

Scandinavian Object Shift, Remnant VP-Topicalisation, and Optimality Theory

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- (5) 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 observation that the object only moves if the main verb has moved forms the basis of Holmberg's generalisation (Holmberg 1986: 165, 1997: 208).

- (6) **Holmberg's Generalisation (HG)** (Holmberg 1997: 208)
 Object Shift is blocked by any phonologically visible category preceding/c-commanding the object position within VP.
 [Here "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.
 E.E. & S.V.]

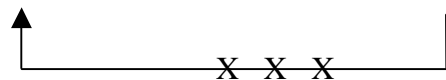
The definition in (6) is vague with respect to whether precedence and/or c-command of a phonologically visible category blocks movement. In the 1999 version of the paper, Holmberg formulates HG in terms of asymmetric c-command. For reasons to become clear in section 2.1 below, the first option will be pursued here, taking HG to be the consequence of a violable condition on order preservation (cf. Déprez 1994, Müller 2001a, Sells 2001, Williams 2003, and Fox & Pesetsky 2005).


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, (7)a. A violation of HG as in (7)c cannot be repaired by subsequent operations as in (7)d 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.

- (7) Sw a. Jag såg henne inte [VP ____ [IP ____ arbeta]].
I saw her not work
 b. Jag har inte [VP sett [IP henne arbeta]].
I have not seen her work
 c. *Jag har henne inte [VP sett [IP ____ arbeta]].
 d. *_{[VP Sett [IP ____ arbeta]]} har jag henne inte _____.
 (Holmberg 1997: 206)

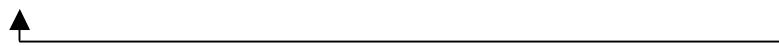

Holmberg concludes that the grammatical sentences in (4) cannot involve OS prior to remnant VP-topicalisation since that would violate HG, cf. (8). Rather, they must be derived by V°-topicalisation, with subsequent OS, cf. (9).

(8) Remnant VP-topicalisation

- Sw a. [CP har [IP jag [VP inte [VP kysst henne]]]]
- b. [CP har [IP jag henne [VP inte [VP kysst ____]]]]
- 

violation of HG!!!
- c. [CP [VP Kysst ____] har [IP jag henne [VP inte ____]]]
- 

(9) V°-topicalisation

- Sw a. [CP har [IP jag [VP inte [VP kysst henne]]]]
- b. [CP [V° Kysst] har [IP jag [VP inte [VP ____ henne]]]]
- 
- c. [CP [V° Kysst] har [IP jag henne [VP inte [VP ____ ____]]]]
- 

Note that the V°-topicalisation analysis is theoretically somewhat problematic: It is counter-cyclic and it involves movement of an X° to an XP-position.

OS is usually optional in Swedish but it is obligatory if the verb occurs in topic position; cf. (4) and (5) above. This is unexpected under the V°-topicalisation analysis, whereas it would follow under the remnant VP-topicalisation analysis, where OS must apply to move the object out of VP prior to topicalisation.

Moreover, if V°-topicalisation were possible, the sentences in (10)b/(11)b would be expected to be acceptable, contrary to fact.

- (10) Da a. Jeg har ikke smidt den ud.
 I have not thrown it out
- b. *Smidt har jeg den ikke ____ ____ ud.
- (11) 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-topicalisation will be assumed to be possible, though it is subject to certain restrictions.

1.2 Fox & Pesetsky's (2005) Remnant VP-Topicalisation approach

As Fox & Pesetsky (2005) observe, remnant VP-topicalisation is possible in Swedish under certain conditions: In double object constructions, topicalisation of a non-finite main verb may take along the IO, stranding the DO in shifted position, (12)a. By contrast, stranding of an IO pronoun alone is not possible, (12)b.

- (12) Sw a. ?_{[VP} Gett henne ____] har jag den inte.
 given her have I it not
 b. *_{[VP} Gett ____ den] har jag henne inte. (Fox & Pesetsky 2005: 25)

Fox & Pesetsky (2005) suggest that the mapping between syntax and phonology, i.e. 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 & Pesetsky (2005), the fact that OS observes HG is a consequence of their "linearisation theory". At the Spell-out domain VP, the ordering statement "V<O" is established, (13)b. At CP, Spell-out adds information about the linearisation of the new material, (13)c; 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.

- (13) Da a. Jeg kyssede hende ikke ____ ____.
I kissed her not

b. Spell-out VP: [_{VP} V O]
Ordering: V<O

c. Spell-out CP: [_{CP} S V [_{IP} t_S O Adv [_{VP} t_V t_O]]
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, predicting the sequence O<Adv to be possible.

OS across a verb *in situ* as in (3)b, repeated as (14)a, gives rise to contradictory ordering statements. The ordering statements produced at Spell-out of CP, (14)c, are in opposition to the statement "V<O" established at Spell-out of VP, (14)b.

(14) Da a. *Jeg har hende ikke kysset ____.
I have her not kissed

b. Spell-out VP: [VP V O]
Ordering: V<O

c. Spell-out CP: [CP S Aux [IP t_S O Adv [VP t_{Aux} [VP V t_O]]]]
Ordering: S<Aux V<O
 Aux<O
 O<Adv
 Adv<VP → Adv<V

Hence, Fox & Pesetsky (2005) derive HG from ordering contradictions. OS cannot take place if it results in ordering statements at CP that contradict those established at the Spell-out of VP. Correspondingly, the asymmetry between stranding of an IO and stranding of a DO by remnant VP-topicalisation illustrated in (12) 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 (12)a but not in (12)b.

Note that Fox & Pesetsky (2005) predict that movement operations that do not obey HG have to proceed successive cyclically: The underlined constituents in (15) have to move via the edge of VP prior to linearisation of the VP domain to prevent ordering contradictions at the Spell-out of CP. These movement operations comprise various instances of A-movement and A-bar-movement operations, such as Scandinavian Negative Shift (see Christensen (2005), Engels (submitted)), *wh*-movement, topicalisation, passivization, and subject raising.

- (15) 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 looked out to to be intelligent

(16) Da a. Bøgerne har jeg solgt _____. = (15)c
books-the have I sold

b. Spell-out VP: [_{VP} Q [_{VP} V t_O]]
Ordering: O<V

c. Spell-out CP: [_{CP} Q Aux [_{IP} S t_{Aux} [_{VP} t_O V t_O]]]
Ordering: O<Aux O<V
Aux<S
S<VP → S<V

Hence, the crucial difference between the various movement operations in (15) and OS is that the former may - and indeed must – go via the edge of VP, but as Fox & Pesetsky (2003) state, in their analysis OS cannot involve movement to the edge of VP, i.e. OS is the exception to their rule. "Our proposals say nothing in themselves, however, about the circumstances under which movement to these left-edge positions is allowed or prohibited" (Fox & Pesetsky 2005: 39).

Note also that Fox & Pesetsky (2003, 2005) make an incorrect prediction concerning remnant VP topicalisation in constructions with an auxiliary *in situ* (see also section 2.3 below). They assume that auxiliary verbs are merged outside vP (and therefore also after Spell-out of VP). As a consequence, the ordering of object and auxiliary verb is not fixed until Spell-out of CP, predicting the sequence O<Aux to be possible (i.e. to be consistent with the ordering statements previously established), contrary to fact. As illustrated in (17), remnant VP topicalisation is not possible in the presence of an auxiliary verb *in situ*; the object can neither precede nor follow the non-finite auxiliary.²

(17) Da a. [_{VP} Kysse hende] har jeg aldrig villet.
kiss her have I never wanted
b. * [_{VP} Kysse ____] har jeg aldrig villet hende.
c. * [_{VP} Kysse ____] har jeg hende aldrig villet.

² In order to account for the data in (17), the Fox & Pesetsky approach might make the additional assumption that auxiliary VPs also constitute Spell-out domains: Thus, VP topicalisation would have to proceed via the edge of the VP of "villet" and via the edge of the VP of "har" at points where OS could not possibly already have applied. In other words, remnant VP topicalisation is expected to be ungrammatical. Movement of the entire VP, still including the object, via these two edge positions predicts that the object precedes both auxiliaries as in (17)a.

However, with the additional assumption that auxiliary VPs also constitute Spell-out domains, it would no longer be possible to derive the remnant VP topicalisation of the grammatical sentence in (3), repeated in (i). Also here, (remnant) VP topicalisation would have to move via the edge of the VP of "har" at a point where OS could not possibly already have applied. Stranding of the object in OS position during VP topicalisation as in (i) is thus incorrectly predicted to be ungrammatical.

(i) Da 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 (i) with the additional assumption that auxiliary VPs also constitute Spell-out domains, would be to follow Holmberg (1997, 1999) and take it to be a case of V° topicalisation, but that in turn would incorrectly predict not only (i) but also (17)c (as well as (9b) and (10b) above) to be grammatical.

2 An OT approach to Object Shift and Remnant VP-topicalisation

OS is motivated by the constraint **SHIFTPRON** which outranks the constraint **STAY** that prohibits movement.³

(18) **SHIFT PRONOUN (SHIFTPRON):**

A [-focus] proform that is "min = max" precedes and c-commands a VP (of the same clause) that contains all V° positions and all VP-adjoined adverbials.⁴

(19) **STAY:**

Trace is not allowed.

(Grimshaw 1997: 374)

SHIFTPRON is satisfied if the pronoun is adjoined to the top VP, as illustrated in (21) below.⁵ Following Fox & Pesetsky (2005), HG will be assumed to result from a high ranking condition on order preservation.

(20) **ORDER PRESERVATION (ORDPRES):**

A moved constituent must not precede a non-adverbial constituent that it (or parts of it) followed at base level.⁶

³ Recall that OS may also apply to full DPs in Icelandic but not in MSc; cf. footnote 1. In Appendix 1 below and in Vikner & Engels (2006), we assume that full DP Shift is motivated by a more general version of **SHIFTPRON**, called **SHIFT**, which requires movement of all [-focus] constituents. Differences in the relative ranking between **SHIFT** and **STAY** account for the cross-linguistic contrasts as to the availability of full DP shift.

⁴ On the "min = max" condition, see Appendix 1.

⁵ The ranking **SHIFTPRON** >> **STAY** predicts that OS is obligatory (unless it is blocked by an intervening category). In Swedish, where pronominal OS is optional, **STAY** and **SHIFTPRON** might be tied, **STAY** <> **SHIFTPRON**: Both relative rankings of the two constraints, **STAY** >> **SHIFTPRON** and **SHIFTPRON** >> **STAY**, co-exist in these languages; depending on the actual ranking, movement is required or prohibited, accounting for its optionality. (In terms of Müller's (2001b) classification of constraint ties, we are here dealing with an ordered global tie.)

⁶ One possible alternative to the formulation of **ORDPRES** in (20) could be to formulate it with reference to c-command relations, (i), rather than precedence:

(i) **ORDPRES:**

A constituent must not c-command a non-adverbial constituent that it (or parts of it) followed at base level.

However, under the assumption that clause-final adverbials are right-adjoined, the second part cannot refer to c-command; if it did, OS of a right-adjoined adverbial across an intervening non-adverbial constituent, (ii)c, would not be ruled out by **ORDPRES** since the adverbial is not c-commanded by the intervening constituent at base level.

