The Germanic languages and the SOV/SVO difference

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

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Abstract

The leftward movement of pronominal objects in Scandinavian called "Object Shift" requires the verb to have moved out of VP. This constraint is known as "Holmberg's generalisation".

In Holmberg (1999), placement of the non-finite verb in clause-initial position as in (i) is analysed as V°-topicalisation with subsequent Object Shift.

(i)   Sw.   Kysst har jag henne inte ___ ___ (bara hållit henne i handen   ).
            kissed have I   her   not   (only held her   by hand-the)

                                                    (example from Holmberg 1999:7)

Counterexamples to Holmberg's hypothesis are given in Fox & Pesetsky (2005a) which show that remnant VP-topicalisations may leave behind an object in Object Shift position in Scandinavian as long as the VP-internal order relations are maintained, as illustrated by the asymmetry between stranding of a direct object and stranding of an indirect object in double object constructions:

(ii)   Sw. a. ? [$_{VP}$ Gett henne ___] har jag den   inte.
                   given her   have I   it   not

       b. * [$_{VP}$ Gett ___   den] har jag henne inte.
                 given   it   have I   her   not

                                                    (examples from Fox & Pesetsky 2005a:25)

Based on an extended set of data, including e.g. remnant VP-topicalisation after passivization and remnant VP-topicalisation out of embedded clauses, I shall argue that within an Optimality Theory analysis, Holmberg's generalisation and the restrictions on object stranding may be seen to result from one and the same, more general (and violable) condition on order preservation.

1   Introduction

In the Scandinavian languages, an unstressed pronominal object may move from its base position behind the main verb to a position to the left of a sentential adverbial.[1] This movement operation is called Object Shift (OS). OS is obligatory in Icelandic, Faroese, and Danish, (1), but optional in Norwegian and Swedish, (2).

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[1] In Icelandic, not only pronouns but also full DPs may undergo OS, (i). In the Mainland Scandinavian languages (MSc), in contrast, OS is restricted to weak pronouns; cf. (1) vs. (ii).

(i)	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: 417)

(ii)	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: 417)

(1) Da a. *Jeg <u>kyssede</u>   ikke   _____ <u>hende</u>.
              I   *kissed*   *not*   *her*

        b.   Jeg <u>kyssede</u> <u>hende</u> ikke   _____ _____.

(2) Sw a. Jag <u>kysste</u>   inte   _____ <u>henne</u>.

        b.   Jag <u>kysste</u>   <u>henne</u> inte   _____ _____.

OS presupposes movement of the main verb; as shown in (3), it cannot cross a verb *in situ*.

(3) Da a. Jeg har   ikke   kysset <u>hende</u>.
              I   *have*   *not*   *kissed* *her*

        b. *Jeg har   <u>hende</u> ikke   kysset _____.

However, the main verb does not have to undergo head movement (V°-to-I°-to-C° movement[2]) as in (1). OS is also possible in clauses with a non-finite main verb if the verb occurs in clause-initial position, (4). In fact, OS has to take place in this case, (5).

(4) Sw a. <u>Kysst</u> har   jag   <u>henne</u> inte   ___ ___   (bara hållit henne i handen).
              kissed *have* *I*   *her*   *not*   *only held her by hand-the*
                                                                                        (Holmberg 1999: 7)

     Da b. <u>Kysset</u> har   jeg   <u>hende</u> ikke   ___ ___   (bare holdt hende i hånden).
              kissed *have* *I*   *her*   *not*   *only held her in hand-the*
                                                                                        (Vikner 2005: 407)

     Ic c. <u>Kysst</u> hef   ég   <u>hana</u> ekki   ___ ___   (bara haldið í höndina á henni).
              kissed *have* *I*   *her*   *not*   *only held in hand-the on her*
                                                                                        (Vikner 2005: 431)

(5) Sw a. *<u>Kysst</u>   har   jag   inte   ___   <u>henne</u>.
              kissed   *have*   *I*   *not*   *her*   (Erteschik-Shir 2001: 59)

     Da b. *<u>Kysset</u>   har   jeg   ikke   ___   <u>hende</u>.
              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).

