]

However, like Andréasson (2008, 2009, 2010) and Josefsson (2011, 2012), Anderssen & Bentzen (2011) note that in some situations pronominal object *det* 'it' with a clausal antecedent can undergo OS. Anderssen & Bentzen argue that this is possible when this *det* 'it' refers back to a pre-established (D(iscourse)-linked) aboutness topic. In such contexts *det* functions as a continuing topic. According to Frascarelli & Hinterhölzl (2007), continuing topics behave syntactically and phonologically like familiar topics. Hence, they are expected to undergo OS in this approach. Anderssen & Bentzen back up their proposal with data from spoken Norwegian from the Nordic Dialect Corpus (NDC) (Johannessen et al. 2009).[8]

Related to this approach, Bentzen, Merchant & Svenonius (to appear) argue that pronominal object *det* also shifts in cases of so-called 'pragmatic control', i.e. where the pronoun does not have an actual linguistic antecedent, but rather refers to some activity that is salient in the situation. For example, when watching a child pretending to break something, one might utter (5) with OS, but without OS the sentence is awkward, if not unacceptable (adapted from Bentzen et al. to appear):[9]

(5) Han gjør **det ikke** / *__ikke det__. (Nor)
    he   does it   not   not it
    'He doesn't do it.'

Thus, in this account, whether or not various pronominal objects undergo OS is governed by their information-structure role in the discourse.

3. METHODOLOGY

3.1 The corpora

In this study, we have investigated OS in the spontaneous speech of adults in large Danish, Norwegian, and Swedish child language corpora. The corpora consist of

adults interacting with children as well as with other adults participating in the recordings. For most of these corpora, audio files are unfortunately not accessible. We have therefore investigated the transcripts and looked at utterances with and without OS in the extended contexts they occur in. However, we do have access to audio files for one of the Norwegian corpora (the Anderssen corpus). We have consulted these files in this corpus in certain cases. In total, the investigated material consists of approximately 210,000 adult utterances.

The Danish material is taken from the Plunkett corpus (Plunkett 1985, 1986) which is available in the CHILDES database (MacWhinney 2000). We have investigated all 55 available files for the child Jens (Jens19–Jens59), and all 42 available files for the child Anne (Anne24–Anne51). In these 97 files, we analyzed the speech of the children's mothers and fathers, as well as the investigators.[10] These adult speakers altogether produce roughly 49,000 utterances. However, the father in Jens' files does not produce any utterances relevant to our investigation, and the father and the investigators in Anne's files produce only one or two relevant examples each. Thus, the bulk of relevant examples from Danish are produced by five adults (Anne's mother, Jens' mother, and the three investigators in Jens' files).

The Norwegian material is taken from the Anderssen corpus (Anderssen 2006) and the Simonsen corpus (Simonsen 1990). The Anderssen corpus contains 70 recordings of three children, Ina (Ina01–Ina27), Ann (Ann01–Ann21) and Ole (Ole01–Ole22), interacting with their mothers, fathers and the investigators. The adults altogether produce approximately 73,000 utterances. We have included the production of the mothers, fathers and investigators in Ina's and Ole's files, and the investigator in Ann's files in our analysis.[11] All adults speak (for the present purposes) similar varieties of Northern Norwegian dialects.[12]

The Simonsen corpus consists of 14 files of recordings of two children, Tomas (tomas01–tomas8) and Nora (nora01–nora06), interacting with their mothers and an investigator. This corpus is smaller than the other corpora investigated in this paper, and the adults altogether produce approximately 6,600 utterances. Nora's and Tomas' mothers produce only two or three relevant utterances. The bulk of relevant examples from this corpus hence comes from the investigator (who is the same person in both sets of files). The adults in the Simonsen corpus speak the Eastern Norwegian dialect of Oslo. This corpus is available in the CHILDES database. A recent study on OS in Norwegian dialects (Bentzen 2013) did not find any significant differences with respect to this phenomenon in Eastern and Northern Norwegian dialects. Thus, we will treat the results from the Anderssen corpus and the Simonsen corpus jointly as 'Norwegian results'.

The Swedish material is taken from the Gothenburg corpus (Plunkett & Strömqvist 1992, Strömqvist, Richthoff & Andersson 1993, Richthoff 2000) and the Wikström corpus (Wikström 2008). The former is available in the CHILDES database. In the Gothenburg corpus, the adults speak standard Swedish with a touch

of the west-coast dialect. In the Wikström corpus, the adults speak either the southern Swedish dialect of Scania or central Swedish with a touch of the Dalecarlian dialect. We will treat the results from the Gothenburg corpus and the Wikström corpus jointly as 'Swedish results'.

In the Gothenburg corpus, we have investigated 174 files of recordings of five children, Anton (ant23_08–ant47_29), Bella (bel18_09–bel41_09), Harry (har18_20–har47_20), Markus (mar15_19–mar33_29) and Tea (tea18_10–tea47_23), interacting with their mothers, fathers, grandparents and the investigators. The 19 adult speakers altogether produce roughly 75,500 utterances. However, six adults do not produce any utterances relevant to our investigation (the investigator in Bella's files, an adult acting as the cookie monster in Anton's files, and Markus' paternal grandfather, Markus' maternal and paternal grandmothers and an unidentified adult in Markus' files), and four adults produce only one or two relevant examples each (Bella's father, Harry's maternal grandfather, Markus' mother and Tea's father). Thus, the bulk of relevant examples from the Gothenburg corpus are produced by nine adults (Anton's mother, father, and paternal grandmother, Bella's mother, Harry's mother and maternal grandmother, Markus' father, and Tea's mother and maternal grandmother).

The Wikström corpus consists of 15 files of recordings of one child, Hanna (Jo1y06m–Jo2y10m), interacting with her mother and father. The adults altogether produce approximately 5,700 utterances.

3.2 Search procedures and data analysis

Our investigation focuses on the relative word order of pronominal objects and negation in Danish, Norwegian, and Swedish. We have extracted utterances containing pronominal objects and negation from the above-mentioned corpora. To ensure comparability between the Danish, Norwegian, and Swedish data sets, corresponding pronouns (and all versions of them) in the three languages were included in the study. The pronouns for each language are listed in Table 1.

Utterances containing both negation and one of the pronouns listed in Table 1 were extracted using a combination of manual and automatic procedures. The Swedish corpora were analyzed using CLAN programs to automatically extract all utterances containing negation (*inte*, *icke*, *ej* 'not'). We then manually extracted all utterances containing a pronominal object either following or preceding the negation.