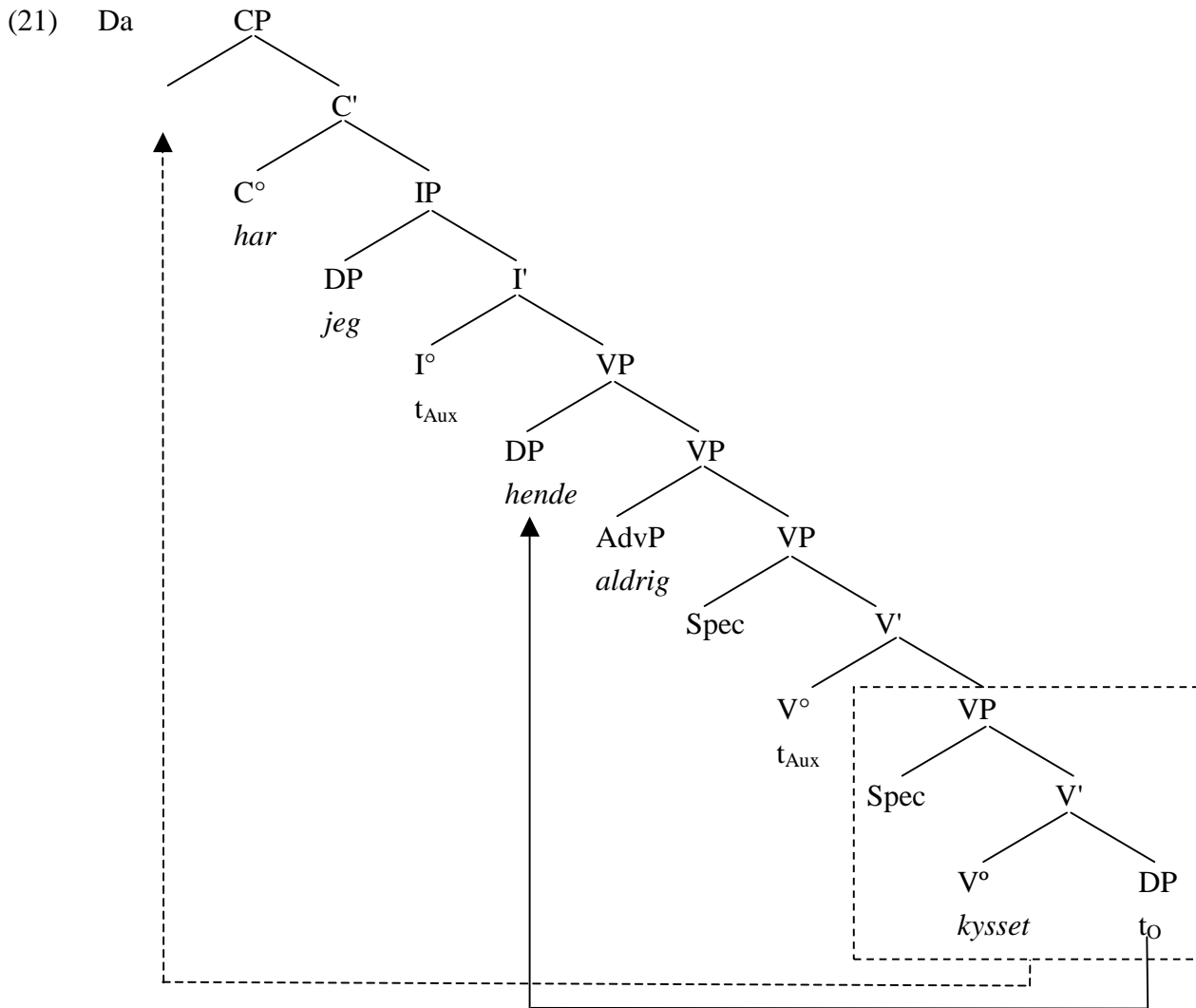
- (ii)
- | | | | | | |
|----|----------|--------------|--------------|------------|--------------------------------|
| a. | Jeg | <u>sov</u> | [<u>der</u> | [ikke | [[<u> </u>] <u> </u>]]] |
| | <i>I</i> | <i>slept</i> | <i>there</i> | <i>not</i> | |
| b. | Jeg | har | | [ikke | [[sovet] <u>der</u>]] |
| | <i>I</i> | <i>have</i> | | <i>not</i> | <i>slept there</i> |
| c. | *Jeg | har | [<u>der</u> | [ikke | [[sovet] <u> </u>]]] |

Another possible alternative to the formulation of **ORDPRES** in (20) could be to formulate it with reference to immediate precedence, (iii), rather than simply precedence:

(iii) **ORDPRES:**

If an overt constituent α immediately precedes a non-adverbial overt constituent β at base level or at surface level, then α also precedes β at the other levels.

The ranking $\text{ORDPRES} \gg \text{SHIFTPRON} \gg \text{STAY}$ 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 moves to a position to the left of the target position of OS, such that the relative order between verb and object is preserved. The main verb does not necessarily have to undergo V° -to- I° -to- C° movement; ORDPRES is also satisfied if a non-finite verb is in topic position as in (4). (The restriction to *non-adverbial* constituents is necessary to permit OS across clause-medial adverbials.)



Under the formulation of ORDPRES in (iii), adverbial constituents must be invisible for adjacency (cf. Åfarli 1998, Bobaljik 1999). The sentence in (iv) is ungrammatical though the verb does not immediately precede the DO at the base level.

(iv) Da *Marie_{IO} har jeg dem_{DO} ikke givet t_V t_{IO} t_{DO} .
 Marie have I them not given

It is crucial that under all three formulations, (20), (i) and (iii), topicalisation of a complete VP and topicalisation of a remnant VP give rise to the same number of ORDPRES violations, namely one for every constituent the VP moves across.

Tableau 1: OS & Holmberg's generalisation

Da:		ORD PRES	SHIFT PRON	STAY	ex.
V <i>in situ</i>	1a S Aux Adv <u>V</u> <u>Pron-O</u>		*		(3)a
	1b S Aux <u>Pron-O</u> Adv <u>V</u> t ₀	*!		*	(3)b
V in C°	2a S <u>V</u> Adv t _V <u>Pron-O</u>		*!		(1)a
	2b S <u>V</u> <u>Pron-O</u> Adv t _V t ₀			*	(1)b
VP in SpecCP	3a [_{VP} <u>V</u> t ₀] Aux S Adv <u>Pron-O</u> t _{VP}		*!		(5)b
	3b [_{VP} <u>V</u> t ₀] Aux S <u>Pron-O</u> Adv t _{VP}			*	(4)b/(21)

(In this and following tableaux, only STAY- and ORDPRES-violations induced by OS violations are listed; STAY- and ORDPRES-violations induced by e.g. VP topicalisation or V°-to-I°-to-C° movement are left out because they do not vary between competing candidates.)

The present approach assumes that occurrence of a non-finite main verb in topic position involves OS of the pronominal object prior to remnant VP-topicalisation; compare (8)/(21) above. In Holmberg's (1997, 1999) approach such remnant VP-topicalisation is ruled out by the assumption that HG is derivational, i.e. that 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 in front of the shifted object such that their precedence relation is re-established.

As mentioned in section 1.2, other types of object movement such as topicalisation may cross a verb *in situ*, i.e. they need not preserve the base order (cf. (22) repeated from (15)c above). Under the OT approach adopted here, this follows if the relevant constraint that motivates movement, e.g. TOPIC, outranks ORDPRES (see Tableau 2).

(22) Da Bøgerne har jeg solgt _____.
books-the have I sold

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

Tableau 2: Object topicalisation

Da:	TOPIC	ORDPRES	SHIFTPRON	STAY
1a S Aux t _S V <u>O</u> _[+top]	*!			*
1b <u>O</u> _[+top] Aux S V t ₀		***		*

2.1 Asymmetry I: Stranding of a DO vs. Stranding of an IO

The asymmetry between stranding of an IO and stranding of a DO in (12), repeated in (24), can be captured by the ranking `ORDPRES >> SHIFTPRON`.

- (24) Sw a. ?_{[VP} Gett henne ____] har jag den inte.
 given her have I it not
 b. *_{[VP} Gett ____ den] har jag henne inte. (Fox & Pesetsky 2005: 25)

Note that also both objects of a double object construction may be taken along, (25)a, or both of them may be stranded by remnant VP-topicalisation, (25)b.

- (25) Da a. [_{VP} Givet hende den] har jeg ikke.
 given her it have I not
 b. ?[_{VP} Givet _____] har jeg hende den ikke.

Because of these alternatives, it is necessary to assume that it is specified in the input which constituents are to be placed in topic position (= bold in the tableaux below). Stranding of an element that should appear in topic position then violates TOPIC whereas taking along too much material does not violate this constraint, see Tableau 3 and Tableau 4.

Tableau 3: Remnant VP-topicalisation that strands both IO and DO⁷


Da/Sw	Topic: V	TOPIC	ORD PRES	SHIFT PRON	STAY	ex.
a	[_{VP} V <u>Pron-IO</u> <u>Pron-DO</u>] Aux S Adv t _{VP}			*!*		(25)a
b	[_{VP} V <u>Pron-IO</u> t _{DO}] Aux S <u>Pron-DO</u> Adv t _{VP}			*!	*	(24)a
c	[_{VP} V t _{IO} <u>Pron-DO</u>] Aux S <u>Pron-IO</u> Adv t _{VP}		*!	*	*	(24)b
 d	[_{VP} V t _{IO} t _{DO}] Aux S <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}				**	(25)b

Tableau 4: VP-topicalisation that takes along both IO and DO

Da/Sw	Topic: V & Pron-IO & Pron-DO	TOPIC	ORD PRES	SHIFT PRON	STAY	ex.
☞ a	[_{VP} V <u>Pron-IO</u> <u>Pron-DO</u>] Aux S Adv t _{VP}			**		(25)a
b	[_{VP} V <u>Pron-IO</u> t _{DO}] Aux S <u>Pron-DO</u> Adv t _{VP}	*!		*	*	(24)a
c	[_{VP} V t _{IO} <u>Pron-DO</u>] Aux S <u>Pron-IO</u> Adv t _{VP}	*!	*	*	*	(24)b
d	[_{VP} V t _{IO} t _{DO}] Aux S <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}	*!*			**	(25)b

As Tableau 3 and Tableau 4 show, SHIFTPRON favours stranding of a pronoun which is, however, only possible if the pronoun is not marked [+topic], due to the higher ranking constraint TOPIC. The asymmetry between stranding of a DO and stranding of an IO is expected by the ranking ORDPRES >>

⁷ Recall from footnote 6 that ORDPRES refers to *moved* constituents only. As a consequence, the same number of ORDPRES-violations (namely, one for every crossed constituent) is induced by VP topicalisation, independent of how many constituents are included in the topicalised VP.

SHIFTPRON. OS of a DO maintains the ordering relations in remnant VP-topicalisations, satisfying ORDPRES (see Tableau 5). Note that it is crucial for the remnant VP-topicalisation constructions that ORDPRES refers to precedence rather than c-command relations: While the precedence relations are maintained in (24)a, the c-command relations are not - neither the verb nor the IO c-commands the shifted DO. In contrast, remnant VP-topicalisation does not re-establish the base order relations if the IO is stranded. Consequently, the violation of ORDPRES rules out stranding of the IO in OS position, compare Tableau 6 below. Instead, the IO has to be taken along by VP-topicalisation, giving rise to neutralization: Despite the different input specifications with regard to topichood, the same candidate (namely, candidate a) arises as output in Tableau 4 and Tableau 6. (But stranding of the IO is possible if it does not result in a violation of ORDPRES, namely if both objects are stranded as in (25)b.)