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[2] Note that the main verb need not move all the way up to C°; V°-to-I° movement as in Icelandic embedded clauses is sufficient to make OS possible (see also section 3.4 below).

(i) Ic a. *Ég spurði af hverju Pétur   aldrei <u>læsi</u> <u>hana</u>.
              I   *asked* *why*   *Pétur*   *never* *read*   *it*
         b.   Ég spurði af hverju Pétur   <u>læsi</u> <u>hana</u> aldrei _____ _____.   (Vikner 2005: 396)

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(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 3.1 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 2005a).

     Holmberg's generalisation prohibits OS across a non-adverbial constituent to its left. In fact,
however, the condition on order preservation seems to be even more general than is expected by
Holmberg's generalisation. As Fox & Pesetsky (2005a) observe, stranding of an object during remnant
VP-topicalisation is only possible if the object is right-peripheral within VP: In double object
constructions, topicalisation of a non-finite main verb may take along the IO, stranding the DO in
shifted position, (7)a. By contrast, the opposite is not possible, topicalisation of the non-finite main
verb carrying along the DO but stranding the IO, (7)b.[3]

(7)   Sw a. ?[VP   Gett   <u>henne   </u>]   har   jag   <u>den</u>   inte.
                     given *her*   *have* *I*   *it*   *not*
          b. *[VP   Gett   _____   <u>den</u>]   har   jag   <u>henne</u> inte.
                     given   *it*   *have* *I*   *her*   *not*   (Fox & Pesetsky 2005a: 25)

     In section 2, we set out the basics of our analysis which is couched in an Optimality Theory
framework with constraints which are violable and ranked, in particular a constraint on order
preservation. We also briefly compare our approach to the one in Fox & Pesetsky (2003, 2005a,b).

     In section 3, we then go on to discuss four different asymmetries related to stranding during
remnant VP-topicalisation: between direct and indirect objects in 3.1, between Danish and Swedish
particle verbs and *let*-constructions in 3.2, between leaving behind an object and leaving behind a
subject in 3.3, and finally between remnant VP-topicalisation out of a main vs. out of an embedded
clause in 3.4.

     Section 4 summarizes the main points of the paper.

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[3] Considering Holmberg's generalisation to be a derivational condition, Holmberg (1999) takes examples like (4) to involve
V°-topicalisation: Moving the verb (and nothing but the verb) to topic position is what paves the way for OS. However,
examples like (7) show that remnant VP-topicalisation is possible in Scandinavian, as admitted in Holmberg (2005:148),
where Holmberg also gives the example repetaed as (34)c below.

2 Approaches to Object Shift and order preservation

2.1 Order preservation as a ranked and violable constraint

OS is motivated by the constraint SHIFTPRON which outranks the constraint STAY that prohibits movement.[4]

(8) SHIFT PRONOUN (SHIFTPRON):
A [-focus] proform ("min = max")[5] is adjoined to the maximal extended VP of its case–assigning verb.

(9) STAY:
Trace is not allowed. (Grimshaw 1997: 374)

SHIFTPRON is satisfied if the pronoun is adjoined to the top VP, as illustrated in (11) below.[6] Following Fox & Pesetsky (2005a), HG will be assumed to result from a high ranking condition on order preservation (see also Müller 2001a).

(10) ORDER PRESERVATION (ORDPRES):
An independently moved constituent[7] α must not precede a non-adverbial constituent β if α (or parts of α) followed β at the point in the derivation where case assignment took place.[8]

The ranking ORDPRES >> SHIFTPRON >> 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.)

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[4] 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.

[5] On the "min = max" condition, see Appendix 1.

[6] The ranking SHIFTPRON >> STAY predicts that OS is obligatory. 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.)

[7] It is essential that because of the wording "independently moved constituent", 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. In other words, the constituents inside the topicalised VP are not seen as "independently moved constituents".

