Object shift in the Scandinavian languages : syntax, information structure, and intonation

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SYNTAX, INFORMATION STRUCTURE, AND INTONATION

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PROEFSCHRIFT

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Leiden, June 2013

Chapter 1. Introduction

The Scandinavian languages are classified into two main branches: Mainland Scandinavian and Insular Scandinavian. The former includes Swedish, Norwegian and Danish, and the latter Icelandic and Faroese (Holmberg and Platzack 1995). In almost all of these Scandinavian varieties, a weak, unstressed object pronoun moves across a sentential adverb. This movement phenomenon is called *Object Shift* OS (see below).[1, 2] A full NP object normally does not move (1). However, the weak pronominal object, *henne* 'her' in Swedish (2a), *den* 'it' in Norwegian (2b), *ham* 'him' in Danish (2c), *hann* 'it' in Icelandic (2d) and *hann* 'it' in Faroese (2e) moves across the negation. OS is obligatory in some of the Scandinavian varieties, but optional in others. Despite the presence of (either obligatory or optional) OS in most of the Scandinavian varieties, OS never occurs in Övdalian, the Älvdalen dialect of Swedish. The weak pronominal object *åna* 'it' follows the negation (2f).

(1) Jag kysste (*Marit) inte (^{OK}Marit). [Swe.]
I kissed Marit not Marit
'I didn't kiss Marit.'

(2) a. Jag kysste (^{OK}henne) inte (^{OK}henne). [Swe.]
I kissed her not her
'I didn't kiss her.'

b. Jon sparket (^{OK}den) ikke ($^{OK/*}$den). [Nor.]
Jon kicked it not it
'Jon didn't kick it.'

c. Peter mødte (^{OK}ham) ikke ($^{OK/*}$ham). [Dan.]
Peter met him not him
'Peter didn't meet him.'

d. Jón keypti (^{OK}hann) ekki (*hann). [Ice.]
Jón bought it not it
'Jón didn't buy it.'

---

[1] In this work, the terminology *Object Shift* is used to refer to pronominal shift only. I refer to movement of noun phrases as *full NP shift*.

[2] '^{OK}' indicates that the relevant sentential element can be located in that position. '*' indicates that the relevant one cannot be located there.

e. Eg málaði (^{OK}hann) ikki ($^{OK/*}$hann). [Far.]
I painted it not it
'I didn't paint it.'

f. Ig tjyöpt (*åna) it (^{OK}åna). [Övd.]
I bought it not it
'I didn't buy it.'

There is a condition under which an object pronoun can move. In simple tense forms (3a-b), a main verb moves to the second position.[3] An object pronoun can move too. In complex tense forms (4a-b), a past participle main verb does not move due to the presence of the Aux(iliary verb). An object pronoun cannot move either. In embedded clauses (5a-b), verb movement does not take place. An object pronoun cannot move either. This observation is called *Holmberg's Generalization* (Holmberg 1986): an object pronoun can move only when verb movement takes place.[4]

(3) a. Jag kysste henne inte [$_{VP}$ ~~kysste~~ ~~henne~~]. [Swe.]
I kissed her not
'I didn't kiss her.'

b. Jag kysste inte[$_{VP}$ ~~kysste~~ henne].
I kissed not her
'I didn't kiss her.'

(4) a. Jag har inte [$_{VP}$ kysst henne]. [Swe.]
I have not kissed her
'I haven't kissed her.'

b. *Jag har henne inte [$_{VP}$ kysst ~~henne~~].
I have her not kissed

(5) a. … att jag inte [$_{VP}$ kysste henne] [Swe.]
that I not kissed her
'… that I didn't kiss her'

b. *… att jag henne inte [$_{VP}$ kysste ~~henne~~]
that I her not kissed

[3] The deletion line illustrates that a relevant sentential element has vacated the position and moved to a higher position. A deleted element is assumed to be a copy of the raised element and have the same properties that the raised one has (Chomsky 1995).
[4] There are many other issues regarding OS, which I introduce in the next chapter.

Holmberg's Generalization indicates that the presence of pronominal movement is dependent on that of verb movement. However, no movement phenomenon other than OS has been found in which the presence of movement of a sentential element is dependent on that of another sentential element. Due to this particular property, OS has long been one of the most controversial issues in generative syntax. Despite much literature on OS (Diesing 1992, 1997; Holmberg and Platzack 1995; Bobaljik and Jonas 1996; Collins and Thráinsson 1996; Holmberg 1999; Chomsky 2001; Sells 2001; Vikner 2001; Josefsson 2003; Fox and Pesetsky 2005; Erteschik-Shir 2005a,b; Broekhuis 2008; among others), no comprehensive and decisive account for all aspects of OS has been provided yet.

Hence, the research questions are as follows:

i) What principled account can be provided for Holmberg's Generalization?; and
ii) What principled accounts can be provided for the obligatoriness, optionality and absence of OS, and how are they related to i)?

It is well known that the Scandinavian languages have specific intonational systems, as represented by Bruce (1977) for Swedish, Kristoffersen (2000) for Norwegian, Grønnum (1998) for Danish, and Árnason (2011) for Icelandic and Faroese. Though these works convincingly show that the intonational properties are involved in characterizing the overall aspect of the Scandinavian languages to a significant extent, a thorough study of OS from the viewpoint of the intonational properties has not been carried out so far.[5] In this thesis, I present experimental data of the constructions relevant to OS of all the Scandinavian varieties concerned. I discuss their intonational properties in turn. I present a new hypothesis and generalization on OS from the perspective of the intonational properties of the Scandinavian languages, and provide an account of Holmberg's Generalization on the basis of it.

The overall property regarding the constructions relevant to OS revealed in this work is as follows: downstep typically occurs in the OS construction of simple tense forms and Verb Topicalization, but it does not occur in complex tense forms and embedded clauses, which mostly do not have OS, in almost all the Scandinavian varieties investigated. That is, the fundamental frequency F0 on the negation becomes lower than the F0 on the main verb in the OS construction. However, in complex tense forms and embedded clauses, the pitch peak occurs on a sentential/clausal element located 'after' the element that cannot be followed by an object pronoun directly, i.e. the Aux and the embedded subject. Thus, the relation between the presence of OS and that of downstep is described as follows: movement of the object

[5] But see Hellan (1981, 1994) for a discussion of OS from the perspective of word tone and intonation.

pronoun entails downstep. The relation of 'entailment' expresses that whenever OS takes place, downstep occurs (but not vice versa). This descriptive generalisation is supported by experimental data collected for 13 Scandinavian varieties (presented in chapters 3 and 4). In chapter 5, the entailment relationship will be theoretically interpreted as that of 'causation'. I propose the following new hypothesis on OS:

(6) Scandinavian Object Shift:
The object pronoun moves to cause downstep.

In simple tense forms, the focus and focal accent typically occurs on a raised main verb. A possible focal effect on the sentential element(s) located after it must be eliminated. In complex tense forms and embedded clauses, the focus typically occurs on the in-situ past participle in the former and on the (in-situ) embedded verb in the latter. The final pitch peak occurs on those main verbs. Then, the theoretical account of Holmberg's Generalization will be provided as follows. When main verb movement takes place, an object pronoun moves and causes downstep to eliminate a focal effect on the sentential element(s) after the main verb. In the environments in which downstep must not occur, i.e. in the constructions where the final pitch peak occurs on the (in-situ) main verb, OS does not occur either.

Whether OS is obligatory, optional or absent depends on whether a Scandinavian variety at issue has an early or delayed pitch gesture: the Scandinavian varieties in which OS tends to be absent, e.g. Övdalian, typically have a delayed pitch gesture, whereas those which have more or less obligatory OS, e.g. East Swedish, have an early pitch gesture. I present the following new generalization on OS:

(7) Scandinavian Object Shift:
The earlier the pitch gesture occurs, the more likely is Object Shift to occur; the more delayed the pitch gesture is, the more likely is Object Shift to be absent.

I argue that OS is not a binary/dichotomous property, i.e. either its presence or absence, but a gradient phenomenon in the Scandinavian languages. We will also see that the property of the early/delayed pitch gesture is closely related to the one-/two-peaked pitch property in the Scandinavian languages.

I propose a system that accounts for the facts on OS as well as the interaction between syntax, information structure and intonation in general. The basic idea is that in theorizing the interaction between syntax, information structure and intonation, only the focal point and the highest pitch peak need to be taken into account: the locus of the highest pitch peak always indicates that the focal point is also there (or quite near it). The cross-linguistic

prediction from the proposed model is that the farther the focal point moves from an unmarked position, the more an unmarked intonation pattern is likely to change, and the more an unmarked syntactic word order is likely to be affected, which is confirmed in various languages.

Finally, I discuss in which grammatical component OS occurs. First, in the current Chomskyan framework, the interpretation that a category receives in the semantic component is derived from the fact that it has already moved to and been located in the corresponding structural position in syntax. Thus, no movement including OS can occur in the semantic component. Secondly, optional movement such as OS in which the interpretation a category receives in a moved position does not differ from the one it receives in situ cannot occur in syntax, and is assumed to occur in the phonological component. I show, however, that movement in phonology cannot be carried out in a theoretically principled way in the currently assumed framework. Thirdly, in the thorough discussion of OS from the intonational perspective, we will see that the obligatoriness, optionality and absence of OS, i.e. all the syntactic behaviors of object pronouns, can be accounted for in a principled way in terms of the intonational properties. Thus, I suggest the possibility that OS occurs in syntax, driven by the intonational properties. I suggest that 'intonation-driven syntactic movement' is feasible in the system as proposed here in which the grammatical components directly interact with each other.

This thesis is organized as follows. Chapter 2 reviews the semantico-syntactic, syntactic and phonological approaches to OS. I argue that none of those studies can provide a decisive account for all aspects of OS. Chapter 3 introduces an experiment that I conducted to observe the intonational properties of the constructions relevant to OS. I present data from Swedish (East, West, South, North, Finland Swedish, Dalecarlian and Övdalian), Norwegian (East and West), Danish (East and South), Icelandic and Faroese. I discuss remarkable findings in each of the Scandinavian varieties in turn. Chapter 4 presents statistical data of the downstep/non-downstep size of the constructions relevant to OS of all the Scandinavian varieties investigated. Chapter 5 presents a new hypothesis and generalization on OS. I also present a new system that accounts for the alignment between syntax, information structure and intonation. Finally, I discuss in which grammatical component OS occurs. Chapter 6 concludes this thesis, presenting several indications from the discussion in the thesis. Especially, I suggest the possibility that phonology affects syntax.

Chapter 2. Background

2.1. Scandinavian Object Shift and related issues

Holmberg (1986) was the first to point out that the presence of pronominal movement is dependent on that of verb movement in the Scandinavian languages: only when a main verb moves, a weak pronominal object can move too (Holmberg's Generalization). Specifically, in simple tense forms in which a main verb moves, an object pronoun can move too (8a-b). OS is obligatory in some of the Scandinavian varieties, but optional in others. An object pronoun cannot move when a main verb does not move, e.g. in complex tense forms in which a main verb past participle does not move due to the presence of an Aux(iliary verb) (9a-b) and in embedded clauses in which main verb movement does not occur (10a-b).

(8) a. Jag såg den inte [$_{VP}$ ~~såg~~ ~~den~~]. [Swe.]
I saw it not
'I didn't see it.'

b. Jag såg inte [$_{VP}$ ~~såg~~ den].
I saw not it
'I didn't see it.'

(9) a. Jag har inte [$_{VP}$ sett den]. [Swe.]
I have not seen it
'I haven't seen it.'

b. *Jag har den inte [$_{VP}$ sett ~~den~~].
I have it not seen

(10) a. … att jag inte [$_{VP}$ såg den] [Swe.]
that I not saw it
'… that I didn't see it.'

b. *… att jag den inte [$_{VP}$ såg ~~den~~]
that I it not saw

Aside from the basic facts on Holmberg's Generalization described above, there are many other issues related to OS. They are mainly classified into three items as presented below.[6]

[6] The description of the issues relevant to OS is based on Fretheim and Nilsen (1987),

1. *The presence (and absence) of movement of various kinds of pronominal forms*. Not only an object pronoun but also various kinds of pronominal forms can move; movement of weak pronominal forms is prevented in some cases. Let us see in turn. Monosyllabic reflexives move (11a), but disyllabic reflexives do not move (11b).[7]

(11) a. Han så ([OK]sig) ikke (*sig) i spejlet. [Dan.]
he saw self not self in the-mirror
'He didn't see himself in the mirror.'

b. *Han så (*sigselv) ikke ([OK]sigselv) i spejlet.
he saw himself not himself in the-mirror
'He didn't see himself in the mirror.'
(Erteschik-Shir 2001:53,(5))

An expletive subject (12a) and a quasi-argument subject (12b) move out of a small clause (indicated as SC below) to a higher position across a sentential adverb.

(12) a. Han tar det mycket sällan [$_{SC}$ ~~det~~ lugnt]. [Swe.]
he takes it very seldom easy.
'He very seldom takes it easy.'
(Holmberg 1999:23,(50))

b. Jeg hørte det ikke [$_{SC}$ ~~det~~ regne]. [Dan.]
I heard it not rain
'I didn't hear it rain.'
(Erteschik-Shir 2005a:62,(29))

A pronominal form of an adverb can move, if it is an argument of a verb.[8] Specifically, the pronominal adverbial *där* 'there', being an argument of *bo* 'to live', can move across a sentential adverb such as the negation *inte* (13a), whereas the phrasal adverbial *i London* 'in London' cannot move (13b).

Holmberg (1986, 1999), Holmberg and Platzack (1995), Hellan and Platzack (1999), Josefsson (1999, 2003), Erteschik-Shir (2001, 2005a), Vogel (2004), Thráinsson (2007), Andréasson (2009), Garbacz (2009), Heycock et al. (2010), and Mikkelsen (2011). Some of the facts introduced below have already been presented by Fretheim and Halvorsen (1975).

[7] Use of *sig*/*sigselv* is not idiomatic: when available, their alternation is always possible, aside from the class of reflexive verbs such as *ångra sej* 'regret', *uppföra sej* 'behave', *tänka sej* 'imagine', etc, which are always formed with the short reflexive (Anders Holmberg, p.c.).

[8] This is a feature observed in the southern Scandinavian area, e.g. in Danish and South Swedish (e.g. Malmö). Movement of pronominal adverbials does not occur, e.g. in East Swedish (e.g. Stockholm) and Finland Swedish (Anders Holmberg, p.c.).

(13) a. För tre år sedan bodde han(OKdär) inte (OKdär). [Swe.]
for three years since lived he there not there
'Three years ago he didn't live there.'
(Hellan and Platzack 1999:129,(17a))

b. För tre år sedan bodde han(*i London) inte (OKi London).
for three years since lived he in London not in London
'Three years ago he did not live in London.'
(Hellan and Platzack 1999:129,(16))

An indirect object pronoun and a direct object pronoun can move in Double Object Constructions. Except in the construction with a prepositional phrase, the former precedes the latter in the Scandinavian languages. In (14a), both the indirect object pronoun *henne* and the direct object pronoun *den* move across a sentential adverb such as the negation. In (14b), only the former moves and the latter remains in situ. In (14c), they both remain in situ.[9, 10]

(14) a. Jag gav henne den inte. [Swe.]
I gave her it not
'I didn't give it to her.'

b. Jag gav henne inte den.
I gave her not it

c. Jag gav inte henne den.
I gave not her it

The Scandinavian languages have a construction called *pro-VP*, which consists of a verb meaning 'do' and an object pronoun that takes either a VP or a sentence as its antecedent:

(15) a. Agnes ville [VP köpa boken]i, men hon gjorde deti inte. [Swe.]
Agnes wanted buy the-book but she did it not
'Agnes wanted to buy the book, but she didn't.'

---

[9] It depends on a speaker under which condition(s) (14a-c) can be obtained, since OS is optional.

[10] Holmberg (1986) states that a direct object pronoun can move across an indirect object pronoun when they both move:

(i) Jag gav den henne inte. [Swe.]
I gave it her not
'I didn't give it to her.'

According to Josefsson's (2003) quantitative research, the order in which a direct object pronoun precedes an indirect object pronoun is not acceptable to Swedish speakers, regardless of whether they move or not.

b. [Köpte Agnes boken?]$_i$ – Det$_i$ tror jag inte.
bought Agnes the-book it think I not
'Did Agnes buy the book? – I don't think so.'
(Andréasson 2009:4,(5-6))

This construction has an option for the location of an object pronoun: i) it moves across a sentential adverb (16a); ii) it either remains in situ or moves to sentence-initial position (16b). (16a) means that the speaker intentionally stopped the plan to slap the guy, e.g. due to a change of mind, which is illustrated by the translation 'do it'. (16b) is a denial of the proposition presented in the preceding sentence, which is illustrated by the translation 'do so'.

(16) Du slo ti'n i ansiktet, gjorde du ikke (det)? [Nor.]
you slapped him in the-fact did you not it
'You in fact slapped him, didn't you do that?

a. Nei, jeg gjorde det ikke.
no I did it not
'No, I didn't do it.'

b. Nei, jeg gjorde ikke det/Nei, det gjorde jeg ikke.
no, I did not it/no, it did I not
'No, I didn't do so.'
(Fretheim and Nilsen 1987:211,(4))

In copula sentences, an object pronoun in a post-verbal position must move in some cases (17a), but it cannot move in others (17b).

(17) a. Simon var min lobemakker i fjor, [Dan.]
Simon was my running-partnerin last-year
men han er (^{OK}det) ikke (*det) i år.
but he is it not it in year
'Simon was my running partner last year, but he isn't (that) this year.'

b. Den hurtigste spiller på holdet er uden tvivl Morten
the fastest player on team-the is without doubt Morten
og den hojeste er (*ham) faktisk også (^{OK}ham).
and the tallest is him actually also him
'The fastest player on the team is without a doubt Morten and the tallest one/player is actually also him.'
(Mikkelsen 2011:258, (3a-b), (5a-b))

2. *Parametric differences among the Scandinavian languages*. There are some differences among the Scandinavian varieties regarding the presence and absence of object movement. It is widely claimed for Icelandic that a strong pronominal object and a full NP object can optionally move (18a), contrary to the other Scandinavian languages (18b).[11] They cannot move in complex tense forms in which the past participle main verb does not move due to the presence of the Aux (18c). Since OS and full NP shift share the property that they are subject to Holmberg's Generalization, attempts have been made to provide a unified account for them.

(18) a. Jón keypti (^{OK}HANN/^{OK}bók Chomskys) [Ice.]
Jón bought it book Chomsky's
ekki (^{OK}HANN/^{OK}bók Chomskys).[12]
not it book Chomsky's
'Jón didn't buy IT/Chomsky's book.'
(Holmberg 1986:229,(205c-f))

b. De känner (*HONOM/*Gunnar) [Swe.]
they know him Gunnar
alla (^{OK}HONOM/^{OK}Gunnar).
all him Gunnar
'They all know HIM/Gunnar.'
(Holmberg 1986:223,(193,d))

c. Jón hefur (*þessa bók) aldrei lesið (^{OK}þessa bók). [Ice.]
Jón has this book never read this book
'Jón has never read this book.'
(Thráinsson 2007:31,(2.26a-b))

Main verb movement generally occurs in Insular Scandinavian embedded clauses. It always occurs in Icelandic embedded clauses, in which OS occurs too (19). In Faroese embedded clauses, a main verb may or may not move. Thus, three word order patterns are considered for the Faroese embedded clause that contains a main verb, the negation and an object pronoun: i) both a main verb and an object pronoun remain in situ (20a); ii) a main verb moves but an object pronoun remains in situ (20b); and iii) both a main verb and an object pronoun move (20c).[13]

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[11] See Nilsen (1997), who claims that full NP shift is not impossible in the Scandinavian languages other than Icelandic, and Josefsson (2003) for an argument against this claim.

[12] Hereafter, in all notations of examples, I use capital letters for sentential elements that are interpreted as contrastive focus, and lower-case letters for those that are focused in the unmarked case.

[13] According to Heycock et al. (2010), a Faroese embedded clause is in the course of the change

(19) … að hann þekki hana ekki [$_{VP}$ ~~þekki~~ ~~hana~~]. [Ice.]
that he knows her not
'… that he doesn't know her'

(20) a. … ið eg ikki [$_{VP}$ málaði hana]. [Far.]
that I not portrayed her
'… that I didn't portray her.'

b. … ið eg málaði ikki [$_{VP}$ ~~málaði~~ hana].
that I portrayed not her
'… that I didn't portray her.'

c. … ið eg málaði hana ikki [$_{VP}$ ~~málaði~~ ~~hana~~].
that I portrayed her not
'… that I didn't portray her.'

Despite the presence of (either obligatory or optional) OS in most of the Scandinavian varieties, OS never occurs in Övdalian, the Älvdalen dialect spoken in the Dalarna area, Sweden. This fact was first pointed out by Levander (1909:124): '[n]egationen *inte* sättes alltid före objektet' ('the negation *inte* is always placed before the object').[14] Specifically, the object pronoun *åna* 'it' follows the negation *it* 'not' in simple tense forms (21a).[15] In complex tense forms (21b), the object pronoun *an* 'it' follows the past participle *si'tt* 'seen' in the same way as in the other Scandinavian varieties. In embedded clauses, a main verb can freely move across the negation, but an object pronoun does not move. Thus in (21c), the object pronoun *an* follows the negation *it* in the same way as in simple tense forms.[16,17]

(21) a. Ig tjyöpt (*åna) it (^{OK}åna). [Övd.]
I bought it not it
'I didn't buy it.'

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from the Icelandic type in which verb movement takes place to the Mainland Scandinavian type in which verb movement does not occur.

[14] The translation is by the author.

[15] The negation *it* is a reduced form of *inte*. According to Garbacz (2009:116-118), the negation *inte* changes its form depending on the environments in which it appears. It normally appears in a sentence-medial position and is reduced to either *int* or *it*, with the final vowel [e] dropped. The latter form *it* cannot be focused. Övdalian has another negative form *itjä*, which appears only in either sentence-initial or sentence-final position. I leave this form aside in this work.

[16] Övdalian shares some syntactic properties with Insular Scandinavian. See Hellan and Platzack (1999) and Garbacz (2009).

[17] According to Broekhuis (2008), Finland Swedish and Falster Danish do not have OS either. According to Anders Holmberg (p.c.), OS is optional in Finland Swedish. Erteschik-Shir (2005a,b) reports that OS is optional in South Danish, which includes Falster Danish.

b. Ig ar (*an) it si'tt (^{OK}an).
I have it not seen it
'I haven't seen it.'

c. Ig sagd at ig tjysst (*an) it (^{OK}an).
I said that I kissed it not it
'I said that I didn't kiss him.'

Object pronouns can not only move across a sentential adverb but also across a subject only in Swedish: *Long OS*. The monosyllabic reflexive *sig* 'self' moves across the negation *inte* and further across the subject *Erik*:

(22) I går kammade sig Erik inte på hela dagen. [Swe.]
yesterday combed self Erik not on whole day-the
'Yesterday Erik didn't comb his hair for the whole day.'
(Hellan and Platzack 1999:132,(25a))

The actual situations of Long OS are complicated. An object pronoun cannot move across a subject in *yes-no* questions in the unmarked case: the object pronoun *den* can either remain in situ or move across the negation *inte*, but it cannot further move across the subject *Johan* (23a). However, a monosyllabic reflexive can cross a subject, and even an object pronoun can move across a subject in some cases, as illustrated by *sig* 'self' (23b) and *dig* 'you' (23c).

(23) a. Köpte (*den) Johan (^{OK}den) inte (^{OK}den)? [Swe.]
bought it Johan it not it
'Didn't Johan buy it?'
(Holmberg 1986:170,(17-18))

b. Slog (^{OK}sig) Sara (^{OK}sig)?
hurt self Sara self
'Did Sara hurt herself?'
(Holmberg 1986:205,(138e-f))

c. Gav dig snuten körkortet tillbaka?
gave you the cops the driving license back
'Did the cops give you back your driving license?'
(Holmberg 1986:236,(224d))

When a sentence has several sentence adverbials, an object pronoun moves to the position higher than the highest adverb in all the Scandinavian languages other than Swedish. Only in Swedish can it be located between sentence adverbials (*Adverbial Intermingling*). Specifically, it can be located in any of the

positions indicated below in Swedish, whereas in the Scandinavian languages other than Swedish, it can be located only in the highest position (i.e. between *han* 'he' and *ju* 'indeed').

(24) I går läste han (OKdem) ju (OKdem) alltså [Swe.]
yesterday read he them indeed them thus
(OKdem) troligen (OKdem) inte (OKdem).
them probably them not them
'Yesterday he probably did not read them, you know.'
(Hellan and Platzack 1999:130,(20))

Adverbial Intermingling can be combined with Long OS. The object pronoun *oss* 'us' (25) can be located in any of the positions indicated below. The subject *någon myndighet* 'any authority' is a negative polarity item. It must be located to the right of the negative phrase *inte längre* 'not longer'. This indicates that the object pronoun *oss* can move not only across the subject but also across more than one adverbial.

(25) Nu manar (OKoss) ju (OKoss) inte längre [Swe.]
now urges us as-you-know us not longer
(OKoss) någon myndighet att äta mer bröd.
us any authority to eat more bread
'We are no longer urged by any authority to eat more bread.'
(Holmberg and Platzack 1995:156-157,(6.31))

An object pronoun normally moves across a particle in verb particle constructions in the Scandinavian languages, as illustrated by Danish (26a) and Norwegian (26b). In Swedish (26c) and Övdalian (26d), however, it cannot move.

(26) a. Jeg skrev (OKdet) op (*det). [Dan.]
b. Jeg skrev (OKdet) opp (*det). [Nor.]
c. Jag skrev (*det) upp (OKdet). [Swe.]
I wrote it up it
'I wrote it down.'
(Holmberg 1999:2,(3a-c))
d. Åˌ ar aingt upp eð. [Övd.]
she has hung up it
'She has hung it up.'
(Garbacz 2009:84,(10c))

3. *Particular syntactic properties of OS*. Some particular syntactic properties are observed for OS. According to Holmberg (1986), OS is not *A-movement*

(Chomsky 1981), i.e. movement to the position where an argument is located. One of the diagnostics to decide whether a construction is derived by A-movement or not is anaphor licensing (Chomsky 1986). If it is derived by A-movement, an argument raised to the subject position licenses an anaphor but does not license a pronoun. Specifically below, the object pronoun *dem* 'them' in the small clause (indicated as SC below) is passivized and raised to the subject position of the main clause.[18] The subject pronoun *de* 'they' licenses an anaphor but not a pronoun: it can be coindexed with either *sin* 'self' or *varandras* 'each other's', but cannot be coindexed with *deras* 'their' (27a). When the pronoun *dem* is 'Object-Shifted', it does not license an anaphor in the raised position: it can be coindexed with neither *sin* nor *varandras*, though it can be coindexed with *deras* (27b).

(27) a. De ansågs till *deras$_i$/sin$_i$/varandras$_i$ [Swe.]
they were-considered to their/self's/each other's
besvikelse [$_{SC}$ dem vara lika bra].
disappointment them be equally good
'To their/each other's disappointment they were considered to be equally good.'

b. Han ansåg dem till deras/*sin/*varandras
he considered them to their/self's/each other's
besvikelse [$_{SC}$ dem vara lika bra].
disappointment them be equally good
'To their disappointment he considered them to be equally good.'
(Holmberg and Platzack 1995:148,(6.17a-c))

Nor is OS *A'-movement* (Chomsky 1981), i.e. movement to the position where a non-argument like an operator is located. Two diagnostics, Weak Crossover (Chomsky 1981) and parasitic gap licensing (Chomsky 1982), are presented to decide whether the construction is derived by A'-movement. First, an operator is subject to Weak Crossover, a phenomenon in which the trace/copy of an operator cannot be coindexed with a pronoun that does not c-command it.[19] Below, the possessive pronoun *hans* 'his' is contained in the prepositional phrase *i hans frånvaro* 'in his absence' and does not c-command *vem* 'who' in the original position. When *hans* is coindexed with the copy of *vem* in the original

[18] *Dem* is an Acc(usative) form, whereas *de* is a Nom(inative) form. The pronunciation does not differ, though: both forms are pronounced like [dom].

[19] Strong Crossover is a phenomenon in which the copy of an operator cannot be coindexed with a pronoun that c-commands it. The copy of the *wh*-phrase *who* cannot be coindexed with the pronoun *he* that is located in the subject position and c-commands it:
(i) *Who$_i$ does he$_i$ love ~~who~~$_i$?

position after the latter moves to sentence-initial position, the sentence is judged odd and not fully acceptable (28a). But when *hans* is coindexed with the copy of the object pronoun *honom* 'him' after the latter is 'Object-Shifted', the sentence is judged grammatical (28b).

(28) a. ?Vem$_i$ tilldelade de i hans$_i$ frånvaro ~~vem$_i$~~ priset? [Swe.]
who awarded they in his absence the-prize
'Who$_i$ did they award the prize in his$_i$ absence?'

b. De tilldelade honom$_i$ i hans$_i$ frånvaro ~~honom$_i$~~ priset.
they awarded him in his absence the-prize
'They awarded him$_i$ in his$_i$ absence the prize.'
(Holmberg and Platzack 1995:147,(6.15a-b))

Second, the NP *den artikeln* 'that article' functions as a (focus) operator when it is left-dislocated (29a), but it is not an operator in the subject position (29b). In the former case, but not in the latter, it licenses a gap: a pronoun that should appear inside the adjunct clause (, which is expressed by *e*,) can be absent in the former but not in the latter. An 'Object-Shifted' pronoun does not license a parasitic gap in the moved position: a pronoun inside the adjunct clause cannot be absent (29c). These facts indicate that a shifted object pronoun is not an operator.

(29) a. Den artikeln kastade de ~~den artikeln~~, [Swe.]
that article threw they
innan jag hade läst *e*.
before I had read
'That article, they threw away before I had read.'

b. *Den artikeln kastades ~~den artikeln~~, innan jag hade läst *e*.
that article was-thrown before I had read
'*That article was thrown before I had read.'

c. *Jag kastade den inte ~~den~~, innan jag hade läst *e*.
I threw it not before I had read
'*I didn't throw it before I had read.'
(Holmberg and Platzack 1995:146,(6.14a-c))

Finally, OS is blocked not only when a main verb does not move but also when any other visible category is left VP-internally. A preposition (30a-b), an indirect object (31a-b) and a verb particle (32a-b) all prevent an object pronoun from moving.

(30) a. Jag talade inte [$_{VP}$ ~~talade~~ med henne]. [Swe.]
I spoke not with her
'I didn't speak with her.'

b. *Jag talade henne inte [$_{VP}$ ~~talade~~ med ~~henne~~].
I spoke her not with

(31) a. Jag gav inte [$_{VP}$ ~~gav~~ Elsa den].
I gave not Elsa it
'I didn't give it to Elsa.'

b. *Jag gav den inte [$_{VP}$ ~~gav~~ Elsa ~~den~~].
I gave it not Elsa

(32) a. De kastade inte [$_{VP}$ ~~kastade~~ ut mig].
they threw not out me
'They didn't throw me out.'

b. *De kastade mig inte [$_{VP}$ ~~kastade~~ ut ~~mig~~].
they threw me not out
(Holmberg 1999:2,(2a-c))

I briefly summarize the facts on OS presented above. First, various kinds of pronominal forms can move. Not only an argument object pronoun but also a pronominal adverbial and an expletive pronoun can move. There are some cases in which OS is prevented. Second, OS is optional in (some of) the Scandinavian varieties; OS is absent in others, e.g. in Övdalian. Swedish shows some properties that are different from the other Scandinavian varieties. Third, it is possible that OS may not be a syntactic movement, since it is neither A-movement nor A'-movement. In the following sections, we investigate whether the facts on OS presented above can be accounted for in terms of the semantico-syntactic, syntactic and phonological approaches.[20] We will see that none of them can provide a principled account for all aspects of OS.[21]

[20] I use the terminology *phonological* to refer to the studies based on theoretical phonology such as the prosodic structure theory (e.g. Nespor and Vogel 1986), distinguishing them from studies in experimental phonetics (e.g. Bruce 1977). I also use the terminology *phonology/phonological* to refer to theory-internal categories in generative grammar, e.g. *the phonological component*, etc.

[21] There are other issues related to OS that have been discussed in the literature. i) Transitive Expletive Constructions (e.g. Bobaljik and Jonas 1996). In normal expletive constructions (ia), the position of a subject can be flexible. In Transitive Expletive Constructions (ib), a transitive verb occurs with an expletive, and a subject must be located between the Aux and the past participle. ii) Negative/quantifier movement (e.g. Rögnvaldsson 1987). A negative phrase (and a small class of quantifiers) must move to the position between the Aux and the past participle.

2.2. Syntax and semantics of Scandinavian Object Shift

Holmberg (1986) originally proposed a Case-theoretic account of OS. A phonetically visible argument must be assigned Case by a Case assigning category adjacent to it (Chomsky 1981). Pronouns of the Scandinavian languages are inflected for Case and do not need to be assigned Case any more. They can move and appear in a position not adjacent to a Case assigning category. Not only pronouns but also all NPs are inflected for Case in Icelandic, whereas only pronouns are inflected for Case in the other Scandinavian varieties. Thus, object pronouns as well as full NPs can move in the former, but only object pronouns can move in the latter. This Case-theoretic account of OS had long been assumed in much of the literature from then on, despite the modification of the theoretical framework (e.g. Holmberg and Platzack 1995, Chomsky 1995). Hellan and Platzack (1999) argue that Long OS is possible when a pronoun has an Acc(usative) Case form different from a Nom(inative) Case form. Swedish has, for the first person plural, both the Nom form *vi* 'we' and the Acc form *oss* 'us', which allows Long OS (33a). But Swedish has only one form for the third person plural, which makes Long OS impossible (33b).[22,23]

(33) a. Nu befallde (OKoss) rånaren (OKoss) att vara tysta. [Swe.]
now ordered us the-thief us to be silent
'Now the thief ordered us to be silent.'

(i) a. Það hefur (OKeinhver köttur) verið (OKeinhver köttur) í eldhúsinu. [Ice.]
there has some cat been some cat in kitchen-the
'There has been some cat in the kitchen.'
b. Það hefur (OKeinhver köttur) étið (*einhver köttur) mýsnar.
there has some cat eaten some cat mice-the
'Some cats has eaten the mice.'
(Vangsnes 2002:44-45,(1a-b),(3a-b))

(ii) Strákarnir höfðu (OKengu grjóti) hent (*engu grjóti) í bílana.
boys-the had no rock thrown no rock in cars-the
'The boys had thrown no rocks at the cars.'
(Svenonius 2000:5,(12a-b))

The former concerns the information structure of an entire sentence: an expletive construction is sentence-focus, which contains all-new information (Lambrecht 1994). The latter concerns a constraint on negative phrases that they must move to the third position in a sentence. As these constructions do not concern movement of weak pronominal objects, I do not discuss them in this thesis.

22 See footnote 18. Hellan and Platzack also argue that in Adverbial Intermingling (24), a moved object pronoun may not always be adjacent to a main verb in Swedish.

23 The Case-theoretic account is not sufficient to explain, e.g. movement of pronominal adverbials, since they do not have Case. In his new account of OS, Holmberg (1999) rejects the Case-theoretic account with many convincing arguments against it. Thus, I do not refer to the Case-theoretic account from now on in this thesis.

b. Nu befallde (*dem) rånaren ([OK]dem) att vara tysta.
now ordered them the-thief them to be silent
'Now the thief ordered them to be silent.'
(Hellan and Platzack 1999:133,(26-27))

Since Chomsky (1995) referred to the problem that OS raises for a new theoretical framework, the *Minimalist Program*, studies on OS have been conducted widely. In the previous framework so far, *Agr*, a functional head on which agreement φ-features is located, was assumed. The phrase structure at that time is illustrated in (34a). It was supposed that a subject and an object check their Case feature by moving to [Spec,AgrSP] and [Spec,AgrOP] respectively. Movement was formulated in terms of the *Minimal Link Condition*, which states that a category closer to the target is allowed to move. On this assumption, it would be Subj, not Obj, that is closer to the target position [Spec,AgrOP], as can be seen in (34a). This problem was solved by assuming i) that if two categories are in the same minimal domain (i.e. in a maximal projection), they are equidistant from a target position, and ii) that verb movement extends a minimal domain. Thus, by assuming that a verb moves from V to AgrO, a minimal domain is extended to include not only VP but also AgrOP. This paves the way to making both Subj and Obj equidistant from [Spec,AgrOP], which enables Obj to move to that target position across Subj, as illustrated in (34b). In this way, the presence of verb movement was well associated with that of object movement (Chomsky 1995:298-299): the presence of verb movement enables an object pronoun to move. However, it was argued that categories like Agr that do not affect the meaning of a sentence should be eliminated (Chomsky 1995:349-351). On the assumption of the *vP shell* structure (Larson 1988), in which a functional head *v* that specifies the properties of a verbal category takes VP as its complement and Subj as its Specifier (34c), AgrO was eliminated by assuming that Obj moves to the (outer) Spec of v. AgrS was eliminated by assuming that Subj moves to [Spec,TP] (Chomsky 1995:352-354). Note that main verb movement is irrelevant to object movement in this new system: Obj simply moves to (the outer) [Spec,vP] regardless of whether a verb moves to v or not. Thus, Holmberg's Generalization, i.e. the dependency of the presence of object movement on that of verb movement, was taken to be one of the greatest problems in this new derivational system.

(34) a. [$_{AgrSP}$ AgrS [$_{TP}$ T [$_{AgrOP}$ AgrO [$_{VP}$ Subj V Obj]]]]

b. … [$_{AgrOP}$ Obj V+AgrO [$_{VP}$ Subj ~~V Obj~~]]

c. [$_{TP}$ Subj T [$_{vP}$ Obj [$_{vP}$ ~~Subj~~ v [$_{VP}$ V ~~Obj~~]]]]

Diesing (1992, 1997) was the first to associate the presence or absence of movement of arguments with their interpretive properties. According to the hypothesis she proposes, the *Mapping Hypothesis*, the arguments interpreted as non-specific, new to the discourse and/or focused remain inside VP, whereas those interpreted as specific, old information and/or defocused must move out of VP. Specifically, the following patterns of OS are predicted according to this hypothesis. An indefinite NP object does not move due to its non-specific status (35a). It can move, e.g., when focalization of a main verb makes it defocused (35b). Though not impossible, an unshifted definite NP object is awkward for its presupposed status (i.e. the status as an old information), which forces it to move out of VP. When it is contrasted with others, it can receive an interpretation like new/unexpected information and remain in situ (35c). An indefinite pronoun is interpreted as non-specific and remains inside VP (35d). A definite pronoun is old information and moves out of VP (35e).

(35) a. Hann las (*bækur) ekki (OKbækur). [Ice.]
he read books not books
'He didn't read books.'
(Diesing 1997:412,(71a-b))

b. Ég LES bækur ekki …
I read books not
'I don't READ books (, but only BUY them).
(Diesing 1997:412,(71d))

c. Jón keypti (OKbókina/OKþessa bók)
Jón bought the-book this book
ekki (OKbókina/OKþessa bók).
not the-book this book
'Jón didn't buy the book/this book.'
(Diesing 1997:417-418,(78,81))

d. Jeg har ingen paraply, [Nor.]
I have no umbrella
men jeg køper (*en) muligens (OKen) i morgen.
but I buy one possibly one Tomorrow
'I have no umbrella, but I will possibly buy one tomorrow.'
(Diesing 1997:413,(74-75))

e. Hann las (OKþær) ekki (*þær). [Ice.]
he read them not them
'He didn't read them.'
(Diesing 1997:413-414,(76))

Diesing's Mapping Hypothesis has long been the basis of the semantics of OS in the literature (Collins and Thráinsson 1996; Holmberg 1999; Chomsky 2001; Sells 2001; Vikner 2001; Erteschik-Shir 2005a,b; Broekhuis 2008; among others).

Holmberg (1999) presents the data of an OS construction, *Verb Topicalization*, a contrastive verb-focus construction in which a past participle moves to sentence-initial position and OS also occurs (36a), as proof that the presence of pronominal movement is dependent on that of verb movement. He argues that after the past participle *kysst* moves to [Spec,CP], no category is left inside VP, which paves the way to movement of the object pronoun *henne* (36b).

(36) a. Kysst har jag henne inte (, bara hållit henne i handen).[Swe.]
kissed have I her not only held her by the-hand
'I haven't KISSED her (, only held her in the arms).'
(Holmberg 1999:7,(11a))

b. [$_{CP}$ kysst … [$_{TP}$ … henne … [$_{VP}$ … ~~kysst~~ ~~henne~~]]]

Rejecting the Case-theoretic account of OS (Holmberg 1986, Holmberg and Platzack 1995), Holmberg (1999) proposes a new account of OS by associating the presence of OS with the defocused status of an object pronoun. Based on the Mapping Hypothesis (Diesing 1992), it is argued that OS applies to either an unstressed pronoun or a nominal that is definite, specific, light and/or defocused. OS does not occur when any visible category including a main verb is left VP-internally as illustrated in (30-32), which are repeated below:

(37) a. Jag talade (*henne) inte [$_{VP}$ ~~talade~~ med (^{OK}henne)]. [Swe.]
I spoke her not with her
'I didn't speak with her.'

b. Jag gav (*den) inte [$_{VP}$ ~~gav~~ Elsa (^{OK}den)].
I gave it not Elsa it
'I didn't give it to Elsa.'

c. De kastade (*mig) inte [$_{VP}$ ~~kastade~~ ut (^{OK}mig)].
they threw me not out me
'They didn't throw me out.'

It is claimed that when a category that is assigned [+Foc(us)] remains inside VP, a defocused object that is assigned [-Foc] is licensed in situ. When none of such categories remains inside VP, a defocused object with [-Foc] must move to the position adjacent to a category with [+Foc] that can license it. Based on Halle

and Marantz (1993), Holmberg claims that [±Foc] is introduced when phonological features are also introduced, thus, OS is a post-syntactic/ phonological operation.

Chomsky (2000), developing the Minimalist Program framework (Chomsky 1995), proposes a new computational system, *phase* theory. Syntactic derivations now proceed by *Merge*, an operation that takes two syntactic objects (either lexical items or phrases) and combines them. A phase is a domain in which a series of such syntactic operations are conducted. v* (a functional head that specifies the category of a transitive verb) and C are assumed to be phasal heads. A phase in which a series of required syntactic operations have been completed is sent to the phonological component and is no longer accessed by further syntactic operations. This derivational point is called *Spell-Out* S-O. At the S-O of a phase, the complement of a phasal head is spelled out, by assumption. Specifically, when v*P and CP are spelled out, the complement of v* and that of C, i.e. VP and TP, are sent to the phonological component, and they are no longer accessed by any further syntactic operation. The *EPP* ('Extended Projection Principle'), the condition that a functional head requires an overt category in its Spec (especially referring to the requirement of a sentential subject, Chomsky 1981, 1986, 1995), is now formulated as the feature that triggers movement in general. A phasal head can have an EPP feature and raise an argument to its Spec when a new semantic effect is produced on the argument. In *wh*-movement as illustrated by 'what did you eat?', for instance, the *wh*-phrase *what* is interpreted not only as an object argument of the main verb but also as a *wh*-operator. A phasal head C can have an EPP feature and raise the *wh*-phrase to its Spec. In the moved position, the *wh*-phrase obtains the interpretation as a *wh*-operator that it could not receive in the original argument position.[24]

Under phase theory, and also on the (tacit) assumption of the Mapping Hypothesis (Diesing 1992), Chomsky (2001) presents an account of OS in the following way: only when an object rejects the interpretation that it receives in the base-generated position, is the EPP assigned to a phasal head and OS applies. Specifically, after all VP-internal categories have moved out of VP, an object is assigned the interpretation as focus and/or new information, by the rules of information-structure in the Scandinavian languages. If the object is a full NP, e.g. *Marit*, there is no problem; v* is not assigned the EPP (38). But the object pronoun *henne* rejects such an interpretation. v* is assigned the EPP, and the object pronoun moves to [Spec,v*P]. In the moved position, the object pronoun receives an interpretation which is consistent with its

[24] See a series of the papers by Chomsky (2000, 2001, 2004, 2008, 2013) for the details of a new derivational mechanism that consists of the *probe-goal* system and a syntactic operation called *Agree*, in which a functional head probes a category acting as its goal and the uninterpretable φ-features of the former are valued by the interpretable counterpart of the latter.

(inherent) categorical property, i.e. defocused and/or old information (39). Movement of the object pronoun to the position between the main verb and the negation where it is actually spelled out is claimed to be phonological movement.

(38) a. Jag kysste inte Marit. [Swe.]
I kissed not Marit
'I didn't kiss Marit.'

b. … [$_{v*P}$ inte [$_{v*P}$ v* [$_{VP}$ ~~kysste~~ Marit]]]
[~~EPP~~] ↖ focus/new info.

(39) a. Jag kysste henne inte. [Swe.]
I kissed her not
'I didn't kiss her.'

b. … [$_{v*P}$ inte [$_{v*P}$ henne[$_{v*P}$ v* [$_{VP}$ ~~kysste~~ ~~henne~~]]]
↑ [EPP]
defocus/old info.

In Chomsky's system, movement of an object pronoun is string-vacuous: it moves to [Spec,v*P] before the negation merges with v*P. The word order between the shifted object pronoun and the negation is not affected, and the negation still precedes the object pronoun after it merges to v*P. Thus, on the assumption that movement of an object pronoun to the actually spelled-out position takes place in the phonological component, his system will provide an account for parametric differences among the Scandinavian languages, i.e. not only the obligatory OS in some Scandinavian varieties but also the optional OS in other varieties and the absence of OS in Övdalian.

On the basis of the Mapping Hypothesis (Diesing 1992), it is predicted i) that an object pronoun that carries new information and/or focus could not move, and ii) that an object pronoun that is old information and/or defocused could not remain in situ. Neither of the predictions is attested, however. First, a strong pronominal object can optionally move in Icelandic, as we saw in § 2.1. In addition, a shifted weak pronominal object can carry part of new information and/or focus (Engdahl 1997; Sells 2001; Hosono 2006, 2007).[25] A typical case of sentence-focus illustrated in (40a) is the answer to 'out-of-the-blue' questions such as 'what happened?', in which nothing is presupposed. The answer contains only new information: the entire answer sentence carries the focus (Lambrecht 1994). The subject *John* is already presented in the question (40b). The answer sentence has a topic-comment

[25] I thank Gisbert Fanselow (p.c.) for an intensive discussion regarding whether a pronoun can be part of focus/new information or not.

structure in which the subject is a topic and the predicate carries the focus, giving a comment on the subject (Lambrecht 1994). In both these cases, the object pronoun *mig* 'me' can move across the sentential adverb *alltid* 'always'. It might be argued that object pronouns such as the first person are the most salient in the discourse, which enables them to move. However, the speaker who asks the question above does not need to know in advance the context such that the addressee and John love each other, etc. In that sense, object pronouns can fully carry part of new information in the contexts above.[26]

(40) a. *Sentence-focus*:
What's up? – [$_{Foc}$ John always kisses me (in presence of others!)].
(i) ^{OK}Jan kysser mig alltid. [Swe.]
Jan kisses me always
'Jan always kisses me.'
(ii) ^{OK}Jan kysser alltid mig.

b. *Predicate-focus*:
What did John always do? – He always [$_{Foc}$ kissed me].
(i) ^{OK}Han kysste mig alltid. [Swe.]
he kissed me always
'He always kissed me.'
(ii) ?Han kysste alltid mig.

Regarding the second prediction, recall that an object pronoun can be prevented from moving in some copula sentences (17b), which is repeated below:

(41) Den hurtigste spiller på holdet er uden tvivl Morten [Dan.]
the fastest player on team-the is without doubt Morten
og den højeste er (*ham) faktisk også (^{OK}ham).
and the tallest is him actually also him
'The fastest player on the team is without a doubt Morten and the tallest one/player is actually also him.'

According to Mikkelsen (2011), in the (second) copula sentence above, the referent of the subject is identified by a post-copular phrase. This statement indicates that the post-copular domain is focused. In (41), the object pronoun *ham* refers back to the already presented *Morten*, thus it is old information and/or defocused. This case shows that an object pronoun that is old information and/or defocused can be included in a focus domain and

[26] See Ariel (2000), who claims that the more accessible an individual is, the more likely he/she is referred to by a pronoun or even a zero form.

prevented from moving.[27]

In sum, OS applies not only when an object pronoun is old information and/or defocused, but also when it carries (part of) new information and/or focus. OS is prevented not only when an object pronoun carries new information and/or focus, but also when it is old information and/or defocused. These facts indicate that the semantic effects that are imposed on an object pronoun itself are not decisive for the application of its movement, thus, the trigger of OS cannot be attributed to them.

The semantico-syntactic approach represented by Diesing and Chomsky has difficulty in accounting for e.g. the fact that not only an argument object pronoun but also an expletive pronoun moves, as illustrated in (12a-b). Expletives do not have any meaning themselves, thus are neither focused nor defocused. It also has difficulty in accounting for the fact that OS does not appear to be a syntactic movement. Chomsky (2001), for instance, assumes that an object pronoun moves to [Spec,v*P] in syntax and there it is assigned the interpretation as defocused. Movement of arguments to [Spec,v*P] is assumed to be A-movement. As we saw in the previous section, however, OS is not A-movement. And more than anything else, the defocused status of a shifted pronominal object itself does not account for Holmberg's Generalization. On the assumption of the Mapping Hypothesis, a defocused pronominal object could move even when a main verb does not move, e.g. in complex tense forms, contrary to fact. The literature that adopts the semantico-syntactic approach then simply assumes that OS can apply after VP is vacated.[28]

The argument above also indicates that OS should be dealt with as a type of movement different from full NP shift, where a new interpretation different from the one in the original position is always produced on a raised NP. A shifted full NP is interpreted as defocused, specific and/or old information, whereas a non-shifted full NP is interpreted as focus and/or new information in the unmarked case. In the cases in which a full NP carries only part of focus/new information, it does not move. The context below is VP-focus. The VP *reads War and Peace* carries the focus of the answer sentence. The NP *War and Peace* carries only part of the focus. In this context, the NP cannot move across a sentential adverb, as illustrated in (42b).

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[27] Mikkelsen argues that the object pronoun itself carries focus in this case. However, that the post-copular domain is focused is owed to the presence of two modifying adverbials, *faktisk* 'actually' and *også* 'also'. This can be seen from the fact that removing them from the second copula-clause turns the entire sentence ungrammatical:
(i) *The fastest player on the team is without doubt Morten, and the tallest (one) is him.

[28] For instance, Chomsky (2001) assumes that when VP is vacated, the EPP may or may not be assigned to v*, as we saw above; when VP is not vacated, e.g. in complex tense forms, the option of assigning the EPP to v* is not allowed, which prevents an object pronoun from moving.

(42) *Predicate-focus*:
What does John do during his vacation?
– He always [$_{Foc}$ reads War and Peace].
a. Hann les alltaf Stríð og frið. [Ice.]
he reads always War and Peace
'He always reads War and Peace.'

b. *Hann les Stríð og frið alltaf.
(Thráinsson 2007:76,(2.108))

2.3. Purely syntactic accounts of Scandinavian Object Shift

Nilsen (2003) presents an account of OS in terms of *remnant movement* (Besten and Webelhuth 1987). In this movement system, (more than) one category has already moved out from a projection, and the latter contains the trace(s). It is assumed that a functional head can attract such a projection to its Spec. (43) illustrates an example of a derivation. A head X merges with its internal complement ZP and also with the external complement YP, which derives XP (43a). A functional head U merges with XP, and X moves to that head. YP also moves to [Spec,UP] (43b). Another functional head S merges with UP and attracts to its Spec XP from which X and YP have already moved out (43c). The way of derivation implies that ZP does not move by itself, but it remains inside XP and is moved as part of the projection of XP.

(43) a. [$_{XP}$ YP [X ZP]]
b. [$_{UP}$ YP X+U [$_{XP}$ ~~YP~~ [~~X~~ ZP]]]
c. [$_{SP}$ [$_{XP}$ ~~YP~~ [~~X~~ ZP]] S [$_{UP}$ YP X+U ~~[$_{XP}$ YP [X ZP]]~~]]

On the assumption that an adverb is a functional head, the word order of simple tense forms, e.g. (Swe.) *jag såg den inte* (I saw it not 'I didn't see it'), is derived as follows. A main verb *såg* merges with an object pronoun *den* and a subject *jag*, which derives VP (44a). A functional head Fin(ite) merges with VP and *såg* moves to that head (44b). A functional head Top(ic) merges with FinP and *jag* moves to [Spec,TopP] (44c). A sentential adverbial *inte* merges with TopP as a functional head Adv(erb) and attracts TopP to its Spec (44d).

(44) a. [$_{VP}$ jag såg den]
b. [$_{FinP}$ såg+Fin [$_{VP}$ jag ~~såg~~ den]]
c. [$_{TopP}$ jag Top [$_{FinP}$ såg+Fin [$_{VP}$ ~~jag~~ ~~såg~~ den]]]
d. [$_{AdvP}$ [$_{TopP}$ jag Top [$_{FinP}$ såg+Fin [$_{VP}$ ~~jag~~ ~~såg~~ den]]] inte
~~[$_{TopP}$ jag Top [$_{FinP}$ såg+Fin [$_{VP}$ jag såg den]]]~~

The word order of complex tense forms, e.g. (Swe.) *jag har inte sett den* (I have not seen it 'I haven't seen it'), is derived as follows. The past participle *sett* merges with an object pronoun *den*, which derives PartP. The Aux *har* merges with PartP and the subject *jag*, which derives VP (45a). Fin merges with VP and *har* moves to that head (45b). Top merges with FinP and *jag* moves to [Spec,TopP] (45c). A functional head Foc(us) merges with TopP and attracts PartP to its Spec (45d). A functional head W, which is assumed to specify scopal properties, merges with FocP and attracts TopP to its Spec (45e). The sentential adverb *inte* merges with WP as an Adv head and attracts TopP to its Spec (45f).

(45)
a. [$_{VP}$ jag har [$_{PartP}$ sett den]]
b. [$_{FinP}$ har+Fin [$_{VP}$ jag ~~har~~ [$_{PartP}$ sett den]]]
c. [$_{TopP}$ jag Top [$_{FinP}$ har+Fin [$_{VP}$ ~~jag~~ ~~har~~ [$_{PartP}$ sett den]]]]
d. [$_{FocP}$ [$_{PartP}$ sett den] Foc [$_{TopP}$ jag Top [$_{FinP}$ har+Fin [$_{VP}$ ~~jag~~ ~~har~~ ~~[$_{PartP}$ sett den]~~]]]]
e. [$_{WP}$ [$_{TopP}$ jag Top [$_{FinP}$ har+Fin [$_{VP}$ ~~jag~~ ~~har~~ ~~[$_{PartP}$ sett den]~~]]]] W [$_{FocP}$ [$_{PartP}$ sett den]] Foc ~~[$_{TopP}$ jag Top [$_{FinP}$ har+Fin [$_{VP}$ jag har [$_{PartP}$ sett den]]]]~~
f. [$_{AdvP}$ [$_{TopP}$ jag Top [$_{FinP}$ har+Fin [$_{VP}$ ~~jag~~ ~~har~~ ~~[$_{PartP}$ sett den]~~]]]] inte [$_{WP}$ ~~[$_{TopP}$ jag Top [$_{FinP}$ har+Fin [$_{VP}$ jag har [$_{PartP}$ sett den]]]]~~ W [$_{FocP}$ [$_{PartP}$ sett den]] Foc ~~[$_{TopP}$ jag Top [$_{FinP}$ har+Fin [$_{VP}$ jag har ~~[$_{PartP}$ sett den]~~]]]]]

Nilsen claims that a weak pronominal object does not move by itself since it remains inside VP (44)/PartP (45) and is raised as part of a projection, TopP (44d)/PartP (45d). He argues that the fact that OS is blocked when any visible category is left VP-internally is accounted for if it is not an object pronoun itself but VP that actually moves: not moving out of VP, an object pronoun does not cross any category left inside VP.

After the theoretical change, it is dubious whether the remnant movement system can be maintained in the current Chomskyan framework. When remnant movement was proposed, the presence of parametric differences in syntactic derivations was accepted (Chomsky 1981, 1986). Syntactic objects that are derived by different syntactic operations were licensed if their final representations in the Logical Form did not differ. In the current framework since Chomsky (2000), however, it is assumed not only that the semantic component is uniform for all languages but also that syntactic operations proceed uniformly for all languages. This assumption is ensured by the cartographic system (Rizzi 1997, Cinque 1999), in which the position where a constituent is located in syntax must correspond to the interpretation that it receives in the semantic component. Specifically, the constituent that moves and is located, e.g. in [Spec,FocP], in the syntactic component must be

cross-linguistically interpreted as focus in the semantic component. Conversely, the constituent that receives the interpretation as focus in the semantic component must be cross-linguistically located in [Spec,FocP] in the syntactic component. In this system, a category is interpreted in the moved position. In the remnant movement system, a category that is moved as part of a projection can reach the syntactic position that does not correspond to the interpretation it should receive in the semantic component. For instance, the subject *jag* in (44-45) firstly moves to [Spec,TopP] (44-45c). It is further raised as part of TopP and the final location is [Spec,AdvP] (44d, 45f). The finite Aux *har* firstly moves to the Fin head (45c). It is further raised as part of TopP and its final location is [Spec,AdvP], which is not a head position (45f). It is unclear what kind of interpretation the subject and the Aux are assigned in [Spec,AdvP].

