Variation in Mainland Scandinavian Object Shift and Prosodic Repair

Nomi Erteschik-Shir   Gunlög Josefsson   Björn Köhnlein

Ben Gurion University   Lund University   Ohio State University

1. Introduction

The standard case of Object Shift in Mainland Scandinavian (MSc) applies to a weak

object pronoun moving it from its canonical position, shown in (1), following an adverb to a

position adjacent to the verb or the subject, as shown in (2a) and (2b), respectively.[1]

(1)   Peter mødte ikke Anders.   Standard Danish

         Peter met   not   Anders.

         'Peter didn't meet Anders.'

(2)   a. Peter mødte ham ikke.

         Peter met   him not

         'Peter didn't meet him.'

      b. Derfor mødte Peter ham ikke.

         therefore met Peter him not

         'Therefore Peter didn't meet him.'

Object Shift (OS) is subject to Holmberg's Generalization, which restricts OS to structures

that have undergone verb-movement. This is shown in (2) and (3):

(3)   a. Peter har ikke mødt ham./*Peter har ham ikke mødt.

         Peter has not   met him / Peter has him not met

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[1] Following Selkirk 1996, weak pronoun forms in English are unstressed and "display the properties of stressless syllables: Vowel reduction, appearance of syllable sonorants, loss of onset 'h', etc." (p. 193). Mainland Scandinavian weak pronouns display similar properties. Note that weak pronouns both in English and in Mainland Scandinavian may be pronounced fully in careful speech. We believe that this may best be regarded as a matter of performance and does not detract from their status as being weak.

b. . . . at Peter ikke mødte ham./*…at Peter ham ikke mødte.

      that Peter   not   met   him/ … that Peter him not met

In (2) both the verb and the object have moved. In the sentences in (3), neither the verb nor the object have moved. In (3a), the presence of the auxiliary blocks OS and (3b) illustrates the lack of verb movement in subordinate clauses.

The phenomenon in general and Holmberg's Generalization in particular have been intriguing to linguists working within the Minimalist Program since Holmberg 1986, in view of the restriction (in Scandinavian languages) of OS to structures that have undergone verb-movement. This type of restriction is problematic since there is no obvious way of linking the occurrence of one rule to the occurrence of another. In spite of the challenge, the problem has engendered innovative syntactic analyses since its inception by Holmberg. Prominent examples are: Åfarli 1997, 2010, Bobaljik 2002, Nilsen 2003, Fox and Pesetsky 2005, Vogel 2006 and Vikner 2012 (optimality-theoretic implementation). Bobaljik, for example, proposes a copy theory of movement which allows for either copy to be pronounced. OS occurs in the syntax; yet morphological adjacency constraints determine which copy is pronounced at PF. This is an ingenious way to allow for a purely syntactic account of OS, sensitive to phonology (adjacency), without PF filters on syntactic derivation. However, if the motivation for OS is phonological, as Bobaljik argues, forcing movement in the syntax makes little sense. Therefore, in this paper we present a purely phonological analysis of OS.

That Information Structure and interpretation impacts OS has also been recognized by Holmberg himself (Holmberg 1999) and further implemented in Chomsky 2001. Information structure and interpretation also plays a role in many other accounts (e.g., Diesing and Jelinek 1995, Erteschik-Shir and Strahov 2004, the work of Josefsson 2010a, 2012, Anderssen and Bentzen 2012 and Andréasson 2012). Most work on OS also takes into account the prosodic

features of the phenomenon. Prominent among these are Hellan 1994, Erteschik-Shir 2005a, 2005b, Hosono 2010, and Josefsson 2012. Holmberg 1999, for example, posits the feature -foc to trigger OS. According to Holmberg -foc is a phonological feature and OS occurs in a postsyntactic component (Stylistic Syntax). However, expletives also undergo OS as shown in (4), but such elements have no information structural import and therefore even the negative focus feature posited by Holmberg has little explanatory power.

(4)   Jeg   hørte det   ikke regne.

        I   heard   it   not   rain

        'I didn't hear it rain.'

Chomsky's account – closely based on Holmberg's – recognizes that OS has phonological properties, but claims that whereas certain displacement rules do not involve surface semantic effects, and can therefore be assumed to be phonological, OS is driven by the semantic interpretation of the shifted object and must, at least partially, fall within narrow syntax. He employs the feature INT' (an interpretive feature) to distinguish languages with OS from languages without it. Chomsky's approach allows for optionality, but the fact that certain language varieties or dialects allow it, whereas others do not is left unaccounted for.

Following Erteschik-Shir 2005a, 2005b and Josefsson 1992, 1994, 2010, 2012, we argue that OS in mainland Scandinavian follows from the requirement that phonologically weak pronouns must prosodically incorporate into a legitimate host. This predicts OS, but not, as noted in these papers, the linguistic variation with respect to OS between the Scandinavian languages and varieties, in particular the fact that OS is obligatory in Standard Danish but optional in Standard Swedish and certain Danish dialects, allowing not only for OS as in (5a), but also the unshifted order in (5b) akin to the order with full DPs as in (5c).

(5) a. Mannen   såg   den   inte. (Swedish)

   man.THE   saw   it   not

   'The man didn't see it.'

   b. Mannen   såg   inte   den.

   man.THE   saw   not   it

   c. Mannen   såg   inte Peter.

   man.THE   saw   not Peter.

Elaborating on previous work by Erteschik-Shir and Josefsson, the goal of this paper is to propose a phonological analysis of optional and obligatory OS that at the same time accounts for the patterns of variation. The analysis is based on connecting two linguistic observations in MSc: on the one hand, OS is optional in some varieties of MSc, but obligatory in others; on the other hand, some varieties of MSc have a tone accent distinction, whereas other do not. We observe that these two types of variation are correlated with each other: varieties with optional OS have a tone accent distinction, and varieties with obligatory OS do not have a tone accent distinction. Roughly, we claim that the presence of tonal accent facilitates the creation of higher-level prosodic units that enable the pronunciation of the unshifted order in (5b). Descriptively, we refer to the high-level prosodic units as Tone Accent Units (TAUs). The idea that accent identifies prosodic units can be found already in Haugen 1967, 198. According to Haugen "tone serves to join successive elements more closely than would otherwise be the case". The tone accent varieties we focus on are Central Swedish and Ærø Danish, one of the South Danish dialects which also exhibit optional OS. These tone accent varieties are compared to Standard Danish, which lacks tonal distinctions and in which OS is obligatory.

The paper is organized as follows: Section 2 offers Swedish and Ærø data showing the correlation between tonal accents and OS. Section 3 analyzes TAUs and provides an

explanation of how these units enable prosodic incorporation. Section 4 explains OS as a prosodic repair strategy, from which Holmberg's generalization follows and, finally, predicts the correlation between optionality and tonal accent. In line with most recent work on the prosody-syntax interface, we choose Optimality Theory (OT, Prince and Smolensky 2004) to formalize the patterns; yet it would also be possible to formalize the patterns in a derivational approach. Furthermore, we make reference to Match Theory (MT) for purposes of exposition (Selkirk 2009, 2011), but we believe that these interactions could be expressed equally well in other approaches, such as Truckenbrodt 1999.

Section 5 examines Lolland-Falster Danish, spoken on two islands in southern Denmark, Oevdalian, spoken in the north western part of Dalecarlia in Sweden and Fenno Swedish, spoken in Finland, all of which have been thought to misbehave with respect to our claim. We then turn to two further potentially problematic cases: Specificational copular clauses in Danish which have been argued to resist a phonological analysis and cases in which the weak pronoun follows a relative clause. We demonstrate that none of these are in fact problematic for our analysis. Section 6 provides a conclusion.

2. Background and Basic Facts: the Co-occurrence of Optional OS and Tonal Accent

This section provides data that illustrate the co-occurrence of optional OS and tonal accent. In 2.1 we present relevant data from Swedish. 2.1.1 discusses OS in Standard Swedish, one of the varieties where OS is optional. The presentation is based mainly on Josefsson 2003, 2010. 2.1.2 briefly reviews some basics of tonal accent in Swedish. 2.2 shows that the same generalizations hold for Ærø Danish, which is known to have tonal accent (described in detail in Kroman 1947). Our own fieldwork (2.2.1) confirms that the variety has optional OS, and 2.2.2 elaborates the properties of tonal accent in Ærø Danish.

2.1 Swedish: Optional OS and Tonal Accents

It has been claimed in the literature that OS is more or less obligatory in Swedish, see for instance Holmberg 1991, 156 and Josefsson 1992. However a more thorough investigation, presented in Josefsson 2003, 2010, shows that OS is optional in (standard) Swedish. In this study, 26 native speakers of Swedish were asked to give grammaticality judgements of a number of shifted and unshifted sentences. An example is given below.

(6)   a. Han är en   riktig diva. Jag   gillar inte   honom.

           he   is a   real   diva. I   like   not   him.

           'He is really a diva. I don't like him.'

       b. Han är en   riktig   diva. Jag   gillar honom inte.

           he   is a   real   diva. I   like   him   not.

Sentence (6a) is unshifted; the negation precedes the object pronoun, *inte honom* 'not him', whereas the reverse holds for (6b), *honom inte* 'him not' The study showed clearly that OS is optional. No difference between speakers of different ages or dialects was found.

Weak locatives, such as *här* 'here' and *där* 'there' shift like regular weak pronouns (Josefsson 1994, Nilsen 1997, Hellan and Platzack 1999, 129), for instance with the verb *bo* 'live':

(7) Därför   bor Sten där   inte   längre.

    therefore   lives Sten there   not   longer

    'Therefore Sten doesn't live there anymore.'

Most Swedish and Norwegian dialects, as well as some Southern Danish dialects, distinguish two tonal accents: Accent 1 and Accent 2. The accents can differentiate word pairs with two or more syllables, for instance [1]anden (duck.the) 'the duck' and [2]anden (spirit.the) 'the spirit' (monosyllables always have Accent 1). The actual tonal accent contour differs between dialects, but a typical Stockholm variant is as shown below:

(8)   Stockholm Swedish: (from Riad 2013, 184) word accent   focus accent

anden 'the duck'   [^{1}'andən]   →   Accent 1   HL*   L*H

anden 'the ghost'   [^{2}'andən]   →   Accent 2   H*L   H*LH

2.2 Ærø Danish: Optional OS and Tonal Accents

It has been observed that, unlike standard Danish, certain South Danish dialects allow for the unshifted order parallel to the Swedish (5b) above. Basbøll 1986 and Pedersen 1993 view OS as an application of the lightness rule (lethedsregelen) whereas the unshifted version follows the likeness rule (lighedsregelen), in that the word order matches that of full DP objects, as in (5c). Optional OS of weak pronouns is attested in the dialects spoken on the island of Ærø (a small island with less than 6000 inhabitants located to the east of Fyn). Examples of the unshifted and shifted orders are given in (9a) and (9b).

(9)   a. Anders køber aldrig=dm.

Anders buys   never them

b. Anders køber=dm aldrig.

Anders buys them never

Whereas (9b) is acceptable both in Standard Danish and in Ærø Danish, (9a) is acceptable only in the Ærø dialect and other Southern Danish dialects which exhibit tonal distinctions.

Danish dialect researchers (e.g., Køster 1980, Kroman 1947, Ejskjær 1993, 2005) describe a number of dialects in Southern Denmark as having two distinct tonal accents. These dialects occur south of the so-called *stød line* (isogloss), below which the characteristic Danish glottal stop is not found.

One of these tone accent varieties is Ærø Danish, which, as stated in 2.2.1, also has optional object shift. According to the literature, South Danish tone accent dialects vary greatly in the way the tones are instantiated. Even on Ærø at least three different varieties are spoken. According to Kroman 1947, 71–72, the following properties are to be found in the

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Marstal dialect of Ærø: Accent 1 rises until the stressed syllable and then descends, whereas Accent 2 has an initial descending tone followed by a rise at the end of the word. The descending tone is more pronounced in Accent 1 and the rising tone is more pronounced in Accent 2.

The general distributional properties of tonal accent in Ærø Danish are similar to Standard Swedish. In Ærø Danish, monosyllables can also show an accent difference. For instance, according to the literature, the singular and the plural of *sten* 'stone' have a tone accent difference; the singular is pronounced with Accent 1 and the plural with Accent 2. Our fieldwork confirms these patterns. Consider the PRAAT diagrams in (10) and (11), which show recordings of Ærø Accents 1 and 2 for the singular and plural of 'stone', respectively.