Tableau 5: Remnant VP-topicalisation that strands DO

Da/Sw	Topic: V & Pron-IO	TOPIC	ORD PRES	SHIFT PRON	STAY	ex.
	a [VP V <u>Pron-IO</u> <u>Pron-DO</u>] Aux S Adv t _{VP}			***!		(25)a
☞	b [VP V <u>Pron-IO</u> t _{DO}] Aux S <u>Pron-DO</u> Adv t _{VP}			*	*	(24)a
	c [VP V t _{IO} <u>Pron-DO</u>] Aux S <u>Pron-IO</u> Adv t _{VP}	*!	*	*	*	(24)b
	d [VP V t _{IO} t _{DO}] Aux S <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}	*!			**	(25)b

Tableau 6: No remnant VP-topicalisation that strands IO

Da/Sw	Topic: V & Pron-DO	TOPIC	ORD PRES	SHIFT PRON	STAY	ex.
☞	a [VP V <u>Pron-IO</u> <u>Pron-DO</u>] Aux S Adv t _{VP}			**		(25)a
	b [VP V <u>Pron-IO</u> t _{DO}] Aux S <u>Pron-DO</u> Adv t _{VP}	*!		*	*	(24)a
	c [VP V t _{IO} <u>Pron-DO</u>] Aux S <u>Pron-IO</u> Adv t _{VP}		*!	*	*	(24)b
	d [VP V t _{IO} t _{DO}] Aux S <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}	*!			**	(25)b

More generally, the ranking ORDPRES >> SHIFTPRON predicts that stranding of an object is only acceptable if the object is right-peripheral within VP. As shown in (26)-(28), topicalisation of the entire VP but not remnant topicalisation is possible in constructions in which the object is followed by other elements within VP, e.g. in constructions with a infinitival clause, (26), a verb with an additional PP-complement, (27), or a particle, (28); see also Appendix 3 for an analysis of these sentences.⁸

⁸ Crucially, the order at *base level* referred to in the definition of ORDPRES in (20) cannot correspond to the base-generated order but instead, we would like to tentatively suggest that it corresponds to the order at an intermediate level at which all cases and all thematic roles assigned by lexical V° have been assigned.

Vikner (1987:263) assumes that the object of a particle verb originates in the complement position of the particle, from where it undergoes overt movement to the specifier position of PrtP in Danish but not in Swedish, for reasons of case. As a consequence, the particle precedes the object within VP in Swedish, (i) but follows it in Danish, (ii).

Recall that the unacceptable sentence in (26)b repeated from (7)d led Holmberg (1997, 1999) to assume that remnant VP-topicalisation is not possible.

- (26) Sw a. [VP Sett henne arbeta] har jag inte.
 seen her work have I not
 b. *[VP Sett _____ arbeta] har jag henne inte. (Holmberg 1997: 206)
- (27) Da a. [VP Stillet det på bordet] har jeg ikke.
 put it on table-the have I not
 b. *[VP Stillet _____ på bordet] har jeg det ikke.
- (28) Da a. [VP Smidt den ud] har jeg ikke.
 thrown it out have I not
 b. *[VP Smidt _____ ud] har jeg den ikke.

-
- (i) Sw a. Jag har inte [VP kastat [PrtP bort den]]
 I have not thrown out it
 b. *Jag har inte [VP kastat [PrtP den bort _____]]
- (ii) Da a. *Jeg har ikke [VP smidt [PrtP ud den]]
 I have not thrown out it
 b. Jeg har ikke [VP smidt [PrtP den ud _____]]

The fact that the object of a particle verb cannot undergo OS in Swedish, (iii), but may do so in Danish, (iv), indicates that it is not the base-generated *Prt*<*DP* order inside the VP in (ii)a but the intermediate *DP*<*Prt* order inside the VP in (ii)b that is relevant for computing of ORDPRES in Danish.

- (iii) Sw a. Jag kastade inte bort den.
 I threw not out it
 b. *Jag kastade den inte bort ____.
- (iv) Da a. *Jeg smed ikke den ud.
 I threw not it out
 b. Jeg smed den ikke ____ ud.

The assumption that it is not the base-generated order but rather the order at an intermediate level which is relevant for ORDPRES is also vital for double object constructions if these are considered to involve a Larsonian shell structure (see also section 2.2 below). The IO precedes the verb in the base-generated order but follows it at the intermediate level. As (v) shows, an IO cannot undergo OS across a verb *in situ*.

- (v) Da a. Jeg har ikke [VP givet [VP hende t_v den]]
 I have not given her it
 b. *Jeg har hende ikke [VP givet [VP _____ t_v den]]

2.2 Excursus: OS and depth of embedding

From the discussion in the previous sections, it might be expected that all that matters is that the remnant object is at the edge of the VP right before this VP is topicalised. However, not all objects on the right edge may be left behind during VP-topicalisation: The object of an infinitival clause cannot be stranded by remnant topicalisation of the main clause VP although it is the rightmost element within that VP.

- (29) Da a. [_{VP} Set [_{IP} ham [_{VP} fotografere hende]]] har jeg ikke.
 seen him photograph her have I not
 b. *[_{VP} Set [_{IP} ham [_{VP} fotografere ____]]] har jeg hende ikke.

Thus, besides the linear restriction, there would seem to also be a structural restriction, ruling out stranding of an object which is too deeply embedded.

Also the object of a Swedish particle verb cannot be left behind during remnant VP-topicalisation even though the particle precedes the object in Swedish and therefore stranding of the object would not violate ORDPRES.

- (30) Sw a. [_{VP} Kastat bort den] har jag inte.
 thrown out it have I not
 b. *[_{VP} Kastat bort ____] har jag den inte. (Gunlög Josefsson, p.c.)

However, OS is possible in particle verb constructions where the particle is topicalised and the verb occurs in V2 position, (31):

- (31) Sw a. UT kastade dom mej inte ____ (bara ned för trappan).
 out threw they me not (only down the stairs)
- b. (Ja, ja, jag ska mata din katt, men) IN släpper jag den inte ____.
 (All right, I will feed your cat but) in let I it not
- (Holmberg 1999: 17)

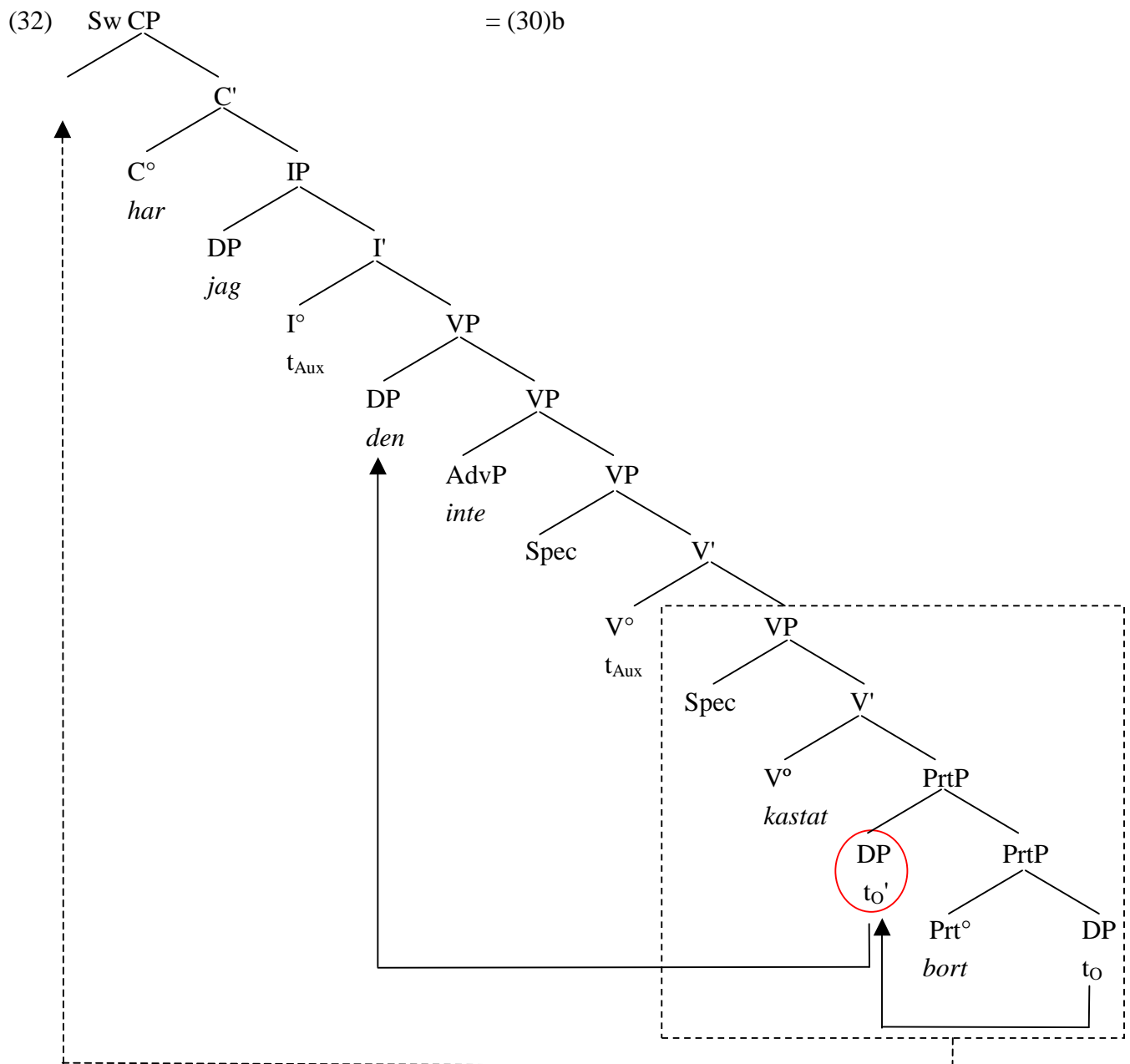
It has been observed for German that a topicalised constituent must not contain an intermediary trace (cf. den Besten & Webelhuth 1990, Müller 1998, Abels 2007).⁹ Assume that a shifted object has to

⁹ This is shown by the ungrammatical sentence in (i), in which the topicalised CP contains an intermediary trace of object *wh*-movement.