Fox and Pesetsky (2005) propose a derivational system, *Cyclic Linearization*, in which successive cyclicity of movement is associated with order preservation. In this system, the information on linearization established at a *Spell-Out* S-O point is not deleted in the course of derivation. It is added to the ordering information established at the next S-O. Assume that [$_D$ X Y Z] is a domain D that is sent to the phonological component at an S-O point. The ordering information at the S-O of D is X<Y and Y<Z ('<' means *precedes*). Assume further i) that A merges with D, which results in A<[$_D$ …], ii) that some category inside D moves higher than A, and iii) that the next domain D' is spelled out. Some derivational cases can be considered:

(46) a. [$_{D'}$ … X A [$_D$ ~~X~~ Y Z]] (X<A, A<[$_D$ …]; thus, X<Y)

b. *[$_{D'}$ … Y A [$_D$ X ~~Y~~ Z]] (Y<A, A<[$_D$ …]; thus, Y<X)

c. [$_{D'}$ … X Y A [$_D$ ~~X~~ ~~Y~~ Z]] (X<Y, Y<A, A<[$_D$ …])

d. [$_{D'}$ … Y A ~~[$_D$ X Y Z]~~] (Y<A, A<~~[$_D$ …]~~)

First, X moves higher than A, which results in X<A (46a). The ordering information A<[$_D$ …] indicates A<Y. The informations X<A and A<Y indicate that X precedes Y at the S-O of D'. Since this ordering information does not contradict the one at the S-O of D, i.e. X<Y, the derivation is licit. Secondly, Y moves higher than A, which results in Y<A (46b). The ordering information A<[$_D$ …] implies A<X. The informations Y<A and A<X indicate Y<X. This ordering information contradicts the one at the S-O of D, i.e. X<Y. Thus, this is an illicit derivation. Thirdly, both X and Y move, which results in X<Y and Y<A (46c). The original ordering information X<Y is still maintained after both X and Y move from inside D, which makes the derivation licit. Finally, after Y moves higher than A, which results in Y<A, [$_D$ …] is subject to ellipsis (46d). Fox and Pesetsky claim that the illicit movement of Y, which

would yield the contradictory ordering information Y<X, is remedied under the ellipsis of the previous S-O domain.

Specifically, this system applies to OS in the following way. Assuming that CP and VP are S-O domains and that the subject is not involved in linearization, the ordering information at the S-O of VP is V<O. In simple tense forms, e.g. (Swe.) *jag såg den inte* (I saw it not 'I didn't see it') (47a), after the sentential adverb *inte* merges with VP, both the main verb *såg* and the object pronoun *den* move. When CP is spelled out, the verb still precedes the pronoun, i.e. V<O. Since the ordering information at the S-O of CP does not contradict the one at the S-O of VP, the derivation is licit. In the ungrammatical derivation of complex tense forms, e.g. (Swe.) **jag har den inte sett* (I have it not seen) (47b) (cf. *jag har inte sett den* (I have not seen it 'I haven't seen it'), the object pronoun *den* moves, but the past participle main verb *sett* does not move. The ordering information at the S-O of VP is V<O. After movement of the object pronoun, however, it precedes the main verb at the S-O of CP, i.e. O<V. Since the ordering information at the S-O of VP contradicts the one at the S-O of CP, this derivation is illicit.[29]

(47) a. [$_{CP}$ jag såg [$_{TP}$ jag den inte [$_{VP}$ ~~såg~~ ~~den~~]]]
(V<O at the S-O of VP, and V<O at the S-O of CP)

b. *[$_{CP}$ jag har [$_{TP}$ ~~jag~~ den inte ~~har~~ [$_{VP}$ sett ~~den~~]]]
(V<O at the S-O of VP, but O<V at the S-O of CP)

There are some parametric differences among the Scandinavian languages, one of which is verb particle constructions. As we saw in § 2.1, an object pronoun cannot move across a verb particle, e.g. in Swedish (26a), as repeated in (48a), but it moves, e.g. in Danish (26b), as repeated in (48b).

(48) a. *[$_{CP}$ jag skrev [$_{TP}$ ~~jag~~ det [$_{VP}$ ~~skrev~~ upp ~~det~~]]]
(particle<O at the S-O of VP, but O<particle at the S-O of CP)

b. [$_{CP}$ jeg skrev [$_{TP}$ ~~jeg~~ det [$_{VP}$ ~~skrev~~ op ~~det~~]]]
(particle<O at the S-O of VP, but O<particle at the S-O of CP)

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[29] See their argument against the analysis of Verb Topicalization by Holmberg (1999). They claim that Verb Topicalization can be derived by remnant movement. They argue that below, after the direct object pronoun *den* moves out from VP, the latter that contains the past participle *gett* and the indirect object pronoun *henne* moves to [Spec,CP]:

(i) ?[$_{CP}$ [$_{VP}$ Gett henne ~~den~~] har [$_{TP}$ jag den inte [$_{v*P}$ ~~[$_{VP}$ gett henne den]~~]]]. [Swe.]
given her have I it not
'Given her, I haven't, regarding it.'
(Fox and Pesetsky 2005:25, (30a))

Fox and Pesetsky refer to the Swedish case, and claim that when an object pronoun moves, the ordering information at the S-O of VP, particle<O, contradicts the one at the S-O of CP, O<particle; thus, the derivation is illicit (48a). The same argument does not apply to, e.g. Danish, in which an object pronoun moves across a verb particle (48b). An object pronoun follows a particle at the S-O of VP, i.e. particle<O. The former precedes the latter at the S-O of CP, i.e. O<particle. Though the derivation does not proceed cyclically, the construction is grammatical in this Scandinavian variety. Thus, parametric differences among the Scandinavian languages remain to be accounted for in Fox and Pesetsky's system.[30]

Broekhuis (2008) proposes an account of OS under the framework of Optimality Theory. In this framework, it is assumed that the generator produces a candidate set of syntactic constructions. They are inputs from which the evaluator selects the most optimal output. An evaluation is done by referring to a small amount of constraints which are drawn from a universal set of constraints. Constraints are hierarchically ranked, and ranking of constraints can differ among languages. It is stipulated in each language before an evaluation starts. Constraints are violable, and the violation of a lower-ranked constraint is allowed if a higher-ranked constraint is not violated.

Broekhuis needs to assume at least four constraints to account for the basic facts on OS illustrated in (8-10):[31] i) **MOVE (t_O only)*, which prohibits the uneconomical movement of an object pronoun; ii) *D-PRONOUN*, which forces a weak/definite pronoun to move out of v*P; iii) *EPP*, which requires an overt category in the Spec of a head; and iv) *H-COMPL*, which requires that the order of head-complement be preserved.

The facts on simple tense forms are accounted for in terms of the first two constraints. The columns in (49a-c) are a candidate set for simple tense forms. In the Scandinavian varieties that do not have OS (49a), *MOVE (t_O only) outranks D-PRONOUN. The evaluator selects the candidate that does not violate the higher-ranked constraint *MOVE (t_O only) aside from the violation of the lower-ranked constraint D-PRONOUN, i.e. the candidate in which an object pronoun remains in situ, as the optimal one. In the Scandinavian varieties in which OS is obligatory (49b), D-PRONOUN outranks *MOVE (t_O only). The evaluator selects the candidate that does not violate the higher-ranked constraint D-PRONOUN, i.e. the candidate in which an object pronoun moves out of v*P, as the optimal one. In the Scandinavian

[30] In addition, there are several phenomena that are observed only in Swedish; see § 2.1. The feature that characterizes them is that an object pronoun moves across a subject. Fox and Pesetsky assume that a subject is not involved in linearization. If a subject were assumed to be part of linearization in their system, many cases would arise in which the linearization information at the S-O of VP contradicts the one at the S-O of CP, which is another defect in their system.

[31] I simplify his accounts here for the sake of convenience.

varieties in which OS is optional (49c), it is assumed that the evaluation yields a tie of the constraints which are equally high: D-PRONOUN <> *MOVE (t_O only). When the ranking (49b) is used, the candidate in which an object pronoun moves (i.e. the lower column) is selected. When the ranking (49a) is used, the candidate in which an object pronoun remains in situ (i.e. the upper column) is selected.

(49) a. Ig tjyöpt (*åna) it (^{OK}åna). [Övd.]
I bought it not it
'I didn't buy it.'

No OS	*MOVE (t_O only)	D-PRONOUN
I+V Adv [t_V O]] ☞		*
I+V [O Adv [t_V t_O]]]	*!	*

b. Peter mødte (^{OK}ham) ikke (*ham). [Dan.]
Peter met him not him
'Peter didn't see him.'

Obligatory OS	D-PRONOUN	*MOVE (t_O only)
I+V Adv [t_V pron]]	*!	
I+V [pron Adv [t_V t_O]]] ☞		*

c. Jag såg (^{OK}den) inte (^{OK}den). [Swe.]
I saw it not it
'I didn't see it.'

Optional OS	D-PRONOUN	*MOVE (t_O only)
I+V Adv [t_V pron]] ☞	*>	
I+V [pron Adv [t_V t_O]]] ☞		*<

The absence of OS in embedded clauses and complex tense forms is accounted for by adding the other two constraints, *EPP* and *H-COMPL*. Ranking is stipulated, from the top to the bottom, as H-COMPL, EPP, D-PRONOUN and *MOVE (t_O only). It is assumed regarding the constraint EPP that both a verbal head and the Aux head require an overt category in their Spec.

(50ai-iii) are a possible candidate set for embedded clauses, and (50b) is their evaluation. A main verb follows a shifted object pronoun in (50aiii). Since the highest-ranked constraint H-COMPL is violated, that candidate is rejected. No overt category is present in [Spec,v*P] in (50ai), but an object pronoun moves to [Spec,v*P] in (50aii). The latter candidate does not violate

the next higher-ranked constraint EPP. It is then selected as the optimal candidate for embedded clauses.

(50) a. i. C [I … inte v+V … t_V pron]
ii. C [I … inte v+V … pron t_V t_O]
iii. C [I … pron inte v+V … t_O t_V t_O]

b. … att jag (*den) inte såg (^{OK}den) [Swe.]
that I it not saw it
'… that I didn't see it'

emb.cl.	H-COMPL	EPP	D-PRONOUN	*MOVE (t_O only)
(50ai)		*!	*	
(50aii) ☞			*	*
(50aiii)	*!			**

(51ai-iv) are a possible candidate set for complex tense forms, and (51b) is their evaluation.[32] The head (Asp+)V follows a shifted object pronoun in (51aiii-iv). Since the highest-ranked constraint H-COMPL is violated, those candidates are rejected. An overt category is present neither in the Spec of the Aux nor in [Spec,v*P] in (51ai): the next higher-ranked constraint EPP is violated twice. Though no overt category is present in the Spec of an Aux, an object pronoun moves to [Spec,v*P] in (51aii): the constraint EPP is violated only once. The latter candidate incurs fewer violations against the next higher-ranked constraint EPP than the former. Thus, it is selected as the optimal candidate for complex tense forms.

(51) a. i. I+v+Aux … Adv t_{V+Aux} … t_{Aux} … Asp+V … t_V pron
ii. I+v+Aux … Adv t_{V+Aux} … t_{Aux} … Asp+V … pron t_V t_O
iii. I+v+Aux … Adv t_{V+Aux} … pron t_{Aux} … Asp+V … t_O t_V t_O
iv. I+v+Aux … pron Adv t_{V+Aux} … t_O t_{Aux} … Asp+V … t_O t_V t_O

b. Jag har (*den) inte sett (^{OK}den). [Swe.]
I have it not seen it
'I haven't seen it.'

[32] (51aiii) is the case in which an object pronoun moves across the past partciple but does not cross a sentential adverb, which is ungrammatical as well.
(i) *Jag har inte den sett. [Swe.]
I have not it seen

comp.tense.	H-COMPL	EPP	D-PRONOUN	*MOVE (t_O only)
(51ai)		**!	*	
(51aii) ☞		*	*	*
(51aiii)	*!		*	**
(51aiv)	*!			***

In the system above, an optimal candidate for simple tense forms is determined only by the presence or absence of the movement of a weak pronominal object. Since the ranking system does not refer to main verb movement, the correlation between the presence of OS and that of verb movement, i.e. Holmberg's Generalization, is not provided an account in this system. All the candidates for embedded clauses and complex tense forms in which an object pronoun precedes the past participle main verb are eliminated by the highest-ranked constraint H-COMPL, which states that a head must precede its complement. The addition of this constraint to ranking is simply a stipulation to account for the ungrammatical cases in which an object pronoun moves across the past participle (and an adverb).

All in all, the syntactic accounts introduced above will provide some devices to derive the constructions relevant to OS. As pointed out for Fox and Pesetsky's account, however, the syntactic approach is not sufficient to provide a coherent account for parametric differences among the Scandinavian languages. To provide a unified account, it would be necessary to assume extra syntactic derivations (for the remnant movement system) or extra constraints (for the Optimality-Theoretic account). In addition, in the same way as in the semantico-syntactic accounts, it is not clear how the fact that OS is neither A-movement nor A'-movement can be accounted for in the syntactic approach. If OS were syntactic movement, it should be either A-movement or A'-movement, contrary to fact.[33]

2.4. Purely phonological accounts of Scandinavian Object Shift

Most of the phonological accounts of OS are based on prosodic structure theory (Nespor and Vogel 1986, Selkirk 1996). Under the tradition of

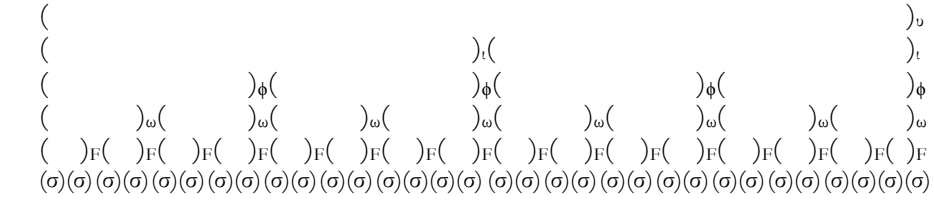
[33] See Vikner (2001) for another account of OS under the framework of Optimality Theory. See Sells (2001) for an account of OS under the framework of Lexical Functional Grammar. Bobaljik (1995, 2002) proposes a morphosyntactic account of OS in terms of *morphological merger*. According to Bobaljik, movement of an object pronoun is prohibited, e.g. in embedded clauses, since a shifted object pronoun would prevent a main verb from merging with T and obtaining inflection:

(i) *[$_{CP}$ att [$_{TP}$ jag T den [$_{VP}$ såg ~~den~~]]]

Bobaljik's proposal is argued against by Holmberg (1999) with convincing counterarguments. I do not review Bobaljik's proposal here.

'interpretive' phonology in which the phonological component 'interprets' the structure that is built in syntax, the prosodic phonology assumes a prosodic hierarchy that mediates between syntax and the phonological component.[34] See (52). The (tree of a) prosodic hierarchy consists of, from the top to the bottom, the utterance *υ*, the intonational phrase *ι*, the phonological phrase *ϕ*, the phonological word *ω*,[35] the foot *F*, and the syllable *σ*:

(52) Prosodic Hierarchy:



An (intermediate) node in the prosodic hierarchy must dominate all and only the subbranch node(s) just below it (the *Strict Layer Hypothesis*, Nespor and Vogel 1986). Thus, the well-formed prosodic hierarchy is the one in which a foot node *F* strictly dominates all and only the syllables *σ*s just below it, a phonological word *ω* strictly dominates all and only the foot nodes *F*s just below it, and so forth. A stressed syllable can be, but an unstressed syllable cannot be, (the head of) a foot *F*. Unlike a stressed, strong form, an unstressed, weak form like a function word is a 'prosodic clitic' that cannot be the head of a foot *F* thus cannot compose a phonological word *ω* by itself (Selkirk 1996:194). A function word such as a weak pronominal object, e.g. *him* in *you need him* [ju: ni:d 'm], is an affixal clitic which phonetically encliticizes onto the preceding phonological word *ω*, i.e. a main verb, and composes part of it: $((V)_\omega\ Obj_{pro})_\omega$ (Selkirk 1996:204).[36]

Erteschik-Shir (2005a,b) proposes that *Prosodic Incorporation*, the phonological process that takes sentential elements and create a phonological word *ω*, applies to a weak element and its phonological host in OS: an unstressed object pronoun is prosodically incorporated into the preceding sentential element that receives a stress and functions as its phonological host,

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[34] I turn to the traditional interpretive model in generative grammar more in detail in § 2.5.

[35] Instead of 'phonological word' the terminology 'prosodic word' is used in some literature. I coherently use the term 'phonological word' throughout this thesis.

[36] When an object pronoun is stressed and pronounced as [him], it is an independent phonological word *ω* by itself and composes a phonological phrase *ϕ* with a preceding verb: $((V)_\omega\ (Obj_{pro})_\omega)_\phi$ (Selkirk 1996:204). See also Vogel (2009) for a recent discussion on the clitic group, which is subordinate to the phonological phrase *ϕ* and above the phonological word *ω* in the prosodic hierarchy according to Nespor and Vogel (1986). Clitics are resyllabified with surrounding words in many languages. See Cardinaletti and Repetti (2009) for a discussion on the problems that arise in the resyllabification process of clitics.

e.g. a main verb. Specifically, the main verb *så* receives a stress (53a). (53bi) is the output of a syntactic operation. Prosodic incorporation applies to the object pronoun *ham* and its phonological host *så* (53bii). Verb movement takes place and the object pronoun moves along with the main verb (53biii). Topicalization applies to the subject *jeg* and it moves to sentence-initial position (53biv). It is argued that OS in fact does not exist, since movement of a weak pronominal object depends on that of its phonological host, i.e. a main verb, onto which it is incorporated.

(53) a. Jeg SÅ ham ikke [$_{VP}$ ~~SÅ~~ ~~ham~~]. [Dan.]
I saw him not
'I didn't see him.'

b. i. ikke jeg så ham
ii. ikke jeg så+ham
iii. så+ham ikke jeg
iv. jeg$_{Top}$ så+ham ikke

This system arbitrarily allows any category to act as a phonological host, e.g. an indirect object, as illustrated in (54).

(54) a. Sara gav Peter den. [Dan.]
Sara gave Peter it
'Sara gave it to Peter.'

b. Sara gav Peter+d'n
(Erteschik-Shir 2005a:66,(39))

Regarding parametric differences among the Scandinavian languages, it is argued that in the Scandinavian varieties in which OS is optional, a phonological reanalysis of a main verb and the following sentential adverb like the negation occurs and the reanalyzed form can be the phonological host of a weak pronominal object. It is not clear whether and how such a reanalyzing process can be justified only for a subvariety of the Scandinavian languages. The problem that an arbitrary prosodic incorporation/phonological reanalysis is allowed is one facet of the more general problem that no phonological rules or principles that characterize the prosodic properties of (each of) the Scandinavian languages are referred to in the system. Due to this problem, a principled account of OS cannot be presented.[37]

Richards (2006) makes an attempt at associating a phonological phrase ϕ with a syntactic domain, a phase (Chomsky 2000). At the Spell-Out of

[37] The same problem occurs in the account of OS by Josefsson (2010). See Vogel (2004) for another prosodic account of OS based on Selkirk (1996).

a phase, only the complement of a phasal head, not the entire phase, is sent to the phonological component. Thus, it is argued that the size of a phonological phrase ϕ must be smaller than that of a phase. It is proposed that at the S-O of a phase, a phonological boundary is inserted between a phasal head and its complement. The insertion of a phonological boundary indicates that the phonological phrase ϕ which a complement belongs to is separated from the one which a phasal head belongs to. Since a weak pronominal object is defective, it cannot compose a phonological phrase ϕ by itself. To be spelled out, it needs a phonological host. For both a weak pronominal object and its host to be contained in the same phonological phrase ϕ, the former must move into the same domain that the latter belongs to. Specifically, see below:

(55) a. Jan kysste henne inte. [Swe.]
Jan kissed her not
'Jan didn't kiss her.'

b. [$_{CP}$ Jan kysste [$_{TP}$ … [$_{v*P}$ henne [$_{v*P}$ inte [$_{v*P}$… ~~kysste~~ [$_{VP}$ ~~kysste~~ ~~henne~~]]]]]]
( )( )$_{\phi}$

(56) a. Jan kysste inte henne. [Swe.]

b. [$_{CP}$ Jan kysste [$_{TP}$ … [$_{v*P}$ inte [$_{v*P}$ … ~~kysste~~ [$_{VP}$ ~~kysste~~ henne]]]]]
( )( )( )$_{\phi}$

The weak pronominal object *henne* moves into the domain that contains its phonological host *kysste* (55). Contained in the same phonological phrase ϕ that the phonological host belongs to, the object pronoun can be spelled out in the shifted position. The object pronoun *henne* remains inside VP and is in the phonological phrase ϕ that does not contain its phonological host *kysst* (56). Since it is separated from the phonological host when VP is sent to the phonological component, it cannot be spelled out in situ. It is argued that movement of a weak pronominal object occurs in syntax, and cliticization onto its host takes place in the phonological component: an object pronoun is a *phasal affix*, in Richards' terms.

As pointed out for Erteschik-Shir's system, parametric differences among the Scandinavian languages, especially the optional aspect of OS, remain to be explained in Richards' account too: (56) could not be a possible prosodic pattern in any of the Scandinavian varieties, contrary to fact. An account for the fact that OS is prevented in some copular sentences (17b), as repeated below, cannot be provided either. The prosodic representation illustrated in (57b) must not be allowed, contrary to his expectation.

(57) a. … den hojeste er (*ham) faktisk også ([OK]ham). [Swe.]
the tallest is him actually also him
'… the tallest one/player is actually also him.'

b. [$_{CP}$ den hojeste er [$_{TP}$…[$_{v*P}$ faktisk også [$_{v*P}$ …~~er~~ [$_{VP}$ ~~er~~ ham]]]]]
( )( )( )$_{\phi}$

The fact that OS is optional, i.e., an object pronoun can remain in situ, in some of the Scandinavian varieties indicates that an object pronoun in the Scandinavian languages in fact does not need a phonological host, contrary to the claims above. This is the crucial point that differentiates OS from cliticization, e.g. in the Romance languages. Selkirk (1996:191) claims that '*the set of constraints governing the interface between morphosyntactic and prosodic structure makes no reference to functional categories* [such as weak pronouns] *at all* (emphasis in original)'. In the next chapter, I show that a (shifted or non-shifted) object pronoun in the Scandinavian languages composes the intonation of an entire sentence together with other sentential elements. I show that it is the level of an entire sentence, i.e. the utterance level, not the level of a phonological word/phonological phrase, that must be taken into account to provide a principled account of OS.[38]

In sum, the phonological approaches to OS introduced above can account for the fact that OS is neither A-movement nor A'-movement, i.e., the fact that OS does not appear to be a syntactic movement, which neither the semantico-syntactic nor syntactic accounts can capture. But arbitrary phonological operations can be allowed, e.g. in Erteschik-Shir's proposal. This problem is derived from the fact that the proposal do not refer to any phonological rules or principles that characterize the prosodic properties of the Scandinavian languages. In addition, parametric differences among the Scandinavian languages remain to be explained in the proposals introduced above.

2.5. Overall summary and introduction to the experimental approach

I summarize the accounts of the semantico-syntactic, syntactic and phonological approaches to OS in (58). The columns of *Items* are, from the left to the right, i) *The presence (and absence) of movement of various kinds of pronominal*

[38] The fact that OS is optional also indicates that an object pronoun in the Scandinavian languages does not need to move. We saw the claim by the Mapping Hypothesis that an object (pronoun) interpreted as focus/new information remains in situ but one interpreted as defocused/old information moves to a higher position. That claim could be rephrased from the phonological point of view as follows: an object pronoun moves to avoid a focal accent on itself. This claim is not tenable, since a weak pronominal object can remain in situ and does not need to move.

forms, introduced in 1 in § 2.1, ii) *Parametric differences among the Scandinavian languages*, introduced in 2 in § 2.1, and iii) *Particular syntactic properties of OS*, introduced in 3 in § 2.1. The columns of *Approaches* are, from the top to the bottom, i) the semantico-syntactic approach introduced in § 2.2, ii) the purely syntactic approach introduced in § 2.3, and iii) the purely phonological approach introduced in § 2.4. A column is marked either with '√' if each of the representative works introduced can account for all the relevant issues in each item, or with '×' if even one of the representatives fails in accounting for even one of the issues in each of the items.

(58) Accounts of the Semantico-Syntactic, Syntactic and Phonological Approaches:

Items / Approaches	Move. of various pro. forms	Parametric differences	Particular Syn. Prop. of OS
Sem.-Syn.	×	√	×
Syn.	√	×	×
Phon.	×	×	√

The semantico-syntactic approach will account for parametric differences among the Scandinavian languages including the optionality of OS in some of the Scandinavian varieties and the absence of OS in Övdalian. However, it has difficulty in accounting for the fact that OS does not appear to be a syntactic movement. Furthermore, the theories based on the Mapping Hypothesis (Diesing 1992) make wrong predictions regarding the application of OS: the semantic effects imposed on an object pronoun are not decisive for the application of its movement. Crucially, the defocused status of shifted object pronouns itself does not account for Holmberg's Generalization. Taking the semantic(o-syntactic) approach, Mikkelsen (2011) leaves aside syntactic properties of OS such as Holmberg's Generalization, saying that they are derived from external factors. However, the primary concern should be to provide an account for the particular syntactic property of Scandinavian OS that the presence of pronominal movement is dependent on that of verb movement, as Holmberg (1986) originally points out.

The syntactic approach will provide some devices to derive the constructions relevant to OS. But it will be insufficient to provide a coherent account for parametric differences among the Scandinavian languages, since it requires either extra syntactic derivations or extra constraints. And it is not clear how the fact that OS does not appear to be a syntactic movement can be accounted for.

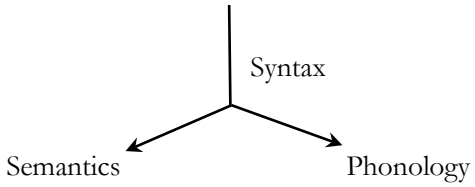
The phonological approach to OS can account for the fact that OS does not appear to be a syntactic movement, which neither the

semantico-syntactic nor syntactic approaches can capture. But in one system that has been proposed, namely Erteschik-Shir's, allows arbitrary phonological operations. This problem occurs since it does not refer to any phonological rules or principles that characterize (each of) the Scandinavian languages. In addition, parametric differences among the Scandinavian languages remain to be explained in any of the proposed systems.

Thus, it has turned out that none of the semantico-syntactic, syntactic and phonological approaches succeeds in providing a principled account for all aspects of OS.

The semantico-syntactic, syntactic and phonological approaches introduced in this section are all based on the traditional 'interpretive' model in generative grammar:

(59) Traditional 'Interpretive' Model in Generative Grammar:



This model illustrates the idea that syntax 'mediates' semantics and phonology. That is, a syntactic structure is firstly constructed in the syntactic component. That syntactic structure is sent to the semantic component and assigned an interpretation, on one hand. It is also sent to the phonological component and assigned some sound properties, on the other.[39] On this theoretical assumption, actual semantic and phonological properties cannot be involved in the syntactic derivation, since the semantic and phonological components simply 'receive' a structure sent from the syntactic component and assign it some interpretation/phonological properties. Conversely, the syntactic component 'cannot see' any actual semantic and phonological properties in the course of derivation: it simply produces a structure to be sent to the semantic and phonological components.

Much of the literature in experimental phonetics has showed that the Scandinavian languages are characterized by specific intonational properties to a significant extent (e.g. Bruce 1977, 1999, 2005, 2007, Bruce and Gårding 1978, Gårding 1998 for Swedish; Kristoffersen 2000, 2007 for Norwegian; Grønnum 1998, Basbøll 2005 for Danish; Árnason 1999, 2011, Gussmann 2002, Dehé 2010 for Icelandic; Árnason 1999, 2011 for Faroese; Kristoffersen 2008 for Övdalian). Swedish and Norwegian have a distinction in word accent: accent 1

[39] As we saw in § 2.2, the current phase framework since Chomsky (2000) assumes that the syntactic structure is sent to the phonological component at the Spell-Out of each phase in the course of derivation.

and accent 2. The former associates an accent with a low tone, and the latter with a high tone. The focus of a sentence is realized by a high tone that occurs on or after the accented syllable of a focused word, i.e. by a focal high contour. The low-high tone plays a crucial role in sentence production and perception in these Scandinavian varieties. A possibility is that the low-high intonation pattern may be the key to shed light on the pending issues on OS.

Danish, instead of word accent, has a peculiar feature associated with an accent, i.e. *stød*, a creaky voice. The dialects in Mainland Scandinavian are classified according to whether word accent/stød is present or not; see (60). Some varieties of South Danish have a tonal distinction instead of stød. South Danish allows an optional application of OS, though OS is obligatory in East Danish (Erteschik-Shir 2005a,b). Together with obligatory/optional OS in Swedish and Norwegian dialects, a possibility is that OS is more or less obligatory in the dialects that have word accent/stød, whereas OS can be optional in those which do not have word accent/stød.

(60)

Word Accent/Stød Present:	*Word Accent/Stød Not Present*:
East Swedish	Finland and Far North Swedish
(e.g. Stockholm)	(e.g. Tornedalen)
East Norwegian	North and West Norwegian
(e.g. Oslo)	(e.g. Finnmark, Bergen)
East Danish	South Danish
(e.g. Copenhagen)	(e.g. Lolland-Falster)

(Bruce 1999:607, (2))

Icelandic and Faroese do not have word accent. Word stress is located on the first syllable in the unmarked case. The pitch accent system of Icelandic is similar to that of, e.g. English. Icelandic has several particular phonological properties. The sound system of Faroese is quite similar to that of Icelandic. In addition, Övdalian, which has been argued to be the only Scandinavian variety that lacks OS, retains many particular intonational properties. It is possible that particular phonological and intonational properties of these varieties are closely related to the presence and absence of OS in them.

Therefore, it is highly plausible that a thorough discussion of OS from the intonational perspective will shed new light on this controversial phenomenon. Specifically, the intonational properties that the syntactic component cannot see in the course of derivation on the assumption of the 'interpretive' model may play a crucial role in accounting for the nature of OS as a whole. In the next chapter, I introduce an experiment to observe the intonational properties of the constructions relevant to OS and present experimental data. It will turn out that the intonational properties of the Scandinavian languages are crucial to the obligatoriness, optionality and absence of OS.

Chapter 3. Intonational Properties of Scandinavian Object Shift

3.1. Experiment

3.1.1 Introduction

I introduce the experiments I have carried out to observe the intonational properties of the constructions relevant to OS. The same method applies to all the Scandinavian languages/dialects investigated: Swedish (East, West, North, South, Finland Swedish, Dalecarlian, and Övdalian); Norwegian (East and West); Danish (East and South); Icelandic; and Faroese.[40]

Sentence constructions investigated are simple tense forms, complex tense forms, and embedded clauses. They represent the basic facts on Holmberg's Generalization, as introduced in the previous chapters. *Verb Topicalization*, a contrastive verb-focus construction in which the past participle moves to sentence-initial position and OS also occurs, was added due to the theoretical significance related to this construction (Holmberg 1999, Chomsky 2001).

Test sentences were built with the main verb *måla* (Swe.) for all the Scandinavian varieties investigated. This verb was selected for the following reasons. i) It consists of only sonorants with which the pitch contour clearly appears. ii) Since it has the meanings 'paint, portray', it can be used with both animate and inanimate objects. iii) It is an accent 2 word. Accent 2 words show intonational behaviors more obviously than accent 1 words, which is described more in detail in § 3.2.1. iv) It is etymologically shared by all the Scandinavian varieties. This makes systematic translation and comparison of the test sentences among the Scandinavian languages possible, aside from minor morphophonological differences.

A target sentence contains either a monosyllabic pronoun, e.g. (Swe.) *den* 'it', or a disyllabic pronoun, e.g. (Swe.) *honom* 'him'. On the basis of the literature on information structure (e.g. Lambrecht 1994, Vilkuna 1995, Kiss 1998), appropriate contexts were built with a question and the answer, the latter of which corresponds to each relevant construction.[41] The test sentences were arranged as illustrated in Table 1, depending on the following variables: i) the types of sentence construction (main clause MC, complex tense forms CT, embedded clauses EC), ii) the types of information structure (polarity-focus PO,

[40] Hereafter, a notation such as *East Swedish* is used like a proper noun that refers to a Scandinavian variety.

[41] I turn to the definition of information structure in § 5.2, where the theoretical account is presented.

contrastive verb-focus CV, clausal argument-focus ClA, contrastive argument-focus CA),[42] iii) the types of object pronouns (monosyllabic object pronouns MO, disyllabic object pronouns DI), iv) the presence (PV) or absence (AV) of verb movement, and v) the presence (PP) or absence (AP) of pronominal movement. Examples of each of the test sentences are given below Table 1. See Appendix I for the materials actually used.

Table 1. Test sentence types used in recordings of the Scandinavian varieties (for explanation of abbreviations, see text; for illustration of sentence types, see examples below table).

	sent.const			info.str.				obj.pro.		verb.M.		pro.M.	
	MC	CT	EC	PO	CV	ClA	CA	MO	DI	PV	AV	PP	AP
A	√			√				√		√		√	
A'	√			√				√		√			√
B	√			√					√	√		√	
B'	√			√					√	√			√
C		√			√				√	√		√	
D		√		√				√			√		√
E		√		√					√		√		√
F			√			√			√		√		√
F'			√			√			√	√			√
F"			√			√			√	√		√	
G	√						√		√	√			√
G'	√						√		√	√		√	

Examples:

A: Jag målade den inte. [Swe.]
A': Jag målade inte den. [Swe.]
B: Jag målade honom inte. [Swe.]
B': Jag målade inte honom. [Swe.]
C: Målat har jag honom inte. [Swe.]
D: Jag har inte målat den. [Swe.]
E: Jag har inte målat honom. [Swe.]
F: … att jag inte målade honom [Swe.]
F': … at eg málaði ikki hana [Far.]
F": … at eg málaði hana ikki [Far.]
G: Jag målade inte HONOM. [Swe.]
G': Ég málaði HANA ekki. [Ice.]

[42] I turn to the definition and use of the terminology *focus* below.

For Verb Topicalization (C), embedded clauses (F-F") and contrastive argument-focus (G-G'), only a disyllabic object pronoun, an accent 2 word, was used. It has been controversial whether a main verb moves in Faroese embedded clauses (e.g. Vikner 1997, Heycock et al. 2010). To observe the relationship between the syntactic word order and the intonational properties, all the possible word orders, Neg+V+Obj_{pro} in which both a main verb and a weak pronominal object remain in situ, V+Neg+Obj_{pro}, in which only a main verb moves, and V+Obj_{pro}+Neg, in which both a main verb and a weak pronominal object move, were tested for Faroese as F, F', and F" respectively. A main verb moves across the negation in Icelandic and Övdalian embedded clauses. An object pronoun moves too in the former but does not move in the latter. Thus, Icelandic embedded clauses are labeled as F", and Övdalian embedded clauses as F'. To observe the intonational properties of a shifted strong pronominal object, a main clause in which a contrastively focused disyllabic object pronoun moves was added as G' for Icelandic and Övdalian. See § 2.1 for the basic facts on Icelandic, Faroese and Övdalian.

The test sentences were presented to informants in a five-page booklet, in which the same sentences occurred in a different random order on each page. They read all five pages; consequently, each sentence was recorded five times. The conditions under which they read test sentences are as follows: i) to understand the contexts of each question-answer pair and read it in each context 'as they like'; ii) to read each question-answer pair in appropriately rapid speech, in such a way as they speak in a real-life conversation; and iii) to read all the test sentences even if they felt some of them to be odd and report their native judgments in a questionnaire, which I turn to below.

The recordings were made one by one, typically in a small lecture room, by the author herself using a laptop with Praat software (Boersma and Weenink 1996) and a microphone. After informants finished reading one page, they took a short break. This procedure was repeated five times. For the Scandinavian varieties that were not recorded by the author herself, informants were asked to record their voice and send the sound file to the author by e-mail attachment. The total number of collected tokens of question-answer pairs amounts to 3200.

Native judgment data is presented in Appendix II. The first column includes i) the dialectal name, e.g. *East Swe.*, ii) the sex, i.e. *F*(emale) or *M*(ale), iii) the informant number, e.g. *1*, *2*, etc., iv) the age, and v) the birthplace (, the last of which is missing for some informants). The judgment grade is evaluated as follows: 4 – grammatical; 3 – grammatical, but slightly odd in a relevant context; 2 – not ungrammatical, but quite odd (or grammatical, but normally not said) in a relevant context; 1 – ungrammatical. The grade of, e.g. '1.5', means that the judgment level is between 2 and 1. The letter codes A-G above the judgment grade points are the test sentence types, which were introduced in Table 1. A-B are the simple tense forms with a shifted object pronoun, and

A'-B' those with an in-situ object pronoun. Note that contrary to the standard view that OS is obligatory in the Scandinavian languages, the majority of informants do not mark 1 ('ungrammatical') for the non-OS constructions, A'-B'. It seems that OS is more or less obligatory only for Icelandic speakers. It is remarkable that informants of some Scandinavian varieties, e.g. South and Finland Swedish, even prefer the non-OS constructions. An East Norwegian speaker reported that no grammatical difference can be found between the OS and non-OS constructions. The only difference is that the non-OS construction sounds 'socially low' or 'childish'. A Finland Swedish speaker reported that the non-OS constructions can be optionally used without feeling any such difference from the OS construction.[43] These judgment data show that OS can be optional in more Scandinavian varieties than considered so far.[44]

A note on the status of collected data is needed. Depending on the speaker's intention, it is possible to put prominence on any of the sentential constituents. However, informants were asked to understand the context of, e.g. *did you buy the book? – no, I didn't buy it*, (as polarity-focus) before they read it. They were asked to read it 'as they like': it depends on each informant 'how to' read it. As long as the contexts are understood by informants in advance, this thesis assumes that informants' reading activity, thus all collected data, represent the unmarked case in each of the contexts. I mention the contexts other than those investigated here in chapter 5.

One more note concerns terminology: *stress*, *accent*, and *focus*. In the standard use, a syllable of a word is *stressed* at the word level; the stressed syllable of a word is *accented* at the sentence level (regardless of whether it carries the focus of a sentence or not); also at the sentence level, a word or phrase is *focused* when it carries the focus of a sentence.[45] I follow this use in this thesis. Following Lambrecht (1994), I assume i) that any sentence must have a focus and can have one and only one focus, and ii) that when a phrase is focused, the unaccented word(s) is (are) contained in a *focal domain*. Thus, the second syllable *-na-* of *banana* is stressed at the word level. At the sentence level as in (argument-focus) *what do you want? – I want [a banana]*, the phrase *[a banana]* is focused and comprises a focal domain (indicated by brackets) in which the unstressed indefinite article is contained. The second syllable *-na-* of *banana* and the primary stressed syllable of *want* are both accented in the answer, but the former receives the highest prominence due to its focused status.[46]

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[43] A related issue is the delayed acquisition of the OS construction. According to Josefsson (1996), only after children have acquired the appropriate intonation pattern of the OS construction, can they produce it.

[44] See also the Scandinavian dialect corpus piled by the ScanDiaSyn project: http://www.tekstlab.uio.no/nota/scandiasyn/index.html .

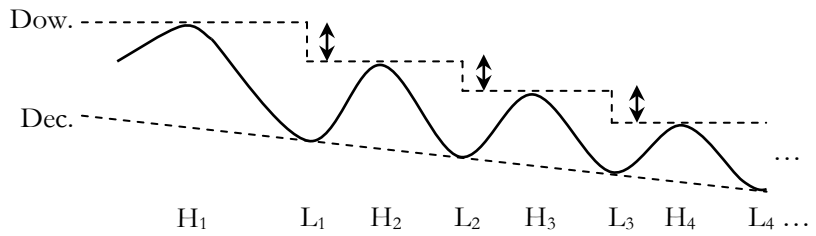
[45] See Van Heuven (1994b) for an argument that accent is associated with a syllable (or even segments smaller than the syllable).

[46] The subject *I* in the answer is unaccented due to its weak status.

3.1.2. Downstep

Downstep, which is the subject of this thesis, should be distinguished from *declination*. The latter refers to the tone downgrading in which tone simply lowers as time passes. The former is described as follows. High tones that have an equal prominence should be expected to reach the same pitch level. When the pitch level of a following H(igh) does not reach that of the preceding H, downstep occurs (cf. Pierrehumbert and Beckman 1988). Downstep and declination are illustrated in (61). The sequence of L(ow) points is considered to be the declination line, and that of H points the downstep line (cf. Pierrehumbert 1980). According to Gussenhoven (2004), downstep is typically triggered by a L tone element: a H tone becomes lower than the preceding H if an L intervenes between them. After a downstep has occurred, a following H reaches at most the same level as the preceding H. As illustrated in (61), after L_1 intervenes between H_1 and H_2, H_2 does not reach the same pitch level as H_1; after L_2 intervenes between H_2 and H_3, H_3 does not become higher than H_2; and so forth.[47]

(61) Downstep (Dow.) and Declination (Dec.):



In this thesis, I use the term 'downstep' for the (expected) lowering in pitch between two designated points in time during the course of a spoken utterance. The first key pitch point P_1 occurs relatively early in the utterance, whereas the second key pitch point P_2 follows towards the end of the utterance. Downstep is defined as the pitch difference between P_1 and P_2 expressed in semitones. I will refer to that pitch difference as the downstep size. As I will explain in more detail in chapter 4, the difference in semitone between P_1 and P_2 must be larger than 2 to say that downstep actually occurs in a sentence. When the downstep is indeed a fall in pitch, its value will be positive. The higher the value is, the larger the downstep size is. The negative value indicates that downstep does not occur in a sentence – in fact, upstep occurs. The lower the value is, the higher the size of upstep/non-downstep is.

The downstep size was computed by taking two key pitch points, as

[47] See, e.g. Gussenhoven (2004), for a detailed discussion of downstep and declination.

stated above. All test sentences were in most cases articulated by every syllable in advance. For simple tense forms and Verb Topicalization in which an object pronoun moves, two key pitch points were determined semi-automatically: the first point is on the accented syllable of the main verb, and the second point on the negation, i.e. the next accentable word after the main verb. The decrement at which the F0 lowers from the main verb to the negation was computed. An exceptional case is Övdalian. Due to the particular intonational properties, a different procedure was taken for this Scandinavian variety, which I mention in § 3.2.1.3.

For complex tense forms and embedded clauses in which an object pronoun does not move, the first point P_1 is on the Aux in the former and the embedded subject in the latter, neither of which an object pronoun can follow directly. The second point P_2 was determined by identifying the syllable with the highest pitch value among the syllables that are located after the Aux/embedded subject. The decrement which the F0 lowers from the Aux/embedded subject to an identified syllable (i.e. the difference in pitch between P_1 and P_2) was computed (for more information see chapter 4).

The pitch value has been taken by the following criteria. For the HLH and LHL pitch contour, L is taken in the former and H in the latter, regardless of whether it is a stressed or unstressed syllable. For HL and LH (and more complicated pitch gestures such as HLHL and LHLH) of accented syllables, the pitch value of the point associated with the accent is taken: e.g., if an observed pitch gesture is H*L, the highest point is taken, etc.[48] For HL and LH (as well as HLHL, LHLH, etc.) of unaccented syllables, the mean pitch value is taken, since the pitch gesture of unaccented syllables occurs in the course of the pitch gestures of accented syllables. When an unstressed syllable is taken for the second key pitch point, P_2, in complex tense forms and embedded clauses, however, the highest pitch value is taken.

In the subsequent sections, I take the following procedure of discussions: i) introducing general intonational properties of each of the Scandinavian languages, i.e. Swedish, Norwegian, Danish, Icelandic and Faroese, at the beginning of each section; ii) introducing detailed properties of each of the Scandinavian varieties investigated with a detailed description of pitch contours; iii) giving the pitch contour(s) of the OS construction predicted from the existing literature; iv) presenting actual pitch contours of the constructions relevant to OS; and v) discussions. Selected pitch contours recorded from my informants are presented as representatives that typically describe each construction. Chapter 4 presents more comprehensive statistical data on the Scandinavian varieties, which shows that the examples in the present chapter are indeed representative tokens. Technical issues such as how to compute downstep size are also introduced there.

[48] '*' indicates the locus of an accent.

3.2. Mainland Scandinavian

3.2.1. The Swedish intonational system[49]

The Swedish dialects are traditionally classified by their word accent system (Meyer 1937, Gårding 1975). Most of the Swedish dialects maintain a distinction in word accents: accent 1 and accent 2. Accent 2 cannot occur on the last syllable in a sentence (including the only syllable of a monosyllabic word), and always requires an unstressed syllable after an accented syllable. Thus, all monosyllabic words have accent 1, whereas di- and polysyllabic words have either accent 1 or accent 2. Each of the word accents is associated with a tonal pattern that consists of a H(igh) and/or a L(ow). The dialects each make a distinction in word accents by associating a tonal pattern with CV segmental structures with different timing, as we will see in detail in the following sections. The timing difference in word accents exists in each Swedish dialect independently of which type of tonal pattern, either HL, LH, H or L, it takes.[50] As a brief description, take the negation *inte*, an accent 2 word and a typical diagnostic for the presence or absence of OS, as an example. The accent is associated with H (i.e. H*L) in East Swedish (e.g. Stockholm), whereas it is associated with L (i.e. L*H) in South Swedish (e.g. Malmö). The pitch simply falls on the first syllable *in-* in East Swedish, whereas it rises and then falls on it in South Swedish. That is, the peak occurs on the first half of the first syllable *in-* in the former, but on its second half in the latter. It is normally said that the pitch gesture occurs early in the former but is delayed in the latter. The early pitch gesture is represented as *HL*, and the delayed pitch gesture as *LH*. There are also dialects that have no distinction in word accents, including Finland Swedish (e.g. Helsinki). The pitch gesture of this variety is simply monotonal.[51]

One of the important intonational properties of Swedish is that the focus of a sentence is realized by a focal H tone, i.e. a focal H contour. This H contour was successfully separated from the H pitch gesture at the word accent level by Bruce (1977). In dialects such as East and West, the focal H contour is added to the H pitch gesture of an accented syllable of a focused word. Due to this property, they are called the two-peaked dialects. The focal H may contain some unstressed syllable(s) or even word(s). The syllable(s) or word(s) contained in the focal H are unaccented, but the pitch level on them becomes higher than that on the accented syllable of a focused word. When the next

[49] The description in this section is based on Bruce (1977), Bruce and Gårding (1978), Bruce (1982, 1994, 2005, 2007).

[50] Bruce (2005) proposes LHL as a basic pattern, with which attempts are made to solve the problem of the leading H of accent 1, e.g. in sentence-initial position, and to restrict CV segments that can be associated with tone.

[51] The dialects spoken in the peripheral area, not only Finland Swedish but also the dialect spoken in the far north area, in general do not have a distinction in word accents. The dialect spoken in the far north area was not investigated here, since it is similar to Finland Swedish.

stressed syllable is part of an accent 2 word, the focal H contains that syllable as well and the pitch peak occurs on it. When the next stressed syllable is part of an accent 1 word, the pitch falls on that syllable. Thus, accent 2 words manifest more obvious pitch gestures than accent 1 words. In dialects such as South, North, Finland Swedish and Dalecarlian, the focal H contour overlaps with the H pitch gesture of an accented syllable of a focused word. Due to this property, they are called the one-peaked dialects.

The two-peaked and one-peaked dialects show a systematically different behavior between them. The two-peaked type has a two-level pitch prominence and maintains a word accent on non-focused words. After the point of the focal H, downstep of the following non-focal accents occurs, producing a difference in pitch level between focal and non-focal accents.[52] The pitch gesture on the accented syllable of a focused word must occur towards the following syllable from which the focal H starts during a short time span. The timing of the pitch gesture thus tends to occur early in this type.

In the one-peaked type, on the other hand, the focus of a sentence is realized by widening the range of the pitch gesture on the focused word. To downgrade post-focal accents, deletion of word accents can occur instead of downstep. This deaccentuation can occur only when it is especially required. When it occurs, the distinction in word accents is lost (/neutralized). Since the focal H contour overlaps with the H pitch gesture on the accented syllable of a focused word, the prominence level in this type is perceived as either accented or unaccented. There is no time pressure for a pitch gesture that could arise between the accented syllable of a focused word and an additional focal H point as in the two-peaked dialects. The timing of the pitch gesture thus tends to occur late.

3.2.1.1. Object Shift in Swedish two-peaked varieties (East and West)[53]

In East Swedish spoken, e.g. in Stockholm, an accent is associated with L for accent 1, which is represented as HL*. For accent 2, an accent is associated with H, which is represented as H*L. (62) illustrates the pitch contour of accent 2 words. The relevant accent 2 words are *lämna* 'leave' and *långa* 'long'. *Några* 'some' between them is unaccented. The main verb is contrastively focused in this case. A focal accent is located on the first syllable *läm-* of *lämna*, where the pitch falls.[54] The pitch begins to rise again on its second syllable *-na*, which is the starting point of a focal H contour. The focal H contains the unaccented *några* and the first syllable *lån-* of *långa*, the latter of which has the pitch peak.

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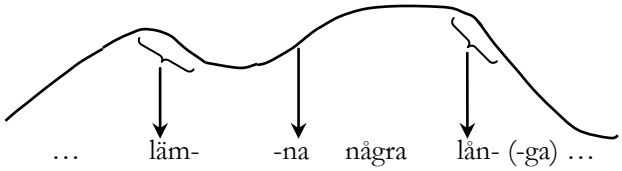
[52] In pre-focal positions, on the other hand, downstep does not occur.

[53] The description on the intonational properties of these varieties is based on Bruce (1977, 2007).

[54] Braces indicate the range of the pitch gesture of a relevant accented syllable, i.e. the range of H*L from the H on which the accent occurs to the following L, here.

The pitch then falls and remains low until the end of the sentence. The pitch contour is characterized as a 'high plateau'.

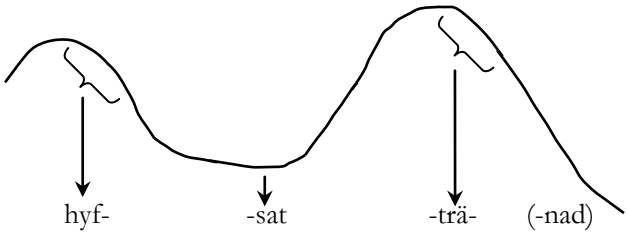
(62) Man vill LÄMNA några långa nunnor. [Swe.]
man wants leave some long nuns
'One wants to leave some tall nuns.'



(Bruce 1977:42, Fig. 5)

Accent 1 of West Swedish spoken, e.g. in Göteborg, is represented as H*L*, and accent 2 as H*L.[55] Compared with East, the focal H contour starts later after the pitch gesture of a focused word. After the focal point in a sentence-medial position, the pitch becomes extremely high on a post-focal accent, which actually marks the preceding word as focused. (63) is the pitch contour of a phrase that consists of a focused adverb *hyfsat* and a non-focused adjective *tränad*, both of which are accent 2 words. The pitch falls after the first syllable *hyf-* of *hyfsat* and lowers on its second syllable *-sat*. The pitch rises again on the first syllable of *tränad*, *trä-*, which is the pitch peak. The pitch then lowers on its second syllable *-nad*. The pitch draws an 'upslope' picture.

(63) HYFSAT tränad 'REASONABLY well-trained' [Swe.]



(Bruce 2007:129, Fig. 5c)

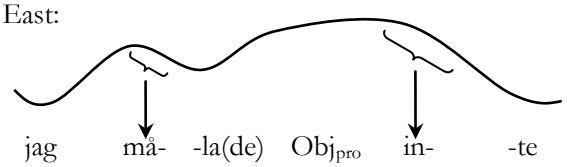
As stated in § 3.1.1, a sentence must have one and only one focus; there are no sentences that do not have a focus (Lambrecht, 1994). The literature (e.g. Vilkuna, 1995) also confirms that cross-linguistically, the focus of a sentence is carried by a (main) verb both in (contrastive) verb-focus and polarity-focus. Hence, it is naturally assumed that the main verb carries the focus of the OS construction, i.e. the focus of the answer sentence in *did you paint the wall? – no, I didn't paint it*.

[55] Asterisks on both H and L indicate a bitonal accent.

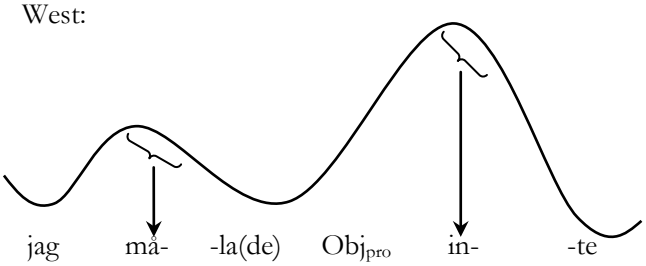
The prediction is that in the two-peaked dialects, a focal H contour should occur after the accent 2 main verb in the OS construction, as illustrated in (64).[56,57] In East (64a), after the pitch falls on the first syllable *må-* of the main verb *målade*, the focal H contour should start from its second syllable *-la(de)*. It should contain a shifted weak pronominal object. The negation is an accent 2 word; thus, the next accentable syllable is its first syllable *in-*. The focal H should contain that syllable, on which the pitch peak should also be located. In West (64b), after the pitch falls after the first syllable *må-* of the main verb, the focal H contour should start around from an unaccented object pronoun, slightly delayed compared with East. The pitch should reach the peak on the first syllable *in-* of the negation.

(64) Jag målade den/honom inte. [Swe.]
I painted/portrayed it/him not
'I didn't paint it/portray him.'

a. East:



b. West:



Actual pitch contours of the constructions relevant to OS in East and West are presented below. First, let us consider the cases of simple tense forms. (65-66) are the most typical pitch contours observed in simple tense forms in which OS occurs. Contrary to the predictions described above, the pitch does not rise

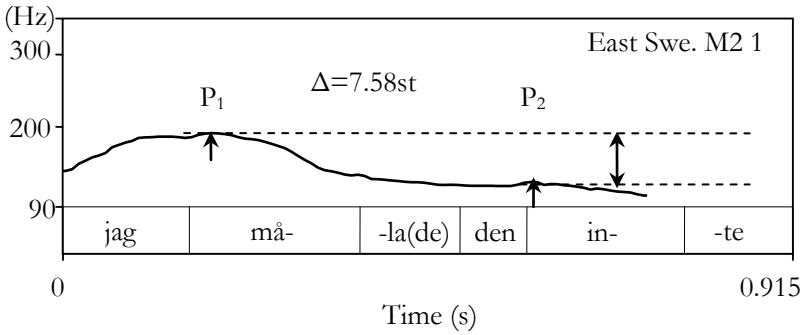
[56] The final syllable *-de* of the main verb is dropped in almost all cases. Thus hereafter, I notate it by attaching it in parentheses to the second syllable as in *-la(de)* in all notations.

[57] Some in the audience at the Nordic Prosody XI suggested that it should not be predicted from the beginning that the focal H occurs in the OS construction: the main verb would only keep an (inherent) word accent due to its given status. However, a focal H should occur in any sentence for the information-structural reason stated above. The focal H in fact occurs even in an all-new sentence that does not contain an 'obviously focused' element such as contrastive focus (Bruce 2007). Thanks to Gilbert Ambrazaitis, Merle Horne and Sara Myrberg for the discussion of this point. I show below that a focal H can actually occur in the OS construction.

again on the second syllable *-la(de)* of the main verb *målade* after its accented first syllable *må-* in East. The pitch lowers on the unaccented weak pronominal object. The pitch does not rise on the next accentable syllable, i.e. the first syllable *in-* of the negation, either. This pitch contour is observed in both cases of monosyllabic (65a) and disyllabic (66a) object pronouns. In West, the pitch tends to slightly rise on a weak pronominal object. Contrary to the prediction, however, the pitch level on the first syllable *in-* of the negation becomes lower than the one on the accented first syllable *må-* of the main verb in both cases of monosyllabic (65b) and disyllabic (66b) object pronouns. These contours show that the predicted focal H contour typically does not occur after the accented main verb in the OS construction of simple tense forms in East and West.