(10)   Accent 1 *sten* 'stone'
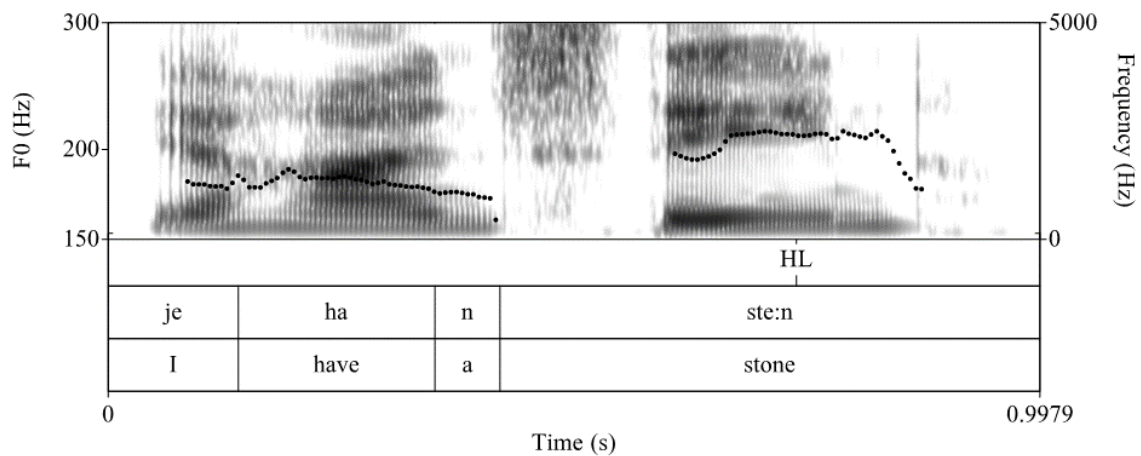
(11)   Accent 2 *sten* 'stones'
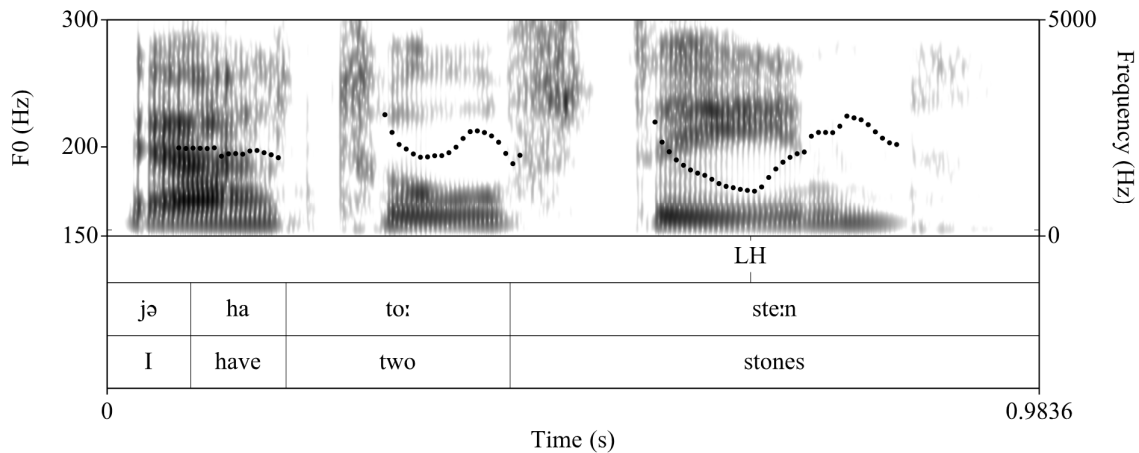
As we can see, Accent 1 has a high tone plus a late fall (HL) in the accent syllable, and Accent 2 an initial descending pitch movement followed by a rise (LH), as described by Kroman.

Although the connection between the existence of tone and the optionality of OS can be clearly observed in Danish dialects, it has not, to our knowledge, been explored before. (Pedersen 1993 considers correlations between the availability of optional OS and various morphological and phonological properties, but does not consider the tonal correlation.) In section 3, we aim to show that this correlation is not coincidental, but has meaningful **implications for our understanding of optional and obligatory OS.**

3. Tone Accent Units (TAUs)

In section 2, we demonstrated that areas with optional OS also have a tone accent distinction. This section deals with the question of what the nature of this correlation might be. Given that we suggest a phonological solution to the problem, a crucial piece in the puzzle is to understand how the presence of tonal accent can influence prosodic phrasing. This section explores the basics of this relationship. Essentially, we argue that the presence of tonal accent influences the mapping between phonological and syntactic domains in a way

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that makes it different from varieties without tonal accent. More specifically, we propose that in varieties where OS is obligatory, weak pronouns cannot be pronounced in situ because adverbs are not proper hosts for weak pronouns; yet the *in situ* pronunciation is possible in varieties with tonal accent because tonal accent creates a TAU that licenses incorporation. As we shall see, this unit is characterized by the assignment of a single tonal accent.

After discussing some general properties of mismatches between prosody and syntax (3.1), 3.2 provides data from Swedish that demonstrate the relationship of tonal accent and weak pronoun incorporation. In 3.3, we show that the same principles hold for Ærø Danish. In 3.4, we elaborate on the correlation between optionality in OS and tonal accent, essentially suggesting that the melodic properties of tonal accent can override certain syntactic boundaries that are respected in non-accent dialects of MSc, such as Standard Danish.

In this section, we try to be as theory-neutral as possible with regard to terminology and more specific claims about the interface of phonology and syntax (though making some basic assumptions is unavoidable). A more detailed discussion of the phonology-syntax interface can be found in section 4, the formal analysis of optional and obligatory OS.

3.1 Mismatches between Prosody and Syntax

In phonological theory, it is by now widely accepted that suprasegmental structure – that is, sound structure above the segmental level – is organized in a prosodic hierarchy (though the claim is not uncontested[2]). It is also commonly assumed that higher level phonological domains interact with syntactic categories. There are good reasons to assume that the relationship between syntactic and phonological categories need not be one-to-one. Two fairly straightforward examples of mismatches between syntactic and phonological structure can be found in compounding and cliticization, respectively. For instance, compounds, which

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[2] See, e.g., Scheer's 2008 arguments against hierarchies in phonology, or Samuels' 2009 arguments against syllable structure.

function as one terminal element in the syntax, consist of more than one prosodic word. A different type of mismatch is found in cliticization, where certain syntactic elements, such as (weak) pronouns, are prosodically incorporated into a host word. The syntax-phonology mismatch observed in cliticization is of particular relevance for our purposes. As we demonstrate in 3.2 for Swedish, and 3.3 for Ærø Danish, OS is a phenomenon where, in varieties with optional *in situ* pronunciation of pronouns, adverbs seem to be suitable prosodic hosts for weak pronouns. This correlation will be further discussed in 3.4.

3.2 Weak Pronoun Clitics and Tonal Accent in Swedish

As in many languages, for instance English, there is no one-to-one correspondence between prosodic words and morphosyntactic words in Swedish. Relevant to our proposal is the observation in Riad (2013, 131) that this applies to weak object pronouns, which may prosodically incorporate into a verb, forming one prosodic word. A prosodic word in this context is defined by the presence of one stress. Riad exemplifies this with the verb ˈ*gav* 'gave', followed by the object pronoun *henne* 'her' (pronounced [ˈhənə] in isolation). The sequence *gav henne* is pronounced as one prosodic word, [ˈgɑːvənə] 'gave her' with stress being on the verb *gav* 'gave' and [ənə] 'her' unstressed. Riad points out that the possibility of omitting the initial /h/ in *henne* 'her' is evidence that the first syllable of *henne* 'her' in these cases is neither stressed, nor initial in a prosodic word. (Basically, /h/ only occurs initially in prosodic words in Swedish.) Furthermore, the syllabification is ga.ve.ne (rather than *gav.e.ne), which indicates a single syllabification domain, i.e. a single prosodic word.

Riad's discussion is restricted to verb + weak object pronouns. However, if we include weak subject pronouns, we may conclude that the formation of prosodic words does not depend on syntactic constituency. The sequence *jag åt* 'I ate' [jaˈoːt] in *jag åt hönan* 'I ate the chicken' forms one prosodic word, distinct from the object *hönan* 'the chicken' [ˈhøːnan], which is a prosodic word by itself: [jaˈoːtˈhøːnan] – it is possible to have a break before
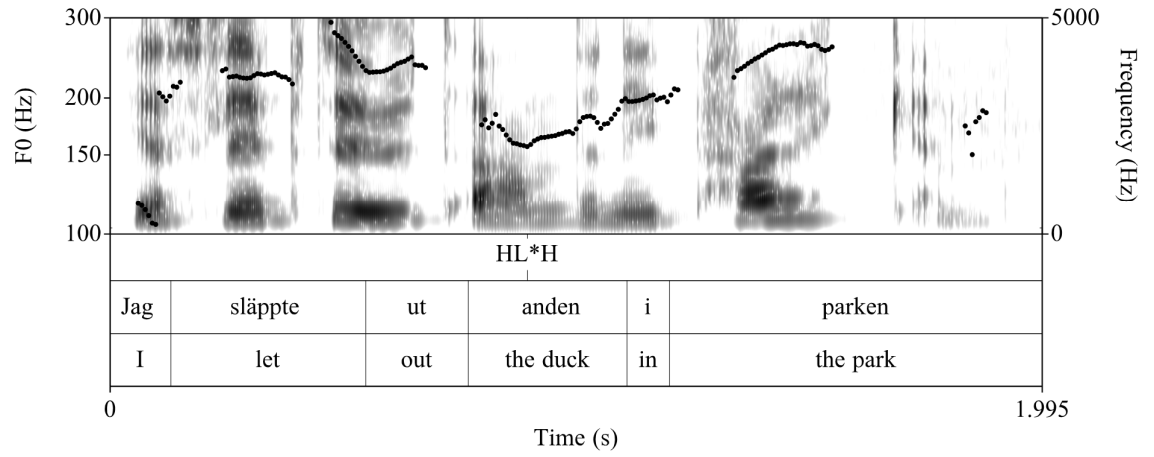
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hönan. Furthermore, it would be incorrect to leave the [h] sound out in this example, *[ˈøːnan], a strong indication that the object *hönan* 'chicken' is a prosodic word on its own in this case. Assuming that verb + object form a syntactic constituent, the subject + verb example shows that a prosodic word can consist of units that are not syntactic constituents. Importantly, the unit of a host plus a weak pronoun clitic is defined by the assignment of one tonal accent. That is, a tonal accent may span over more than one stress-defined prosodic word. Riad (2013) terms such a larger prosodic domain *a maximal prosodic word*. When formed by a verb + a weak object pronoun, the tonal accent of the verb determines the tonal accent of the whole domain:

(12) a. *gav* 'gave' + *henne* 'her': $[^{1}ˈgav]ω + [^{2}ˈhenne]ω$ ➔ $[^{1}ˈgɑːvənə]ω$

  b. *gillar* 'likes'+ *det* 'it': $[^{2}ˈgillar]ω + [^{1}ˈdet]ω$ ➔ $[^{2}ˈjɪlaɖə]ω$
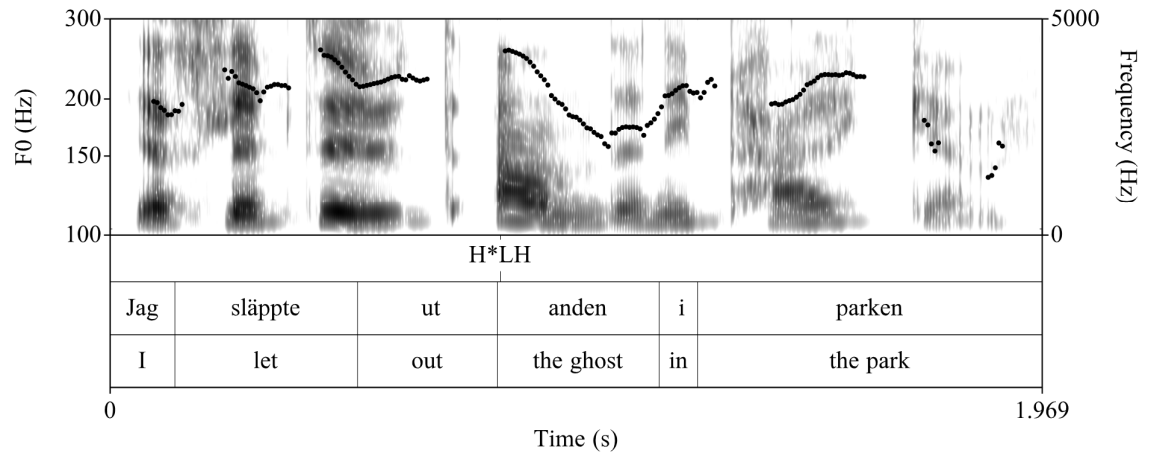
In the examples in (12) the object pronoun no longer has a tonal accent of its own, but is incorporated in the TAU that spans over the sequence consisting of the verb and the pronoun. Furthermore, there is no restriction of constituency when it comes to maximal prosodic words. Thus, in *Jag åt hönan* 'I ate the chicken', discussed above, *jag åt* 'I ate' is an Accent 1 prosodic word, whereas *hönan* 'the chicken' is an Accent 2 prosodic word.

