

## 8 Derivation of Scandinavian Object Shift and remnant VP-topicalization

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**ABSTRACT** Based on the examination of remnant VP-topicalization constructions, this chapter argues for an order preservation analysis to Scandinavian Object Shift. Reviewing Fox and Pesetsky's (2003, 2005) cyclic linearization approach and extending the empirical data base, we show that the phenomena are better accounted for in an Optimality Theoretic framework.

**KEYWORDS** Object Shift; VP-topicalization

## 1. Introduction

In the Scandinavian languages, an unfocused object may move from its base position right of the main verb to a position left of a sentential adverbial.<sup>1</sup> This movement operation is called Object Shift (OS). OS is restricted to weak pronouns in the Mainland Scandinavian languages (MSc), but may also optionally take place with full DPs in Icelandic; cf. (1) and (2). Note that pronominal OS is obligatory in Icelandic, Faroese, and Danish, (3)/(4), but optional in Norwegian and Swedish, (5).

- (1) Ic (a) Af hverju las Pétur aldrei þessa bók?  
*why read Pétur never this book*  
 (b) Af hverju las Pétur þessa bók aldrei \_\_\_\_\_?  
 (Vikner 2005: 394)

- (2) Da (a) Hvorfor læste Peter aldrig \_\_\_\_ den her bog?  
*why read Peter never this here book*  
 (b) \*Hvorfor læste Peter den her bog aldrig \_\_\_\_ \_\_\_\_\_?  
(Vikner 2005: 394)

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- (3) Ic (a) \*Af hverju las Pétur aldrei hana?  
*why read Pétur never it*  
 (b) Af hverju las Pétur hana aldrei \_\_\_\_\_?  
 (Vikner 2005: 394)
- (4) Da (a) \*Hvorfor læste Peter aldrig den?  
*why read Peter never it*  
 (b) Hvorfor læste Peter den aldrig \_\_\_\_\_?  
 (Vikner 2005: 394)
- (5) Sw (a) Varför läste Peter aldrig den?  
*why read Peter never it*  
 (b) Varför läste Peter den aldrig \_\_\_\_\_?

OS presupposes movement of the main verb; as shown in (6), it cannot cross a verb *in situ*.

- (6) Da (a) Hvorfor har Peter aldrig læst den?  
           *why has Peter never read it*  
      (b) \*Hvorfor har Peter den aldrig læst \_\_\_\_?
- (Vikner 2005: 395)

However, the main verb does not have to undergo head movement ( $V^0$ -to- $I^0$ -to- $C^0$  movement) as in (1)-(5). OS is also possible in clauses with a non-finite main verb if the verb occurs in clause-initial position, (7). In fact, OS has to take place in this case, (8).

- (7) Sw (a) Kysst har jag henne inte \_\_\_\_ \_\_\_\_ (bara hållit henne i handen).  
*kissed have I her not only held her by hand-the*  
(Holmberg 1999: 7)  
Da (b) Kysset har jeg hende ikke \_\_\_\_ \_\_\_\_ (bare holdt hende i hånden).  
*kissed have I her not only held her in hand-the*  
(Vikner 2005: 407)  
Ic (c) Kysst hef ég hana ekki \_\_\_\_ \_\_\_\_ (bara haldið í höndina á henni).  
*kissed have I her not only held in hand-the on her*  
(Vikner 2005: 431)
- (8) Sw (a) \*Kysst har jag inte \_\_\_\_ henne.  
*kissed have I not her*  
(Erteschik-Shir 2001: 59)  
Da (b) \*Kysset har jeg ikke \_\_\_\_ hende.  
*kissed have I not her*

The following sections concentrate on OS in constructions in which a non-finite main verb occurs in topic position. In section 2.1 we argue in favor of a remnant VP-topicalization approach, rejecting Holmberg's (1997, 1999) V<sup>0</sup>-topicalization approach. Section 2.2 presents Fox and Pesetsky's (2003, 2005a,b) cyclic linearization approach to OS and briefly addresses some theoretical and empirical problems this approach faces. In section 3, we set out the basics of our analysis which

is couched in an Optimality Theoretic framework. Section 4 discusses two asymmetries related to OS during remnant topicalization: between OS of a direct object and OS of an indirect object (section 4.1) and between remnant topicalization out of a main clause and remnant topicalisation out of an embedded clause (section 4.2). Section 5 summarizes the main results.

## 2. Holmberg's generalization: V<sup>o</sup>-topicalization vs. remnant VP-topicalization

### 2.1 Holmberg's (1997, 1999) $V^0$ -topicalization approach

The above observation that the object only moves if the main verb has moved forms the basis of Holmberg's generalization (Holmberg 1986: 165, 1997: 208). Holmberg's (1997) formulation is given in (9), where 'within VP' has to mean that only elements 'properly inside' VP (i.e. not adverbials or other elements adjoined to VP) may block object shift.

- (9) *Holmberg's Generalization (HG)*  
Object Shift is blocked by any phonologically visible category preceding/  
c-commanding the object position within VP.

The definition in (9) is vague with respect to whether precedence and/or c-command of a phonologically visible category blocks movement. In the 1999 version of the same paper, Holmberg formulates HG in terms of asymmetric c-command. For reasons that will become clear in section 3 below, the first option will be pursued here, that is, we will take HG to be the consequence of a violable condition on order preservation (cf. Déprez 1994; Müller 2001a; Sells 2001; Williams 2003; Fox and Pesetsky 2005a; Koenenman 2006).

Holmberg (1997, 1999) suggests that HG is a derivational condition, not a representational one. OS of an infinitival clause subject is possible as long as there is no intervening non-adverbial material; cf. (10a) and (10b). A violation of HG, as in (10c), cannot be repaired by subsequent operations, as in (10d), that place the blocking element to the left of the shifted object; in other words, HG may not be violated at any point in the course of derivation.

- (10) Sw (a) Jag såg henne inte [<sub>VP</sub> \_\_\_\_ [<sub>IP</sub> \_\_\_\_\_ arbeta]].  
I saw her not work  
(b) Jag har inte [<sub>VP</sub> sett [<sub>IP</sub> henne arbeta]].  
I have not seen her work  
(c) \*Jag har henne inte [<sub>VP</sub> sett [<sub>IP</sub> \_\_\_\_\_ arbeta]].  
(d) \*[<sub>VP</sub> Sett [<sub>IP</sub> \_\_\_\_\_ arbeta]] har jag henne inte \_\_\_\_\_.  
(Holmberg 1997: 206)

Holmberg concludes that the grammatical sentences in (7) cannot involve OS prior to remnant VP-topicalization since that would violate HG in a parallel fashion,

cf. (11). Rather, they must be derived by V°-topicalization, with subsequent OS, cf. (12).

(11) Deriving (7a) by remnant VP-topicalization

- Sw (a) [<sub>CP</sub> har [<sub>IP</sub> jag [<sub>VP</sub> inte [<sub>VP</sub> kysst henne]]]]  
 (b) [<sub>CP</sub> har [<sub>IP</sub> jag henne [<sub>VP</sub> inte [<sub>VP</sub> kysst \_\_\_\_ ]]]]  
 (c) [<sub>CP</sub> [<sub>VP</sub> Kysst \_\_\_\_ ] har [<sub>IP</sub> jag henne [<sub>VP</sub> inte \_\_\_\_ ]]]]  
 violation of HG!

(12) Deriving (7a) by V°-topicalization

- Sw (a) [<sub>CP</sub> har [<sub>IP</sub> jag [<sub>VP</sub> inte [<sub>VP</sub> kysst henne]]]]  
 (b) [<sub>CP</sub> [<sub>VP</sub> Kysst] har [<sub>IP</sub> jag [<sub>VP</sub> inte [<sub>VP</sub> \_\_\_\_ henne]]]]]  
 (c) [<sub>CP</sub> [<sub>VP</sub> Kysst] har [<sub>IP</sub> jag henne [<sub>VP</sub> inte [<sub>VP</sub> \_\_\_\_ ]]]]]

Note that the V°-topicalization analysis is theoretically somewhat problematic: It is counter-cyclic and it involves movement of an X\* to an XP-position.<sup>2</sup> (See also Broekhuis 2008: section 4.3.3 for an extensive critique of Holmberg's (1999) proposal.)