- (i) Ge *_{[CP t_O'} Dass Fritz t_O liebt] weiß ich nicht [_{CP} wen er t_{CP} gesagt hat]
 that Fritz loves know I not who he said had
(Müller 1998: 23, (63))

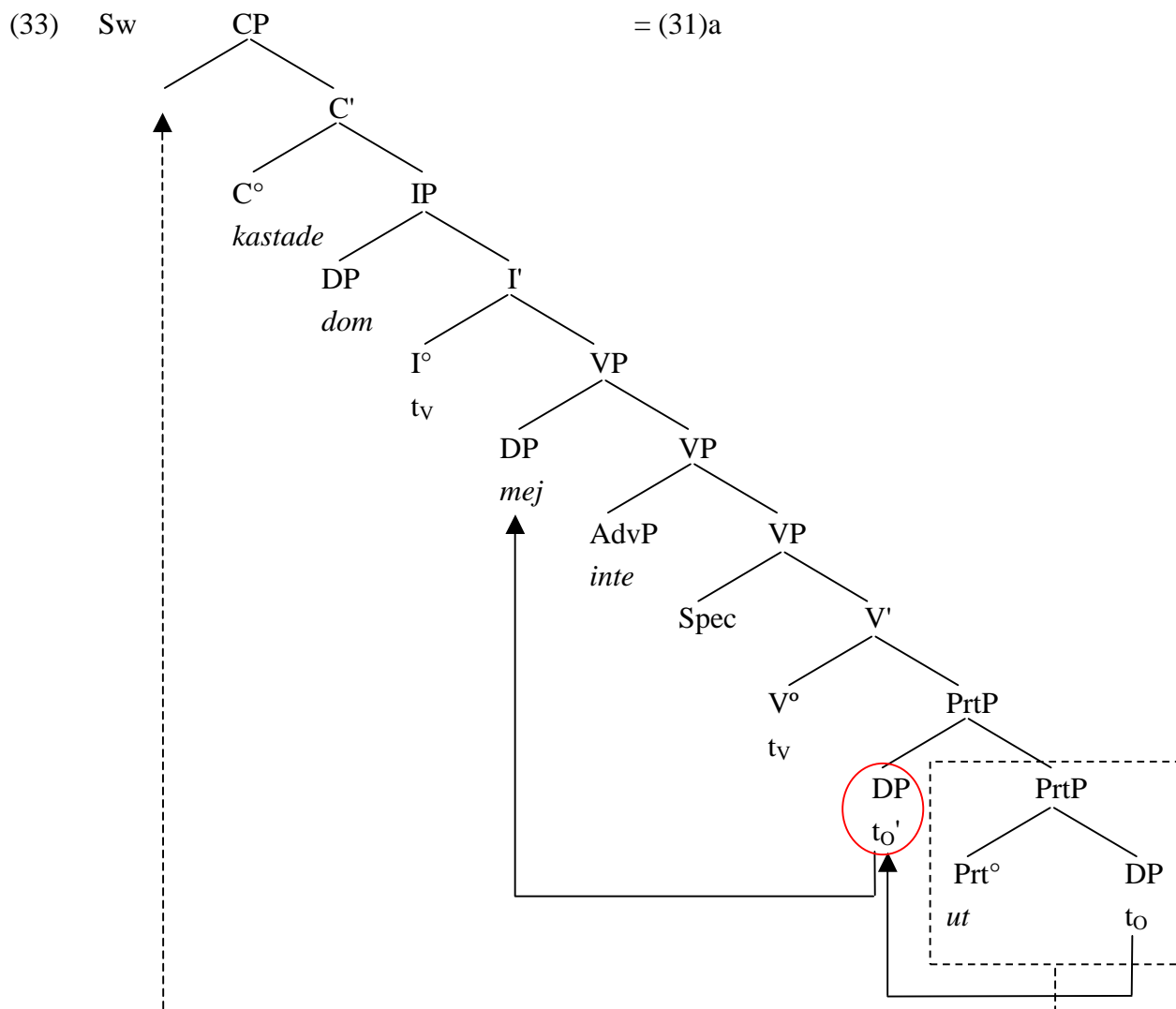
Thereby, the facts that topicalisation of a whole CP is (marginally) acceptable, (ii), and that long-distance topicalisation of VP may (marginally) cross a *wh*-island, (iii), point to the conclusion that it is the intermediary trace contained in the topicalised CP which is crucial for the ungrammaticality of (i).

adjoin to the minimal XP whose X° contains its selecting/theta-assigning head before moving to OS position. As a consequence, OS in particle verb constructions such as (30) and (31) proceeds via adjunction to PrtP. Subsequent remnant VP-topicalisation as in (30)b would thus have to take along an intermediary trace.

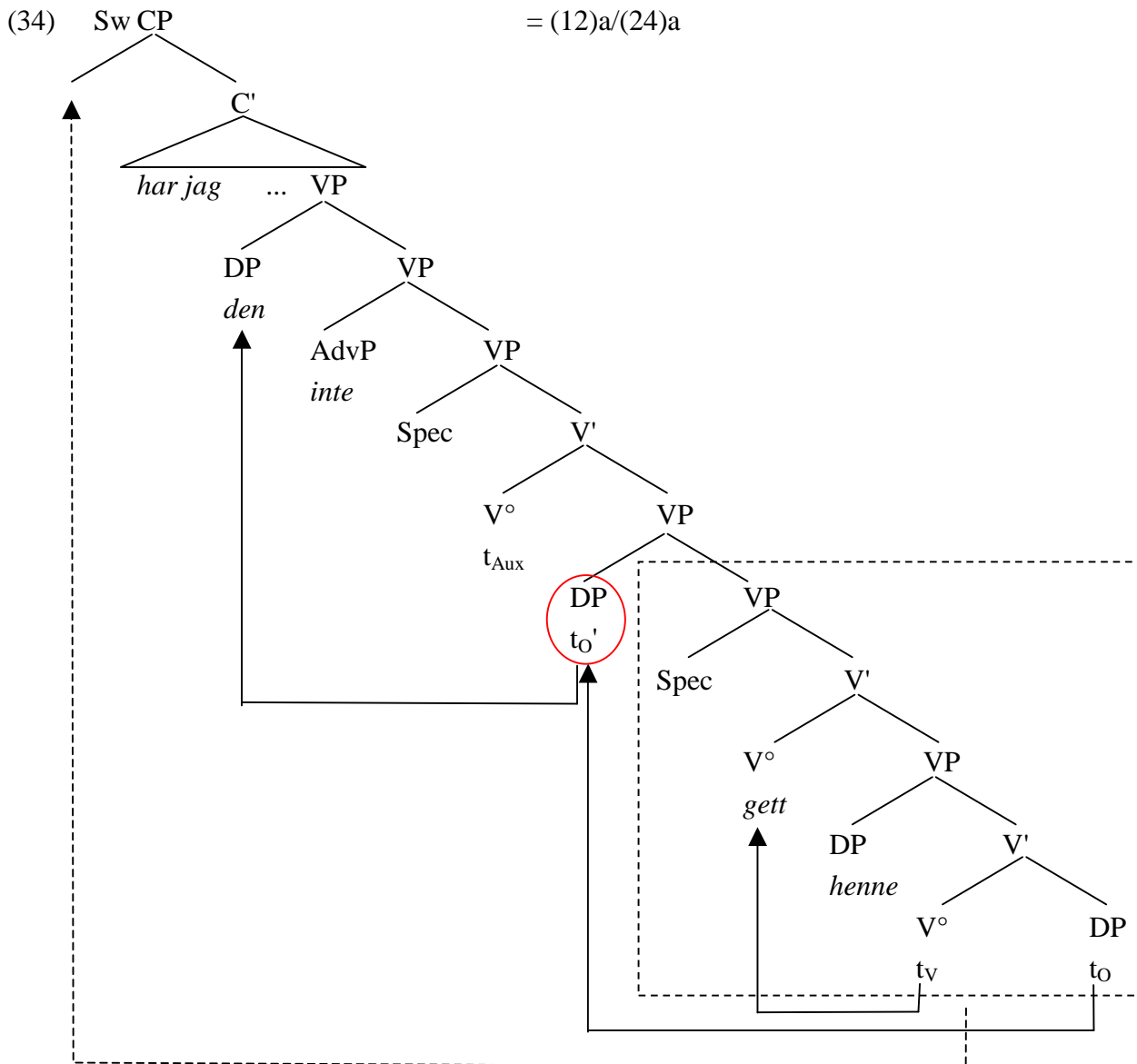


- | | | | | | | | | | | | | | | |
|-------|----|--------------------|---------------------|-------------------------------------|-----------------------------|------------------------|---------------------|---------------------|--|--------------------------------------|-------------------------------|---------------------------------|--------------------------------|-------------------------|
| (ii) | Ge | ?? _[CP] | Dass
<i>that</i> | Fritz
<i>Fritz</i> | Caroline
<i>Caroline</i> | liebt]
<i>loves</i> | weiß
<i>know</i> | ich
<i>I</i> | nicht
<i>not</i> | [_{CP} ob
<i>whether</i> | er
<i>he</i> | t _{CP}
<i>admit</i> | zugeben würde]
<i>would</i> | (Müller 1998: 22, (62)) |
| (iii) | Ge | ?? _[VP] | t _O | Auf den Mund
<i>on the mouth</i> | geküsst]
<i>kissed</i> | weiß
<i>know</i> | ich
<i>I</i> | nicht
<i>not</i> | [_{CP} <u>wen</u>
<i>who</i> | sie
<i>she</i> | t _{CP}
<i>has</i> | hat]
<i>has</i> | (Müller 1998: 23, (64)) | |

The difference between (30) and (31) is that in (31), only the *PrtP* is topicalised (the main verb is also moved, but by a different movement, *V°-to-I°-to-C°*) and so there does not have to be an intermediary trace inside *Spec,CP*.



In a double object construction such as (12)a/(24)a above, the selecting/theta-assigning verb undergoes VP-internal movement such that OS may proceed via adjunction to the higher VP (cf. Baker 1988). Consequently, remnant VP-topicalisation may take place without bringing along any intermediary trace.



Given that just as in German, a topicalised remnant VP cannot contain any intermediary trace in the Scandinavian languages, stranding of a too deeply embedded object can be ruled out by requiring that OS proceed via adjunction to the minimal XP whose X° contains its selecting/theta-assigning head.¹⁰

¹⁰ This condition is also able to account for the fact that remnant topicalisation taking along a manner adverb is not only ungrammatical if the adverb occurs in right-peripheral position within VP (ORDPRES), (i), but also if the adverb is left-adjoined to VP, (ii). In both cases, the remnant VP includes an intermediary trace of the object.

- (i) Da a. Han har nok [_{VP} [_{VP} læst den] omhyggeligt] (men har han forstået den?)
 he has probably read it carefully (but has he understood it?)
 b. [_{VP} [_{VP} Læst den] omhyggeligt] har han nok, men har han forstået den?
 c. *[[_{VP} [_{VP} to'] [_{VP} Læst to]]] omhyggeligt] har han den nok, men har han forstået den?

2.3 Asymmetry II: Stranding of a Subject vs. Stranding of an Object

The ranking `ORDPRES >> SHIFTPRON` thus predicts that remnant VP-topicalisation may strand an object in shifted position as long as the precedence relations are maintained (and its base position is not too deeply embedded). Consequently, only an object that is right-peripheral in VP may be left behind, giving rise to the asymmetry between stranding of an IO and stranding of a DO.

In addition, there is an asymmetry between stranding of an object and stranding of a subject by remnant VP-topicalisation, indicating that a non-peripheral trace in the topicalised VP is not a problem as such. The base order of elements does not have to be maintained by remnant VP-topicalisation if the remnant occurs in subject position (as in passives), see (35)a/(36)a vs. (35)b/(36)b.

- | | | | | | | | | | |
|------|-------|------------------|---------------|-----|---------------------|-------------|------------|------------|------------|
| (35) | Da a. | *[_{VP} | Smidt | ___ | ud] | har | jeg | <u>den</u> | ikke. |
| | | | <i>thrown</i> | | <i>out</i> | <i>have</i> | <i>I</i> | <i>it</i> | <i>not</i> |
| | b. | [_{VP} | Smidt | ___ | ud] | blev | <u>den</u> | | ikke. |
| | | | <i>thrown</i> | | <i>out</i> | <i>was</i> | <i>it</i> | | <i>not</i> |
| (36) | Da a. | *[_{VP} | Stillet | ___ | på bordet] | har | jeg | <u>det</u> | ikke. |
| | | | <i>put</i> | | <i>on table-the</i> | <i>have</i> | <i>I</i> | <i>it</i> | <i>not</i> |
| | b. | ?[_{VP} | Stillet | ___ | på bordet] | blev | <u>det</u> | | ikke. |
| | | | <i>put</i> | | <i>on table-the</i> | <i>was</i> | <i>it</i> | | <i>not</i> |

This contrast is accounted for if the constraint that triggers subject movement to Spec,IP, SUBJECT, outranks ORDPRES.¹¹ (Note that the acceptability of subject movement out of a verb particle construction indicates that depth of embedding does not play a role for subject movement either.)