The PRAAT diagrams (13) and (14) below illustrate tonal accent on the pairs *anden* (duck.THE) 'the duck', which has Accent 1 and, and *anden* (spirit.THE) the spirit, which has Accent 2. Figures (15) and (16) illustrate verb-pronoun sequences with Accent 1 and Accent 2 verbs, respectively. (All PRAAT diagrams of Swedish are from speakers of Central Swedish.)
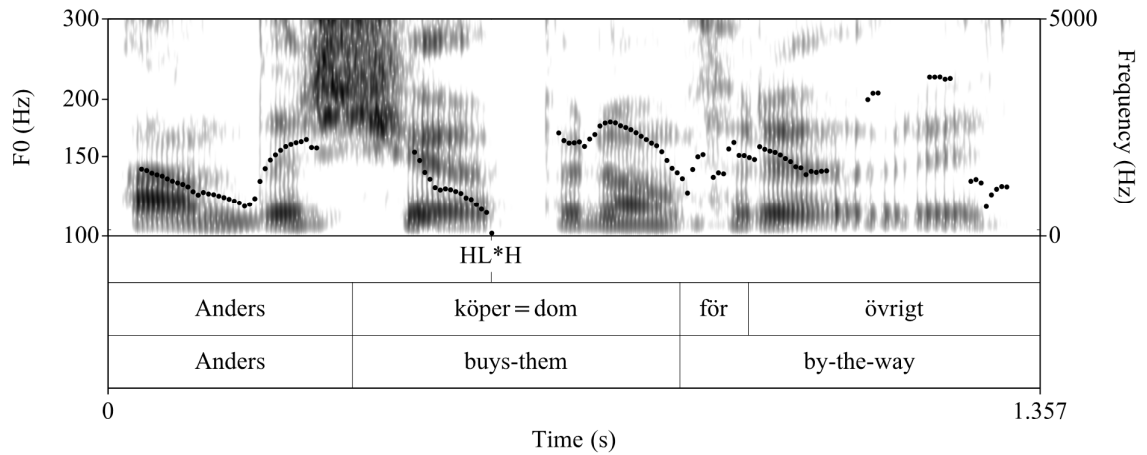
(13) Accent 1 noun *anden* 'the duck'

Jag	släppte	ut	anden	i	parken
I	let	out	the duck	in	the park

(14) Accent 2 noun *anden* 'the spirit

Jag	släppte	ut	anden	i	parken
I	let	out	the ghost	in	the park

(15) Accent 1 verb + weak pronoun: *köper dem* 'buys them'

	HL*H		
Anders	köper = dom	för	övrigt
Anders	buys-them		by-the-way

Time (s)

(16)   Accent 2 verb + weak pronoun: *köpte dem* 'bought them'

|		
	H*LH	
Anders	köpte = dom	också
Anders	bought-them	also

Time (s)
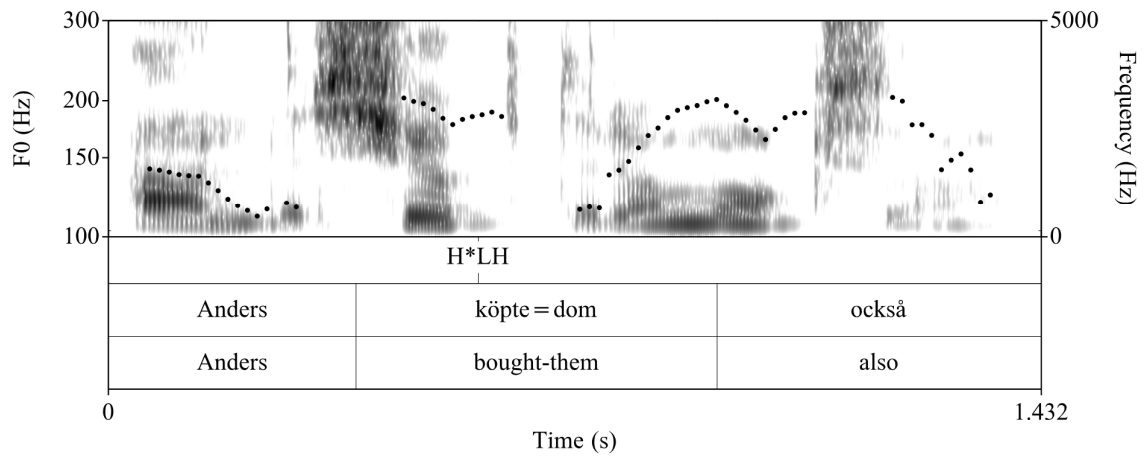
As we can see, the prosodic contour of Accent 1 *anden* 'the duck' is the same as for the sequence *köper dem* 'buys them'. The same applies to Accent 2 *anden* 'the spirit' and the sequence *köpte dem* 'bought them'.

Swedsh is a V2-language, and when a non-subject occupies a sentence-initial position, the subject will follow the finite verb. In such cases, weak object pronouns prosodically incorporate into the preceding noun giving rise to the same patterns as shown in (15)
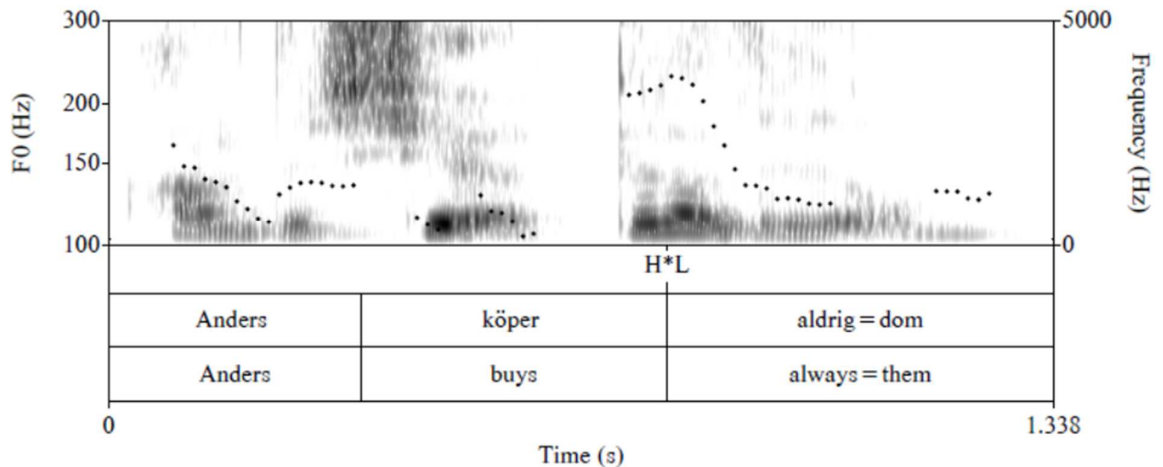
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and (16); an accent 1 noun + a weak pronoun, gives rise to an accent 1 prosodic word and an accent 2 noun + a weak pronoun gives rise to an accent 2 prosodic word. The derivation of such cases is described in Section 4.

Interestingly, we find the same tonal patterns for Accent 1 and Accent 2 adverbs + pronoun, in other words cases where OS has not applied; as pointed out above, this is an option in (most dialects of) Swedish:

(17) Accent 1 adverb + weak pronoun: *faktiskt dem* 'in fact them'.

| Anders | köpte | faktiskt = dom |
| Anders | bought | actually = them |
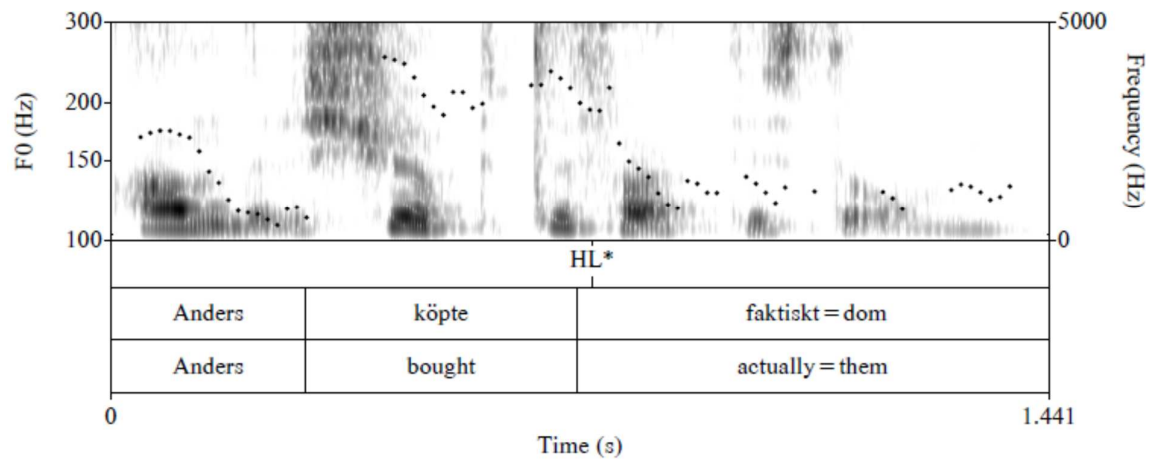
(18) Accent 2 adverb + weak pronoun: *aldrig dem* 'never them'.

| Anders | köper | aldrig = dom |
| Anders | buys | always = them |

The relation between tonal accent and OS will be discussed in section 4. The main points in this section is that OS is optional in (most dialects of) Swedish, that pronouns may be

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prosodically incorporated, and that tonal accents may span over sequences of (syntactic) words. The accent of the first word determines the tone of the whole TAU.

The next section examines the corresponding phenomena in the Danish dialect spoken on the island Ærø.
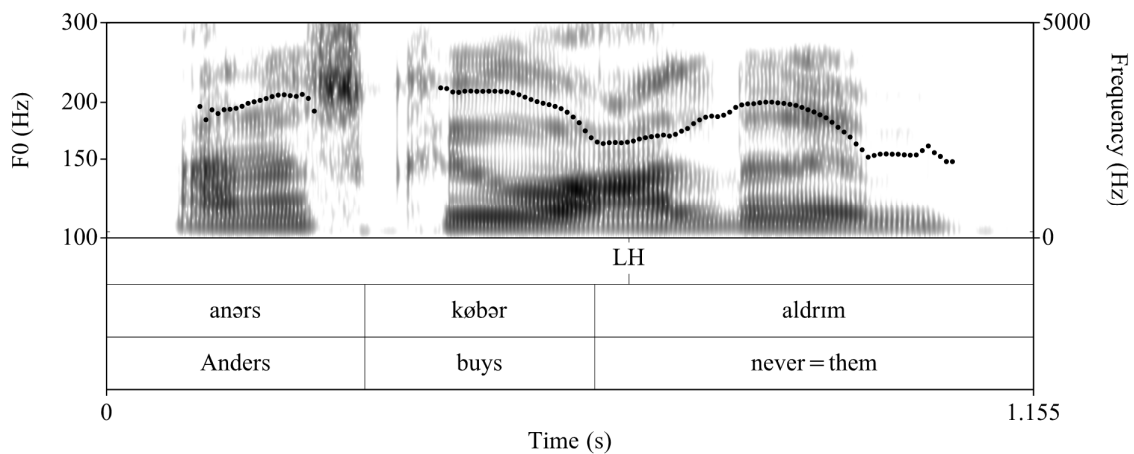
3.3 Weak Pronoun Clitics and Tonal Accent in Ærø Danish

As in Swedish, the weak pronoun can be pronounced in situ as shown in (19) and (20) for Accent 1 and Accent 2 adverbs, respectively.

(19)   Accent 1 adverb + clitic: *faktisk ham* 'in fact him'
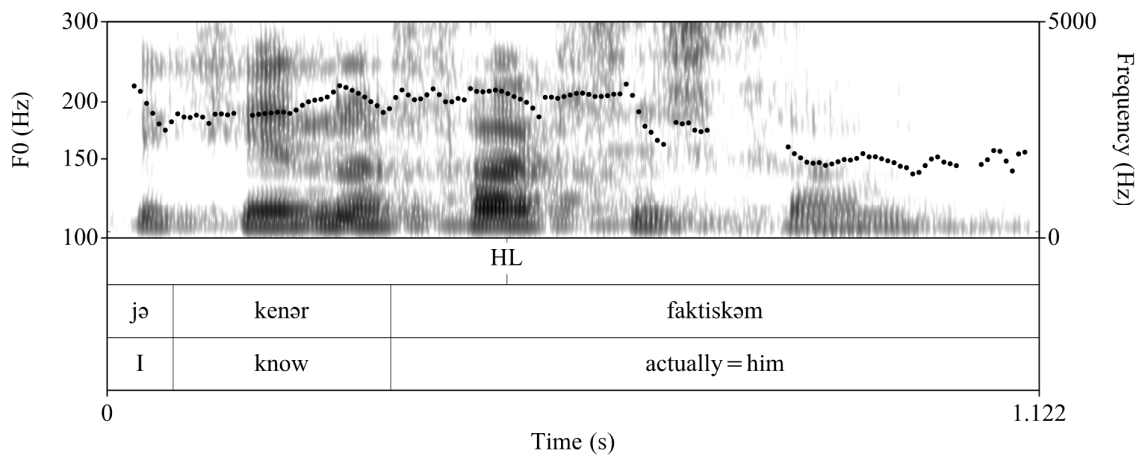
(20) Accent 2 adverb + clitic: *aldri(g) dem* 'never them'

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As described for Swedish the tonal unit spans the adverb and the pronoun in both accent types. (21) and (22) illustrate the shifted cases in which the weak pronoun is prosodically incorporated into the verb. Here again, the verb and the incorporated pronoun form one tonal unit.

(21)   Accent 1 verb + clitic: *køber dem* 'buy them'

	HL	
jə	købərbm	ik
I	buy = them	not
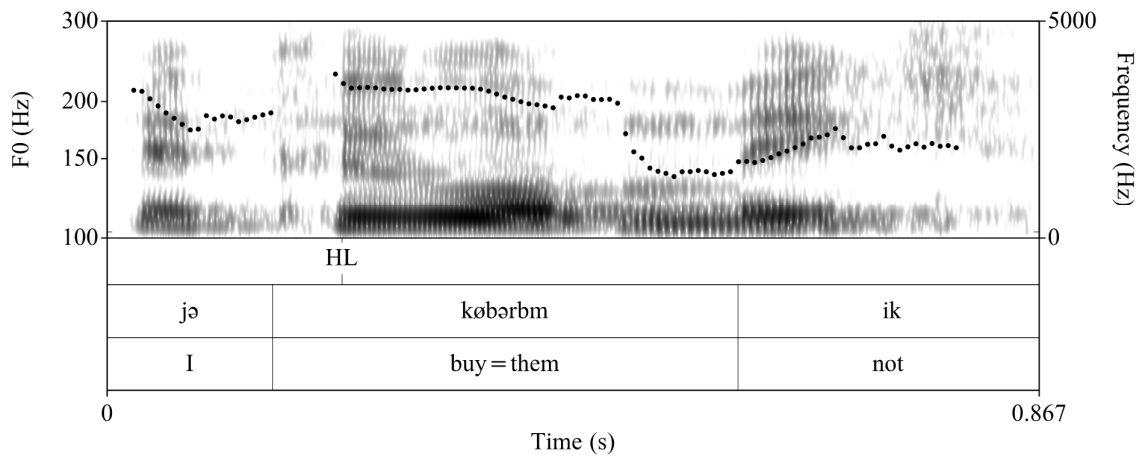
(22)   Accent 2 verb + clitic: *fodre dem* 'feed them'

	LH	
jə	fɔrbm	ik
I	feed = them	not
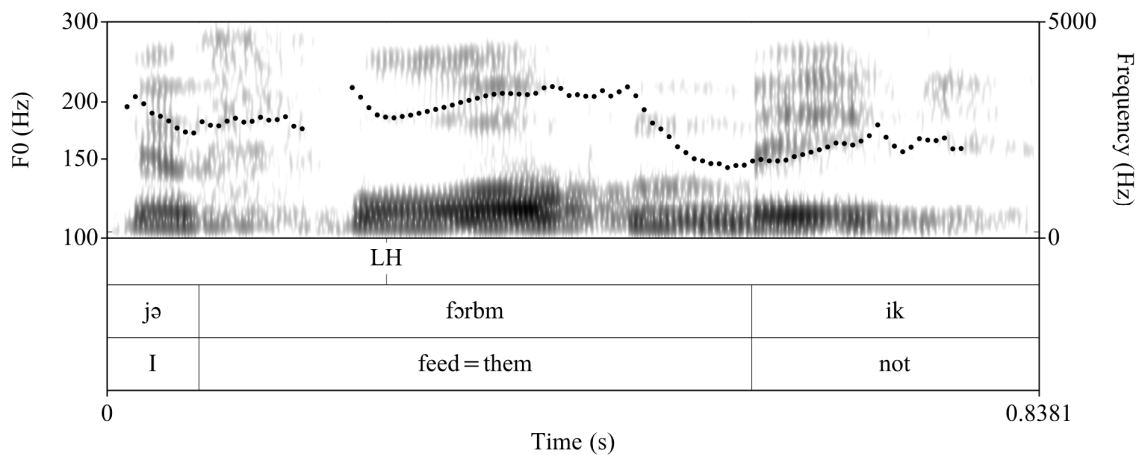
Weak object pronouns incorporate into the subject when the subject is inverted (in cases when another element precedes the verb and in questions). This word order was presented in (2b) for standard Danish. In the Ærø dialect, as in Swedish, the tonal accent of the subject

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noun determines the tonal accent of the unit formed with the incorporated weak pronoun. We return to these cases in Section 4.