Moreover, OS is usually optional in Swedish but it is obligatory if the verb occurs in topic position; cf. (7) and (8) above. This is unexpected under the V°-topicalization analysis, whereas it would follow under the remnant VP-topicalization analysis, where OS must apply to move the object out of VP prior to topicalization.

In addition, if V°-topicalization were possible, the sentences in (13b)/(14b) would be expected to be acceptable, contrary to fact. Furthermore, examples like (15) below show that remnant VP-topicalization is possible in Scandinavian, as admitted in Holmberg (2005: 148).

- (13) Da (a) Jeg har ikke smidt den ud.  
 I have not thrown it out  
 (b) \*Smidt har jeg den ikke \_\_\_\_ ud.  
 (14) Da (a) Jeg har ikke stillet det på bordet.  
 I have not put it on table-the  
 (b) \*Stillet har jeg det ikke \_\_\_\_ på bordet.

Against Holmberg (1997, 1999), remnant VP-topicalization will therefore be assumed to be possible, though it is subject to certain restrictions.

## 2.2 Fox and Pesetsky's (2003, 2005a,b) remnant VP-topicalization approach

As Fox and Pesetsky (2005a) observe, remnant VP-topicalization is possible in Swedish under certain conditions. In double object constructions, topicalization of a non-finite main verb may pied-pipe the indirect object (IO), stranding the direct object (DO) in shifted position, (15a). Even though (15a) is not completely perfect to all speakers, there is consensus that it is much better than stranding of an IO pronoun on its own, (15b), which simply is not possible.

- (15) Sw (a) ?[<sub>VP</sub> Gett henne \_\_\_\_ ] har jag den inte.  
 given her have I it not  
 (b) \* [<sub>VP</sub> Gett \_\_\_\_ den ] har jag henne inte.

(Fox and Pesetsky 2005a: 25)

Fox and Pesetsky (2003, 2005a) suggest that the mapping between syntax and phonology, that is Spell-out, takes place at various points in the course of derivation (including at VP and at CP), whereby the material in the Spell-out domain D is linearized; see also Chomsky (2000, 2001). The crucial property of Spell-out is that it may only add information about the linearization of a newly constructed Spell-out domain D' to the information cumulatively produced by previous applications of Spell-out. Established information cannot be deleted in the course of derivation, accounting for order preservation effects.

To Fox and Pesetsky (2005a), the fact that OS observes HG is a consequence of their 'linearization theory'. At the Spell-out domain VP, the ordering statement 'V precedes O' (henceforth 'V<O') is established, (16b). At CP, Spell-out adds information about the linearization of the new material, (16c); this information is consistent with the previously established information: The finite main verb moves to C° in the main clause and the pronominal object undergoes OS, maintaining their relative order V<O.

- (16) Da (a) Jeg kyssede hende ikke \_\_\_\_ \_\_\_\_.  
 I kissed her not  
 (b) Spell-out VP: [<sub>VP</sub> V Q]  
 Ordering: V<O  
 (c) Spell-out CP: [<sub>CP</sub> S V [<sub>IP</sub> t<sub>S</sub> Q Adv [<sub>VP</sub> t<sub>V</sub> t<sub>Q</sub>]]]  
 Ordering: S<V V<O  
 O<Adv  
 Adv<VP

Note that the adverbial is merged outside the VP Spell-out domain. Its position relative to the object (and the main verb) is thus not fixed until Spell-out of CP, thus predicting that OS can cross an adverb.

OS across a verb *in situ* as in (6b), repeated as (17a), gives rise to contradictory ordering statements. The ordering statements produced at Spell-out of CP, (17c), are in opposition to the statement 'V<O' established at Spell-out of VP, (17b). The statements O<Adv, Adv<V and V<O cannot simultaneously be satisfied.

- (17) Da (a) \*Jeg har hende ikke kysset \_\_\_\_.  
I have her not kissed

(b) Spell-out VP: [<sub>VP</sub> V O]  
Ordering: V<O

(c) Spell-out CP: [<sub>CP</sub> S Aux [<sub>IP</sub> t<sub>S</sub> O Adv [<sub>VP</sub> t<sub>Aux</sub> [<sub>VP</sub> V t<sub>O</sub>]]]]  
Ordering: S<Aux  
Aux<O  
O<Adv  
Adv<VP → Adv<V

Thus, Fox and Pesetsky (2005a) derive HG from ordering contradictions. OS cannot take place if it results in ordering statements at the Spell-out of CP that contradict those established at the Spell-out of VP. For our present purpose it is crucial to note that order preservation does not necessarily require that the main verb undergoes V°-to-I°-to-C° movement in all OS cases. Consistent ordering statements can also be obtained when OS applies across a non-finite verb *in situ* if subsequently remnant VP-topicalization takes place, as in (7b) repeated here as (18a).

- (18) Da (a) Kysset har jeg hende ikke \_\_\_\_.  
kissed have I her not

(b) Spell-out VP: [<sub>VP</sub> V O]  
Ordering: V<O

(c) Spell-out CP: [<sub>CP</sub> [<sub>VP</sub> V t<sub>O</sub>] Aux [<sub>IP</sub> S t<sub>Aux</sub> [<sub>VP</sub> O [<sub>VP</sub> Adv [<sub>VP</sub> t<sub>Aux</sub> t<sub>VP</sub>]]]]]  
Ordering: V<Aux  
Aux<S  
S<O  
O<Adv  
Adv<VP

Correspondingly, the asymmetry between stranding of an IO and stranding of a DO by remnant VP-topicalization illustrated in (15) above is expected by order preservation. Stranding of an IO, but not stranding of a DO gives rise to contradictory ordering statements at the various Spell-out domains: At VP, 'IO<DO' is established, which is consistent with the Spell-out of CP in (15a) but not in (15b).

Note that Fox and Pesetsky (2005a) predict that movement operations that do not obey HG have to proceed successive cyclically: the underlined constituents in (19) have to move via the edge of VP prior to linearization of the VP domain to prevent ordering contradictions at the Spell-out of CP; see (20). These movement opera-

tions comprise various instances of A-movement and A-bar-movement operations, such as Scandinavian Negative Shift (see Christensen 2005; Engels 2011, 2012), *wh*-movement, topicalization, passivization, and subject raising. The underlined constituents in (19) have to move via the edge of VP, giving rise to the order O<V at the VP-level; since the main verb remains *in situ*, we find the same order at the CP-level and the result is therefore acceptable, as illustrated in (20).

- (19) Da (a) Måske har han ingen bøger solgt \_\_\_\_.  
probably has he no books sold

(b) Hvad har du solgt \_\_\_\_?  
what have you sold

(c) Bøgerne har jeg solgt \_\_\_\_.  
books-the have I sold

(d) Måske blev bøgerne solgt \_\_\_\_.  
perhaps were books-the sold

(e) Efter min mening har Poul altid set ud til \_\_\_\_ at være intelligent.  
in my opinion has Paul always seemed to to be intelligent

- (20) Da (a) Måske har han ingen bøger solgt \_\_\_\_ = (19a)  
probably has he no books sold

(b) Spell-out VP: [<sub>VP</sub> O [<sub>VP</sub> V t<sub>O</sub>]]  
Ordering: O<V

(c) Spell-out CP: [<sub>CP</sub> Adv Aux [<sub>IP</sub> S t<sub>Aux</sub> [<sub>NP</sub> O [<sub>VP</sub> t<sub>Aux</sub> [<sub>VP</sub> t<sub>O</sub> V t<sub>O</sub>]]]]]  
Ordering: Adv<Aux  
Aux<S  
S<O  
O<VP → O<V

Hence, the crucial difference between the various movement operations in (19) and OS is that the former may go via the edge of VP while OS cannot. Fox and Pesetsky (2005b: 245) propose that the motivation for movement through the edge of VP might be connected to semantics: phrases with a feature [+negative], [+wh], [+topic] or [+focus] cannot be interpreted in argument position and thus must undergo movement. 'It is possible that movement to the edge of VP is motivated by this semantic factor, and that there is no independent feature of *v* that could motivate such movement. In the case of [negative] phrases, it is the semantics that motivates the movement, and in the case of OS there is no motivation' (Fox and Pesetsky 2005b: 245).