- (ii) Da a. Han har nok [_{VP} omhyggeligt [_{VP} læst den]] (men har han forstået den?)
 he has probably carefully read it (but has he understood it?)
 b. ?[_{VP} Omhyggeligt [_{VP} læst den]] har han nok, men har han forstået den?
 c. *[_{VP} Omhyggeligt [_{VP} t₀' [_{VP} læst t₀]]] har han den nok, men har han forstået den?

¹¹ The ranking SUBJECT >> ORDPRES is supported by the fact that movement to subject position does not presuppose verb movement; i.e. subject movement may cross an intervening (unaccusative, passive) verb. At the same time, ORDPRES predicts that in double object constructions the IO rather than the DO is promoted to subject in passives, as borne out in e.g. Danish.

- | | | | | | | | | |
|------|----|----|------------------|-------------|-------------|------------|--------------|-----------------------------|
| (i) | Da | a. | Derfor | har | <u>Elsa</u> | ikke | _____ | ringet. |
| | | | <i>therefore</i> | <i>has</i> | <i>Elsa</i> | <i>not</i> | | <i>called</i> |
| | | b. | Derfor | er | <u>Elsa</u> | ikke | | kommet _____. |
| | | | <i>therefore</i> | <i>is</i> | <i>Elsa</i> | <i>not</i> | | <i>come</i> |
| | | c. | Derfor | blev | <u>Elsa</u> | ikke | | fotograferet _____. |
| | | | <i>therefore</i> | <i>was</i> | <i>Elsa</i> | <i>not</i> | | <i>photographed</i> |
| (ii) | Da | a. | Derfor | har | jeg | ikke | givet | <u>Elsa</u> <u>bogen</u> . |
| | | | <i>therefore</i> | <i>have</i> | <i>I</i> | <i>not</i> | <i>given</i> | <i>Elsa</i> <i>book-the</i> |
| | | b. | Derfor | blev | <u>Elsa</u> | ikke | givet | _____ <u>bogen</u> . |
| | | | <i>therefore</i> | <i>was</i> | <i>Elsa</i> | <i>not</i> | <i>given</i> | <i>book-the</i> |
| | | c. | *Derfor | blev | bogen | ikke | givet | Elsa _____. |

Tableau 7: Stranding of a Subject vs. Stranding of an Object

Da:	Topic: V & Prt	SUBJECT	ORDPRES	SHIFTPRON	STAY	ex.
☞ 1a	[_{VP} V <u>Pron-O</u> Prt] Aux S Adv t _{VP}			*		(28)a
1b	[_{VP} V t _O Prt] Aux S <u>Pron-O</u> Adv t _{VP}		*!		*	(35)a
2a	[_{VP} V <u>Pron-S</u> Prt] Aux e Adv t _{VP}	*!		*		-
☞ 2b	[_{VP} V t _S Prt] Aux <u>Pron-S</u> Adv t _{VP}		*		*	(35)b

Accordingly, constraints triggering other movement operations such as Negative Shift, *wh*-movement or topicalisation that are not subject to HG, (15), outrank ORDPRES (e.g. NEGSPEC, WHSPEC, TOPIC >> ORDPRES >> SHIFTPRON). Hence, OS with its almost unique property of being order preserving does not receive a special treatment in the present analysis; rather, the contrast between the various movement devices follows from the familiar OT-mechanism of constraint ranking (relative to ORDPRES).

2.4 Asymmetry III: Remnant VP-Topicalisation out of a Main vs. an Embedded Clause

Moreover, there is an asymmetry between remnant VP-topicalisation out of a main clause and remnant VP-topicalisation out of an embedded clause in the Mainland Scandinavian languages (MSc).

While the finite verb undergoes V^o-to-I^o-to-C^o movement in main clauses, it stays *in situ* in embedded clauses in MSc, (37). As a consequence, OS is not possible in embedded clauses (ORDPRES >> SHIFTPRON); cf. (38).

- (37) Da a. Jeg spurgte hvorfor Peter aldrig læste bogen.
 I asked why Peter never read book-the
 b. *Jeg spurgte hvorfor Peter læste aldrig ____ bogen.
- (38) Da a. Jeg spurgte hvorfor Peter aldrig læste den.
 I asked why Peter never read it
 b. *Jeg spurgte hvorfor Peter den aldrig læste ____.

A full VP may be topicalised from both main clauses and embedded clauses.

- (39) Da a. [_{VP} 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. [_{VP} 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

Topicalisation of a remnant VP, by contrast, is only possible out of a main clause, (40)a, not out of an embedded clause in Danish: The stranded object may neither follow the finite auxiliary (in its base position), (40)b, nor may it precede it, (40)c. (See also example (17) in section 1.2 above.)

- (40) Da a. ?[_{VP} 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. *[_{VP} Set ____] tror jeg ikke at hun [_{V°} har] ham, ...
 seen believe I not that she has him
- c. *[_{VP} Set ____] tror jeg ikke at hun ham [_{V°} har] , ...
 seen believe I not that she him have
 ... 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 (SHIFTPRON), 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 by an independent movement device (see also Appendix 3).

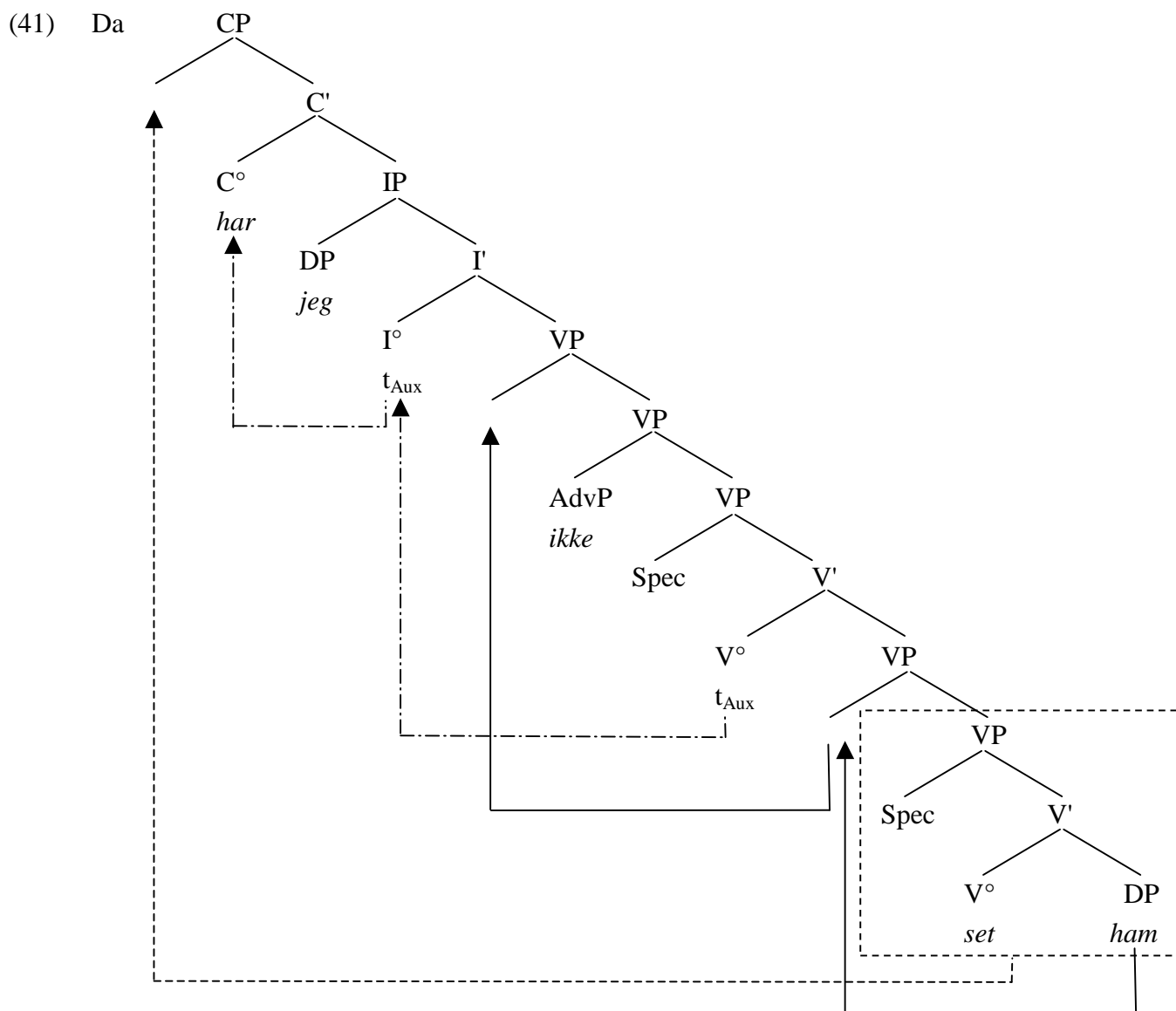


Tableau 8: Remnant VP-topicalisation out of a main clause

Da:	Topic: V	ORDPRES	SHIFTPRON	STAY	ex.
a	$[_{VP} \mathbf{V} \text{ Pron-O}] \text{ Aux S Adv } t_{VP}$		*!		(39)a
b	$[_{VP} \mathbf{V} t_O] \text{ Aux S Adv } \underline{\text{Pron-O}} t_{VP}$		*!	*	(5)b
☞ c	$[_{VP} \mathbf{V} t_O] \text{ Aux S } \underline{\text{Pron-O}} \text{ Adv } t_{VP}$			*	(40)a