Kroman 1947 interestingly observes that when a weak unstressed word is preceded by a stressed word, it will have the same tone as the preceding word independently of its inherent tone (exactly as in Swedish). Our research results clearly show that the tone of the incorporating host together with the weak pronoun is determined by the tone of the incorporating constituent.

The correlation between languages in which tonal distinctions are to be found and the optionality of OS remains firm and is theoretically significant in and of itself. In addition, the tonal instantiations that remain to be discovered will shed light on the way tone allows for these sequences to be pronounced as one prosodic unit. This is the topic of the next section.

3.4 Towards an Explanation

As we have seen, varieties where OS is not obligatory allow incorporation of weak pronouns into a preceding adverb, unlike varieties with obligatory OS, where the word order adverb plus weak pronoun is disallowed. This observation suggests that, from a phonological perspective, varieties with obligatory OS seem to have some prosodic boundary between the adverb and the pronoun that blocks incorporation. Since weak pronouns cannot surface independently but require a prosodic host, they have to move to a position where prosodic incorporation is possible. The prosodic boundary in question seems to be less strong in varieties with tonal accent, meaning that adverb and weak pronoun can be located in the same higher-level phonological domain. Accordingly, the *in situ* pronunciation of weak pronouns is possible since incorporation is not blocked.

The general idea fits nicely with most current approaches to the interface of syntax and phonology, where it is assumed that syntactic and phonological phrasing do not necessarily have to mirror each other.

Given that higher-level prosodic domains are formed in relation to syntactic domains, the most faithful mapping of phonology to syntax would obviously be that each syntactic phrase correspond to exactly one phonological phrase. The existence of approaches that rely on matching operations between prosodic and syntactic domains demonstrates that, apparently, this mapping does not always appear to be perfect – otherwise, it would be redundant to assume matching operations of phonological and syntactic domains, or, for that matter, to assume the existence of higher-level phonological domains to begin with (that is, if there were no mismatches, it would be sufficient to claim that phonological rules can make reference to syntactic categories).

If phonological phrasing and syntactic phrasing do not necessarily display a one-to-one correspondence, then the position of certain clitics, such as weak pronouns in OS, may be (at least partially) determined by phonological rather than by syntactic considerations. A recently discussed example might be pronoun placement in Irish, as proposed in Bennett et al. 2016). As the authors demonstrate, prosodic considerations can optionally override syntactic phrasing. In a nutshell, these prosodic considerations concern the desire to have 'balanced' phonological phrases – that is, phrases should be approximately equal in length and adhere to binarity requirements. Irish pronoun placement thus seems to be a case where prosodic phrasing can override the word order provided by syntax.

With this in mind, we can focus more closely on the phenomenon under discussion, the interaction of OS and tonal accent. Assuming that the presence of tonal accent is somehow responsible for optional – instead of obligatory – OS, one of our goals must be to identify a property of tonal accent that would help us understand why and how it can affect word order. In short, we believe that certain 'non-local' characteristics of tonal accent might be a surface property that facilitates certain types of prosodic phrasing which, in turn, makes optional OS possible.

On the one hand, tonal accent is a 'local', word-level phenomenon, in the sense that it enables speakers to distinguish segmentally identical items. At the same time, however, it is also a 'non-local' phenomenon, since the realization of tonal accents combines prominence markers at the word level with phrase-level intonational tones. As first established in Bruce 1977, word-level tones mark the lexical distinction between Accent 1 and Accent 2, while phrase-level tones (focus tones, boundary tones) mark phrasal prominence and phrase edges. Since these tones are combined into a single tonal contour, we can say that different types of tones – word-level tones *and* phrasal tones – together form a tonal/intonational unit, which we have descriptively referred to as a *Tonal Accent Unit*.

Tonal Accent Units link word-level and phrase-level phonology in two ways. Most importantly, by virtue of combining word-level and phrase-level tones, they create a direct link between these two levels of structure. The word-level relevance of tonal accent makes the phenomenon particularly salient, thereby distinguishing it from tonal phenomena in purely intonational languages like English, where (intonational) tone is commonly assumed not to be a correlate of word-level phenomena. The non-local character of tonal accent, i.e., the strong interaction of word-level and phrase-level markers, distinguishes the surface correlates of tonal accent from segmental contrasts; the latter are typically local, that is, a property of an individual segment (barring coarticulation with preceding and / or following segments). Particularly in Germanic, consonants and vowels are essentially word-level phenomena, in the sense that Germanic languages do not use segmental information to indicate pragmatic information or phrasal boundaries. Thus, the locality of segmental structure is different from tonal accent, which combines word-level (prominence) tones and phrase-level tones.[3] We can think of this type of non-locality as hierarchical, in the sense that

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[3] This in turn might be the reason that OS is obligatory in Standard Danish, although Danish has stød. Stød is a glottal closure on certain sonorant segments, whose distribution shares similarities with Accent 1 in tone accent varieties. There have been debates as to how

it creates a direct connection between lower (word) and higher (phrase) levels of prosodic structure.

A different, potentially somewhat less crucial non-local characteristic of tonal accent is the fact that tones of a Tonal Accent Unit are typically not only realized on the two types of (stressed) syllables that mark the difference between Accent 1 and Accent 2, but can also occur *before* or *after* the respective tone accent syllable (the precise realization depends on various prosodic factors, such as the position of word stress in an item, or the position of an item in an intonational phrase; see, e.g., Bruce 1977). This type of non-locality is thus not hierarchical but rather 'flat', in the sense that it makes reference to the flat structure of an utterance. This property of tonal accent is particularly pronounced in Standard Norwegian, where tonal melodies of a Tonal Accent Unit typically span from one (stressed) tone accent syllable to the next (or to the end of an intonational phrase, if the item in question is phrase-final). In the words of Kristoffersen (2000: 239-240), "more than one syntactic constituent, that is, any word not carrying primary stress that intervenes between two syllables with primary stress [= with a tonal accent; authors], will be included in the domain of the full melodies." Not all varieties have such a wide range of melodic spans for the two accents. Furthermore, as pointed out to us by Tomas Riad (pers.com.), Accent 1 will have a narrower range than Accent 2 in many tone accent varieties (particularly in South Swedish). Still, the realization of tonal accent will typically extend beyond the syllable marked for tonal accent. In that sense, flat non-locality provides additional support for the connection between word-level and phrase-level prosody provided by the vertical non-locality of tonal accent.

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stød should be analyzed phonologically, one of these possibilities being a tonal analysis (e.g. Gussenhoven 2004 for discussion). On the basis of experimental evidence, it has been argued, however, that stød does not carry any identifiable tonal characteristics (Grønnum et al. 2013). This suggests that the main correlate of stød does indeed seem to be the glottal closure, which would imply that stød is a local phenomenon that does not directly interact with phrase-level intonation, unlike tonal accent.

We have thus established that the non-local tonal characteristics of tonal accent (hierarchical and flat) provide a link between word-level and phrase-level phonology. This is particularly informative for our purposes because (intonational) tones are common surface correlates of high-level phonological domains. For instance, Bennett et al. 2016 observe that the phonological phrases they postulate for Irish are usually marked with distinctive pitch accents. This is not at all typologically unusual: Left and/or right edges of higher-level phonological domains are often marked with intonational pitch accents and boundary tones (Gussenhoven 2004, Ladd 1996). In many languages, higher-level phonological domains can most reliably be identified on the basis of the presence of phrase-marking tones. Such domains have sometimes been referred to as *accentual phrases*, highlighting the importance of intonational pitch accents for the structuring of utterances. For instance, in Lekeitio Basque, unaccented words (i.e., words without a lexical pitch accent) are typically grouped together with the following word; accented items (words with a lexical pitch accent), on the other hand, are *always* followed by a phrase boundary (Elordieta 1997). This example shows particularly clearly that lexical tonal properties can have a strong influence on prosodic phrasing.

As we have seen in section 3.2, weak pronouns can form a unit together with the preceding tone accent item. From a more general perspective, it has been widely observed that in varieties with tonal accent, some prosodic constituent is defined by the presence of *one* tone-accent item. Essentially, the prosodic domain in question ranges from one item with tonal accent to the next; if there is no following item with tonal accent, it extends to the end of the intonational phrase. These accent-based units have been referred to with different names: *Accent Phrase* (Kristoffersen 2000, Abrahamsen 2003, Myrberg 2010, Morén-Duolljá 2013), *Maximal Prosodic Word* (Myrberg and Riad 2015), *Tonal Foot/Accent Unit* (e.g. Fretheim and Nilsen 1989), or *Prosodic Word* (Bruce 1998, Hansson 2003). Aside from terminological

issues, which will be discussed in more detail in our analysis (section 4), these proposals all capture the insight that in Scandinavian tonal accent varieties, some higher-level prosodic unit is defined by the presence of a tonal accent.

This is perfectly in line with our observation that Tonal Accent Units can create higher-level phonological domain to license the in-situ pronunciation of weak pronouns. By relating the presence of tonal accent to optional OS, our proposal therefore applies independently motivated phrasal structures concerning Scandinavian tone accent varieties to a novel phenomenon.

To sum up, we have argued that tonal accent, being a local *and* non-local phenomenon at the same time, provides all it takes to define anchor points for higher-level prosodic constituents. Tonal marking is a typical characteristic of higher-level prosodic domains. Its realization often contains word-level *and* phrase-level tones, which provides a link between the two domains (hierarchical non-locality). Furthermore, the tonal contour associated with a tone accent item typically extends beyond the tone accent syllables in question (flat non-locality), which differentiates tonal accent from segmental phenomena at the word level. As has been independently shown by various scholars for different tonal accent varieties, these domains are created from one tonal accent item to the next tonal accent item (or to the end of the intonational phrase). Their formation is thus based entirely on prosodic grounds, which means that they can interfere with the phonology-syntax mapping.

4. A Prosodic Account of OS and Variation

Based on our general proposal in section 3, this section addresses the question of what division of labor between syntax and phonology best accounts for these data. We argue that even though word order is at stake, the movement is not syntactic but occurs as part of 'externalization' to the sensorimotor systems (Berwick and Chomsky 2011) linearizing the output of narrow syntax. The view that OS involves prosodic features is not new (e.g., Hellan

1994, Erteschik-Shir 2005a, 2005b, Hosono 2010, 2013, Josefsson 2012). Our main innovation is the claim that the phenomenon is purely phonological and that TAUs play an important role in explaining variation. This section is organized as follows. 4.1 gives some background on the influence of phonology on word-order phenomena and provides some general arguments against a syntactic approach to OS. In 4.2, we argue that OS is a phonological repair strategy that avoids the parsing of adverbs and following weak pronouns in the same phonological phrase. 4.3 presents our account of Holmberg's generalization and 4.4 explains variation.

4.1 Phonology and Word Order

That phonology plays a role in certain word-order phenomena has been observed over the years and has received additional impetus since Berwick and Chomsky 2011's assertion that although displacement is constrained by the computational system (Merge), the PF externalization system is responsible for at least microvariation. Various word-order phenomena have been shown to be motivated by phonology, but these accounts typically mingle phonological and syntactic considerations.[4] Others, prominent among them Richards (e.g., 2010, 2016), offer prosodic accounts of a large amount of relevant phenomena including prosodic parameters on wh-movement. In view of the fact that wh-movement has semantic effects, Richards (on a par with Chomsky) maintains syntactic movement. Since OS has no semantic effect, this argument therefore does not apply here.

Here, we would like to go one step further than most previous approaches and investigate how purely phonological accounts of certain word-order phenomena (here: OS) fit in the architecture of grammar. Why would we want to take OS out of the narrow syntax? Among the purely phonological analyses of word-order phenomena, Bennett et al. 2016, which deals with rightward movement of pronouns in Irish (see also Adger 1997, 2007), offers a series of

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[4] E.g., Gutiérrez-Bravo 2005, Vicente 2005, Göbbel 2007, Anttila et al. 2010, López 2009.

arguments for why a syntactic analysis is to be rejected. As it turns out, similar arguments can be given for why one should be suspicious of a syntactic analysis of OS.

I.   No syntactic motivation.

OS has no semantic or even information structural motivation nor is there any obvious syntactic motivation. This is the most indicative argument against syntactic movement in this case.