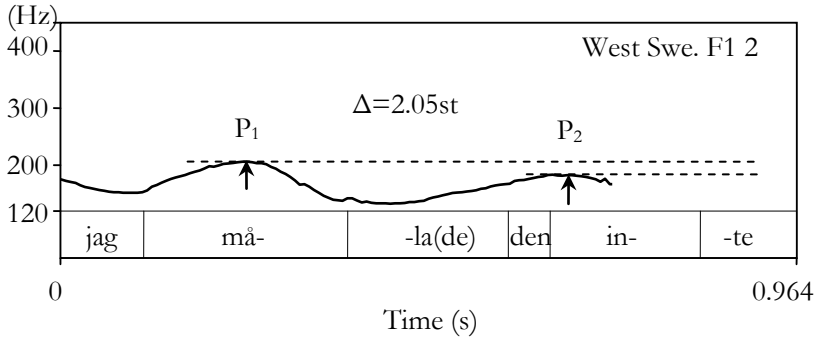
(65) Simple tense forms with a monosyllabic object pronoun:
Jag målade den inte. (I painted it not 'I didn't paint it')

a. East:[58]



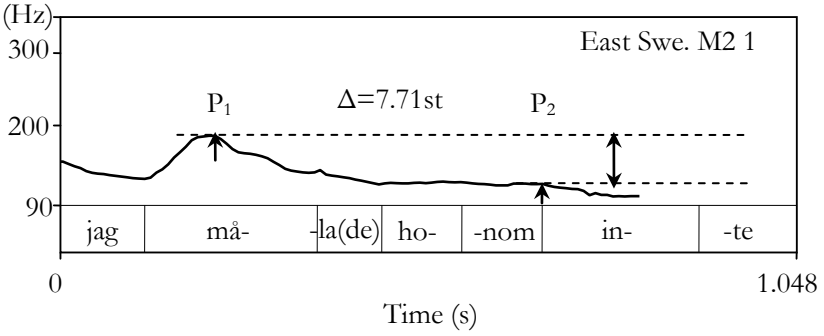
[58] Notations: *East Swe. M2 1* at the upper right stands for the dialectal name, the sex, the informant number and the token number (token number 1 through 5); ⌟ stands for downstep, the value *7.58* for the downstep size, *st* for semitone, and P_1 and P_2 for two key pitch points (see § 3.1.2). The second syllable *-te* of the negation does not appear in a pitch contour in some cases due to either its extremely low pitch or apocope in sentence-final position.

b. West:

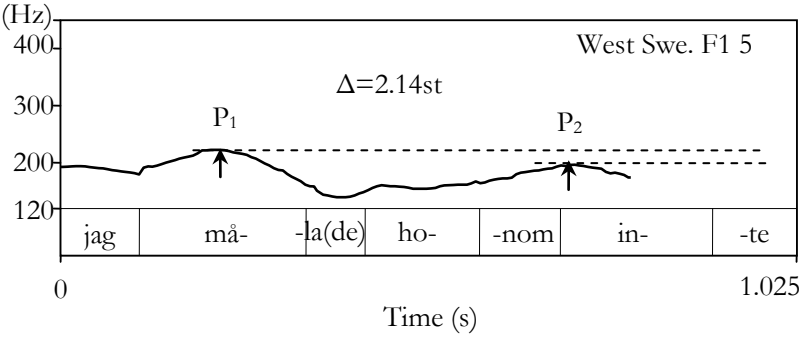


(66) Simple tense forms with a disyllabic object pronoun:
Jag målade honom inte. (I portrayed him not 'I didn't portray him')

a. East:



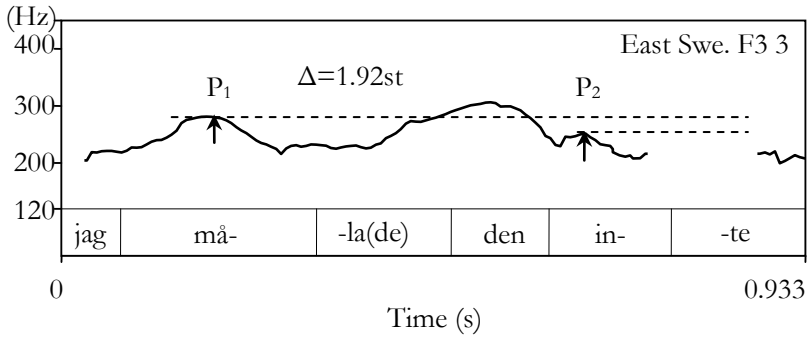
b. West:



One more pitch contour observed in several cases is illustrated in (67). The pitch rises on the second syllable *-la(de)* of the main verb and the pitch level on the unaccented weak pronominal object is beyond the one on the accented first

syllable *må-* of the main verb. This contour illustrates that a focal H contour can actually occur in the OS construction of simple tense forms. However, the pitch peak occurs on the shifted weak pronominal object and the pitch lowers on the first syllable *in-* of the negation.[59]

(67) (=65a)

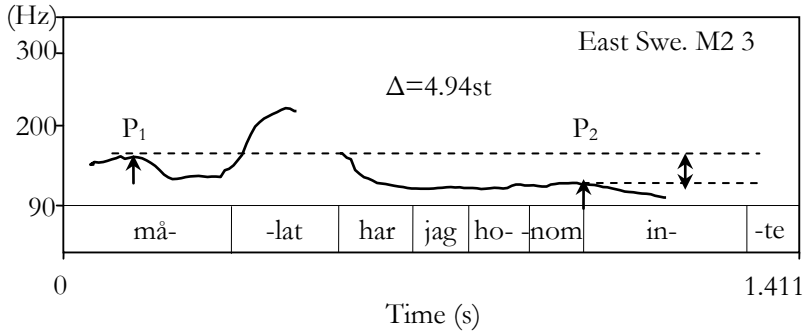


See also the pitch contour of another OS construction, Verb Topicalization (68). The pitch peak is typically located on the second syllable *-lat* of the sentence-initial past participle *målat*. The pitch falls immediately after it and maintains a low level until the end of the sentence. The expected focal H that would span the Aux, the subject, the object pronoun and the first syllable of the negation does not occur. The pitch level on the first syllable of the negation is lower than that on the accented first syllable of the past participle in both East (68a) and West (68b).

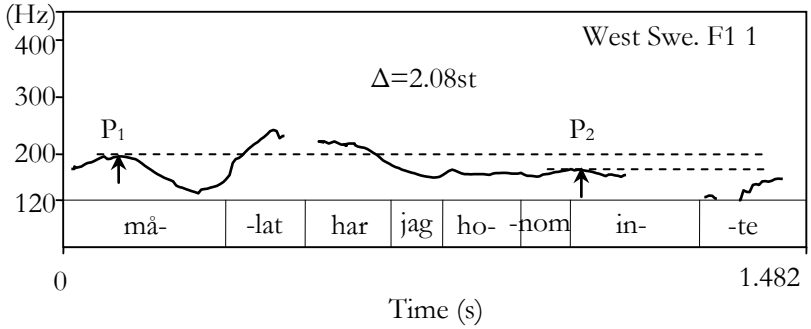
[59]It might be argued, following the literature, e.g. Roll et al. (2009), that the pitch gesture of a main verb is not that of a focal accent, but a H left-edge boundary tone. Their data concern the case in which a focal H occurs on a sentential element other than the one at issue, specifically the one located in sentence-final position. Since the focus of a sentence is carried by the sentential element on which the focal H occurs, another focal H must not occur on the sentential element at issue in their data. In the case of the OS construction, however, there are no candidates other than the main verb on which the focal H can occur. As has been stated before, there are no sentences without a focus (Lambrecht 1994). It is cross-linguistically confirmed that the main verb carries the focus in the context of polarity-focus and verb-focus. If the pitch gesture of the main verb were not that of the focal H, the OS construction would not have the focus, which would violate the basic principle of information structure. It might be also argued that the negative particle *nej* in *nej, jag målade den inte* 'no, I didn't paint it' is assigned the highest prominence in the answer sentence, since it is the only new lexical item in the answer sentence. It is questionable whether an answer particle such as 'no' should be part of the intonation contour of the (answer) sentence, since it is separated from the rest of the sentence and composes its own intonational phrase, as illustrated by the comma after it. Hence, it is plausible to think of the pitch gesture of the main verb as that of the focal accent. See also Roll et al. (2007) for an account of OS based on event-related potentials (ERPs).

(68) Verb Topicalization:
Målat har jag honom inte.
(portrayed have I him not 'I haven't PORTRAYED him')

a. East:



b. West:

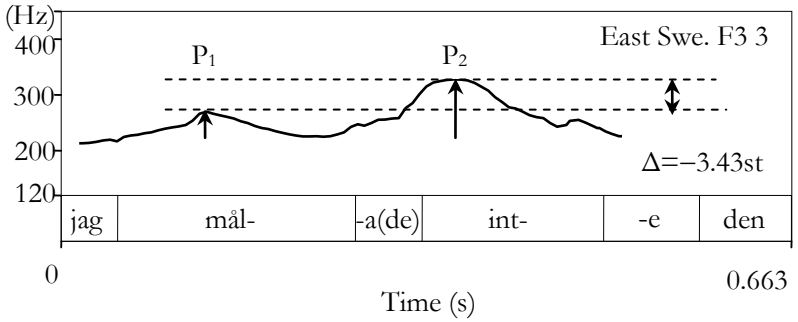


All of these data show that downstep occurs in the OS construction. That is, contrary to the predictions, the F0 on the first syllable *in-* of the negation, the next accentable syllable, becomes lower than the F0 on the accented syllable of a main verb in the OS construction in East and West, regardless of whether a focal H contour occurs or not.

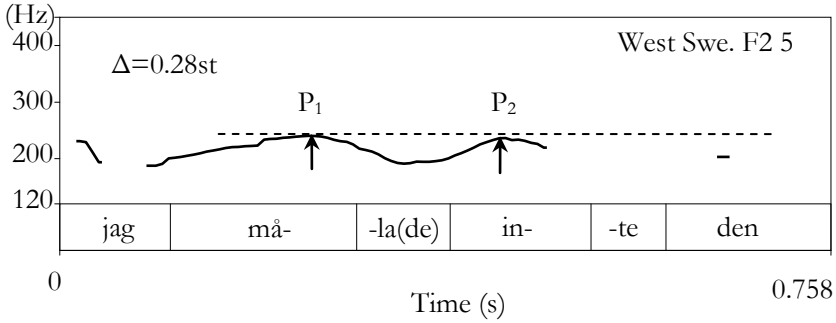
Let us compare with the pitch contours of the non-OS construction of simple tense forms. The pitch rises on the negation after the second syllable of the main verb in some cases (69a). The pitch level on the negation is almost the same as that on the main verb in others (69b). In most cases, the pitch does not lower after the accented syllable of the main verb to a considerable extent; see also (70a-b). This indicates that the pitch level on the negation in the non-OS construction does not become as low as that on the negation in the OS construction. That is, the ratio of downgrading tends to be smaller in the non-OS construction than in the OS construction. Hereafter, I do not present pitch contours of the non-OS construction of simple tense forms. The statistical data of this construction is presented in chapter 4, in addition to that of the other construction types.

(69) Simple tense forms with a monosyllabic object pronoun:
Jag målade inte den. (I painted not it 'I didn't paint it')

a. East:

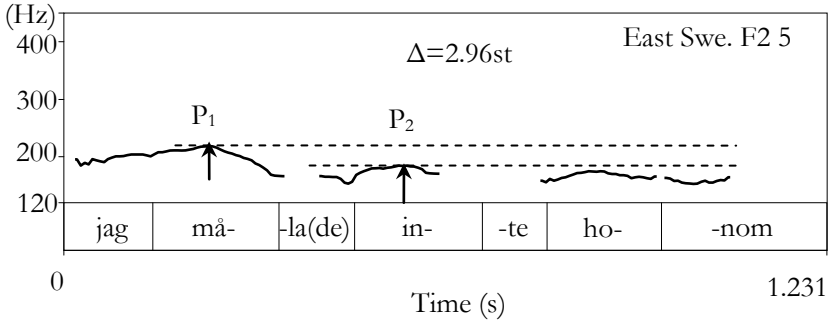


b. West:

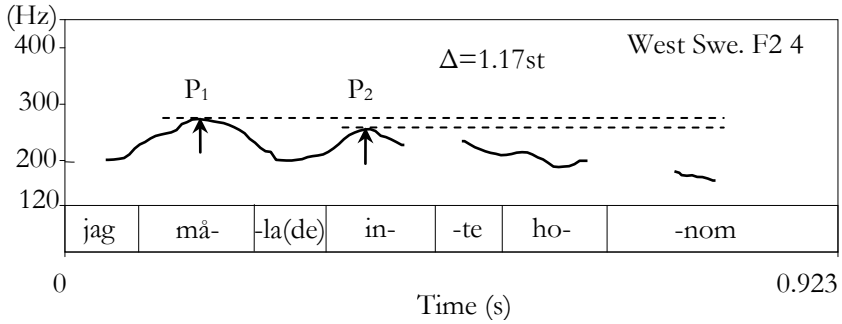


(70) Simple tense forms with a disyllabic object pronoun:
Jag målade inte honom. (I portrayed not him 'I didn't portray him')

a. East:



b. West:

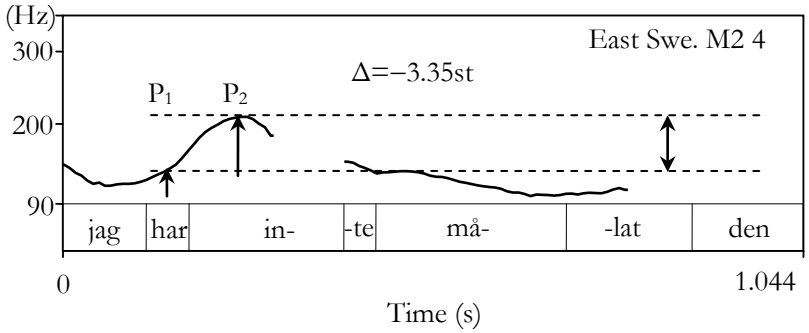


Let us go on to the cases in which OS does not occur, i.e. complex tense forms and embedded clauses. The relevant context regarding complex tense forms is polarity-focus. It is naturally assumed that in the answer sentence of *have you painted the wall? – no, I haven't painted it*, the focus is carried by the past participle main verb. The relevant context regarding embedded clauses is clausal argument-focus. In the answer of *what did you say? – I said that I didn't portray him*, the embedded main verb is most likely to carry the focus, though the object pronoun can also carry the focus.

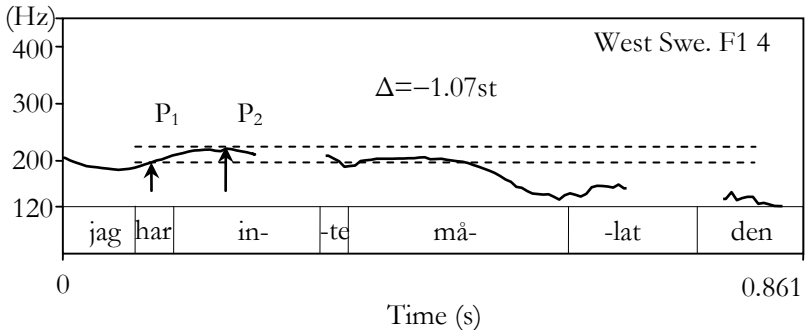
In complex tense forms, the pitch peak is located mostly on the first syllable *in-* of the negation in both East (71-72a) and West (71-72b), regardless of whether a sentence contains a monosyllabic or disyllabic pronoun. The final pitch peak occurs on the first syllable *må-* of the past participle main verb *målat*. In embedded clauses, the pitch peak can occur either on the negation, on the embedded main verb or on the object pronoun in sentence-final position in East. (73a) illustrates the case in which the pitch peak occurs on the first syllable *må-* of the embedded main verb. The pitch peak tends to occur on the object pronoun in sentence-final position in West, as illustrated in (73b).

(71) Complex tense forms with a monosyllabic object pronoun:
Jag har inte målat den. (I have not painted it 'I haven't painted it')

a. East:

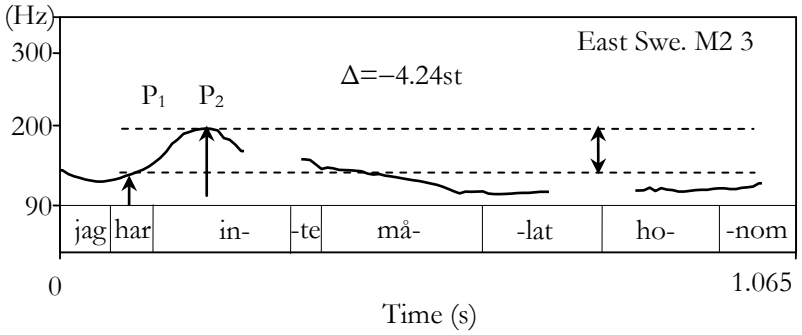


b. West:

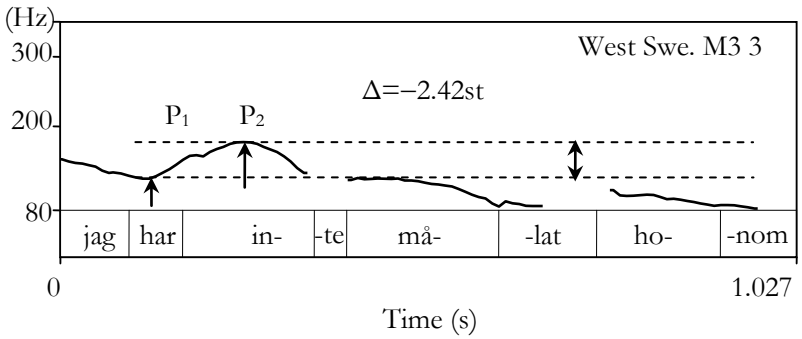


(72) Complex tense forms with a disyllabic object pronoun:
Jag har inte målat honom.
(I have not portrayed him 'I haven't portrayed him')

a. East:

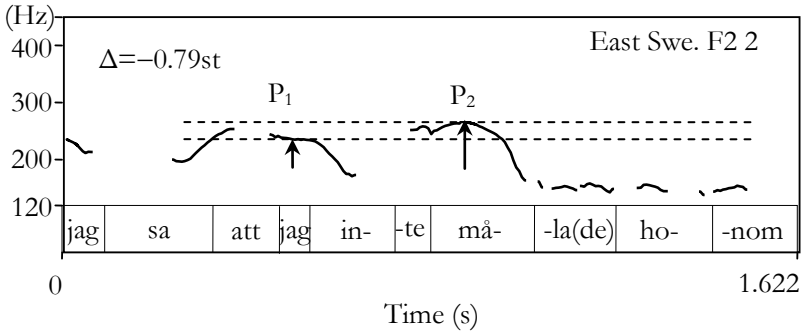


b. West:

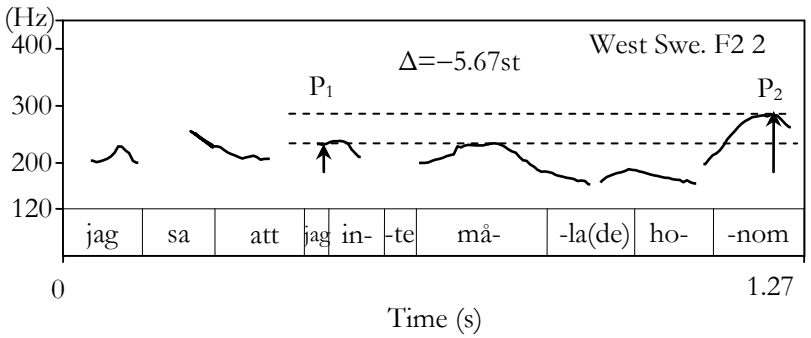


(73) Embedded clauses with a disyllabic pronoun:
Jag sa att jag inte målade honom.
(I said that I not portrayed him 'I said that I didn't portray him')

a. East:



b. West:



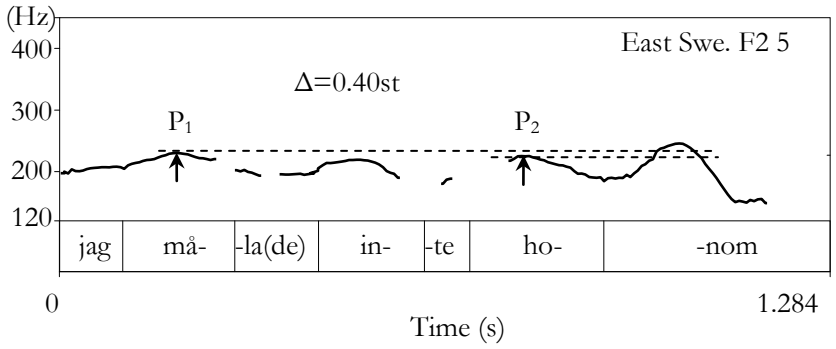
The point is that the pitch peak occurs on a sentential/clausal element located 'after' the element that cannot be directly followed by an object pronoun, i.e. the Aux in complex tense forms (71-72) and the subject pronoun in embedded clauses (73). Specifically, the pitch peak occurs on the negation immediately after the Aux in complex tense forms. In embedded clauses, the pitch peak can occur either on the negation, on the embedded main verb or on the object pronoun in sentence-final position, all of which are located in a position after the embedded subject. The final pitch peak is most likely to occur on the in-situ main verb in both cases. These data show that downstep does not occur in the constructions in which OS does not occur. That is, the pitch still rises after the sentential/clausal element which an object pronoun cannot follow directly.

A comparison with the case of contrastive argument-focus of object pronouns (74) is useful here. The first key pitch point is on the first syllable *må-* of the main verb and the second one on the accented first syllable *ho-* of the

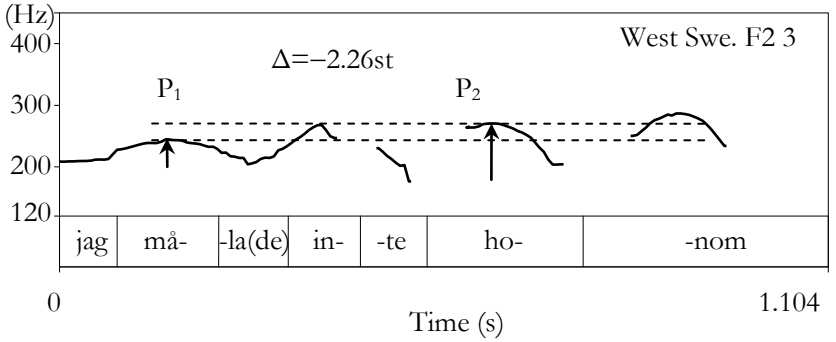
in-situ object pronoun. The pitch does not lower until the second syllable of the object pronoun, *-nom*, on which the pitch peak of the focal H occurs in most cases. Hereafter, I do not present pitch contours of contrastive argument-focus. The statistical data of this sentence type is presented in chapter 4.

(74) Simple tense forms with a strong (disyllabic) object pronoun:
Jag målade inte HONOM. (I portrayed not him 'I didn't portray HIM')

a. East:



b. West:

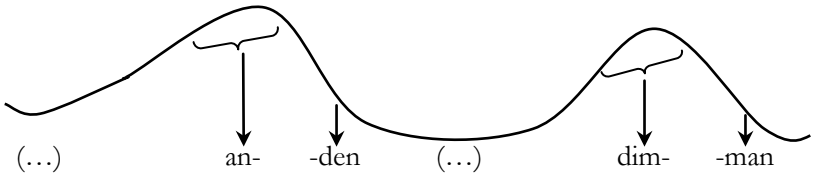


A note is needed here. The pitch peak is most likely to occur on a focused sentential element, but that is not always so. As stated in § 3.2.1, the pitch level on the syllable(s) or word(s) contained in the focal H becomes higher than that on a focused word but they are unaccented. The pitch peak can occur on the negation in complex tense forms and embedded clauses, but that does not imply that the negation itself is focused, though it can be. The final pitch peak mostly occurs on the in-situ main verb that carries the focus in both cases. Thus, the location of the pitch peak indicates that a focused sentential element is there or quite close to it, but the sentential element that receives the pitch peak is not always focused.

3.2.1.2. Object Shift in Swedish one-peaked varieties (South, North and Finland Swedish)[60]

Accent 1 of South Swedish spoken, e.g. in Malmö, is represented as H*L, and accent 2 as L*H. The focus in a sentence-medial position is realized by an extreme lowering of the pitch in the position immediately after a focused word. The focus in sentence-final position is realized by raising the pitch extremely high. Below, both *anden* 'the spirit' and *dimman* 'the fog' are accent 2 words, and the former carries the focus of the sentence. The pitch starts to rise on the accented first syllable of *anden*, reaches the first peak on the latter part of that syllable, and falls immediately after it. The pitch starts to rise again on the accented first syllable of *dimman*, reaches the second peak on the latter part of that syllable, and falls after it. The pitch level of the second peak on *dim-* is slightly lower than that of the first peak on *an-*. The pitch contour is characterized as a 'low plateau'.

(75) Jag har sett anden i dimman. [Swe.]
I have seen spirit-the in fog-the
'I have seen the spirit in the fog.'



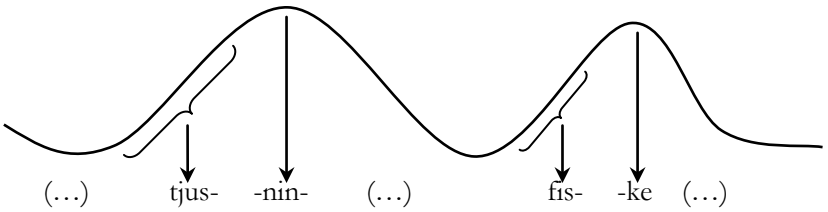
(Ambrazaitis and Bruce 2006:5, Fig. 1)

North Swedish is spoken in wide areas. Accent 1 of the North dialect spoken, e.g. in North Bothnia (*Norrbotten*) and West Bothnia (*Västerbotten*), is represented as L*H*, and accent 2 as L*H. The H of accent 2 occurs strictly on the syllable following an accented syllable. This delayed peak of accent 2 as well as the peak of accent 1 occur independently of whether a word is focused or not. The focus of a sentence is realized by an extra high pitch in both sentence-final and non-final positions. Below, both *tjusningen* 'the charm' and *fiske* 'fishing' are accent 2 words and accented. The pitch starts to rise from the first syllable *tjus-* of *tjusningen*, reaches the first peak on its second syllable *-nin-*, and falls after it. The pitch starts to rise again from the first syllable *fis-* of *fiske*, reaches the second peak on its second syllable *-ke*, and falls after it. The pitch level of the second peak on *-ke* can be as high as that of the first peak on *-nin-*. The pitch pattern is a 'downslope'.[61]

[60] The description of the intonational properties of these varieties is based on Bruce (2005, 2007) and Ambrazaitis and Bruce (2006).

[61] Most of the Swedish dialects have a complementary quantity system that allows a sequence

(76) svårt å förklara den där tjusningen med fiske egentligen [Swe.]
hard to explain the there charm with fishing really
'hard to explain the charm of fishing really'



(Bruce 2007:134, Fig. 7a)

Finland Swedish is spoken in wide areas too.[62] Finland Swedish does not have a distinction in word accents. An accent is associated with a monotonal L in the northern area and with a monotonal H in the southern area. The timing of the pitch gesture of the Finland Swedish dialect spoken, e.g. in Helsinki, is late and similar to that of the accent 2 gesture of South. (77) is an illustration of the pitch contour of Finland Swedish.[63] *Syntetisk* (accent 2) carries the focus of the sentence. The secondary prominent word is *datatekniken*.[64] The pitch begins to rise on the second syllable *-te-* of *syntetisk*, reaches the first peak on its third syllable *-tisk*, and falls after it. The pitch begins to rise again on the first syllable *da-* of *datatekniken*, reaches the second peak on its second syllable *-ta-*, and falls on its third syllable *-tek-*. The pitch then remains low until the end of the sentence. The second pitch peak on *-ta-* is lower than the first pitch peak on *-tisk*. The pitch pattern is a 'low plateau'.

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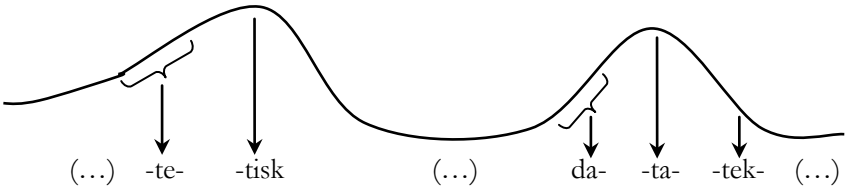
of a short vowel and a long consonant, i.e. VC:, and one of a long vowel and a short consonant, i.e. V:C. The North dialect spoken in Västerbotten maintains the old Swedish quantity system that allows a sequence of a short vowel and a short consonant, i.e. VC, and one of a long vowel and a long consonant, i.e. V:C: (Strangert 2001).

62 Finland Swedish maintains the old Swedish quantity system in the same way as the North dialect spoken in Västerbotten. See footnote 61. According to the literature (Strangert 2001, Schaeffler, Wretling and Strangert 2002), the vowel length spoken in Vörå is the longest among the Swedish varieties.

63 This is taken from a simulation test by Bruce (2005). He admits that the simulation test is not complete concerning Finland Swedish. I present the pitch contour for reference.

64 This word is a compound that consists of *data-* and *-tekniken*. The primary stress occurs on *da-* and the secondary stress on *ni-*. The pitch gesture of compounds differs among the Swedish dialects.

(77) Der er en syntetisk dialekt som datatekniken fixat. [Swe.]
it is a synthetic dialect that data-technique fixed
'It's a synthetic dialect that was fixed by computer technique.'

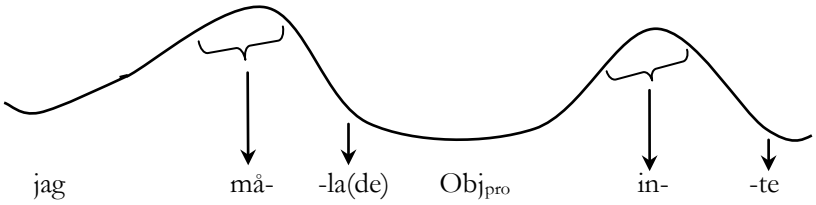


(Bruce 2005:426, Fig. 15.8)

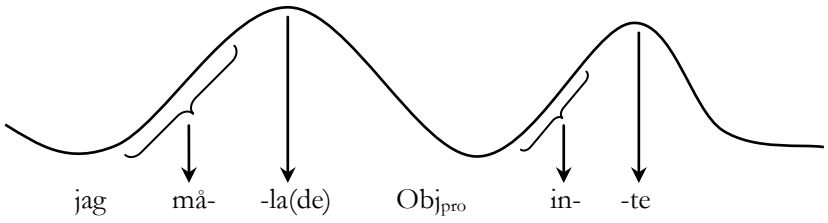
The pitch contours of the OS construction in South, North and Finland Swedish predicted from the descriptions above are illustrated below. In South (78a), the pitch should start to rise on the accented first syllable *må-* of *målade*, reach the first peak on the latter part of that syllable, and fall after it. The pitch should start to rise again on the first syllable *in-* of the negation, reach the second peak on the latter part of that syllable, and fall after it. In North (78b), the pitch should start to rise from the accented first syllable *må-* of *målade*, reach the first peak on its second syllable *-la(de)*, and fall after it. The pitch should rise again from the first syllable of the negation *in-*, reach the second peak on its second syllable *-te*, and fall after it. The second peak on *-te* could be as high as the first peak on *-la(de)*. In the Finland Swedish spoken in the northern area (78c), in which an accent is associated with L, the pitch should start to rise from the accented first syllable *må-* of *målade*, reach the first, highest peak on the second syllable *-la(de)*, and fall after it. The pitch should rise again from the first syllable *in-* of the negation, and reach the second peak on its second syllable *-te*. In the Finland Swedish spoken in the southern area, in which an accent is associated with H, the first syllable *må-* of *målade* and the first syllable *in-* of *inte* should be the pitch peaks.

(78) Jag målade den/honom inte. [Swe.]
I painted/portrayed it/him not
'I didn't paint it/portray him.'

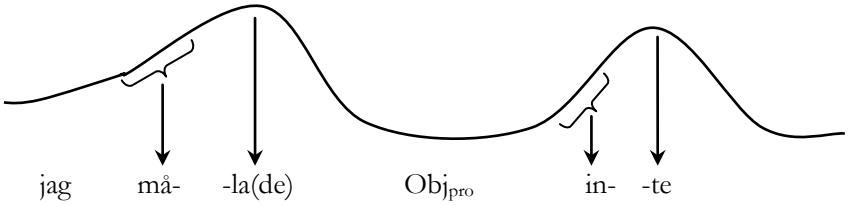
a. South:



b. North:



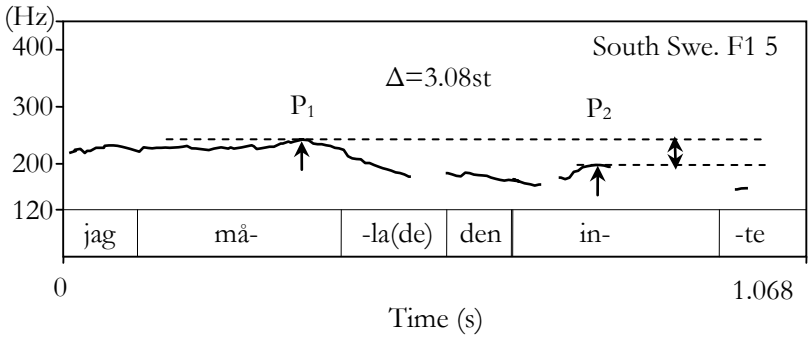
c. Finland Swedish:



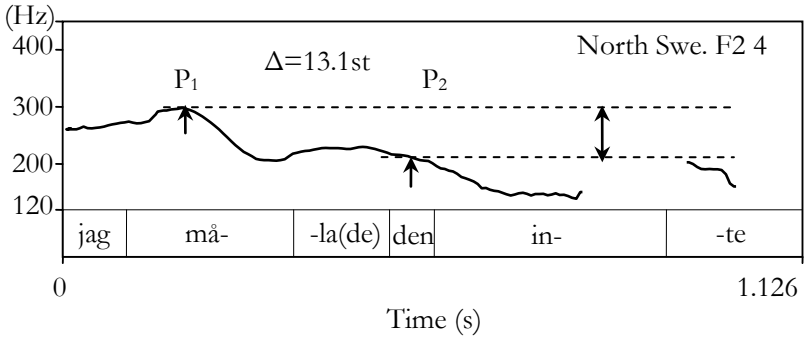
Actual pitch contours are presented below. First, observe the pitch contours of simple tense forms, in which OS occurs. Contrary to the predictions, the pitch rises on the first syllable *in-* of the negation only slightly in both cases of monosyllabic (79a) and disyllabic (80a) object pronouns in South. In North, the pitch peak occurs not on the second syllable, but on the first syllable *må-* of *målade*, in both cases of monosyllabic (79b) and disyllabic (80b) object pronouns. The pitch range from the L to H on the negation is remarkably small. The pitch on the second syllable *-te* of the negation is low, compared with that of the first peak on the first syllable of the main verb. In both the northern and southern varieties of Finland Swedish, the pitch peaks occur not on the second syllable, but on the first syllable of *målade* and *inte*, in both cases of monosyllabic (79c) and disyllabic (80c) object pronouns. The pitch does not rise on (the first syllable of) the negation in most cases.

(79) Simple tense forms with a monosyllabic object pronoun:
Jag målade den inte. (I painted it not 'I didn't paint it')

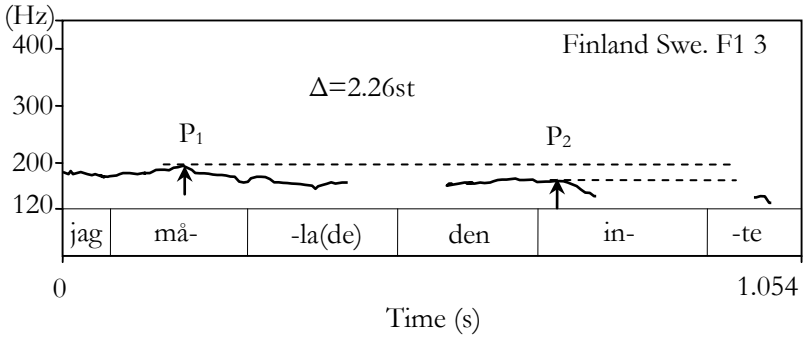
a. South:



b. North:

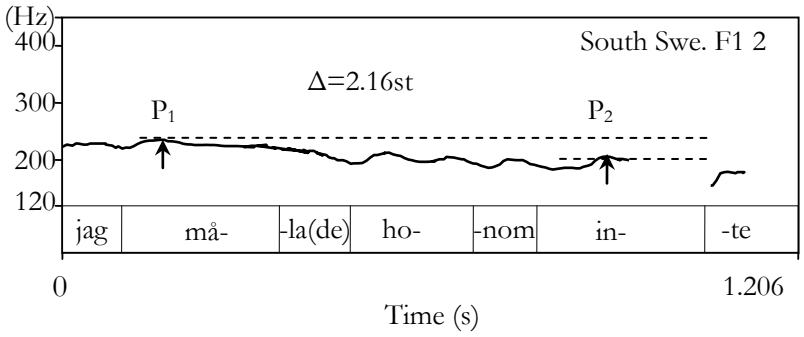


c. Finland Swedish:

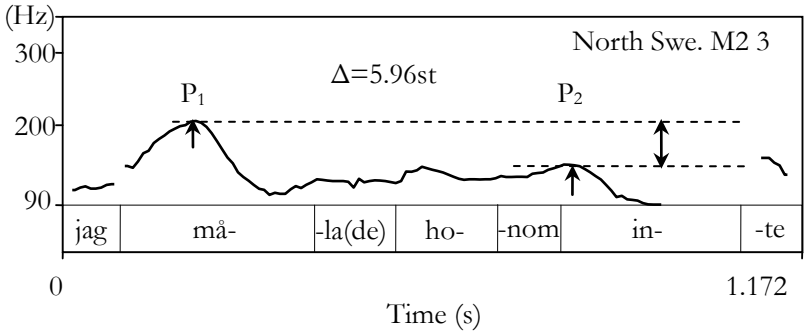


(80) Simple tense forms with a disyllabic object pronoun:
Jag målade honom inte. (I portrayed him not 'I didn't portray him')

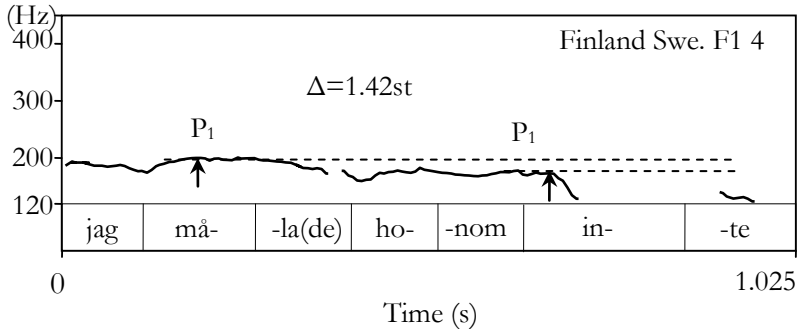
a. South:



b. North:



c. Finland Swedish:

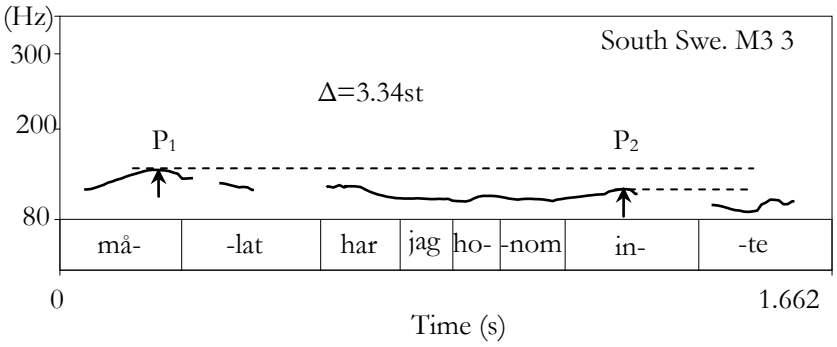


See also the pitch contours of Verb Topicalization, another type of the OS construction. In all of South, North and Finland Swedish, the pitch peak can occur either on the first syllable *må-* of the sentence-initial past participle *målat* (81a), on its second syllable *-at* (81b), or can be delayed and occur even on the

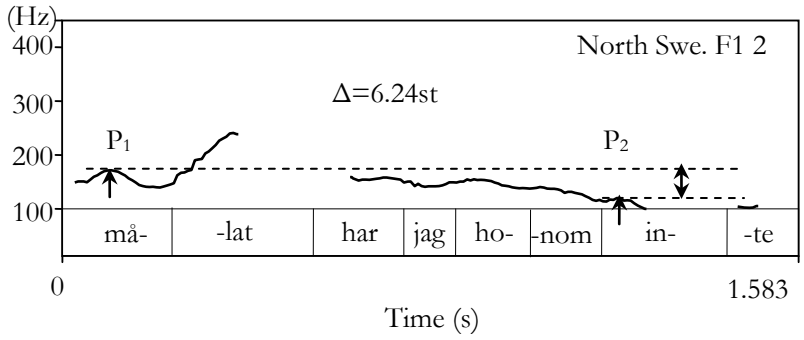
Aux *har* (81c). The pitch falls after the peak and remains low until the end of the sentence.

(81) Verb Topicalization:
Målat har jag honom inte.
(portrayed have I him not 'I haven't PORTRAYED him')

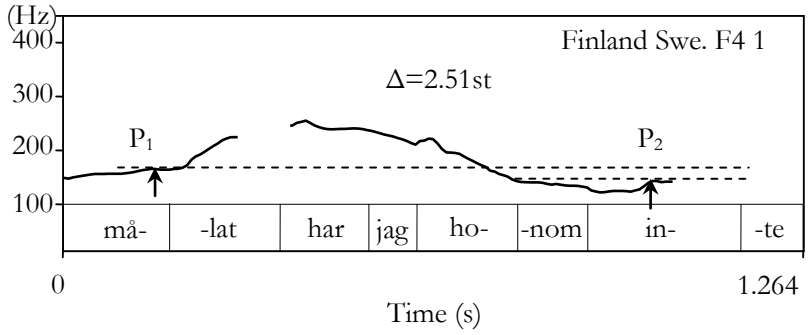
a. South:



b. North:



c. Finland Swedish:

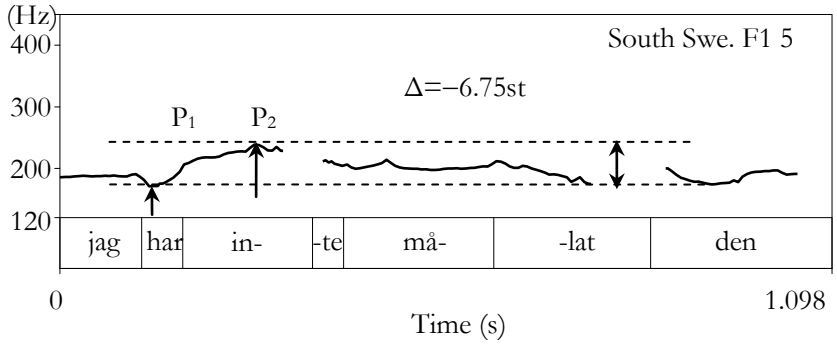


These data illustrate that the F0 on the negation is substantially lower than the F0 on the main verb in the OS construction. That is, downstep occurs in the OS construction in South, North and Finland Swedish too, in the same way as in East and West.

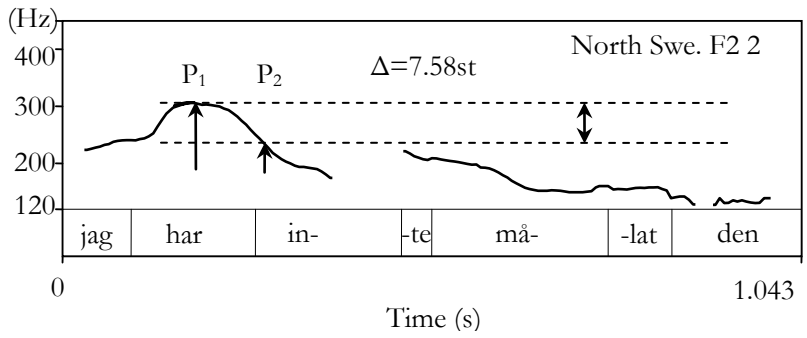
Next, observe the pitch contours of complex tense forms, in which OS does not occur. In South, the pitch peak comes on the first syllable *in-* of the negation in both cases of monosyllabic (82a) and disyllabic (83a) object pronouns. In North, the pitch peak tends to occur on the Aux in both cases of monosyllabic (82b) and disyllabic (83b) object pronouns. This inflexible tendency is exceptional among all the Scandinavian varieties investigated. In Finland Swedish, the pitch peak can come either on the Aux or on the first syllable of the negation, regardless of whether a sentence contains a monosyllabic or disyllabic object pronoun (82-83c). In almost all cases, the final pitch peak occurs on the in-situ past participle.[65]

(82) Complex tense forms with a monosyllabic object pronoun:
Jag har inte målat den. (I have not painted it 'I haven't painted it')

a. South:

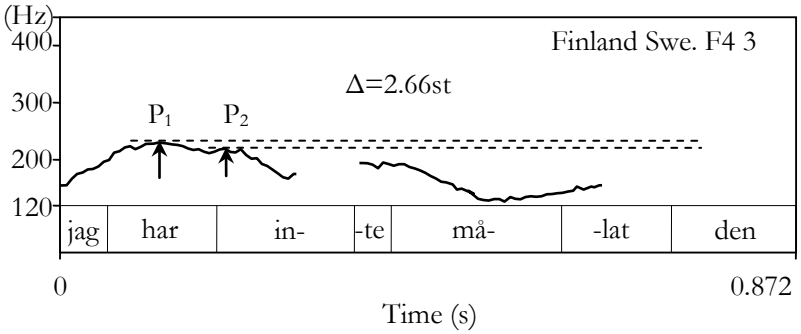


b. North:



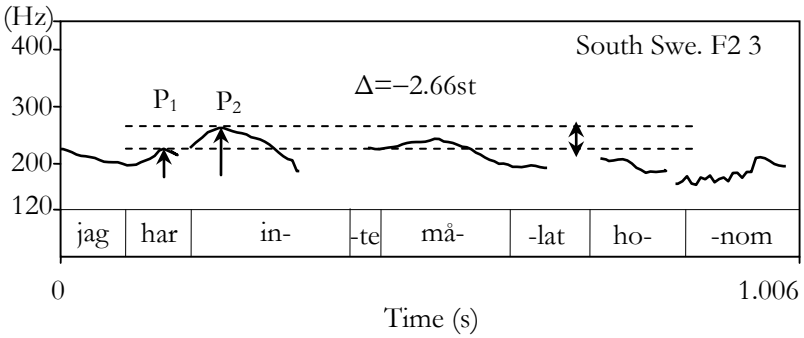
[65] The pitch peak can occur on the in-situ object pronoun in Finland Swedish; see (83c).

c. Finland Swedish:

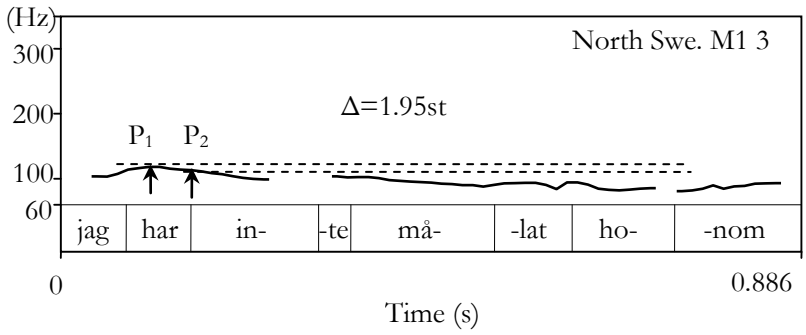


(83) Complex tense forms with a disyllabic object pronoun:
Jag har inte målat honom.
(I have not portrayed him 'I haven't portrayed him')

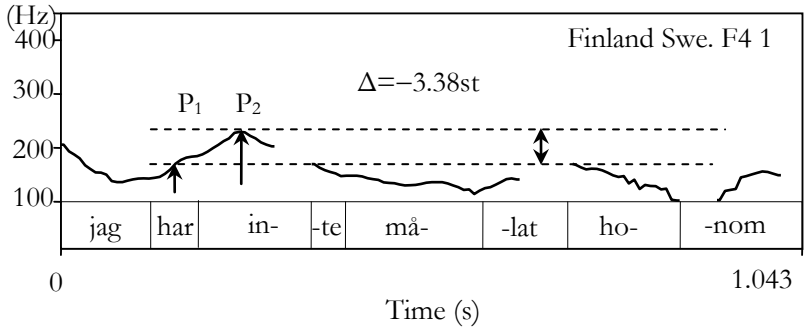
a. South:



b. North:



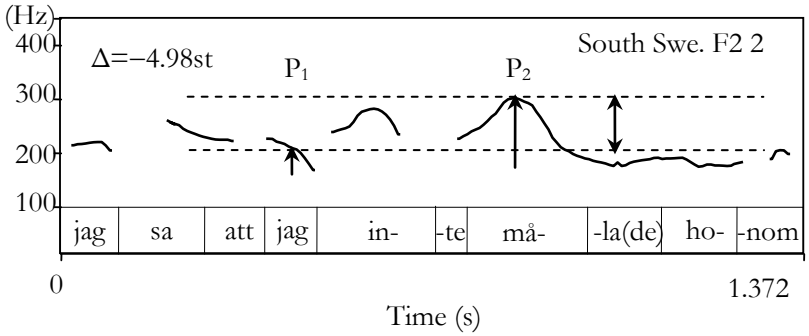
c. Finland Swedish:



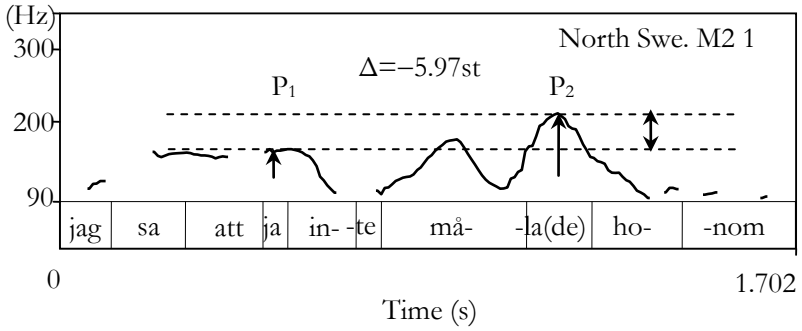
See also the pitch contours of embedded clauses, another type of the non-OS construction. The pitch peak typically occurs either on the first syllable *må-* of the embedded main verb in South (84a) and Finland Swedish (84c) or on its second syllable *-la(de)* in North (84b).

(84) Embedded clauses with a disyllabic object pronoun:
Jag sa att jag inte målade honom.
(I said that I not portrayed him 'I said that I didn't portray him')

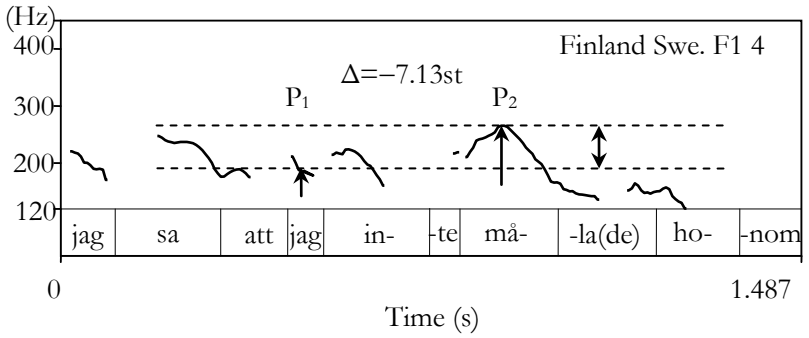
a. South:



b. North:



c. Finland Swedish:



These data illustrate that the pitch does not lower immediately after the sentential elements that cannot be directly followed by an object pronoun, i.e. the Aux in complex tense forms and the embedded subject, in South, North and Finland Swedish. That is, downstep does not occur in the constructions where OS does not occur in these Swedish dialects either.

3.2.1.3. Absence of Object Shift (Dalecarlian and Övdalian)[66]

In this section, I discuss the absence of OS. It has been argued that Övdalian (or the Älvdalen dialect of Swedish; cf. Levander 1909), is the only Scandinavian variety that does not have OS. I show that contrary to this claim, the absence of OS is far more widespread in Dalecarlian in general than reported so far.

Dalecarlian, the Swedish dialect group spoken in the Dalarna area, is

[66] The description of the intonational properties of Dalecarlian is based on Bruce (1977), Bruce and Gårding (1978), and Bruce (2005, 2007). Concerning Övdalian, the description is based on Kristoffersen (2008) and Garbacz (2009).

classified into the one-peaked type. Accent 1 of Dalecarlian is represented as L*H*, and accent 2 as L*H. The H peak of both word accents occurs independently of whether a word is focused or not. The timing of the pitch gesture is very late in Dalecarlian. The focus is realized by raising the pitch extremely high, whether it is in a sentence-medial or sentence-final position. (85) is an illustration of the pitch contour of Dalecarlian.[67] Both *syntetisk* (accent 2) and *datatekniken* are accented and the former carries the focus of the sentence. The pitch starts to rise from the accented second syllable *-te-* of *syntetisk*, reaches the first peak on the latter part of that syllable, and falls after it. The pitch starts to rise again from the accented first syllable *da-* of *datatekniken* and continues to rise up to the second peak on the fourth syllable *-ni-*, on the latter part of which the pitch falls. The pitch of the second peak on *-ni-* can be as high as that of the first peak on *-te-*. The pitch pattern is a 'downslope'.

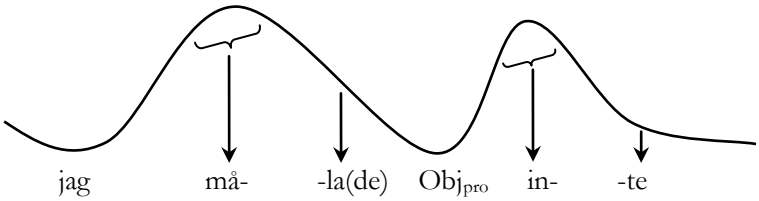
(85) Der er en syntetisk dialekt som datatekniken fixat. [Swe.]
it is a synthetic dialect that data-technique fixed
'It's a synthetic dialect that was fixed by computer technique.'

(Bruce 2005:426, Fig. 15.8))

The pitch contour of the OS construction predicted from the description above is illustrated in (86). The pitch should start to rise from the accented first syllable *må-* of *målade*, reach the first peak on the latter part of that syllable, and fall after it. The pitch should start to rise again from the first syllable *in-* of the negation, reach the second peak on the latter part of that syllable, and fall after it.

[67] This is taken from a simulation test by Bruce (2005).

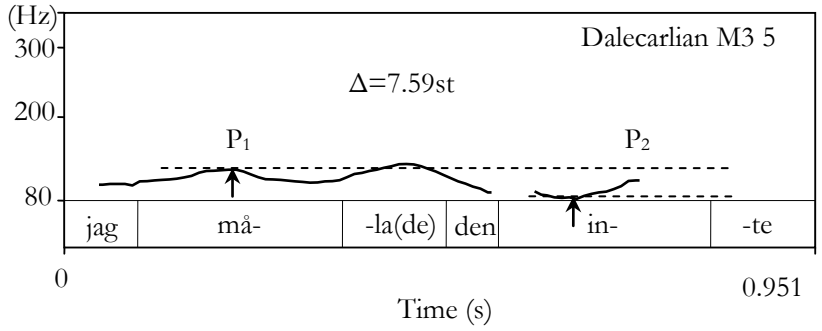
(86) Jag målade den/honom inte. [Swe.]
I painted/portrayed it/him not
'I didn't paint it/portray him.'



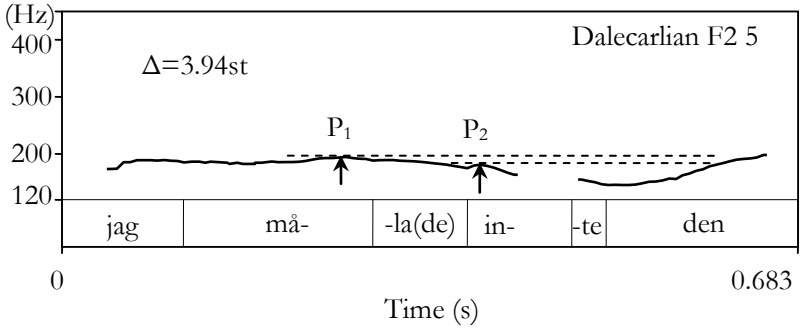
First of all, against expectations, half of the informants, two female speakers, strictly rejected the OS construction for both monosyllabic and disyllabic object pronouns. See the judgment data in Appendix II for the birthplace of each of the informants.

Observe the data of simple tense forms. Contrary to the prediction above, the peak on the main verb mostly occurs not on the first syllable, but on the second syllable *-la(de)*, in both cases of shifted monosyllabic (87a) and disyllabic (88a) object pronouns. In these cases, the pitch does not rise again on the first syllable *in-* of the negation following the object pronoun. The pitch level on the negation, in fact, is lowest of all. Even in the case in which the peak occurs on the first syllable *må-* of the main verb, i.e. in the simple tense form with an in-situ monosyllabic (87b) or disyllabic (88b) object pronoun, the pitch on the second syllable *-la(de)* is almost as high as that on the first syllable. In those constructions, the pitch tends to rise again on the sentence-final object pronoun after the accented main verb.

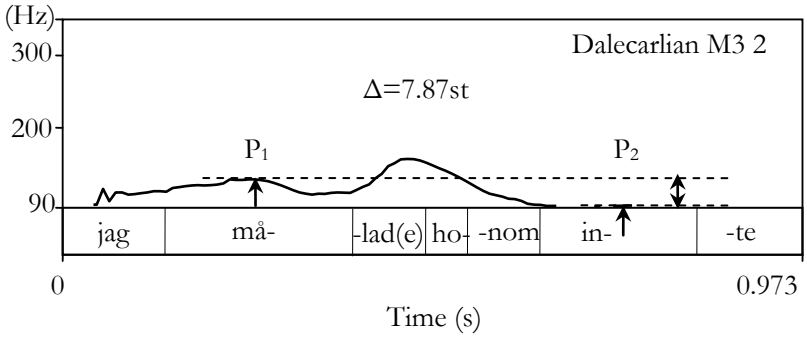
(87) a. Simple tense forms with a shifted monosyllabic object pronoun:
Jag målade den inte. (I painted it not 'I didn't paint it')



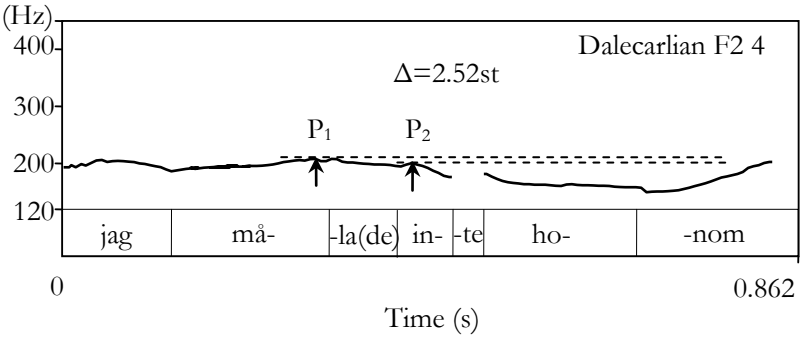
b. Simple tense forms with an in-situ monosyllabic object pronoun: *Jag målade inte den.* (I painted not it 'I didn't paint it')[68]



(88) a. Simple tense forms with a shifted disyllabic object pronoun: *Jag målade honom inte.* (I portrayed him not 'I didn't portray him')



b. Simple tense forms with an in-situ disyllabic object pronoun: *Jag målade inte honom.* (I portrayed not him 'I didn't portray him')[69]

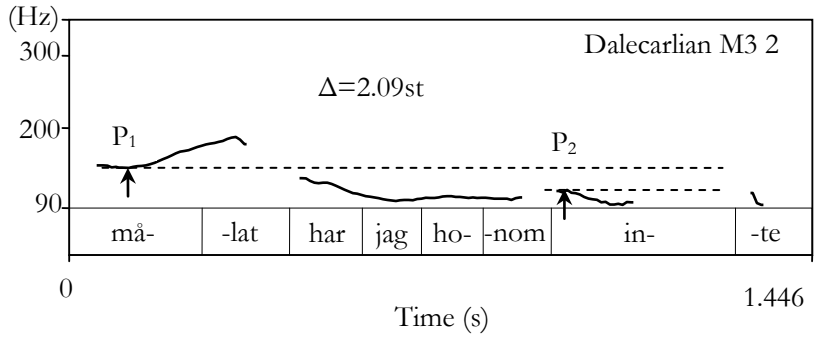


[68] Morphologies of pronouns differ among Dalecarlian. This speaker actually pronounces [han] in (87b).