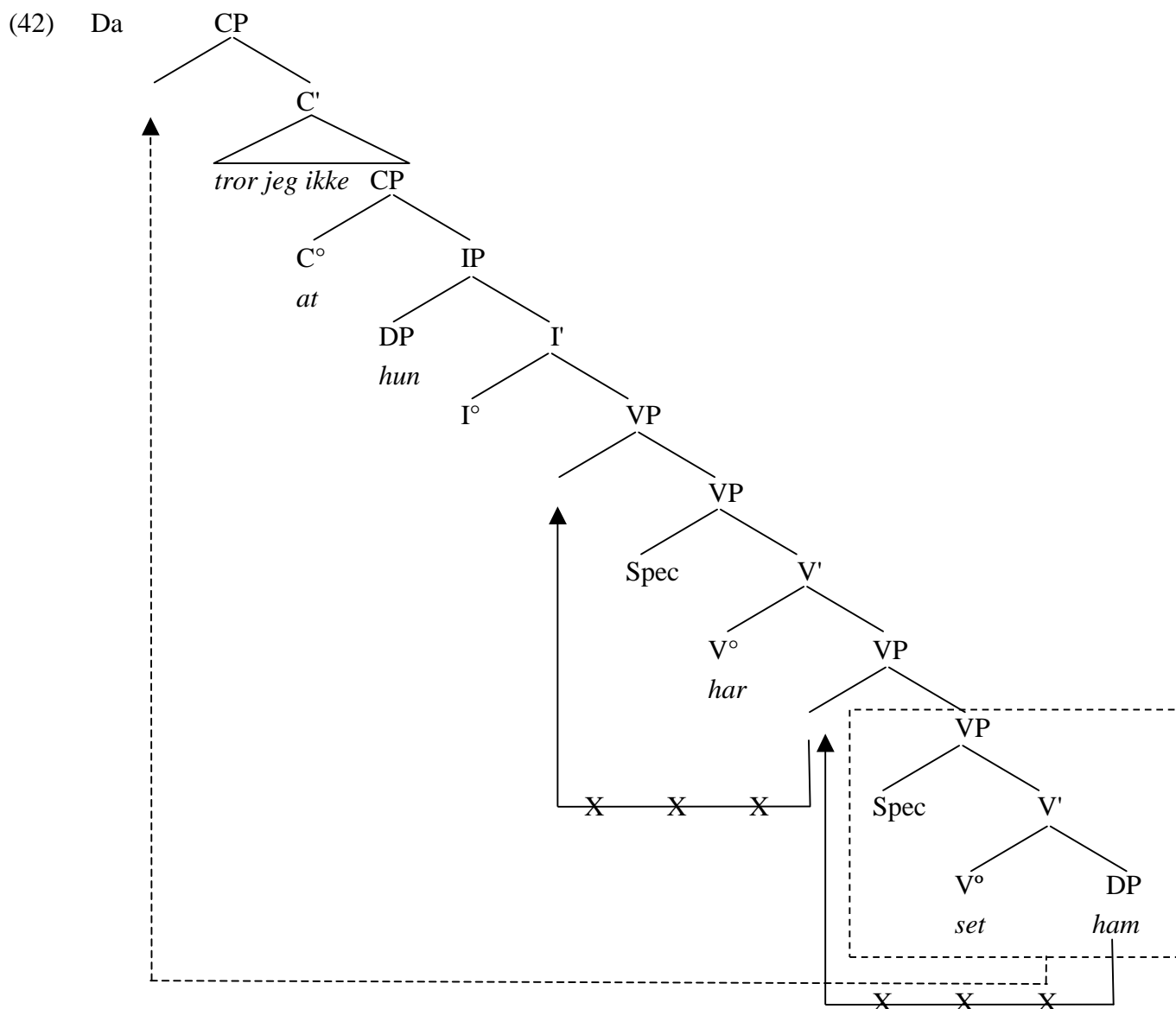


Tableau 9: No remnant VP-topicalisation out of an embedded clause

Da:	Topic: V	ORDPRES	SHIFTPRON	STAY	ex.
☞ a	$[_{VP} \mathbf{V} \text{ Pron-O}] \text{ V S Adv Comp S Aux } t_{VP}$		*		(39)b
b	$[_{VP} \mathbf{V} t_O] \text{ V S Adv Comp S Aux } \text{Pron-O} t_{VP}$		*	*!	(40)b
c	$[_{VP} \mathbf{V} t_O] \text{ V S Adv Comp S } \text{Pron-O} \text{ Aux } t_{VP}$	*!		*	(40)c

(43) 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)

- Note that remnant VP-topicalisation from embedded clauses is possible in passives, i.e. if the element left behind occurs in subject position. This follows from SUBJECT being ranked higher than ORDPRES, as in Tableau 7 above.¹²

- ¹² Similarly, long-distance topicalisation of a VP that contains a trace of a *wh*-moved object is possible, (i). This is expected given that *wh*-movement need not preserve the base order, i.e. the constraint motivating *wh*-movement (WHSPEC) outranks ORDPRES.

- Engels & Vikner: Scandinavian OS, Remnant VP-Topicalisation, and OT, p. 23

3 Conclusion

Holmberg (1997, 1999) considers occurrences of a non-finite verb in topic position such as (4) to result from V°-topicalisation. He assumes that HG is a matter of derivation rather than of representation, i.e. 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-topicalisations altogether.

However, Fox & Pesetsky (2005) have presented data from double object constructions that clearly show that remnant VP-topicalisation 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 linearisation 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 & Pesetsky (2005) 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 e.g. *wh*-movement or subject raising, in that the latter have to proceed successive cyclically via the left edge of VP while this is impossible for OS. In addition, Fox & Pesetsky's (2005) approach makes incorrect predictions as to remnant VP-topicalisation in constructions with an auxiliary verb *in situ*.

Based on an extended set of data concerning remnant VP-topicalisation, the present OT approach agrees with Fox & Pesetsky (2005) 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 ORDPRES and its dominance over the constraint that triggers OS, SHIFTPRON, predicts that only pronominal objects that originate in a right-peripheral position within VP might be left behind in OS position during remnant VP-topicalisation, accounting for the asymmetry in stranding of an IO and stranding of a DO observed by Fox & Pesetsky (2005). However, depth of embedding also plays a role for whether or not an object may have undergone OS out of a topicalised VP: The remnant VP in Spec,CP may not include an intermediary trace of a shifted object. Moreover, new data were presented that showed that subject raising does not underly either of these restrictions; this may be accounted for by a different ranking of SUBJECT and SHIFTPRON relative to the corresponding prohibitions (including ORDPRES).

Finally, the asymmetry between main and embedded clauses as to the applicability of remnant VP-topicalisation in MSc 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-topicalisation would have to undergo OS.

Appendix 1: Syntactic Complexity of Pronouns and "Min = Max"

In MSc, OS may only apply to weak pronouns, (46) repeated from (1); neither full DPs, (47), nor syntactically complex pronouns, i.e. modified or conjoined ones, (48) and (49), may undergo OS (cf. footnote 3 on full DP shift in Icelandic).

- (46) Da a. *Jeg kyssede ikke _____ hende.
I kissed not her
 b. Jeg kyssede hende ikke _____ _____.
 (47) Da a. Hvorfor læste Peter aldrig _____ bogen?
why read Peter never book-the
 b. *Hvorfor læste Peter bogen aldrig _____ ____?
 (48) Da a. Hvorfor læste Peter aldrig _____ den her?
why read Peter never this here
 b. *Hvorfor læste Peter den her aldrig _____ ____? (Vikner 2005: 417)
 (49) 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 & Jelinek 1993: 27)

Moreover, focused pronouns cannot undergo OS: Focused pronouns have to stay *in situ* where they follow a medial adverb.

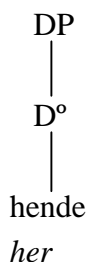
- (50) Da a. Hvorfor læste Peter aldrig _____ DEN?
 why read Peter never it
 b. *Hvorfor læste Peter DEN aldrig _____ ____? (Vikner 2005: 417)

In our analysis, OS is triggered by the constraint SHIFTPRON in (18), repeated here as (51).

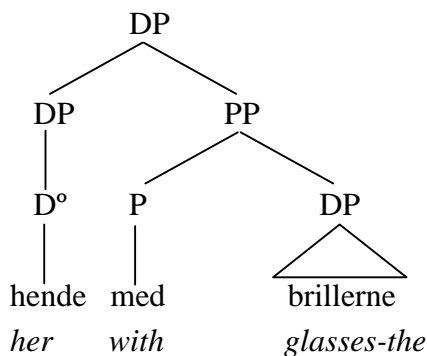
- (51) **SHIFTPRONOUN (SHIFTPRON):**
A [-focus] proform that is "min = max" precedes and c-commands a VP (of the same clause) that contains all V^o positions and all VP-adjoined adverbials.

The fact that focused pronouns do not move is captured by the restriction of SHIFTPRON to [-focus] constituents. Furthermore, a syntactically simple pronoun, (52)a, differs from a modified, (52)b, or conjoined one, (52)c, in that the phrasal status of the former but not the one of the latter two is "min = max" (cf. also Josefsson 1999).

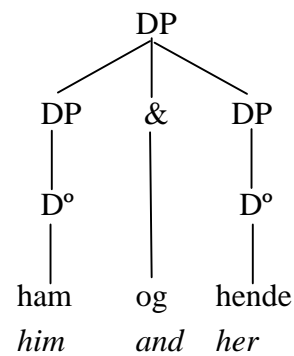
(52) a. simple pronoun



b. modified pronoun



c. conjoined pronoun



By "min = max", we thus mean that the amount of lexical material (i.e. phonologically visible material) dominated by the highest XP (here: DP) must be the same as the amount of lexical material dominated by the lowest X° (here: D°). This is fulfilled in (52)a, but not in (52)b,c. Hence, SHIFTPRON does not affect modified or conjoined pronouns; they are thus expected to remain *in situ* due to STAY in MSc.¹³

Tableau 10

Da:	SHIFT PRON	STAY	ex.
1a Sub V [VP Adv [VP ... [DP=D° <u>Pron-Obj</u>]]]	*!		(46)a
☞ 1b Sub V [VP [DP=D° <u>Pron-Obj</u>] [VP Adv [VP ... t _{Obj}]]]		*	(46)b
☞ 2a Sub V [VP Adv [VP ... [DP≠D° <u>Pron-Obj Mod</u>]]]			(48)a
2b Sub V [VP [DP≠D° <u>Pron-Obj Mod</u>] [VP Adv [VP ... t _{Obj}]]]		*!	(48)b
☞ 3a Sub V [VP Adv [VP ... [DP≠D° <u>Pron-Obj & Pron-Obj</u>]]]			(49)a
3b Sub V [VP [DP≠D° <u>Pron-Obj & Pron-Obj</u>] [VP Adv [VP ... t _{Obj}]]]		*!	(49)b

As mentioned in footnote 3, OS is not restricted to weak pronouns in Icelandic; it may also apply to full DPs, (53). Likewise, syntactically complex pronouns may undergo OS; cf. (54) and (55).

- (53) Ic a. Af hverju las Pétur aldrei _____ þessa bók?
 why read Pétur never this book
 b. Af hverju las Pétur þessa bók aldrei _____?

- (54) Ic a. Af hverju las Pétur aldrei _____ þessa hérna?
 why read Pétur never this here
 b. Af hverju las Pétur þessa hérna aldrei _____? (Vikner 2005: 417)

¹³ Note that there are elements which are "min = max" in the conjoined structure in (52)c, namely each single conjunct, and are thus expected to be able to move due to the ranking SHIFTPRON >> STAY. However, movement out of a conjoined structure is impossible for independent and universal reasons (cf. Ross' (1967) coordinate structure constraint).

- (55) Ic a. Ég þekki ekki ____ hann og hana.
 I know not him and her
 b. Ég þekki hann og hana ekki _____. (Diesing & Jelinek 1993: 27)

In Vikner & Engels (2006:35), we take OS of a complex phrase to be triggered by a more general version of the constraint SHIFTPRON, namely SHIFT.

- (56) SHIFT:
 A [-focus] element precedes and c-commands a VP (of the same clause) that contains all V° positions and all VP-adjoined adverbials.

The contrast between Icelandic and MSc in the applicability of OS to complex DPs may be captured by differences in the relative ranking between SHIFT and STAY.