II.   Dependence on verb movement

The restriction of OS to structures that have undergone verb-movement is problematic since there is no obvious way of linking the occurrence of one rule to the occurrence of another.

III.   Applies only to weak pronouns. (Strong and weak pronouns are not distinguished syntactically).[5]

IV.   Optionality of OS is governed by language/dialect specific prosodic properties.

With these arguments in mind, we now move forward to a phonological account of the phenomena in question that does not suffer from these shortcomings.

4.2 Object Shift – A Repair Strategy

We now turn to our analysis of OS in Mainland Scandinavian, investigating how linearization works to render a shifted weak object pronoun, the word order, which is licensed in all the dialects we have described here so far and also to allow the pronoun to remain in situ in those dialects (with tonal accent) that allow it. Following Bennett et al. our goal is to provide an analysis that "should be well integrated with a reasonable theory of how prosodic structure is built... In particular, the theory of prosody appealed to should have solid independent grounding rather than being tailored to the needs of the problem at hand."

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[5] Information structure distinguishes strong and weak pronouns: weak pronouns are topics, strong (stressed) pronouns are (contrastive, demonstrative) foci. In a framework in which prosody is computed from IS, IS features are marked on the input to PF.

To live up to these aims, we first adopt the main tenets of Selkirk's (2009, 2011) Match Theory (MT), which derives prosodic structure from syntactic structure: clausal phrases are mapped onto intonational phrases (ι), syntactic maximal projections map onto phonological phrases (φ) and heads map onto prosodic words (ω). Together with Erteschik-Shir 2005a, Selkirk 1996, 2009, 2011, Myrberg 2013 and Bennet et. al. 2016, Ito and Mester 2008, among others, we furthermore assume that phonological criteria influence the linearization of syntactic structure. In the case of OS this means that the position of the object is derived via this linearization. If the weak pronoun ends up in a position in which it can incorporate, the string passes the phonological criteria and is therefore pronounceable.

Since OS constructions involve the order between an adverb and a weak pronoun, two possible analyses present themselves: Either the weak pronoun shifts in order to satisfy prosodic requirements or else the adverb is linearized in those positions which satisfy these prosodic requirements. Erteschik-Shir 2005 offered the latter analysis. Here we show, following Bennet et.al. 2016, that prosodically triggered pronoun movement provides a more elegant and simpler (phonological) explanation of the phenomenon.

We first turn to the case of Standard Danish, where OS is obligatory. The weak pronoun shifts in order to be positioned adjacent to a legal host of incorporation. In the shifted order shown in (23a) and (23b), the pronoun is incorporated into a verbal or nominal host. (23c) is ruled out because adverbs do not provide legitimate hosts for incorporation.

(23) a. Peterså=den ikke.   Standard Danish

        Peter   saw=it   not

    b. Her   så   Peter=den   ikke.

        Here   saw Peter= it   not

    c. *Jeg mødte   ikke=ham.

        I   met   not =him

Let us first examine a VP with a non-pronominal object and no adverb as in (24a). (24b) shows the syntactic tree. Following similar assumptions to those in Bennet et al, V* is a fusion of the syntactic features of the elements it raises through. The subject raises from spec, vP and raises to spec, CP. In this way, V-2 order is derived. (24c) shows the same tree with all null elements removed. MT then derives the prosodic structure in (24d) in which, following Elfner 2012, phrasal projections are ignored if they are empty of phonological material or if they dominate the same elements as a lower phrase. A weak object pronoun does not project its own prosodic word but only a syllable, rendering the structure in (24e).
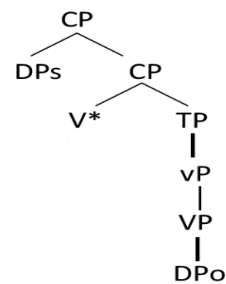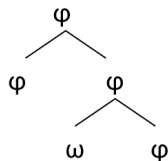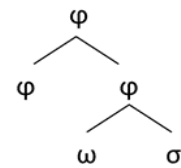
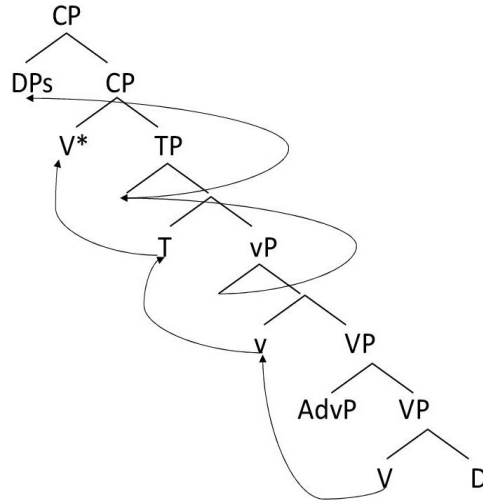(24) a. Peter så   Mette.
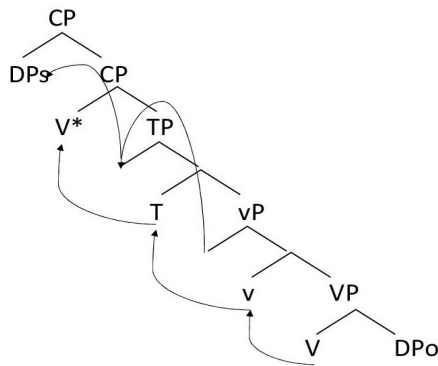
      Peter saw   Mette

This allows for prosodic incorporation in which the verb and the pronoun form a single prosodic word pronounced *så=ham* 'saw him'.[6] Assuming that the adverb is left-adjoined to the VP and its position is derived as a result of V movement, we derive the syntactic structure in (25).

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[6] See Selkirk 2011, 19.

(25)

CP
DPs   CP
    V*   TP
       T   vP
        v   VP
          AdvP   VP
               V   D

We know that adverbs are less suitable hosts for clitics than nouns or verbs in MSc, and this property of the system must be accounted for. The status of adverbs is, arguably, not determined in the phonology via constraints that directly make reference to the word class 'adverb'; that is, there seems to be no good reason to assume that phonology itself should differentiate between different classes of lexical words. Therefore, we reject such an empirically satisfactory, but theoretically undesirable approach. It seems to us that a more promising solution is that the syntax-to-phonology mapping of AdvPs is different from VPs and NPs. Unlike VPs and NPs, AdvP's are adjuncts, and this might be the reason why their prosody is different. Building on this idea, we propose that the faithful matching of the adjoined structure of (26a), in which the VP is recursive, is the prosodic structure in (26b).

(26) a.   b.

VP   φ
Adv   VP   ω   φ
       D   σ
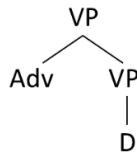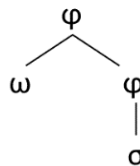
According to the current version of MT, the prosodic structure of (26a) should be flattened further, eliminating the lower φ-phrase in (26b). Our proposal is that MT relates differently to

adjoined phrases, maintaining the adjoined structure in the prosody so that in a faithful mapping, recursive XPs are NOT ignored in the syntax-to-prosody mapping.

Formally, we express this in (27) with the constraint MATCH PHRASE (XP, ADJP) that assigns violations for failure to match XPs and AdjPs in the same manner. Since, presumably, matching XPs might still be more crucial than matching AdjPs across languages, there probably is a more general constraint Match Phrase (XP) that penalizes only the non-matching of maximal XPs, but we can ignore this for our purposes (the general idea is comparable to de Lacy's 2006 approach to capturing prominence-related phonological scales in OT constraints).

(27) MATCH PHRASE (XP, ADJP): Given a maximal projection XP or a recursive projection AdjP in a syntactic representation S, where XP/AdjP dominates all and only the set of terminal elements {a, b, c, . . . , n}, there must be in the phonological representation P corresponding to S a ϕ-phrase that includes all and only the phonological exponents of a, b, c, . . . , n. If there is no such ϕ-phrase, assign one violation mark.

This constraint, and by extension our analysis of OS, makes crucial reference to a 'special status' of adverbs. That adverbs have a special status has been noted before. For instance, Lebeaux 1988, Åfarli 1995, 2010 and Chomsky 2004 propose, for different reasons, that adjuncts are integrated differently into syntactic structure than other elements. The latter two suggest that they are inserted in a different plane resulting in a 3-dimensional structure. It follows naturally that adjuncts are integrated into the linear structure as separate prosodic phrases. Our suggestion is that a faithful mapping in MT maintains this separation by leaving the adjunction structure as is.

There is little agreement on how to account for the prosodic properties of adjuncts and the prosodic boundaries they incur. Truckenbrodt 1999, Selkirk 2011, Cheng and Downing 2016

and Bellik and Kalivoda 2016 propose a variety of approaches to account for these as they pertain to a variety of languages.[7]
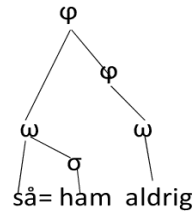
In view of the fact that different adjunct types may have different prosodic properties and that different languages may differ with respect to the prosodic integration of adjuncts, MT may have to take such variation into account. We note, for example, that in Bennet et. al (op. cit.), 208, the mapping of adjoined PPs is no different from complements. The PPs in question, however, are Manner, Time and Place adverbials which have different properties from the sentence adverbials involved in OS.

From a phonological perspective, the problem with the prosodic adjunction structure in (26b) is that the weak pronoun requires incorporation. If we make the natural assumption that the incorporation of weak pronouns requires that the weak pronoun and its incorporating host be included in the same minimal prosodic phrase, and that a prosodic phrase must contain a prosodic word, incorporation is not possible in (26b).[8] This is illustrated more explicitly in (28a) and (28b) for Standard Danish, where OS is obligatory. As shown in (28a), the adverb cannot host the weak pronoun in a faithful mapping since they are not in the same minimal prosodic phrase. Furthermore, a weak pronoun also cannot head its own prosodic phrase because it does not have the status of a prosodic word ((28b)).

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[7] These approaches vary in their premises and the data they account for and are therefore difficult to compare. Bellik and Kalivoda, for example argue for the visibility of the higher node in adjunction structures and do not rule out the visibility of the lower one as we do. The discussion of the distinction between the mapping of complements and adjuncts is also prominent in the literature on Chinese Tone Sandhi (TS), as discussed in, e.g., Chen 1987, 1992 and Zhang 2014. There is little agreement of how to account for this type of data in the various dialects and languages for which similar phenomena have been attested. For an overview see for example Simpson 2014.

[8] We adopt Elfner's 2012 distinction between maximal (non-minimal) phrases and minimal ones.

(28) a.   b.   c.

φ   φ   φ
│ φ   │ φ   │ φ
│ │ φ   │ │ φ   │ │
ω ω σ   ω ω σ   ω ω σ
│ │   │ │   │ │
*så aldrig=ham   *så aldrig=ham   *så aldrig=ham

The mappings in (28a) and (28b) thus indicate that there is no way the faithful mapping

can be preserved; that is, the prosodic phrase node that only contains the weak pronoun must

be deleted. The question is what a legitimate host for the pronoun is. We argue that the

mapping in (28c), where the phrasal node dominating the weak pronoun is deleted and the

pronoun is cliticized onto the preceding adverb is illicit, at least in Standard Danish. We

propose that the reason is that clitics will preferably not be associated to an element that

originates from a (maximal) syntactic projection of the same type. This restriction, which

triggers object shift, is formally expressed with the constraint in (29).

(29) NoSkip (Syn): Assign one violation mark for every instance where a phonological

exponent α (clitic) is associated to a ω β if ω β corresponds to a terminal element β in

a syntactic projection AdjXP that is of the same type as a syntactic projection XP

containing the terminal element corresponding to the phonological exponent α.

We argue, taking our cue from Bennet et. al.'s proposal for Irish weak pronoun

postposing, that weak pronouns are preposed in Mainland Scandinavian as a prosodic repair

to enable weak pronoun incorporation. Bennet et. al. propose for the Irish case that weak

pronouns are right adjoined at the level of the φ-phrase. Here we propose that the pronoun is

right adjoined to the verb at the prosodic word level as shown in (30).[9]

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[9] For details of prosodic adjunction, its properties and constraints, see among others
Vigário 2010, Bennett et al. 2016 and the references cited therein.

(30)

så= ham aldrig

This analysis also applies to cases such as (23b) in which the subject remains in spec,TP as in yes/no-questions or when another element (e.g., an adverb or a fronted object) occupies the clause-initial position. (31a) illustrates the simplified syntactic tree of such a structure and (31b) the prosodic structure with the shifted pronoun.

(31)   a.

b.

Her så   Peter=ham   ikke
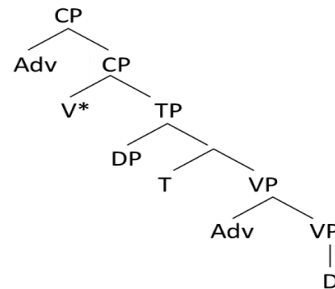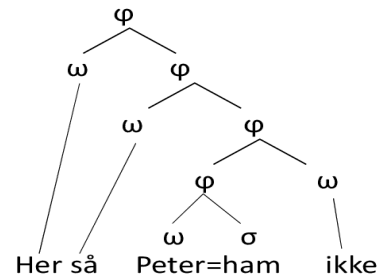
The subject can itself be a weak pronoun as in (32a) in which case it incorporates into the verb in situ. If both the subject and the object are pronouns as in (32b), both are incorporated forming a clitic cluster.

(32)   a. Her   så=han   ikke Peter.