However, the ability to move across a verb *in situ* may be subject to cross-linguistic variation (see also Broekhuis 2008: chapter 3). For instance, Negative Shift across a verb *in situ* is prohibited in Norwegian, (21a), but possible in the other Scandinavian varieties (see Engels 2011, 2012). In other words, movement of a negative object through the edge of VP is not possible in Norwegian; the semantic factor apparently does not apply in this language. Note that *in situ* occurrence of a negative phrase is not permitted under a sentential negation reading either, (21b); instead, the *ikke ... noen*-variant ('not ... any') must be used, (21c).

- (21) No (a) \*Han har ingen bøger solgt \_\_\_\_.  
           he has no books sold  
       (b) \*Han har \_\_\_\_\_ solgt ingen bøger.  
       (c) Han har ikke solgt noen bøger.  
           he has not sold any books

In addition, if movement through the edge of VP were motivated by the feature [+negative], such a movement would be expected to be obligatory. However, this could not possibly be the case, given that string-vacuous Negative Shift is possible in all Scandinavian varieties, (22). The derivation of (22) would in fact have to be parallel to the one in (16) above; that is the object could not have gone through the edge of VP, since this would lead to an ordering contradiction.

- (22) Da (a) Han sælger ingen bøger \_\_\_\_.  
       No (b) Han sælger ingen bøger \_\_\_\_.  
           he sells no books

Fox and Pesetsky (2005b: 239–45) consider a range of options, including covert movement through the edge of VP, but if covert movement were possible, we would additionally expect that a negative object may occur *in situ*, contrary to fact; see (21b).

Note also that Fox and Pesetsky (2003, 2005a,b) make an incorrect prediction concerning remnant VP-topicalization in constructions with an auxiliary *in situ*. They assume that auxiliary verbs are merged outside vP, that is, after Spell-out of VP. As a consequence, the ordering of object and auxiliary verb is not fixed until Spell-out of CP, which incorrectly predicts that OS across an auxiliary is possible, (23a) = (24c). This is because it is consistent with the ordering statements previously established, none of which mention the auxiliary at all. (See also the examples in (24) and (25) below.)<sup>3</sup>

- (23) Da (a) \*Kysse har jeg hende aldrig villet.  
           kiss have I her never would
- (b) Spell-out VP: [VP V O]  
       Ordering: V<O
- (c) Spell-out CP:  
       [CP [VP Vt<sub>O</sub>] Aux2 [IP St<sub>Aux</sub> [AuxP2 O [AuxP2 Adv [AuxP2 t<sub>Aux</sub> [AuxP1 Aux1 t<sub>VP</sub>]]]]]]]  
       Ordering: V<Aux2 V<O  
                   Aux2<S  
                   S<O  
                   O<Adv  
                   Adv<Aux1  
                   Aux1<VP → ∅

Fox and Pesetsky (2005b: 252) even go so far as to draw a tree diagram of the problematic structure, but then they claim, following Holmberg (2005: 151) that

their prediction cannot be checked because VP-topicalization is impossible across an auxiliary *in situ*, regardless of whether or not OS out of the VP has taken place first. However, as shown in (24), this is incorrect: VP-topicalization is actually possible across an auxiliary *in situ*, but remnant VP-topicalization is not; the object can neither precede nor follow the auxiliary *in situ*.<sup>4,5</sup>

- (24) Da (a) [VP Kysse hende] har jeg aldrig villet.  
           kiss her have I never would  
       (b) \*[VP Kysse \_\_\_\_\_] har jeg aldrig villet hende.  
       (c) \*[VP Kysse \_\_\_\_\_] har jeg hende aldrig villet.
- (25) Sw (a) [VP Kyssa henne] har jag aldrig velat.  
           kiss her have I never would  
       (b) ??[VP Kyssa \_\_\_\_\_] har jag aldrig velat henne.  
       (c) \*[VP Kyssa \_\_\_\_\_] har jag henne aldrig velat.

In order to account for the data in (24) and (25), another assumption might be added to Fox and Pesetsky's analysis, viz. that auxiliary phrases also constitute Spell-out domains (see also Bobaljik 2005): thus, VP-topicalization would have to proceed via the edge of the AuxP of *villet* and via the edge of the AuxP of *har* at points where OS could not possibly already have applied (as the target position of OS is not yet present at these points). In other words, remnant VP-topicalization would be expected to be ungrammatical; see (26). Movement of the entire VP, still including the object, via these two edge positions predicts that the object precedes both auxiliaries as in case of topicalization of the entire VP, (24a)/(25a).

- (26) Da (a) \*[VP Kysse \_\_\_\_\_] har jeg hende aldrig villet.  
           kiss have I her never would
- (b) Spell-out VP: [VP V O]  
       Ordering: V<O
- (c) Spell-out AuxP1: [AuxP1 [VP V O] [AuxP1 Aux1 t<sub>VP</sub>]]  
       Ordering: V<O V<O  
                   O<Aux1
- (d) Spell-out AuxP2: [AuxP2 [VP V O] [AuxP2 Aux2 [AuxP2 t<sub>VP</sub> [AuxP1 Aux1 t<sub>VP</sub>]]]]  
       Ordering: V<O V<O V<O  
                   O<Aux2 O<Aux1  
                   Aux2<Aux1
- (e) Spell-out CP:  
       [CP [VP Vt<sub>O</sub>] Aux2 [IP St<sub>Aux</sub> [AuxP2 O [AuxP2 Adv [AuxP2 t<sub>Aux</sub> [AuxP1 t<sub>VP</sub> [AuxP1 Aux1 t<sub>VP</sub>]]]]]]]  
       Ordering: V<Aux2 V<O V<O V<O  
                   Aux2<S O<Aux2 O<Aux1  
                   S<O Aux2<Aux1  
                   O<Adv  
                   Adv<Aux1

However, with the additional assumption that auxiliary phrases also constitute Spell-out domains, it would no longer be possible to derive the remnant VP-topicalization of the grammatical sentence in (7), repeated in (27). Also here, (remnant) VP-topicalization would have to move via the edge of the AuxP of *har* at a point where OS could not possibly already have applied. Stranding of the object in OS position during VP-topicalization as in (27) would thus incorrectly be predicted to be ungrammatical.

- (27) Da (a) Kysset har jeg hende ikke \_\_\_\_ (bare holdt hende i hånden).  
kissed have I her not only held her in hand-the  
(Vikner 2005: 407)

The only way to derive (27) with the additional assumption that AuxPs also constitute Spell-out domains, would be to follow Holmberg (1997, 1999) and take it to be a case of V<sup>o</sup>-topicalization, but that in turn would incorrectly predict not only (27) but also (24c) and (25c) (as well as (13b) and (14b) above) to be grammatical.

In section 3 below we will outline an OT approach to OS and remnant VP-topicalization that also relies on order preservation. In section 4 we will then show how this approach can handle the problems discussed above: double object constructions in section 4.1, and auxiliaries *in situ* in section 4.2.

### 3. An OT approach to Object Shift and remnant VP-topicalization

OS is motivated by the constraint SHIFT, which outranks the constraint STAY that prohibits movement. SHIFT is satisfied if the pronoun is adjoined to the top VP (see e.g. (33) below).

- (28) **SHIFT:**  
A [-focus] constituent precedes and c-commands a VP (of the same clause) that contains all **V<sup>\*</sup>** positions and all VP-adjoined adverbials.

- (29) STAY:  
Don't move.

Recall that there is cross-linguistic variation as to the applicability of OS, depending on the syntactic complexity of the object. In Icelandic, both a pronominal object as well as a full DP can undergo OS, whereas OS is restricted to weak pronouns in Mainland Scandinavian; see the examples in (1)–(5) above. We therefore assume that the constraint STAY is differentiated as to syntactic complexity. In addition to the general constraint STAY, there exists a more specific constraint that prohibits movement of full DPs (see also Appendix 1).