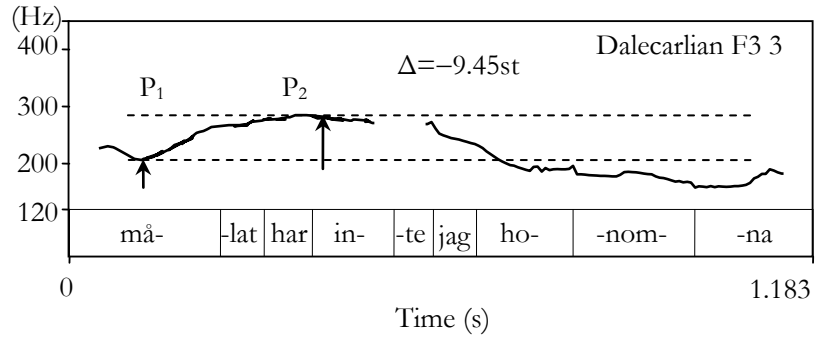
[69] The speaker actually pronounces [hana] in (87b).

Also see the pitch contours of Verb Topicalization. The peak on the past participle main verb mostly occurs not on the first syllable, but on the second syllable *-lat*, in the case of a shifted object pronoun (89a). In this case, the pitch remains low after the peak on the main verb and rises only slightly on the first syllable *in-* of the negation. In the case of an in-situ object pronoun (89b), the pitch peak can be delayed and can occur even on the Aux. In this case, the pitch tends to rise again on the sentence-final object pronoun.

(89) a. Verb Topicalization with a shifted disyllabic object pronoun:
Målat har jag honom inte.
(portrayed have I him not 'I haven't PORTRAYED him')



b. Verb Topicalization with an in-situ disyllabic object pronoun:
Målat har inte jag honom.
(portrayed have not I him 'I haven't PORTRAYED him')[70]



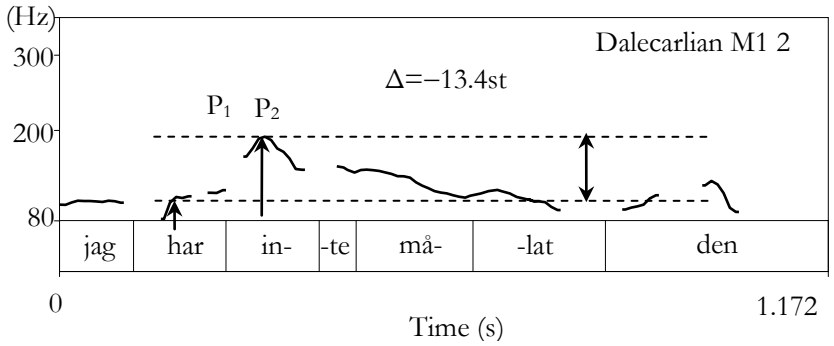
These data show that the pitch gesture of the accented syllable of a main verb is far more delayed than has been considered so far in the constructions that contain an object pronoun in Dalecarlian. Furthermore, they also show that the

[70] As indicated in the pitch contour, the speaker accepts the word order in which the negation precedes the subject for Verb Topicalization. In her dialect, the form of the third person male singular is *honomna*.

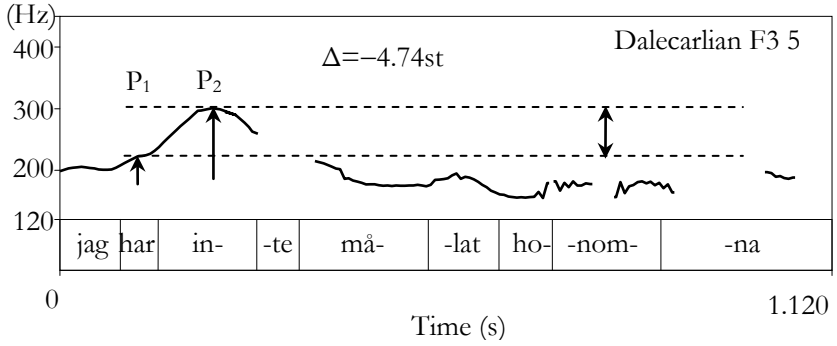
pitch tends to lower in the cases in which OS occurs but does not lower in the cases in which OS does not occur.

Next, observe the pitch contours of complex tense forms and embedded clauses, in which OS does not occur. In complex tense forms, the pitch peak mostly occurs on (the first syllable of) the negation in both cases of monosyllabic (90a) and disyllabic (90b) object pronouns. The final pitch peak occurs either on the past participle or on the in-situ object pronoun. In embedded clauses, the pitch peak typically occurs on the second syllable *-la(de)* of the embedded main verb (91a-b). It is remarkable that though most speakers do not have verb movement in embedded clauses (91a), one speaker has it (91b). The peak on the main verb typically occurs not on the first syllable, but on the second syllable *-la(de)* in both cases of embedded clauses; the pitch rises on the second syllable even slightly in complex tense forms too. These data illustrate that the pitch gesture of the accented syllable of a main verb is in general substantially delayed in the constructions that contain an object pronoun in Dalecarlian.

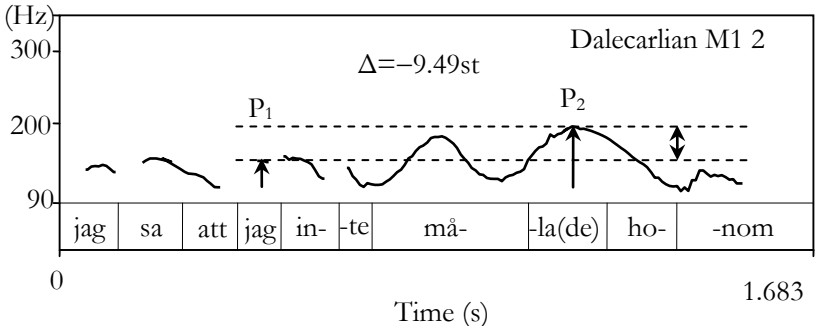
(90) a. Complex tense forms with a monosyllabic object pronoun:
Jag har inte målat den. (I have not painted it 'I haven't painted it')



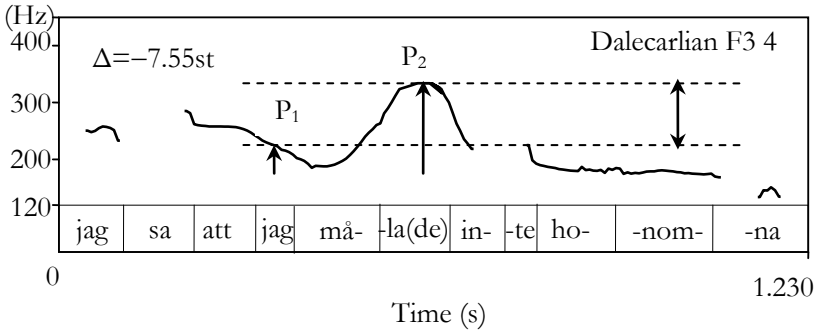
b. Complex tense forms with a disyllabic object pronoun:
Jag har inte målat honom.
(I have not portrayed him 'I haven't portrayed him')



(91) a. Embedded clauses without main verb movement:
Jag sa att jag inte målade honom.
(I said that I not portrayed him 'I said that I didn't portray him')



b. Embedded clauses with main verb movement:
Jag sa att jag målade inte honom.
(I said that I portrayed not him 'I said that I didn't portray him')



The intonational property that differentiates Dalecarlian from the other Swedish dialects is that the pitch gesture on an accented main verb occurs later than considered so far in the constructions that contain an object pronoun in Dalecarlian, compared with the others. This is formulated as the following generalization:

(92) Generalization on Scandinavian Object Shift (first approximation):
The more delayed the pitch gesture of an accented main verb is, the more likely is Object Shift to be absent.

To see if this generalization holds, let us compare Dalecarlian with North, both of which are one-peaked and the 'downslope' type. We have seen that the peak on the main verb mostly occurs not on the first syllable, but on the second syllable *-la(de)*, in Dalecarlian. However, the peak on the main verb comes on the first syllable *må-* in the OS construction in North against the prediction; see (19-21b). This indicates that the timing of the pitch gesture of an accented main verb is earlier than usual in the OS construction in North.[71] Thus, an object pronoun tends to move in North but remain in situ in Dalecarlian.

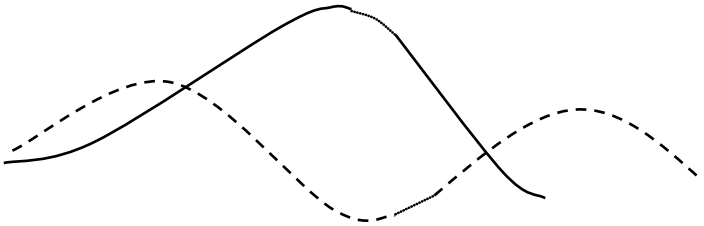
OS never occurs in Övdalian even when verb movement takes place (Hellan and Platzack 1999, Garbacz 2009). See § 2.1 for the basic facts on Övdalian. The fact that Övdalian does not have OS has not been extensively discussed despite much literature on OS. Since most of the literature targets the derivational mechanism of OS, the factors that prevent OS in Övdalian have not been clarified.

Övdalian maintains a distinction in word accents in the same way as most of the Swedish dialects and belongs to the two-peaked dialect group.

[71] The answer to the question why it is so is beyond the topic of this thesis.

Övdalian accent 1 words have a stressed syllable that consists of an L and a following H, i.e. L*H*. For sentence-final disyllabic words, the H peak occurs on the final part of the stressed syllable, which is followed by the L on the next, final syllable. Thus, when the disyllabic accent 1 word *skenet* [stʃi:neð] 'the shine' appears in sentence-final position, the H peak occurs on the final part of the stressed syllable *ske-*, which is followed by the L on the next syllable *-net*. The Övdalian accent 2 has a complex melodic tone. The pitch contour of sentence-final disyllabic accent 2 words is LH*LH(L), in which each syllable is associated with an H. Thus, when the disyllabic accent 2 word *skina* [skainɑ] 'to shine' appears in sentence-final position, both the stressed first syllable *ski-* and the following syllable *-na* consist of a rise, an H peak, and a fall. The pitch gestures of accent 1 and accent 2 words are illustrated below:[72]

(93) Övdalian accent 1 and accent 2 disyllabic words:[73]



——— : (vowel of) accent 1; - - - - - - : (vowel of) accent 2;
——— : consonant
(From Kristoffersen 2008:138, Fig. 20)

Without the literature that describes the intonational properties of an entire sentence, it is difficult to predict the pitch contour of the constructions relevant to (the absence of) OS in Övdalian. I simply present all relevant data below.[74]

A remarkable fact of Övdalian is that the pitch does not lower until the last accentable syllable in a sentence even in the cases in which the negation and object pronouns are not focused.[75] Due to this particular property, the second key pitch point is taken from the last pitch peak that can occur either on a main verb, on the negation or on an object pronoun for Övdalian. In the simple tense form with an in-situ monosyllabic object pronoun (94a), the final pitch peak occurs on the primary stressed syllable of the negation *it*. In the

[72] See e.g. Bye (1996) and Kristoffersen (2008) for another remarkable feature of Övdalian: level stress. In addition, Övdalian maintains the old Swedish quantity system that allows not only V:C and VC: but also VC and V:C:. V:C: occurs to mark morphological Case, which is maintained in Övdalian but not in the other Swedish varieties except for pronouns (Schaeffler 2005).

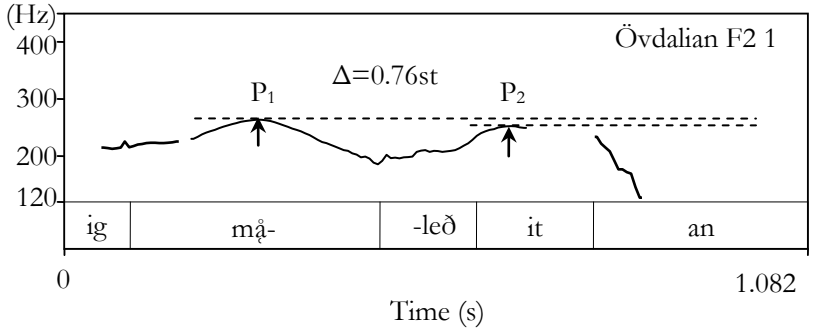
[73] The accent 1 word is *skenet* [stʃi:neð] 'the shine', and the accent 2 word *skina* [skainɑ] 'to shine'.

[74] See § 3.1.1 for tested construction forms in the experiment of Övdalian.

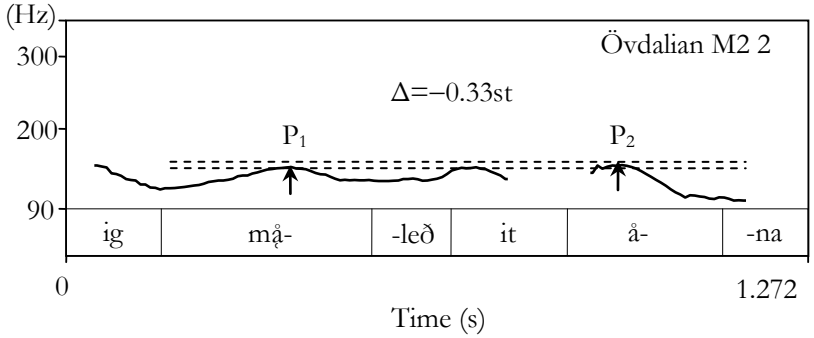
[75] Recall that the negation *it* is a reduced form of *inte*. It is an accent 2 word.

simple tense form with an in-situ disyllabic object pronoun (94b), the final pitch peak occurs on the first syllable *å-* of the object pronoun *åna*. Those syllables are both sentence-final, accentable syllables. Compare (94b) with the case of contrastive argument-focus (95), in which the pitch tends to rise up to the focused object pronoun. The height of the final pitch peak does not differ between the focused and non-focused object pronouns. These data illustrate that in Övdalian, the final pitch peak occurs on the last syllable in a sentence, regardless of whether it is part of a focused or non-focused sentential element.

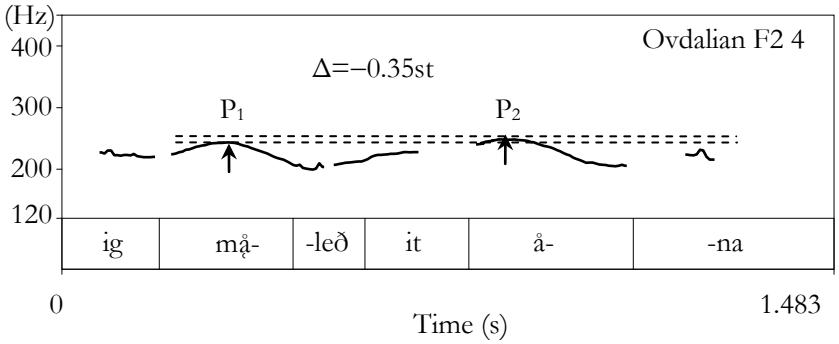
(94) a. Simple tense forms with a monosyllabic object pronoun:
Ig måled it an. (I portrayed not him 'I didn't portray him')



b. Simple tense forms with a disyllabic object pronoun:
Ig måled it åna. (I painted not it 'I didn't paint it')

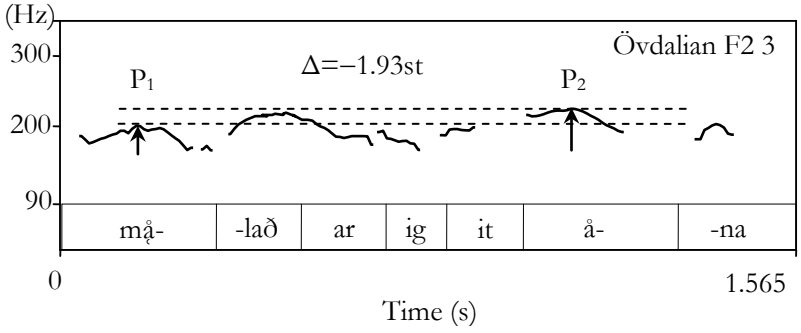


(95) Simple tense forms with a strong (disyllabic) object pronoun:
Ig måleð it ÅNA. (I portrayed not her 'I didn't portray HER')

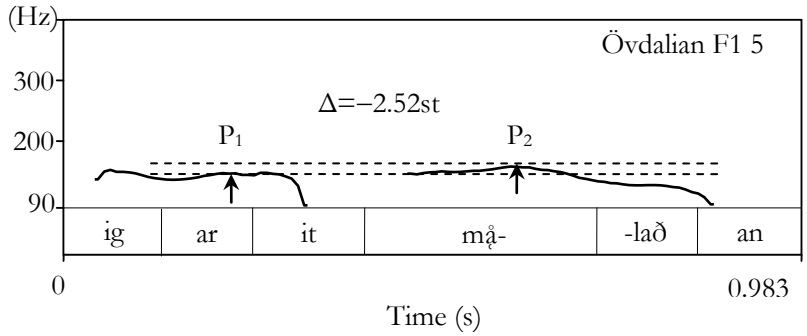


See also the other constructions. In those with a disyllabic object pronoun, i.e. Verb Topicalization (96), the complex tense form with *åna* (97b) and embedded clauses (98), the final pitch peak occurs on the first syllable *å-* of the object pronoun. In the complex tense form with a monosyllabic object pronoun (97a), the pitch occurs on the first syllable *må-* of the main verb *målað*. They are both the last accentable syllable in each of the sentences. In most cases, the pitch level on the sentence-final, accentable syllable is almost the same as, or even higher than, that on the accented syllable of the main verb.

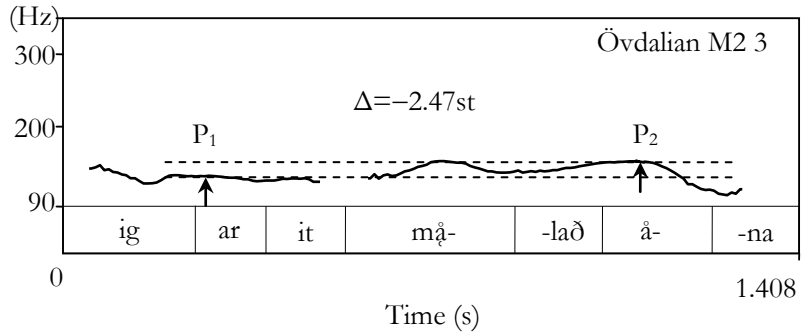
(96) Verb Topicalization:
Målað ar ig it åna.
(portrayed have I not her 'I haven't PORTRAYED her')



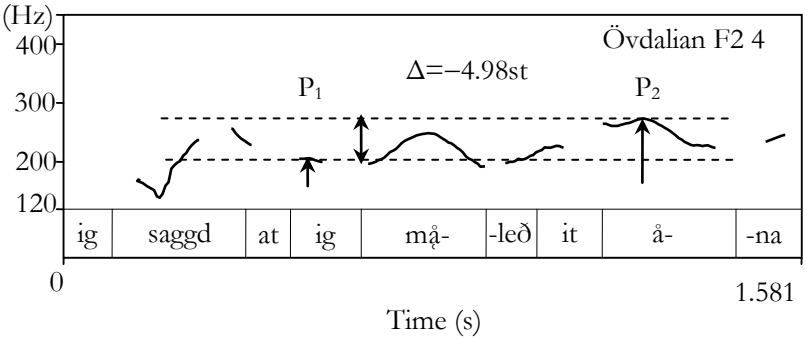
(97) a. Complex tense forms with a monosyllabic object pronoun:
Ig ar it målað an.
(I have not portrayed him 'I haven't portrayed him')



b. Complex tense forms with a disyllabic object pronoun:
Ig ar it målað åna. (I have not painted it 'I haven't painted it')



(98) Embedded clauses with a disyllabic object pronoun:
Ig saggd at ig måleð it åna.
(I said that I painted not it 'I said that I didn't paint it')



The fact that the pitch does not lower until the last accentable syllable in a sentence regardless of whether it is part of a focused or non-focused sentential element indicates that downstep does not occur in a sentence. That is, downstep does not occur in Övdalian.

Why is it so? Recall that accent 1 and accent 2 of Övdalian are L*H* and LH*LH(L): the pitch gesture of an accented word is delayed, though Övdalian belongs to the two-peaked group. What happens if the pitch gesture is delayed in a two-peaked variety? In a typical two-peaked variety, the focal H starts immediately after an accented syllable of a focused word. It includes some unaccented syllable(s) and even word(s) and also the next accentable syllable, on the latter of which the pitch peak occurs. When the pitch gesture is delayed, however, it is predicted that the starting point of the focal H is also delayed. It will occur at earliest on the next accentable syllable, since the pitch always lowers on an accented syllable of a focused word in the two-peaked varieties. It is also predicted that with the delayed pitch gesture, the (final part) LH of LH*LH of a preceding word always overlaps the (first part) LH* of the following word in Övdalian. This environment in which the (second) H of a preceding word always overlaps the (first) H* on the following word produces the condition under which downstep does not occur in Övdalian.

Finally, let us consider the data of the OS construction, which all informants judged as ungrammatical; see Appendix II. In the simple tense form with a monosyllabic object pronoun (99a), the final pitch peak occurs on the shifted object pronoun *an*. The pitch becomes high on the shifted monosyllabic object pronoun and continues to be high on the following negation *it*. Since the negation is the last accentable syllable located in sentence-final position, the accent on it is stronger than the one that it receives in a sentence-medial position.[76] In the simple tense form with a disyllabic object pronoun (99b), the final pitch peak occurs on the first syllable *å-* of the shifted object pronoun *åna*. Note that the final H of the LH*LH(L) contour that should be realized on its second syllable *-na* is actually realized on the following negation *it*. The accent on the negation located in sentence-final position is stronger than the one that it receives in a sentence-medial position. Since the excessive accent on the negation in sentence-final position could make it more prominent than the main verb, the OS construction of simple tense forms is ungrammatical for Övdalian speakers.[77]

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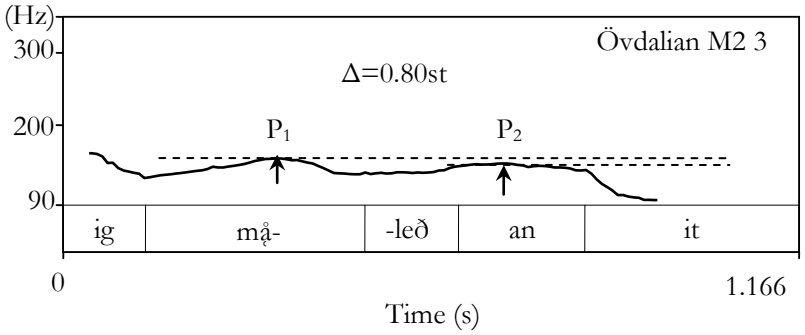
[76] Actually, the negation *it* appears in sentence-final position when it needs to receive some prominence, e.g. in negative imperative sentences:

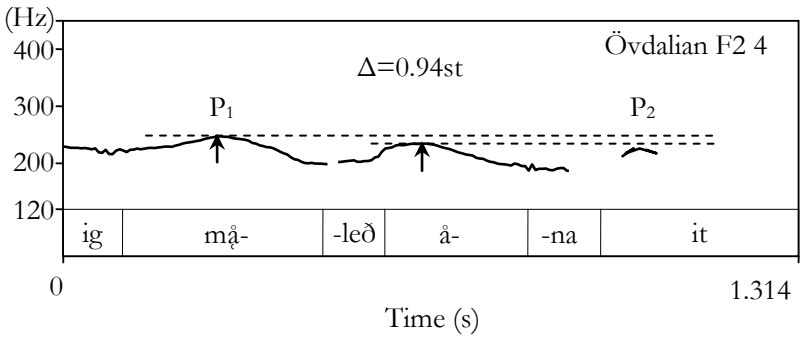
(i) Gokk /Kâit it! [Övd.]
go-IMP run-IMP not
'Don't go/run!'
(Garbacz 2009:127, (19a))

[77] Garbacz (2009:64, fn. 48) states that some of his informants accept the OS order and report that a shifted object pronoun is interpreted as focused. However, all of my informants judged it as ungrammatical in all contexts including contrastive argument-focus. See Appendix II.

(99) a. Simple tense forms with a shifted monosyllabic object pronoun:
**Ig måled an it.* (I portrayed him not)



b. Simple tense forms with a shifted disyllabic object pronoun:
**Ig måled åna it.* (I painted it not)



3.2.1.4. Summary

We have examined the intonational properties relevant to Swedish OS. Downstep occurs in simple tense forms and Verb Topicalization, in which OS occurs. However, it does not occur in complex tense forms and embedded clauses, in which OS does not occur. It has turned out that OS is far more absent in Dalecarlian in general than reported so far. The intonational property that differentiates Dalecarlian from the other Swedish dialects is that the pitch gesture (of an accented main verb) is substantially delayed in the constructions that contain an object pronoun in Dalecarlian compared with the latter. This fact was formulated as follows: the more delayed the pitch gesture of an accented main verb is, the more likely is Object Shift to be absent (92). In addition, it has also turned out that downstep does not occur in Övdalian. This property is derived from the fact that Övdalian is a two-peaked variety, but the pitch gesture occurs late.

Since it is crucial for the presence or absence of OS in a relevant Scandinavian variety whether it has a delayed pitch gesture, (92) is further generalized as follows:

(100) Generalization on Scandinavian Object Shift (second approximation): The more delayed the pitch gesture is, the more likely is Object Shift to be absent in a relevant Scandinavian variety.

3.2.2. The Norwegian intonational system[78]

Most of the Norwegian dialects have a distinction in word accents, accent 1 and accent 2, in the same way as Swedish. Since Haugen (1967), the Norwegian word accent system has been traditionally analyzed in the following way: accent 1 is unmarked; accent 2 is marked, as an additional tonal property occurs on it. That is, both accent 1 and accent 2 are assumed to have either LH or HL (depending on the dialects) as the basic tone. An additional leading tone, either an H for the LH varieties or an L for the HL varieties, occurs before the basic tone for accent 2. Such a leading tone is absent for accent 1. This analysis is called the *privativity* hypothesis, contrasted with the *timing* hypothesis represented by Bruce (1977) introduced in § 3.1.1.

The focus of a sentence is realized by a focal H contour in Norwegian too. The focal H is realized such that the H on a focused word is extremely high-pitched. It is not separated from the pitch gesture of a focused word in Norwegian. In post-focal positions, downstep occurs. The Hs on the words following a focused word do not reach the same pitch level as the focal H on the focused word.[79]

The Norwegian dialects are divided into several groups. The dialects that have LH as the basic tone associate the accent with the L and are called the low-tone dialects. The dialects that have HL as the basic tone associate the accent with the H and are called the high-tone dialects.[80] The former is represented by East Norwegian, and the latter by West Norwegian. Below, I discuss the intonational properties of the constructions relevant to OS in East and West Norwegian.

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[78] The description of this section is based on Bruce (1977), Fretheim (1992), Gussenhoven (2004), and Kristoffersen (2000, 2006, 2007).

[79] In pre-focal positions downstep does not occur.

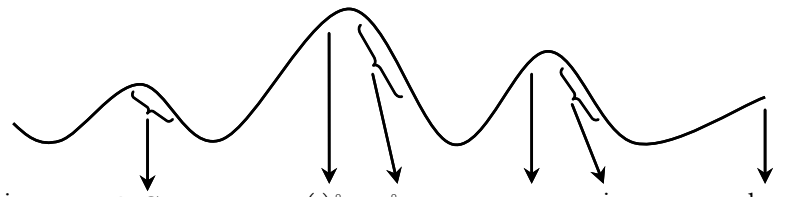
[80] The dialects spoken in the far north areas, e.g. Northern Tromsø and Finnmark, do not have the distinction in word tones.

3.2.2.1. Object Shift in Norwegian low-tone dialects (East)[81]

The basic word tone is LH in East Norwegian spoken, e.g. in Oslo. An accent is associated with L for accent 1, which is represented as L*H. Accent 2 has a leading H associated with an accent before the basic LH, which is represented as H*LH. The focal H contour is realized by raising the H (for accent 1)/the second H (for accent 2) of a focused word extremely high. The focal H is not separated from the pitch gesture of a focused word, as stated in the previous section. Thus, for accent 2, H*LH, the pitch gesture in the Norwegian low-tone varieties sounds like double-peaked as in East and West Swedish.

(101) is the case of narrow focus of the main verb *prøver* 'try'. That main verb, the infinitive *åpne* 'open', and the noun phrase *vinduet* 'the window' are all accent 2 words. The infinitival marker *å* 'to' combines into an intonational unit with the preceding verb. After the pitch falls on the first syllable *prø-* of the main verb, it becomes extremely high on *å* in the intonational unit *prøver-å*. After the pitch falls on the first syllable *åp-* of the infinitive, it rises again on its second syllable *-ne*. The pitch level on *-ne* is not as high as that on *å*. The pitch falls on the first syllable *vin-* of the noun phrase and rises again on its second syllable *-duet*. The pitch level on *-duet* does not reach the same height as that on the second syllable *-ne* of the infinitive. These pitch properties illustrate that downstep occurs on *åpne* and *vinduet* in turn after the intonational unit *prøver-å* composed of the focused main verb and the infinitival marker.[82] When an object pronoun follows an accented main verb, it must be incorporated into the pitch contour of the main verb in the same way as the infinitival marker *å* in (101). It is the highest peak of a focal H.

(101) Jeg PRØVER å åpne vinduet. [Nor.]
I try to open the-window
'I try to open the window.'



(Fretheim 1992: 118, Fig. 7)

[81] The description of the intonational properties of this variety is based on Fretheim (1992), Fretheim and Nilsen (1992), and Kristoffersen (2000, 2006, 2007).
[82] Tone lowering is also accounted for in terms of declination: the L on the accented first syllable *vin-* of *vinduet* is lower than that on the accented first syllable *åp-* of *åpne*.

The change in word accents occurs in the contexts of a shifted object pronoun (though it occurs only in a pre-focal position). An accent 2 word is not affected in the unmarked case. When an accent 1 verb is followed by the negation *ikke*, accent 1 of the verb can change to accent 2. Specifically, when a sentence has the full NP object *bilen* (102a), accent 1 of the main verb *finner* can change to accent 2 with the negation *ikke* cliticized to it (102b). When a sentence has the shifted weak pronominal object *den* (103a), accent 1 of *finner* can change to accent 2 if a stressed word like *igjen* 'again' follows the negation (103b). When nothing follows the negation (104a), however, the change of accent 1 of *finner* to accent 2 is ungrammatical (104b), and its accent 1 is maintained (104c). The ungrammaticality arises since the main verb, the object pronoun, and the negation compose a sentence-final accent phrase.

(102) a. De finner ikke bilen. [Nor.]
they find not the car
'They cannot find the car.'

b. De [2]finner+ikke [1]bilen.

(103) a. De finner den ikke igjen.
they find it not again
'They cannot find it again.'

b. De [2]finner+den+ikke [1]igjen.

(104) a. De finner den ikke.
they find it not
'They cannot find it.'

b. *De [2]finner+den+ikke.

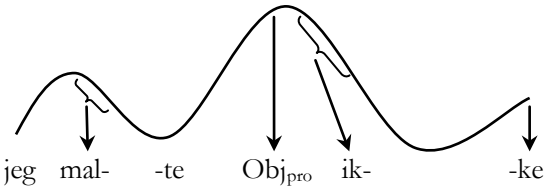
c. De [1]finner+den+ikke.
(Kristoffersen 2000:290, (22) and fn16)

Two pitch contours are predicted for the OS constructions from the descriptions above. First, an object pronoun might be incorporated into the pitch contour of the preceding accent 2 main verb in the same way as the infinitival marker in (101), as illustrated in (105a). After the pitch falls on the accented first syllable *mal-* of the main verb *malte*, the pitch would rise and the peak of the focal H would occur on the object pronoun. After the pitch falls on the first syllable *ik-* of the negation *ikke*, it would rise again. The final peak on its second syllable *-ke* could not reach the same height as that on the object pronoun. Secondly, it could be conjectured from the argument we saw in

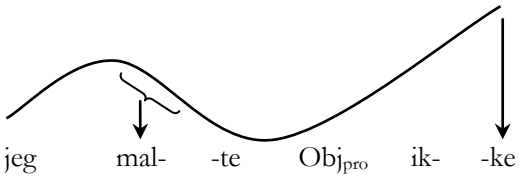
(102-104) that an accent 2 main verb, a shifted object pronoun and the negation compose a sentence-final accent phrase, as illustrated in (105b). After the pitch falls on the first syllable *mal-* of the main verb, it would continue to rise up to the sentence-final negation. The pitch peak would occur on the second syllable *-ke* of the negation and would be realized by an extra H.

(105) Jeg malte den/henne ikke. [Nor.]
I painted/portrayed it/him not
'I didn't paint it/portray her.'

a.



b.

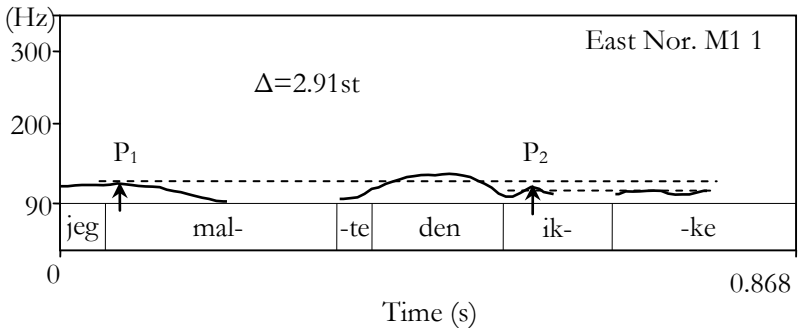


Actual pitch contours are presented as follows. First, I present the pitch contours of the OS construction of simple tense forms. Prediction (105a) is confirmed as illustrated in (106-107a).[83] The shifted object pronouns, *den* (106a) and *henne* (107a), are incorporated into the pitch contour of the preceding main verb *malte*. The pitch peak of the focal H occurs on the object pronouns. The pitch level on the second syllable *-ke* of the negation does not reach the same height as that on the object pronouns. The pitch pattern illustrated in (105b), in which the main verb, the shifted object pronoun and the negation compose an accent phrase, is also observed (106-107b). Contrary to the prediction, however, the second syllable *-ke* of the negation is not realized by an extra H. The pitch level on it is either almost the same as or lower than that on the accented first syllable *mal-* of the main verb.

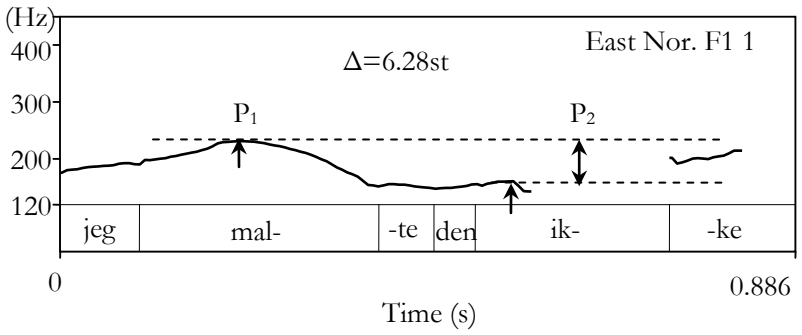
[83] In the OS construction, the disyllabic object pronoun *henne* is pronounced very rapidly. Since the articulation is very difficult, I put the entire word in one syllable box.

(106) Simple tense forms with a shifted monosyllabic object pronoun: *Jeg malte den ikke.* (I painted it not 'I didn't paint it.')

a.

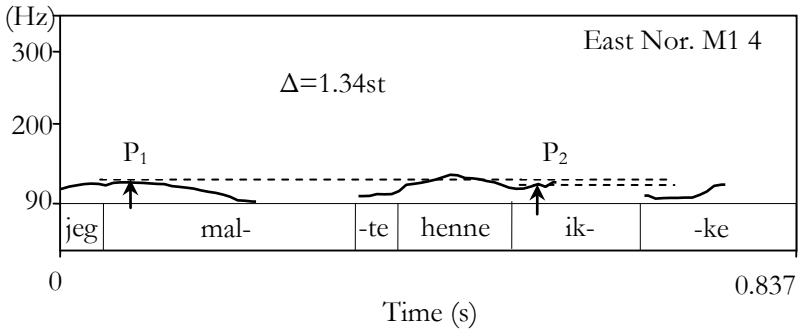


b.

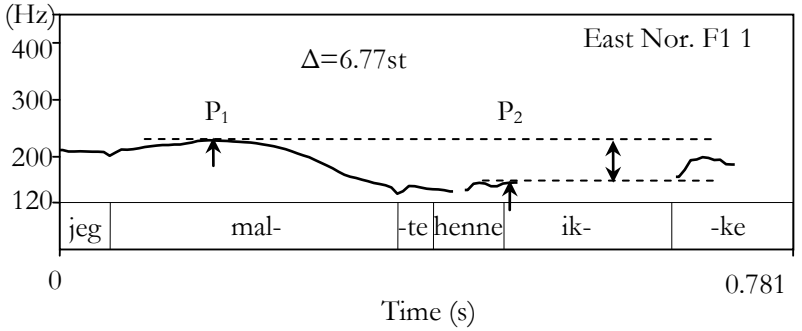


(107) Simple tense forms with a shifted disyllabic object pronoun:
Jeg malte henne ikke. (I portrayed her not 'I didn't portray her.')

a.



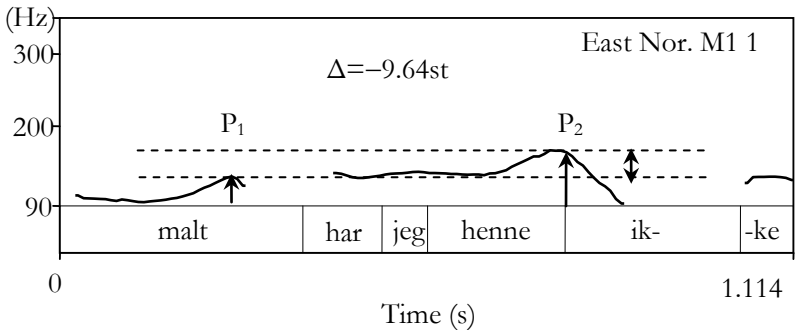
b.



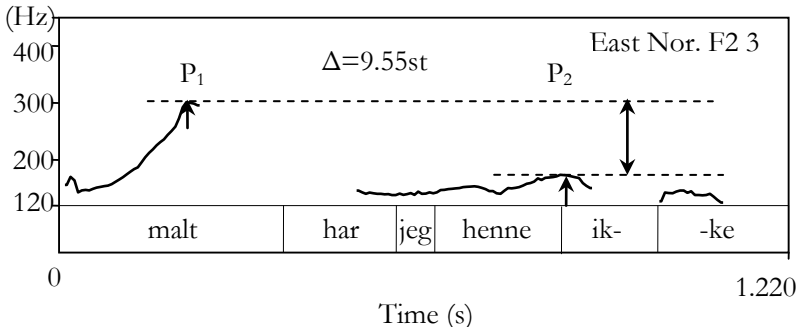
Two intonation patterns are also observed in Verb Topicalization, another type of the OS construction. In the first pattern (108a), the pitch continues to rise after the focused sentence-initial past participle *malt*. The pitch level on the shifted object pronoun *hen(ne)* is almost the same as that on the negation, but the pitch peak tends to occur on the first syllable *ik-* of the negation. The pitch rises again on its second syllable *-ke*, but does not rise so high. In the second pattern (108b), the pitch peak occurs on the sentence-initial past participle. After the pitch falls, it remains low until the end of the sentence.

(108) Verb Topicalization with a shifted disyllabic object pronoun:
Malt har jeg henne ikke.
(portrayed have I her not 'I haven't PORTRAYED her.')

a.



b.



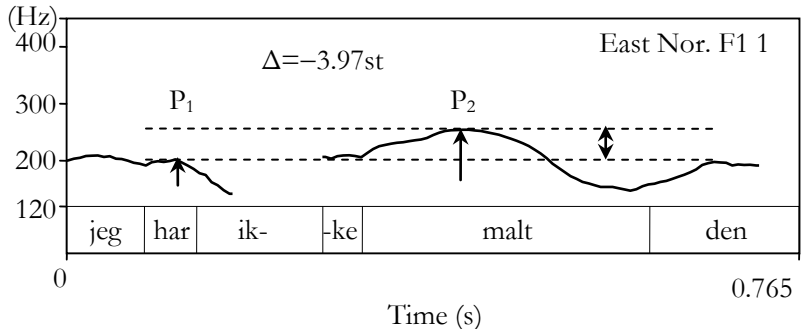
These data illustrate that the F0 on the negation becomes lower than the F0 on the main verb in the OS construction in most cases except a few cases as illustrated in (108a). That is, downstep occurs in the OS construction in East Norwegian, in the same way as in the Swedish varieties we saw in the previous sections. When a shifted object pronoun is incorporated into the pitch contour of the preceding accented main verb, it is the highest peak of the focal H. When a main verb, a shifted object pronoun and the negation compose a (sentence-final) accent phrase, the pitch peak mostly occurs on the accented syllable of the main verb. In both cases, the H that occurs on (the second syllable of) the negation does not reach the same height as the one on the preceding sentential element in most cases.

Next, observe the pitch contours of the constructions in which OS does not occur, complex tense forms and embedded clauses. In complex tense forms, whether they contain a monosyllabic object pronoun or a disyllabic object pronoun, the pitch peak occurs either on the in-situ past participle *malt*

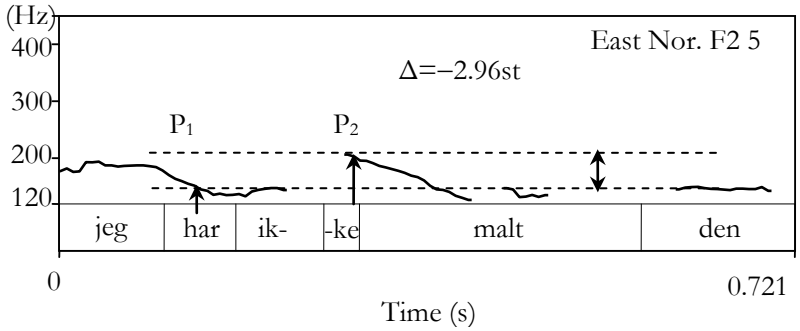
(109-110a) or on the second syllable *-ke* of the negation (109-110b). In the latter case, the final pitch peak occurs on the past participle. In embedded clauses, the pitch peak occurs on the sentence-final object pronoun in almost all cases (111).

(109) Complex tense forms with a monosyllabic object pronoun:
Jeg har ikke malt den. (I have not painted it 'I haven't painted it.')

a.

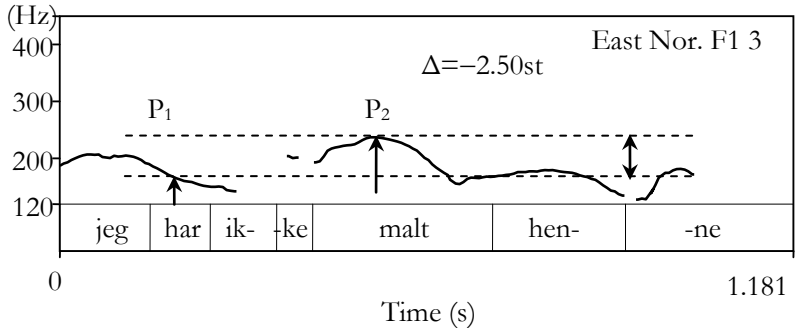


b.

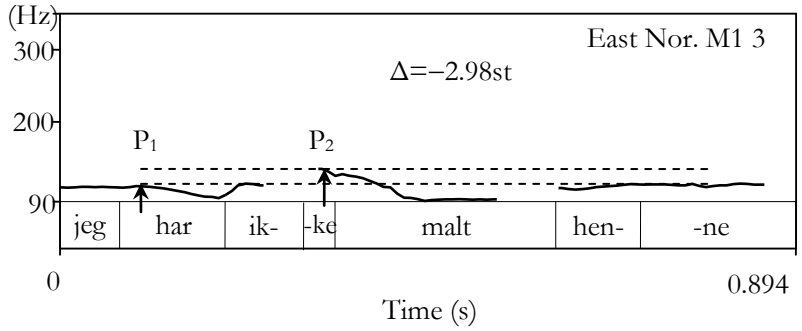


(110) Complex tense forms with a disyllabic object pronoun:
Jeg har ikke malt henne.
(I have not portrayed her 'I haven't portrayed her.')

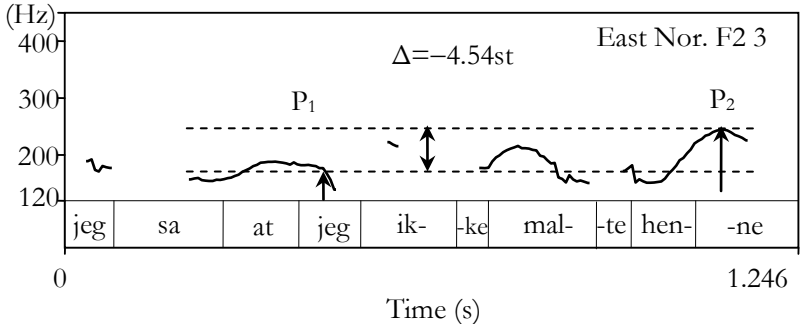
a.



b.



(111) Embedded clauses:
Jeg sa at jeg ikke malte henne.
(I said that I not portrayed her 'I said that I didn't portray her.')



These data illustrate that the pitch does not lower immediately after the sentential/clausal element that cannot be followed by an object pronoun directly, i.e. the Aux in complex tense forms and the embedded subject. The pitch peak occurs on a sentential/clausal element located after those elements. That is, downstep does not occur in the constructions where OS does not occur in East Norwegian, as we saw in the Swedish varieties.

3.2.2.2. Object Shift in Norwegian high-tone dialects (West)[84]

The basic word tone is HL in West Norwegian spoken, e.g. in Bergen. An accent is associated with H for accent 1, which is represented as H*L. Accent 2 has a leading L associated with an accent before the basic HL, which is represented as L*HL. The focal H contour is realized by raising the H* (for accent 1)/the H between two Ls (for accent 2) of a focused word extremely high. It is not separated from the pitch gesture of a focused word. Thus, for accent 2, LH*L, the pitch gesture in Norwegian high-tone varieties sounds like one-peaked as in South Swedish (Kristoffersen 2006).

With an accent associated with H, a tonal clash may occur when a focused word is followed by another accented word (Haslev 1986). This is avoided by various tonal sandhi patterns. (112) is the case of the tonal sandhi in which a focused accent 2 word *liten* 'small' is followed by another accent 2 word *jente* 'girl'.[85] The pitch remains low on the first syllable *li-* of the adjective, contrary to the expected H on it. It rises and reaches the highest H on its second syllable *-ten*, and then falls. It remains low on the first syllable *jen-* of the following noun phrase, contrary to the expected H on it. It rises again on its second syllable *-te* and falls on the verb *kom*.[86]

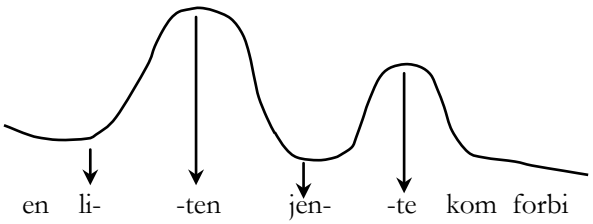
---

[84] The description of the intonational properties of this variety is based on Mjaavatn (1978), Lorentz (1981), Haslev (1986), Abrahamsen (2004), Almberg (2004), Hognestad (2004), and Kristoffersen (2006).

[85] This sentence is composed of a complex NP in which two accentable words are adjacent to each other, which differs from the OS construction composed of pronouns and a main verb. This example is presented simply to describe how a tonal clash can be avoided.

[86] The pitch can rise on the first syllable of *liten*. But it falls on it and remains low until the first syllable of *jente*. It rises again on its second syllable.

(112) En liten jente kom forbi. [Nor.]
a little girl came by
'A small girl went by.'



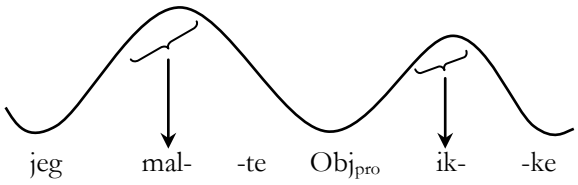
(Lorentz 1981:173, Table 3)

In the previous section, we saw that when an accent 1 verb is directly followed by the negation, accent 1 of the verb can change to accent 2 in East. With accent 1 of H*L, such an accent shift is not possible in West. In the relevant context, the pitch falls from an extreme H.

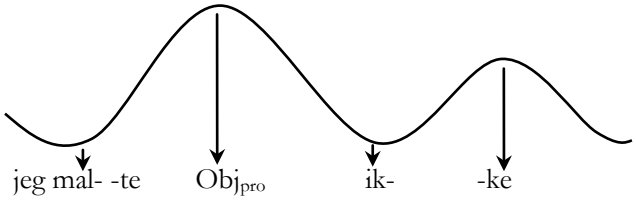
Two pitch gestures are predicted for the OS construction from the descriptions above. First in (113a), the pitch would rise from the first half of the first syllable of a focused accent 2 main verb and the pitch peak would occur on the second half of that syllable. After the pitch falls, it would rise again on the first syllable *ik-* of the negation and fall on its second syllable *-ke*. Secondly in (113b), since an object pronoun is unstressed, it might be incorporated into the pitch contour of the preceding main verb. Since the negation, which is accentable, follows the phonological unit that consists of the accented main verb and the object pronoun, a tonal clash might occur. It could be avoided by the following tonal sandhi pattern. The pitch would remain low on the first syllable *mal-* of the main verb. The pitch peak would occur on the shifted object pronoun incorporated into it. After the pitch falls, the L would persist on the first syllable *ik-* of the negation. The pitch would rise again on its second syllable *-ke* and fall sentence-finally.

(113) Jeg malte den/henne ikke. [Nor.]
I painted/portrayed it/him not
'I didn't paint it/portray her.'

a.



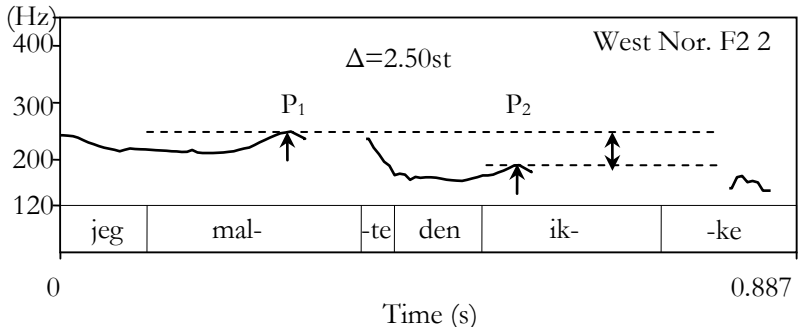
b.



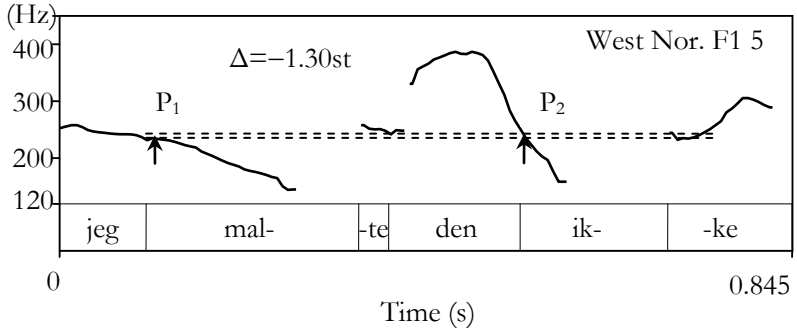
Actual pitch contours of the OS construction of simple tense forms are presented below. See (114-115a). The pitch rises on the first half of the first syllable *mal-* of the accented main verb. The pitch peak occurs on the second half of that first syllable. Contrary to the first prediction (113a), however, the pitch can rise only slightly on the first syllable *ik-* of the negation in most cases. See also (114-115b). The shifted object pronoun is incorporated into the pitch contour of the preceding main verb, and the pitch peak occurs on the former. Contrary to the second prediction (113b), however, both the first syllable of the main verb and that of the negation maintain their H. The H on the negation is in the course of the falling pitch after the pitch peak on the shifted object pronoun. The pitch level on the negation is almost the same as or slightly higher than that on the main verb.

(114) Simple tense forms with a shifted monosyllabic object pronoun: *Jeg malte den ikke.* (I painted it not 'I didn't paint it')

a.

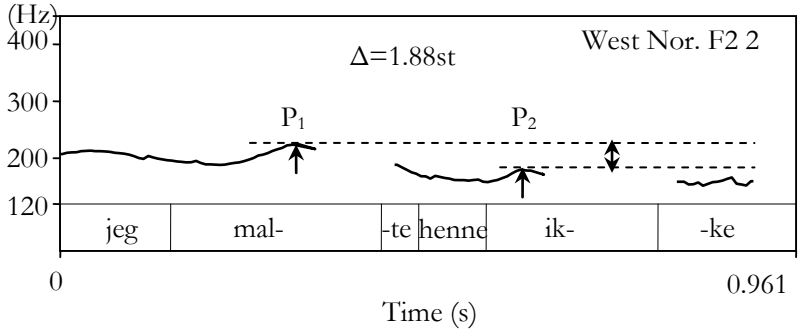


b.

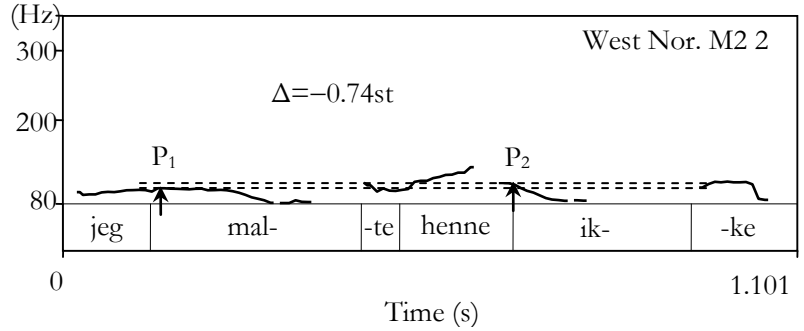


(115) Simple tense forms with a shifted disyllabic object pronoun: *Jeg malte henne ikke.* (I portrayed her not 'I didn't portray her')

a.



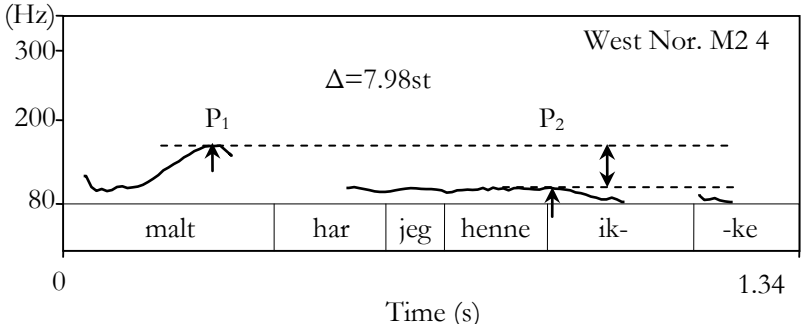
b.



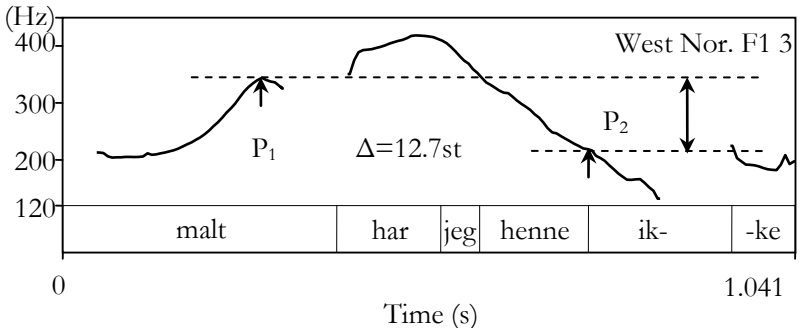
Two intonation patterns are observed in Verb Topicalization. In both cases, the main verb and the negation maintain their H. In the first pattern (116a), the pitch peak occurs on the accented syllable of the sentence-initial past participle *malt*. After the pitch falls, it continues to be low until sentence-final position. It does not rise again so high on the first syllable of the negation in most cases. In the second pattern (116b), the pitch peak occurs on the Aux. After that peak, the pitch continues to fall until the first syllable *ik-* of the negation. The H on that first syllable is in the course of the falling pitch after the pitch peak on the Aux, but it becomes far lower than the H on the past participle; compare with the cases of simple tense forms (114-115b). The pitch rises again on the second syllable *-ke* of the negation, but the pitch level on it does not reach the same height as that on the Aux.

(116) Verb Topicalization with a shifted disyllabic object pronoun:
Malt har jeg henne ikke.
(portrayed have I her not 'I haven't PORTRAYED her')

a.



b.