[8] This means that two kinds of movement Shift cannot possibly violate order preservation: **DP-movement into a case-marked position** (e.g. passivisation, subject raising, and movement across a verb particle as in section 3.2 below) and **head movement necessary for case assignment** (e.g. particle incorporation as in section 3.2 below).
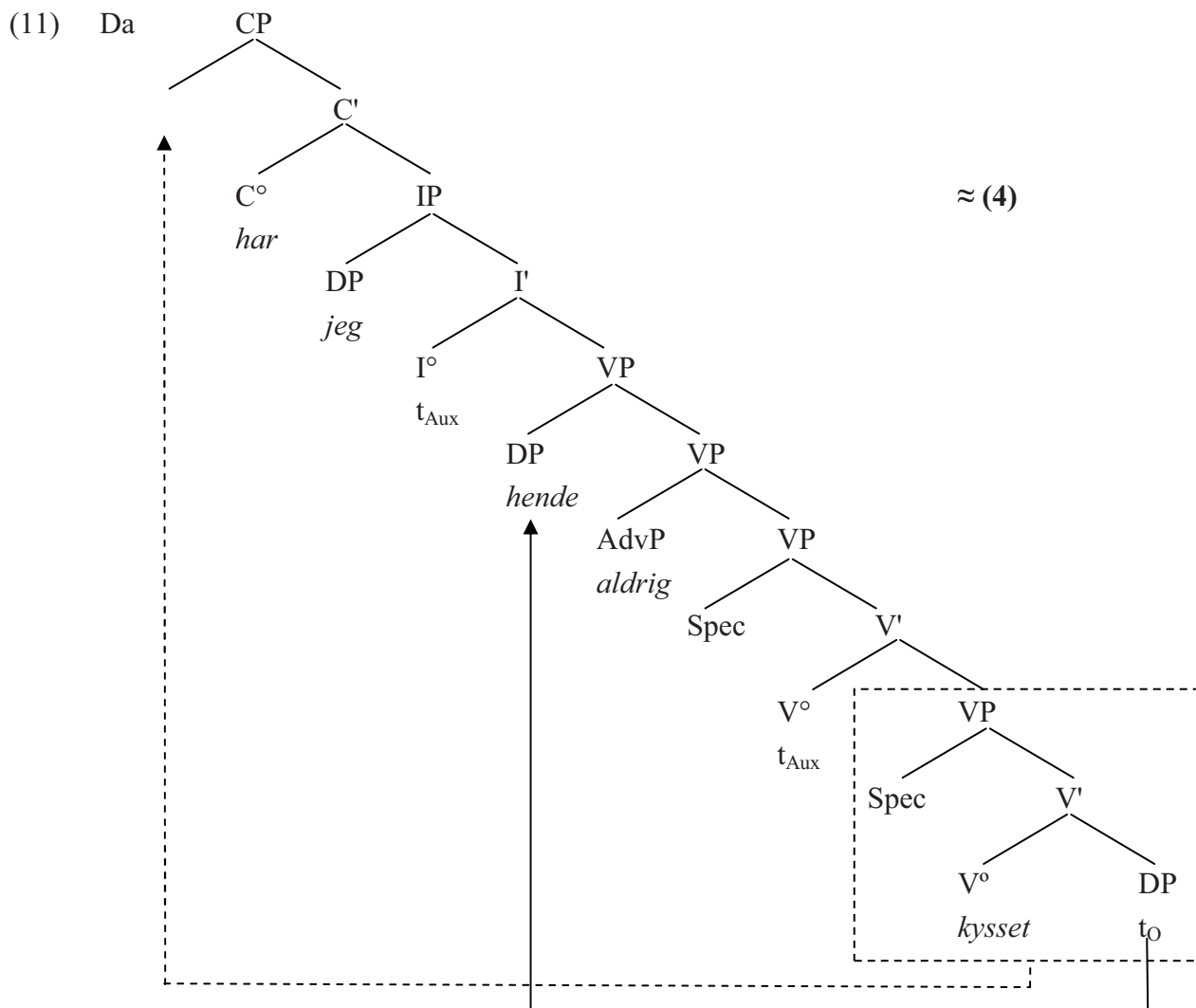
(11) Da

```
        CP
          \
          C'
         /  \
       C°    IP
      har   /  \
          DP    I'
          jeg  /  \
             I°   VP
            t_Aux /  \
               DP     VP
              hende  /  \
                  AdvP   VP
                 aldrig /  \
                    Spec    V'
                           /  \
                         V°    VP
                        t_Aux /  \
                           Spec   V'
                                 /  \
                               V°    DP
                             kysset  t_O
```