- (30) **STAYBRANCH:**  
Don't move a constituent that contains a branching node.

Differences in the ranking of STAY and STAYBRANCH relative to SHIFT account for the cross-linguistic variation: Dominance of SHIFT over both STAY-constraints predicts that OS is possible with both pronominal objects and full DPs, as found in Icelandic, while the ranking STAYBRANCH >> SHIFT >> STAY only permits weak pronouns but not full DPs to undergo OS, as observed in Mainland Scandinavian; see also *T1*.<sup>6</sup>

- (31) Ic: SHIFT >> STAYBRANCH >> STAY  
Da: STAYBRANCH >> SHIFT >> STAY

## T1 Full DP

Da:		STAY BRANCH	SHIFT	STAY	ex.
full DP	a S <u>V Adv t<sub>v</sub> DP-O</u>		*		(2a)
	b S <u>V DP-O Adv t<sub>v</sub> t<sub>0</sub></u>	*!		*	(2b)
pronoun	a S <u>V Adv t<sub>v</sub> Pron-O</u>		*!		(4a)
	b S <u>V Pron-O Adv t<sub>v</sub> t<sub>0</sub></u>			*	(4b)

In this and the following tableaux, only STAY-violations induced by OS are listed; STAY-violations induced by e.g.  $V^0$ -to- $I^0$ -to- $C^0$  movement or VP-topicalization are left out because they do not vary between competing candidates. The same holds for the violations of the constraint **ORDPRES**, which we will turn to now.

Following Fox and Pesetsky (2005a,b), HG will be assumed here to result from a high ranking condition on order preservation (see also Müller 2001).

- (32) ORDER PRESERVATION (ORDPRES):  
An independently moved constituent must not precede a non-adverbial constituent that it (or parts of it) followed at base level.

Dominance of ORDPRES over SHIFT predicts that OS is only possible if it maintains the base order of certain constituents. What is crucial for OS to be possible is that the main verb occurs in a position to the left of the target position of OS, such that the relative order between verb and object is preserved. This is guaranteed if the verb undergoes movement to a position to the left of the target position of OS such as V<sup>o</sup>-to-I<sup>o</sup>-to-C<sup>o</sup> movement or embedded V<sup>o</sup>-to-I<sup>o</sup> movement in Icelandic (see section 4.2). The former case is illustrated in T2. However, if the main verb stays *in situ*, OS gives rise to a fatal violation of ORDPRES and is thus excluded; the object must remain *in situ* to the right of the main verb, as shown by the optimal candidate in T3. (The restriction to *non-adverbial* constituents is necessary to permit OS across clause-medial adverbials.)

## T2 OS &amp; V°-to-I°-to-C° movement

Da:		ORD PRES	SHIFT	STAY	ex.
V in C°	a S <u>V</u> Adv t <sub>v</sub> <u>Pron-O</u>		*!		(4a)
	b S <u>V</u> <u>Pron-O</u> Adv t <sub>v</sub> t <sub>0</sub>			*	(4b)

## T3 OS &amp; in situ verb

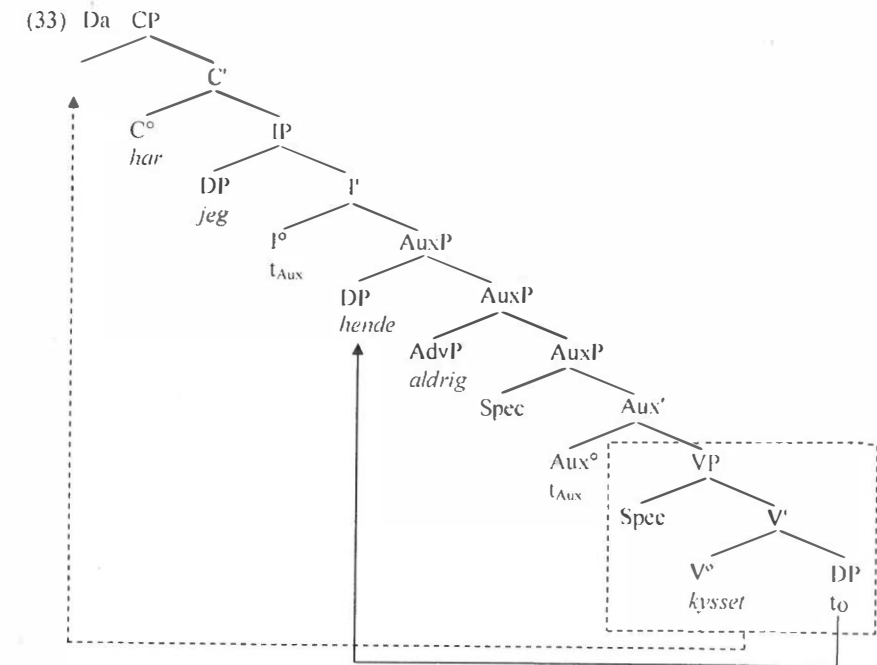
Da:		ORD PRES	SHIFT	STAY	ex.
V in situ	a S Aux Adv <u>V</u> <u>Pron-O</u>		*		(6a)
	b S Aux <u>Pron-O</u> Adv <u>V</u> t <sub>0</sub>	*!		*	(6b)

However, the main verb does not necessarily have to undergo V°-to-I°-to-C° movement for OS to be possible; ORDPRES is also satisfied if the main verb occurs in topic position as in (7) above; see T4.

## T4 OS and verb in SpecCP

Da:		ORD PRES	SHIFT	STAY	ex.
V in SpecCP	a [ <sub>VP</sub> <u>V</u> t <sub>0</sub> ] Aux S Adv <u>Pron-O</u> t <sub>VP</sub>		*!	**	(8b)
	b [ <sub>VP</sub> <u>V</u> t <sub>0</sub> ] Aux S <u>Pron-O</u> Adv t <sub>VP</sub>			**	(7b)

As argued for in section 2, we consider occurrence of a non-finite verb in topic position to involve OS of the pronominal object prior to remnant VP-topicalization, as illustrated in (33). We saw in (11) that in Holmberg's (1997, 1999) approach, such remnant VP-topicalization is ruled out by the assumption that HG is derivational, that is it cannot be violated at any point in the derivation. The OT constraint ORDPRES, by contrast, is representational: constraint violations are computed based on the final structure of the candidates. Hence, although the individual steps of OS might violate ORDPRES, this is of no consequence as long as the verb is subsequently placed to the left of the shifted object such that their original precedence relation is re-established.



Section 2.2 showed that other types of object movement such as topicalization may cross a verb *in situ*, that is they need not preserve the base order (cf. (34) repeated from (19c) above). Under the OT approach adopted here, this follows if the relevant constraint that motivates movement, for example TOPIC, outranks ORDPRES (see T5).

(34) Da Bogerne har jeg solgt \_\_\_\_.  
books-the have I sold

(35) TOPIC: Elements with a [+topic] feature occur in Spec,CP.

## T5 Object topicalization

Da:		TOPIC	ORDPRES	SHIFT	STAY	ex.
	a S Aux t <sub>s</sub> V <u>Q</u> <sub>[+top]</sub>	*!		*	*	-
	b <u>Q</u> <sub>[+top]</sub> Aux S V t <sub>0</sub>		***	*	*	(34)

The following section focuses on two asymmetries related to OS during remnant VP-topicalization (namely, between OS of a direct object and OS of an indirect object, section 4.1, and between remnant topicalization out of a main clause and remnant topicalization out of an embedded clause, section 4.2). These support the OT approach presented here.



More generally, the ranking  $\text{ORD}_{\text{PRES}} \gg \text{SHIFT}$  predicts that stranding of an object during remnant VP-topicalization is only acceptable if the object is right-peripheral within VP. As shown in (38)–(40), topicalization of the entire VP but not remnant topicalization with stranding of the pronoun is possible in constructions in which the object is followed by other elements within VP, for example in constructions with an infinitival clause, (38), with a verb and an additional PP-complement, (39), or with a verb and a particle, (40); see Appendix 2. Recall that the unacceptable sentence in (38b), repeated from (10d), led Holmberg (1997, 1999) to assume that remnant VP-topicalization is not possible.