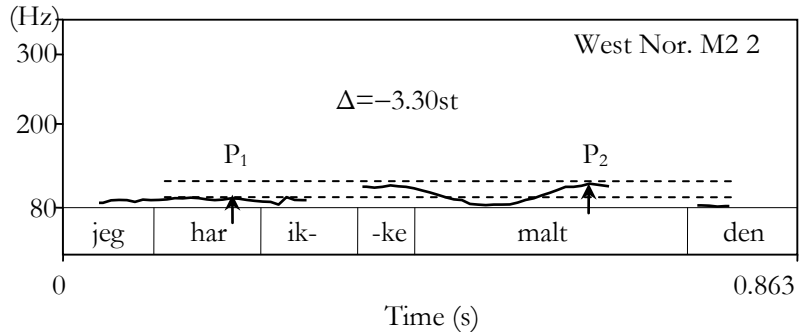


These data illustrate that the F0 on the negation tends to become lower than the F0 on the main verb in the OS construction in most cases, though the former can be at the same level as the latter as illustrated in (114-115b). That is, downstep occurs in the OS construction in West Norwegian too, in the same way as in the Scandinavian varieties we have seen so far.

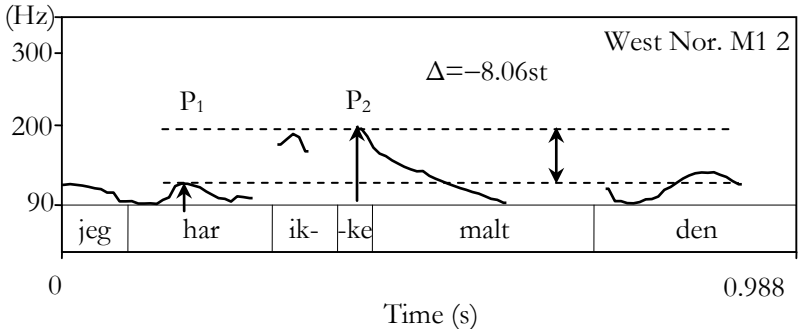
Next, observe the pitch contours of complex tense forms and embedded clauses, in which OS does not occur. In complex tense forms, whether they contain a monosyllabic or disyllabic object pronoun, the pitch peak occurs either on the in-situ past participle *malt* (117-118a) or on the second syllable *-ke* of the negation (117-118b). In the latter case, the final pitch peak occurs on the past participle. In embedded clauses, the pitch peak comes either on (the first syllable of) the sentence-final object pronoun (119a) or on (the second syllable of) the negation (119b). In the latter case, the final pitch peak occurs on the sentence-final object pronoun.

(117) Complex tense forms with a monosyllabic object pronoun:
Jeg har ikke malt den. (I have not painted it 'I haven't painted it')

a.

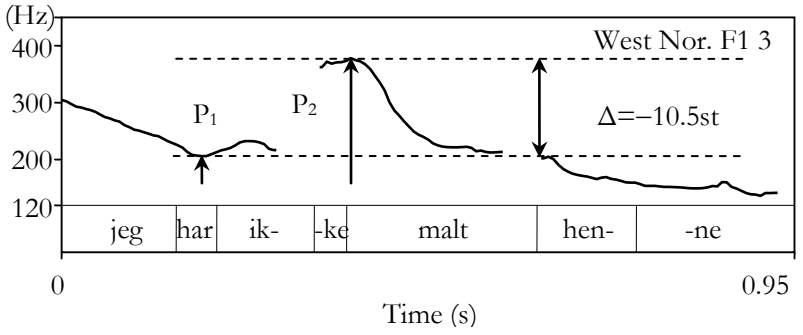


b.

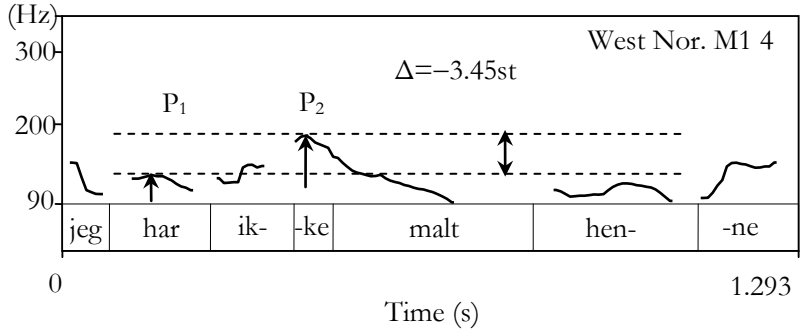


(118) Complex tense forms with a disyllabic object pronoun:
Jeg har ikke malt henne.
(I have not portrayed her 'I haven't portrayed her')

a.

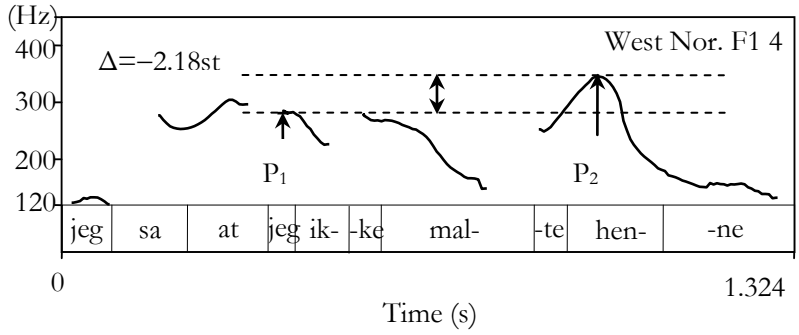


b.

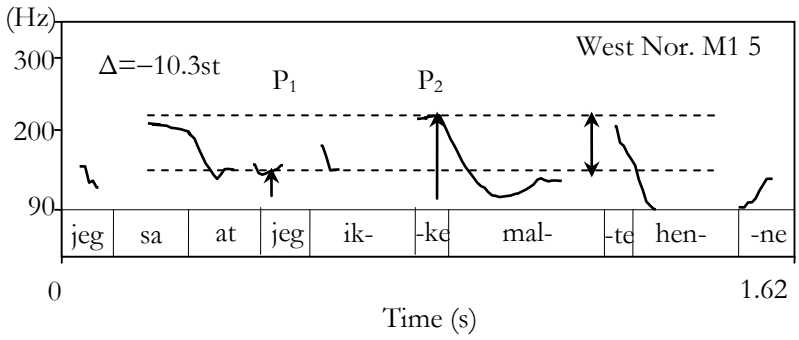


(119) Embedded clauses:
Jeg sa at jeg ikke malte henne.
(I said that I not portrayed her 'I said that I didn't portray her')

a.



b.



The data above illustrate that the pitch does not begin to lower immediately after the Aux in complex tense forms and the embedded subject, neither of which can be directly followed by an object pronoun. The pitch rises after them and the pitch peak occurs either on the negation, on the past participle or on the in-situ object pronoun. That is, in West Norwegian too, downstep does not occur in the constructions in which OS does not occur.

3.2.2.3. Summary

We have examined the intonational properties of the constructions relevant to Norwegian OS. In the OS constructions of simple tense forms and Verb Topicalization, the peak on the negation tends to be lowered, compared with that on an accented main verb. That is, the F0 on the negation tends to be lower than the F0 on the main verb in these constructions. In the non-OS

constructions of complex tense forms and embedded clauses, on the other hand, the pitch does not lower immediately after the element that cannot be followed by an object pronoun directly, i.e. the Aux in complex tense forms/the embedded subject. The pitch rises up to the peak on a sentential/ clausal element that follows it. These data show that downstep occurs in the constructions in which OS occurs but does not occur in the constructions in which OS does not occur in the Norwegian varieties too, in the same way as in (most of) the Swedish varieties.

The difference between Norwegian and Swedish is that an object pronoun is incorporated into the pitch contour of the preceding main verb and composes the final H part of the H*LH contour in the former, but this does not occur in the latter. Thus, the pitch peak is more likely to occur on the shifted object pronoun in Norwegian than in Swedish. The pitch peak can occur on the shifted object pronoun in Swedish too. But in this case, it is contained in the focal H that is added to the pitch contour of the preceding main verb, not in the pitch contour of the main verb itself.

3.2.3. The Danish intonational system[87]

Danish has a particular sound property, *stød*, instead of the distinction in word accents observed in Swedish and Norwegian. The distribution of stød words corresponds to that of accent 1 words, and the distribution of non-stød words corresponds to that of accent 2 words. The environments in which stød actually occurs are not so simple, however. I will present a more detailed description of stød in the next section.

The Danish intonation pattern is described as LH(L). This pattern is repeated in each intonational phrase of a sentence. The H typically occurs on the syllable following an accented syllable. A general declining trend is observed. Declination is most likely to occur in declarative sentences but least likely to occur in *yes-no* questions with a declarative form; *wh*-questions have in-between status. The degree of declination is large in short utterances but small in long utterances.[88] Danish does not have a default focal accent that occurs on the last intonational phrase in a sentence. To focalize a word, its H is raised higher than the H on the preceding word(s). In addition, an unstressed vowel is always reduced to a schwa, /ə/, and assimilated to a sonorant consonant adjacent to it in the Danish post-lexical utterance.

The pitch properties of Danish are similar to those of the Swedish one-peaked dialects, in which the focal H always overlaps the pitch gesture of a focused word. As stated in § 3.1.1, the prominence level is differentiated simply by accented or unaccented in those dialects. Thus, deaccentuation occurs to

[87] The description of this section is based on Basbøll (1985, 2005), Dyhr (1992), Grønnum (1998), Gussenhoven (2004), Lorentz (2004), and Bruce (2007).

[88] This regularity is found in other languages too, e.g. in Dutch ('t Hart et al. 1990).

downgrade non-focal words, but this happens only when it is especially required. In Danish, the H of the words surrounding a focused word is downgraded, which makes the latter perceptually salient. But such downgrading occurs only when the focused word has a low vowel.

The Danish dialects are divided into several groups. Most of them have stød except the dialects in the southern areas, which have the distinction in word tones instead. The literature on OS has pointed out that though OS is more or less obligatory in most of the Danish varieties, it is optional in the southern dialects of Danish. Dealing with East Danish and South Danish, I discuss the intonational properties of the constructions relevant to Danish OS in the following sections.

3.2.3.1. Object Shift in Danish stød dialects (East)[89]

East Danish spoken e.g. in Copenhagen, has stød. It is uttered by constricting the glottis. It occurs on a syllable with a relatively high pitch, after which the F0 decreases drastically. The degree of falling pitch on stød words is larger than that of falling pitch on non-stød words. For a stød to occur, a word needs to have a stressed syllable with a long vowel or a stressed syllable with a short vowel followed by a sonorant consonant (including [ð]).[90] Unless a word has either a final short vowel of a monosyllable or a short vowel of a monosyllable followed by an obstruent, stød can occur either obligatorily or optionally on the accented syllable of a word.[91] For instance, in *gå tur* [g̊ɔ ˈtˢuʁˀ] 'go for a walk', stød is absent on a monosyllabic word *gå*, since its short vowel is immediately followed by an obstruent /t/. In *betale skat* [be(ˌ)tˢæ(:ˀ)l ˈsg̊ad] 'pay taxes', stød can optionally occur on the second syllable *-ta-* of *betale* depending on the length of the vowel. In *gå* [ˈg̊ɔ:ˀ] 'walk', stød must occur, since the accented (mono)syllable is very long. Only the morpheme attached either to the left or to the right can affect the addition or loss of stød. The past form ending, /-əðə, -də/, causes, but the past participle ending, /-əð/, may or may not cause, the loss of stød. Stød obligatorily occurs before the clitic form of the weak pronominal objects, *den* and *det* (/ən, əð/), when the preceding word has a short full vowel (regardless of whether it is followed by a sonorant consonant): e.g. *på den* 'on it' [pɔˀən].

The intonation pattern of East Danish has long been described as L*H(L), in which an accent is associated with the first L.[92] A typical pitch

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[89] The description of the intonational properties of this variety is based on Thorsen (1982), Rischel (1983, 1986), Basbøll (1985, 2005), Grønnum (1998), Bruce (1999), Gussenhoven (2004), Lorentz (2004), and Grønnum and Basbøll (2007).

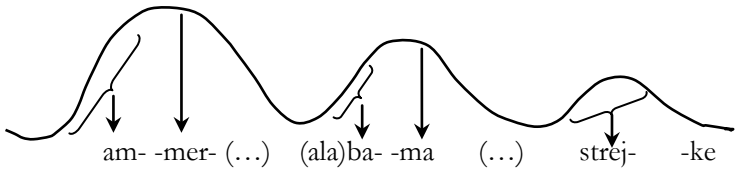
[90] This includes the case of a stressed syllable with a long vowel followed by a sonorant consonant.

[91] In the following notations, 'ˀ' stands for a stød sound.

[92] The recent literature (e.g. Gussenhoven 2004, Lorentz 2004) reinterprets the intonation

contour is illustrated below. The pitch starts with L on the first syllable *am-* of *ammerne*, reaches the first peak on its second syllable *-mer-*, and starts to fall after it. The pitch starts to rise again on the third syllable *-ba-* of *Alabama*, reaches the second peak on its last syllable *-ma*, and starts to fall after it. The pitch rises again on the first syllable *strej-* of *strejke*, and falls sentence-finally. As we can see, a general declination trend is observed.

(120) Ammerne i Alabama var i strejke. [Dan.]
the nurses in Alabama were in strike
'The nurses in Alabama were on strike.'



(Thorsen 1982:48, Fig. 1)

Phrasal accent is located finally: the rightmost constituent in a phrase is assigned the highest prominence. Certain kinds of phrases such as a VP that consists of a verb and a determiner-less object (including object pronouns), e.g. *købte hus* 'buy a house', are pronounced as a close unit. In (121a), the main verb *købte* and the object *hus* compose an accentual unit in which the object is assigned a prominence. When the negation *ikke* appears between the main verb and the object (121b), however, *ikke* as well as the object *hus*, which is separated from the main verb by the intervening negation, compose an accentual unit independently. They are both assigned a prominence.

(121) a. Peter [købte hus]. [Dan.]
Peter bought a-house
'Peter bought a house.'

b. Peter købte [ikke] [hus].
Peter bought not a-house
'He didn't buy a house.'
(Rischel 1983:87)

Several pitch patterns of the OS construction are predicted from the descriptions so far.[93] First in (122a), the pitch would start with L on the first

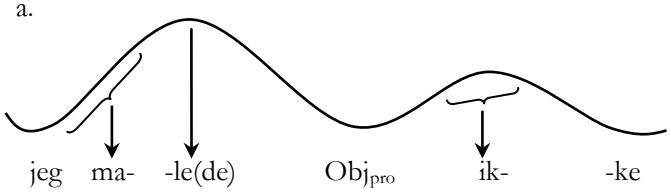
pattern of East Danish as (L)H*L, in which an accent is associated with the H in the middle of the LHL pattern.

[93] The final vowel of the past tense morpheme *-de* disappears in most cases. I attach it in the parentheses to the second syllable as in *-le(de)*.

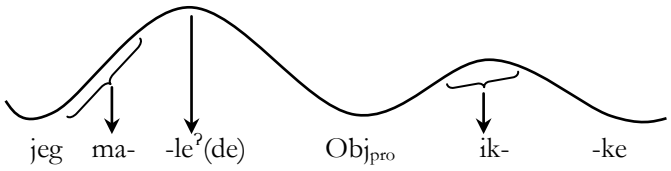
syllable *ma-* of the accented main verb *malede* and reach the peak on its second syllable *-le(de)*. The pitch would fall on the shifted object pronoun. The pitch would rise again on the first syllable *ik-* of the negation *ikke* and fall sentence-finally. Secondly in (122b), especially when a sentence has the monosyllabic object pronoun, *den* or *det*, stød could occur before the shifted object pronoun. This pitch pattern, however, could not be realized as indicated by the asterisk, since the vowel preceding it, i.e. the second syllable *-le(de)* of the main verb, does not have a stress (and it is in fact realized as a schwa). Thirdly in (122c), the main verb and the shifted object pronoun could compose an intonational unit. The pitch would rise on the former, and the pitch peak would occur on the latter. After a slight fall, the pitch would rise again on the first syllable *ik-* of the negation and fall sentence-finally.

(122) Jeg malede den/hende ikke. [Dan.]
I painted it/her not
'I didn't paint it/portray her.'

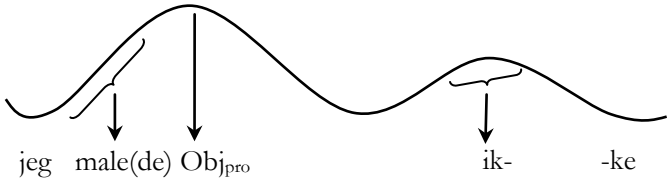
a.



b. *



c.

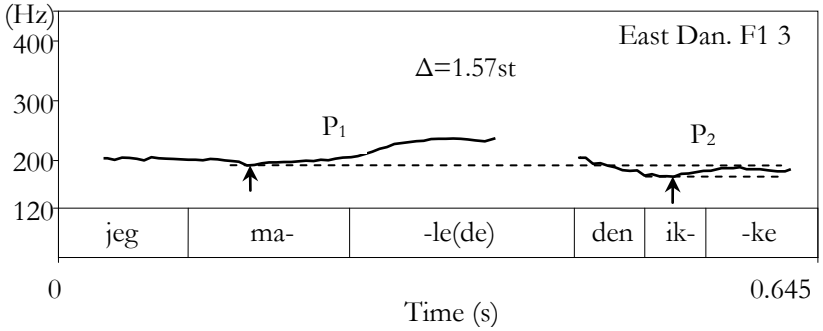


Actual pitch contours of the OS constructions, simple tense forms and Verb Topicalization, are presented below.[94] As illustrated in prediction (122a), the

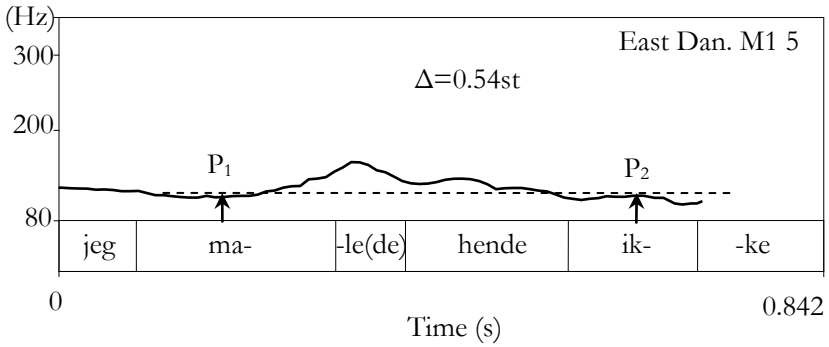
[94] The articulation of the disyllabic object pronoun *hende* is difficult in most cases. I put the entire word in one syllable box.

pitch peak typically occurs on the second syllable *-le(de)* of the main verb, whether it is the simple tense form with a monosyllabic object pronoun (123), the simple tense form with a disyllabic object pronoun (124) or Verb Topicalization (125). In all the cases, the pitch does not rise again (so high) on the next accentable, first syllable *ik-* of the negation: the F0 of the negation is always lower than the F0 of the main verb. There were no cases in which the pitch peak occurs on the shifted object pronoun contrary to prediction (122c). Remarkably, contrary to prediction (122b), stød (visible as an interruption of the F0 curve) occurs in front of the shifted monosyllabic object pronoun, i.e. in the second half of the second syllable *-le(de)* of the main verb (123).

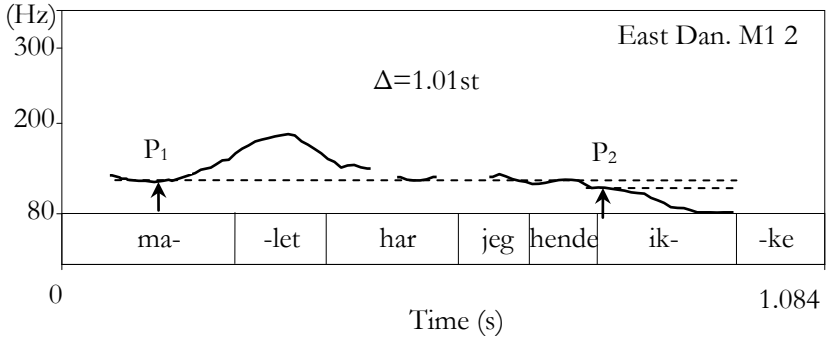
(123) Simple tense forms with a shifted monosyllabic object pronoun:
Jeg malede den ikke. (I painted it not 'I didn't paint it.')



(124) Simple tense forms with a shifted disyllabic object pronoun:
Jeg malede hende ikke. (I portrayed her not 'I didn't portray her.')



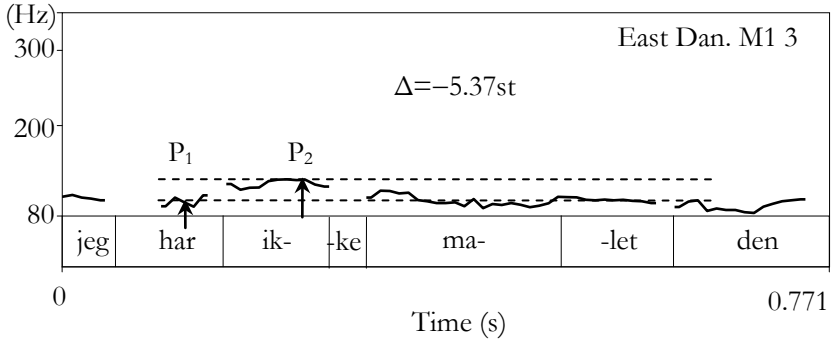
(125) Verb Topicalization with a shifted disyllabic object pronoun:
Malet har jeg hende ikke.
(portrayed have I her not 'I haven't PORTRAYED her.')



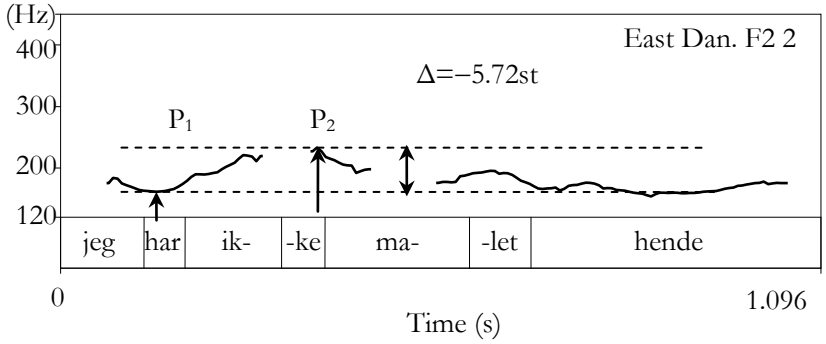
These data illustrate that the F0 on the negation becomes lower than the F0 on the main verb in the OS construction. That is, downstep occurs in the OS construction in East Danish too, as we have seen in the Swedish and Norwegian varieties.

Next, see the pitch contours of the non-OS constructions, complex tense forms and embedded clauses. In complex tense forms, the pitch peak typically occurs on the negation, either on the first syllable *ik-* (126) or on the second syllable *-ke* (127), regardless of whether a sentence has a monosyllabic or disyllabic object pronoun. The final pitch peak occurs on the in-situ past participle. In embedded clauses, the pitch peak typically occurs on the second syllable *-le(de)* of the main verb of the embedded clause (128).

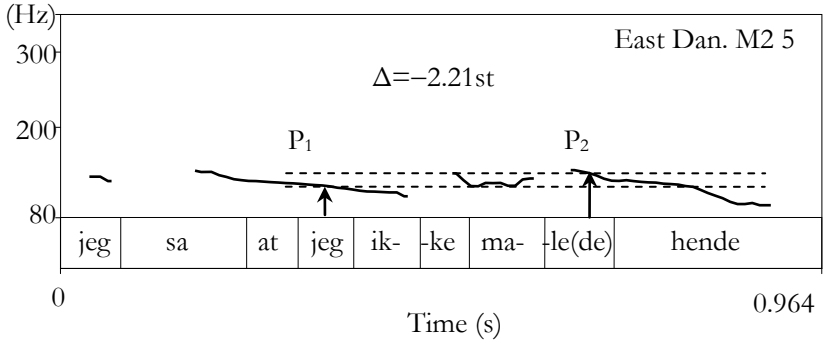
(126) Complex tense forms with a monosyllabic object pronoun:
Jeg har ikke malet den. (I have not painted it 'I haven't painted it.')



(127) Complex tense forms with a disyllabic object pronoun:
Jeg har ikke malet hende.
(I have not portrayed her 'I haven't portrayed her.')



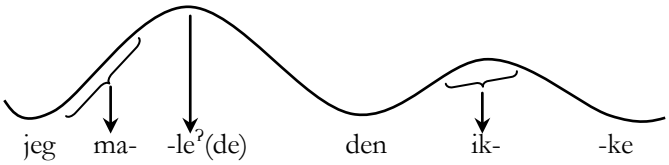
(128) Embedded clauses:
Jeg sa at jeg ikke malede hende.
(I said that I not portrayed her 'I said that I didn't portray her.')



The data above illustrate that the pitch does not lower immediately after the Aux in complex tense forms and the embedded subject, neither of which an object pronoun can follow directly. The pitch peak occurs on a sentential/ clausal element located somewhere 'after' them. That is, in East Danish too, downstep does not occur in the constructions in which OS does not occur.

Turning to the case of the simple tense form with a shifted monosyllabic object pronoun, I repeat again (122b), which turned out to actually occur, in (129). The pitch reaches the highest point on the second syllable *-le(de)* of the main verb. Stød can occur on it when a monosyllabic object pronoun follows it, though it is unstressed. The question is how and why stød can occur in this environment.

(129) (=122b) In fact, OK:



One way to account for the situation above would be to argue, on the basis of the reanalysis of the Danish intonational pattern as LH*L (e.g. Gussenhoven 2004), that the second syllable of the main verb on which the highest peak occurs is accented. If the second syllable were accented, the environment in which stød can occur could be satisfied: for a stød to occur, a relevant syllable needs to be stressed. However, the second syllable is short and the third syllable becomes a schwa [ə] or simply disappears. Thus, the environment in which stød can occur, i.e. a stressed syllable with a short vowel plus a sonorant consonant, is not brought about.

Another way to account for the fact above is to say that stød can occur due to the high pitch on the second syllable of a main verb. This is highly likely. As stated at the beginning of this section, the syllable on which stød occurs always has a high pitch. The pitch falls immediately after the high-tone syllable of a main verb and lowers on the following object pronoun. The pitch does not rise again on the negation following the object pronoun. Recall that the pitch level lowers drastically after a stød syllable. The stød that occurs on the second syllable of a main verb can lower the pitch level. Hence, the answer to the question how and why stød can occur on the second syllable of a main verb is provided as follows: i) how? – due to the high pitch on that syllable; ii) why? – to lower the pitch level on the following sentential elements.

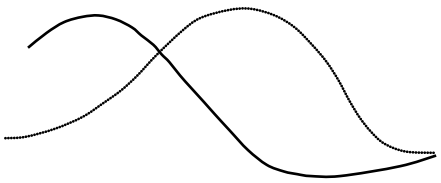
3.2.3.2. Object Shift in Danish non-stød dialects (South)[95]

Stød is absent in South Danish spoken, e.g. in Southern Jutland and Ærø. Instead, it has the kind of word tone observed in Swedish and Norwegian. The pitch contour of South Danish is H*L for stød/accent 1 words and L*H*(L) for non-stød/accent 2 words:[96]

[95] The description of the intonational properties of this variety is based on Lorentz (2004), Gussenhoven (2004), and Erteschik-Shir (2005a, b).

[96] According to Lorenz (2004), the South Danish non-stød/accent 2 pitch contour is LH*L. However, as illustrated in (130), it is obvious that the pitch gesture of the non-stød/accent 2 word is more delayed than that of the stød/accent 1 word. This indicates that part of an accent is carried by the initial L too. This is attested by the pitch gesture of a main verb in the OS construction, as we will see below.

(130) H*L and L*H*(L) contours in South Danish:



———— : H*L ('Kristian'); ···· : L*H*(L) ('Martin')
(Lorentz 2004:189, (10))

Interestingly, the literature on OS reports that though OS has been said to be obligatory in Danish, OS is optional in South Danish, specifically, e.g. in Ærø, South Fyn, Femø and Lolland-Falster (Erteschik-Shir 2005a,b, Broekhuis 2008):

(131) Jeg så ikke det. [Dan.]
I saw not it
'I didn't see it.'
(Erteschik-Shir 2005a:70, (47b))

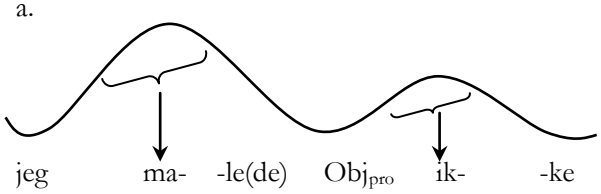
According to Erteschik-Shir (2005a:71), the intonational properties of the non-OS construction in South Danish are similar to those in Swedish; the negation *ikke* is accented. Such an intonational pattern is not allowed in East Danish.

Two pitch contours of the OS construction are predicted from the descriptions above. First, the pitch contour of South Danish is H*L for accent 1 words and L*H* for accent 2 words. South Danish does not have stød. South Danish (and Danish in general) does not have a focal H that expresses the focus of a sentence. To focalize a word, the H on it is raised higher than the H on the preceding word(s). Hence, it would be predicted that the pitch properties of South Danish are similar to those of South Swedish, a one-peaked dialect that has a H*L contour for accent 1 words and a L*H contour for accent 2 words and in which the pitch gesture of a focused word overlaps with that of a focal H tone. Specifically in (132a), the pitch would rise on the first syllable *ma-* of the accented main verb *malede* and then begin to fall on it. It would be low on its second syllable *-le(de)* and also on the shifted object pronoun. It would rise again on the first syllable *ik-* of the negation *ikke* and fall sentence-finally. Secondly, the H typically occurs on the syllable following an accented syllable in Danish. Thus as in (132b), the pitch would begin to rise on the first syllable *ma-* of the main verb, and the pitch peak could occur on its second syllable *-le(de)*. After the pitch fall following it, the pitch would begin to rise again on the first syllable *ik-* of the negation. The second pitch peak would

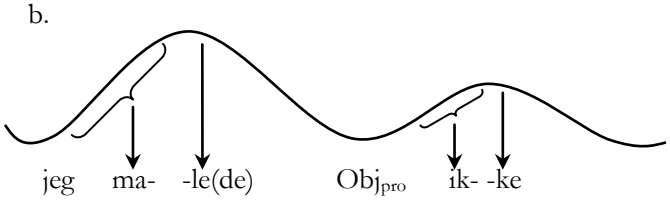
occur on its second syllable *-ke*, and the pitch would fall sentence-finally.

(132) Jeg malede den/hende ikke. [Dan.]
I painted it/her not
'I didn't paint it/portray her.'

a.

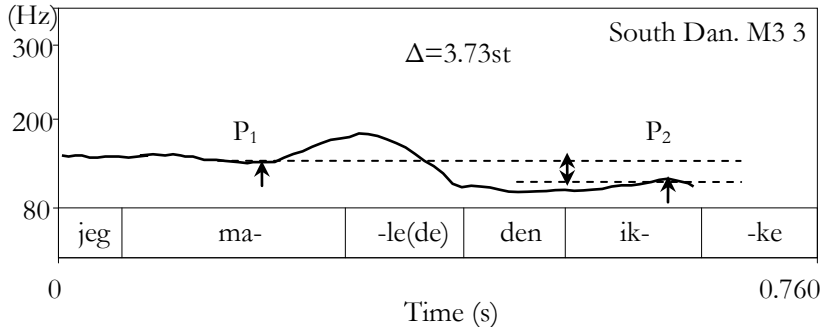


b.

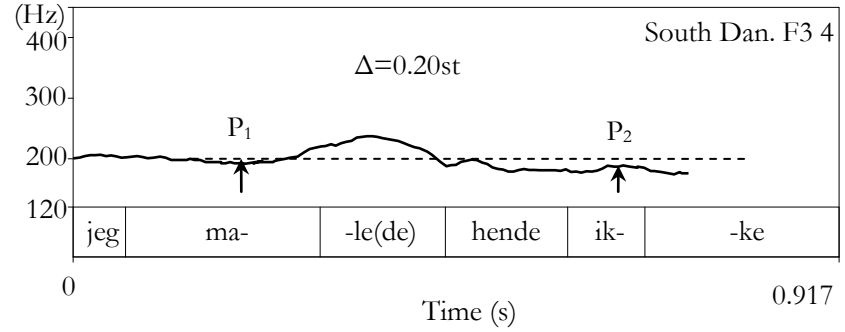


Actual pitch contours of the OS constructions, simple tense forms and Verb Topicalization, are presented below. The pitch peak typically occurs on the second syllable *-le(de)* of the main verb, regardless of whether a sentence contains a monosyllabic (133) or disyllabic (134) object pronoun, which confirms prediction (132b). As illustrated in (135), the pitch peak can also occur on the final part of the first syllable *ma-* of the main verb, as predicted in (132a). In that case, however, the pitch level on the first syllable of the main verb is almost the same as that of its second syllable. The first and second half of the first syllable of the main verb each carry a part of an accent, which makes the pitch contour of South Danish non-stød/accent 2 words a L*H* pitch. Note that stød does not occur in the OS construction of the simple tense form that contains a monosyllabic object pronoun (133): there is no interruption of the F0 curve. Compare with the same construction of East Danish (123).

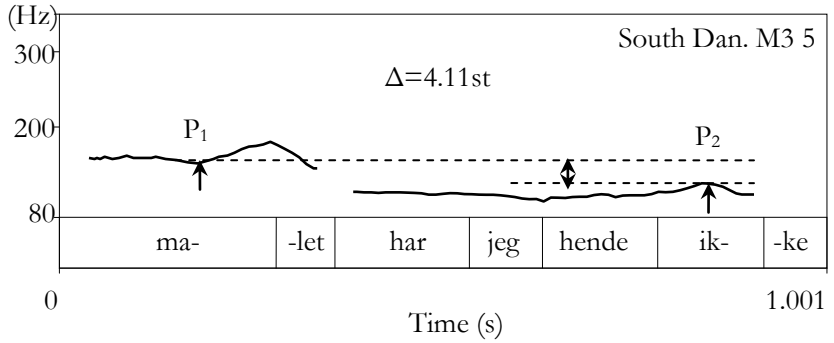
(133) Simple tense forms with a shifted monosyllabic object pronoun:
Jeg malede den ikke. (I painted it not 'I didn't paint it.')



(134) Simple tense forms with a shifted disyllabic object pronoun:
Jeg malede hende ikke. (I portrayed her not 'I didn't portray her.')



(135) Verb Topicalization with a shifted disyllabic object pronoun:
Malet har jeg hende ikke.
(portrayed have I her not 'I haven't PORTRAYED her.')



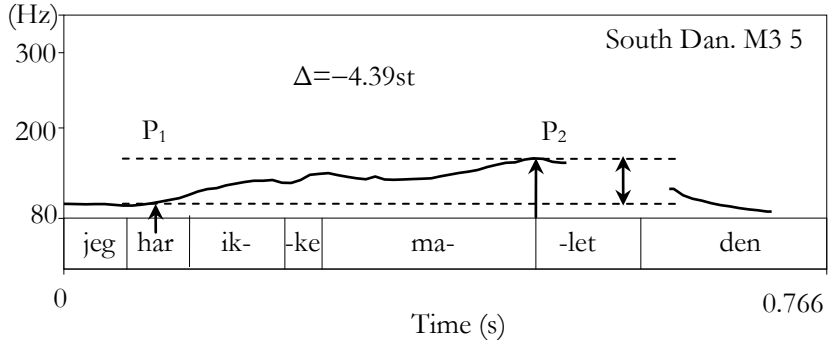
As illustrated above, the pitch properties of the OS construction of South Danish are very similar to those of South Swedish, except the point that the

pitch peak (on the main verb) is somewhat delayed in the former, compared with the latter. In the same way as in South Swedish, the pitch does not rise again on the negation: the F0 on the negation is lower than the F0 on the main verb in South Danish too. That is, downstep occurs in the OS construction of South Danish too.

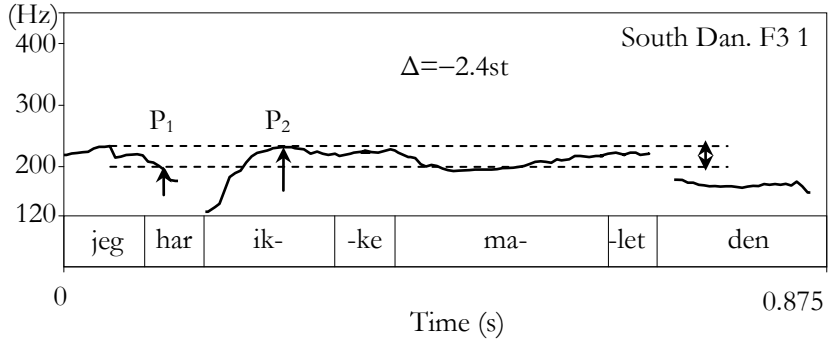
Next, see the pitch contours of the non-OS constructions, complex tense forms and embedded clauses. In complex tense forms, regardless of whether a sentence contains a monosyllabic or disyllabic object pronoun, the pitch peak occurs either (somewhere) on the main verb (136-137a) or on (the first syllable of) the negation (136-137b). In the latter case, the final pitch peak occurs on the in-situ past participle. In embedded clauses, the pitch peak occurs either (somewhere) on the embedded main verb (138a) or on (the second syllable of) the negation (138b). In the latter case, the final pitch peak occurs on the embedded main verb.

(136) Complex tense forms with a monosyllabic object pronoun:
Jeg har ikke malet den. (I have not painted it 'I haven't painted it.')

a.

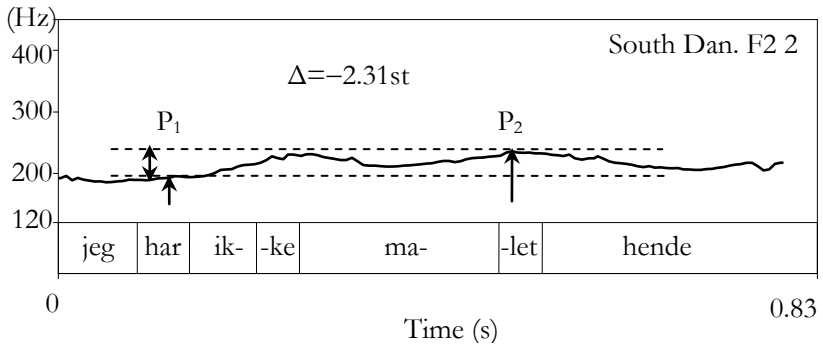


b.

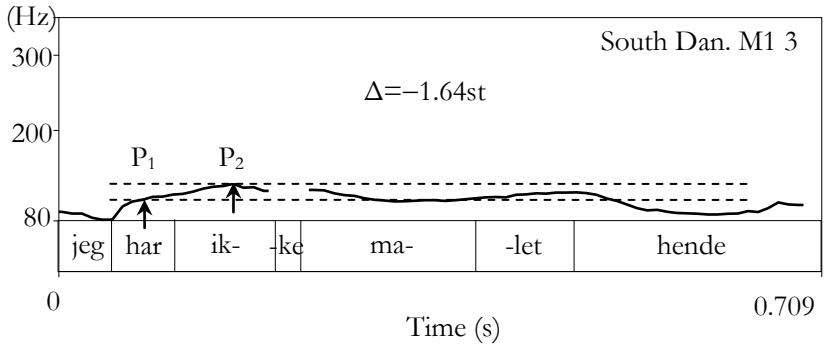


(137) Complex tense forms with a disyllabic object pronoun:
Jeg har ikke malet hende.
(I have not portrayed her 'I haven't portrayed her.')

a.

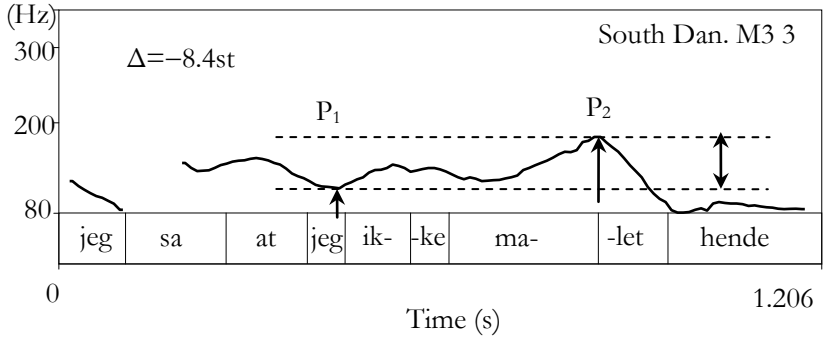


b.

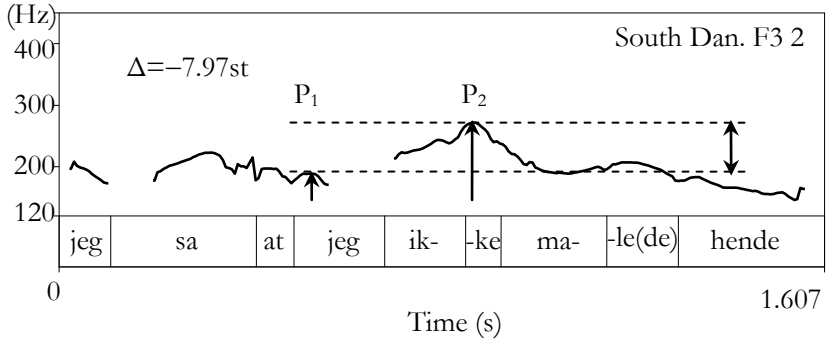


(138) Embedded clauses:
Jeg sa at jeg ikke malede hende.
(I said that I not portrayed her 'I said that I didn't portray her.')

a.



b.



As illustrated above, the pitch peak occurs on a sentential/clausal element located somewhere 'after' the Aux in complex tense forms and the embedded subject, neither of which is followed by an object pronoun directly. That is, downstep does not occur in the constructions in which OS does not occur in South Danish either, in the same way as in the other Scandinavian varieties we have seen so far.

3.2.3.3. Summary

We have examined the intonational properties of the constructions relevant to Danish OS. Stød occurs before a shifted monosyllabic object pronoun in simple tense forms in East Danish. It can occur on the second syllable of a main verb due to the high pitch on that syllable and lowers the pitch level on the following sentential element(s). The pitch properties of the OS constructions in South Danish are very similar to those in South Swedish. In

both varieties, the F0 on the negation is lower than the F0 on the main verb in the OS constructions. In the non-OS constructions, the pitch peak occurs somewhere after the Aux in complex tense forms and the embedded subject, neither of which can be followed by an object pronoun directly. Thus, downstep occurs in the constructions in which OS occurs but does not occur in the constructions in which OS does not occur in Danish too, in the same way as in the other Scandinavian varieties we have seen so far.

3.2.4. Summary of Mainland Scandinavian Object Shift

We have examined the intonational properties of the constructions relevant to (the presence and absence of) OS in Mainland Scandinavian. In the Swedish two-peaked varieties, East and West Swedish, the expected focal H that should occur after an accented main verb typically does not occur in the OS constructions of simple tense forms and Verb Topicalization, except a few cases. The pitch lowers on a shifted object pronoun and does not rise again on the negation. The F0 on the negation becomes lower than the F0 on the main verb. In the non-OS constructions of complex tense forms and embedded clauses, however, the pitch does not lower immediately after the Aux in complex tense forms and the embedded subject, neither of which can be followed by an object pronoun directly. The pitch peak occurs on a sentential/ clausal element that is located after them.

The tendency above is observed in Norwegian too. The difference from Swedish is that a shifted object pronoun, being incorporated into the pitch contour of the preceding main verb, composes the final H part of the H*LH contour of the verb. Thus, the pitch peak is more likely to occur on the shifted object pronoun in Norwegian than in Swedish.

The same tendency is also observed in Danish. In East Danish, stød occurs before a shifted monosyllabic object pronoun, i.e. on the second syllable of a main verb, in simple tense forms. The high pitch on that syllable enables stød to occur, and the latter can lower the pitch level on the following sentential element(s).

All in all, downstep occurs in the OS constructions but does not occur in the non-OS constructions in almost all the Mainland Scandinavian varieties we have seen so far, aside from a few exceptional cases.

It turned out that OS is far more absent in Dalecarlian in general than reported so far. In one of the Dalecarlian varieties, Övdalian, OS is totally absent. In this variety, downstep does not occur. This property is derived from the fact that Övdalian is two-peaked, but the pitch gesture occurs late. The intonational property that differentiates Dalecarlian in general from the other Swedish dialects is that the pitch gesture (of an accented main verb) is substantially delayed in the former. Thus, the generalization on OS was formulated as follows:

(139) Generalization on Scandinavian Object Shift (second approximation): The more delayed the pitch gesture is, the more likely is Object Shift to be absent in a relevant Scandinavian variety.

3.3. Insular Scandinavian

3.3.1. Icelandic

3.3.1.1. The Icelandic intonational system[97]

Icelandic does not have the kind of word tone observed in Swedish and Norwegian. Word stress is almost obligatorily located on the first syllable: Icelandic has a trochaic accent system.

Icelandic has a particular phonological property: *preaspiration*. Plosives are either aspirated or unaspirated, but they are not aspirated after sonorants such as vowels. A sequence of geminated plosives and a plosive followed by a sound like [l] or [n] appear as 'a preaspirated plosive which itself is unaspirated' (Gussmann 2002:55). The process of preaspiration results in the insertion of [h] before the relevant plosive(s). Thus, the negation *ekki*, a typical diagnostic for the presence or absence of OS, is pronounced with preaspiration as [ehki].

The rhythmic pattern in the compounding process is arranged by reducing the secondary stress on the first element and maintaining the primary stress on the second element. Thus, *ˈforstˌa* 'leadership' + *ˈsauður* 'sheep' results in *ˈforstuˌsauður* 'leading sheep', in which the secondary stress of the first element is reduced and the primary stress of the second element is kept as the secondary stress of the entire compound.[98] The vowel of the first syllable of the first element may or may not maintain its length, but that of the second element does not keep its length. Thus, *gler* [klɛ:r] 'glass' + *auga* [œi:ɣa] 'eye' results in *glerauga* [klɛ:rœiɣa] 'glass eye', in which the long vowel of the first element is maintained. *Haf* [ha:v] 'ocean' + *gola* [kɔ:la] 'breeze' results in *hafgola* [havkɔla] 'sea breeze', in which the long vowel of the first element is not kept any longer. The long vowel of the second element is, however, maintained in neither of the cases.

Cliticization differs from compounding in that the former produces a phonological word. Cliticization of an object pronoun onto the preceding main verb, e.g. *treysti honum* 'trust him', produces a reduced form [ˈtʰreistɔnʏm]. The initial consonant *h* of the pronoun is omitted. The final vowel *i* of the main verb, which would be adjacent to the (initial) vowel *o* of the pronoun, disappears too. Unlike the suffixation, e.g. of *-legur*, which maintains an accent as a secondary stress in a resulting form (e.g. *ˈaumingjaˌlegur* 'miserable looking'),

[97] The description of the intonational properties of this variety is based on Árnason (1999, 2009, 2011), Gussmann (2002), and Dehé (2006, 2009, 2010).

[98] 'ˈ' shows the location of the primary stress, and 'ˌ' that of the secondary stress.

cliticization does not keep stress. A main verb receives a prominence higher than the following object pronoun in the unmarked case.[99]

Phrasal accent is located on the rightmost constituent in the unmarked case. An exception, in addition to the case of cliticization stated above, is a definite noun phrase (consisting of not so heavy words), in which the leftmost constituent is accented in the unmarked case: e.g. *GAMLA hestinn* 'the *OLD* horse' vs *gamlan HEST* 'an old *HORSE*'. Sentence rhythm can be sometimes rearranged to avoid stress crash: *fimmtán mínútur* 'fifteen minutes' [ˈfɪm̥taunˈminutʏr̥] vs *fimm mínútur* 'five minutes' [ˈfimiˈnuːtʏr], in the latter of which the stress on the first syllable of *mínútur* moves to its second syllable.[100]

Icelandic has a pitch accent system similar to English. Icelandic can have various pitch patterns: L*H, L*H*, LH*, H*L and H*L*. Neutral declarative sentences are realized by either a sequence of H*Ls or the combination of L*H and H*L. L*H and L*H* are normally used in question. They can appear in neutral declarative sentences when they are followed by another H*. The focus of a sentence is realized by a focal accent. The vowel of an accented syllable of a focused word can be lengthened. Downstep is observed, though it does not occur before a focused element. It occurs when a sentence has a final L boundary, but does not occur when a sentence has a final H boundary. The latter case gives an impression that a sentence has not yet ended or an impression of an argument against what was previously stated. Deaccentuation on sentential elements that carry given information is not obligatory, though it can occur on those which are 'informationally "light"' (Árnason 2011:322).

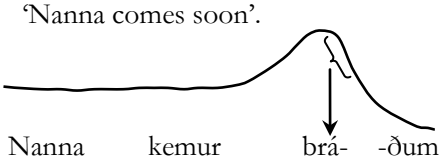
Typical pitch contours of declarative sentences are illustrated below. The focus of a sentence is carried by the adverb *bráðum* in (140a). Downstep does not occur before the adverb, and the pitch level is relatively low in pre-focal positions. The pitch peak occurs on the first syllable *brá-* of the adverb, and the pitch starts to fall on it. The object *kríuegg* is contrastively focused in (140b). The pitch begins to rise on the first half of its first syllable *krí-* and reaches the peak on the second half of it. The pitch lowers on the second syllable *-egg* and rises again sentence-finally.

---

[99] With the argument that cliticization produces a phonological word, Árnason (2009) argues against the assumption of the clitic group as an independent category.

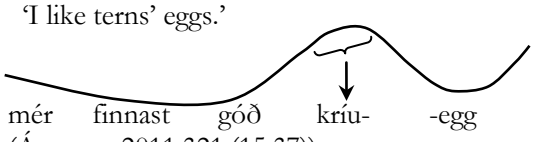
[100] In the post-lexical utterance, weak final vowels often disappear, when the next word starts with a vowel (Final Vowel Deletion). This occurs for [ɪ], [a] and [ʏ], which typically appear as a verbal ending and a derivational suffix, but does not occur for other vowels such as [i], [œ] and [ɔ].

(140) a. Nanna kemur bráðum. [Ice.]
Nanna comes soon
'Nanna comes soon'.



Nanna kemur brá- -ðum
(Árnason 2011:315,(15.22))

b. Mér finnast góð KRÍUEGG.
me find good terns' eggs
'I like terns' eggs.'



mér finnast góð kríu- -egg
(Árnason 2011:321,(15.37))

3.3.1.2. Icelandic Object Shift

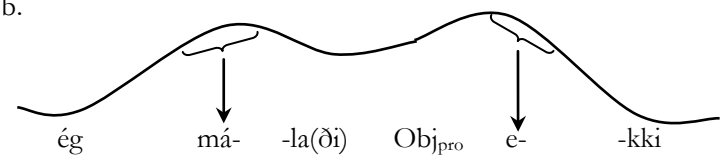
The pitch contours of the OS construction predicted from the descriptions of the Icelandic intonational system in the previous section are presented below. First in (141a), a shifted object pronoun should be cliticized onto the preceding main verb *málaði*. The pitch peak would occur on its accented, first syllable *má-*. After the pitch falls, it should rise again on the first syllable *e-* of the negation *ekki*, since Icelandic has a trochaic accent system. Secondly, declarative sentences can be realized by the combination of L*H and H*L. The LH contour can appear when it is followed by another H*. Thus as in (141b), after the first pitch peak on the accented, first syllable *má-* of the main verb, the pitch would not lower. It would continue to rise up to the next accentable H, i.e. the first syllable *e-* of the negation, and fall sentence-finally.

(141) Ég málaði hann/hana ekki. [Ice.]
I painted/portrayed it/her not
'I didn't paint it/portray her.'

a.

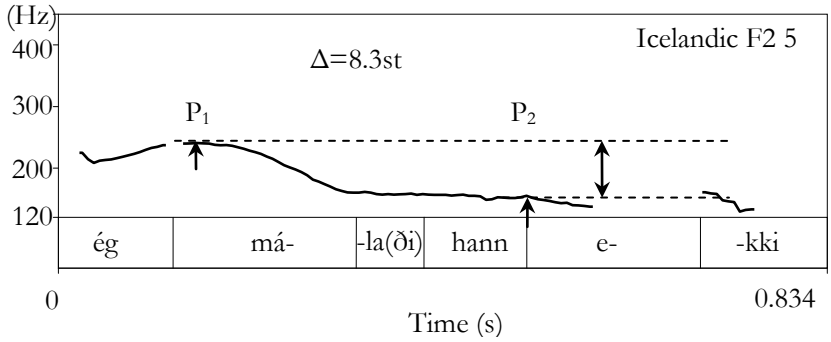
ég má- -la(ði) Obj_{pro} e- -kki

b.



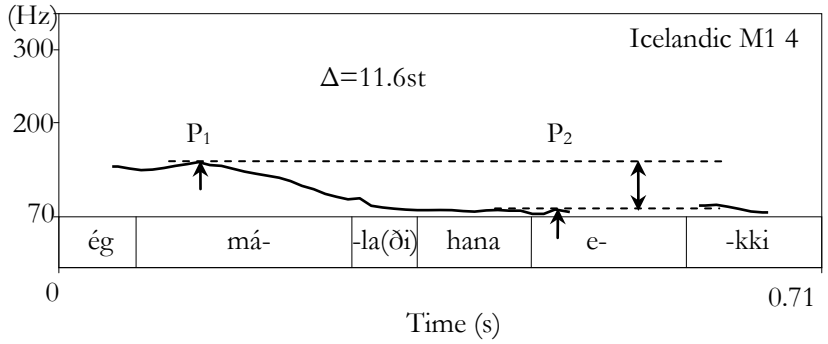
Actual pitch contours of the OS constructions are presented as follows.[101] The pitch peak occurs on the first syllable *má-* of the main verb *málaði* in all cases of simple tense forms that have either a mono- or disyllabic object pronoun (142-143), contrary to prediction (141b). After the pitch falls on the first syllable of the main verb, it continues to fall until sentence-final position. It does not rise again on the first syllable *e-* of the negation, contrary to prediction (141a). In Verb Topicalization too, the pitch peak occurs on the first syllable *má-* of the sentence-initial past participle main verb *málað* (144). In this case, the pitch can slightly rise on the first syllable of the negation. But the pitch level on the negation is far lower than that on the past participle. These data illustrate that the F0 on the negation becomes lower than the F0 on the main verb in the OS construction. That is, downstep occurs in the OS construction in Icelandic, in the same way as in the Mainland Scandinavian varieties.

(142) Simple tense forms with a monosyllabic object pronoun:
Ég málaði hann ekki. (I painted it not 'I didn't paint it')

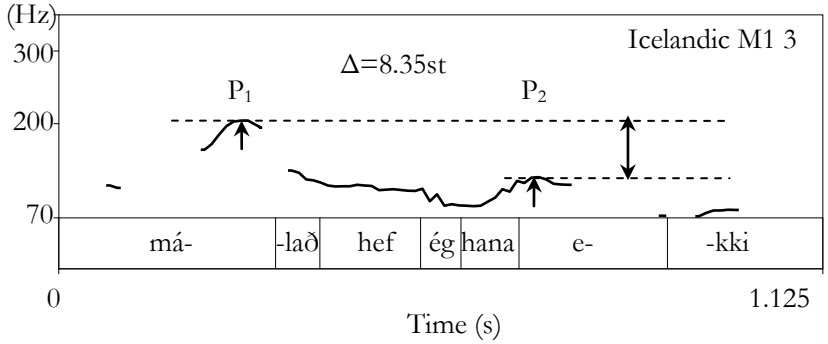


[101] In the OS construction, the disyllabic object pronoun *hana* is pronounced very rapidly. Since the articulation is very difficult, I put the entire word in one syllable box.

(143) Simple tense forms with a disyllabic object pronoun:
Ég málaði hana ekki. (I portrayed her not 'I didn't portray her')



(144) Verb Topicalization:
Málað hef ég hana ekki.
(portrayed have I her not 'I haven't PORTRAYED her')



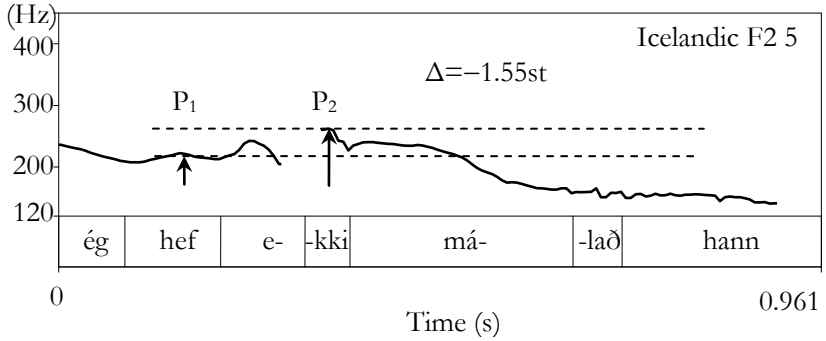
We saw the cliticization process that produces a phonological word in the previous section. Remarkably, in simple tense forms with a shifted object pronoun (142-143), not only a main verb and a shifted object pronoun but also the negation compose a phonological word together. The actual pronunciation of the phrase *málaði hann ekki* is [ˈmɔːləhanehk(i)], and that of the phrase *málaði hana ekki* is [ˈmɔːləhanehk(i)/ˈmɔːləhanahk(i)]. In both cases, the verbal suffix *-ði* is dropped and the final vowel *i* of the negation can be voiceless. In the case of the shifted monosyllabic object pronoun *hann*, its final nasal *n* of is resyllabified as the onset of the following initial vowel *e* of the negation, which results in [ne]. In the case of the shifted disyllabic object pronoun *hana*, either its final vowel *a* or the first vowel *e* of the negation is omitted. The former process produces the foot [ne] by resyllabification of the final nasal *n* of the object pronoun as the onset of the following initial vowel *e* of the negation. The latter process maintains the final vowel *a* of the shifted object pronoun, which is directly followed by the preaspirated *h* of the negation. Unlike the compounding

process, the first syllable *e* of the negation does not attract the secondary stress in any of the cases.[102]

Next, see the pitch contours of the constructions complex tense forms and embedded clauses. The pitch peak occurs on the second syllable of the negation in both the complex tense form with a monosyllabic object pronoun (145a) and the one with a disyllabic object pronoun (146a). In these cases, the final pitch peak occurs on the past participle. Another tendency is that the pitch peak occurs on the subject (145-146b). Since both the Aux and the next highest pitch point are in the course of the pitch falling after the subject, the pitch level on the Aux can be slightly higher than that on the next pitch point. After the pitch falls, however, it rises again on the object pronoun that remains in situ. In embedded clauses (147), in which both a main verb and an object pronoun move in Icelandic, the pitch peak typically occurs on the first syllable *má-* of the embedded main verb.