≈ **(4)**

Tableau 1: OS & Holmberg's generalisation

Da				ORD PRES	SHIFT PRON	STAY	ex.
V *in situ*	☞	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_O	*!		*	(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_O			*	(1)b
VP in SpecCP		3a	[_VP <u>V</u> t_O] Aux S Adv <u>Pron-O</u> t_VP		*!		(5)b
	☞	3b	[_VP <u>V</u> t_O] Aux S <u>Pron-O</u> Adv t_VP			*	(4)/(11)

(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 (11) above. The OT constraint ORDPRES 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.[9]

2.2   Fox & Pesetsky (2005a): Order preservation and cyclic linearization

Fox & Pesetsky (2005a) also discuss OS and remnant VP-topicalisation. They suggest that the order preservation effects arise in the following way: 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 (2005a), 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, (12)b. At CP, Spell-out adds information about the linearisation of the material outside VP, (12)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.

(12)   Da   a.   Jeg   <u>kyssede</u>   <u>hende</u> ikke   ___   ____.
                   I   *kissed*   *her*   *not*

   b.   Spell-out VP: [$_{VP}$ <u>V</u> <u>O</u>]
         <u>Ordering</u>:   **V<O**

   c.   Spell-out CP: [$_{CP}$ S <u>V</u> [$_{IP}$ t$_S$ <u>O</u> Adv [$_{VP}$ t$_V$ t$_O$]]]
         <u>Ordering</u>:   **S<V**   **V<O**
                          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 OS across the adverb (i.e. the sequence O<Adv) to be possible.

OS across a verb *in situ* as in (3)b, repeated as (13)a, gives rise to contradictory ordering statements. The ordering statements produced at Spell-out of CP, (13)c, are in opposition to the statement "V<O" established at Spell-out of VP, (13)b.

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[9] Notice that OS which is always motivated by the constraint SHIFTPRON cannot force remnant VP-topicalisation because VP-topicalisation violates the higher ranking contraint ORDPRES (the topicalised VP moves across the finite auxiliary and the subject).

(13) Da a. *Jeg   har   <u>hende</u> ikke   kysset ____.
           I   *have* *her*   *not*   *kissed*

   b. Spell-out VP: [$_{VP}$ V <u>O</u>]
      <u>Ordering</u>:   **V<O**

   c. Spell-out CP: [$_{CP}$ S Aux [$_{IP}$ t$_S$ <u>O</u> Adv [$_{VP}$ t$_{Aux}$ [$_{VP}$ V t$_O$]]]]
      <u>Ordering</u>:   **S<Aux**   **V<O**
                           Aux<O
                           O<Adv
                           Adv<VP → Adv<V

Hence, Fox & 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. Correspondingly, the asymmetry between stranding of an IO and stranding of a DO by remnant VP-topicalisation illustrated in (7) 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 (7)a but not in (7)b.

   Note that Fox & Pesetsky (2005a) predict that movement operations that do not obey HG have to proceed in a successive cyclic fashion: The underlined constituents in (14) 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)), topicalisation, and subject movement.

(14) Da a. Måske   har   han   <u>ingen bøger</u> solgt   _____.
           probably   *has* *he*   *no books*   *sold*

   b. <u>Bøgerne</u>   har   jeg   solgt   _____.
      books-the   *have* *I*   *sold*

   c. Måske   blev   <u>bøgerne</u>   solgt   _____.
      perhaps   *were* *books-the*   *sold*

(15) Da a. <u>Bøgerne</u> har jeg solgt _____.   = (14)b
          books-the *have* *I* *sold*

      b. Spell-out VP: [$_{VP}$ <u>O</u> [$_{VP}$ V t$_O$]]
          <u>Ordering</u>: **O<V**

      c. Spell-out CP: [$_{CP}$ <u>O</u> Aux [$_{IP}$ S t$_{Aux}$ [$_{VP}$ t$_O$ V t$_O$]]]
          <u>Ordering</u>: **O<Aux**   **O<V**
                          Aux<S
                          S<VP → S<V

Hence, to Fox & Pesetsky the crucial difference between the various movement operations in (14) 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 2005a: 39).