- (38) Sw (a) [<sub>VP</sub> Sett henne arbeta] har jag inte.  
seen her work have I not  
(b) \*<sub>[VP</sub> Sett \_\_\_\_\_ arbeta] har jag henne inte.  
(Holmberg 1997: 206)
- (39) Da (a) [<sub>VP</sub> Stillet det på bordet] har jeg ikke.  
put it on table-the have I not  
(b) \*<sub>[VP</sub> Stillet \_\_\_\_\_ på bordet] har jeg det ikke.
- (40) Da (a) [<sub>VP</sub> Smidt den ud] har jeg ikke.  
thrown it out have I not  
(b) \*<sub>[VP</sub> Smidt \_\_\_\_\_ ud] har jeg den ikke.

As mentioned above, HG only prohibits OS across constituents to the left. This section has shown that the condition on order preservation is more general: OS is only grammatical if the VP-internal ordering relations are retained. Only right-peripheral objects may be stranded during remnant VP-topicalization. In the present OT-analysis, this follows from the constraint ORDPRES and its dominance over SHIFT.

#### 4.2 Remnant VP-topicalization out of a main vs. an embedded clause

Apart from the asymmetry between stranding of an IO and stranding of a DO, there is an asymmetry between remnant VP-topicalization out of a main clause and remnant VP-topicalization out of an embedded clause in Mainland Scandinavian.

While the finite verb undergoes V°-to-I°-to-C° movement in main clauses, it stays *in situ* in embedded clauses in Mainland Scandinavian, (41). As a consequence, OS is not possible in embedded clauses (ORD<sub>PRES</sub> >> SHIFT); see (42).

- (41) Da (a) Jeg spurte hvorfor Peter aldri læste bogen.  
*I asked why Peter never read book-the*  
 (b) \*Jeg spurte hvorfor Peter læste aldri \_\_\_\_ bogen.
- (42) Da (a) Jeg spurte hvorfor Peter aldri læste den.  
*I asked why Peter never read it*  
 (b) \*Jeg spurte hvorfor Peter den aldri læste \_\_\_\_.

As shown in (43), a full VP may be topicalized from both main clauses and embedded clauses.

- (43) Da (a) [<sub>VP</sub> Set ham] har jeg ikke, ...  
*seen him have I not*  
 ... hvis jeg skal være helt ærlig, men jeg har talt i telefon med ham.  
*if I should be totally honest but I have spoken in phone with him*
- (b) [<sub>VP</sub> Set ham] tror jeg ikke at hun har, ...  
*seen him believe I not that she has*  
 ... men hun kan måske nok have talt i telefon med ham.  
*but she may perhaps well have spoken in phone with him*

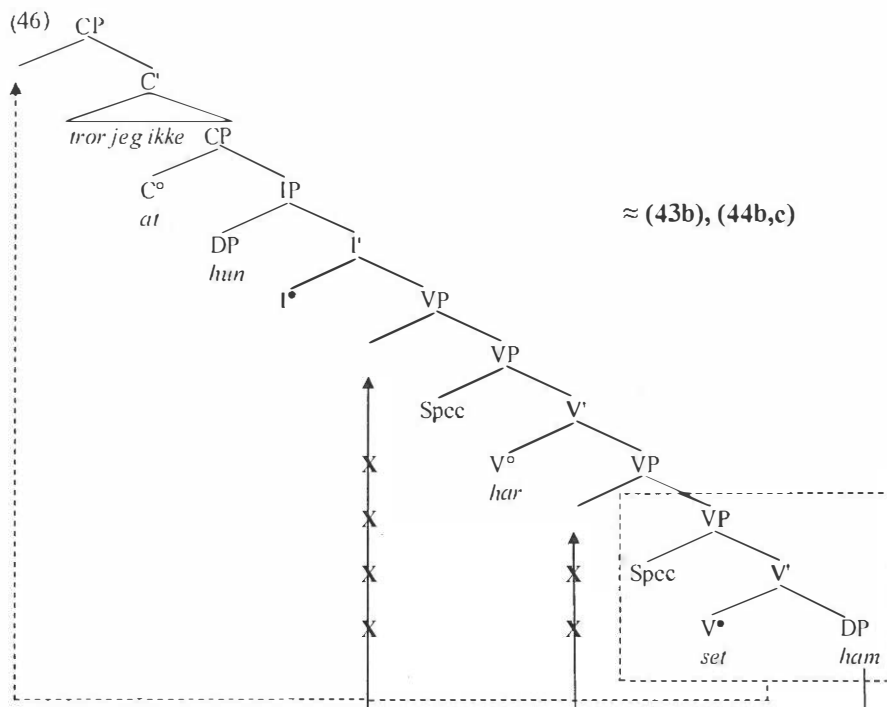
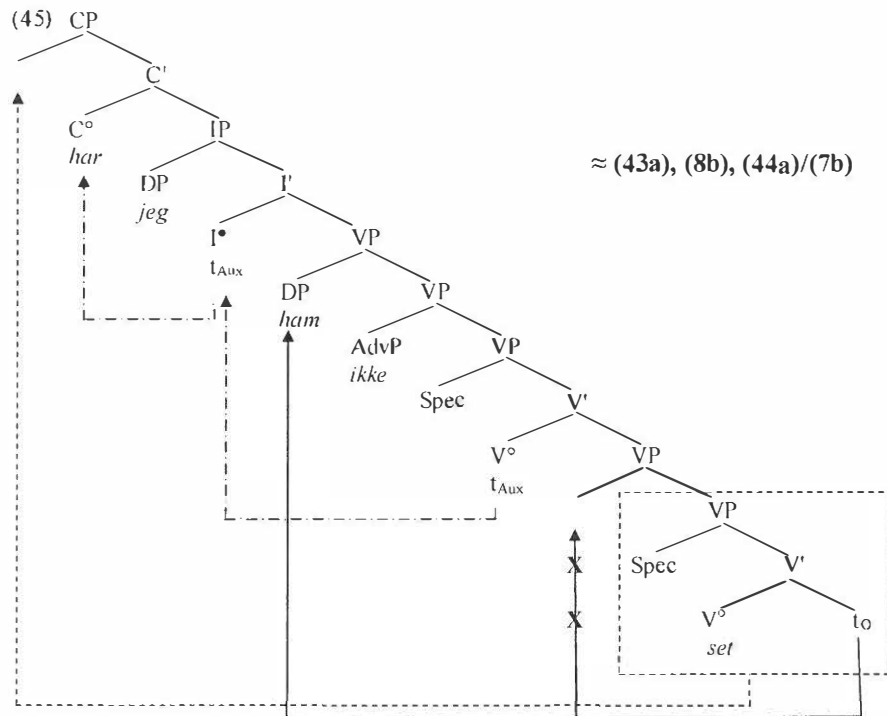
Topicalization of a remnant VP, by contrast, is only possible out of a main clause, (44a), not out of an embedded clause in Danish: The stranded object may neither follow the finite auxiliary (in its base position), (44b), nor may it precede it, (44c).

- (44) Da (a) ?<sub>[VP</sub> Set \_\_\_\_ ] har jeg ham ikke, ...  
seen have I him not  
... hvis jeg skal være helt ærlig, men jeg har talt i telefon med ham.  
*if I should be totally honest but I have spoken on phone-the with him*
- (b) \*<sub>[VP</sub> Set \_\_\_\_ ] tror jeg ikke at hun [<sub>V</sub>, har] ham, ...  
seen believe I not that she has him
- (c) \*<sub>[VP</sub> Set \_\_\_\_ ] tror jeg ikke at hun ham [<sub>V</sub>, har], ...  
seen believe I not that she him has  
... men hun kan måske nok have talt i telefon med ham.  
*but she may perhaps well have spoken in phone with him*

This asymmetry shows that stranding must involve OS, because OS requires the (stranded) object to occur in a position to the left of the base position of a finite verb (SHIFT is violated in candidate b below as the object is adjoined to a lower VP), but it can only do so if this verb has itself left its base position (ORDPRES). In other words, stranding is only possible if motivated independently, in this case by SHIFT, and if it does not violate higher ranking principles (ORDPRES, STAYBRANCH).