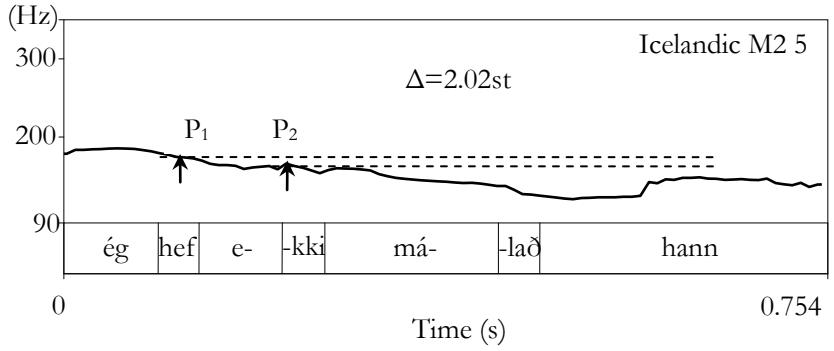
(145) Complex tense forms with a monosyllabic object pronoun:
Ég hef ekki málað hann. (I have not painted it 'I haven't painted it')

a.



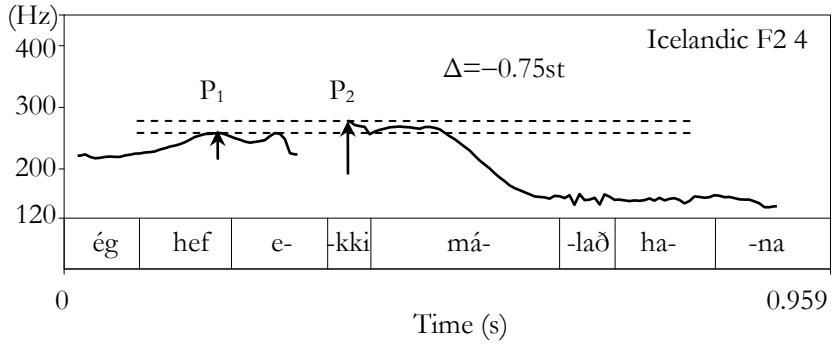
[102] The initial consonant *h* of the shifted object pronoun appears sometimes as a semivowel [w] in these cliticization cases. This is presumably to avoid hiatus that could arise when, in the absence of *h*, the second vowel *a* of the main verb would be adjacent to the first vowel *a* of the shifted object pronoun.

b.

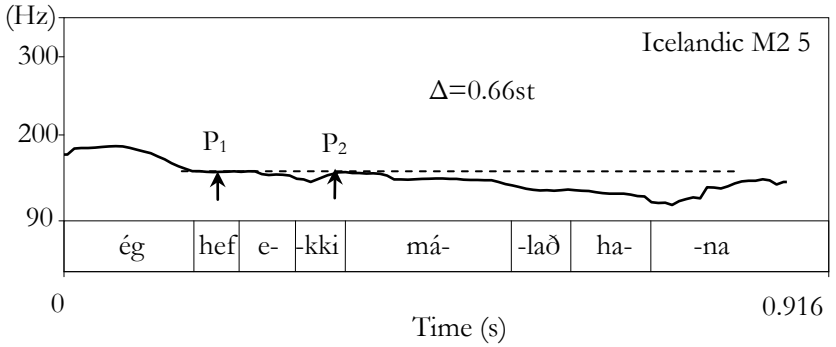


(146) Complex tense forms with a disyllabic object pronoun:
Ég hef ekki málað hana.
(I have not portrayed her 'I haven't portrayed her')

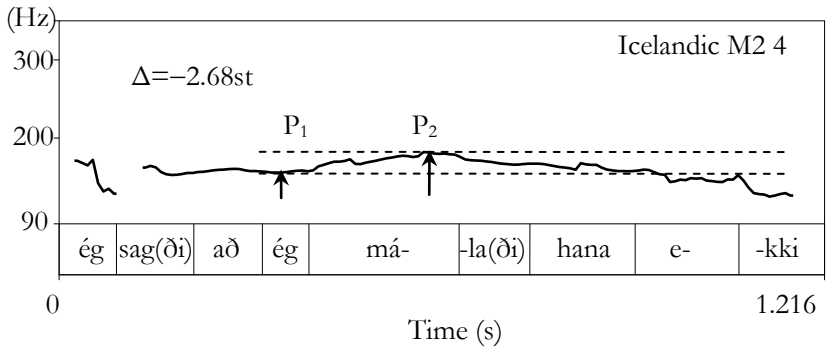
a.



b.



(147) Embedded clauses with a disyllabic pronoun:
Ég sagði að ég málaði hana ekki.
(I said that I portrayed her not 'I said that I didn't portray her')



The data above illustrate that the same tendency as observed in the Mainland Scandinavian varieties can be observed in Icelandic: the pitch peak occurs on a sentential/clausal element located somewhere 'after' the Aux in complex tense forms and the embedded subject, neither of which can be followed by an object pronoun directly. That is, downstep does not tend to occur in Icelandic complex tense forms and embedded clauses.

Consider the non-OS construction of the complex tense forms in which the pitch peak occurs on the subject (145-146b). The actual pronunciation of *ég hef ekki málað hann* is [ˈja(he)vekimɔːləˌhan], and that of *ég hef ekki málað hana* is [ˈja(he)vekimɔːləhaˌna]. The final consonant *f* of the Aux is surrounded by two vowels, one of the Aux and the other of the first syllable of the negation, and voiced, which produces [v]. In quite a rapid speech, even the first consonant *h* and the vowel *e* are dropped, and the Aux has only the final voiced sound [v]. The [h] of the negation [ehki] that should be produced by the preaspiration process does not occur. Remarkably, the entire sentence is uttered as if it were a compound. That is, the first consonant *h* of an object pronoun always appears, and the monosyllabic object pronoun and the second syllable of the disyllabic object pronoun attract the secondary stress of 'the entire compound', as illustrated by 'ˌ'.[103]

[103] In the experiment, the case of contrastive argument-focus of object pronouns, i.e. the case of strong object pronouns, is tested, for both the construction in which a strong object pronoun moves and the one in which it remains in situ. I present the result of computation of downstep in those constructions in chapter 4, where summary statistics of all constructions are presented.

3.3.1.3. Summary

We have examined the intonational properties relevant to Icelandic OS. In the same way as in the Mainland Scandinavian varieties, downstep occurs in simple tense forms and Verb Topicalization, but tends not to occur in complex tense forms and embedded clauses, in Icelandic too. In the OS construction of simple tense forms, the cliticization process occurs. Not only a main verb and a shifted object pronoun but also the negation compose a phonological word together. In the non-OS construction of complex tense forms, the pitch peak can occur on the subject. The entire sentence is uttered as if it were a compound in which an object pronoun attracts the secondary stress.

3.3.2. Faroese

3.3.2.1. The Faroese intonational system[104]

The phonological system of Faroese is quite similar to that of Icelandic. Faroese does not have word tones. Word stress is located on the first syllable of almost all vernacular Faroese words. However, Faroese allows a much greater variety of stress patterns than Icelandic, locating stress on non-initial positions, e.g. of certain kinds of adjectives and adverbs (e.g. *samˈbær¸ligur* 'agreeable', *alˈoftast* 'most frequently') and foreign words especially of Danish origin (e.g. *stuˈdentur* 'student').

Faroese has preaspiration, the process of inserting [h]. It occurs before a geminate plosive and before [t] followed by a sound such as [l] and [n]. [kk] undergoes palatalization before [i] and is pronounced as [ɡʲ]. The negation *ikki*, a typical diagnostic of the presence or absence of OS, is thus pronounced as [ihɡʲi] in an emphatic context or a citation form. In rapid speech in normal conversation, both [h] and the final [i] are often dropped, which produces [iɡʲː].

In the compounding process, the primary stress of an entire compound occurs on the first element and the secondary stress on the second element. However, there are some compounds that have an option in the location of the primary stress on either the first or second element: e.g. either *ˈburðar¸vektir* or *¸burðarˈvektir* 'birth weights'.[105]

Cliticization in Faroese differs from compounding in that the former is the process of producing a phonological word: e.g. *hjá honum* 'with him' [ˈɡʲʰɔːnʊn] (< [ˈɡʲʰɔɑːˈhɔːnʊn]). The final long vowel of the preposition, i.e. [ɑː], is lost and the initial consonant *h* of the following pronoun is also omitted. The pronoun does not attract the secondary stress.

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[104] The description of the intonational properties of this variety is based on Lockwood (1977) and Árnason (1999, 2011).

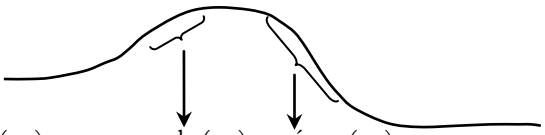
[105] [ð] almost always disappears. In a few words, the sequence [ðr] is pronounced as [gr].

Phrasal accent is located on the rightmost constituent in the unmarked case. Unlike Icelandic, Faroese has non-suffixal, independent definite and indefinite articles, and also has definite and indefinite inflections that are realized on a noun and an adjective. Faroese thus does not show a systematic intonational difference between a definite phrase (left-strong) and an indefinite phrase (right-strong) that we saw in Icelandic.

The Faroese intonational system has changed from the one strictly based on the word stress rule to the phrasal accent system stated above, though it is a long-term process. The vacillation in the location of the primary stress on either the first or second element of a compound that we saw above, as well as the tendency in the change of the location of the stress from the first to final syllable, are derived from the change in the Faroese intonational system.

A remarkable feature of the Faroese intonational system can be described as follows. The pitch starts at a relatively high level. The pitch level is kept in short utterances. In long utterances, the pitch further rises on the first prominent syllable. In both cases, the pitch abruptly falls on the accented syllable of a focused word. This is illustrated in (148), in which the focus is carried by the adjective *góður*. The pitch rises on the first syllable *al-* of the first prominent word *altíð* and keeps its level on the unstressed adverb *so*. It abruptly falls on the accented first syllable *gó-* of the focused word *góður*. After the pitch fall, the pitch remains low until the end of the sentence.

(148) Hann var altíð so góður við hana. [Far.]
he was always so fond with her
'He was always so fond of her.'

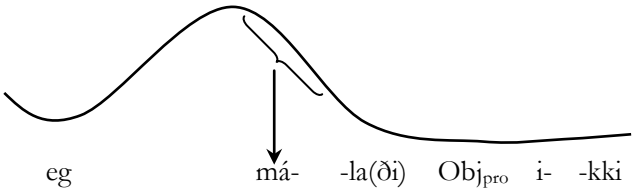


(Lockwood 1977:25)

3.3.2.2. Faroese Object Shift

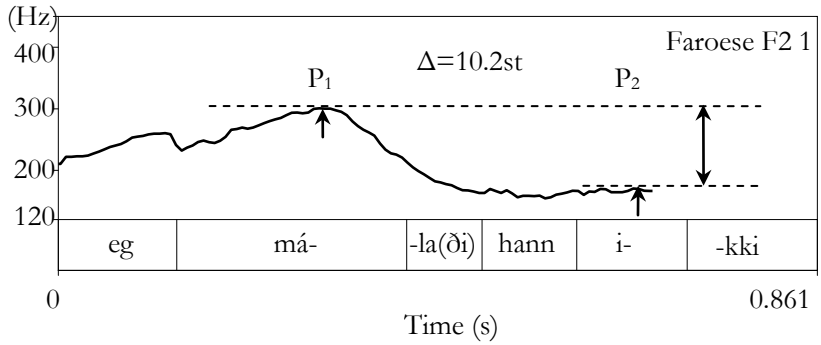
The pitch contour predicted from the Faroese intonational system described in the previous section is illustrated below. Faroese basically has a trochaic accent system but allows a greater variety of stress patterns than Icelandic. In the typical intonation pattern, the pitch abruptly falls on the accented syllable of a focused word. Thus, after the pitch reaches the peak on the first syllable *má-* of the main verb *málaði*, which carries the focus and focal accent of the sentence, it would fall abruptly. It would then remain low until the end of the sentence, without rising again on (the first syllable of) the negation.

(149) Eg málaði hann/hana ikki. [Far.]
I painted/portrayed it/her not
'I didn't paint it/portray her.'



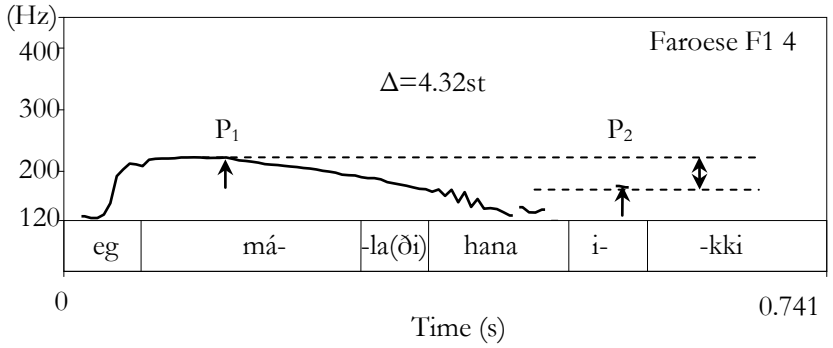
Actual pitch contours of the OS construction are presented below.[106] In both the simple tense form with a monosyllablic object pronoun (150) and that with a disyllabic object pronoun (151), the pitch peak occurs on the first syllable *má-* of the main verb. As predicted, the pitch falls drastically after it. It continues to be at a low level until sentence-final position, without rising again on (the first syllable of *i-*) the negation *ikki*. The pitch can slightly rise on the negation (151), but the pitch level on the negation is far lower than that on the main verb. In Verb Topicalization (152) too, the pitch peak occurs on the first syllable *má-* of the sentence-initial past participle *málað*. The pitch drastically falls after it. The pitch remains low and can slightly rise on the first syllable *i-* of the negation *ikki*, but this pitch peak is far lower than that on the past participle main verb.

(150) Simple tense forms with a monosyllabic object pronoun:
Eg málaði hann ikki. (I painted it not 'I didn't paint it')

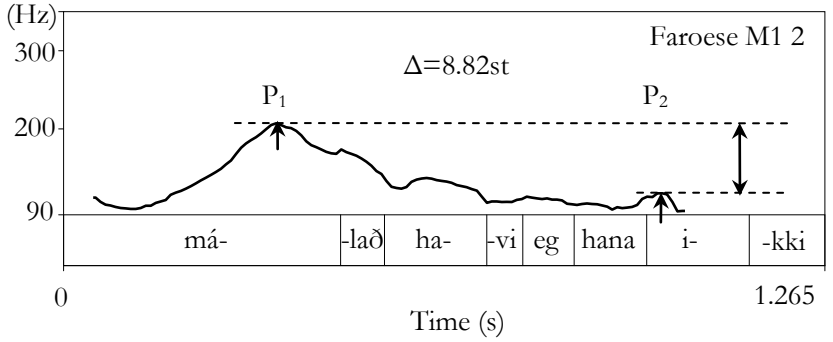


106 In the OS construction, the disyllabic object pronoun *hana* is pronounced very rapidly. Since the articulation is very difficult, I put the entire word in one syllable box.

(151) Simple tense forms with a disyllabic object pronoun:
Eg málaði hana ikki. (I portrayed her not 'I didn't portray her')



(152) Verb Topicalization:
Málað havi eg hana ikki.
(portrayed have I her not 'I haven't PORTRAYED her')

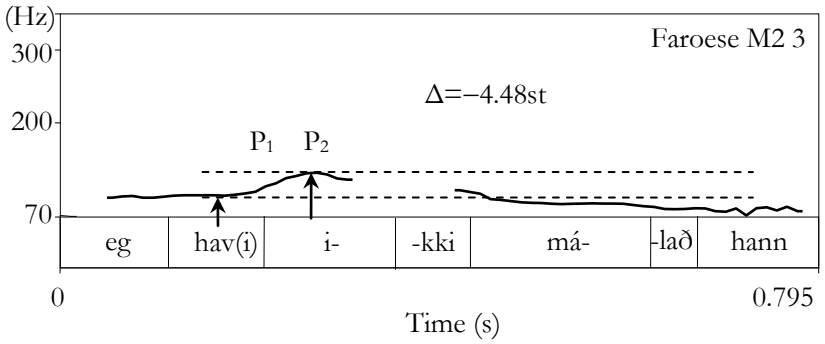


In all the cases above, the pitch peak on the negation does not reach the same level as that on the main verb. That is, the F0 on the negation is always lower than the F0 on the main verb. These data show that downstep occurs in the OS construction of Faroese too.

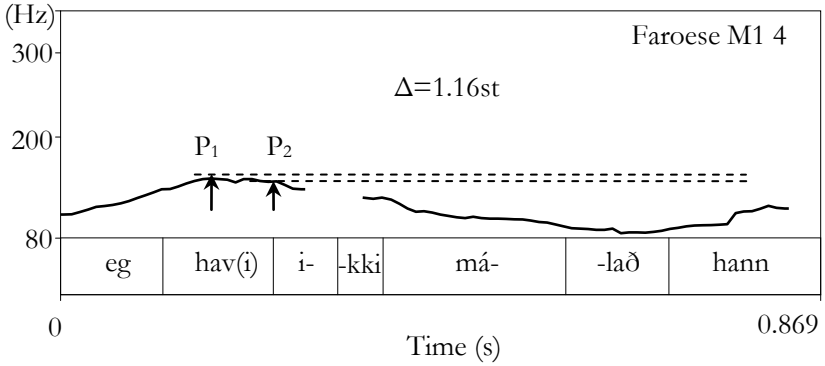
Next, observe the pitch contours of complex tense forms, in which OS does not occur. The pitch peak occurs on the first syllable of the negation in both the complex tense form with a monosyllabic object pronoun (153a) and that with a disyllabic object pronoun (154a). The pitch peak can also occur on the Aux (153-154b). But the pitch level on the Aux is not so different from that on the following negation. The final pitch peak occurs either on the past participle or on the in-situ object pronoun.

(153) Complex tense forms with a monosyllabic object pronoun:
Eg havi ikki málað hann. (I have not painted it 'I haven't painted it')

a.

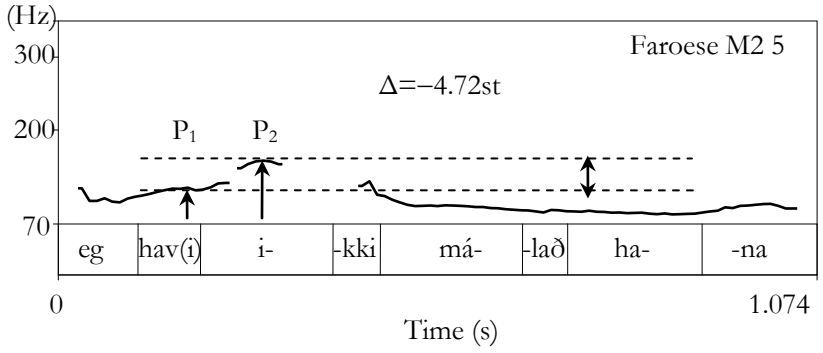


b.

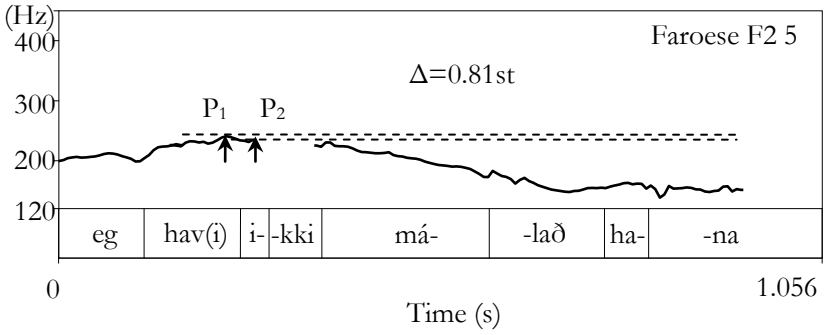


(154) Complex tense forms with a disyllabic object pronoun:
Eg havi ikki málað hana.
(I have not portrayed her 'I haven't portrayed her')

a.

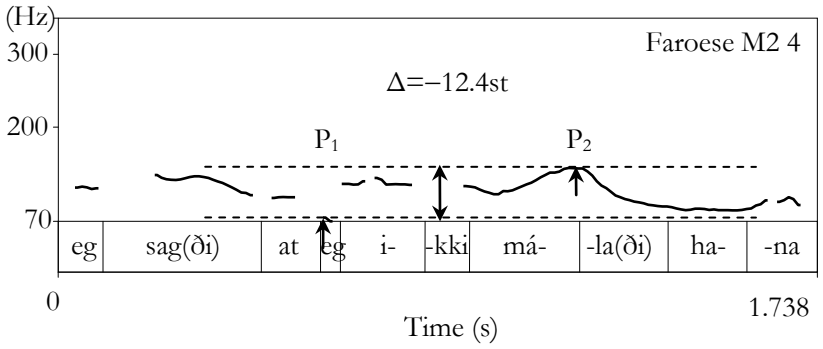


b.

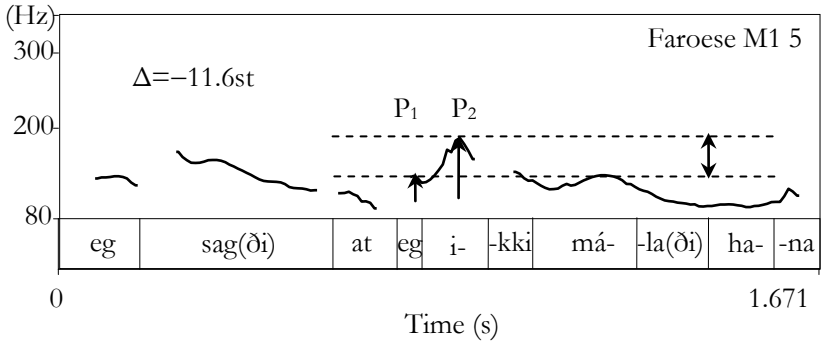


Finally, let us observe the pitch contours of embedded clauses. As introduced in chapter 2, it is controversial whether a main verb moves or remains in situ in Faroese embedded clauses (e.g. Heycock et al. 2010). The following three patterns are considered to be possible word orders of an embedded clause regarding the context of OS: Neg+V+Obj_{pro} (155), V+Neg+Obj_{pro} (156), and V+Obj_{pro}+Neg (157). When the embedded main verb does not move, the pitch peak can occur either on it (155a) or on the negation (155b). In the latter case, the final pitch peak occurs on the past participle. When it moves, the pitch peak always occurs on it, regardless of whether the object pronoun remains in situ (156) or moves across the negation (157).

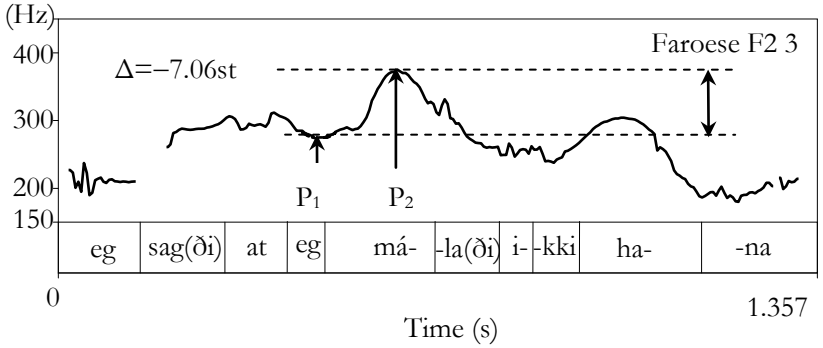
(155) Embedded clauses with a disyllabic pronoun (Neg+V+O):
Eg sagði at eg ikki málaði hana.
(I said that I not portrayed her 'I said that I didn't portray her')
a.



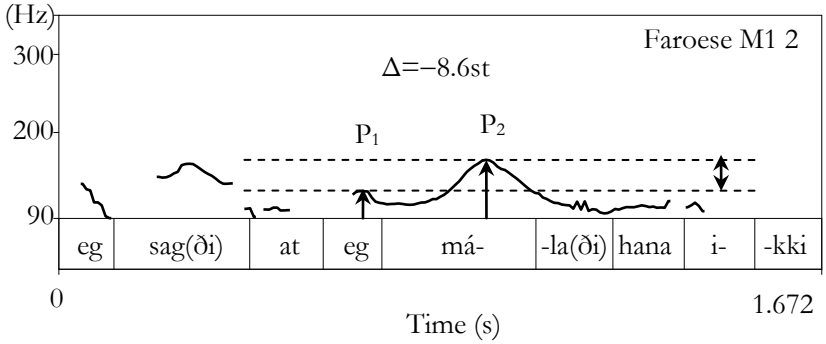
b.



(156) Embedded clauses with a disyllabic pronoun (V+Neg+O):
E*g sagði at eg málaði ikki hana.*
(I said that I portrayed not her 'I said that I didn't portray her')



(157) Embedded clauses with a disyllabic pronoun (V+O+Neg):
Eg sagði at eg málað hana ikki.
(I said that I portrayed her not 'I said that I didn't portray her')



It is a remarkable fact that when the object pronoun directly follows the embedded main verb, the pitch simply lowers on the first syllable *ha-* of the object pronoun *hana*, regardless of whether the embedded main verb remains in situ (155a-b) or moves (157). When the negation intervenes between them, however, the pitch rises on the first syllable of the sentence-final object pronoun (156). One of the informants reports that only when the object pronoun is isolated from the embedded main verb, i.e. only in the pattern of V+Neg+Obj_{pro} (156), is the sentence interpreted as if the object pronoun received some prominence. This informant also reports that the patterns in which the object pronoun is adjacent to the main verb, i.e. Neg+V+Obj_{pro} (155a-b) and V+Obj_{pro}+Neg (157), are both interpreted as VP-/verb-focus (and also as subject-focus). These observations indicate that verb movement in Faroese embedded clauses does not contribute to the change in meaning: the semantic change is attributed to whether the object pronoun is isolated from the main verb, not to whether verb movement occurs or not.

The data on complex tense forms and embedded clauses that we have seen so far illustrate that the pitch peak mostly occurs on a sentential/clausal element located somewhere 'after' the Aux and the embedded subject, neither of which an object pronoun can follow directly. That is, downstep mostly does not occur in these constructions in Faroese too, in the same way as in the other Scandinavian varieties.

3.3.2.3. Summary

We have examined the intonational properties relevant to Faroese OS. The F0 on the negation is always lower than the F0 on the main verb in simple tense forms and Verb Topicalization. In complex tense forms and embedded clauses, the pitch peak mostly occurs on a sentential/clausal element located

somewhere 'after' the Aux and the embedded subject, neither of which can be followed by an object pronoun directly. That is, downstep occurs in the former constructions but does not occur in the latter constructions in Faroese too, in the same way as in the other Scandinavian varieties. The interpretation of the embedded clause in which both an embedded main verb and an object pronoun move does not differ from the one in which they both do not move. Only when an object pronoun is isolated from an embedded main verb, is the sentence interpreted as if it were prominent. Thus, verb movement in Faroese embedded clauses does not contribute to the change in meaning.

3.3.3. Summary of Insular Scandinavian Object Shift

We have examined the intonational properties of the constructions relevant to OS in Insular Scandinavian. In Icelandic, the pitch peak occurs on the main verb in simple tense forms and Verb Topicalization. In the former constructions, the main verb, the shifted object pronoun and the negation compose a phonological word. In complex tense forms, the pitch peak can occur either on the negation or on the subject. In the latter case, an entire sentence is uttered as if it were a compound. In embedded clauses, the pitch peak occurs on the embedded main verb.

In Faroese too, the pitch peak occurs on the main verb in simple tense forms and Verb Topicalization. The pitch peak can occur either on the negation or on the Aux in complex tense forms, but the pitch level on the Aux is not different from that on the following negation in the latter case. In embedded clauses, the interpretation does not differ between the case in which both an embedded main verb and an object pronoun move and the case in which they both do not move. An object pronoun receives some prominence only when it is isolated from an embedded main verb. Thus, main verb movement does not contribute to the semantic change.

All in all, the data presented so far illustrate that downstep occurs in simple tense forms and Verb Topicalization but does not occur in complex tense forms and embedded clauses in Insular Scandinavian, in the same way as in Mainland Scandinavian.

3.4. Overall Summary

We have examined the intonational properties of the constructions relevant to (the presence and absence of) OS in the Scandinavian languages. In the Swedish two-peaked dialects, the focal H that should be expected to occur after an accented main verb typically does not occur in the OS constructions of simple tense forms and Verb Topicalization. The F0 on the negation following a shifted object pronoun typically becomes lower than the F0 on the main verb. In the non-OS constructions of complex tense forms and embedded clauses,

the pitch peak mostly occurs on a sentential/clausal element located somewhere 'after' the Aux in complex tense forms and the embedded subject, neither of which can be followed by an object pronoun directly. It has turned out that downstep does not occur in Övdalian, in which OS is totally absent. This property is derived from the fact that Övdalian belongs to the two-peaked group, but the pitch gesture is delayed. It has also turned out that not only in Övdalian but also in Dalecarlian in general, OS is far more absent than reported so far. The intonational property that differentiates Dalecarlian from the other Swedish dialects is that the pitch gesture is substantially delayed compared with the latter. We have proposed a new generalization on Scandinavian OS on the basis of Swedish OS: The more delayed the pitch gesture is, the more likely is Object Shift to be absent in a relevant Scandinavian variety.

We have also examined the intonational properties of the relevant constructions in the other Scandinavian varieties. In Norwegian, a shifted object pronoun is incorporated into the pitch contour of the preceding main verb. The pitch peak is likely to occur on the former. In (East) Danish, stød occurs before a shifted (monosyllabic) object pronoun, i.e. on the second syllable of the preceding main verb. It can occur due to the high pitch on that syllable and lowers the pitch level on the following sentential element(s). In Icelandic, a main verb, a shifted object pronoun and the negation compose a phonological word together in the OS construction of simple tense forms. In complex tense forms, an entire sentence can be uttered like a compound in which an object pronoun attracts the secondary stress. In Faroese, the interpretation of the embedded clause in which both an embedded main verb and an object pronoun move does not differ from the one in which they both do not move. Only when an object pronoun is isolated from an embedded main verb, does the former receive some prominence. Thus, main verb movement does not contribute to the change in meaning.

All in all, downstep occurs in simple tense forms and Verb Topicalization, but does not occur in complex tense forms and embedded clauses, in all the Scandinavian varieties investigated here.

Chapter 4. Statistical Data

In this chapter, I present statistical data on downstep in all the Scandinavian varieties investigated.[107] The downstep size is expressed in terms of a musical scale, using the semitone as a convenient unit of measurement for the perceived magnitude of a change in pitch.[108] The semitone is one-twelfth of an octave. An octave is a doubling of the fundamental frequency F0, the most important acoustic determinant of vocal pitch.[109] The Praat software measures the F0 in hertz (Hz). The interval between any two key pitch points P_1 and P_2 in Hz can be converted to semitones by formula (158):[110]

(158) $12 * [\log(P_1/P_2) / \log(2)]$

A complication is that the pitch of a spoken sentence normally declines from the beginning to the end. This is the phenomenon of declination, which was introduced in § 3.1.2. In my recordings, the time interval between P_1 and P_2 is shorter than 3 seconds; it does not normally exceed the duration of one second. It can be estimated that the pitch lowering in the sentence types I used should be roughly 2 semitones.[111] Thus, I define a proper instance of downstep in my materials as a pitch decrement between P_1 and P_2 larger than 2 semitones. This indicates that the difference in semitones between P_1 and P_2 must be larger than 2 to say that downstep actually occurs in a sentence.[112]

For each sentence type, two dependent variables which characterize the extent of downstep are defined as follows. The first one is the incidence of downstep. This variable expresses what percentage of the utterances recorded for a given sentence type in a given Scandinavian variety shows downstep (where the pitch decrement between P_1 and P_2 is larger than 2 semitones). The second variable is the mean size of the pitch decrement between P_1 and P_2, irrespective of whether the pitch decrement qualifies as a downstep or not (i.e. regardless of whether the semitone between two points is larger than 2 or not).

---

[107] I am indebted to Vincent van Heuven for computation of the downstep size and the presentation of the statistical data in this chapter.

[108] See also traditional works, e.g. Liberman and Pierrehumbert (1984), who propose to compute the downstep size by exponential decay.

[109] See Van Heuven (1994a) and references given therein for details.

[110] Without multiplication by 12, this formula computes the pitch interval in octaves.

[111] This estimate is based on the formula ($D = -11 / t + 1.5$) to compute the declination in semitones per second (= D) for utterances shorter than 5 seconds, where t is the duration of the utterance ('t Hart, Collier and Cohen, 1990:128; Rietveld and Van Heuven, 2009:311).

[112] In hindsight, it would have been better to actually measure the time intervals between P_1 and P_2 (in ms) and the overall duration of the test utterances so that the expected declination effects could have been computed and corrected for more precisely.

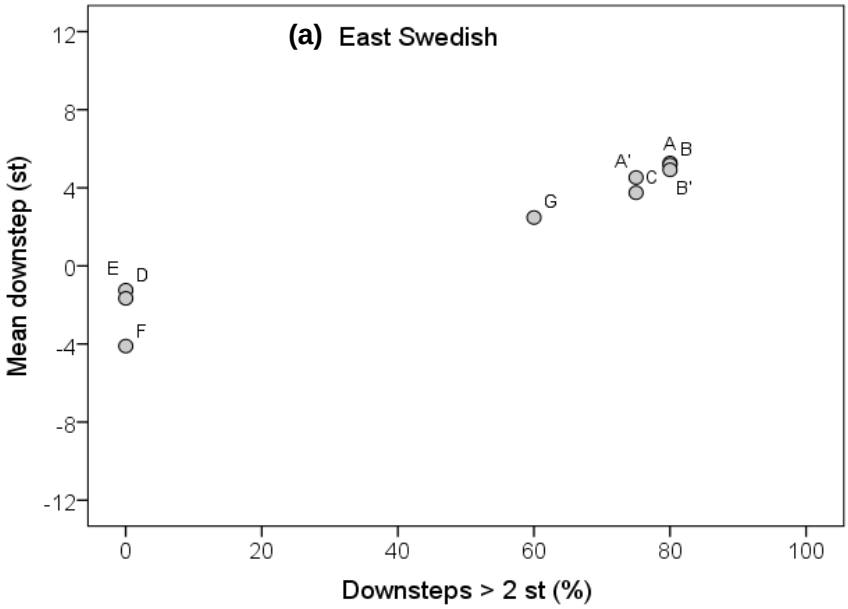
The incidence and mean size of the downstep size were computed by choosing two representative male and two representative female speakers in each of the Scandinavian varieties investigated. The F0 was computed for each utterance by using the autocorrelation method implemented in the Praat software. Reasonable upper and lower frequency bounds were set depending on the gender and vocal characteristics of the speaker. As stated in § 3.1.2, all test sentences were in most cases articulated by every syllable in advance. Each syllable was marked off by boundaries on a time-aligned annotation grid in Praat. Within each target syllable, the F0 maximum could then be automatically found and extracted by the Praat software. The F0 values (in Hz) extracted at P_1 and P_2 were then converted to semitones and further processed with the SPSS statistical software. Each sentence type was repeated five times by each speaker. When one token did not yield a measureable F0 at a pitch target point, the token was simply discarded. This led to occasional missing data. Given the large number of tokens per sentence type, this was not considered a problem.

Below, I graphically characterize the sentence types in the Scandinavian varieties investigated two-dimensionally by plotting the mean size of the pitch decrement between P_1 and P_2 (mean downstep) against the incidence of downstep (percentage of proper downsteps). In the following graphs, each code letter stands for a corresponding test sentence type. See Table 1 in § 3.1.1 for the test sentence constructions and the corresponding code letters. The x-axis shows the percentage at which downstep actually occurs, i.e., the semitone value is larger than 2, in all the utterance tokens of a relevant sentence construction by four (i.e. two male and two female) speakers. The y-axis shows the mean size of the downstep of all the utterance tokens of a relevant sentence construction computed by formula (158) above. As we have seen in chapter 3, the more positive value a sentence has, the larger the downstep size is; the more negative value a sentence has, the more likely is upstep, instead of downstep, to occur in it. Thus, the more to the upper right corner a data point is located, the more likely is downstep to occur and the larger the downstep size in the corresponding sentence is. Towards the lower left corner of a plot, downstep is more unlikely to occur (/upstep is more likely to occur) and the downstep size is smaller (/or even an upstep occurs) in the corresponding sentence.

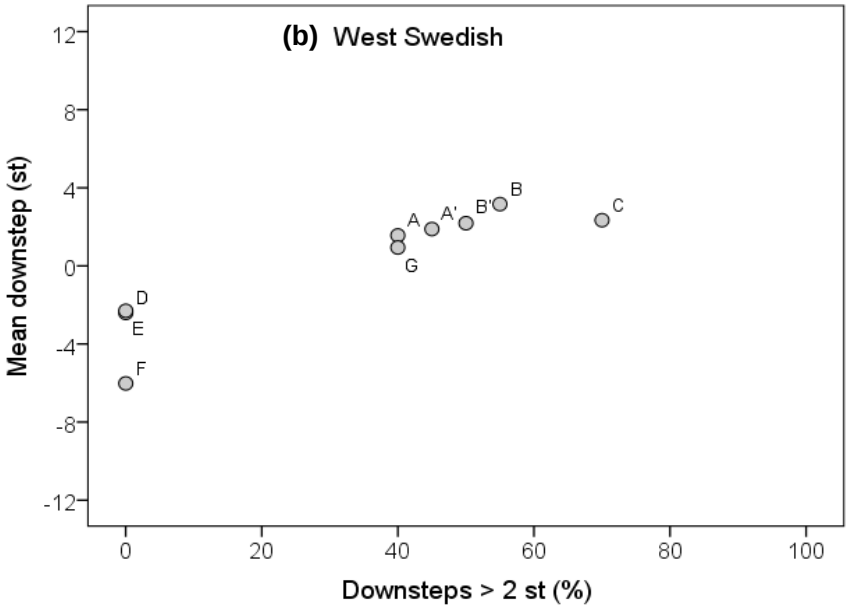
First, consider the statistical data of the Swedish varieties. A striking fact is that A(')-B(') (simple tense forms) and C (Verb Topicalization) are mostly located at the upper right, and D-E (complex tense forms) and F (embedded clauses) at the lower left. This indicates that downstep is likely to occur in the former, but upstep is likely to occur in the latter. The status of G (contrastive argument-focus) vacillates among the Swedish varieties: downstep may or may not occur in it. Note that A(')-B(') are located further to the lower

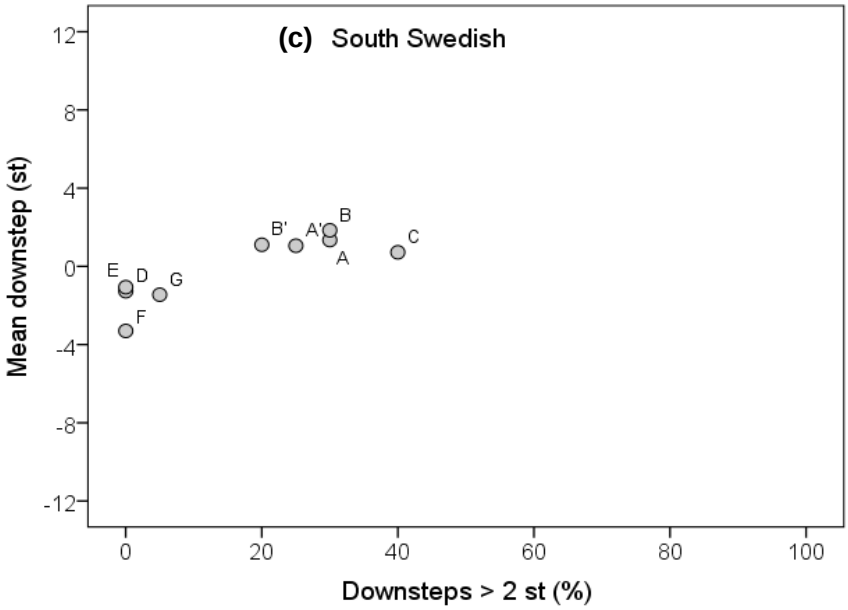
left in Övdalian than in the other Swedish varieties.[113] This indicates that downstep is much less likely to occur in those constructions in the former than in the latter. This data supports the claim made so far: downstep does not occur in Övdalian.

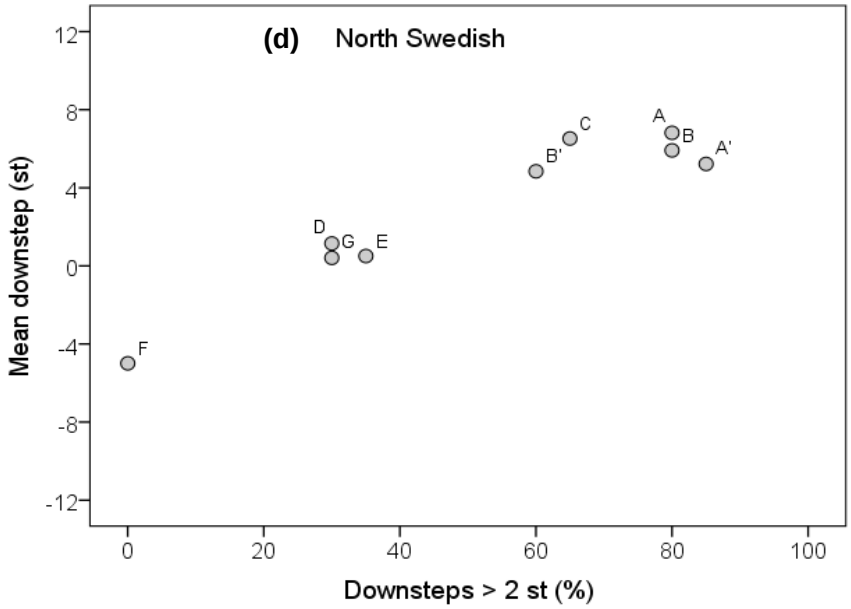
(159) Downstep size and incidence in the Swedish varieties:

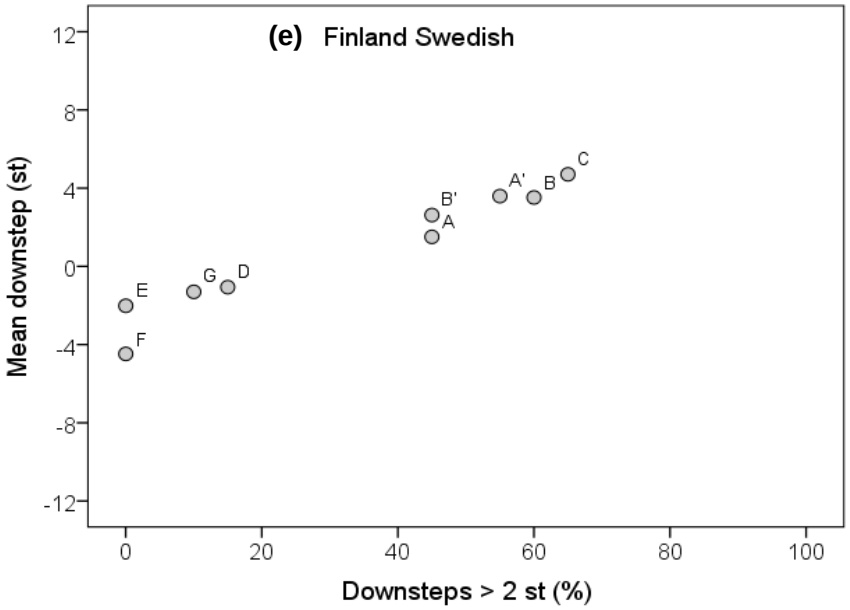


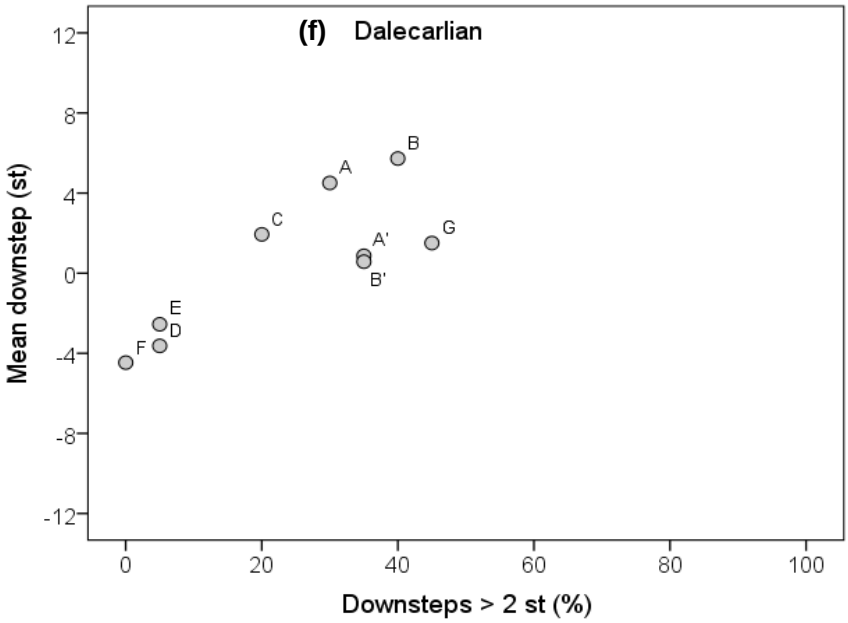
[113] Recall that A-B (simple tense forms with a shifted object pronoun) are ungrammatical and A'-B' (simple tense forms with an in-situ object pronoun) are grammatical for Övdalian speakers. G' is contrastive argument-focus with a shifted object pronoun, which all informants judged as ungrammatical. See Appendix II.

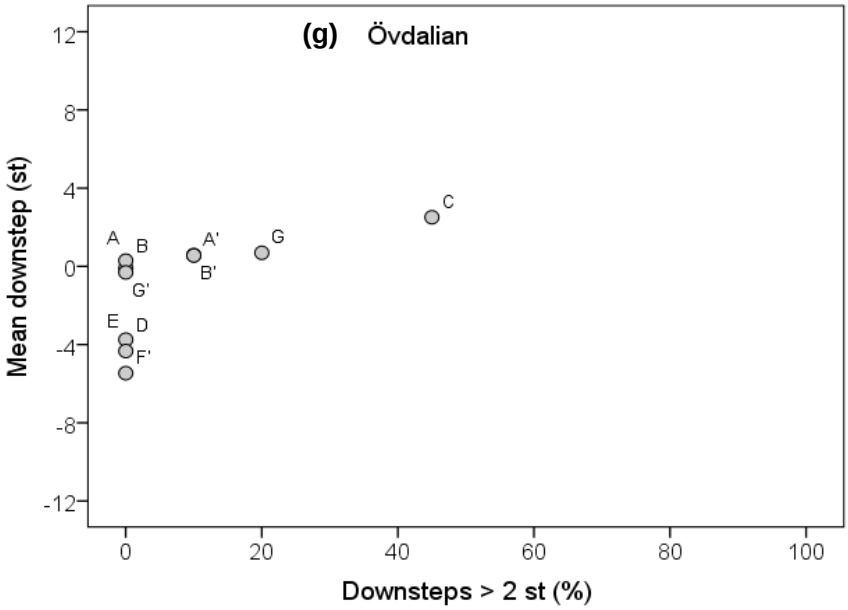

(b) West Swedish
Mean downstep (st)
12
8
4
0
-4
-8
-12
0
20
40
60
80
100
Downsteps > 2 st (%)
A
A'
B
B'
C
D
E
F
G


(c) South Swedish
Mean downstep (st)
12
8
4
0
-4
-8
-12
0
20
40
60
80
100
Downsteps > 2 st (%)
A
A'
B
B'
C
D
E
F
G


(d) North Swedish
Mean downstep (st)
Downsteps > 2 st (%)
12
8
4
0
-4
-8
-12
0
20
40
60
80
100
A
B
A'
C
B'
D
G
E
F

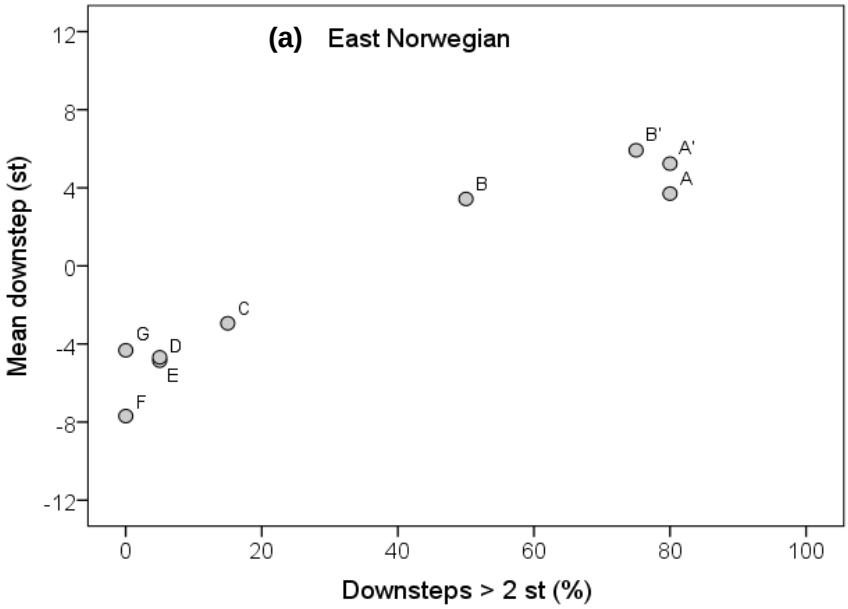

(e) Finland Swedish
Mean downstep (st)
Downsteps > 2 st (%)
12
8
4
0
-4
-8
-12
0
20
40
60
80
100
C
A'
B
B'
A
G
D
E
F

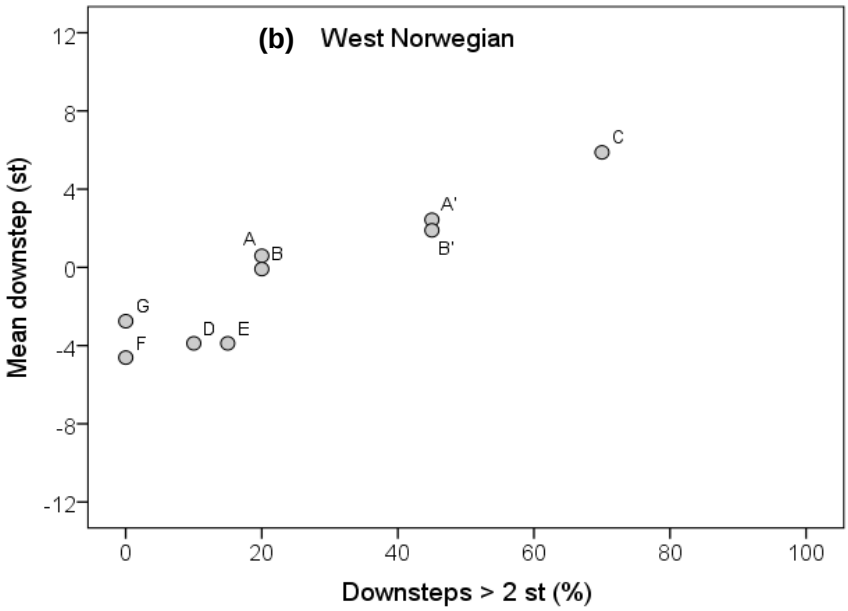

(f) Dalecarlian
Mean downstep (st)
12
8
4
0
-4
-8
-12
0
20
40
60
80
100
Downsteps > 2 st (%)
A
B
C
D
E
F
G
A'
B'


(g) Övdalian
Mean downstep (st)
12
8
4
0
-4
-8
-12
0
20
40
60
80
100
Downsteps > 2 st (%)
A
B
C
D
E
F'
G
G'
A'
B'

Next, let us observe the statistical summary data of the Norwegian varieties:

(160) Downstep size and incidence in the Norwegian varieties:

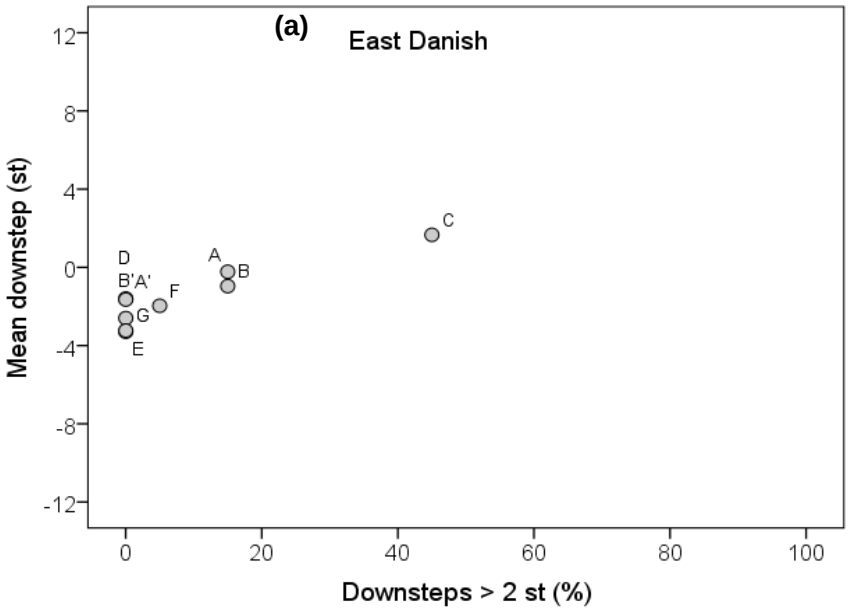


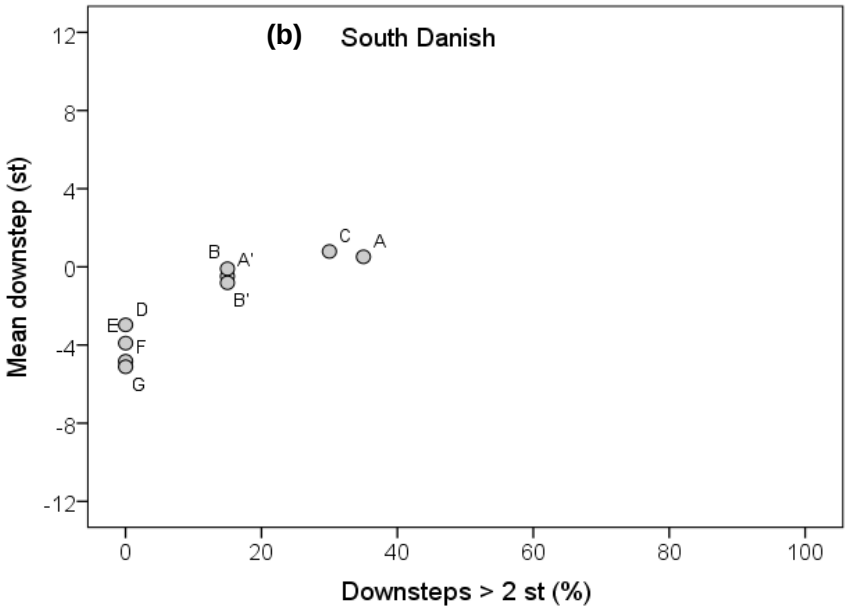


The tendency we saw in Swedish, i.e. that A(')-B(') (simple tense forms) and C (Verb Topicalization) are located towards the upper right, and D-E (complex tense forms) and F (embedded clauses) towards the lower left, is observed in Norwegian, too. This indicates that downstep is more likely to occur in the former, but upstep is more likely to occur in the latter. Unlike in Swedish, G (contrastive argument-focus) is located towards the lower left in both East and West Norwegian: downstep is less likely to occur in this sentence type in Norwegian.

Next, consider the statistical data of the Danish varieties. Remarkably, the downstep ratio in A(')-B(') (simple tense forms) is relatively low compared with the other Scandinavian varieties, though downstep is likely to occur in C (Verb Topicalization). This is unexpected since it has long been argued that declination occurs in the unmarked case in Danish, as we saw in § 3.2.3. D-E (complex tense forms), F (embedded clauses) and G (contrastive argument-focus) are located towards the lower left: downstep is less likely to occur in those constructions in Danish, too.