To analyze the Danish and the Norwegian corpora, we used CLAN programs to automatically extract all utterances with negation (*ikke*, *ikkje* 'not') directly followed or preceded by the pronouns in Table 1. Because some of the pronouns in Danish (*den* and *det*), Eastern Norwegian (*han*, *den*, *det* and *dere*) and Northern Norwegian (*han*, *ho*, *den*, *det*, *dokker*, *dem* and *de*) are ambiguous between subject and object

		Norwegian		
	Danish	Eastern	Northern[a]	Swedish
'me'	*mig*	*meg*	*meg/mæ*	*mig/mej*
'you'	*dig*	*deg*	*deg/dæ*	*dig/dej*
'him'	*ham*	*ham/han*	*han*	*honom*
'her'	*hende*	*henne*	*henne/ho*	*henne*
'it'	*den*	*den*	*den*	*den*
'it'	*det*	*det*	*det*	*det*
'us'	*os*	*oss*	*oss*	*oss*
'you'	*jer*	*dere*	*dokker*	*er*
'them'	*dem*	*dem*	*de/dem*	*dem/dom*
'oneself/themselves' (refl)	*sig*	*seg*	*seg/sæ*	*sig/sej*

[a]For Northern Norwegian, we searched for both the standard and the dialectal form of the pronouns (standard/dialectal form).

Table 1. Pronouns included in the study.

	Danish	Norwegian	Swedish
'surely not'	*sgu ikke*	*visst ikke/ikkje*	*visst inte*
'probably not'	*nok ikke*	*nok ikke/ikkje*	*nog inte*
'presumably not'	*vel ikke*	*vel ikke/ikkje*	*väl inte*
'to be sure not'	*jo ikke*	*jo ikke/ikkje*	*ju inte*
'not at all'	*slet ikke*	*slett ikke/ikkje*[a]	*alls inte/inte alls*
'neither'	*heller ikke*	*heller ikke/ikkje*	*heller inte/inte heller*

[a]Including Norwegian variants such as *slettes* and *slettest*.

Table 2. Adverb–negation combinations included in the study.

forms, this procedure gave us many utterances with pronominal subjects, which were excluded manually from the data sets.

When manually analyzing the Swedish corpora we found some utterances with an adverb in combination with negation, such as *alls inte* 'not at all' and *nog inte* 'probably not'. As the CLAN analyses of the Danish and the Norwegian corpora only gave us utterances with pronouns directly following and preceding negation, we performed additional CLAN searches to extract all utterances that had one of the relevant adverbs in combination with negation in these corpora. To ensure that the Danish, Norwegian, and Swedish data sets were comparable, we used the Danish and Norwegian equivalents of the adverbs that we found in the Swedish corpora. The adverb–negation combinations for each language are listed in Table 2.[13] These searches gave us a few more examples for Danish, but none for Norwegian.

When analyzing the data we excluded contrastive pronominal objects following negation, as these are expected to follow negation. As already mentioned above, we

did not have access to audio files for all transcripts. Thus, to identify contrastive pronominal objects we studied the contexts in which they occur.[14] In total, we identified and excluded 11 contrastive pronominal objects in the Danish corpus, seven in the Norwegian corpora, and 21 in the Swedish corpora. Examples illustrating pronominal objects that we have interpreted as contrastive are given for Norwegian in (6) and for Swedish in (7). In (6), *den* 'it' is referring to a puzzle piece which is contrasted with other puzzle pieces, and in (7), *den* 'it' is referring to a piece of Lego which is contrasted with other pieces of Lego.

(6) Situation: Ole and the investigator (INV) are doing a puzzle.
     OLE: da   kan vi ta   en anna brikke.   (Nor, Ole16)
           then can we take an other piece
           'Then we can take another piece.'
     INV: ja   så da   tar vi bare   den bort.
           yes so then take we simply it   away
           'Yes, then we simply take that one away.'
     INV: så bruke vi **ikkje den**.
           so use   we not   it
           'Then we do not use that one.'

(7) Situation: Harry and his mother (MOT) are building with Lego.
     MOT: sätta många såna klossar på.   (Swe, har19_09)
           put   many such blocks on
           'Put many such blocks on.'
     MOT: na den e så smal.
           no it is so thin
           'No, it is so thin.'
     MOT: ta   **inte den**!
           take not it
           'Do not take that one!'
     MOT: vi tar gubben i   stället.
           we take man.DEF instead
           'We take the man instead.'

The collected data have been analyzed considering the influence of nominal and non-nominal antecedents on the position of pronominal objects. Further, we analyze variation across Danish, Norwegian, and Swedish, and link our results to previous studies on OS. Finally, our results will also be discussed in relation to previous accounts of the role of prosody, cognitive status and information structure of the position of pronominal objects.

4. RESULTS

In this section we present the results from our corpus study of OS in Danish, Norwegian, and Swedish spontaneous spoken language. As pointed out in Anderssen

et al. (2011), potential contexts for OS are rather infrequent in spontaneous speech. Consequently, although we have investigated several rather large corpora, our searches yielded relatively low numbers of relevant occurrences. The upshot of this, however, is that a qualitative investigation of the individual examples is possible. We will return to a detailed discussion of our results in Section 5 below.

4.1 Danish results

In her study of written Danish, Andréasson (2008, 2009, 2010) found that pronominal objects with nominal antecedents obligatorily undergo OS (see also Pedersen 1993), whereas pronominal object *det* 'it' referring to a VP or a clause usually undergoes OS. Our data on spoken Danish confirm Andréasson's results with respect to pronominal objects with nominal antecedents. We see a strong tendency for such pronouns to undergo OS, 95% (21/22) of the time. Examples of shifted pronominal objects with nominal antecedents in Danish are provided in the sentences in (8), whereas (9) illustrates the one example where this type of object remains in the unshifted position.

(8) a. INV: så   tager jeg **den ikke** frem mere.   (Dan, Jens37)
           then take I   it   not forth more
           'Then I won't take it out again.'
    b. MOT: jeg snød   **dig ikke**.   (Dan, Anne11)
           I   tricked you not
           'I didn't trick you.'

(9) INV: skal vi synge den der   med tommelfinger hvor   er   du?
         shall we sing   that there with thumb   where are you
         'Shall we sing "Thumb, where are you"?'
         Jens. Kan du **ikke den**?   (Dan, Jens41)
         Jens can you not   it
         'Jens. Don't you know it?'

In contrast to Andréasson (2009, 2010), who found that *det* 'it' referring to a VP or a clause practically never remains in situ in written Danish, we see a tendency for such pronouns to remain in situ in our spoken Danish data. However, we do find that such pronouns MAY shift, and do so as much as 15% (14/93) of the time. As will become obvious in this section, these types of pronouns undergo OS more frequently in Danish than in Norwegian and Swedish. We will return to this point when discussing our results in Section 5. Examples of both shifted and unshifted *det* 'it' referring to a VP or a clause are provided in (10)–(11), where *det* in (10) refers to something Jens has already done and is about to do again and in (11) to 'go down to Great Grandmother':

	Danish pronominal objects	+OS	−OS
'me'	*mig*	1	0
'you'	*dig*	2	0
'him'	*ham*	—	—
'her'	*hende*	3	0
'it'	*den*	14	1
'it'	*det* (nominal antecedents)	—	—
	det (non-nominal antecendents)	14	79
'us'	*os*	—	—
'you'	*jer*	—	—
'them'	*dem*	1	0
'oneself/themselves' (refl)	*sig*	—	—
Total		35	80

Table 3. Types of pronominal objects in Danish, and their positions.

(10) MOT: Det er alvor Jens. Du gør **det ikke** mere. (Dan, Jens07)
           it is serious Jens you do it not more
           'I'm serious, Jens, don't do it anymore.'