- (57) a. MSc: SHIFTPRON >> STAY >> SHIFT
 b. Ic: SHIFTPRON, SHIFT >> STAY

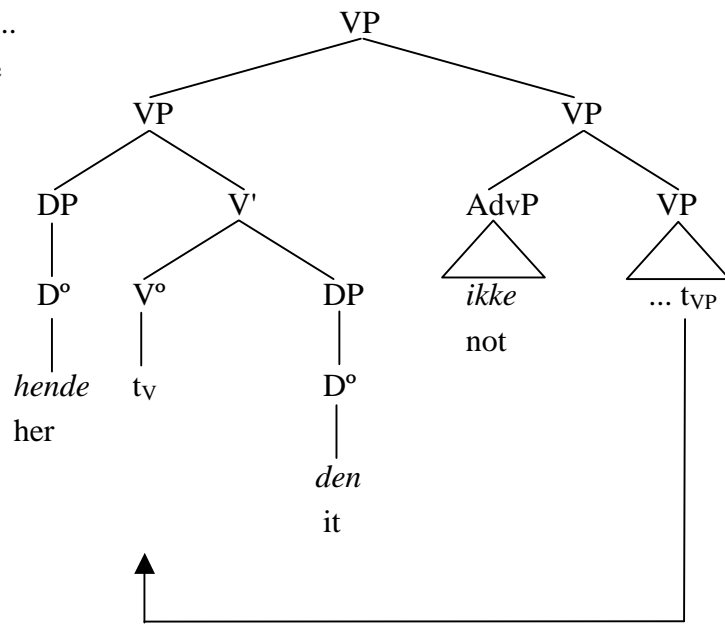
The account presented so far thus captures the facts that OS in MSc only applies to [-focus] DPs that satisfy the "min = max" condition, and that OS in Icelandic applies to all [-focus] DPs. The account is thus incompatible with some accounts of multiple OS, see (58)c, in that it does not allow the analysis of OS as movement of one constituent including several pronouns (contrary to e.g. Vikner 1989:151 and Christensen 2005:157). We thus have to assume that each pronoun has to be moved separately. This is forced by two facts, to do with c-command and with the definition of "min = max".

If multiple OS was movement of one constituent including several pronouns, then the shifted objects would not c-command the relevant VP themselves, (59)a. The formulation of SHIFTPRON and of SHIFT is such that every shifted object must fulfill the condition that a shifted object precedes and c-commands the relevant VP, as is indeed the case in the alternative analysis, where the objects move individually, (59)b; cf. also candidate d in Tableau 11.

Furthermore, if multiple OS was movement of one constituent including several pronouns, then this complex constituent would not satisfy the "min = max" condition (it would be a phrase that was not "min = max" itself but rather included several elements that are "min = max", just like (52)c), and thus it would not be affected by SHIFTPRON; movement of a complex constituent is ruled out by the ranking STAY >> SHIFT in MSc.

- (58) Da a. *Jeg gav ikke ____ hende den.
 I gave not her it
 b. *Jeg gav hende ikke ____ den.
 c. Jeg gav hende den ikke _____.

(59) Da a. *Jeg gav...*
I gave



b. *Jeg gav...*
I gave

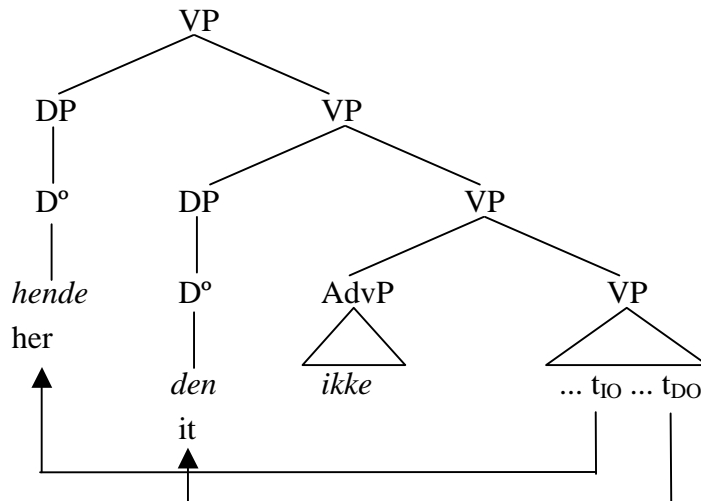


Tableau 11

Da:	SHIFT PRON	STAY	ex.
a Sub V [VP Adv [VP ... [DP=D° <u>Pron-IO</u>] [DP=D° <u>Pron-DO</u>]]]	*!*		(58)a
b Sub V [VP [DP=D° <u>Pron-IO</u>] [VP Adv [VP ... t _{IO} [DP=D° <u>Pron-DO</u>]]]]	*!	*	(58)b
c Sub V [VP [VP ... [DP=D° <u>Pron-IO</u>] [DP=D° <u>Pron-DO</u>]] [VP Adv t _{VP}]]	*!*	*	(58)c= (59)a
☞ d Sub V [VP [DP=D° <u>Pron-IO</u>] [VP [DP=D° <u>Pron-DO</u>] [VP Adv [VP ... t _{IO} t _{DO}]]]]]		**	(58)c= (59)b

Appendix 2: Structure Preservation

There are native speakers of Danish whose intuitions do not agree with the acceptability judgments given above. Rather than to subject remnant VP-topicalisation to a linear restriction, permitting stranding of an object in OS position as long as it does not change the base order of elements (cf. (24) and (25) above), these speakers do not allow for object stranding during remnant VP-topicalisation at all. Topicalisation of a full VP, in contrast, is judged acceptable.

- (60) Da a. [VP Givet hende den] har jeg ikke.
 given her it have I not
 b. *[VP Givet ____ ____] har jeg hende den ikke.
 c. *[VP Givet hende ____] har jeg ____ den ikke.
 d. *[VP Givet ____ den] har jeg hende ikke.

The pattern in (60) can be accounted for if in addition to order preservation, (20), a constraint on structure preservation is considered to restrict OS (cf. Déprez 1994, Müller 2001a, Sells 2001, and Williams 2003).

(61) STRUCTURE PRESERVATION (STRUCPRES):

A non-adverbial constituent must c-command a constituent that it c-commanded at base level.

In other words, where ORDPRES says "preserve the sequence", STRUCPRES says "preserve the c-command relationships".

Like ORDPRES, the constraint STRUCPRES and its dominance over SHIFTPRON predicts that OS cannot cross an intervening non-adverbial element: For example, OS across a verb *in situ* as in (62)b changes the c-command relation between the verb and the shifted object.

- (62) Da a. Jeg spurgte hvorfor Peter aldrig læste den.
 I asked why Peter never read it
 b. *Jeg spurgte hvorfor Peter den aldrig læste ____.

In contrast to ORDPRES, however, STRUCPRES (>> SHIFTPRON) rules out stranding of an object during VP-topicalisation. While the linear relations between the verb and the objects are maintained in (60)b,c above, their structural relations are not: The verb (and IO) in Spec,CP is too deeply embedded to c-command the stranded (IO and) DO. Consequently, STRUCPRES >> SHIFTPRON rules out stranding of an object during remnant VP-topicalisation while permitting topicalisation of a full VP.

Tableau 12: No remnant VP-topicalisation

Da	Topic: V	TOPIC	STRUC PRES	SHIFT PRON	ex.
☞ a	[_{VP} V <u>Pron-IO</u> <u>Pron-DO</u>] Aux Sub Adv t _{VP}			**	(60)a
b	[_{VP} V t _{IO} t _{DO}] Aux Sub <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}		*!*		(60)b
c	[_{VP} V <u>Pron-IO</u> t _{DO}] Aux Sub <u>Pron-DO</u> Adv t _{VP}		*!*	*	(60)c
d	[_{VP} V t _{IO} <u>Pron-DO</u>] Aux Sub <u>Pron-IO</u> Adv t _{VP}		*!*	*	(60)d

Hence, variation between speakers as to the strandability of objects during VP-topicalisation may be accounted for by a contrast in the ranking of two very similar constraints, one requiring order preservation, the other structure preservation.

Appendix 3: Differentiation according to syntactic complexity: SHIFT, STAY, or both?

Under our formulation of SHIFTPRON in (18), it is predicted that a pronominal object may force stranding of other (right-peripheral) elements such as DPs, PPs, or particles whose movement is not motivated by an independent constraint, i.e. which cannot move to a sentence-medial position otherwise. This prediction is not borne out. A right-peripheral particle/PP cannot be stranded, irrespective of whether or not the pronominal object is stranded as well; cf. (63)c,d/(64)c,d. The only option is to topicalise the whole VP as in (63)a and (64)a. (The b-sentences in (63) and (64) are ruled out by ORDPRES >> SHIFTPRON, cf. section 2.1 above.)

- (63) Da a. [_{VP} Smidt den ud] har jeg ikke.
 thrown it out have I not
 b. *_{VP} Smidt ____ ud] har jeg den ikke.
 c. *_{VP} Smidt den ____] har jeg ikke ud.
 d. *_{VP} Smidt ____ ____] har jeg den ikke ud.
- (64) Da a. [_{VP} Stillet det på bordet] har jeg ikke.
 put it on table-the have I not
 b. *_{VP} Stillet ____ på bordet] har jeg det ikke.
 c. *_{VP} Stillet det ____] har jeg ikke på bordet.
 d. *_{VP} Stillet ____ ____] har jeg det ikke på bordet.

We might be able to rule out the c-sentences: Assuming that TOPIC requires the verb and the object to occur in Spec,CP, STAY predicts that stranding of the particle/PP alone is not possible since its movement out of VP is not motivated otherwise. (Remember that taking along too much material to Spec,CP does not violate TOPIC.)

Tableau 13

Da:	Topic: V & Obj-Pron	TOPIC	ORD PRES	SHIFT PRON	STAY	ex.
☞ a	[_{VP} V <u>Obj-Pron</u> <u>PP</u>] Aux Sub Adv t _{VP}			*		(64)a
b	[_{VP} V t _{Pron} <u>PP</u>] Aux Sub <u>Obj-Pron</u> Adv t _{VP}	*!	*		*	(64)b
c	[_{VP} V <u>Obj-Pron</u> t _{PP}] Aux Sub Adv <u>PP</u> t _{VP}			*	*!	(64)c
d	[_{VP} V t _{Pron} t _{PP}] Aux Sub <u>Obj-Pron</u> Adv <u>PP</u> t _{VP}	*!			**	(64)d

However, the ranking SHIFTPRON >> STAY falsely predicts that a phrase (particle/PP) which follows a pronominal object within VP is stranded together with the object if only the verb is marked as [+topic]. The object thus does not have to occur in Spec,CP, and SHIFTPRON requires its stranding in clause-medial position. In order to satisfy ORDPRES, the right-peripheral particle/PP has to be stranded as well. The extra violation of STAY induced by stranding of the particle/PP is now "legalized" by the satisfaction of the higher ranking constraints ORDPRES and SHIFTPRON.

Tableau 14

Da: Topic: V	TOPIC	ORD PRES	SHIFT PRON	STAY	ex.
a [VP V <u>Obj-Pron</u> PP] Aux Sub Adv t _{VP}			*!		(64)a
b [VP V t _{Pron} PP] Aux Sub <u>Obj-Pron</u> Adv t _{VP}		*!		*	(64)b
c [VP V <u>Obj-Pron</u> t _{PP}] Aux Sub Adv PP t _{VP}			*!	*	(64)c
☹ d [VP V t _{Pron} t _{PP}] Aux Sub <u>Obj-Pron</u> Adv PP t _{VP}				**	(64)d

As mentioned in Appendix 1, while OS is restricted to pronominal elements in MSc, not only pronouns but also full DPs may undergo OS in Icelandic. This contrast as to the applicability of OS to phrases of different complexity may be accounted for by the ranking of STAY relative to SHIFT and SHIFTPRON; cf. (57).