   Under the OT approach adopted here, this difference between the various movement operations in (14) and OS, i.e. that only OS must preserve the base order, follows from the standard OT-mechanism of constraint ranking: The constraint that motivates OS, SHIFTPRON, is outranked by ORDPRES (see Tableau 1 above), whereas the constraints that motivate the other movements, e.g. TOPIC, outrank ORDPRES. See Tableau 2 below as well as (16) repeated from (14)b above.

(16) Da <u>Bøgerne</u> har jeg solgt _____.
          books-the *have* *I* *sold*

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

Tableau 2: Object topicalisation

Da	TOPIC	ORDPRES	SHIFTPRON	STAY	ex.
a S Aux t$_S$ V <u>O</u>$_{[+top]}$	*!			*	-
☞ b <u>O</u>$_{[+top]}$ Aux S V t$_O$		***		*	(16)

   Note also that Fox & Pesetsky (2003, 2005a,b) make an incorrect prediction concerning remnant VP-topicalisation in constructions with an auxiliary *in situ* (see also section 3.4 below). They assume that auxiliary verbs are merged outside *v*P (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, which incorrectly predicts that the sequence O<Aux is possible (because it is consistent with the ordering statements previously established, none of which mention the auxiliary at all). Fox & Pesetsky (2005b: 252) even go so far as to draw a tree diagramme of the problematic structure, but then they claim, following Holmberg (2005: 151) their prediction cannot be checked because VP-topicalisation is impossible across an auxiliary *in situ* anyway, regardless of whether or not OS out of the VP has taken place first. However, as shown in (18), this is incorrect: VP-topicalisation is actually possible across

an auxiliary *in situ*, but remnant VP-topicalisation is not; the object can neither precede nor follow the auxiliary *in situ*.

(18) Da a. [VP Kysse <u>hende</u>] har jeg aldrig villet.
          kiss   her   *have I*   *never   wanted*
     b. *[VP Kysse _____] har jeg aldrig villet <u>hende</u>.
     c. *[VP Kysse _____] har jeg <u>hende</u> aldrig villet.

(19) Sw a. [VP Kyssa <u>henne</u>] har jag aldrig velat.
     b. ??[VP Kyssa _____] har jag aldrig velat <u>henne</u>.
     c. *[VP Kyssa _____] har jag <u>henne</u> aldrig velat.

Tableau 3: Remnant VP-topicalisation across an auxiliary *in situ*

Da		ORD PRES	SHIFT PRON	STAY	ex.
☞ a	[VP V <u>Pron-O</u>] Aux[fin] S Adv Aux[non-fin] tVP		*		(18)a
b	[VP V tO] Aux[fin] S Adv Aux[non-fin] <u>Pron-O</u> tVP		*	*!	(18)b
c	[VP V tO] Aux[fin] S <u>Pron-O</u> Adv Aux[non-fin] tVP	*!		*	(18)c

In the present OT approach, the ungrammaticality of (18)c follows from all (non-adverbial) elements being relevant for ORDPRES, which includes any auxiliaries *in situ*. The ill-formedness of (18)b and (19)b shows that since ORDPRES makes it impossible to comply with SHIFTPRON, there is no reason for the object to leave the VP.

Notice further that although these examples, (18) and (19), have a non-finite auxiliary *in situ* (as do the ungrammatical examples in Holmberg (2005: 151) that Fox & Pesetsky (2005b: 252) refer to), this is not the only possible case of auxiliaries *in situ*. In embedded clauses, finite auxiliaries remain *in situ* in Mainland Scandinavian, and also here topicalisation of the entire VP (but not of a remnant VP) is possible, and also here Fox & Pesetsky (2005b: 252) make the wrong prediction, as discussed in section 3.4 below.