(11) MOT: Vi skal ned til oldemor.
           we shall down to Great.Grandmother
           Vil du **ikke det**? (Dan, Jens50)
           will you not it
           'We're going down to Great Grandmother. Don't you want to?'

In the Danish material, we found six pronominal object types, and two of these occur in both shifted (+OS) and unshifted (−OS) position (*den* 'it' and *det* 'it'), as shown in Table 3. The pronominal object *den* 'it' seems to tend to shift (14 +OS vs. 1 −OS), whereas *det* 'it' referring to a VP or a clause tends to remain in situ (14 +OS vs. 79 −OS). The remaining four pronominal objects are attested only once or twice.

In total, there are five speakers in the Danish material; of those, three speakers produce pronominal objects in both shifted and unshifted position. The remaining two speakers only produce one example each and, thus, do not show any overlap between +OS and −OS. Our Danish data thus suggest that +OS versus −OS is not dependent on the preferences of individual speakers.

4.2 Norwegian results

As in the Danish corpus, pronominal objects with nominal antecedents usually undergo OS in our Norwegian data, 87% (41/47). Examples of shifted pronominal objects with nominal antecedents are provided in (12) (HAN = Hanne, investigator):

(12) a. INV: Du gjer **dæ** **ikkje** huh? (Nor, Ole14)
          you give yourself not huh
          'You don't give up, huh?

   b. HAN: Hvorfor slår han **seg** **ikke**? (Nor, Tomas05)
          why   hurts he REFL not
          'Why doesn't he hurt himself?'

In total, we found six examples with such pronouns in situ in the Norwegian corpora. This is illustrated in (13) and (14).

(13) INA: synge sole. (Nor, Ina04)
        sing dress
        'Sing *Se min kjole*.'[15]

   MOT: skal ho Merete synge?
        shall she Merete sing
        'Shall Merete sing it?'

   INV: ja men eg kan **ikkje den** aleina.
        yes but I can not it alone
        'Yes, but I don't know it alone.'

   Alternatively: ja men eg kan ikkje **synge** den aleina[16]
               yes but I can not sing it alone

(14) OLE: korfor kommer ikke mummien sæ laus? (Nor, Ole17)
        why   comes   not moomin.DEF REFL loose
        'Why can't the moomin escape?'

   INV: ja. kommer han **ikkje sæ** laus nei?
        yes comes he not REFL loose no
        'Yes. He can't escape, huh?'

With respect to the pronominal object *det* 'it' referring to a VP or a clause, we find that such pronouns typically remain in situ in spoken Norwegian, 95% (225/237). Examples of both unshifted and shifted *det* are provided in (15)–(16), where *det* in (15) refers to 'inflated' and in (16) to 'to eat them'.

(15) MOT: er ikkje ballongen oppblåst? INA: nei. (Nor, Ina13)
        is not   balloon.DEF inflated   no
        'Is the balloon not inflated?'   'No.'

   MOT: er han **ikkje det**?
        is he not   it
        'Isn't it?'

(16) HAN: han tror alltid at han skal klare å spise dem han
        he thinks always that he shall manage to eat them he
        men han klarer **det ikke**.   (Nor, Nora06)
        but he manage it not
        'He always thinks that he will manage to eat them, but he doesn't.'

In the Norwegian corpora, we found nine pronominal object types, and four of these occur in both shifted and unshifted position (*den* 'it', *det* 'it', *de/dem* 'them'

	Norwegian pronominal objects	+OS	−OS
'me'	*meg/mæ*	3	0
'you'	*deg/dæ*	4	0
'him'	*han*	4	0
'her'	*henne/ho*	0	1
'it'	*den*	11	2
'it'	*det* (nominal antecedents)	3	1
	det (non-nominal antecedents)	12	225
'us'	*oss*	2	0
'you'	*dere/dokker*	—	—
'them'	*de/dem*	4	1
'oneself/themselves' (refl)	*seg/sæ*	10	1
Total		53	231

Table 4. Types of pronominal objects in Norwegian, and their positions.

and *seg/sæ* 'oneself/themselves'), as shown in Table 4. The pronouns *den* 'it' and *seg/sæ* 'oneself/themselves' more frequently occur in the shifted position, whereas *det* 'it' referring to a VP or a clause tends to remain in situ. One pronominal object (*henne/ho* 'her') was attested only once (unshifted) and thus could not show any overlap between +OS and −OS.[17] The remaining four pronominal objects (*meg/mæ* 'me', *deg/dæ* 'you', *han* 'him' and *oss* 'us') are attested only between two and four times, which makes it difficult to draw any conclusions about distributional patterns.

In the Norwegian corpora, there are eleven speakers, and nine of them produce pronominal objects in both shifted and unshifted positions. Two speakers only use −OS (Nora's mother and Tomas' mother); however, both speakers only produce *det* 'it' referring to a VP or a clause and, thus, are expected to use the unshifted position. Hence, our Norwegian data also suggest that +OS versus −OS is not dependent on the preferences of individual speakers.

4.3 Swedish results

In her investigation of written Swedish, Andréasson (2008, 2009, 2010) found that pronominal objects with nominal antecedents tend to undergo OS (see also Josefsson 2003, 2010a), whereas the pronominal object *det* 'it' referring to a VP or a clause tends to remain in situ. Our data on spoken Swedish confirm Andréasson's results with respect to *det*, but differ somewhat with respect to pronominal objects with nominal antecedents.

In contrast to Andréasson, who found that pronominal objects with nominal antecedents tended to undergo OS in written Swedish (95.5%), our data show that only 64% (30/47) of the pronominal objects with nominal antecedents undergo OS in

spoken Swedish. Thus, we see a much stronger tendency for pronominal objects with nominal antecedents to remain in situ in our data on spoken Swedish (36%, 17/47) than in our data on spoken Danish (5%) and Norwegian (13%). Examples of shifted and unshifted pronominal objects with nominal antecedents in Swedish are provided in (17)–(18).

(17) a. MOT: men du   lägg **dom inte** där   ännu. (Swe, mar31_24)
                but   you put   them not there yet
                'Don't put them there yet.'
      b. MOT: så   slår dom **sej**   **inte**
                then hit   them themselves not
                när   dom landar.   (Swe, har28_02)
                when they land
                'Then they don't hurt themselves when they land.'

(18) MOT: tappa **inte den** bara.   (Swe, har31_04)
             drop   not   it   only
             'Just don't drop it.'

In parallel with Andréasson's (2009, 2010) data on written Swedish, we see a strong tendency for the pronominal object *det* 'it' referring to a VP or a clause to remain in situ in spoken Swedish. Only two examples of *det* in the shifted position were found in our Swedish corpora; 99% (256/258) of such pronominal objects remain in situ in spoken Swedish. In our material, the tendency for *det* to remain in situ is stronger in spoken Swedish than in spoken Danish (85%) and Norwegian (95%). An example with the pronominal object *det* 'it' in situ in Swedish is given in (19), where *det* refers to the VP 'wear the overall'. (In (19) FAT = father; CHI = child.)