To resolve the problem described above, it would seem necessary (instead of distinguishing between elements for which movement is/is not independently motivated, i.e. for which there is a constraint above STAY) to distinguish between elements for which movement is/is not explicitly prohibited. Hence, instead of differentiating SHIFT according to syntactic complexity (SHIFT and SHIFTPRON), apparently STAY must be differentiated according to syntactic complexity, STAY and STAYCOMPLEX (= *Don't move elements that are "min ≠ max" (i.e. non-pronominals)*). The cross-linguistic variation as to the mobility of elements of different syntactic complexity might then be accounted for by differences in the ranking between SHIFT and STAYCOMPLEX (and STAY).

- (65) a. MSc: STAYCOMPLEX >> SHIFT >> STAY
b. Ic: SHIFT >> STAYCOMPLEX, STAY

The ranking STAYCOMPLEX >> SHIFT >> STAY in MSc predicts that OS is only possible for weak pronouns but not for more complex phrases. In contrast, the ranking SHIFT >> STAYCOMPLEX, STAY permits OS of both pronouns and full DPs in Icelandic. ORDPRES >> SHIFT makes sure that OS only takes place if the base order is maintained (e.g. if the verb is moved to a position further leftwards).

- (66) Da a. Hvorfor læste Peter ikke _____ bogen?
 why read Peter not book-the
b. *Hvorfor læste Peter bogen ikke _____ ?
- (67) Da a. *Hvorfor læste Peter ikke _____ den?
 why read Peter not it
b. Hvorfor læste Peter den ikke _____ ?

Tableau 15

Da:		TOPIC	ORD PRES	STAY COMPLEX	SHIFT	STAY	ex.
☞	1a wh V Sub Adv <u>DP-Obj</u>				*		(66)a
	1b wh V Sub <u>DP-Obj</u> Adv t _{DP}			*!		*	(66)b
	2a wh V Sub Adv <u>Pron-Obj</u>				*!		(67)a
☞	2b wh V Sub <u>Pron-Obj</u> Adv t _{Pron}					*	(67)b

Though pronominal OS is required (SHIFT >> STAY), it is predicted that stranding of the pronominal object during VP-topicalisation is not possible if there is a phrase within VP that follows the object (i.e. particle or PP). ORDPRES rules out stranding of the object alone, and the demand for pronominal OS cannot force stranding of the following phrase due to the higher ranking STAYCOMPLEX.

Tableau 16

Da:	Topic: V	TOPIC	ORD PRES	STAY COMPL	SHIFT	STAY	ex.
☞	a [_{VP} V <u>Pron-Obj</u> PP] Aux Sub Adv t _{VP}				**		(64)a
	b [_{VP} V t _{Pron} PP] Aux Sub <u>Pron-Obj</u> Adv t _{VP}		*!		*	*	(64)b
	c [_{VP} V <u>Pron-Obj</u> t _{PP}] Aux Sub Adv PP t _{VP}			*!	*	*	(64)c
	d [_{VP} V t _{Pron} t _{PP}] Aux Sub <u>Pron-Obj</u> Adv PP t _{VP}			*!		**	(64)d

However, a distinction between STAY and STAYCOMPLEX would seem not to suffice. Though both pronominal and non-pronominal arguments may undergo OS in Icelandic (SHIFT >> STAYCOMPLEX, STAY), movement of adverbials depends on syntactic complexity. While pronominal adverbials are able to undergo OS, (68), complex adverbials are not – independent of their syntactic category, PP or DP, and independent of whether they are free or selected for; cf. (69) and (70).

- (68) Ic a. Býr Pétur ekki lengur _____ þar?
lives Peter not longer there
b. Býr Pétur þar ekki lengur _____ ? (Vikner 2005: 422)
- (69) Ic a. Býr Pétur ekki lengur _____ í Kaupmannahöfn?
lives Petur not longer in Copenhagen
b. *Býr Pétur í Kaupmannahöfn ekki lengur _____ ? (Vikner 2005: 424)

- (70) Ic a. Pétur kemur sennilega _____ næstu viku.
Pétur comes probably next week
b. *Pétur kemur næstu viku sennilega _____ .
(Gunnar Hrafn Hrafnbjargarson, p.c.)

To account for the asymmetry in OS of arguments and OS of adverbials, we would need an even more specialized version of STAYCOMPLEX, namely STAYCOMPLEXADVERBIAL (which outranks SHIFT).

Tableau 17

Ic:	ORD PRES	STAY COMP ADV	SHIFT	STAY COMP	STAY	ex.
☞ 1a wh V Sub Adv <u>PP-Adv</u>			*			(69)a
1b wh V Sub <u>PP-Adv</u> Adv t _{pp}		*!		*	*	(69)b
2a wh V Sub Adv <u>Pron-Adv</u>			*!			(68)a
☞ 2b wh V Sub <u>Pron-Adv</u> Adv t _{pron}					*	(68)b

Furthermore, although the cross-linguistic variation as to the mobility of pronouns and more complex phrases might be accounted for by a differentiation of STAY (i.e. STAY, STAYCOMPLEX, and STAYCOMPLEXADVERBIAL), the distinction between SHIFT and SHIFTPRON will still have to be retained. In Vikner & Engels (2006), we argued that Scrambling (SCR) in the West Germanic languages might be treated on a par with OS in the Scandinavian languages by considering both movement devices to be triggered by SHIFT (and SHIFTPRON). Though both pronouns and complex phrases may undergo movement in Dutch (SHIFT >> STAY, STAYCOMPLEX), they contrast in the ability to scramble across an intervening argument, i.e. in whether or not their movement has to maintain the ordering relations (ORDPRES).

- (71) Du a. *... dat Jan waarschijnlijk Marie 't gegeven heeft.
that Jan probably Marie it given has
b. ... dat Jan 't waarschijnlijk Marie _____ gegeven heeft.
c. ... dat Jan 't Marie waarschijnlijk _____ _____ gegeven heeft.
- (72) Du a. ... dat ik gisteren de jongen het boek gegeven heb.
that I yesterday the boys the book given have
b. *... dat ik het boek gisteren de jongen _____ gegeven heb.
c. *... dat ik het boek de jongen gisteren _____ _____ gegeven heb.
(De Hoop & Kosmeijer 1995:150)

This asymmetry may only be accounted for if movement of pronouns and movement of more complex phrases are motivated by distinct constraints, SHIFTPRON and SHIFT. Only if pronominal movement is additionally triggered by some other constraint than movement of full DPs, this asymmetry might be

derived from differences in the constraint ranking relative to ORDPRES: SHIFTPRON >> ORDPRES >> SHIFT.

Hence, we would seem to end up with differentiation according to syntactic complexity twice, for SHIFT and for STAY. (Note that SHIFTPRON would have to be ranked below STAYCOMPLEX in MSc to avoid the problem of the original approach.)

References

- Abels, Klaus. 2007. Towards a Restrictive Theory of (Remnant) Movement. Ms., University of Tromsø, Norway.
- Åfarli, Tor A. 1998. Dimensions of phrase structure: The representation of sentence adverbials. Manuscript, Dragvoll: Norges teknisk naturvitenskapelige universitet.
- Baker, Mark. 1988. *Incorporation. A Theory of Grammatical Function Changing*. Chicago: University of Chicago Press.
- Besten, Hans den & Webelhuth, Gert. 1990. Stranding. In *Scrambling and Barriers*, Günther Grewendorf and Wolfgang Sternefeld (eds.), pp. 77-92. Amsterdam: Benjamins.
- Bobaljik, Jonathan. 1999. Adverbs: The hierarchy paradox. *GLOT International* 4:27-28.
- Chomsky, Noam. 2000. Minimalist inquiries. In *Step by step: essays on minimalist syntax in honor of Howard Lasnik*, Roger Martin, David Michaels and Juan Uriagereka (eds.), pp. 89-156. Cambridge, Mass.: MIT Press.
- Chomsky, Noam. 2001. Beyond explanatory adequacy. *MIT Working Papers in Linguistics* 20, 1-28.

- Christensen, Ken Ramshøj. 2005. *Interfaces: Negation – Syntax – Brain*. PhD dissertation, University of Aarhus, Denmark. (www.hum.au.dk/engelsk/engkrc/Papers/krc-phd.pdf)
- Déprez, Viviane. 1994. Parameters of Object Movement. In *Studies on Scrambling*, Norbert Corver and Henk van Riemsdijk (eds.), pp. 101–152. Berlin: Mouton de Gruyter.
- Engels, Eva. Submitted. Scandinavian negative indefinites and cyclic linearization. Submitted to *Syntax*. (Draft version; http://folk.uio.no/evaengel/engels_NegIndef&CycLin.pdf)
- Erteschik-Shir, Nomi. 2001. P-syntactic motivation for movement: imperfect alignment in Object Shift. *Working Papers in Scandinavian Syntax* 68, 49–73.
- Fox, Danny & Pesetsky, David. 2003. *Cyclic Linearization and the Typology of Movement*. Ms., MIT. (http://web.mit.edu/linguistics/www/fox/July_19_handout.pdf)
- Fox, Danny & Pesetsky, David. 2005. Cyclic Linearization of Syntactic Structure. *Theoretical Linguistics* 31, 1-45.
- Holmberg, Anders. 1997. The true nature of Holmberg's generalization. *NELS* 27, 203-217.
- Holmberg, Anders. 1999. Remarks on Holmberg's Generalization. *Studia Linguistica* 53, 1-39.
- Müller, Gereon. 1998. *Incomplete Category Fronting. A Derivational Approach to Remnant Movement in German*. Dordrecht: Kluwer.
- Müller, Gereon. 2001a. Order Preservation, Parallel Movement, and the Emergence of the Unmarked. In *Optimality Theoretic Syntax*, Jane Grimshaw, Géraldine Legendre & Sten Vikner (eds.), pp. 279-313. Cambridge, Mass.: MIT Press.
- Müller, Gereon. 2001b. Optionality in Optimality-Theoretic Syntax. In *The Second Glot International State-of-the-Article Book*, Lisa Cheng & Rint Sybesma (eds.), pp. 289-321. Berlin: Mouton.
- Ross, John R. 1967. *Constraints on variables in syntax*. PhD dissertation, MIT (published as 'Infinite syntax!' Ablex: Norwood, 1986).
- Sells, Peter. 2001. *Structure, Alignment and Optimality in Swedish*. Stanford: CSLI Publications.
- Vikner, Sten. 2001. *Verb Movement Variation in Germanic and Optimality Theory*. Habilitationsschrift, University of Tübingen. (www.hum.au.dk/engelsk/engsv/papers/viknhabi.pdf)
- Vikner, Sten. 2005. Object Shift. In *The Blackwell Companion to Syntax*, Henk van Riemsdijk & Martin Everaert (eds.), pp. 392-436. Oxford: Blackwell.
- Vikner, Sten & Engels, Eva. 2006. *The Germanic Languages and the SOV/SVO difference, Part VII: Object Shift and Scrambling – An Optimality Theoretic approach*. DGfS/GLOW Summer School: Micro- & Macrovariation, University of Stuttgart, Aug. 14 - Sept. 2, 2006. Ms., University of Aarhus. (www.hum.au.dk/engelsk/engsv/papers/stuttgart/vikner-stgt7.pdf)
- Williams, Edwin. 2003. *Representation theory*. Cambridge, Mass.: MIT Press.