**T10** Remnant VP-topicalization out of a main clause

Da	Topic: V	ORDPRES	SHIFT	STAY	ex.
a	$[_{VP} \mathbf{V} \text{ Pron-O}] \text{ Aux S Adv } t_{VP}$		*!		(43a) <sup>9</sup>
b	$[_{VP} \mathbf{V} t_O] \text{ Aux S Adv } \underline{\text{Pron-O}} t_{VP}$		*!	*	(8b)
c	$[_{VP} \mathbf{V} t_O] \text{ Aux S } \underline{\text{Pron-O}} \text{ Adv } t_{VP}$			*	(7b)/(44a)



## T11 No remnant VP-topicalization out of an embedded clause

Da	Topic: V	ORDPRES	SHIFT	STAY	ex.
a	[ <sub>VP</sub> V <u>Pron-O</u> ] V S Adv Comp S Aux t <sub>VP</sub>		*		(43b)
b	[ <sub>VP</sub> V t <sub>O</sub> ] V S Adv Comp S Aux <u>Pron-O</u> t <sub>VP</sub>		*	*!	(44b)
c	[ <sub>VP</sub> V t <sub>O</sub> ] V S Adv Comp S <u>Pron-O</u> Aux t <sub>VP</sub>	*!		*	(44c)

VP-topicalization out of an embedded clause with finite auxiliary *in situ* is completely parallel to the examples of VP-topicalization out of a main clause with non-finite auxiliary *in situ* in (24) and (25) above, repeated here as (47). In both cases, the presence of an auxiliary *in situ* means that ORDPRES makes it impossible to comply with SHIFT (the object would have to adjoin to the top VP to satisfy SHIFT, where it precedes the auxiliary *in situ*), and there is therefore no reason for the object to leave the VP at all (see also that T11 and T12 are completely parallel).

- (47) Da (a) [<sub>VP</sub> Kysse hende] har jeg aldrig villet.  
 kiss her have I never would  
 (b) \* [<sub>VP</sub> Kysse \_\_\_\_ ] har jeg aldrig villet hende.  
 (c) \* [<sub>VP</sub> Kysse \_\_\_\_ ] har jeg hende aldrig villet.

## T12 No remnant VP-topicalization across auxiliary in situ

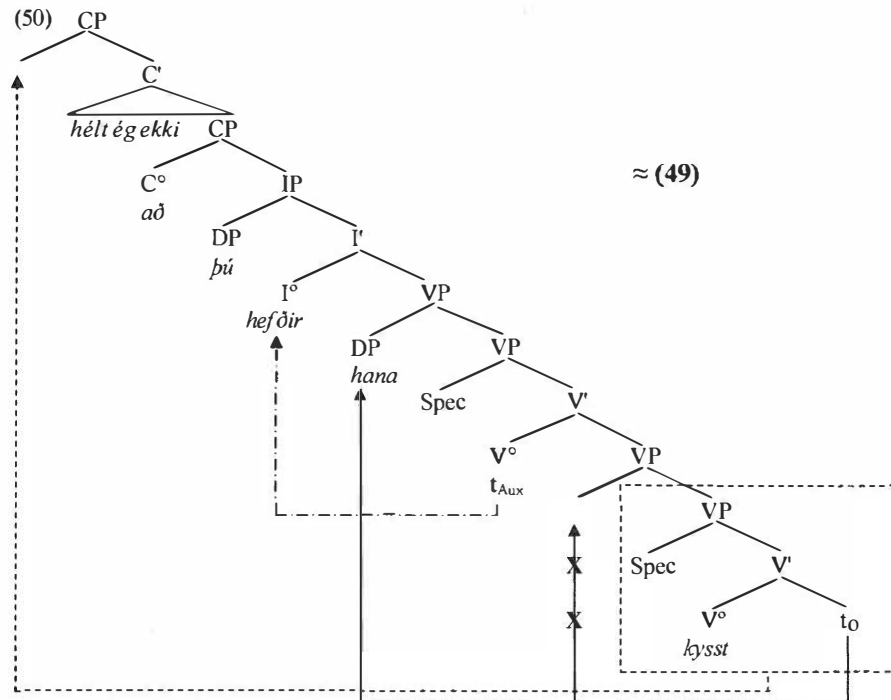
Da	Topic: V	ORDPRES	SHIFT	STAY	ex.
a	[ <sub>VP</sub> V <u>Pron-O</u> ] Aux2 S Adv Aux I t <sub>VP</sub>		*		(47a)
b	[ <sub>VP</sub> V t <sub>O</sub> ] Aux2 S Adv Aux I <u>Pron-O</u> t <sub>VP</sub>		*	*!	(47b)
c	[ <sub>VP</sub> V t <sub>O</sub> ] Aux2 S Adv <u>Pron-O</u> Aux I t <sub>VP</sub>	*!		*	(47c)

The hypothesis that OS has to take place, i.e., that (a) a stranded object has to undergo movement to some position to the left of the finite verb, and (b) this movement is only possible if the finite verb itself has left its base position, would seem to be supported by phenomena of remnant VP-topicalization in Icelandic. Icelandic which has V°-to-I° movement and therefore also OS in embedded clauses, (48), permits a remnant object in VP-topicalization out of an embedded clause; compare (49) with the Danish examples in (44b,c), which are completely ungrammatical).

- (48) Ic (a) \*Ég spurði af hverju Pétur aldrei læsi hana.  
 I asked why Pétur never read it  
 (b) Ég spurði af hverju Pétur læsi hana aldrei \_\_\_\_\_.  
 (Vikner 2005: 396)

- (49) Ic ?<sub>[VP Kysst \_\_\_\_]</sub> hélt ég ekki að þú [hefðir] hana oft, ...  
 kissed think I not that you have her often  
 ... bara haldið í höndina á henni.  
 only held in hand-the on her  
 (Gunnar Hrafn Hrafnbjargarson, p.c.)

Stranding of the object is expected to be possible under the present approach since SHIFT can be satisfied without violating the higher ranking constraint ORDPRES due to movement of the finite auxiliary: OS is order-preserving; see T13 below.



T13 Remnant VP-topicalization out of an embedded clause in Icelandic

Ic	Topic: V	ORDPRES	SHIFT	STAY	ex.
a	<sub>[VP V Pron-O]</sub> V S Adv Comp S Aux t <sub>Aux</sub> t <sub>VP</sub>		*!		-
b	<sub>[VP V t<sub>θ</sub>]</sub> V S Adv Comp S Aux t <sub>Aux</sub> <u>Pron-O</u> t <sub>VP</sub>		*!	*	(49)
c	<sub>[VP V t<sub>θ</sub>]</sub> V S Adv Comp S Aux <u>Pron-O</u> t <sub>Aux</sub> t <sub>VP</sub>			*	(49)

As in Mainland Scandinavian, remnant VP-topicalization is not possible in Icelandic in the presence of a non-finite auxiliary *in situ*, which prevents OS from complying with order preservation.

- (51) Ic (a) <sub>[VP Kyssa hana]</sub> hef ég aldrei viljað ...  
 kiss her have I never would  
 (b) \*<sub>[VP Kyssa \_\_\_\_]</sub> hef ég aldrei viljað hana ...  
 (c) \*<sub>[VP Kyssa \_\_\_\_]</sub> hef ég hana aldrei viljað ...  
 ... bara haldið í höndina á henni.  
 only held in hand-the on her  
 (Gunnar Hrafn Hrafnbjargarson, p.c.)

Finally, note that long-distance topicalization of a VP that contains a trace of a *wh*-moved object is possible, (52). The fact that *wh*-movement is not subject to order preservation indicates that the constraint motivating *wh*-movement (WHSPEC) outranks ORDPRES, much like the constraint TOPIC in T5. Accordingly, stranding of a *wh*-object in SpecCP is predicted to be possible under the present approach – even if the object is non-peripheral within VP.