(19) FAT: varför ville   du   inte ha   på dej overallen
             why   wanted you not have on you overall.the
             då?   (Swe, jo2y05m)
             then
             'Why didn't you want to wear the overall?'
      CHI: ja vilde   inte!
             I   wanted not
             'I didn't want to.'
      FAT: du   ville   bara **inte de**.
             you wanted just not   it
             'You just didn't want to.'

Example (20) illustrates an instance of OS with *det* 'it' referring to a VP in the Swedish data. In this case, *det* refers to the content of a VP meaning 'to go down' or 'to turn'.

	Swedish pronominal objects	+OS	−OS
'me'	*mej*	1	1
'you'	*dej*	4	2
'him'	*honom*	1	3
'her'	*henne*	1	0
'it'	*den*	8	9
'it'	*det* (nominal antecedents)	1	1
	det (non-nominal antecedents)	2	256
'us'	*oss*	1	0
'you'	*er*	—	—
'them'	*dom*	6	1
'oneself/themselves' (refl)	*sej*	7	0
Total		32	273

Table 5. Types of pronominal objects in Swedish, and their positions.

(20) Situation: Tea and her mother are playing a game with blocks that
       one can press and turn.
       MOT: Den ska   man nte göra nånting me.[18] (Swe, tea19_15)
            it   shall one not do   anything with
            'One shall not do anything with that one.'
       MOT: Ska   man bara trycka där   så.
            shall one just push   there so
            'One should just push there, like that.'
       TEA: dätä.?
            unintelligible
       MOT: Vill   den **de inte**?
            will   it   it not
            'Doesn't it want to?'

In the Swedish material, we found nine pronominal object types, and six of these occur in both shifted and unshifted position (*mej* 'me', *dej* 'you', *honom* 'him', *den* 'it', *det* 'it' and *dom* 'them'), as shown in Table 5. As already pointed out above, *det* 'it' referring to non-nominal antecedents typically remains in situ. Two pronominal objects (*henne* 'her' and *oss* 'us') were attested only once (shifted) and, thus, could not show any overlap between +OS and −OS. Not counting these, *sej* 'oneself/themselves' is the only pronominal object in the Swedish material that only occurs in one of the positions (shifted). This suggests that +OS versus −OS is not dependent on individual pronouns.

Further, our Swedish data also suggest that +OS versus −OS is not dependent on the preferences of individual speakers. In total, there are 15 speakers in the Swedish material; of those, nine speakers produce pronominal objects in both shifted and unshifted position. Three speakers only produce one example each and, thus, could not show any overlap between +OS and −OS. Not counting these speakers, there are three speakers who only use −OS (Anton's grandmother, Bella's father and

	Nominal antecedents		Non-nominal antecedents	
	+OS	−OS	+OS	−OS
Danish	95% (21/22)	5% (1/22)	15% (14/93)	85% (79/93)
Norwegian	87% (41/47)	13% (6/47)	5% (12/237)	95% (225/237)
Swedish	64% (30/47)	36% (17/47)	1% (2/258)	99% (256/258)

Table 6. Summary of results.

Hanna's father). However, all three speakers are only producing *det* 'it' referring to non-nominal antecedents and, thus, are expected only to use the unshifted position.

5. DISCUSSION

Traditionally, OS has been regarded as an obligatory operation, and it is only in recent years that it has become increasingly clear that OS involves considerably more variation than previously assumed. One type of variation pertains to the antecedent that the object pronoun refers back to (Andréasson 2008, 2009, 2010; Anderssen & Bentzen 2011, 2012; Anderssen, Bentzen & Rodina 2012). However, variation has also been found to exist in the types of pronouns that represent the typical cases as well (Josefsson 2003, 2010a, 2011; Andréasson 2008, 2009, 2010). The results of our investigation of spoken corpora confirm what other recent studies of OS generally have argued, namely that this is not a uniform operation of simply shifting all (unstressed) pronominal objects across adverbs and negation. As we have seen, in Swedish OS seems optional with objects with nominal antecedents and strongly dispreferred with objects with non-nominal antecedents. In Danish and Norwegian, pronominal objects with a nominal antecedent typically shift, while pronoun *det* 'it' with a non-nominal antecedent typically remains in situ. However, these pronouns also occasionally shift, especially in Danish. Our results are summarized in Table 6.

In this section we discuss our data in light of the three approaches presented in Section 2. As none of these proposals are based on spontaneous spoken language, we will highlight strengths and weaknesses of each of the approaches when faced with spoken language use. We will start by discussing to what extent the different approaches can account for the lack of OS with object pronouns referring to nominal antecedents (Josefsson 2003, 2010a, 2011, 2012). We then consider how the different proposals would deal with the placement of *det* 'it' when its antecedent is a type DP, an adjective, a VP or a clause (Andréasson 2008, 2009, 2010; Anderssen & Bentzen 2011, 2012). Even though OS can be said to exhibit optionality in the spoken corpora of all the Mainland Scandinavian languages, it is clear that *det* 'it' is considerably less likely to shift if it refers to a type DP, an adjective, a VP or a clause in all the

varieties, while there is considerable variation between the three languages when the antecedent is nominal.

5.1 The position of pronominal objects with nominal antecedents

If we consider OS of pronominal objects with nominal antecedents, it seems to be fairly obligatory in Danish and Norwegian, especially in Danish. Only 4.5% (1/22) and 13% (6/47) of these pronouns remain in situ in Danish and Norwegian. Swedish, however, exhibits a great deal more variation, with 36% (17/47) of these pronominal objects remaining in situ. Even though OS has been shown to be optional even for pronouns with nominal antecedents in Swedish on the basis of native speaker judgment data (Josefsson 2003, 2010a), pronominal objects have not been found to occur in the unshifted position very frequently. For example, Andréasson (2008) shows that the (non-contrastive) pronouns *honom* 'him' and *henne* 'her' occur in this position only 4–5% of the time in written corpora. Given this, the high number of unshifted pronominal objects with nominal antecedents in the spoken corpora, and especially in Swedish, is surprising. Let us now consider how this optionality can be dealt with in the different approaches presented in Section 2 above.

First, let us consider our data in light of the prosodic approach to OS proposed by Josefsson. As outlined in Section 2.1 above, on this account pronominal objects with nominal antecedents are clitics, and OS is a reflection of cliticization onto the verb (or the subject). As most of such pronominal objects in our data are indeed shifted across negation/adverbs, this account can explain much of our data.

However, as mentioned above, pronominal objects with nominal antecedents also occur in the unshifted position in our data, especially in Swedish. Josefsson's (2010a, 2011, 2012) approach was specifically intended to account for the fact that in the native speaker judgment task carried out in Josefsson (2003), Swedish informants showed a very high degree of acceptability of pronominal objects with nominal antecedents in the unshifted position. In Josefsson (2010a, 2011, 2012), this is accounted for by assuming that pronominal objects may cliticize onto the adverb in these cases. Moreover, the author proposes that this is an option in Swedish, but not in Danish. Thus, this approach predicts the differences we find in our data, namely that OS is certainly optional in Swedish, while it seems to be obligatory in Danish. For Norwegian, the situation is a bit less clear. While OS certainly appears to be the more frequent word order, there are some examples of unshifted pronouns. However, the native speakers of Norwegian we have consulted find these examples degraded. Thus, it seems that Norwegian is more like Danish than Swedish in this respect, and that cliticization onto the adverb presumably is not an option in Norwegian either (or at least a strongly dispreferred option).