       Here saw=he   not Peter

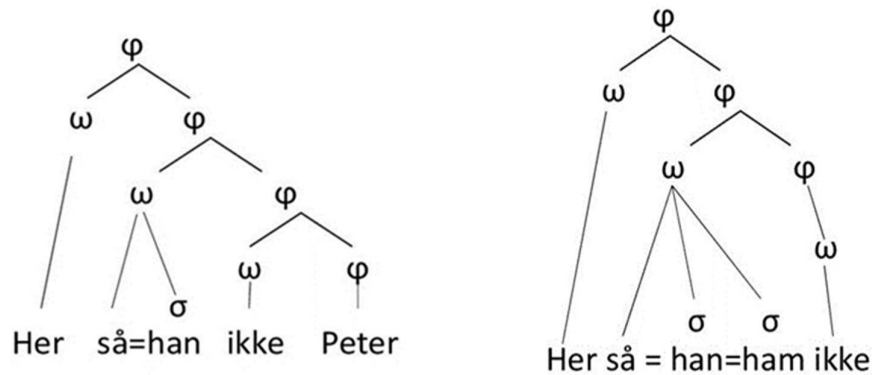   'Here he didn't see Peter.'

   b. Her   så=han=ham ikke.

      Here saw=he=him=not

      'Here he didn't see him.'

The prosodic trees for (32a) and (32b) are shown in (33a) and (33b) respectively.

(33) a.   b.

φ
ω φ
ω φ
ω φ
σ

Her så=han ikke Peter

φ
ω φ
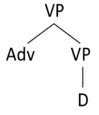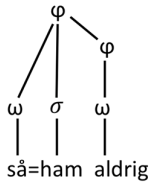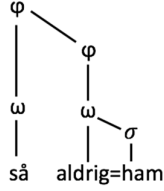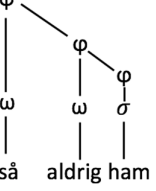ω φ
ω
σ σ

Her så = han=ham ikke

In (33a) the prosodic structure allows for the incorporation of the subject pronoun in situ and in (33b) the weak object pronoun right adjoins to the prosodic word formed from the verb and the incorporated subject pronoun forming a clitic cluster.

An OT tableau depicting our analysis of Standard Danish is provided in (34), on the basis of the shift depicted in (28). It includes the constraints defined in (27) and (29) plus a constraint that prohibits prosodic phrases without a prosodic word ($\phi \rightarrow \omega$). This restriction may well be universal, and thus not a violable constraint. It is included here anyway because the most faithful mapping would incur a violation of this principle.

The winning candidate (34a), which displays obligatory object shift, satisfies the two high ranked constraints $\phi \rightarrow \omega$ and NoSkip (S) and only violates low-ranked MATCH PHRASE (XP, ADJP) three times: i. the lower VP has no correspondent, ii. the prosodic phrase corresponding to the higher VP does not contain the clitic as a terminal element, and iii. the XP containing the raised verb gains an additional clitic that is not in the corresponding syntactic phrase. Candidates b and c lose because they violate higher-ranked constraints. Candidate b violates high-ranked No Skip (S). This fatal violation occurs since the clitic is hosted by the preceding adverb, which originates from a syntactic phrase of the same type. c, the faithful candidate, is ruled out because it contains a prosodic phrase that does not contain a prosodic word, which violates $\phi \rightarrow \omega$.
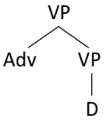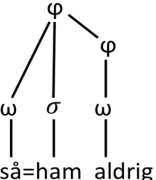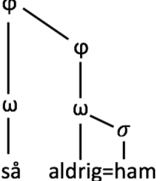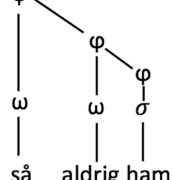
(34) Object shift is obligatory in Standard Danish

VP Adv VP D	φ → ω	NoSkip (S)	Match Phrase (XP, ADJP)
a.· φ / φ ω σ ω så=ham aldrig			***
b. φ / φ ω ω σ så aldrig=ham		*!	*
c. φ / φ / φ ω ω σ så aldrig ham	*!		

Now we account for the fact that OS is optional in varieties with tonal accent, such as Ærø Danish or Swedish. In section 3.4 we have argued that this is because prosodic phrasing in these varieties can be influenced by the presence of tonal accent. Essentially, the presence of tonal accent can mark the (left) edges of prosodic domains, which then span from one tone accent item to the next or to the end of a phrase. While in the past, researchers have sometimes assumed that language-specific prosodic domains can arise from such functional forces (e.g. Féry 2010), we believe that it is possible to account for these patterns without assuming such an emergent category in the prosodic hierarchy (although we cannot exclude that possibility on principled grounds).

Instead, we argue that the salience of tonal accent makes it possible to incorporate a weak pronoun into a preceding adverb. In the OT analysis developed here, this means that the constraint NoSkip (S), which militates against such output forms, becomes violable. Since OS is optional, however, we also have to account for the possibiltiy of shift. In the tableau in (35), we achieve the desired result by arguing that in Ærø Danish and Swedish, NoSkip (S) and Match Phrase (XP, AdjP) are unranked, which means that candidates and (35a) and (35b) are both legitimate output forms. (35a) fares better with regard to NoSkip (S), while (35b) incurs fewer violations of Match Phrase (XP, AdjP). What form is chosen in the end may be decided in the grammar, where optionality could be modelled with, e.g., Stochastic OT (e.g. Boersma 1998). Alternatively, we could assume that both surface forms are generated, and that the version that is eventually spelled out is chosen in a post-grammtical component. We leave this question open; for our purposes, it is more crucial to show that both options are available to begin with. (Lastly, note that, since $\phi \rightarrow \omega$ remains inviolable, (35c) is still not a possible output.)

(35) Object shift is optional in Ærø Danish and Standard Swedish

VP tree: Adv, VP → D	φ → ω	NoSkip (S)	Match Phrase (XP, ADJP)
a. → (φ tree: så=ham aldrig)			***
b. → (φ tree: så aldrig=ham)		*	*
c. (φ tree: så aldrig ham)	*!		

4.3 Holmberg's Generalization – Our Account

How do we account for the necessary relation between OS and verb movement out of the VP (Holmberg's generalization)? Remember that OS does not occur in subordinate clauses and not in main clauses in which an auxiliary or modal undergoes V-2 as shown in (36).

(36) a. at   Peter   ikke   så=den

that   Peter   not   saw=it

'that Peter didn't see it'

b. Peter har   ikke   sett=den.

Peter has   not   seen=it

'Peter hasn't seen it.'

This would fall out easily from what we have seen so far because in these cases the pronoun is already adjacent to the verb and can incorporate without further ado. The difference in the position of the adverb with respect to the verb in V-2 cases follows if we assume, as is customary, that the adverb is adjoined to the left of the VP and the verb raises around it (see the structure in (25)).[10]

Holmberg's generalization as formulated by Holmberg 1999 states that Scandinavian Object Shift cannot cross any phonologically realized VP-internal material. This way of formulating Holmberg's generalization holds for the classic cases in (36) and also covers additional cases in which "any phonological visible category inside VP preceding the object position will block Object Shift" (p.2). This is the case for verb particles in Swedish which generally precede the weak object pronoun, as shown in (37). (Verb particles form a TAU with weak pronouns, on a par with verbs.)

(37) a. *Han sparkade   bollen/den inte ut.   Swedish

          he   kicked   ball.THE/it not   out

      b.   Han   sparkade   inte ut   bollen/den.

          he   kicked   not   out   ball.THE/it

          'He didn't kick out the ball/it.'

In Danish, however, the particle must follow the object and OS therefore obligatory.

(38)   a. Han sparked ikke bolden ud.   Danish

          he   kicked   not ball.THE out.

       b. Han sparked den   ikke ud.

          he   kicked   it   not   out

---

[10] A number of questions arise concerning V-2. Does it occur in the syntax or at PF as Chomsky 1999 proposes? What is its motivation in each case? These issues have of course been dealt with in various contexts but we will not discuss them further here.

These cases follow without further ado from our analysis. There is a small number of "Danish style" verb particles in Swedish, i.e. verb particles that optionally may follow the object pronoun, for instance *med* 'with', as in (39):

(39) Hon tog dem inte (dem) med till kalaset.   Swedish

she took them not (them) with to party.THE

'She brought them/the children to the party.'

As (39) shows, OS is an option in such cases. This provides further support for our analysis of OS as driven by the need for phonological repair.

In the following sections, the question of variation will be discussed, more specifically whether OS is obligatory or optional in those syntactic configurations that allow OS.

4.4 Variation Explained

For Swedish and Ærø Danish shifting the object is only one of two possible options. The other option, as we have shown in this paper is that the adverb + the weak pronoun form a TAU, with the weak pronoun in situ. Similarly to Irish pronoun postposing there can be more than one licit way to map the syntactic structure in (26a) to prosodic structure. For Ærø Danish we would derive the structure in (40a) for the shifted version as in Standard Danish and (40b) for the unshifted one. In (40b) incorporation is possible since the presence of the TAU overrides the prohibition against the clitic incorporating into the adverb, and the adjunct phrase can therefore host the clitic. This TAU carries the same accent as the prosodic word the pronoun attaches to, which indicates how closely the two elements are connected.

(40) a.   b.

så=ham aldrig   så   aldrig=ham
                                             (TAU   )

3
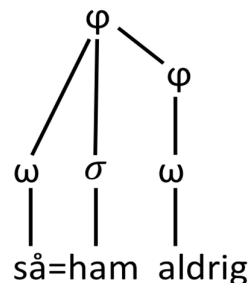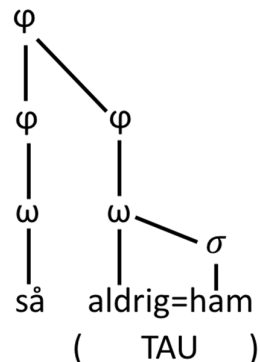
In some dialects with tone accent distinctions, OS is in fact obligatory. This is the case in most Norwegian dialects, for example the Norwegian dialect Vesttrøndersk (Nordmørsk). From the perspective of our analysis, this means that the presence of tonal accent offers the option of leaving the pronoun in situ, but not all dialects avail themselves of this option. This can be seen as evidence that incorporating the pronoun into an adverb by virtue of the presence of tonal accent is a possible but not necessary repair in some dialects.

In addition, even in those dialects with tone distinctions in which both OS and incorporation in situ are available, there may be a preference for OS or a preference for leaving the pronoun in situ. In Ærø Danish, for example, leaving the pronoun in situ is consistently preferred for the adverb 'not' (*ikke* in standard Danish, clitic *it* in the Ærø dialect) but not with the longer adverbs e.g., *aldrig* 'never'. As an experiment, three Ærø informants were asked to repeat sentences where the object pronoun had undergone OS across *it* = not). All three informants reversed most of the test sentences with OS and rendered them with the object following the adverb. When the pronoun is left in situ in such cases the adverb + pronoun form a clitic cluster hosted by the verb. Josefsson (2010) shows that OS generally is optional in Swedish, but there is a significant preference for shift for some pronouns. In general we find variation in the use of the two orders depending on the phonological properties of the adverb and the pronoun. This kind of variation across speakers and across dialects is beyond the scope of this paper.

5. Apparent Problems

In this section we discuss seeming counterexamples to our claim that optionality depends on the availability of tonal distinctions. Lolland-Falster Danish and Fenno-Swedish, for example, have been claimed to allow the in-situ option in spite of not having tonal distinctions. We will demonstrate that these two dialects do not provide counterexamples to our claim, but for very different reasons. We also show that the lack of prosodic

incorporation in specificational copular clauses as well as following relative clauses in standard Danish, can be explained while maintaining our prosodic analysis.

The claims in this section are based on data derived from recordings of a fair number of informants in each case. Informants were asked for grammaticality judgments with and without OS with a variety of different adverbs before the recordings were made. For lack of space we leave out the details of our results.

Our analysis in fact only predicts the correlation between tonal distinctions and the option of leaving the weak object pronoun in situ. We have made no claims as to whether a language or dialect need avail itself of such an option. In fact, it does not. Norwegian is a language with tonal distinctions yet most Norwegian dialects have obligatory OS as does standard Danish which does not have tonal distinctions. The Norwegian dialect Vesttrøndersk (=nordmørsk) exemplifies a dialect in which Object Shift is obligatory (in spite of the presence of tonal distinctions). In the dialect of Trøndersk spoken in most parts of Trøndelag (e.g., Trondheim), however, negation undergoes apocope (ikkje → itj) resulting in a monosyllabic clitic. In this dialect and with this adverb, pronouncing the pronoun in situ is strongly preferred. If we assume that the word order *såg itj'n* (saw=not=it) is due to the clitic nature of the negative adverb, we have an explanation of the difference between these two dialects and the limitation of the in situ option to the clitic adverb.

Lolland-Falster Danish does not have tonal distinctions but it has been claimed to allow weak pronouns to remain in situ. If true that would be a bone fide counterexample to our proposal. The following example is from Pedersen 1993, 205:

(41) Pronounced *[jæ   ve' jund də]*   (FaIster)

                          jeg   ved jo= inte=det

                          I   know=as.you.know=not=it

However, as in Trøndersk, the dialect has apocope; negation, *ikke*, which in standard Danish has two syllables, is pronounced *ik* or *int* in the Falster dialect. The adverb *jo* is also a clitic. Pedersen's example, as she herself describes the pronunciation, contains a clitic cluster of these two adverbs. We therefore hypothesized that the weak pronoun which remains in situ in this dialect is incorporated into this clitic cluster which in turn is hosted by the verb. Our hypothesis was confirmed by the data we collected from our informants. In-situ pronouns were only found with the clitic adverbs and the recordings clearly showed the incorporation of the clitic cluster composed of the clitic adverb(s) and the weak pronoun into the preceding verb. Falster Danish thus has obligatory OS, as we predict for a dialect without tonal distinctions. The cases of in-situ weak pronouns are limited to clitic adverbs which cliticize into the verbs themselves, forming a clitic-cluster with the following weak pronounss.