3 Asymmetries in Object Shift and remnant VP-topicalisation

3.1 Stranding of a DO vs. stranding of an IO

As mentioned in section 1 above, there is an asymmetry between stranding of an IO and stranding of a DO during remnant VP-topicalisation; cf. (7) repeated in (20). This asymmetry is captured by the ranking ORDPRES >> SHIFTPRON.

(20)   Sw a.   ?[VP   Gett   <u>henne ___</u>]   har   jag <u>den</u>   inte.
                      given   *her*   *have* *I* *it*   *not*
          b.   *[VP   Gett   <u>___ den</u>]   har   jag <u>henne</u> inte.   (Fox & Pesetsky 2005a: 25)

Note that also both objects of a double object construction may be taken along, (21)a, or both of them may be stranded by remnant VP-topicalisation, (21)b.

(21)   Da a.   [VP   Givet   <u>hende</u> <u>den</u>]   har   jeg   ikke.
                      given   *her* *it*   *have* *I*   *not*
          b.   ?[VP   Givet   <u>___ ___</u>]   har   jeg <u>hende</u> <u>den</u>   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 4 and Tableau 5.

Tableau 4: Remnant VP-topicalisation that strands both IO and DO

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			*!*		(21)a
b	[VP **V** <u>Pron-IO</u> t_DO] Aux S <u>Pron-DO</u> Adv t_VP			*!	*	(20)a
c	[VP **V** t_IO <u>Pron-DO</u>] Aux S <u>Pron-IO</u> Adv t_VP		*!	*	*	(20)b
☞ d	[VP **V** t_IO t_DO] Aux S <u>Pron-IO</u> <u>Pron-DO</u> Adv t_VP				**	(21)b

Tableau 5: 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			**		(21)a
b	[VP **V** **<u>Pron-IO</u>** t_DO] Aux S **<u>Pron-DO</u>** Adv t_VP	*!		*	*	(20)a
c	[VP **V** t_IO **<u>Pron-DO</u>**] Aux S **<u>Pron-IO</u>** Adv t_VP	*!	*	*	*	(20)b
d	[VP **V** t_IO t_DO] Aux S **<u>Pron-IO</u>** **<u>Pron-DO</u>** Adv t_VP	*!*			**	(21)b

Recall that ORDPRES, (10), refers to *independently moved constituents*. As a consequence, the number of ORDPRES-violations (namely, one for each crossed constituent) induced by VP-topicalisation is

independent of how many constituents are included in the topicalised VP.[10]

As Tableau 4 and Tableau 5 show, SHIFTPRON favours stranding of a pronoun, but this is 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 >> SHIFTPRON. Remnant VP-topicalisation with OS of a DO maintains the VP-internal ordering relations, satisfying ORDPRES (see Tableau 6). 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 (20)a, the c-command relations are not: Neither the verb nor the IO c-commands the shifted DO.

In contrast, remnant VP-topicalisation with OS of an IO does not re-establish the base order relations. The violation of ORDPRES therefore rules out stranding of the IO in OS position, see Tableau 7 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 5 and Tableau 7. (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 (21)b, Tableau 5.)

Tableau 6: Remnant VP-topicalisation that strands DO

Da/Sw	Topic: V & Pron-IO	TOPIC	ORD PRES	SHIFT PRON	STAY	ex.
a	[$_{VP}$ **V Pron-IO** Pron-DO] Aux S Adv t$_{VP}$			**!		(21)a
☞ b	[$_{VP}$ **V Pron-IO** t$_{DO}$] Aux S Pron-DO Adv t$_{VP}$			*	*	(20)a
c	[$_{VP}$ **V** t$_{IO}$ Pron-DO] Aux S **Pron-IO** Adv t$_{VP}$	*!	*	*	*	(20)b
d	[$_{VP}$ **V** t$_{IO}$ t$_{DO}$] Aux S **Pron-IO** Pron-DO Adv t$_{VP}$	*!			**	(21)b