Furthermore, recall that Josefsson (2010a, 2011, 2012) suggests that cross-linguistic variation concerning what the pronominal object can cliticize onto is

related to how strictly the language adheres to prosodic patterns. In light of this, what needs to be explained is the behaviour of Danish and Norwegian as opposed to Swedish. Josefsson (2011, 2012) speculates that Danish has stricter demands on rhythmic alternations than Swedish, and that this prevents object cliticization onto adverbs/negation. It is not entirely clear what criteria for rhythmic patterns this is based on. Swedish of course has lexical tone, while Danish does not. However, Danish is a language in which many sounds are extremely reduced, and as a consequence one would expect that its prosodic structure would NOT be very rigid or even very clear (see Grønnum 2003, Bleses & Basbøll 2004, Hilton, Schüppert & Gooskens 2011). Moreover, with respect to prosodic aspects such as tone and rhythmic patterns, in the literature, Norwegian is usually grouped with Swedish, and in contrast with Danish (e.g. Bleses, Basbøll & Vach 2011). Thus, if these prosodic properties are the reasons why OS is optional in Swedish but not in Danish, we would expect Norwegian to pattern with Swedish and show more optionality with respect to OS than what we find in our data.

Josefsson (2010a) also discusses another factor that might influence whether pronominal objects shift, namely syllable structure. Josefsson (2010a:7) finds that there is a statistically significant difference between the informants' willingness to accept the monosyllabic pronoun *den* 'it' in shifted and unshifted position, with a lower acceptability for the unshifted position. For the disyllabic pronoun *honom* 'him', on the other hand, there was no statistical difference, and Josefsson attributes the higher acceptability of *honom* in situ to its disyllabic status.

Generally speaking, the results from our investigation do not suggest that variability in the placement of pronominal objects with nominal antecedents is dependent on syllable structure. As can be seen in the tables in Section 4 above, there is not a stronger tendency for monosyllabic pronominal objects to undergo OS than disyllabic ones. For example, in Danish, where pronominal objects with nominal antecedents in general tend to shift, three of the 21 shifted pronouns are in fact disyllabic (three instances of *hende* 'her'). Furthermore, all eight cases of unshifted pronouns in Danish and Norwegian are actually monosyllabic. Swedish also displays both monosyllabic and disyllabic pronouns in both positions, at about the same rates. Examples of monosyllabic and disyllabic pronominal objects occurring in shifted and unshifted positions are illustrated with Swedish in (21)–(22), respectively (GMM = maternal grandmother).

(21) a. MOT: a   du   hittar **den inte**.   (Swe, bel31_12)
                yes you   find   it   not
                'Yes, you don't find it.'
     b. MOT: hittar du   **nte den**?   (Swe, bel29_24)
                find   you   not it
                'Don't you find it?'

(22) a. GMM: ja ser **honom inte**.   (Swe, tea40_19)
          I   see him   not
          'I don't see him.'

   b. MOT: du   känner **inte honom**? (Swe, har39_11)
          you know   not him
          'Don't you know him?'

Thus, it does not seem that prosodic structure determines whether pronominal objects with nominal antecedents undergo OS or not.

Turning to the cognitive approach to OS, this approach assumes that the syntactic position of the pronominal object in structures involving OS is linked to the highest cognitive status (*in focus*) in the Givenness Hierarchy (Gundel et al. 1993). Furthermore, pronominal objects with nominal antecedents are *in focus* and thus generally undergo OS. This approach can also account for the majority of examples with such objects in our data.

However, as we have seen, Andréasson (2008, 2009, 2010) finds that Swedish seems to permit a lack of OS with object pronouns with nominal antecedents, that is, with pronouns with the highest cognitive status (*in focus*). As an explanation for these facts, Andréasson (2010) suggests that languages may vary with regard to where they can place the negation relative to the cognitive status of pronominal objects. In Danish, the negation always occurs after pronominal objects that are *in focus*, while in Swedish, both the Danish and another option are available, namely that negation may also precede pronominal objects that are *in focus*. With regard to the results presented here, it seems that the cognitive approach to OS could maintain the proposals for Danish and Swedish. Danish seems to allow very little variation, if any, in the placement of object pronouns with nominal antecedent, while Swedish clearly allows both orders. Norwegian, showing some, but clearly very limited variation, could either be regarded as similar to Swedish, in which case the negation can occur in two positions, or be classified as similar to Danish, in which case the six instances of unshifted pronominal objects with nominal antecedents would have to be explained otherwise.

Irrespective of how Norwegian is treated within this approach, it seems that the cognitive approach can account for the variation observed in the three languages. However, the variability account proposed by this approach does not make reference to the cognitive status of the pronouns, but rather to where the negation can be placed in relation to the different pronouns.[19] One interpretation of this proposal would be that the different cognitive statuses should be reflected as different positions in a syntactic tree, where the higher the cognitive status of a given lexical element is, the higher up in the structure it is found.

In the information-structure approach proposed by Anderssen & Bentzen (2011, 2012), OS is treated as compulsory for pronominal objects with nominal antecedents. This approach does not prima facie have anything to say about structures in which

these elements do not undergo OS. Consequently, unshifted pronominal objects with nominal antecedents are problematic for this proposal. Recall that according to Anderssen & Bentzen (2011, 2012), OS is topicalization to an IP-internal topic position, and the most straightforward case is found with object pronouns with nominal antecedents. These elements are classified as familiar topics; they are informationally given, destressed and realized as pronouns. Again, this is an account that can explain most of the data with such pronominal objects in our material.

However, in Swedish, as much as 36% (17/47) of these pronouns remain in situ. Only one of these cases is judged as degraded by our native Swedish-speaking consultant. A closer examination of the Swedish contexts in which object pronouns with nominal antecedents have not undergone OS shows that these unshifted objects, like the shifted objects, clearly are familiar topics. This is illustrated by the example in (23), where the pronoun has a familiar antecedent, and according to the information-structure account should undergo OS. (The symbol ˆ marks a pause between syllables.)

(23) MOT: e **barnen** där ute Anton? (Swe, ant28_03)
       are children.DEF there out Anton
       'Are the children out there, Anton?'
  ANT: haˆa.
       yes
  ANT: dä aja aja.
       there unintelligible
  MOT: jaˆa fast ja ser **inte dom** nu.
       yes but I see not them now
       'Yes, but I can't see them right now.'

For Norwegian, there are six potential counterexamples to the information-structure account, that is, pronominal objects with nominal antecedents displaying a lack of OS. The Norwegian examples, like the Swedish ones, all seem to involve pronominal objects that have been previously introduced and that function as familiar topics. This is illustrated in (24) below. In this context, the pronominal object is clearly the topic of the conversation.