Oevdalian has been claimed not to have OS at all. As pointed out above, we have made no claim as to the availability of OS in cases where tonal distinctions enable the in-situ pronunciation of the weak pronoun. Still it would be surprising if this variety would differ from standard Swedish in this manner. Interestingly it is the same misreading of the data found in Falster-Danish that is also the cause of much misleading discussion of Oevdalian.

The claim that there is no OS in Oevdalian, found in the literature (e.g. Garbacz 2010, Hellan and Platzack 1999, Hosono 2013, Garbacz and Rosenkvist 2007, Garbacz and Johannessen 2015), seems to be ultimately based on Levander 1909. However, Levander only relates to the order of clitic negation and an object in which negation and the object form a clitic cluster incorporated into the verb as shown in (42).

(42)   ig-fik-int-ed

        1SG-got-not-it

        'I didn't get it.'

We conclude that the misconception of Oevdalian is due to the same phenomenon as in Norwegian Trøndersk and in Lolland-Falster Danish, in which the clitic adverb and the weak pronoun form a clitic cluster. As can be gathered from other sources, for example Åkerberg 2012, OS is indeed available in Oevdalian, with sentence adverbs other than the weak negation.

Fenno-Swedish lacks tonal distinctions (Malmberg 1971: 127; Selenius 1972; Bruce 2010, 180; Huhtamäki 2015) yet weak object pronouns remain in situ. Our explanation for this seeming exception to our claim is that Fenno-Swedish unstressed pronouns are not weak and therefore are not required to incorporate. Kiparsky 2008, 17 provides a list of "function words with short stressed syllables in Helsinki Swedish", among them pronouns, such as *honom* 'him 'and *det* 'it'. Kuronen and Leinonen 2008 note that Fenno-Swedish differs from standard Swedish when it comes to rhythm. According to their analysis the "betoningsgrupper" (stress groups) are shorter in Fenno-Swedish, and the degree of reduction of stress in non-stressed syllables is much lower, as compared to standard Swedish. We take these comments to indicate that Fenno-Swedish unstressed object pronouns are not prosodically weak, at least not in the same sense as in standard Swedish. Our recordings verified our predictions: Weak pronouns were pronounced fully and not incorporated. Fenno-Swedish is therefore not a counterexample to our proposal either.

Mikkelsen 2011 argues that a prosodic analysis (in particular the prosodic analysis proposed in Erteschik-Shir 2005a, 2005b) cannot account for the lack of OS in specificational copular clauses in Danish. Examine the following example modified from Mikkelsen (p. 237):

(43)   Den smukkeste pige er (*hende) så afgjort   HENde/hende

           the prettiest   girl is   her   so decidedly her

           'The prettiest girl is without question HER.'

This example shows that OS of an unstressed pronoun is ungrammatical in such sentences, and that an unstressed pronoun as well as a stressed one must remain in situ. These pronouns are both focused: The unstressed one is an informational focus and the stressed one is contrastive. The problematic case is the unstressed but focused one. According to Mikkelsen, the example in (43) shows that an Information Structural account makes the correct prediction: Focused pronouns don't shift whether they are stressed or not. Mikkelsen further argues that the unstressed pronoun is incorporated in situ, contra Erteschik-Shir 2005a, and also contradicting the proposal we make here. Mikkelsen's diagnostics for incorporation are "lack of prepronoun silence, no dramatic pitch movement at the start of the pronoun, and no increased intensity during the pronoun." (p.242) The experimental stimuli presented all adhered to these diagnostics and therefore, according to Mikkelsen, show that a purely prosodic analysis cannot account for the lack of OS in specificational copular clauses in Danish. Mikkelsen's data and arguments are clearly a challenge for the current analysis. Notably, however, an important property of weak pronouns in Danish and other languages is that they can take on a reduced clitic form as illustrated in (44a) in which the initial /h/ is dropped. (44b) shows that this is also how shifted pronouns are pronounced.[11]

(44) a. Jeg så=am/ham

    I   saw him.

  b. Jeg så= am ikke

Interestingly the pronouns in specificational clauses cannot take on the reduced form as shown in (45).

(45)   Den flotteste   drenger bestemt ikke *am/ham

    the   best looking boy is   certainly not   him

---

[11] We do not claim that the reduced form is required with weak pronouns, but only that it is possible. This may vary depending on e.g., speech rate, the wish for clear enunciation in reading aloud, for example.

This we take as a sign that these pronouns are in fact not incorporated. What we derive is therefore a pronoun parsed as its own prosodic word (not as a clitic) with commensurate stress which in Swedish results in a TAU. Such pronouns need not incorporate and no repair is therefore necessary.

Another problematic case is one in which the weak pronoun follows a relative clause. In section 4.2 ((23b)) we showed that DPs can also provide hosts for the incorporation of shifted weak pronouns, yet incorporation is impossible if a relative clause follows the DP as shown in (46).[12]

(46) Tror manden   der læser meget det/ham/hende ikke?

    thinks man.the   who reads a lot   it/him/her   not

    'Doesn't the man who reads a lot believe it/him/her?'

In these cases, the weak pronoun undergoes OS but does not incorporate into the relative clause. In fact, the pronoun incorporates into the following adverb with a clear pause preceding it and /h/ must be pronounced.

(47) …[*der læser meget*] *ham=ikke*

        'who reads much him not'

Interestingly, a pause is also required between the relative clause and the pronoun even when no adverb is present as shown in (48).[13]

(48) Tror   manden   der   læser #det?

    Thinks man.THE that   reads #it

    'Does the man who reads think that?'

Without the pause the pronoun is understood as the object of *read*, which makes the sentence incomplete. With the pause a weak reading is still possible, but the sentence is in fact quite bad, even worse than (46) with the adverb.[14] This is because the weak pronoun is left unincorporated with no potential host on either side.

Interestingly, the adverb, it turns out, can provide a host to a proclitic weak pronoun. Proclitics are in fact found elsewhere in the Mainland Scandinavian languages. As Ørsnes pointed out to us, genitival *-s* in Danish is a case in question.[15] Examine (49) in which the genitive -s is pronounced as a proclitic to the following constituent.

(49) Det er ham jeg kender s-onkel

      It   is him I   know's uncle

      'It is his uncle I know.'

As with the weak pronouns, the genitive -s is pronounced as a proclitic to the following element when it has no choice. What seems to be happening is that OS occurs as in all other cases of weak pronouns following adverbs in standard Danish, however, in cases such as (46)-(47) the 'repair' positions the pronoun in another position in which it cannot incorporate. This results in a secondary repair procliticizing into the following adverb.

6. Conclusions

In this paper we have described the variation in the properties of OS in some Mainland Scandinavian languages and dialects. We have demonstrated that optionality of OS is attested only in dialects which have tonal distinctions. Whereas an abundance of research on the tonal distinctions of Swedish can be found, the only source for a detailed description of the tonal distinctions of the Danish dialect spoken on the island of Ærø, as far as we know, is that of Kroman 1947. We have recorded a fair number of speakers of this dialect focusing on the

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[14] Ørsnes' observations.
[15] The example and observation are Una Carger's (pers. com. to Bjarne Ørsnes).

tonal accents and their instantiation in cases of pronoun incorporaton. And whereas the existence of tonal accents as well as the optionality of OS in Swedish and in certain South Danish dialects, including the dialect spoken on Ærø, is well known, the idea that the two are correlated has not been proposed before. In fact, it has been rejected by linguists citing the dialects and the phenomena discussed in Section 5. We have attempted to argue for this correlation and offered an explanation for why this correlation is to be found.

Another contribution of our paper is to add another case to the growing set of phenomena for which a purely phonological account can be argued for and to reach a deeper understanding of what prosodically driven movement should look like and to what kinds of movement it applies. Wheras syntactic movement is hierarchical and triggered by syntactic features, OS is linear and triggered by prosodic features. Furthermore, it is optional, dependent on dialectal variation. Optional movement rules have long been a problem for syntactic theory and it would therefore be advantageous if optionality were relegated to phonology.

It has often been suggested to us that our phonological account could be presented as phonological constraints on the output of syntactic movement. In the introduction we listed a number of such accounts. One problem with approaches of this type is that there is no syntactic trigger for OS, certainly not for Mainland Scandinavian OS which is restricted to weak pronouns. Moreover, such an approach does not offer an explanation of the optionality of OS in tonal dialects which we have argued for here.

One of the important criteria that follows from minimalist architecture is that movement which has semantic import must occur in the syntax. Mainland Scandinavian OS, we claim, does not belong in this category since it is the requirement of weak pronouns to incorporate that is at the basis of our analysis and not their status as topics. OS of weak pronouns therefore does not shed any light on this issue. Still OS applies to full DPs in Icelandic and it

is commonly assumed that Icelandic object shift applies to topics. Similarly scrambling phenomena in a variety of languages also target topics. Since topics take wide scope, semantic import also follows.[16]

Thráinsson 2001 compares OS (mainly of full DPs in Icelandic) to scrambling in German and Dutch. He discusses the problems of a syntactic account in particular with respect to the cross-linguistic variation and optionality in certain cases. He also demonstrates that the shifted or scrambled element may not be stressed and considers and rejects the possibility that OS is a PF rule due to lack of arguments. Struckmeier 2016 discussing German scrambling proposes an architecture in which both syntax and semantics play a role and prosodic constraints result in preferred and dispreferred outputs. We believe that the type of approach we have outlined here may give rise to new findings for these phenomena once a better understanding of prosodically triggered movement has been achieved furthering a better understanding of the syntax-prosody interface.

A number of topics have been left out of our discussion. Among these are Long Object Shift (LOS) and Adverbial intermingling, neither of which have received satisfactory accounts, syntactic or otherwise, so far. LOS, illustrated in (50), is a marked construction in Swedish, which only occurs with certain verbs and certain weak pronouns (see Josefsson 1992, 2003, 2010; Berger 2015).

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[16] Diesing and Jelinek 1993 consider the shifted element to be in the restriction and the non-shifted one to be in the nuclear scope rendering the correct scopal interpretations.

(50) Därför   gör   mig Tutanchamons förbannelse   inte   någon   skada.

     therefore   makes   me   Tutankhamun's curse   not   any   damage

     'Therefore, Tutankhamun's curse doesn't hurt me.'

One requirement is that the subject following the object pronoun must be 'heavy', this according to Josefsson to avoid stress on the pronoun. This clearly indicates that there is a phonological component involved here too.

Adverbial intermingling in Swedish involves cases with several adverbs in which the weak pronoun, in addition to undergoing OS to the verb and remaining in situ, can also occur 'intermingled' between the adverbs (Holmberg and Platzack 1995, 156-7, Hellan and Platzack 1999, 130, Sells 2001, 63). Here too, the data indicates that shift is degraded. The fact that the pronoun can "land" in intermediate landing sites is similar to the different landing sites for Irish pronoun postposing (Bennett et al. 2016, 207-9). They offer an explanation in terms of the rephrasing of the phonological structure according to rhythmic balance. A clue that this might also apply to OS is the observation in that the preferred position of weak pronouns differs depending on whether the adverb itself is weak or a clitic as pointed out in our discussion of the Danish dialect spoken in Lolland-Falster and the Norwegian dialect spoken in Trønderlag. We leave this for further research.

References:

Abrahamsen, Jardar E. 2003. Ein vestnorsk intonasjonsfonologi. Trondheim: Norges teknisk-
naturvitenskapelige universitet (NTNU).

Adger, David. 1997. VSO Order and Weak Pronouns in Goidelic Celtic. Canadian Journal of
Linguistics 42:9-29.

Adger, David. 2007. Pronouns Postpose at PF. Linguistic Inquiry 38:343-349.

Åfarli, Tor A. 1995. A Note on the Syntax of Adverbial Phrases. Norsk Lingvistisk Tidsskrift 13:23-40.

Åfarli, Tor A. 2010. Adjunction and 3D phrase structure: a study of Norwegian adverbials. In The Sound Patterns of Syntax, eds. Nomi Erteschik-Shir and Lisa Rochman, 9-32. Oxford: Oxford University Press.

Anderssen, Merete, and Bentzen, Kristine. 2012. Norwegian Object Shift as IP-internal topicalization Nordlyd: Tromsø University Working Papers on Language & Linguistics 39:1-23.

Anttila, Arto, Adams, Matthew, and Speriosu, Michael. 2010. The role of prosody in the English dative alternation. Language and Cognitive Processes 25:946-981.

Basbøll, Hans. 1986. Når genstande bliver så lette at de flyver. In Profiler, eds. F. Hauberg Mortensen and P. Schmidt, 171-182. Nordisk Institut: Odense Universitetsforlag.

Bellik, Jennifer, and Kalivoda, Nick. 2016. Adjunction and Branchingness Effects in Syntax-Prosody Mapping. Proceedings of AMP 2015.

Bennett, Ryan, Elfner, Emily, and McCloskey, James. 2016. Lightest to the Right: An Apparently Anomalous Displacement in Irish. Linguistic Inquiry 47:169-234.

Berger, Mikael. 2015. Long Object Shift does not apply to objects. Lund University. MA thesis.

Berwick, Robert, and Chomsky, Noam. 2011. The Biolinguistic Program: The Current State of its Evolution. In The Biolinguistic Enterprise: New Perspectives on the Evolution and Nature of the Human Language Faculty, eds. Anna Maria Di Sciullo and Cedric Boeckx, 19-41. Oxford and New York: Oxford University Press.

Boersma, Paul. 1998. Functional Phonology. University of Amsterdam. Ph.D. thesis.

Bruce, Gösta. 1977. Swedish Word Accent in Sentence Perspective. Travaux de l'Institute de Linguistique de Lund 11.

Bruce, Gösta. 1998. Allmän och svensk prosodi: Praktisk Lingvistik 16. Lund: Lund
University. [Republished 2012 by Studentlitteratur, Lund].

Bruce, Gösta. 2010. Vår fonetiska geografi : om svenskans accenter, melodi och uttal. Lund:
Studentlitteratur.