(161) Downstep size and incidence in the Danish varieties:

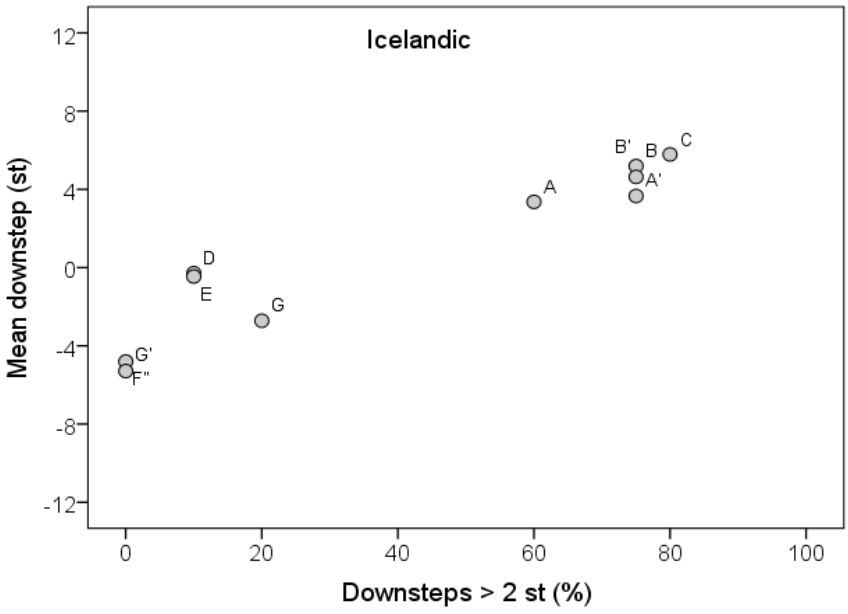




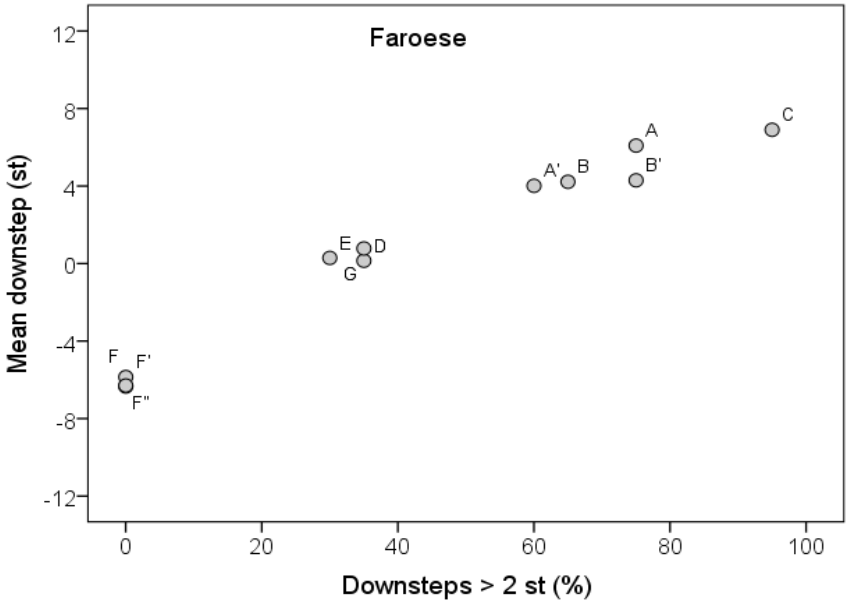
Finally, see the statistical data of Insular Scandinavian, Icelandic and Faroese:[114]

[114] G' in Icelandic is contrastive argument-focus with a shifted object pronoun. The grade of acceptability is vacillating among speakers: some informants prefer the construction in which a strong object pronoun moves; others prefer the one in which it remains in situ. See Appendix II. In Faroese, F is the embedded clause with Neg+V+Obj_{pro}, F' with V+Neg+Obj_{pro}, and F" with V+Obj_{pro}+Neg.

(162) Downstep size and incidence in Icelandic:



(163) Downstep size and incidence in Faroese:



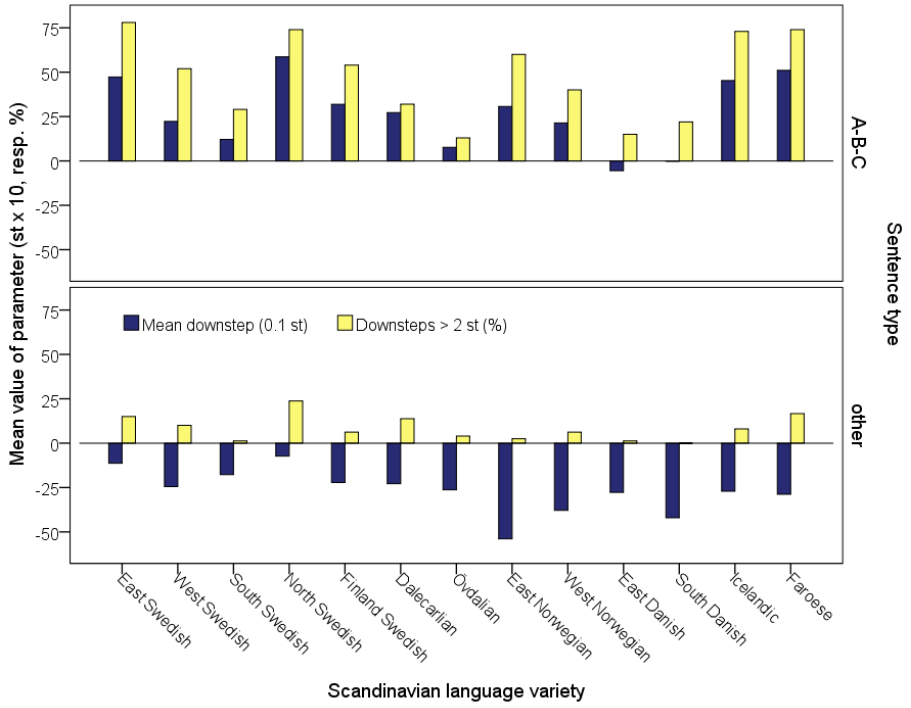
The tendency we saw in Swedish and Norwegian, i.e. that A(')-B(') (simple tense forms) and C (Verb Topicalization) are located towards the upper right, is strikingly observed in Insular Scandinavian: downstep is more likely to occur in those constructions. D-E (complex tense forms), F (embedded clauses) and G (contrastive argument-focus) tend to be located at the lower left compared with A(')-B(') and C: upstep is more likely to occur in the former than in the latter.

In general, the OS constructions, A-B (simple tense forms with a shifted monosyllabic/disyllabic object pronoun) and C (Verb Topicalization), are located in the upper right; D-E (complex tense forms with a monosyllabic/disyllabic object pronoun), F (embedded clauses) and G (contrastive argument-focus), which are all typically the non-OS construction, are found towards the lower left.

The following graphs are the comparison of the mean downstep parameters of A-B-C (upper) with that of all the others (lower). In each graph, a light bar and a dark one are plotted side by side. The former stands for the mean percentage of the cases in which the semitone value is larger than 2, which was plotted along the x-axis in the graphs above. The latter stands for the mean downstep size computed by formula (158), which was plotted along the y-axis in the above graphs.[115] The mean percentage (light bars) at which downstep actually occurs is substantially higher in the constructions A-B-C (upper) than in the others (lower). The mean downstep size (dark bars) of the constructions A-B-C has a positive value in almost all the Scandinavian varieties except in East Danish, whereas that of the others has a negative value (indicating the absence of downstep) in all the varieties. This indicates that downstep is more likely to occur in the constructions A-B-C but less likely to occur in the others (where, in fact, upstep may occur).

[115] In figure (164) the downstep size is multiplied by a factor 10 in order to obtain bars of approximately the same height as the percentages of downsteps realized (between 0 and 75).

(164) Mean downstep size (dark bars) and mean incidence of proper downsteps (light bars) in between sentence types A-B-C (upper panel) and in all other types together (lower panel).



Finally, I refer to Appendix III for the actual numerical values of the mean downstep size and mean downstep incidence of all the test sentences of all the Scandinavian varieties investigated, and the actual values of the comparison of the mean downstep size and incidence in the OS construction (A-B-C) with that in all the other constructions.

Chapter 5. Theoretical Account

5.1. A new hypothesis and generalization on Scandinavian Object Shift

We have long seen that downstep occurs in simple tense forms and Verb Topicalization. By contrast, downstep does not occur in complex tense forms and embedded clauses. OS typically occurs in the former but does not occur in the latter in almost all the Scandinavian varieties investigated, aside from a few exceptions. As shown by the pitch contours presented in chapter 3 and the statistical data presented in chapter 4, it is obvious that there is a strong association between the presence of OS and that of downstep. Thus, the overall property of Scandinavian Object Shift is described as follows: movement of the object pronoun entails downstep. The relation of 'entailment' expresses that whenever OS takes place, downstep occurs (but not vice versa).

There are several reasons for which the entailment relation should be interpreted as a stronger relation. Recall that downstep is typically caused by the L intervening between two Hs; see § 3.1.2. The pitch typically lowers on an object pronoun located between a raised main verb and the negation. This indicates that a weak pronominal object is an inherently low-tone element.[116] The pitch can be high on a shifted object pronoun in some cases – in fact, the pitch peak can occur on it; see the pitch contours of simple tense forms in East Swedish and East and West Norwegian in chapter 3. According to Odden (2007:103), the element that originally has a low tone and plays a role in causing downstep, can appear as a high tone in front of another high-tone element (*H-insertion*) and causes downstep of that following high tone, as illustrated by the second L in the following case: ˛ ˛ ˚ ˛ (L-L-H-L) → ˛ ˚ º ˛ (L-H-!H (downstepped) -L). Hence, it is not surprising even if an object pronoun that inherently has a low tone appears as a high-tone element in the shifted position and downstep occurs on the following sentential element(s). Note that the fact that a sentential element occurs as a high-tone element does not imply that it is assigned a focal accent. As we have seen, the syllable(s) or word(s) contained in the focal H are not accented, but the pitch level on them becomes higher than that on the accented syllable of a focused word.

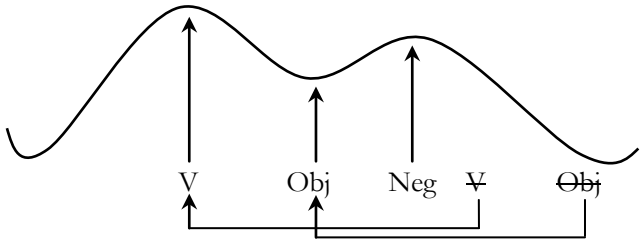
Recall also the data on the non-OS construction of simple tense forms (69-70); see § 3.2.1.1. The pitch does not lower after the accented syllable of the main verb to a considerable extent in this construction. This observation is statistically confirmed. See Appendix III. A-B are the OS construction of simple tense forms with a mono- (A)/disyllabic (B) object pronoun. A'-B' are the non-OS construction of simple tense forms with a mono- (A')/disyllabic (B') object pronoun. The total mean downstep size of A is 2.69; that of A' is

[116] This claim is confirmed by the fact that pitch always lowers on, e.g. short reflexive pronouns.

2.38. The total mean downstep size of B is 2.87; that of B' is 2.39. These data show that regardless of whether a sentence contains a monosyllabic or disyllabic object pronoun, the downstep size is larger in the OS construction than in the non-OS construction. Thus, it is difficult to claim that downstep happens to occur after an object pronoun moves to a surface position. If so, the downstep size would not differ between the OS and non-OS constructions, contrary to fact.

Therefore, the relation of 'entailment', i.e. the presence of OS always coincides with downstep (but not vice versa) should be theoretically interpreted as that of 'causation'. I propose the following new hypothesis on OS:

(165) Scandinavian Object Shift:
The object pronoun moves to cause downstep.



The question is why downstep must be triggered by movement of object pronouns in simple tense forms, i.e. when verb movement takes place. In Swedish, the stressed syllable of an accent 2 word that constitutes the final part of a focal H contour creates the impression that the word itself is focused, as the last high pitch occurs on that stressed syllable (Gussenhoven 2004:213). The negation *inte* is an accent 2 word. If the first syllable *in-* of the negation were to carry a focal H contour as its final part, it might sound as if the negation itself were focused. However, the focus of a sentence is carried by a raised main verb and the focal accent of a sentence is located on it in the relevant context (of polarity-focus), as mentioned in § 3.2.1.1. Hence, an object pronoun moves, causes downstep, and prevents a focal H contour from arising after an accented main verb. In other words, movement of object pronouns serves to eliminate a focal effect on the negation on one hand and to maintain the focus of a sentence on the main verb on the other.

We also saw the case in which a focal H contour actually occurs in the OS construction of simple tense forms. Here too, movement of an object pronoun makes the F0 on the negation lower than the F0 on an accented main verb, i.e., prevents a focal effect from arising on the negation, with the object pronoun itself being a high tone element and actually the pitch peak.

The argument above also applies to Verb Topicalization, where the pitch does not rise again after it falls on a sentence-initial past participle. Since a contrastively focused past participle is the sole possible locus of the focus of a sentence, an additional focus of a sentence that could be realized by a focal H contour must not occur: a sentence can have one and only one focus (Lambrecht 1994); see § 3.1.1. Thus, an object pronoun moves and triggers downstep to prevent a pitch rise for a possible focal H contour that could produce a focal effect on the negation from arising.[117]

In Norwegian, when the negation follows a main verb, they compose a LH pitch contour together. This indicates that after the accented syllable of a main verb, the first syllable of the negation becomes an accented L, i.e. L*, and the H occurs on its second syllable. The H that would be expected to occur on the second syllable of a main verb disappears. This situation is allowed when a focused word follows the unit consisting of a main verb and the negation: the focal H occurs on the H on the focused word that follows that unit. In the case in which a sentence has only a main verb, the negation and an object pronoun, however, the focus and focal accent of a sentence is carried by a main verb. The focal H must occur in the pitch contour of a main verb. If a main verb and the negation composed a unit, the first syllable of the negation would be an accented L*, and the focal H would occur on its second syllable. The negation itself then might sound focused. Hence, an object pronoun moves, causes downstep and eliminates a focal effect on the following negation.

In (East) Danish, when a monosyllabic object pronoun follows a main verb, stød occurs on the second, unstressed syllable of the latter. The question is what relationship there is between the occurrence of stød on (the second syllable of) the main verb and the presence of movement of the (monosyllabic) object pronoun. The pitch is relatively high on the second syllable of the main verb. Recall that when the negation directly follows the main verb, it composes an independent accentual unit and is assigned a prominence. It would be expected that the pitch continues to rise up to the negation, and the peak occurs on it. This might sound as if the negation were focused. However, the focus and focal accent of a sentence is carried by the main verb. Therefore, an object pronoun moves and causes downstep to eliminate a focal effect on the negation. When a monosyllabic object pronoun moves, the preceding high-tone syllable (of the main verb) becomes the pitch peak and a stød occurs on it: movement of an object pronoun triggers the occurrence of stød. This movement further triggers the pitch lowering on the

[117] Note that an object pronoun moves to eliminate a possible pitch rise, not a possible focal accent, on the negation. When the negation is contained in the focal H, the focal effect on it could be produced by the highest tone on its first syllable, rather than by the accent on it. Recall the statement in § 3.2.1: the two-peaked varieties, e.g. East Swedish, maintain a word accent on non-focused words; thus, after the point of the focal H, downstep of the following non-focal accents occurs to produce a difference in pitch level between focal and non-focal accents.

following sentential element(s). The pitch lowers partly due to the inherent low status of an object pronoun and partly due to the general property of stød that the pitch drastically lowers after it. When a disyllabic object pronoun moves, it directly causes downstep due to its inherently low-tone status.

In Icelandic, a main verb, a shifted object pronoun and the negation compose a phonological word in the cliticization process in the OS construction of simple tense forms. The pitch peak occurs on the main verb that carries the focus and focal accent of a sentence. Thanks to movement of an object pronoun, the resulting word order, V+Obj_{pro}+Neg, produces a phonological word in which only the main verb is accented and the negation does not attract a secondary stress. In other words, an object pronoun contributes to lowering the pitch level on the negation significantly in the typical OS construction by moving and triggering the birth of a phonological word composed of the main verb, the shifted object pronoun itself and the negation in that order. Thus, movement of an object pronoun causes downstep on the following negation.

In Faroese, the pitch peak normally occurs on an accented main verb, and the pitch drastically falls after it. The pitch continues to be low until sentence-final position. When the negation intervenes between a main verb and an object pronoun, the pitch rises on the sentence-final object pronoun, as illustrated in the case of embedded clauses. This indicates that the pitch does not lower on the negation preceding the object pronoun. See (156). The pitch falls after the (embedded) main verb, but the pitch level on the negation is relatively high compared with the second syllable *-na* of the object pronoun in sentence-final position. Thus, the object pronoun moves to trigger downstep and lower the pitch level on the negation.[118]

In complex tense forms and embedded clauses, in which both main verb movement and OS typically do not occur, on the other hand, the pitch peak occurs either on the negation, on a main verb, or on an object pronoun (in situ). In the relevant context (of polarity-focus), the focus and focal accent of a sentence is carried by the in-situ past participle main verb located after the Aux and by the (normally in-situ) embedded main verb located after the embedded subject. The final pitch peak occurs on those main verbs. Therefore, an object pronoun must not move and cause downstep before them.[119] This argument applies to all the Scandinavian varieties investigated here.[120]

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[118] Recall that when an object pronoun is isolated from an embedded main verb, a sentence sounds as if an object pronoun were somewhat prominent. Thus, it could be argued that an object pronoun moves to avoid a high tone on itself. However, the pitch can become high on an in-situ object pronoun. See, e.g. the complex tense form with a monosyllabic object pronoun (153b). Thus, there is no reason for which an object pronoun has to move to avoid a high tone on itself.

[119] As we have seen, the final pitch peak can occur on an in-situ object pronoun.

[120] This argument also accounts for the fact that an object pronoun cannot directly follow the negation either:

The account of Holmberg's Generalization is thus provided as follows. When main verb movement takes place, an object pronoun moves and causes downstep to eliminate a focal effect on the sentential element(s) after the main verb. In the environments in which downstep must not occur, i.e. in the constructions where the final pitch peak occurs on the (in-situ) main verb, OS does not occur either.

Note that the argument here straightforwardly accounts for the optional aspect of OS. That is, OS being optional, an object pronoun does not need to move for its own reason at all. Why does it still move? The reason is that it moves to trigger downstep and eliminate a focal effect on the sentential element(s) following the main verb.

With the argument made so far, the cases below are accounted for. As introduced in 2.1, an object pronoun cannot move across an indirect full NP object (166a). It (normally) cannot move across a subject in *yes-no* questions either (166b) (Holmberg 1986, 1999). In addition, it generally cannot move across a main verb (166c).[121] In some *pro*-VP forms (166d) and some copula sentences (166e), an object pronoun cannot move.

(166) a. Jag gav inte Elsa *den*. *Jag gav *den* inte Elsa. [Swe.]
I gave not Elsa it I gave it not Elsa
'I didn't give it to Elsa.'

b. Köpte Johan *den* inte? *Köpte *den* Johan inte?
bought Johan it not bought it Johan not
'Didn't Johan buy it?'

c. Jag köpte den inte. *Jag *den* köpte inte.
I bought it not I it bought not
'I didn't buy it.'

d. ('You in fact slapped him, didn't you do that?')
– Nei, jeg gjorde ikke det. [Nor.]
no, I did not it
'No, I didn't do so.'

e. (The fastest player in the team is without doubt Morten and)
den hojeste er (*ham) faktisk også (OKham). [Dan.]
the tallest is him actually also him
'the tallest one/player is actually also him.'

(i) *Jag har inte den malat. [Swe.]
I have not it painted
Since the final pitch peak occurs on the past participle, an object pronoun must not move across it and cause downstep before it.

121 Thanks to Anders Holmberg (p.c.) for pointing out (166c) to me.

In appropriate contexts, the indirect full NP *Elsa* (166a), the subject *Johan* (166b), and the main verb *köpte* (166c), are the most appropriate candidates for the carrier of the focus in each of the sentences. The final pitch peak occurs on those focused elements. Since downstep must not occur before them, an object pronoun must not move and cause downstep; thus it cannot cross them.[122] Recall that the answer sentence in (166d) is a denial of the proposition presented in the preceding sentence. That is, the negation carries the focus of the answer sentence. Thus, the pitch must rise up to the negation; an object pronoun must not move to trigger downstep before the negation. As mentioned in § 2.2, the post-copular domain is focused in (166e). The pitch must not lower before the adverbs in the focused, post-copular domain due to movement of an object pronoun.[123]

In chapter 3, a new generalization on OS was presented:

(167) Generalization on Scandinavian Object Shift (second approximation):
The more delayed the pitch gesture is, the more likely is Object Shift to be absent in a relevant Scandinavian variety.

The formulation above is based on the fact that Övdalian and Dalecarlian in general, in which OS tends to be absent, have a delayed pitch gesture compared with the other Swedish varieties. Depending on whether the pitch gesture occurs in an early or late timing, on one hand, and whether the dialect at issue is one- or two-peaked, on the other, the Swedish varieties (and Mainland Scandinavian in general) are classified into the following three types: i) early timing (HL) and two-peaked – e.g. East Swedish; ii) late timing (LH) and one-peaked – e.g. South Swedish and Dalecarlian; and iii) late timing (LH) and two-peaked – Övdalian. OS is more or less obligatory in i), optional in ii) and totally absent in iii).

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122 An object pronoun can in fact move across a main verb, when it is contrasted:

(i) Den köpte jag inte. [Swe.]
it bought I not
'I didn't buy IT (, but THAT).'

The construction above can be used as either focalization or topicalization of an object pronoun, which has not been called OS. But in this kind of construction, the pitch peak occurs on the contrasted object pronoun in sentence-initial position. The pitch lowers after it and does not rise again. The fact that an object pronoun can be contrasted does not contradict the fact that it is an inherently low-tone element: as long as it is an argument of a verb, it can always be contrasted. Thanks to Johan Rooryck (p.c.) for pointing out this to me.

123 As we have seen, an object pronoun cannot move across a verb participle in Swedish and Övdalian but moves in the other Scandinavian varieties; see § 2.1. Anders Holmberg (p.c.) suggests the possibility that such a difference in word order is a matter of a parameter concerning VP-internal linearization. In my paper (in prep.), I show that the difference in word order among the Scandinavian languages is closely related to the intonational properties of verb particle constructions.

The only gap is the type of the Scandinavian varieties that have an early pitch gesture (HL) and are one-peaked. The Insular Scandinavian varieties, Icelandic and Faroese, do not have word accents. Word stress almost always occurs on the first syllable. Recall that though Icelandic can have various kinds of pitch accent, the LH contour cannot appear in neutral declarative sentences unless it is followed by another H*. This indicates that Icelandic has H*L(*) as the basic pitch gesture. The Icelandic pitch accent system is very similar to, e.g. that of English, and phrasal accent is located on the rightmost constituent in the unmarked case. In other words, the pitch peak occurs only once on the most prominent (rightmost) word of a sentence in Icelandic. All of these intonational properties are shared by Faroese. That is, though Icelandic and Faroese do not have word accents, they can be regarded as having the properties of the pitch gesture with an early timing (HL) and one-peaked.

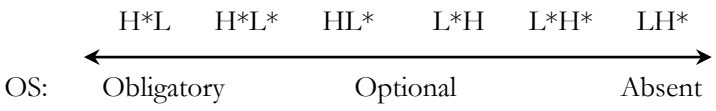
With the final gap filled by Insular Scandinavian, the Scandinavian varieties are classified as follows:

(168) Classification of the Scandinavian varieties:

	HL (early timing)	*LH* (late timing)
one-peak	Ice., Far.	Swe. (South, North, Fin.-Swe., Dal.) Nor. (West), Dan. (East, South)
two-peak	Swe. (East, West) Nor. (East)	Swe. (Övd.)

The relationship between the early/late pitch gesture and the obligatoriness/optionality/absence of OS is illustrated in (168). Below, OS is more obligatory in a Scandinavian variety that has the pitch gesture located more to the left. OS is more optional and even absent in one that has the pitch gesture located more to the right.

(169) Relationship between early/late pitch gesture and obligatoriness/ optionality/absence of Object Shift:



Whether OS is obligatory, optional or absent depends on whether a Scandinavian variety at issue has an early or late pitch gesture. Hence, the generalization (167) is reformulated as follows:

(170) Scandinavian Object Shift (final):
The earlier the pitch gesture occurs, the more likely is Object Shift to occur; the more delayed the pitch gesture is, the more likely is Object Shift to be absent.

The generalization above accounts for not simply the presence or absence of OS. It also accounts for the extent to which OS occurs, i.e. its obligatoriness, optionality and absence. The extent to which OS occurs depends on the timing of the pitch gesture in each of the Scandinavian languages. OS is then a gradient phenomenon rather than a binary/dichotomous property in the Scandinavian languages.

Let us see the extent to which OS is obligatory, optional and absent in each of the Scandinavian languages, by considering the (un)acceptability of the non-OS construction of simple tense forms A'-B' and comparing the total mean grades of A'-B'. See Appendix II. The total mean grade in East and West Swedish is 2.9, and the one in all the other Swedish varieties is 3.4. This indicates that this construction is less acceptable in East and West Swedish, in which the pitch gesture occurs early, than in all the other Swedish varieties in which the pitch gesture is delayed.

The mean grade of the non-OS construction of simple tense forms in Övdalian is 3.9. Thus, this construction is acceptable for speakers of Övdalian, which has a delayed pitch gesture but are two-peaked.

The total mean grade of the non-OS construction of simple tense forms in East Norwegian is 3.1, and the one in West Norwegian is 2.8. This indicates that this construction is more acceptable in the former than in the latter. The intonational properties in East Norwegian are similar to those in the two-peaked varieties, and the intonational properties in West Norwegian to those in the one-peaked varieties. However, the former has LH as the basic tone, and the latter has HL as the basic one. It is plausible that the difference in the basic tonal pattern is related to the different grade in the acceptability of this construction.

The total mean grade of the non-OS construction of simple tense forms in East Danish is 2.5, and the one in South Danish is 2.6. Both grades are lower compared with the other Mainland Scandinavian varieties, though none of the Danish speakers marks this construction as ungrammatical. The result that this construction is slightly less acceptable in the former than in the latter is compatible with the observation in the literature that OS can be more optional in South Danish than in East Danish (cf. § 3.2.3.2).[124]

The total mean grade of the non-OS construction of simple tense forms in Icelandic is 1.2, and the one in Faroese is 2.6. The grade in Icelandic is significantly lower compared with the other Scandinavian varieties. Almost all

[124] I turn to the question why OS is more or less obligatory in East Danish compared with South Danish below soon.

Icelandic informants mark this construction as ungrammatical. The grade in Faroese is the same as that in the Danish varieties, and low compared with the other Scandinavian varieties.

With the hypothesis (165) as well as the generalization on OS (170), all the aspects of OS, i.e. the relationship between the early/late pitch gesture, the one-/two-peaked property, and the obligatoriness/optionality/absence of OS, are accounted for as follows (cf. Bruce 2005, 2007; see § 3.2.1):

i) The Scandinavian varieties in which the pitch gesture occurs early are typically the two-peaked dialects. In these varieties, the two-level difference in prominence between a focused word and a non-focused word as well as the distinction in word accents are maintained. Downstep should occur to differentiate the two prominence levels. When a sentential adverb follows an accented main verb, however, the point at which downstep could occur is after the primary stressed syllable of a sentential adverb, e.g. after the first syllable *in-* of the negation *inte*, on which the final peak of the focal H would occur. Hence, an object pronoun needs to move and cause downstep to eliminate a focal effect on the negation. OS is more or less obligatory in the relevant contexts in these dialects.

ii) The Scandinavian varieties in which the pitch gesture occurs relatively late are typically the one-peaked dialects. Since the pitch gesture of an accented word always overlaps that of a focal H tone, the prominence level is simply either accented or not. Deaccentuation of non-focused words then occurs instead of downstep. Deaccentuation indicates that the difference in word accents is lost: neutralization of word accents occurs. Neutralization in the context of OS means that the negation, an accent 2 word, loses its H after an accented main verb. Since the pitch has already lowered, an object pronoun does not need to move to cause downstep. OS is more likely to be optional or even absent in these varieties.[125] Recall that deaccentuation occurs only when it is especially required. In the cases in which it is difficult to induce it, e.g. in the simple tense form with a monosyllabic weak pronominal object, OS is more likely to occur to trigger downgrading.[126]

[125] Recall that South and Finland Swedish and Dalecarlian speakers tend to prefer an in-situ object pronoun, especially for disyllabic object pronouns. See Appendix II.

[126] In Danish, the H of the words surrounding a focused word is downgraded. But that occurs only when the focused word has a low vowel. Thus, in (South Danish) *jeg så ikke det* (I saw not it 'I didn't see it'), an accented main verb has a low vowel [ɔ]. OS can be optional here. When an accented main verb does not have a low vowel, OS is more likely to occur.

iii) Övdalian belongs to the two-peaked dialect group, but the pitch gesture occurs late. Unlike in the typical two-peaked varieties in which the focal H starts immediately after an accented syllable of a focused word, the starting point of the focal H is delayed. It occurs at earliest on the next accentable syllable, since the pitch always lowers on an accented syllable of a focused word in the two-peaked varieties. The (final part) LH of LH*LH of a preceding word always overlaps the (first part) LH* of the following word. Since the (second) H of a preceding word always overlaps the (first) H* on the following word, downstep does not occur in Övdalian. An object pronoun cannot, and must not, move to cause downstep. OS is totally absent in Övdalian.

iv) The Insular Scandinavian languages, Icelandic and Faroese, have been classified as belonging to the varieties that are one-peaked but have an early pitch gesture. Downstep could basically occur after an accented main verb. But the pitch does not lower on the negation when it directly follows a main verb, as we saw in Faroese embedded clauses. Thus, an object pronoun needs to move to trigger downstep. In the same way as in the one-peaked varieties, the pitch level is distinguished simply by being accented or not. But these varieties basically have the trochaic accent system. Since deaccentuation of non-focal words does not always occur, the first syllable of each sentential element could have the same prominence. Thus, there is more obligation for an object pronoun to move to cause downgrading in these varieties than in the typical two-peaked varieties with an early pitch gesture.

In § 2.1, we saw the issues on OS classified into the following three items: i) the presence (and absence) of movement of various kinds of pronominal forms; ii) parametric differences among the Scandinavian languages; and iii) particular syntactic properties of OS. We also saw that none of the semantico-syntactic, syntactic and phonological approaches succeeds in providing an account for all of them. Here, item i) is accounted for as follows: an (object) pronoun moves to trigger downstep; OS is absent when downstep must not occur. Item ii), i.e. the obligatoriness, optionality and absence of OS, is accounted for in terms of the intonational properties of each of the Scandinavian varieties we have seen so far.[127] Item iii) is straightforwardly accounted for in terms of the fact that OS occurs for purely intonational/phonological reasons.

I mention several issues in the rest of this section. It has long been argued that OS is more or less obligatory in East Danish. Both East and South

[127] Regarding the parametric difference in verb particle constructions between the Scandinavian languages, see footnote 123.

Danish have LH as the basic tone. But the target H typically occurs on the syllable next to an accented syllable in East Danish (cf. § 3.2.3.1), which is not a typical feature of South Danish (cf. § 3.2.3.2). As stated previously, when the negation directly follows the main verb, it composes an independent accentual unit and is assigned a prominence. Thus in East Danish, if the second syllable of an accented verb on which the target H occurs were immediately followed by the negation, the pitch would continue to rise up to the negation and a focal effect could be produced on it. In South Danish, on the other hand, the pitch can lower on the accented syllable of a main verb, and does not directly rise up to the negation. This will reduce a possible focal effect on the negation. Hence, movement of an object pronoun to cause downstep is more necessary in East Danish than in South Danish.

A full NP interpreted as specific/given can move in Icelandic and is subject to Holmberg's Generalization; see § 2.1:

(171) Jón hefur (*þessa bók) aldrei lesið (^{OK}þessa bók). [Ice.]
Jón has this book never read this book
'Jón has never read this book.'

Above, when the definite NP *þessa bók* moves, the sentence is ungrammatical. Recall that in a definite NP, the leftmost constituent is accented. Thus, the leftmost word *þessa* should be accented in the shifted (and in-situ) position. The pitch level on it should get high. The pitch level on the Aux is also high, as we have seen so far. A possible account for this fact is that there is an intonational clash between the high pitch on the Aux and the high pitch on the leftmost constituent of the full NP following and adjacent to it after movement of the NP.[128]

Finally, it is predicted that OS would not occur when the pitch peak occurs on the sentential element following an object pronoun. There are in fact cases in which the pitch peak can occur on the sentential element following a shifted object pronoun: e.g. contrastive argument-focus of a direct object in ditransitive constructions. In the Scandinavian languages, the direct object normally follows the indirect object. Below, the direct object *en bok* 'a book' is contrastively focused; the pitch peak is likely to occur on it. But the indirect object pronoun *henne* moves across the negation *inte*.

(172) Jag gav henne inte en BOK (, men en KAKA). [Swe.]
I gave her not a book but a cake
'I didn't give her a BOOK (, but a CAKE)'.

[128] A bare nominal can move in simple tense forms when it receives a specific interpretation. But in complex tense forms, an intonational clash would occur, since Icelandic has a trochaic accent system. The high pitch on the Aux and the high pitch on the first syllable of the shifted nominal would be adjacent to each other.

According to Holmberg and Platzack (1995), a dative object is exceptional in that not only a pronominal form but also a full NP can move across a sentential adverb:

(173) a. De ga Marit ikke blomstene. [Nor.]
they gave Marit not the-flowers
'They didn't give Marit the flowers.'

b. Vi ger barnen alltid vad de vill ha. [Swe.]
we give the-children always what they want have
'We always give the children what they want to have.'
(Holmberg and Platzack 1995:172, (6.60b-c))

Thus, movement of the indirect object pronoun in (172) is not unexpected. It can occur due to the general property of dative objects described in (173).[129,130]

5.2. Interaction between syntax, information structure and intonation

In this section, I propose a new system that accounts for the facts regarding OS as well as the interaction between syntax, information structure and intonation in general, which is not based on any existing theoretical framework. *Information structure*, the term originated from Halliday (1967), has long been studied in different disciplines and frameworks (Mathesius 1929; Firbas 1974; Chomsky 1970; Jackendoff 1972; Gundel 1974; Chafe 1976; Kuno 1976; Li and Thompson 1976; Dik 1978; Givón 1979; Selkirk 1984; Vallduví 1990; Vallduví and Engdahl 1996; Lambrecht 1994; Rizzi 1997; Zubizarreta 1998; Bresnan 2001; Steube 2004; Hengeveld and Mackenzie 2006; Schwabe and Winkler 2007, among others). In this thesis, I define information structure as the discourse concepts that mediate between grammatical components such as syntax and phonology to express the information flow of a sentence in a language at issue. The basic concept is focus, the center of a given discourse, which plays a central role in the system proposed below. For the theory of

[129] The answer to the question why dative objects behave in an exceptional way is beyond the topic of this thesis.

[130] Anders Holmberg (p.c.) points out that the negation in simple tense forms can be contrastively focused and the pitch peak can occur on it:

(i) Jag målade den INTE. [Swe.]
I painted it not
'I did NOT paint it.'

In fact, the prominence occurs on the negation not only in the context of contrastive focus. The pitch peak occurs on it also in the context of polarity-focus for some speakers. The prominence on it can occur depending on speakers' preference. The speaker who tends to raise the pitch on the negation in simple tense forms also tends to do so in other constructions. I leave the fact that the negation is prominent (in the contexts of polarity-focus/contrastive focus) but OS can occur for future research.

sentence accentuation, see Chomsky and Halle (1968), Schmerling (1976), Gussenhoven (1984), Selkirk (1984, 1995), Rochemont (1986), Cinque (1993), Zubizarreta (1998), Kahnemuyipour (2009), among others.

We have seen that the highest pitch peak occurs on the accented syllable which is contained in the focal H that occurs immediately after a focused word in the Scandinavian two-peaked varieties. It overlaps the H of the pitch gesture of a focused word in the one-peaked varieties. Thus, the locus of the highest pitch peak always indicates that the focal point is also there (or quite near it). The locus of an accent does not necessarily show the focal point, however: both a main verb and the negation are accented in the OS construction of simple tense forms, but only the former, not the latter, carries the focus of a sentence. That is, the locus of an accent is not primary unlike that of the pitch peak.

The basic idea is that in theorizing the interaction between syntax, information structure and intonation, only the focal point and the highest pitch peak point need to be taken into account. Since the highest pitch peak point always points to the focal point on it or quite near it, the former must more or less correspond to the latter. This is formulated as the following principle:[131]

(174) The highest pitch peak point mostly coincides with the focal point.

As stated so far, a sentence can have one and only one focus, though it can have more than one non-focused/topic element (Lambrecht 1994, Rizzi 1997). Therefore, the location of the focus of a sentence should play the central role in theorizing the interaction between syntax, information structure and intonation.

In the proposed system, the focal point of a sentence is indicated by the focal pointer *fp*, ' ☞ '. The fp is the indicator of the change in the information flow of a sentence. When it moves, the focal point (and the pitch peak) moves too. Below, the syntactic word order, here SVO, goes on from the left to the right. In transitive constructions, the focus is carried by a (full NP) object in the unmarked case (Gundel 1988). The fp is normally located on it. The pitch rises towards the object, and the pitch peak occurs on its rightmost constituent. The pitch peak coincides with the focal point indicated by the fp. After the pitch peak, downstep occurs in the position(s) following the focal point.[132]

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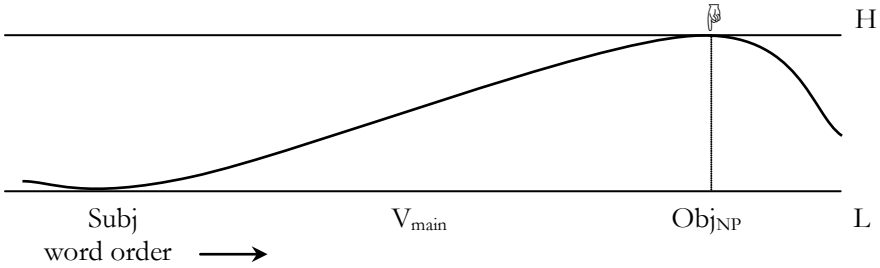
[131] This principle is compatible with the widely claimed view in the literature given above: the focused constituent must contain the word most prominent in a sentence.

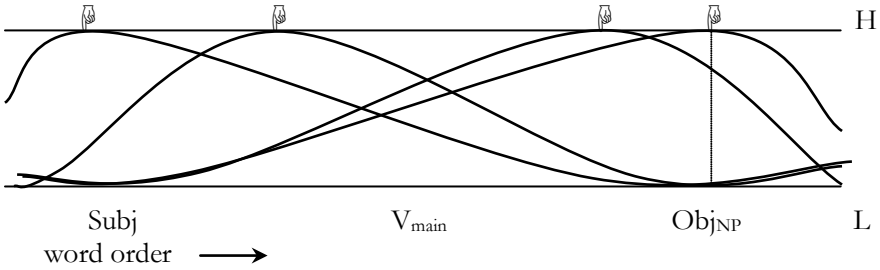
[132] Abbreviations: H – high; L – low; Subj – a subject; S.Adv – a sentential adverb; Aux – an auxiliary verb; V_{main} – a main verb in a main clause; V_{part} – a past participle; V_{emb} – a main verb in an embedded clause; Obj_{NP} – a full NP object; Obj_{pro} – an object pronoun.

(175) The unmarked case of transitive constructions in SVO languages:



When the fp occurs on the unmarked position, the unmarked intonation pattern does not change; the syntactic word order is not affected either. As the fp moves from the right to the left, however, the focus of a sentence occurs on a marked position. The pitch peak moves too and occurs on the constituent in that marked position. Since downstep starts from the marked position, the unmarked intonation pattern changes. The syntactic word order is also likely to be affected, often by movement of a sentential element. Thus, as illustrated below, the farther to the left the fp moves from the unmarked object position, the more the unmarked intonation pattern is likely to change, and the more the unmarked SVO order is likely to be affected.

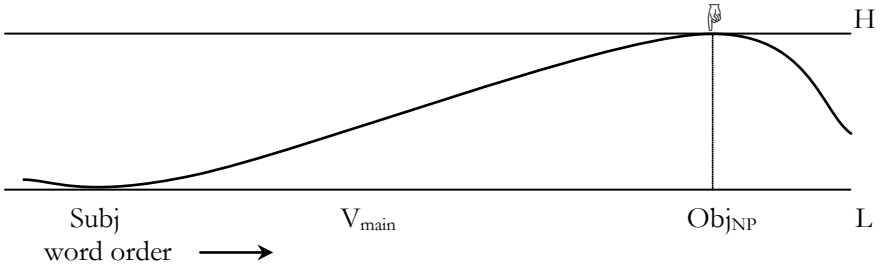
(176) The interaction between the changes of the focal point, the pitch peak point and the syntactic word order in SVO languages:



The facts on OS we have seen so far are accounted for as follows. The Scandinavian languages are SVO languages. Since the focus is carried by an object, the fp is located on the sentence-final full NP object in the unmarked case (regardless of whether a main verb moves and/or whether a sentential adverb is present) (177a).[133] The pitch rises towards that focal point. The focal H occurs on the object that carries the focus, and the pitch peak occurs on it. The unmarked intonation pattern does not change. The unmarked syntactic word order is not affected either. Some examples are given in (177b).

[133] This case includes that of a focused object pronoun in situ.

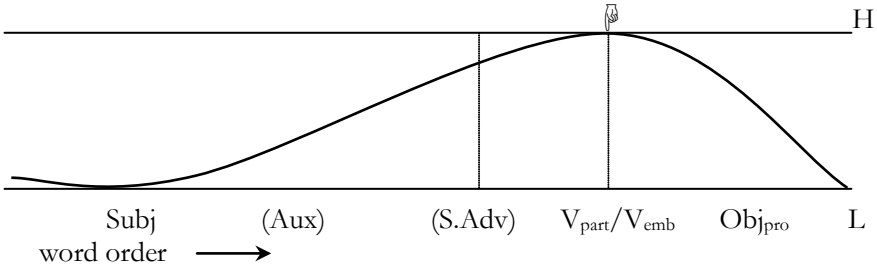
(177) a. Unmarked cases:



b. Jag kysste *Anna.*[134] 'I kissed Anna.' [Swe.]
Jag har sett *filmen.* 'I have seen the movie.'
Jag sa att jag kysste *Anna.* 'I said that I kissed Anna.'

In complex tense forms and embedded clauses that have a non-focused object pronoun, the focus of a sentence is carried by a past participle/embedded main verb located (mostly) in situ. The fp moves from the object position and occurs on it (178a). The final pitch peak occurs on it too (regardless of the presence or absence of a sentential adverb). Since downstep must not occur before it, OS does not occur either. Thus, the unmarked intonation pattern does not change; the unmarked syntactic word order is not affected either. Some examples are given in (178b).[135]

(178) a. Complex tense forms and embedded clauses with a weak pronominal object:



[134] The locus of the (information/contrastive) focus of a sentence is indicated by italics.

[135] The case in which Holmberg's Generalization is violated (i) is derived from the violation of principle (174). If the object pronoun moved to cause downstep, the pitch peak point could not occur on the past participle main verb and not coincide with the focal point on it. Thus, it must not move.

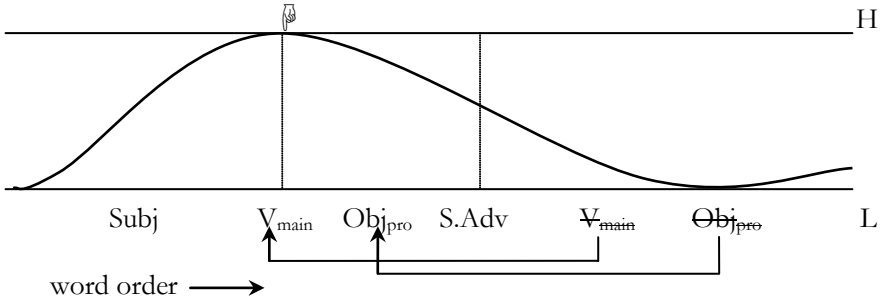
(i) *Jag har honom inte målat. [Swe.]
I have him not portrayed

Thanks to Anders Holmberg (p.c.) for pointing out this to me.

b. Jag har *sett* den./Jag har inte *sett* den. [Swe.]
'I have seen it/I have not seen it.'
Jag sa att jag *kysste* henne./Jag sa att jag inte *kysste* henne.
'I said that I kissed her/I said that I not kissed her.'

In simple tense forms that have a non-focused object pronoun and a sentential adverb, the focus is carried by a main verb. The fp moves and occurs on the main verb in the second position (179a). The pitch peak occurs on it too. After that pitch peak, the pitch must lower. Hence, the object pronoun moves and causes downstep to prevent a focal effect from arising on the sentential adverb located after the main verb. Since the pitch peak occurs on the raised main verb and downstep starts immediately after it, the unmarked intonation pattern changes. The unmarked word order is also affected as illustrated by the presence of OS. (179b) is some illustrations. Note that if OS did not occur, the pitch peak could occur on the negation, as discussed in § 5.1. This yields the situation against principle (174): since the focal point would occur on the main verb but the pitch peak on the negation, the focal point would not coincide with the pitch peak point.

(179) a. Simple tense forms with a weak pronominal object:

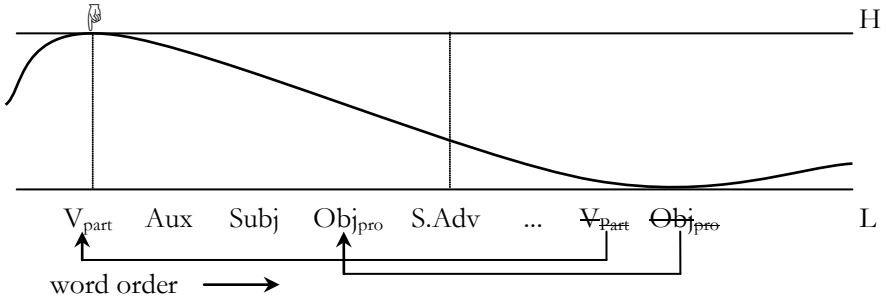


b. Jag *kysste* henne inte. 'I kissed her not.' [Swe.]
Jag *köpte* den inte. 'I bought it not.'

In Verb Topicalization, the past participle main verb is contrastively focused. The fp moves farther to the left and occurs on the past participle in sentence-initial position (180a). The pitch peak occurs on it too. After that pitch peak, downstep must occur. An object pronoun moves and causes downstep to prevent a focal effect from arising on the sentential adverb that has the next accentable syllable. Since downstep starts immediately after the pitch peak on the sentence-initial past participle, the unmarked intonation pattern changes further than in the cases we have seen above. The unmarked syntactic order is also more affected than in the cases so far, as illustrated by the presence of past participle fronting resulting in the VSO order and that of OS.

(180b) gives an illustration.

(180) a. Verb Topicalization:



b. *KYSST* har jag honom inte. 'I haven't KISSED him.'

The cross-linguistic prediction from the model above is as follows: the farther the fp moves from an unmarked position, the more an unmarked intonation pattern is likely to change, and the more an unmarked syntactic word order is likely to be affected.

In SVO languages, the focus of a sentence and the final pitch peak occur near the end of the sentence, e.g. on the (full NP) object, in the unmarked case; the fp occurs on the element located there. See (175) for the illustration of the unmarked case. It is predicted that the farther the fp moves to the left, the unmarked intonation pattern is more likely to change; the unmarked syntactic word order is more likely to be affected too. This is confirmed by the case of object argument-focus. The focus of a sentence is carried by the *wh*-phrase *what* in (181a) and by the full NP *that article* in (181b). The fp and the pitch peak move from the original position to sentence-initial position as illustrated in (181c). Since downstep occurs immediately after those focused elements in sentence-initial position, the unmarked intonation pattern changes. The syntactic word order is affected too, as illustrated by the presence of *wh*-movement (181a) and focus fronting (181b).[136]

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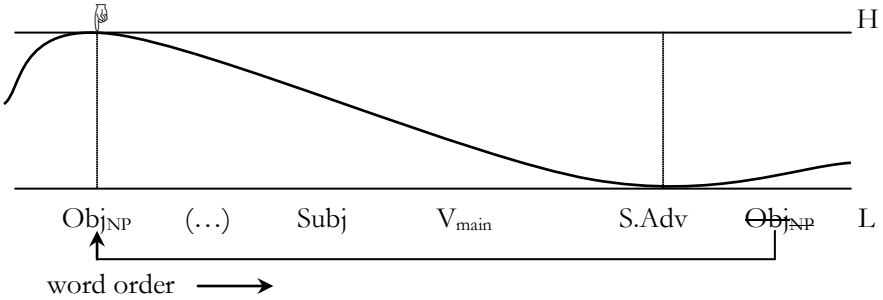
136 An interesting case is Hungarian, an SVO language. According to Szendrői (2003), a focal accent occurs in a sentence-medial position in Hungarian. It occurs on a main verb in broad-focus contexts, as illustrated in (i), where the accent on the unit composed of the particle and the main verb *kinézett* 'chose' is more prominent (indicated by large capitals) than that on the object *kalapot* 'hat'. In other cases, the focal accent occurs strictly in the immediately preverbal position. Thus, a focused sentential element moves and immediately precedes the main verb, as illustrated by the object *kalapot* in (ii).

(i) Mari KINÉZETT magának egy KALAPOT. [Hun.]
Mari PRT-spotted herself-DAT a hat-ACC
'(What did Mary do?) Mari chose a hat for herself.'

(181) a. *What* did you do yesterday*?*

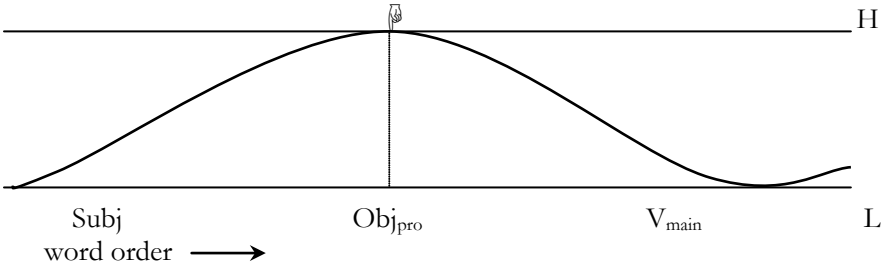
b. *THAT ARTICLE*, I didn't read today.

c.



In SOV languages as well, the focus of a sentence is carried by a (full NP) object in transitive constructions in the unmarked case (Gundel 1988). The fp and the pitch peak occur on the position immediately preceding a verb. The unmarked case is illustrated below:

(182) The unmarked case of transitive constructions in SOV languages:



It is predicted that the farther the fp moves either to the left or to the right, the more the unmarked intonation pattern is likely to change, and the more the unmarked word order is likely to be affected too. This is confirmed by verb-focus (183a) and subject-focus (183b) in Japanese. In the former, the fp moves to the left of the object. The pitch peak moves too. Since downstep

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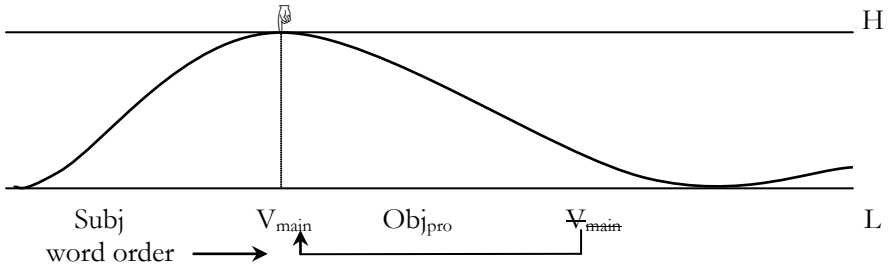
(ii) Mari egy KALAPOT nézett ki.
Mari a hat-ACC spotted PRT
'(What did Mari choose?) Mari chose a hat.'
(Szendrői 2003:72-73, (57-58))

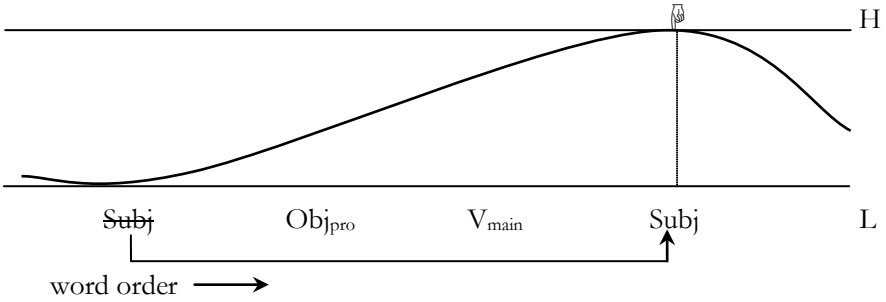
In the proposed system, the fp is located on the main verb in the unmarked case in Hungarian. This claim does not violate principle (174), since broad-focus contains both the main verb and the argument(s). When the fp moves to the left, the unmarked syntactic word order is affected by movement of a focused sentential element, as illustrated in (ii). The pitch peak also moves from the main verb to the focused element to its left.

occurs immediately after the focal point on the main verb, the unmarked intonation pattern changes. The basic word order is also affected by the presence of verb fronting, which results in the SVO order. In the latter case, the fp moves to the right of the object, even across the main verb. The pitch peak occurs on it too. Since downstep does not occur until the subject in sentence-final position, the unmarked intonation pattern changes. The syntactic word order is also affected as illustrated by subject postposing resulting in the OVS order.[137]

(183) a. watashi *tabe-mashi-ta* ano keiki (totteoka-zuni). [Jap.]
I eat-HON-PAST that cake (keep-without)
'I ATE that cake (, not kept it).'



b. keiki-o kat-ta-no-wa *watashi*-desu (, haha-de-naku).
cake-ACC buy-PAST-GEN-TOP I-be mother-be-not
'It's me who bought the cake (, not (my) mother).'

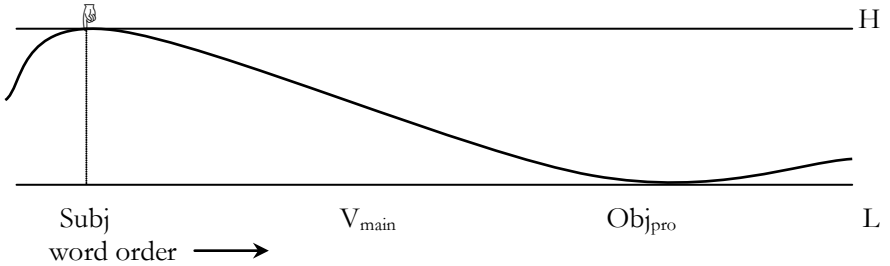


As we have seen so far, the focal point indicated by the fp always coincides with the pitch peak. It is predicted that there are i) cases in which they both move, but the syntactic word order is not affected, and ii) cases in which they do not move, but the syntactic word order is affected. Case i) is illustrated by subject-focus in English (184). The fp and the pitch peak moves to the subject

[137] Subject-focus could also be analyzed in the way that the fp moves to the right and occurs on the subject and the VP containing the object and the verb is fronted. In either way, both the unmarked intonation pattern and the unmarked word order are affected in this construction.

in sentence-initial position. Since downstep occurs immediately after the subject, the unmarked intonation pattern is affected. But the basic word order SVO is not affected.[138]

(184) JOHN (, not MARY,) likes it.

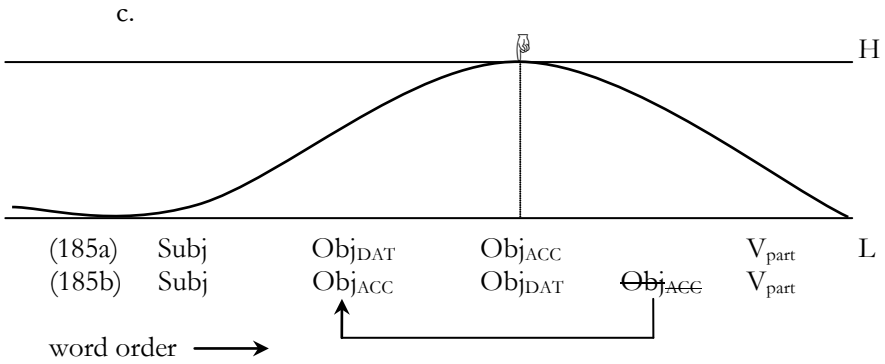


Case ii) is illustrated by scrambling in German (185). (185a) is broad focus, i.e. the unmarked case in which the pitch peak occurs on the sentential element immediately preceding the past participle main verb, i.e. on the direct object *das Buch* 'the book'. (185b) is contrastive argument-focus of the indirect object *dem Kind* 'the child'. The direct object *das Buch* is fronted due to its given status, and the syntactic word order is affected here. As illustrated in (185c), however, the fp occurs on the unmarked position, i.e. on the sentential element immediately preceding the past participle main verb, and the pitch peak also occurs on it in both cases.

(185) a. Hans hat dem Kind das BUCH gegeben. [Ger.]
Hans-NOM has the-DAT child the-ACC book given
'Hans gave the child the book.'

b. Hans hat das Buch dem KIND gegeben.
Hans-NOM has the-ACC book the-DAT child given
'Hans gave the book to the CHILD (, not to her MOTHER).'

[138] In French subject-focus, the unmarked word order is also affected by the use of cleft constructions:
(i) C'est JEAN qui l'aime. [Fre.]
it's Jean who it likes
'It is JEAN who likes it./JEAN likes it.'

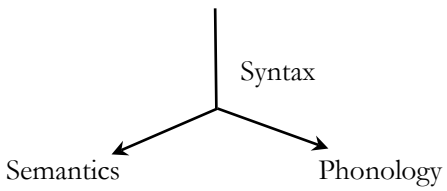


In sum, information structure mediates between grammatical components to express the information flow of a sentence. The basic concept is focus. When the focal point occurs on the unmarked position, the pitch peak occurs on it too; the unmarked intonation pattern does not change. The basic syntactic word order is not affected either. When the focal point moves, however, the focus of a sentence occurs on a marked position. The pitch peak moves too, and downstep starts from the marked position; thus, the unmarked intonation pattern changes. The syntactic word order is also likely to be affected by movement of a sentential element.

5.3. In which grammatical component does Object Shift occur?

In this section, I discuss the grammatical component in which OS can occur. We saw in chapter 2 that generative grammar has traditionally assumed the 'interpretive' model illustrated in (186). According to this model, syntax 'mediates' semantics and phonology. That is, after a syntactic structure is constructed in the syntactic component, it is sent to the semantic component and assigned an interpretation. It is also sent to the phonological component and assigned sound properties.[139]

(186) Traditional 'Interpretive' Model in Generative Grammar:



[139] Recall that in the current phase framework since Chomsky (2000), the syntactic structure is sent to the phonological component at the Spell-Out of each phase in the course of derivation.