(24) INV: trur du **dem** er syk enda? (Nor, Ole10)
      think you they are ill still
      'Do you think that they still are ill?'
  OLE: du må ikke røre **dem** og sover.
      you must not touch them and sleep
      'You mustn't touch them and sleeping.'
      (intended: '. . . because they are sleeping?)
  INV: nei eg forstyrr **ikkje dem**, eg skal være kjempestille.
      no I disturb not them I shall be giant.quiet
      'No, I'm not disturbing them, I will be really quiet.'

Thus, it is clear that the behaviour of these object pronouns cannot be explained by information structure. Hence, although the information-structure based approach to OS can account for the Danish and most of the Norwegian data, our Swedish data clearly represent a challenge to this approach.

In conclusion, we have seen that while all the three approaches discussed above can account for OS of pronominal objects with nominal antecedents, they all face (different types of) challenges in dealing with the lack of OS with such objects. This is unexpected on the information-structure based approach, and the other two approaches do not fully explain the variation found both within and across the Mainland Scandinavian languages.

5.2 The position of det 'it' with non-nominal antecedents

Now let us turn to the distribution of the pronoun *det* 'it' with non-nominal antecedents in our material. As has been pointed out in previous research (Andréasson 2008, 2009, 2010; Anderssen & Bentzen 2011, 2012; Josefsson 2011, 2012; Lødrup 2012), this pronoun typically remains unshifted in all three Mainland Scandinavian languages considered here. This tendency is clearly also found in our spoken language data, where these pronouns remain in situ 85% of the time in Danish, 95% in Norwegian, and 99% in Swedish. In Swedish there are only two instances of OS with pronominal objects with non-nominal antecedents. In Danish and Norwegian there are 14 and 12, respectively. The three approaches outlined in Section 2 above have different explanations for why these pronouns generally fail to undergo OS, as well as which conditions occasionally may make OS of them possible after all.

Recall that within the prosodic account proposed by Josefsson (2010a, 2011, 2012), pronominal objects with nominal antecedents are considered clitics which shift across negation/adverbs in order to cliticize onto the verb or the subject. In contrast, Josefsson (2010a, 2011, 2012) argues that pronominal objects with non-nominal antecedents are prosodically more prominent. Moreover, she defines them as non-specific due to their reference. They are thus argued not to be clitics, and consequently do not shift to cliticize onto the verb. This approach certainly predicts the general pattern in our data, namely that the vast majority of pronominal objects of this type remains in situ in all three languages.

However, as we saw in our results (Section 4 above), even pronominal objects with non-nominal antecedents may occasionally occur in the shifted position. According to Josefsson (2011, 2012), this is possible in those cases where the verb receives contrastive stress, allowing the pronoun to be weak or unstressed in order to meet requirements for sentence-level stress. A relevant example is provided in (25) (from Josefsson 2012:10).

(25) Vi förlorade. Jag TROR det inte, jag VET det.   (Swe)
     we lost   I   guess it   not I   know it
     'We lost. I'm not guessing, I know.'

Anderssen & Bentzen (2011) have claimed that these pronouns can be unstressed in the same way as pronouns with nominal antecedents. Unfortunately we have not been able to measure prosodic prominence of these pronouns in our data. However, we have listened through the relevant examples in the audio files we have had access to, and performed an auditory prosodic analysis. From this analysis, combined with studies of the contexts in which the relevant pronouns occur in, our impression is that pronouns with non-nominal antecedents may vary in prosodic prominence irrespective of their position. For example, there does not seem to be a big difference in prominence on the object pronouns in the two examples in (26) and (27).

(26) INV: du   gjør **ikkje det** nei.   (Nor, Ina11)
           you do   not   it   no
           'I see. You don't.'

(27) INV: ... men no   får eg **det ikkje** til ...   (Nor, Ina22)
              but now get I   it not   to
           'but now I can't do it'

Still, we are aware that the impression to our native ear that such pronouns indeed can be unstressed of course needs to be supported by prosodic measurements for us to be able to make such an argument. Thus, at present, we cannot refute the claim that such pronouns are more prominent prosodically than pronouns with nominal antecedents.

When studying the extended discourse of these contexts further, however, we find that the verb is not always stressed or in contrast in those situations where the pronoun *det* shifts. In some cases, the verb indeed appears to have some contrastive focus, as in (28) below, but in other cases this is not so clear, as in (29). In yet other cases, the contrast appears to be on the subject, see (30). As this subject then is followed by a non-focused verb, it is not clear why OS is needed in order to attain appropriate sentence-level stress.

(28) MOT: hvad er alt det for noget   derinde.   (Dan, Jens38)
           what is all that for something there.in
           'What is all that in there?'
     JEN: ved   ikke.
          know   not
          'Don't know.'
     MOT: ved   du **det ikke**.
          know you it   not
          'Don't you know?'

(29) INV: må   jeg godt smage den.   (Dan, Jens41)
            may I   well   taste   that
            'May I taste that one?'
      JEN: ja.
            yes
      INV: jeg   tager lige en lille bid.
            I   take   just a   little piece
            'Then I will take a little piece.'
      JEN: nu.
            now
      INV: vi   putter **det ikke** ind i   munden.
            we put   it   not   in   inside mouth.DEF
            'We don't put it in our mouth.'

(30) JEN: mor   rejs nu   den op.   (Dan, Jens54)
            mother lift now it   up
            'Come on mother, put it up!'
      MOT: nej det kan du gøre. for det var dig der tog den
            no   that can you do for   it   was you who took it
            there.out
            derud.
            'No, you can do that. Because it was you who took it out.'
      JEN: jeg vil   altså   ikke.
            I   want actually not
            'But I don't want to.'
      MOT: men jeg gør **det heller ikke**.
            but I   do   it   either not
            'But I don't (want to) either.'

Thus, we see that a shifted pronoun with non-nominal antecedents can occur in various types of sentence stress patterns, and we therefore believe that it is challenging to explain this distribution within a purely prosodic approach.

   We have seen that within the prosodic account there is an explanation as to why pronouns with non-nominal antecedents tend to remain in situ, and this accounts for the majority of our data on these pronouns. However, it is not entirely obvious how this approach will account for the cases in which these shift, or predict when they shift and when they remain in situ.

   Within the approach to OS based on cognitive status, the explanation for the behaviour of these pronouns with non-nominal antecedents is quite different. As outlined in Section 2.2 above, Andréasson (2009, 2010) claims that these pronouns are less accessible and thus have a lower cognitive status, *activated*, than pronouns with nominal antecedents (which are *in focus*). As her claim is that the OS position is associated with the highest cognitive status, pronouns with non-nominal antecedents do not undergo OS to this position. Her proposal also therefore predicts that such pronouns generally will remain in situ, a prediction that is overall met in our data. Moreover, Andréasson finds that pronouns with non-nominal antecedents quite

consistently remain in situ in non-declarative contexts. As these pronouns remain in situ as much as 99% in our Swedish data, we cannot make any conclusions about the effect of a clause being declarative or not in our Swedish material. For Danish and Norwegian, however, a fairly high percentage of unshifted pronouns indeed do occur in non-declarative contexts (173/225 (77%) in Norwegian and 57/59 (97%) in Danish), illustrated in (31) below. In contrast, the majority of shifted *det* occur in declarative contexts (9/12 (75%) in Norwegian and 9/14 (64%) in Danish), illustrated in (32):

(31) MOT: skal vi blåse en gang til?   (Nor, Ina9)
              shall we blow one time more
              'Should we blow one more time?'
     INA: nei.
              no
     MOT: skal vi **ikke det**?
              shall we not it
              'Shouldn't we?'