- (52) Da (a) ?<sub>[VP Læst \_\_\_\_]</sub> ved jeg ikke hvad for nogen bøger Poul har, ...  
 read know I not what for some books Poul has  
 ... men jeg ved hvad for nogle han har købt.  
 but I know what for some he has bought  
 (b) ?<sub>[VP Smidt \_\_\_\_ ud]</sub> ved jeg ikke hvor mange bøger Poul har, ...  
 thrown out know I not how many books Poul has  
 ... men jeg ved hvor mange han har foræret væk.  
 but I know how many he has given away

The Mainland Scandinavian asymmetry between remnant VP-topicalization out of a main clause and remnant VP-topicalization out of an embedded clause discussed in the present subsection shows that stranding of an object must be motivated independently. Only if object extraction out of VP is required by some constraint (e.g. SHIFT) and complies with higher ranking principles (e.g. ORDPRES) is stranding during VP-topicalization possible.

## 5. Conclusion

Holmberg (1997, 1999) considers occurrences of a non-finite verb in topic position such as (7) to result from V°-topicalization. He assumes that HG is a matter of derivation rather than of representation, that is, a violation of HG cannot be rescued by some subsequent operation, and hence the non-finite verb has to move before OS can take place, ruling out remnant VP-topicalizations altogether.

Section 2.1 has shown, however, that there are theoretical as well as empirical problems with the V°-topicalization analysis. It is counter-cyclic and involves movement of an X° to an XP position. And it falsely predicts topicalization of a verb in constructions with a particle, PP-complement or infinitival clause to be grammatical.

Moreover, Fox and Pesetsky (2005a) present data from double object constructions that clearly show that remnant VP-topicalization is possible, as long as it does

not involve a reversal of the base order of elements, which suggests that HG is representational. Their approach builds on the assumption that Spell-out applies at various points in the derivation (in particular, at VP and at CP) and that the information about the linearization of the material of a newly constructed Spell-out domain must not contradict the cumulated information of previous applications of Spell-out. In this way, Fox and Pesetsky (2005a) predict that OS differs radically from other types of (A- and A-bar-) movement that can result in a reversal of the order of elements, such as *wh*-movement or subject raising, in that the latter have to proceed successively cyclically via the left edge of VP while this is impossible for OS. In addition, Fox and Pesetsky's (2005a,b) approach makes incorrect predictions as to remnant VP-topicalization in constructions with an auxiliary verb *in situ*.

Based on an extended set of data concerning remnant VP-topicalization, the present OT approach agrees with Fox and Pesetsky (2005a,b) in the assumption that HG is to be accounted for in terms of order preservation, as required by the violable constraint *ORDPRES*. The ranking of *ORDPRES* relative to the constraints that motivate the various types of movement accounts for the contrast as to whether or not a certain movement operation has to be order preserving. Hence, OS does not receive a special treatment in the present approach; the properties distinguishing it from other movement types result from constraint interaction.

The linear conception of HG as expressed by the constraint  $\text{ORD}_{\text{PRES}}$  and its dominance over the constraint that triggers OS,  $\text{SHIFT}_i$ , predicts that only objects that originate in a right-peripheral position within VP might be left behind in OS position during remnant VP-topicalization, accounting for the asymmetry in stranding of an IO and stranding of a DO observed by Fox and Pesetsky (2005a).

Finally, the asymmetry between main clauses and embedded clauses as to the applicability of remnant VP-topicalization in Mainland Scandinavian illustrates that object stranding has to involve OS. Object stranding is only possible in sentences in which there are no intervening verbs, something that would be expected if any object left behind during remnant VP-topicalization would have to undergo OS.

## APPENDIX 1: Syntactic complexity of pronouns

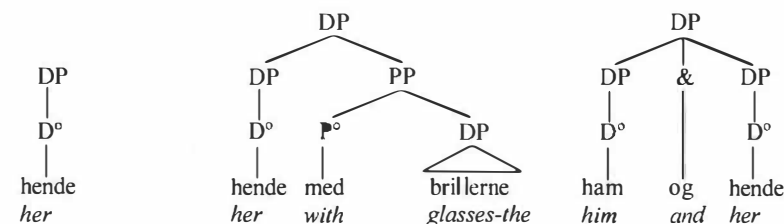
The examples in (1)–(4) repeated below have shown that in Mainland Scandinavian, OS is restricted to weak pronouns whereas in Icelandic, also full DPs may undergo OS. In this connection note that not only a full DP like *den her bog* ‘this book’, (53), but also syntactically complex pronouns, that is modified or conjoined ones as in (54) and (55), are excluded from OS in Mainland Scandinavian. In Icelandic, in contrast, they can undergo OS, (58) and (59).

- [illegible]

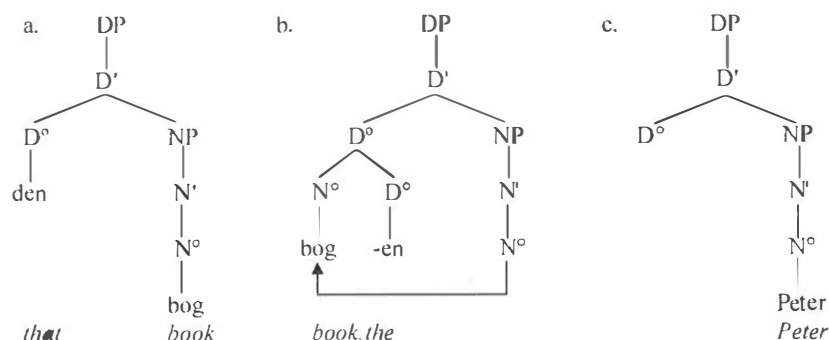
- (54) Da (a) Hvorfor læste Peter aldrig den her?  
*why read Peter never this here*  
 (b) \*Hvorfor læste Peter den her aldrig \_\_\_\_\_?  
 (Vikner 2005: 417)
- (55) Da (a) Han så ikke \_\_\_\_\_ dig og hende sammen.  
*he saw not you and her together*  
 (b) \*Han så dig og hende ikke \_\_\_\_\_ sammen.  
 (Diesing and Jelinek 1993: 27)
- (56) Da (a) \*Jeg kyssede ikke \_\_\_\_\_ hende.  
*I kissed not her*  
 (b) Jeg kyssede hende ikke \_\_\_\_\_.
- (57) Ic (a) Af hver ju las Pétur aldrei \_\_\_\_\_ þessa bók?  
*why read Pétur never this book*  
 (b) Af hver ju las Pétur þessa bók aldrei \_\_\_\_\_?  
 (Vikner 2005: 394)
- (58) Ie (a) Af hver ju las Pétur aldrei þessa hérna?  
*why read Pétur never this here*  
 (b) Af hver ju las Pétur þessa hérna aldrei \_\_\_\_\_?  
 (Vikner 2005: 417)
- (59) Ic (a) Ég þekki ekki hann og hana.  
*I know not him and her*  
 (b) Ég þekki hann og hana ekki \_\_\_\_\_.  
 (Diesing and Jelinek 1993: 27)
- (60) Ic (a) \*Af hver ju las Pétur aldrei \_\_\_\_\_ hana?  
*why read Pétur never it*  
 (b) Af hver ju las Pétur hana aldrei \_\_\_\_\_?  
 (Vikner 2005: 394)

The difference between simple pronouns and all other DPs is that the former are DPs that do not contain a branching node whereas the latter are DPs that contain a branching node (compare (61a) with (61b,c) and (62a,b,c) below).<sup>10,11</sup>

- (61) a. simple pronoun      b. modified pronoun      c. conjoined pronoun



## (62) full DPs



Thus, the ranking  $\text{SHIFT} \gg \text{STAYBRANCH}$  permits OS of full DPs and more complex pronouns whereas the reverse ranking  $\text{STAYBRANCH} \gg \text{SHIFT}$  prohibits it. Simultaneously, dominance of  $\text{SHIFT}$  over the more general constraint  $\text{STAY}$  predicts OS of weak (i.e. unstressed, non-modified, non-conjoined) pronouns to be possible even in cases where  $\text{SHIFT}$  is dominated by  $\text{STAYBRANCH}$  ( $\text{STAYBRANCH} \gg \text{SHIFT} \gg \text{STAY}$ ).