Tableau 7: No remnant VP-topicalisation that strands IO

Da/Sw	Topic: V & Pron-DO	TOPIC	ORD PRES	SHIFT PRON	STAY	ex.
☞ a	[$_{VP}$ **V** Pron-IO **Pron-DO**] Aux S Adv t$_{VP}$			**		(21)a
b	[$_{VP}$ **V** Pron-IO t$_{DO}$] Aux S **Pron-DO** Adv t$_{VP}$	*!		*	*	(20)a
c	[$_{VP}$ **V** t$_{IO}$ **Pron-DO**] Aux S Pron-IO Adv t$_{VP}$		*!	*	*	(20)b
d	[$_{VP}$ **V** t$_{IO}$ t$_{DO}$] Aux S Pron-IO **Pron-DO** Adv t$_{VP}$	*!			**	(21)b

More generally, the ranking ORDPRES >> SHIFTPRON predicts that stranding of an object during remnant VP-topicalisation is only acceptable if the object is right-peripheral within VP. As shown in (22) and (23), 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, (22), or with a verb and an additional PP-complement, (23) (see Appendix 3 for an analysis).

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[10] Furthermore, we are here assuming that OS of two objects take place as two independent movements, (21)b and candidate d in Tableau 4-Tableau 7. In (75) and Tableau 2121 in Appendix I below, we show how this is due to SHIFTPRON. This might seem to open the possibility of multiple OS in which the DO precedes the IO, but such a candidate will never be optimal, as it will have exactly the same constraint violations as candidate d in Tableau 4-Tableau 7 **plus** an additional violation of ORDPRES.

(22) 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)

(23) 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.

As mentioned above, Holmberg's generalisation 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-topicalisation. In the present OT-analysis, this follows from the constraint ORDPRES and its dominance over SHIFTPRON.

3.2   Particle verbs and *let*-constructions in Danish vs. Swedish

The order preservation approach to OS and remnant VP-topicalisation advocated here is also supported by the contrast between Danish and Swedish particle verbs and *let*-constructions.

Vikner (1987: 263) and Haegeman & Guéron (1999:257-258), among others, suggest that particle constructions have a parallel structure to prepositional constructions, i.e. that the particle (Prt°) is the head of a particle phrase (PrtP), and that this head may be followed by a complement DP. Haegeman & Guéron (1999:257-258) further suggest that unlike prepositions, particles do not assign case to their complement DPs, and that in English, there are two ways out of this predicament, DP-movement and particle incorporation. Vikner (2009: 5-6) implements these two as follows: Either the DP moves to the specifier of the PrtP where it can be assigned case by the verb (much like ECM, exceptional case marking), or the particle incorporates into the verb, which allows the case assignment properties of the verb to be shared with the particle, so that the DP may now be assigned case by the trace of the particle. Both of these are found in English and Norwegian (with full DPs, at least), whereas Danish only allows DP-movement, (24), and Swedish only allows particle incorporation, (25):

(24) Da a. *Jeg har   [_{VP} smidt   [_{PrtP}   ud   tæppet]]
             I   *have*   *thrown*   *out* *carpet-the*
     b. Jeg har   [_{VP} smidt   [_{PrtP} tæppet   ud   _____]]

(25) Sw a. Jag har   [_{VP} kastat [_{PrtP}   bort mattan]]
             I   *have*   *thrown*   *out* *carpet-the*
     b. *Jag har   [_{VP} kastat [_{PrtP} mattan   bort _____]]

We would like to suggest that the difference between the Obj<Prt sequence in Danish and the Prt<Obj one in Swedish can be accounted for by means of three constraints: CASE, which penalises DPs that are not assigned case, NO INCORPORATION, which penalises particle incorporation as a means of achieving case assignment, and NO EXCEPTIONAL CASE MARKING, which penalises the DP moving to Spec,PrtP in order to be assigned case from the verb.

(26)   CASE:
         DPs must be Case-marked.   (Grimshaw 1997: 374)

(27)   NO INCORPORATION (NO INC):
         A head must not incorporate into a lexical verb.

(28)   NO EXCEPTIONAL CASE MARKING (NO ECM):
         A head must not assign Case to the specifier of its complement.