(32) JEN: er der flere af dem.   (Dan, Jens51)
              are there more of them
     MOT: jeg ved **det ikke** Jens.
              I know it not Jens
              'I don't know, Jens.'

Recall further that Andréasson proposes various conditions that may enhance the cognitive status of the pronoun *det* to *in focus*, thus enabling it to shift. First of all, she claims that complements of factive predicates are more accessible than those of non-factive predicates, and thus may shift more easily. In our data, we find that contexts in which *det* shifts sometimes contain a factive verb (in 4/12 of non-nominal OS contexts in Norwegian, and in 9/14 of such contexts in Danish). One example of this was provided in (32) above from Danish, and (33) illustrates the same from Norwegian.

(33) INV: skal vi skru høyere?   (Nor, Ann11)
              shall we turn higher
              'Shall we turn it higher?'
     MOT: nei.
              no
     INV: høre du **det ikkje** sånn?
              hear you it not like.that
              'Can't you hear it like that?'

Another condition that may facilitate OS of pronouns with non-nominal antecedents according to Andréasson (2009, 2010) is cases in which the relevant clause or VP has already been referred to by a pronominal element prior to the OS

context. Again, we find that this is a common pattern in the contexts where OS of pronouns with non-nominal antecedents applies in our data. This holds for 5/12 of OS contexts with *det* in Norwegian and 7/14 of such contexts in Danish.[20] Examples from Danish and Norwegian are provided in (34) and (35):

(34) MOT: hvornår   finder de   så ud af at   der   er stjålet
          when   find   they so out of that there is stolen
          noget.   (Dan, Jens54)
          something
          'So when will they find out that something has been stolen?'
     JEN: **det** ved   de   ikke.
          that know they not
          'They don't know that.'
     MOT: ved   de   **det** ikke.
          know they it   not
          'Don't they know?'

(35) INV: ser   ut som et kryss i vinduan   trur eg. (Nor, Ann18)
          looks out like a cross in windows.DEF think I
          'Looks like a cross in the windows, I think.'
     ANN: ja.
          yes
     INV: **det** trur eg nesten men eg huske   **det ikkje**.
          that think I almost but I remember it not
          'I almost think so, but I don't remember.'

   We believe that the cognitive status approach fares better with our data than the prosodic approach. Like the prosodic approach, the cognitive status approach can explain why the majority of the pronominal objects with non-nominal antecedents in our spoken language corpora generally remain in situ. However, the cognitive approach can also explain the majority of the exceptional cases where *det* undergoes OS. OS is facilitated by declarative contexts, by contexts containing factive verbs, and by contexts where the antecedent has already been referred to with a pronoun prior to the OS context.
   In the information-structure based approach proposed by Anderssen & Bentzen (2011, 2012), the difference between pronominal objects with nominal antecedents and those with non-nominal antecedents is associated with different types of topichood. The authors argue that the pronominal objects with non-nominal antecedents have the characteristics of aboutness topics. When, for example, a clause, a VP, or a type DP is referred to by this pronoun, this turns it into what the discourse is about, the aboutness topic. Investigating the examples in our material, we indeed find that pronoun *det* in an unshifted position typically has the function of turning a new proposition or type DP in the discourse into the aboutness topic of the conversation. We illustrate this here with two examples. In the Norwegian example in (36), the

topic of Ina and her mother's conversation is a bear that is watching over Ina. Then, her mother switches the topic and asks whether Ina has slept in kindergarten today. Using *det* 'it' to refer to 'slept in kindergarten today' now establishes this as the new aboutness topic in the discourse.

(36) INA: lille bjørn passe på! (Nor, Ina17)
       little bear watches on
       'Little bear is watching out!'

    MOT: den lille bjørnen passe på ho Ina.
        the little bear.the watches on she Ina
        'The little bear is watching out for Ina.'

    MOT: han er så snill.
        he is so kind
        'He is so kind.'

    INA: ja.
       yes

    MOT: ja.
        yes

    MOT: **har du sovet i barnehagen idag**?
        have you slept in kindergarten today
        'Did you sleep in kindergarten today?'

    INA: neida.
       no

    MOT: har du **ikkje det**?
        have you not it
        'Didn't you?'

In the Swedish example in (37), Harry and his mother are talking about horses and who owns horses. Then towards the end, Harry's mother introduces sheep into the conversation, and when referring back to sheep as a type of animal, unshifted pronoun *de*(*t*) 'it' is used. (In (37), xxx marks an unintelligible sequence of sounds, and [/] indicates that the speaker repeats himself and starts over.)

(37) MOT: xxx Linnea har hästar. (Swe, har33_08)
        Linnea has horses
        'Linnea has horses.'

    HAR: Jo [/] Jon har häsa ni har inte häsa.
        Jo Jon has horses you have not horses
        'Jon has horses. You don't have any horses.'

    MOT: nä ja har allri sett att Jon har nåra hästar.
        no I have never seen that Jon has any horses
        'No, I haven't ever seen that Jon has any horses.'

    MOT: ja visste bara att Jon hade **får**.
        I knew only that Jon had sheep
        'I only knew that Jon had sheep.'

    HAR: näˆä.
       no
       'No.'

> MOT: har dom **inte de**?
>   *have they not it*
>   'Don't they have that?'

Anderssen & Bentzen (2011) propose that those contexts in which pronominal objects with non-nominal antecedents shift, are cases where they function as continuing topics, that is, they refer to something that has already been established as the aboutness topic of the discourse. This is somewhat reminiscent of Andréasson's observation that these pronouns tend to shift when their antecedent has already been referred to with a pronoun prior to the OS context (see also Gundel, Hegarty & Borthen 2003). Moreover, recall from Section 2.3 above that Bentzen et al. (to appear) argue that pronominal objects with non-nominal antecedents also shift in pragmatic control situations, i.e. when the pronoun refers to some activity that is salient in the discourse. In Norwegian and Danish, most of the cases of shifted *det* can be analyzed as meeting one of these two conditions, being continuing topics or being part of a pragmatic control situation. An example of the former is given in (38) below, where the topic is what Big Wolf does with the little pigs. When referring back to this aboutness topic in the final utterance, *det* 'it' functions as a continuing topic, and undergoes OS.

(38) HAN: og hva er det Storeulv pleier å gjøre med
          and what is it Big.Wolf uses   to do   with
          dem da?   (Nor, Nora06)
          them then
          'And what does Big Wolf usually do to them then?'
     NOR: jeg vet   ikke.
          I   know not
          'I don't know.'
     HAN: han pleier å ville **spise dem** vet du.
          he uses   to want eat   them know you
          'He usually wants to eat them, you know.'
     NOR: ja.
          yes
     HAN: han tror alltid at han skal klare **å spise dem han**
          he thinks always that he shall manage to eat   them he
          men han klarer **det ikke**.
          but he manages it not
          'He always thinks that he will be able to eat them, but he can't.'