## APPENDIX 2: Differentiation according to syntactic complexity: Stay, Shift, or both?

In earlier versions (see for example Engels and Vikner 2006; Vikner and Engels 2006), we accounted for the contrasts as to the applicability of OS to pronouns and full DPs by a differentiation of the constraint  $\text{SHIFT}$  according to syntactic complexity,  $\text{SHIFT}$ , (63) repeated from (28), and  $\text{SHIFTPRONOUN}$ , (64).

(63)  $\text{SHIFT}$ :

A [-focus] constituent precedes and c-commands a VP (of the same clause) that contains all  $V^*$  positions and all VP-adjoined adverbials.

(64)  $\text{SHIFTPRONOUN}$  ( $\text{SHIFTPRON}$ ):

A [-focus] pronoun that is 'min = max' precedes and c-commands the lowest VP (of the same clause) that contains all other VPs and all VP-adjoined adverbials.

The ranking  $\text{SHIFTPRON} \gg \text{STAY} \gg \text{SHIFT}$  predicts that weak pronouns but not full DPs can undergo OS as observed in Mainland Scandinavian, while dominance of both  $\text{SHIFT}$ -constraints over  $\text{STAY}$  permits OS independent of syntactic complexity as found in Icelandic; see Appendix 1.

The change from the differentiation of  $\text{SHIFT}$  to the differentiation of  $\text{STAY}$  according to syntactic complexity made it possible to account for the fact that OS cannot force stranding of other right-peripheral constituents such as the PP-complement in (65)

under remnant VP-topicalization, which was incorrectly predicted to be possible in the  $\text{SHIFTPRON}/\text{SHIFT}$  analysis (compare T14 with T15, where the ungrammatical candidate d is incorrectly predicted to be optimal, as marked by L).

- (65) Da (a)  $[_{VP} \text{ Stillet } \underline{\text{det}} \text{ på bordet}]$  har jeg ikke.  
           put it on table-the have I not  
       (b)  $*[_{VP} \text{ Stillet } \underline{\quad} \text{ på bordet}]$  har jeg det ikke.  
       (c)  $*[_{VP} \text{ Stillet } \underline{\text{det}} \quad] \text{ har jeg ikke } \underline{\text{på bordet}}$ .  
       (d)  $*[_{VP} \text{ Stillet } \underline{\quad} \quad] \text{ har jeg det ikke } \underline{\text{på bordet}}$

## T14

Da: Topic: V	ORD PRES	STAY BRANCH	SHIFT	STAY	ex.
a $[_{VP} \text{ V } \underline{\text{Pron-O}} \text{ PP}] \text{ Aux Sub Adv } t_{VP}$			**		(65a)
b $[_{VP} \text{ V } t_{\text{pron}} \text{ PP}] \text{ Aux Sub } \underline{\text{Pron-O}} \text{ Adv } t_{VP}$	*!		*	*	(65b)
c $[_{VP} \text{ V } \underline{\text{Pron-O}} \text{ t}_{PP}] \text{ Aux Sub Adv } \underline{\text{PP}} t_{VP}$		*!	*	*	(65c)
d $[_{VP} \text{ V } t_{\text{pron}} t_{PP}] \text{ Aux Sub } \underline{\text{Pron-O}} \text{ Adv } \underline{\text{PP}} t_{VP}$		*!		**	(65d)

## T15

Da: Topic: V	ORD PRES	SHIFT PRON	STAY	ex.
a $[_{VP} \text{ V } \underline{\text{Pron-O}} \text{ PP}] \text{ Aux Sub Adv } t_{VP}$		*!		(65a)
b $[_{VP} \text{ V } t_{\text{pron}} \text{ PP}] \text{ Aux Sub } \underline{\text{Pron-O}} \text{ Adv } t_{VP}$	*!		*	(65b)
c $[_{VP} \text{ V } \underline{\text{Pron-O}} \text{ t}_{PP}] \text{ Aux Sub Adv } \underline{\text{PP}} t_{VP}$		*!	*	(65c)
d $[_{VP} \text{ V } t_{\text{pron}} t_{PP}] \text{ Aux Sub } \underline{\text{Pron-O}} \text{ Adv } \underline{\text{PP}} t_{VP}$			**	(65d)

However, a distinction between  $\text{STAY}$  and  $\text{STAYBRANCH}$  would seem not to be quite sufficient. Although the cross-linguistic variation as to the mobility of pronouns and more complex DPs might be accounted for by the differentiation of  $\text{STAY}$  suggested in the main text above, the distinction between  $\text{SHIFT}$  and  $\text{SHIFTPRON}$  would seem to be necessary as well. In Vikner and Engels (2006), we argued that Scrambling in the West Germanic languages should be treated on a par with OS in the Scandinavian languages by considering both movements to be triggered by  $\text{SHIFT}$  (and  $\text{SHIFTPRON}$ ). Though both pronouns and complex phrases may undergo movement in Dutch ( $\text{SHIFT} \gg \text{STAY}$ ,  $\text{STAYBRANCH}$ ), they differ in their ability to scramble across an intervening argument, that is, whether or not the movement has to maintain the ordering relations ( $\text{ORDPRES}$ ). In other words, whereas a pronominal DO may scramble across an IO, (66b), a non-pronominal DO may not, (67b), even though a non-pronominal DO may scramble across an adverb, (68b).



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### III OPTIMAL DESIGN, ECONOMY AND LAST RESORT IN OT

### Advances in Optimal<sup>●</sup>ity Theory

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## Linguistic Derivations and Filtering

### Minimalism and Optimality Theory

Edited by Hans Broekhuis and Ralf Vogel

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## 1 Introduction

Hans Broekhuis\* and Ralf Vogel\*\*

**ABSTRACT** This chapter will motivate why it is useful to consider the topic of derivations and filtering in more detail. We will argue against the popular belief that the minimalist program and optimality theory are incompatible theories in that the former places the explanatory burden on the generative device (the computational system  $C_{HL}$ ) whereas the latter places it on the filtering device (the OT evaluator). Although this belief may be correct in as far as it describes existing *tendencies*, we will argue that minimalist and optimality theoretic approaches normally adopt more or less the same global architecture of grammar: both assume that a generator defines a set  $S$  of potentially well-formed expressions that can be generated on the basis of a given input and that there is an evaluator that selects the expressions from  $S$  that are actually grammatical in a given language  $L$ . For this reason, we believe that it has a high priority to investigate the role of the two components in more detail in the hope that this will provide a better understanding of the differences and similarities between the two approaches. We will conclude this introduction with a brief review of the studies collected in this book.

### 1. The architecture of grammar

The studies collected in this book all discuss the relation between the generative and the filter component of the grammar. The focus will be on syntax although the collection also contains a contribution by John J. McCarthy and Kathryn Pruitt, which discusses the issue for phonology. The starting point of this book is the popular view that current generative theories differ considerably in where they place the burden of explanation: whereas minimalist approaches generally assume that this is the generative component (the computational system  $C_{HL}$ ), optimality-theoretic approaches generally focus on the filter component (the OT-evaluator). This difference between the minimalist program (MP) and optimality theory (OT) is also reflected in the claims that are normally made about the output of the generator;

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# Linguistic Derivations and Filtering

## Minimalism and Optimality Theory

Edited by Hans Broekhuis and Ralf Vogel

This volume focuses on the role of the postulated derivational and filtering devices in current linguistic theory. It promotes the exchange of ideas between the proponents of Chomsky's Minimalist Program and Prince and Smolensky's Optimality Theory to evaluate the role of these devices in the two frameworks. It discusses the tenability of the often proclaimed opinion that the Minimalist Program and Optimality Theory are incompatible frameworks, given that the explanatory power of the former mainly resides on the generative device, whereas the explanatory power of the latter mainly resides in the filtering device. The papers presented here discuss and compare the two devices in these two frameworks from various perspectives, collating a number of arguments that favour a strictly derivational, a strictly filtering, or a hybrid approach.

This book is directed to syntacticians working within the current frameworks that have developed from the Minimalist Program and Optimality Theory, but it will also be of interest to researchers or advanced students of linguistic theory.

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