Chen, Matthew Y. 1987. The syntax of Xiamen tone sandhi. Phonology Yearbook 4:109–
149.

Chen, Matthew Y. 1992. Argument v. Adjunct: Xiamen Tone Sandhi Revisited. Ms.
University of California,San Diego.

Cheng, Lisa Lai-Shen, & Downing, Laura J., and Downing, Laura J. 2016. Phasal Syntax =
Cyclic Phonology? Syntax 19:156-191.

Chomsky, Noam. 1999. Derivation by phase. MIT Working Papers in Linguistics.

Chomsky, Noam. 2001. Derivation by phase. In Ken Hale -- A Life in Language, ed. Michael
Kenstowicz, 1-52. Cambridge, MA: MIT Press.

Chomsky, Noam. 2004. Beyond Explanatory Adequacy. In Structures and Beyond: The
Cartography of Syntactic Structures, Vol. 3, ed. Adriana Belletti, 104-131. Oxford:
Oxford University Press.

de Lacy, Paul. 2006. Markedness: Reduction and preservation in phonology.vol. 112.
Cambridge: Cambridge University Press.

Diesing, Molly, and Jelinek, Eloise. 1993. The Syntax and Semantics of Object Shift.
Working Papers in Scandinavian Syntax 51:1-54.

Diesing, Molly, and Jelinek, Eloise. 1995. Distributing Arguments. Natural Language
Semantics 3:123-176.

Ejskjær, Inger. 1993. Danish Dialect Research. Copenhagen: Institut for Dansk
Dialektforskning, C.A. Reitzels Forlag.

Ejskjær, Inger. 2005. Dialects and regional linguistic varieties in the 20th century III:

> Denmark. In The Nordic Languages: An International Handbook of the History of the
>
> North Germanic languages, Volume 2, eds. Oscar Bandle et al., 1721-1741. Berlin:
>
> Walter de Gruyter.

Elfner, Emily. 2012. Syntax-Prosody Interactions in Irish: UMass, Amherst. Ph.D. thesis.

Erteschik-Shir, Nomi, and Strahov, Natalia. 2004. Focus structure architecture and P-syntax.

> Lingua 114:301-323.

Erteschik-Shir, Nomi. 2005a. Sound Patterns of Syntax: Object Shift. Theoretical Linguistics

> 31:47-93.

Erteschik-Shir, Nomi. 2005b. What is Syntax? Theoretical Linguistics 31:263-274.

Féry, Caroline. 2010. Syntax, information structure, embedded prosodic phrasing and the

> relational scaling of pitch accents. In The sound patterns of syntax eds. Nomi
>
> Erteschik-Shir and Lisa Rochman, 271-290. Oxford and New York: Oxford
>
> University Press.

Fox, Danny, and Pesetsky, David. 2005. Cyclic Linearization and its interaction with other

> aspects of grammar: a reply. Theoretical Linguistics 31:235-262.

Fretheim, Thorstein, and Nilsen, Randi Alice. 1989. Terminal rise and rise-fall tunes in East

> Norwegian intonation. Nordic Journal of Linguistics:155–182.

Garbacz, Piotr, and Rosenkvist, Henrik. 2007. Övdalian – A brief background. In The Norms

> Workshop in Älvdalen (2007). Lund University.

Garbacz, Piotr. 2010. Word Order in Övdalian: A study in variation and change. Lund

> University: Lundasstudier i Nordiska Sprakvetenskap 71 A.

Garbacz, Piotr, and Johannessen, Janne Bondi. 2015. Övdalian from 1909 to 2009. In Studies

> in Övdalian Morphology and Syntax: New research on a lesser-known Scandinavian

language, eds. Kristine Bentzen, Henrik Rosenkvist and Janne Bondi Johannessen, 11–46. Amsterdam/Philadelphia: John Benjamins.

Göbbel, Edward. 2007. Extraposition as PF Movement. Paper presented at Proceedings of WECOL 2006.

Grønnum, Nina, Vazquez-Larruscaín, Miguel, and Basbøll, Hans. 2013. Danish Stød: Laryngealization or Tone. Phonetica 70:66–92.

Gussenhoven, Carlos. 2004. The phonology of Tone and Intonation. Cambridge: Cambridge University Press.

Gutiérrez-Bravo, Rodrigo. 2005. Subject inversion in Spanish relative clauses. In Romance languages and linguistic theory, eds. T. Geerts, I. van Ginneken and H. Jacobs, 115-128. Amsterdam and Philadelphia: John Benjamins.

Hansson, Petra. 2003. Prosodic Phrasing in Spontaneous Swedish: Travaux de l'Institute de Linguistique de Lund 43. Lund: Gleerup.

Haugen, Einar. 1967. On the rules of Norwegian tonality. Language 43:185-202.

Hellan, Lars. 1994. A Note on Clitics in Norwegian. In Clitics: Their Origin Status and Position., eds. Henk van Riemsdijk and Lars Hellan. Tilburg: ESF-EUROTYP.

Hellan, Lars, and Platzack, Christer. 1999. Pronouns in Scandinavian languages: An overview. In Clitics in the Languages of Europe, Language Typology, Volume III ed. Henk van Riemsdijk, 123-142. Berlin/New York: Mouton de Gruyter.

Holmberg, Anders. 1986. Word order and syntactic features in the Scandinavian languages and English. University of Stockholm: Stockholm. Ph.D. dissertation thesis.

Holmberg, Anders. 1991. The Distribution of Scandinavian Weak Pronouns. In Clitics and their Hosts, eds. Henk van Riemsdijk and Luigi Rizzi, 155 –173. Tilburg University.

Holmberg, Anders, and Platzack, Christer. 1995. The Role of Inflection in Scandinavian Syntax: Oxford Studies in Comparative Syntax. Oxford: Oxford University Press.

Holmberg, Anders. 1999. Remarks on Holmberg's Generalization. Studia Linguistica 53.1:1-
39.

Hosono, Mayumi. 2010. Scandinavian Object Shift as the Cause of Downstep. Working
Papers in Scandinavian Syntax 85:1-36.

Hosono, Mayumi. 2013. Object Shift in the Scandinavian Languages: Syntax, Information
Structure, and Intonation. LOT: Netherlands Graduate School of Linguistics. Ph.D.
thesis.

Huhtamäki, Martina. 2015. Intonations and functions of questions in Helsinki Swedish
conversations. In Working Papers 55. 2015: Proceedings from Fonetik 2015 Lund,
June 8–10 eds. Malin Svensson Lundmark, Gilbert Ambrazaitis and Joost van de
Weijer, 69-73. Lund.

Ito, Junko, and Mester, Arnim. 2008. The extended prosodic word. In Phonological Domains:
Universals and Derivations, eds. Baris Kabak and Jaent Grijzenhout, 135-194. The
Hague, The Netherlands: Mouton de Gruyter.

Josefsson, Gunlög. 1992. Object Shift and Weak Pronominals in Swedish. Working Papers in
Scandinavian Syntax 49:59-94.

Josefsson, Gunlög. 1994. Scandinavian Pronouns and Object Shift. In Clitics: Their Origin,
Status and Position, eds. Henk C. van Riemsdijk and Lars Hellan, 91–122. Tilburg:
ESF-EUROTYP.

Josefsson, Gunlög. 2003. Four myths about Object Shift in Swedish -- and the Truth... In
Grammar in Focus vol. II. Festschrift for Christer Platzack, 18 Nov. 2003, eds. Lars-
Olof Delsing, Cecilia Falk, Gunlög Josefsson and Halldór Á. Sigurðsson, 199-208.
Lund: Department of Scandinavian Languages, Lund University.

Josefsson, Gunlög. 2010. Object shift and optionality. An intricate interplay between syntax,
prosody and information structure. Working Papers in Scandinavian Syntax 86.

Josefsson, Gunlög. 2012. Deconstructing Object Shift. Ms., Scandinavian languages, Centre
  for Languages and Literature. Lund University.

Kiparsky, Paul. 2008. Fenno-Swedish Quantity: Contrast in Stratal OT. In Rules, constraints,
  and phonological phenomena, eds. Andrew Nevins and Bert Vaux, 185-219. Oxford:
  Oxford University Press.

Køster, Finn. 1980. Nogle dialektforhold på øerne syd for Fyn. Dansk Folkemål 22:135-144.

Kristoffersen, Gjert. 2000. The Phonology of Norwegian. Oxford: Oxford University Press.

Kroman, Erik. 1947. Musikalsk Akcent i Dansk Copenhagen: Einar Munksgård.

Kuronen, Mikko, and Leinonen, Kari. 2008. Prosodiska särdrag i finlandssvenska In
  Svenskans beskrivning 29, ed. Marianne Nordman et al., 161-169. Vasa universitet:
  Svensk-Österbottniska samfundet r.f. nr 70.

Ladd, Robert D. 1996. Intonational Phonology. Cambridge: Cambridge University Press.

Lebeaux, David. 1988. Language Acquisition and the form of the grammar. University of
  Massachusetts, Amherst. Ph.D. thesis.

Levander, Lars. 1909. Älvdalsmålet i Dalarna: Ordböjning och syntax. Stockholm: P.A.
  Norstedts & Söner.

López, Luis. 2009. Ranking the Linear Correspondence Axiom. Linguistic Inquiry 40:239-
  276.

Malmberg, Bertil. 1971. Svensk fonetik. Lund: Gleerup.

Mikkelsen, Line. 2011. On prosody and focus in object shift. Syntax 14:230–264.

Morén-Duolljá, Bruce. 2013. The prosody of Swedish underived nouns: No lexical tones
  required. In Nordlyd : 40.1 special issue 'A Festschrift on the Occasion of X Years of
  CASTL Phonology and Curt Rice's Lth Birthday', eds. Sylvia Blaho, Martin Krämer
  and Bruce Morén-Duolljá, 196-248.

Myrberg, Sara. 2010. The Intonational Phonology of Stockholm Swedish New Series 53. Stockholm: ACTA Universitatis Stockholmiensis 53. Stockholm Studies in Scandinavian Philology. .

Myrberg, Sara. 2013. Sisterhood in prosodic branching. Phonology 30:73-124.

Myrberg, Sara, and Riad, Tomas. 2015. The prosodic hierarchy of Swedish. Nordic Journal of Linguistics 38:115-147.

Nilsen, Øystein. 1997. Adverbs and A-shift. Working Papers in Scandinavian Syntax 59:1-31.

Pedersen, Karen Margrethe. 1993. Lethedreglen og lighedsreglen, Novation, ekspansion og resistens. In Jyske Studier, Institut for Dansk Dialektforsknings Publikationer, eds. K. M. Pedersen and I.L. Pedersen, 199-218. København: C. A. Reitzels Forlag.

Prince, Alan, and Smolensky, Paul. 2004. Optimality Theory: Constraint Interaction in Generative Grammar. Maiden, MA: Wiley-Blackwell [Technical Report CU-CS-696-93, Department of Computer Science, University of Colorado at Boulder, and Technical Report TR-2, Rutgers Center for Cognitive Science, Rutgers University, New Brunswick, NJ, April 1993.].

Richards, Norvin. 2010. Uttering Trees. Cambridge, MA: MIT Press.

Richards, Norvin. 2016. Contiguity Theory. Cambridge, MA: MIT Press.

Samuels, Bridget D. 2009. The structure of phonological theory. Harvard University: Cambridge, Massachusetts. Ph.D. thesis.

Scheer, Tobias. 2008. Why the prosodic hierarchy is a diacritic & why the interface must be direct. In The sounds of silence, eds. J.M. Hartmann, V. Hegedus and H. van Riemsdijk, 145–192. Amsterdam: North-Holland Elsevier.

Selenius, Ebba. 1972. Västnylländsk ordaccent. Helsingfors: Svenska Litteratursällskapet i Finland.

Selkirk, Elisabeth. 1996. The prosodic structure of function words. In Signal to syntax. Bootstrapping from speech to grammar in early acquisition, eds. James L. Morgan and Katherine Demuth, 187–213. Mahwah, NJ: Lawrence Erlbaum Associates.

Selkirk, Elisabeth. 2009. On clause and intonational phrase in Japanese: The syntactic grounding of prosodic constituent strcture. Gengo Kenkyu 136:35-73.

Selkirk, Elisabeth. 2011. The syntax-phonology interface. In The Handbook of Phonological Theory, eds. John Goldsmith, Jason Riggle and Alan Yu. Oxford: Blackwell Publishing.

Sells, Peter. 2001. Structure, Alignment and Optimality in Swedish. Stanford, CA: CSLI.

Simpson, Andrew A. 2014. Prosody and Syntax. In The Handbook of Chinese Linguistics, eds. C.-T. James Huang, Y.-H. Audrey Li and Andrew Simpson, 465-491. Oxford: WILEY Blackwell.

Struckmeier, Volker. 2016. Scrambling in German Is Driven by Prosody and Semantics. In Proceedings of the 33rd West Coast Conference on Formal Linguistics,, ed. Kyeong-min Kim et al., 381-389. Somerville, MA: Cascadilla Proceedings Project.

Thráinsson, Höskuldur. 2001. Object Shift and Scrambling. In The Handbook of Contemporary Syntactic Theory, eds. Mark Baltin and Chris Collins, 148-202. Oxford: Blackwell.

Truckenbrodt, Hubert. 1999. On the Relationship between Syntactic Phrases and Phonological Phrases. Linguistic Inquiry 30:219-255.

Vicente, Luis. 2005. Word order variation in Basque as prosodically-driven movement. Ms.

Vigário, Marina. 2010. Prosodic structure between the prosodic word and the phonological phrase: Recursive nodes or an independent domain? The Linguistic Review 27:485-530.

Zhang, Jie. 2014. Tones, Tonal Phonology, and Tone Sandhi. In The Handbook of Chinese Linguistics, First Edition, eds. C.-T. James Huang, Y.-H. Audrey Li and Andrew Simpson, 443-464: John Wiley & Sons, Inc.