An example of pragmatic control is provided in (39), where Jens' mother is telling him not to do something he is currently doing:

(39) MOT: hold så op. nu er det alvor.   (Dan, Jens07)
          hold so up now is it serious
     MOT: det er alvor Jens. du gør **det ikke** mere.
          it is serious Jens you do it   not   more
          'Stop it. Now I'm serious. I'm serious, Jens. Don't do that anymore.'

Some of our Danish examples, however, appear to be a challenge to this approach. They involve a shifted pronoun in contexts where, in the other two languages, the pronoun would preferably be simply left out. An example is given in (40):

(40) JEN: er   der   flere af dem.   (Dan, Jens51)
          are   there   more of them
          'are there more of them?'
     INV: jeg ved **det ikke** Jens.
          I   know it   not   Jens
          'I don't know, Jens.'

Strikingly, the pronouns in all these examples are complements of the same verb, 'know'. Interestingly, in precisely such contexts – with main verb 'know' and pronominal objects *det* 'it' with non-nominal antecedents – Andréasson (2010) finds that in her Swedish data, leaving out complement *det* is quite common, while in her Danish data, this is not a frequently used strategy. In her Danish material, these pronouns are either shifted or placed in clause-initial position. We have confirmed with a Danish-speaking consultant that these two options are indeed available for all of the relevant examples in our Danish material.

Like the two previous approaches, the information-structure based approach can explain why pronominal objects with non-nominal antecedents typically remain in situ in our data. Within the information-structure based approach, these cases are classified as aboutness topics. This approach can also explain the majority of the exceptional cases in which pronominal object *det* undergoes OS. OS with such pronouns tends to be either a case of continuing topics or pragmatic control.

As we have seen, the main challenge for all three approaches with respect to pronominal objects with non-nominal antecedents is to account for those exceptional cases in which these pronouns undergo OS. It is not clear how a prosodic approach can incorporate these cases, but we emphasize that in order to thoroughly evaluate this, one would need to measure the pronominal objects with respect to prosodic prominence. Both the cognitive status approach and the information-structure based approach have proposals for what might trigger exceptional OS of these pronouns that we find support for in our data.

6. CONCLUDING REMARKS

In this paper, we have presented the results of a study of OS in the spontaneous speech of adults in large Danish, Norwegian and Swedish child language corpora. We investigated approximately 210,000 adult utterances and found 704 utterances containing the relevant combinations of negation and pronominal objects. The data were examined in order to explore variation in OS across these three languages, and to evaluate our results against three recent accounts of OS, namely a prosodic/phonological account, an account in terms of cognitive status, and an

account in terms of information structure. As the first large-scale cross-linguistic study of OS in spoken language, we believe the results of the study represent an important step on the way towards a better understanding of OS. We have demonstrated that OS is a variable operation both within and across the languages. We have also demonstrated that all three accounts of OS can explain some of our data, and that all three accounts are faced with different challenges, in particular when explaining exceptional cases, namely lack of OS with objects with nominal antecedents and OS with objects with non-nominal antecedents. Through this study we hope to have highlighted some of the challenges that still remain for developing a unified account of the full picture of Mainland Scandinavian OS.

We recognize the importance of phonetically measuring the prosodic patterns in clauses with and without OS to establish the role of prosody and stress with respect to OS, and acknowledge this as an important aspect for future investigations. We also recognize the need for more spoken language data on OS, both spontaneous and experimental data. In particular, experimental manipulation of the cognitive status of objects and their antecedents, as well as the overall discourse information structure of the relevant clauses should constitute important aspects of future investigations into Mainland Scandinavian OS.

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NOTES

1. Andréasson (2009, 2010) points out that one actually needs to consider three positions of object placement: in addition to ±OS, pronominal objects can also occur in the clause-initial position. We obviously acknowledge this fact. However, in this study, we have focused on a comparison between the shifted and the unshifted object position.
2. We acknowledge that this only provides impressionistic evaluations of stress patterns and prosodic prominence. Careful prosodic measurements are required to objectively evaluate these issues. We currently have to leave this for future work.
3. The distinction between mono- and disyllabic pronominal objects is important to many prosodic approaches to OS. For example, Vogel (2006) argues that monosyllabic function words, which (following Selkirk 1996) cannot be prosodic words, are 'invisible' in the sense that they do not count as part of the phonological-correspondent of the verb phrase (they do not project prosodic structure). As a result, shifted pronouns do not violate syntactic constraints on the linearization of VP in languages with OS and are free to shift leftwards.
4. Note, however, that Anderssen & Bentzen (2011) argue that unaccented *det* may also be used in contexts where English uses *that*.

5. Ørsnes (2013 this issue) also connects the variable placement of pronominal object *det* 'it' with non-nominal antecedents to subcategorization properties of the verb. More specifically, he suggests that in Danish OS of this type of *det* is only an option when *det* is a complement of a verb that may also take a nominal complement (such as for example *savne* 'miss').

6. See also Anderssen et al. (2012) for a proposal that argues that OS is IP-internal topicalization.

7. Note that Frascarelli & Hinterhölzl (2007) do not associate different types of referents with different types of topics.

8. See also Andréasson, Engdahl & Lindahl (2013) and Bentzen (2013) for other studies of OS based on this corpus.

9. See also Hankamer & Sag (1976).

10. There are five different investigators involved in the recordings of these children, two in Anne's files and three in Jens' files. All five are included in our investigation, but we have not looked at these five speakers separately. In the results section (Section 4), the two investigators in Anne's files are treated jointly as 'the investigators', as are the three investigators in Jens' files.

11. There are two investigators involved in the recordings of Ole, one in files Ole01-Ole11 and one in files Ole14-Ole22. The two investigators in Ole's files will be treated jointly in the results section (Section 4).

12. The production of Ann's mother was also counted, but not included in the analysis. Ann's father was also not included. The rationale for excluding Ann's parents is that they are from a region in Northern Norway (the north of Troms county) where OS appears to be slightly different compared to most other dialects in Norway. As little is currently known about OS in this dialect, we leave our results on this point for future investigation.

13. As we found some examples where the adverbs *alls* and *heller* follow negation in Swedish, we also searched for this order in Danish and Norwegian. However, this resulted in no hits.

14. Unfortunately, there were no relevant examples of contrastive pronominal objects in the corpus where we had access to audio files.

15. *Se min kjole* 'Look at my dress' is a Norwegian children's song about colours.

16. Note that the answer provided by the investigator here is very strange when the verb *synge* 'sing' is absent, as it suggests that she only knows the song if someone else sings along.

17. This example is from the Anderssen corpus of Northern Norwegian, so the pronoun is pronounced *ho* in this case, not *henne*.

18. Note that the negation can be reduced in the way indicated here, and may even be pronounced together with the preceding word.

19. Andréasson (2010:33) also provides an indication of where the negation can go in Icelandic, which can shift DPs across the negation as well, namely in between referents that have the status IDENTIFIABLE and REFERENTIAL.

20. There is some overlap between clauses involving factive predicates and cases where prior pronominal reference has been used.

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