We also saw the theoretical change into the phase-cartographic framework. The current phase framework assumes not only that the semantic component is uniform for all languages but also that syntactic operations proceed uniformly for all languages (Chomsky 2001, Berwick and Chomsky 2001). This claim is ensured by the cartographic system (Rizzi 1997, Cinque 1999), in which the position where a sentential constituent is located in syntax, whether as a result of base-generation or movement, must correspond to the interpretation that it receives in the semantic component. In this theoretical framework, a category is interpreted in the moved position.[140]

One of the corollaries of this theoretical framework is that movement cannot occur in the semantic component: the interpretation that a category receives in the semantic component is derived from the fact that it has already moved to and been located in the corresponding structural position in syntax. Thus, the possibility that OS occurs in the semantic component disappears.

Another corollary of the phase-cartographic framework is that optional movement cannot occur in syntax. For movement to occur, a dichotomy between the interpretation that a category receives in situ and the one that it receives in the moved position must be present: the former interpretation must differ from the latter. If such a dichotomy is not observed, movement of that category cannot be regarded as syntactic movement. Such movement has been dealt with as movement in the phonological component, which, by definition, does not affect the change of meaning.[141] We have long seen that OS is optional in many Scandinavian varieties. Thus, one way to account for OS, which is optional and does not affect the change of meaning, within the current phase-cartographic framework would be to say that OS occurs in the phonological component.

A possible derivation, e.g. of Verb Topicalization, (Swe.) *kysst har jag honom inte* 'I haven't kissed him', on this assumption would proceed as follows.[142] The contrastively focused past participle moves to sentence-initial

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[140] The phase framework and the cartographic system in fact must compensate for each other. On the side of the phase theory, to argue that syntax and semantics are uniform for all languages, the interpretation a category receives must be ensured by the position where it is located in syntax, which is argued in the cartography. On the side of the cartographic system, to argue that a category universally receives the same interpretation in a certain syntactic position, the syntactic computation must be uniform, with a category moving to the same syntactic position to receive a certain interpretation, for all languages, which is argued in the phase theory.

[141] See Chomsky's (2001) argument that movement of a main verb, which can appear either in v* (e.g. English), in T (e.g. French) or in C (e.g. Swedish), though its interpretation does not differ between languages, is a phonological movement.

[142] It is controversial whether main verb movement occurs in syntax or phonology. Chomsky (2001) argues that it occurs in phonology, for the reason stated in footnote 141. Some literature (e.g. Matushansky 2006) argues against that claim, saying that it occurs in syntax. Thus, I take Verb Topicalization as an example here, since the interpretation of contrastive focus of the raised past participle is obvious, and thus it must occur in syntax.

position and the subject and the Aux also move, resulting in *[CP kysst har jag inte honom]*.[143] This structure is spelled out and sent to the phonological component. The pitch peak occurs on the past participle that carries the focus of the sentence. Downstep must occur after it. The object pronoun moves across the negation to cause downstep, resulting in *kysst har jag honom inte*. The pitch remains low on the negation.

It is quite dubious, however, whether and how movement in phonology can be carried out in a theoretically principled way. First, there are no possible candidate features that are directly involved in raising a category in phonology. Syntactic movement requires that a functional head is assigned an EPP feature that triggers movement. As a purely syntactic feature, however, it cannot be directly involved in raising a category in the phonological component. It is not possible to assume that the EPP is assigned to a functional head in the phonological component, since the spelled-out structure cannot be involved in a syntactic operation again.

Assume that in the case of OS, an object pronoun is assigned a phonological feature called [downstep]. This feature could be required by the interface with phonology and cause downstep after the syntactic structure of the OS construction is spelled out. However, that feature itself is irrelevant to movement and does not affect the presence or absence of pronominal shift in phonology.

Secondly, under the traditional interpretive model, it is assumed that semantic/morphophonological realization is derived from some syntactic features present in syntax. For instance, the interpretation as focus in the semantic component is derived from [Foc] present in syntactic component. The morphological realization of agreement in the phonological component is derived from the phi-features present in syntax. In the same way, assume that movement in phonology results from the realization of the feature called [movement in phonology] present in syntax, and that the carrier of this feature moves in the phonological component.

Let us apply the argument above to OS. OS is optional in the Scandinavian languages. Under the assumption of the uniformity in syntax and semantics, it cannot be assumed that the [movement] feature enters a syntactic derivation in some cases but does not enter in others: the syntactic computation would differ between the two cases. Assume that the [movement] feature always enters a derivation, and that it may be realized in some cases (, which results in the presence of pronominal shift) but may not be realized in others (, which results in its absence). It is unclear whether it is justified that the [movement] feature can be allowed not to be realized, since the presence of the EPP always entails movement of a category in syntax.

All in all, it is quite doubtful that movement in phonology can be

[143] In the account here, I leave aside all detailed issues, e.g. Spell-Out of v*P, the assumption that only the complement of a head is spelled out, etc.

derived in a principled way under the current theoretical assumption. For movement in phonology to be feasible in a principled way, a more elaborate derivational mechanism needs to be worked out.[144]

In the thorough discussion of OS from the intonational perspective, we have established that the intonational properties that are not part of the syntactic component under the interpretive model do account for all aspects of OS, i.e. the obligatoriness, optionality and absence of OS. As argued in § 5.1, an object pronoun moves to cause downstep and eliminate a focal effect on the negation on one hand and to maintain the focus of a sentence on the main verb on the other. A possible pitch peak on the negation must be eliminated for the pitch peak to coincide with the focal point on the main verb, as stated in principle (174). Thus, as long as all the *syntactic* behaviors of object pronouns can be accounted for in a principled way in terms of the intonational properties, a different way to account for OS is to say that it occurs in syntax, driven by the intonational properties.[145]

Consider how 'intonation-driven' syntactic movement proceeds by taking Verb Topicalization, (Swe.) *kysst har jag honom inte* 'I haven't kissed him', as an example again. In the same way as in movement in phonology described previously, the following structure will be constructed: *[$_{CP}$ kysst har jag inte honom]*.[146] Since the sentence-initial past participle is contrastively focused, the focal accent and the pitch peak must occur on it. Since the negation is also prominent, the object pronoun moves across the negation to cause downstep on the latter, resulting in *kysst har jag honom inte*. The pitch is low on the negation.

The difference between 'intonation-driven' syntactic movement and movement in phonology described previously is that all operations proceed in syntax. The information that the focal accent and the pitch peak must occur on the past participle enters from phonology in the course of syntactic operations. That information is the trigger of pronominal shift to cause downstep. That some information entering syntax from phonology is the source of pronominal shift indicates that syntax needs to accept some feedback from phonology in the course of syntactic derivations.

Though it is unclear how 'intonation-driven' syntactic movement can be carried out in the current phase-cartographic framework, it is feasible in the system of alignment between syntax, information structure and intonation

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144 The argument here applies to verb movement too. As stated in footnote 141, verb movement is claimed to be a phonological movement. However, there are no principles/features that determine when and where a main verb moves (or does not move) in phonology. A verbal head could freely choose the position where it moves (or choose not to move). But it appears in either v*, T, or C, depending on languages. It is unclear how this regularity in each language can be accounted for.

145 Or, OS is a 'prosodically-informed syntactic movement', as Vincent van Heuven (p.c.) suggests.

146 Again, I leave aside all detailed issues here.

presented in § 5.2 and, e.g. in the model that assumes the parallel architecture of syntax, semantics and phonology (Jackendoff 2010). In those systems, it is assumed that the grammatical components directly interact with each other. The direction of the interaction is not unilateral, but bilateral. It is possible for the phonological component to directly interact with the syntactic component and affect syntactic operations. I leave the details of how to construct syntactic structures driven by the intonational properties for future research.[147]

[147] See Cheng and Rooryck (2000), who propose to encode intonational properties as a syntactic feature. They observe that the *wh*-in-situ contruction differs from the *wh*-movement construction in that the former has particular intonational properties. They assume that the syntactic feature that is translated into a particular intonation in phonology is included in the selection of the lexical items that enter the derivation of *wh*-in-situ constructions. They propose this system under the *Minimalist Program* (Chomsky 1995), in which the uniformity of syntax and semantics was not assumed.

Chapter 6. Conclusion

In this thesis, I have discussed OS from the point of view of the intonational properties of the Scandinavian languages. The experimental data of simple tense forms and Verb Topicalization show that the F0 of the sentential element(s) that follow a main verb is lower than the F0 of the main verb in the OS construction. The experimental data of complex tense forms and embedded clauses show that the pitch peak occurs on a sentential element located at some point after the Aux in complex tense forms and the embedded subject, neither of which can be followed by an object pronoun directly. The new hypothesis on OS has been proposed: the object pronoun moves to cause downstep. The account of Holmberg's Generalization has been provided as follows. When main verb movement takes place, an object pronoun moves and causes downstep to eliminate a focal effect on the sentential element(s) after the main verb. In the environments in which downstep must not occur, i.e. in the constructions where the final pitch peak occurs on the (in-situ) main verb, OS does not occur either. On the basis of the fact that the Scandinavian varieties in which OS tends to be absent have a delayed pitch gesture but those in which OS is more or less obligatory have an early pitch gesture, a new generalization on OS has been presented: the earlier the pitch gesture occurs, the more likely is Object Shift to occur; the more delayed the pitch gesture is, the more likely is Object Shift to be absent. It has been argued that OS is a gradient phenomenon rather than a binary/dichotomous property in the Scandinavian languages. A system that accounts for the interaction between syntax, information structure and intonation, in which information structure mediates between grammatical components to express the information flow of a sentence, has also been presented. It has been discussed in which component OS occurs. It has been argued that OS occurs in syntax, driven by the intonational properties, which is feasible in the system where the grammatical components directly interact with each other, as proposed here.

In this section, I mention several indications from the arguments in this thesis. First, the recent literature gives Övdalian the status of a language that is independent of the other Scandinavian varieties due to its particular syntactic properties (e.g. Garbacz 2009). However, as far as the absence of OS in it is concerned, Övdalian actually behaves like a Swedish dialect. That is, the absence of OS can be accounted for in the interaction between two variables concerning the intonational properties, i.e. i) one-/two-peaked and ii) early/delayed pitch gesture, in the same way as in the other Swedish varieties. As stated in § 5.1, the absence of OS in Övdalian is derived from its two-peaked but delayed pitch gesture property.

Secondly, the distribution of either obligatory or optional OS geographically coincides with that of either the one- or two-peaked dialects in the Scandinavian countries. East and West Swedish and East and Mid Norwegian, which have two-peaked properties, compose a 'central Scandinavian axis' (Bruce 2007:144), whereas the other Mainland Scandinavian varieties, which are spoken in the peripheral areas, share one-peaked properties. OS is more or less obligatory in the former, but OS can be optional and even absent in the latter. As we have seen so far, the obligatoriness of OS is derived from the early pitch gesture in the former, and the optionality and absence of OS from the delayed pitch gesture in the latter. This result is compatible with the prediction in § 2.5: OS is more or less obligatory in the dialects that have word accent/stød, which typically include the two-peaked varieties, whereas OS can be optional in those which do not have word accent/stød, which typically include the one-peaked varieties.[148]

Thirdly, the issue on the conditions under which stød occurs in (East) Danish has long been one of the debates in Danish phonology (e.g. Basbøll 1985, 2005; Grønnum 1998; Gussenhoven 2004; Bruce 2007; Grønnum and Basbøll 2007). It has been claimed that the distribution of stød words corresponds to that of accent 1 words, and the distribution of non-stød words to that of accent 2 words; see § 3.2.3. This argument is owed to the observation that monosyllabic words, which have an accent 1 in Swedish and Norwegian, have a stød. However, the environments in which stød actually occurs are not so simple: the condition under which stød occurs or not is determined solely by the morpheme adjacent to a relevant syllable (Basbøll 1985).

The data on Danish OS show that the factor that triggers the occurrence of stød is not stress, since a stød can occur in an unstressed syllable, i.e. the second syllable of an accented main verb. The occurrence of stød is triggered by the H on a relevant syllable (cf. § 3.2.3.1), which possibility is not taken seriously, e.g. in Grønnum and Basbøll (2007). This argument provides an account for the traditional observations i) that Danish has a LHL contour, and ii) that declination occurs in the unmarked case (e.g. Grønnum 1998, Gussenhoven 2004). That is, on the H point (with or without a stress) of each intonational phrase consisting of a LHL contour, a stød occurs and lowers the pitch level of the following word; this pattern is repeated in turn, which causes declination in an entire sentence. This provides an account for why stød occurs to begin with, i.e. the function of stød: it occurs to lower the pitch level on the following sentential elements (cf. § 3.2.3.1).

Fourthly, the argument made so far indicates that the timing hypothesis represented by Bruce (1977) is in a more appropriate and right direction than the privativity hypothesis (e.g. Riad 1998).[149] The privativity

[148] The aspect of the more or less obligatory OS in East Danish is referred to in § 5.1.

[149] Kristoffersen (2007) suggests that even for Norwegian, though it has long been analyzed under the privativity hypothesis, the timing hypothesis is more appropriate.

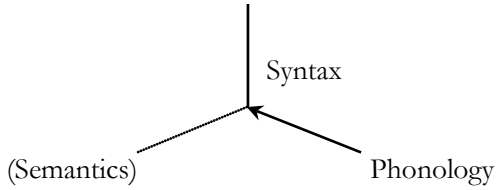
hypothesis determines a basic tonal pattern a dialect takes, e.g. LH in East Swedish. It assumes that the first tone of that basic pattern is associated with an accent in accent 1. It also assumes that in accent 2, an H associated with an accent is added to the basic LH pattern. Thus, it represents accent 1 as L*H and accent 2 as H*LH. The timing hypothesis, on the other hand, assumes that a dialect has the same tonal pattern, e.g. HL in East Swedish, for both accent 1 and accent 2, and that an accent is associated with either H or L respectively. Thus, it represents accent 1 as HL* and accent 2 as H*L. In this way, both the privativity hypothesis and the timing hypothesis can account for the fact that the timing difference in word accents exists independently of a tonal pattern in each of the Swedish dialects.

However, the privativity hypothesis can account for the intra-dialectal intonational grammar as stated above but cannot account for the inter-dialectal correlation, whereas the timing hypothesis can account for both of them. The correlation between one dialect that has a certain tonal pattern and another that has a different pattern can be accounted for by the timing hypothesis only, since it accounts for the difference in tonal pattern among the dialects in terms of either early or delayed pitch gesture. That is, East Swedish has an early pitch gesture; thus, its accent 2 is H*L. South Swedish has a delayed pitch gesture; thus, its accent 2 is L*H. The generalization on OS presented in (170) in § 5.1 is also straightforward for the timing hypothesis, since the obligatoriness of OS is attributed to the early pitch gesture, and the optionality and(/or) absence of OS is attributed to the delayed pitch gesture, in a relevant dialect; see § 5.1. The privativity hypothesis would simply stipulate that East Swedish has H*LH and South Swedish has L*HL as the basic tonal pattern respectively. It could also describe the fact that OS is more or less obligatory in the former but tends to be optional in the latter with that stipulation. But it cannot account for why the fact is so: that OS is obligatory in East Swedish cannot be associated with the fact that OS is optional in South Swedish in this hypothesis.

Finally, the argument in this thesis indicates that the possibility that the phonological component affects syntax should be seriously taken into account. As discussed in § 5.3, Chomskyan generative grammar has the long-term tradition of the 'interpretive' model of semantics and phonology. In this model, the syntactic component simply produces a structure to be sent to the semantic and phonological components; the latter components simply receive that structure and assign it some interpretation/phonological properties. In the current phase-cartographic system, the interpretation a category receives in situ must differ from the one it receives in the moved position. Optional movement such as OS that does not affect the change of meaning has to be dealt with as movement in the phonological component. We saw, however, that movement in phonology cannot be carried out in a theoretically principled way in the currently assumed framework.

We have long seen that the obligatoriness, optionality and absence of OS, i.e. all the syntactic behaviors of object pronouns, can be accounted for in a principled way in terms of the intonational properties. It has been suggested in § 5.3 that OS can be syntactic movement driven by the intonational properties, and that such a movement is feasible in the theoretical model in which the grammatical components interact with each other. Thus, contrary to the traditional interpretive phonology, the following possibility should be taken into consideration:

(187) PHONOLOGY DOES AFFECT SYNTAX.



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Summary

This thesis concerns *Scandinavian Object Shift* (OS). In almost all the Scandinavian varieties, a weak, unstressed object pronoun moves across a sentential adverb, whereas a full NP object normally does not move. Specifically, the weak pronominal object *henne* moves across the negation (1a), whereas the full NP object *Marit* must remain in situ. OS is obligatory in some of the Scandinavian varieties, optional in others and absent still in others.

(1) a. Jag kysste (OKhenne) inte (OKhenne). [Swe.]
I kissed her not her
'I didn't kiss her.'

b. Jag kysste (*Marit) inte (OKMarit).
I kissed Marit not Marit
'I didn't kiss Marit.'

There is a condition under which an object pronoun can move. In simple tense forms (2a), a main verb moves to the second position. An object pronoun can move too. In complex tense forms (2b), a past participle main verb does not move due to the presence of the Aux(iliary verb). An object pronoun cannot move either. In embedded clauses (2c), verb movement does not take place. An object pronoun cannot move either. This observation is called *Holmberg's Generalization* (Holmberg 1986): an object pronoun can move only when verb movement takes place.

(2) a. Jag kysste (OKhenne) inte ~~kysste~~ (OKhenne). [Swe.]
I kissed her not her
'I didn't kiss her.'

b. Jag har (*henne) inte kysst (OKhenne).
I have her not kissed her
'I haven't kissed her.'

c. … att jag (*henne) inte kysste (OKhenne)
… that I her not kissed her
'… that I didn't kiss her'

Holmberg's Generalization indicates that the presence of pronominal movement is dependent on that of verb movement. However, no movement phenomenon other than OS in which movement of a sentential element is dependent on that of another sentential element has been found. Due to this

particular property, OS has long been one of the most controversial issues in generative syntax. Despite much literature on OS, no comprehensive and decisive account of all aspects of OS has been provided yet.

Hence, the research questions are as follows:

i) What principled account can be provided for Holmberg's Generalization?; and
ii) What principled accounts can be provided for the obligatoriness, optionality and absence of OS, and how are they related to i)?

It is well known that the Scandinavian languages have specific intonational systems, as represented by Bruce (1977) for Swedish, Kristoffersen (2000) for Norwegian, Grønnum (1998) for Danish, and Árnason (2011) for Icelandic and Faroese. Though these works convincingly show that intonational properties are involved in characterizing the overall aspect of the Scandinavian languages, a thorough study of OS from the viewpoint of intonational properties has not been carried out so far. In this thesis, I discuss the constructions relevant to OS from the intonational perspective, by presenting experimental data on all the Scandinavian varieties concerned. I present a new hypothesis on OS and an account of Holmberg's Generalization on the basis of it. I also present a new generalization on OS from the intonational perspective.

Chapter 2 conducts a thorough literature survey. I introduce the issues associated with OS that have been discussed in the literature. Much literature on OS exists in (mainly Chomskyan) generative syntax. I introduce the approaches taken to account for OS proposed so far, specifically, the semantico-syntactic, purely syntactic and purely phonological approaches. I show that none of these approaches succeeds in providing a principled account of all aspects of OS.

Chapter 3 presents experimental data on OS. Data have been collected from almost all the Scandinavian varieties: Swedish (East, West, South, North, Finland Swedish, Dalecarlian and Övdalian), Norwegian (East and West), Danish (East and South), Icelandic and Faroese. They are all presented in turn.

The overall findings in this work regarding the constructions relevant to OS are as follows: *downstep*, noticeable lowering of pitch peaks on successive accented words, typically occurs in the OS construction of simple tense forms and Verb Topicalization, but it does not occur in complex tense forms and embedded clauses, which mostly do not have OS, in almost all the Scandinavian varieties investigated. That is, the pitch level on the negation becomes lower than that on the main verb in the OS construction. In complex tense forms and embedded clauses, however, the pitch peak occurs on a sentential/clausal element located 'after' the element that cannot be followed by an object pronoun directly, i.e. the Aux and the embedded subject.

Chapter 4 presents the statistical analysis of acoustic data on the incidence and magnitude of downstep in all the Scandinavian varieties investigated. The downstep size has been determined by measuring the pitch maximum in two crucial words (one early, one late) in the sentence and expressing the pitch difference between these peaks in semitones (one semitone is one-twelfth of an octave, which is a doubling of the fundamental frequency F0). The observation in chapter 3 is confirmed: downstep is more likely to occur in the OS construction, whereas non-downstep/upstep is more likely to occur in the non-OS construction.

Chapter 5 provides a theoretical account of the findings on OS. The relation between the presence of OS and that of downstep is described as follows: movement of the object pronoun entails downstep. The relation of 'entailment' expresses that whenever OS takes place, downstep occurs (but not vice versa). This descriptive generalisation is supported by experimental data collected for 13 Scandinavian varieties (presented in chapters 3 and 4). In this chapter, the entailment relationship will be theoretically interpreted as that of 'causation'. I propose the following new hypothesis on OS:

(3) Scandinavian Object Shift:
The object pronoun moves to cause downstep.

In simple tense forms, the focus and focal accent typically occur on a raised main verb. A possible focal effect on sentential element(s) located after it must be eliminated. In complex tense forms and embedded clauses, the focus typically occurs on the in-situ past participle in the former and on the (in-situ) embedded verb in the latter. The final pitch peak occurs on those main verbs. Then, the theoretical account of Holmberg's Generalization will be provided as follows: When main verb movement takes place, an object pronoun moves and causes downstep to eliminate a focal effect on the sentential element(s) after the main verb. In the environments in which downstep must not occur, i.e. in the constructions where the final pitch peak occurs on the (in-situ) main verb, OS does not occur either.

Whether OS is obligatory, optional or absent depends on whether a relevant Scandinavian variety has an early or delayed pitch gesture: the Scandinavian varieties in which OS tends to be absent, e.g. Övdalian, typically have a delayed pitch gesture, whereas those which have more or less obligatory OS, e.g. East Swedish, have an early pitch gesture. I present the following new generalization on OS:

(4) Scandinavian Object Shift:
The earlier the pitch gesture occurs, the more likely is Object Shift to occur; the more delayed the pitch gesture is, the more likely is Object Shift to be absent.

I argue that OS is not a dichotomous property, i.e. either present or absent, but a gradient phenomenon in the Scandinavian languages.

I propose a system that accounts for the facts on OS as well as the interaction between syntax, information structure and intonation in general. The basic idea is that in theorizing the interaction between syntax, information structure and intonation, only the loci of the sentence focus and the highest pitch peak need to be taken into account: the locus of the highest pitch peak always indicates that the sentence focus is also there (or quite near it). The cross-linguistic prediction from the proposed model is that the farther the focal point moves from an unmarked position, the more an unmarked intonation pattern is likely to change, and the more an unmarked syntactic word order is likely to be affected, which is confirmed in various languages.

Finally, I discuss in which grammatical component OS occurs. I present the following three possibilities. First, no movement including OS can occur in the semantic component in the current Chomskyan framework. Secondly, OS could occur in the phonological component. Movement in phonology, however, cannot be carried out in a principled way under current theoretical assumptions. Thirdly, OS occurs in syntax, driven by the intonational properties. This movement is feasible in the system as proposed here, in which the grammatical components directly interact with each other.

Chapter 6 concludes this thesis. I suggest that contrary to the traditional 'interpretive' phonology in Chomskyan generative grammar, the possibility that the phonological component affects syntax should be seriously taken into account.

Samenvatting

Dit proefschrift gaat over *Scandinavische ObjectVerplaatsing* (OV). In bijna alle Scandinavische taalvariëteiten wordt een zwak, onbeklemtoond objectpronomen verplaatst over een zinsbijwoord heen, terwijl een vol NP object normaliter niet verplaatst wordt. Zo wordt het zwakke voornaamwoordelijke object (= lijdend voorwerp) *henne* in (1a) verplaatst over het negatiebijwoord heen maar moet het volle NP object *Marit* op zijn normale plek (*in situ*) blijven staan. OV is verplicht in sommige Scandinavische taalvariëteiten, optioneel in andere en onmogelijk in nog weer adere.

(1) a. Jag kysste ([OK]henne) inte ([OK]henne). [Zweeds]
Ik kuste haar niet haar
'Ik heb haar niet gekust.'

b. Jag kysste (*Marit) inte ([OK]Marit).
Ik kuste Marit niet Marit
'Ik heb Marit niet gekust.'

Wil een objectpronomen verplaatst worden dan gelden speciale voorwaarden. Een finiet werkwoord als in (2a), wordt verplaatst naar de tweede positie. Een objectpronomen kan ook verplaatst worden. In een complexe werkwoordgroep als in (2b), kan een voltooid deelwoord niet verplaatst worden, omdat er een hulpwerkwoord (Aux) bij staat. Een objectpronomen kan in dat geval evenmin verplaatst worden. In bijzinnen zoals (2c) wordt het werkwoord niet verplaatst. Een objectpronomen kan dan evenmin verplaatst worden. Deze observatie wordt wel *Holmbergs Generalisatie* genoemd (Holmberg 1986): een objectpronomen kan alleen verplaatst worden als ook het werkwoord verplaatst wordt.

(2) a. Jag kysste ([OK]henne) inte ~~kysste~~ ([OK]henne). [Zweeds]
Ik kuste haar niet haar
'Ik heb haar niet gekust.'

b. Jag har (*henne) inte kysst ([OK]henne).
Ik heb haar niet gekust haar
'Ik heb haar niet gekust.'

c. … att jag (*henne) inte kysste ([OK]henne).
… dat ik haar niet kuste haar
'… dat ik haar niet gekust heb.'

Holmbergs Generalisatie zegt dus dat verplaatsing van het voornaamwoord afhankelijk is van verplaatsing van het werkwoord. Er is echter nooit een ander

verplaatsingsverschijnsel gevonden dan OV, waarin verplaatsing van het ene zinselement afhankelijk is van de verplaatsing van een ander zinselement. Om die reden is OV sinds lang een van de meest controversiële kwesties in de generatieve syntaxis. Ondanks een ruime literatuur over OV ontbreekt nog altijd een allesomvattende en beslissende verantwoording van alle aspecten van OV. Daarom stel ik de volgende onderzoeksvragen:

i) Hoe ziet een principiële verantwoording van Holmbergs Generalisatie eruit?; en
ii) Hoe kunnen we een principiële verklaring geven voor de verplichtheid, optionaliteit of afwezigheid van OV, en hoe verhoudt deze zich tot i)?

Scandinavische talen hebben ieder hun eigen intonatiesysteem, zoals beschreven door Bruce (1977) voor het Zweeds, door Kristoffersen (2000) voor het Noors, door Grønnum (1998) voor het Deens en door Árnason (2011) voor het IJslands en het Faroers. Deze publicaties tonen overtuigend aan dat melodische eigenschappen een wezenlijk onderdeel vormen van een algemene karakteristiek van de Scandinavische talen. Niettemin ontbreekt nog een grondige bestudering van OV vanuit het perspectief van melodische eigenschappen. In dit proefschrift bespreek ik de constructies die relevant zijn voor OV vanuit melodisch gezichtspunt en presenteer ik experimentele gegevens over alle betrokken Scandinavische taalvariëteiten.
Ik stel een nieuwe hypothese voor over OV and geef op basis daarvan een verklaring van Holmbergs Generalisatie. Ik presenteer dan ook een nieuwe generalisatie over OV vanuit melodisch perspectief.

Hoofdstuk 2 bevat een literatuuroverzicht. Ik geef een inleiding in the problemen rond OV zoals die zijn besproken in de literatuur, met name de literatuur over OV in de (vooral Chomskyaanse) generatieve syntaxis. Ik geef een inleidend overzicht van voorstellen ter verklaring van OV die tot nog toe gedaan zijn, d.w.z. de semantisch-syntactische, de zuiver syntactische en de zuiver fonologische benaderingen. Ik laat zien dat geen van deze benaderingen erin slaagt een principiële verklaring te geven van alle aspecten van OV.

In hoofdstuk 3 presenteer ik experimentele gegevens over OV, verzameld uit praktisch alle Scandinavische taalvariëteiten: Zweeds (Oost, West, Zuid, Noord, Fins Zweeds, Dalecarlisch en Övdalisch), Noors (Oost en West), Deens (Oost en Zuid), IJslands en Faroers. De gegevens worden in deze volgorde gepresenteerd.

De gegevens wijzen uit dat OV over het geheel genomen optreedt onder de volgende condities: in OV-constructies met niet-samengestelde tijden of met werkwoordtopicalisatie (vooropplaatsing van het werkwoord) treedt doorgaans downstep op (d.w.z. een opvallende toonhoogteverlaging op het laatste accent in de zin). Downstep blijft achterwege in zinnen met samengestelde tijden en in bijzinnen, die in de regel geen OV vertonen, in praktisch alle onderzochte Scandinavische taalvariëteiten. Dat wil zeggen dat de

toonhoogte (ook wel 'grondtoon' of 'F0') op het negatiepartikel in de zin lager wordt dan de F0 van het hoofdwerkwoord in de OV-constructie. Maar in samengestelde tijden en in bijzinnen komt er een toonhoogtepiek op een zinselement op een plaats na een element dat niet onmiddellijk gevolgd kan worden door een objectvoornaamwoord, d.w.z. de Aux en het onderwerp van de bijzin.

Hoofdstuk 4 bevat een statistische analyse van akoestische data (grondtoonmetingen) over de incidentie (d.w.z. hoevaak komt iets voor?) en de grootte van de downstep in alle onderzochte Scandinavische taalvariëteiten. De grootte van een downstep is bepaald door het toonhoogtemaximum te meten in twee cruciale woorden (één vroeg, één laat) in de zin, en het verschil tussen de twee pieken uit te drukken in semitonen (een halve toon is een twaalfde deel van een octaaf, dat is een verdubbeling van de fundamentele frequentie F0). De resultaten bevestigen de eerdere observatie uit hoofdstuk 3: downstep komt regelmatig voor in de OV-constructie maar blijft achterwege in niet-OV-constructies.

Hoofdstuk 5 geeft een theoretische verklaring van de bevindingen. De relatie tussen het optreden van OV en van downstep beschrijf ik als volgt: verplaatsing van het objectvoornaamwoord gaat altijd samen met downstep – maar niet omgekeerd. Deze zgn. entailment-relatie ('leidt altijd tot') drukt uit dat altijd wanneer OV plaatsvindt, downstep optreedt – maar niet omgekeerd. De beschrijvende generalisatie in (3) vindt steun in de experimentele data die verzameld zijn voor de 13 Scandinavische taalvariëteiten (die gepresenteerd zijn in hoofdstukken 3 en 4). In hoofdstuk 5 interpreteer ik de entailment-relatie theoretisch in termen van causaliteit (oorzakelijkheid). Ik stel een nieuwe hypothese voor met betrekking tot OV:

(3) Scandinavische ObjectVerplaatsing:
Het objectvoornaamwoord wordt verplaatst ten einde downstep te veroorzaken.

In niet-samengestelde tijden, ligt de focus en het focale accent doorgaans op een naar voren verplaatst hoofdwerkwoord. Mogelijke focuseffecten op zinselementen na da werkwoord moeten tenietgedaan worden. In samengestelde tijden en in bijzinnen valt de focus in de regel op een niet-verplaatst (zgn. *in-situ*) voltooid deelwoord, resp. op het (*in-situ*) werkwoord in de bijzin; de laatste toonhoogtepiek valt op die hoofdwerkwoorden. De verklaring van Holmbergs Generalisatie is dan als volgt: Bij verplaatsing van een hoofdwerkwoord wordt ook een objectvoornaamwoord verplaatst, wat downstep veroorzaakt en zo focuseffecten op zinsdelen na het hoofdwerkwoord uitsluit. In omgevingen waarin downstep niet mag voorkomen, bv. in samengestelde tijden en in bijzinnen waarin de laatste toonhoogtepiek op het (*in-situ*) hoofdwerkwoord valt, komt OV ook niet voor.

Of OV verplicht is, optioneel of afwezig, hangt af van het type toonhoogtegebaar dat gehanteerd wordt door de betreffende Scandinavische taalvariëteit: vroeg of uitgesteld. Scandinavische variëteiten waarin OV meestal achterwege blijft, bv. het Övdalisch, hebben in de regel een uitgesteld toonhoogtegebaar, terwijl de variëteiten met min of meer verplichte OV, bv. het Oost-Zweeds, een vroeg toonhoogtegebaar hebben. Ik presenteer dan de volgende nieuwe generalisatie met betrekking tot OV:

(4) Scandinavische ObjectVerplaatsing:
Hoe vroeger het toonhoogtegebaar, des te groter de kans op Object-Verplaatsing; hoe meer uitgesteld het toonhootegebaar, des te groter de kans dat ObjectVerplaatsing achterwege blijft.

Ik betoog dat OV niet een dichotome eigenschap is, d.w.z. een eigenschap die alleen maar aanwezig of afwezig kan zijn, maar in de Scandinavische talen juist een gradiënt verschijnsel vormt.

Ik stel een systeem voor ter verklaring van de feiten met betrekking tot OV als ook tot de interactie tussen syntaxis, informatiestructuur en intonatie in het algemeen. De grondgedachte is dat een theorie over de interactie tussen syntaxis, informatiestructuur en intonatie alleen maar de zinsfocus (belangrijkste element in de zin) en de plaats van de hoogste toonhoogtepiek in beschouwing hoeft te nemen: de plaats van de hoogste toonhoogtepiek geeft aan dat de zinsfocus daar (in de buurt) ligt. De cross-linguïstische voorspelling van het voorgestelde model is dat hoe verder het brandpunt van een ongemarkeerde positie verwijderd ligt, des te waarschijnlijker is het dat een ongemarkeerd intonatie patroon verandert, en des te groter de kans dat een ongemarkeerde syntactische woordvolgorde beïnvloed wordt, wat in verschillende talen bevestigd wordt.

Als laatste bespreek ik de vraag in welk onderdeel van de grammatica OV gesitueerd is. Ik neem de volgende drie mogelijkheden in beschouwing. Ten eerste, geen enkele verplaatsing met inbegrip van OV kan voorkomen in de semantische component binnen het huidige Chomskyaanse kader. Als tweede mogelijkheid zou OV gesitueerd kunnen zijn in de fonologische component. Onder de huidige theoretische aannamen is er geen principiële manier om binnen de fonologie een verplaatsing te realiseren. De derde mogelijkheid is dat OV zich afspeelt in de syntaxis maar onder invloed van melodische eigenschappen. Zo'n soort verplaatsing is mogelijk in het systeem dat ik voorstel, waarin de grammatische componenten een directe interactie met elkaar kunnen aangaan.

Hoofdstuk 6 vormt het besluit van dit proefschrift. Ik open daar de mogelijkheid dat, in tegenstelling tot de traditionele 'interpretatieve' fonologie in de Chomskyaanse grammatica, de fonologische component invloed kan hebben op de syntaxis.

Appendix I: Test Sentences

Swedish:

A. Målade du väggen? – Nej, jag målade den inte.
painted you the-wall no I painted it not
'Did you paint the wall? – No, I didn't paint it.'

A'. Målade du väggen? – Nej, jag målade inte den.

B. Målade du Jan? – Nej, jag målade honom inte.
portrayed you Jan no I portrayed him not
'Did you portray Jan? – No, I didn't portray him.'

B'. Målade du Jan? – Nej, jag målade inte honom.

C. Har du målat Jan?
have you portrayed Jan
– Målat har jag honom inte. Men jag har tagit foto av honom.
portayed have I him not but I have taken photos of him
'Have you portrayed Jan? – I haven't PORTRAYED him. But I have taken photos of him.'

D. Har du målat väggen? – Nej, jag har inte målat den.
have you painted the-wall no I have not painted it
'Have you painted the wall? – No, I haven't painted it.'

E. Har du målat Jan? – Nej, jag har inte målat honom.
have you portrayed Jan no I have not portrayed him
'Have you portrayed Jan? – No, I haven't portrayed him.'

F. Vad sa du? – Jag sa att jag inte målade honom.
what said you I said that I not portrayed him
'What did you say? – I said that I didn't portray him.'

G. Målade du Jan?
portrayed you Jan
– Nej, jag målade inte HONOM. Men jag målade Mats.
no I portrayed not him but I portrayed Mats
'Did you portray Jan? – No, I didn't portray HIM. But I portrayed Mats.'

Övdalian:

A. Måled du weddję? – Näj, ig måled åna it.

A'. Måled du weddję? – Näj, ig måled it åna.
painted you the-wall no I painted not it
'Did you paint the wall? – No, I didn't paint it.'

B. Måled du Jan? – Näj, ig måled an it.

B'. Måled du Jan? – Näj, ig måled it an.
portrayed you Jan no I portrayed not him
'Did you portray Jan? – No, I didn't portray him.'

C. Ar du målad Anna?
have you portrayed Anna
– Målad ar ig it åna. Men ig ar fotografirad åna.
portayed have I not her but I have taken photos her
'Have you portrayed Anna?"– I haven't PORTRAYED her. But I have taken photos of her.'

D. Ar du målad weddję? – Näj, ig ar it målad åna.
have you painted the-wall no I have not painted it
'Have you painted the wall? – No, I haven't painted it.'

E. Ar du målad Jan? – Näj, ig ar it målad an.
have you portrayed Jan no I have not portrayed him
'Have you portrayed Jan? – No, I haven't portrayed him.'

F'. Wen saggd du? – Ig saggd at ig måled it åna.
what said you I said that I portrayed not her
'What did you say? – I said that I didn't portray her.'

G. Måled du Anna?
portrayed you Anna
– Näj, ig måled it ÅNA. Men ig måled Lena.
no I portrayed not her but I portrayed Lena
'Did you portray Anna? – No, I didn't portray HER. But I portrayed Lena.'

G'. Måled du Anna?
– Näj, ig måled ÅNA it. Men ig måled Lena.

Norwegian:

A. Malte du veggen? – Nei, jeg malte den ikke.
painted you the-wall no I painted it not
'Did you paint the wall? – No, I didn't paint it.'

A'. Malte du veggen? – Nei, jeg malte ikke den.

B. Malte du Anne? – Nei, jeg malte henne ikke.
portrayed you Anne no I portrayed her not
'Did you portray Anne? – No, I didn't portray her.'

B'. Malte du Anne? – Nei, jeg malte ikke henne.

C. Har du malt Anne?
have you portrayed Anne
– Malt har jeg henne ikke. Men jeg har tatt bilde av henne.
portayed have I her not but I have taken photos of her
'Have you portrayed Anne? – I haven't PORTRAYED her. But I have taken photos of her.'

D. Har du malt veggen? – Nei, jeg har ikke malt den.
Have you painted the-wall no I have not painted it
'Have you painted the wall? – No, I haven't painted it.'

E. Har du malt Anne? – Nei, jeg har ikke malt henne.
have you portrayed Anne no I have not portrayed her
'Have you portrayed Anne? – No, I haven't portrayed her.'

F. Hva sa du? – Jeg sa at jeg ikke malte henne.
What said you I said that I not portrayed her
'What did you say? – I said that I didn't portray her.'

G. Malte du Anne?
portrayed you Anne
– Nei, jeg malte ikke HENNE. Men jeg malte Sonja.
no I portrayed not her but I portrayed Sonja
'Did you portray Anne? – No, I didn't portray HER. But I portrayed Sonja.'

Danish:

A. Malede du væggen? – Nej, jeg malede den ikke.
painted you the-wall no I painted it not
'Did you paint the wall? – No, I didn't paint it.'

A'. Malede du væggen? – Nej, jeg malede ikke den.

B. Malede du Anne? – Nej, jeg malede hende ikke.
portrayed you Anne no I portrayed her not
'Did you portray Anne? – No, I didn't portray her.'

B'. Malede du Anne? – Nej, jeg malede ikke hende.

C. Har du malet Anne?
have you portrayed Anne
– Malet har jeg hende ikke. Men jeg har taget fotos af hende.
portayed have I her not but I have taken photos of her
'Have you portrayed Anne?' '– I haven't PORTRAYED her. But I have taken photos of her.'

D. Har du malet væggen? – Nej, jeg har ikke malet den.
have you painted the-wall no I have not painted it
'Have you painted the wall? – No, I haven't painted it.'

E. Har du malet Anne? – Nej, jeg har ikke malet hende.
have you portrayed Anne no I have not portrayed her
'Have you portrayed Anne? – No, I haven't portrayed her.'

F. Hvad sagde du? – Jeg sagde at jeg ikke malede hende.
what said you I said that I not portrayed her
'What did you say? – I said that I didn't portray her.'

G. Malede du Anne?
portrayed you Anne
– Nej, jeg malede ikke HENDE. Men jeg malede Helena.
no I portrayed not her but I portrayed Helena
'Did you portray Anne? – No, I didn't portray HER. But I portrayed Helena.'

Icelandic:

A. Málaðir þú vegginn? – Nei, ég málaði hann ekki.
painted you the-wall no I painted it not
'Did you paint the wall? – No, I didn't paint it.'

A'. Málaðir þú vegginn? – Nei, ég málaði ekki hann.

B. Málaðir þú Önnu? – Nei, ég málaði hana ekki.
portrayed you Anna no I portrayed her not
'Did you portray Anna? – No, I didn't portray her.'

B'. Málaðir þú Önnu? – Nei, ég málaði ekki hana.

C. Hefur þú málað Önnu?
have you portrayed Anna
– Málað hef ég hana ekki. En ég hef tekið myndir af henni.
portayed have I her not but I have taken photos of her
'Have you portrayed Anna? – I haven't PORTRAYED her. But I have taken photos of her.'

D. Hefur þú málað vegginn? – Nei, ég hef ekki málað hann.
have you painted the-wall no I have not painted it
'Have you painted the wall? – No, I haven't painted it.'

E. Hefur þú málað Önnu? – Nei, ég hef ekki málað hana.
have you portrayed Anna no I have not portrayed her
'Have you portrayed Anna? – No, I haven't portrayed her.'

F". Hvað sagðir þú? – Ég sagði að ég málaði hana ekki.
what said you I said that I portrayed her not
'What did you say? – I said that I didn't portray her.'

G. Málaðir þú Önnu?
portrayed you Anna
– Nei, ég málaði ekki HANA. En ég málaði Hönnu.
no I portrayed not her but I portrayed Hanna
'Did you portray Anna? – No, I didn't portray HER. But I portrayed Hanna.'

G'. Málaðir þú Önnu?
– Nei, ég málaði HANA ekki. En ég málaði Hönnu.

Faroese:

A. Málaði tú veggin? – Nei, eg málaði hann ikki.
painted you the-wall no I painted it not
'Did you paint the wall? – No, I didn't paint it.'

A'. Málaði tú veggin? – Nei, eg málaði ikki hann.

B. Málaði tú Anne? – Nei, eg málaði hana ikki.
portrayed you Anne no I portrayed her not
'Did you portray Anne? – No, I didn't portray her.'

B'. Málaði tú Anne? – Nei, eg málaði ikki hana.

C. Hevur tú málað Anne?
have you portrayed Anne
– Málað havi eg hana ikki. Men eg havi tikin myndir av henni.
portayed have I her not but I have taken photos of her
'Have you portrayed Anne? – I haven't PORTRAYED her. But I have taken photos of her.'

D. Hevur tú málað veggin? – Nei, eg havi ikki málað hann.
have you painted the-wall no I have not painted it
'Have you painted the wall? – No, I haven't painted it.'

E. Hevur tú málað Anne? – Nei, eg havi ikki málað hana.
have you portrayed Anne no I have not portrayed her
'Have you portrayed Anne? – No, I haven't portrayed her.'

F. Hvat segði tú? – Eg segði ið eg ikki málaði hana.
what said you I said that I not portrayed her
'What did you say? – I said that I didn't portray her.'

F'. Hvat segði tú? – Eg segði at eg málaði ikki hana.

F''. Hvat segði tú? – Eg segði at eg málaði hana ikki.

G. Málaði tú Anne?
portrayed you Anne
– Nei, eg málaði ikki HANA. Men eg málaði Lena.
no I portrayed not her but I portrayed Lena
'Did you portray Anne? – No, I didn't portray HER. But I portrayed Lena.'

Appendix II: Native Judgment Data

Language variety, speaker (age, place)[150]	A	A'	B	B'	C	D	E	F	F'	F''	G	G'
East Swe. F1 (31, Gnesta)	4	2	4	2	2	4	3	4			3	
*East Swe. F2 (63, Uppsala)	4	3	4	4	2	4	4	4			4	
*East Swe. F3 (23, Stockholm)	4	3	4	3	2	4	4	4			4	
East Swe. M1 (34, Linköping)	4	3	4	4	4	4	4	4			4	
*East Swe. M2 (26, Jönköping)	4	3	4	2	2	4	4	4			4	
*East Swe. M3 (27, Linköping)	4	3	4	4	4	4	4	4			4	
East Swe. M4 (48, Linköping)	4	3	4	3	3	4	4	4			4	
East Swe. M5 (48, Örebrö)	3	2	4	3	3	4	4	3			4	
*West Swe. F1 (50, Borås)	4	3	4	4	2	4	4	4			4	
*West Swe. F2 (48, Göteborg)	2	2	3	3	2	4	4	4			4	
*West Swe. M1 (53, Göteborg)	4	3	1	4	2	4	4	4			4	
West Swe. M2 (65, Västervik)	4	2	4	3	4	4	4	4			4	
*West Swe. M3 (47, Orust)	4	3	3	3	1	4	4	4			4	
West Swe. M4 (62, Göteborg)	4	1/2	3	2	3	4	4	4			4	
*South Swe. F1 (54, Malmö)	3	4	3	4	1	4	4	4			4	
*South Swe. F2 (27, Halmstad)	3	3	3	3	1	3	3	4			4	
South Swe. F3 (24, Hässleholm)	4	3	3	4	2	4	4	4			4	
South Swe. M1 (30, Lund)	4	3	4	4	2	4	4	4			4	
*South Swe. M2 (22, Vellinge)	4	3	3	4	2	4	4	4			4	
*South Swe. M3 (21, Ängelholm)	4	4	3	3	1	4	3	2			3	
*North Swe. F1 (61, Robertsfors)	4	2	1	4	1	4	4	4			4	
*North Swe. F2 (39, Umeå)	4	4	2	2	3	4	2	2			2	
*North Swe. M1 (35, Umeå)	4	2	4	4	1	4	4	4			4	
*North Swe. M2 (34, Piteå)	4	4	3	3	4	4	4	4			4	
*Finland Swe. F1 (61, Helsinki)	4	4	4	4	2	4	4	4			4	
Finland Swe. F2 (27, Jakobstad)	4	3	1	1	1	4	1	1			1	
Finland Swe. F3 (52, Helsinki)	2	4	4	4	1	4	4	4			4	
*Finland Swe. F4 (52, Helsinki)	4	4	4	4	3	4	4	4			4	
*Finland Swe. M1 (55, Helsinki)	4	4	4	4	3	4	4	4			4	
*Finland Swe. M2 (20, Vassa)	2	4	2	4	1	2	2	1			3	
Dalecarlian F1 (28, Storaskedvi)	4	3	2	4	1	4	4	4			4	
*Dalecarlian F2 (54, Nås)	1	2	1	2	1	2	2	1			1	
*Dalecarlian F3 (39, Hosjö)	2	2	2	2	2	2	2	4			4	
*Dalecarlian M1 (53, Leksand)	4	3	4	3	2	4	4	4			4	
Dalecarlian M2 (47, Falun)	4	3	1	3	1	3	4	4			4	
*Dalecarlian M3 (28, Borlänge)	3/4	3/4	3/4	3/4	1	3/4	3/4	2			2	
*Övdalian F1 (82, Loka)	1	4	1	4	1	4	4		4		4	1
*Övdalian F2 (64, Åsen)	1	4	1	4	2	4	4		3		4	1

[150] Informants marked with an asterisk were chosen for computation of the downstep size.

*Övdalian M1 (72, Klitten)	1	4	1	3	4	4	4		4		3	1
*Övdalian M2 (48, Brunnsberg)	1	4	2	4	1	4	4		4		4	1
*East Nor. F1 (53, Grue)	4	4	4	4	1	4	4	4			4	
*East Nor. F2 (49, Oslo)	4	2	4	1	1	4	4	4			4	
*East Nor. M1 (31, Hønefoss)	4	2	4	2	1	4	3	4			3	
*East Nor. M2 (60, Oslo)	4	4	4	4	1	4	4	4			4	
East Nor. M3 (27, Moss)	4	4	4	4	1	4	4	4			4	
*West Nor. F1 (53, Stavanger)	4	1	2	1	1	4	4	4			4	
*West Nor. F2 (27, Hålandsdalen)	4	3	4	3	2	4	4	4			4	
*West Nor. M1 (41, Fosnavåg)	4	4	4	4	2	4	4	4			4	
*West Nor. M2 (39, Stavanger)	4	2	4	4	1	4	4	4			4	
*East Dan. F1 (29, Nivå)	4	2	4	2	2	4	3	4			4	
*East Dan. F2 (25, Slangerup)	4	3	2	3	1	4	4	4			4	
*East Dan. M1 (39)	3	2	1	2	1	4	4	3			4	
*East Dan. M2 (36, G. Copenhagen)[151]	4	2	4	3	1	4	4	4			4	
East Dan. M3 (39, G. Copenhagen)	4	4	4	2	1	4	4	4			4	
South Dan. F1 (29)	4	3	4	2	1	4	4	4			4	
*South Dan. F2 (24, Odense)	4	3	4	3	2	4	4	4			4	
*South Dan. F3 (39, Odense)	4	2	4	2	2	4	4	4			4	
*South Dan. M1 (36, Middelfart)	4	2	4	3	2	4	4	4			4	
*South Dan. M3 (44, Svendborg)	4	2	4	4	2	4	4	4			4	
*Icelandic F1 (24, Reykjavík)	4	1	4	1	1	3	4			4	4	3
*Icelandic F2 (46, Reykjavík)	4	1	4	1	2	4	4			4	4	2
*Icelandic M1 (39, Akureyri)	4	1	4	1	3	4	4			4	3	4
*Icelandic M2 (32, Reykjavík)	4	2	4	2	2	3	4			4	3	4
Icelandic M3 (61, Reykjavík)	4	1	4	1	2/1	4	4			4	2	4
*Faroese F1 (39, Tórshavn)	4	3	4	4	1	4	4	4	4	4	4	
*Faroese F2 (49, Suðuroy)	4	1	4	3	1	4	4	4	4	4	4	
*Faroese M1 (40, Eysturoy)	4	3	4	4	3	4	4	4	4	4	4	
*Faroese M2 (54, Eysturoy)	4	2	4	2	1	4	4	4	4	4	4	
Faroese M3 (29, Funningur)	4	2	4	2	4	4	4	4	2	4	4	

[151] 'G. Copenhagen' stands for 'Greater Copenhagen'.

Appendix III: Downstep data

A. Mean downstep size (in semitones) and mean percentage of downsteps larger than 2 semitones broken down by sentence type for each Scandinavian language variety investigated.

Language	**Sentence**	**Downstep size (st)**	**Downsteps > 2 st (%)**
East Swedish	A	5.2740	80.0000
	A'	4.5242	75.0000
	B	5.1770	80.0000
	B'	4.9171	80.0000
	C	3.7496	75.0000
	D	–1.2427	.0000
	E	–1.6604	.0000
	F	–4.1092	.0000
	G	2.4804	60.0000
	Total	2.1233	50.0000
West Swedish	A	1.5636	40.0000
	A'	1.8894	45.0000
	B	3.1630	55.0000
	B'	2.1881	50.0000
	C	2.3406	70.0000
	D	–2.4127	.0000
	E	–2.2983	.0000
	F	–6.0173	.0000
	G	.9384	40.0000
	Total	.1505	33.3333
South Swedish	A	1.3416	30.0000
	A'	1.0577	25.0000
	B	1.8461	30.0000
	B'	1.1043	20.0000
	C	.7159	40.0000
	D	–1.2732	.0000
	E	–1.0647	.0000
	F	–3.3027	.0000
	G	–1.4496	5.0000
	Total	–.1138	16.6667

Language	Sentence	Downstep size (st)	Downsteps > 2 st (%)
North Swedish	A	6.8139	80.0000
	A'	5.2210	85.0000
	B	5.9127	80.0000
	B'	4.8445	60.0000
	C	6.5231	65.0000
	D	1.1469	30.0000
	E	.5025	35.0000
	F	–4.9915	.0000
	G	.4089	30.0000
	Total	2.9313	51.6667
Finland Swedish	A	1.5088	45.0000
	A'	3.5926	55.0000
	B	3.5195	60.0000
	B'	2.6254	45.0000
	C	4.7037	65.0000
	D	–1.0654	15.0000
	E	–2.0193	.0000
	F	–4.4799	.0000
	G	–1.3000	10.0000
	Total	.7873	32.7778
Dalecarlian	A	4.5070	30.0000
	A'	.8675	35.0000
	B	5.7229	40.0000
	B'	.5724	35.0000
	C	1.9372	20.0000
	D	–3.6295	5.0000
	E	–2.5542	5.0000
	F	–4.4654	.0000
	G	1.5059	45.0000
	Total	.4960	23.8889
Övdalian	A	–.0973	.0000
	A'	.5762	10.0000
	B	.2944	.0000
	B'	.5528	10.0000
	C	2.5091	45.0000
	D	–3.7502	.0000
	E	–4.3284	.0000
	F'	–5.4636	.0000
	G	.6945	20.0000
	G'	–.3088	.0000
	Total	–.9321	8.5000

Language	Sentence	Downstep size (st)	Downsteps > 2 st (%)
East Norwegian	A	3.6999	80.0000
	A'	5.2357	80.0000
	B	3.4295	50.0000
	B'	5.9224	75.0000
	C	–2.9397	15.0000
	D	–4.8559	5.0000
	E	–4.6825	5.0000
	F	–7.6927	.0000
	G	–4.3257	.0000
	Total	–.6899	34.4444
West Norwegian	A	.5913	20.0000
	A'	2.4313	45.0000
	B	–.0849	20.0000
	B'	1.8906	45.0000
	C	5.8830	70.0000
	D	–3.8865	10.0000
	E	–3.8889	15.0000
	F	–4.6166	.0000
	G	–2.7537	.0000
	Total	–.4927	25.0000
East Danish	A	–.2234	15.0000
	A'	–1.5935	.0000
	B	–.9622	15.0000
	B'	–1.6470	.0000
	C	1.6643	45.0000
	D	–2.5964	.0000
	E	–3.2961	.0000
	F	–1.9668	5.0000
	G	–3.2339	.0000
	Total	–1.5394	8.8889
South Danish	A	.5170	35.0000
	A'	–.4798	15.0000
	B	–.0965	15.0000
	B'	–.8117	15.0000
	C	.7859	30.0000
	D	–2.9715	.0000
	E	–3.9041	.0000
	F	–4.8313	.0000
	G	–5.1157	.0000
	Total	–1.8786	12.2222

Language	Sentence	Downstep size (st)	Downsteps > 2 st (%)
Icelandic	A	3.3566	60.0000
	A'	3.6599	75.0000
	B	5.1920	75.0000
	B'	4.6359	75.0000
	C	5.7852	80.0000
	D	–.2827	10.0000
	E	–.4591	10.0000
	F"	–4.8000	.0000
	G	–2.7168	20.0000
	G'	–5.2925	.0000
	Total	.9079	40.5000
Faroese	A	6.0870	75.0000
	A'	4.0112	60.0000
	B	4.2199	65.0000
	B'	4.2964	75.0000
	C	6.9036	95.0000
	D	.1440	35.0000
	E	.2888	30.0000
	F	–6.3470	.0000
	F'	–5.8541	.0000
	F"	–6.2910	.0000
	G	.7773	35.0000
	Total	.7487	42.7273
Total	A	2.6877	45.3846
	A'	2.3841	46.5385
	B	2.8718	45.0000
	B'	2.3916	45.0000
	C	3.1201	55.0000
	D	–2.0520	8.4615
	E	–2.2588	7.6923
	F	–4.8018	.4545
	F'	–5.6588	.0000
	F"	–6.2910	.0000
	F"	–4.8000	.0000
	G	–1.0838	20.3846
	G'	–2.8007	.0000
	Total	.1980	29.4215

B. As appendix IIIA but with sentence types {A, B, C} grouped against all others.

Language	Sentence type	Mean downstep (st)	Downsteps > 2 st (%)
East Swedish	A-B-C	4.7284	78.0000
	other	–1.1330	15.0000
	Total	2.1233	50.0000
West Swedish	A-B-C	2.2289	52.0000
	other	–2.4475	10.0000
	Total	.1505	33.3333
South Swedish	A-B-C	1.2131	29.0000
	other	–1.7726	1.2500
	Total	–.1138	16.6667
North Swedish	A-B-C	5.8630	74.0000
	other	–.7333	23.7500
	Total	2.9313	51.6667
Finland Swedish	A-B-C	3.1900	54.0000
	other	–2.2161	6.2500
	Total	.7873	32.7778
Dalecarlian	A-B-C	2.7214	32.0000
	other	–2.2858	13.7500
	Total	.4960	23.8889
Övdalian	A-B-C	.7671	13.0000
	other	–2.6313	4.0000
	Total	–.9321	8.5000
East Norwegian	A-B-C	3.0696	60.0000
	other	–5.3892	2.5000
	Total	–.6899	34.4444
West Norwegian	A-B-C	2.1423	40.0000
	other	–3.7864	6.2500
	Total	–.4927	25.0000
East Danish	A-B-C	–.5524	15.0000
	other	–2.7733	1.2500
	Total	–1.5394	8.8889
South Danish	A-B-C	–.0170	22.0000
	other	–4.2057	.0000
	Total	–1.8786	12.2222
Icelandic	A-B-C	4.5259	73.0000
	other	–2.7102	8.0000
	Total	.9079	40.5000
Faroese	A-B-C	5.1036	74.0000
	other	–2.8803	16.6667
	Total	.7487	42.7273
Total	A-B-C	2.6911	47.3846
	other	–2.6957	8.5714
	Total	.1980	29.4215