In Danish, NO INCORPORATION is ranked higher than NO EXCEPTIONAL CASE MARKING, whereas in Swedish, it is the opposite, NO ECM overrides NO INC, as seen in the tableaux for (24) and (25):

Tableau 8: Particle verb construction in Danish

Da			CASE	NO INC	NO ECM	ORD PRES	SHIFT PRON	STAY	Ex.
	a S Aux V	Prt DP	*!			?			(24)a
	b S Aux V-Prt	t$_{Prt}$ DP		*!				*	(24)a
☞	c S Aux V	DP Prt t$_O$			*			*	(24)b

Tableau 9: Particle verb construction in Swedish

Sw			CASE	NO ECM	NO INC	ORD PRES	SHIFT PRON	STAY	ex.
	a S Aux V	Prt DP	*!			?			(25)a
☞	b S Aux V-Prt	t$_{Prt}$ DP			*			*	(25)a
	c S Aux V	DP Prt t$_O$		*!				*	(25)b

There are no violations of SHIFTPRON in Tableau 8 and Tableau 9, as the complement DP is not a pronoun. Presumably there are no violations of ORDPRES either, as the two movements, particle incorporation (candidate b) and DP-movement (candidate c), both take place before case assignment and thus do not affect ORDPRES. As for the question whether there are any violations of ORDPRES in candidate a, this is clearly not crucial, given that the candidate violates the highest ranking constraint, CASE. In fact, we would like to suggest that CASE is part of the generator, i.e. that the evaluation procedure never even gets to evaluate candidates like candidate a, as the generator does not generate any candidates that violate CASE. Therefore the tableaux below will only consider versions of what corresponds to candidates b and c in Tableau 8 and Tableau 9.

Consider now cases similar to (24) and (25) above, but where the DP in question is a pronoun which is [-focus], i.e. cases where SHIFTPRON is potentially violated: The particle follows the pronoun in Danish, (29), as Danish only allows DP-movement, but the particle precedes the pronoun within VP in Swedish, (30), as Swedish only allows particle incorporation. Since the main verb stays *in situ*, OS is expected to be ungrammatical; cf. the (c)-examples in (29) and (30).

(29) Da a. *Jeg har   ikke [_{VP} smidt [_{PrtP}   ud   <u>det</u>]]
            I   *have*   *not*   *thrown*   *out*   *it*
       b.   Jeg har   ikke [_{VP} smidt [_{PrtP} <u>det</u> ud   ___]]
       c. *Jeg har   <u>det</u> ikke [_{VP} smidt [_{PrtP} ___   ud   ___]]

(30) Sw a.   Jag har   inte [_{VP} kastat [_{PrtP}   bort   <u>den</u>]]
            I   *have*   *not*   *thrown*   *out*   *it*
       b. *Jag har   inte [_{VP} kastat [_{PrtP} <u>den</u> bort   ___]]
       c. *Jag har   <u>den</u> inte [_{VP} kastat [_{PrtP} ___   bort   ___]]

As Tableau 10 and Tableau 11 show, the difference between the Obj<Prt sequence in Danish and the Prt<Obj one in Swedish can be seen here without interference from OS: The order is determined by the ranking of NO INC and NO ECM. The c and d candidates with OS are suboptimal because they violate ORDPRES, given that the verb is *in situ*.[12]

Tableau 10: OS with particle verb *in situ* in Danish

Da				NO INC	NO ECM	ORD PRES	SHIFT PRON	STAY	ex.
a	S Aux	Adv V-Prt	t_{Prt} <u>Pron-O</u>°	*!			*	*	(29)a
☞ b	S Aux	Adv V <u>Pron-O</u> Prt	t_O		*		*	*	(29)b
c	S Aux <u>Pron-O</u> Adv V-Prt		t_{Prt} t_O	*!		**		**	(29)c
d	S Aux <u>Pron-O</u> Adv V t'_O		Prt t_O		*	*!		**	(29)c

Tableau 11: OS with particle verb *in situ* in Swedish

Sw				NO ECM	NO INC	ORD PRES	SHIFT PRON	STAY	ex.
☞ a	S Aux	Adv V-Prt	t_{Prt} <u>Pron-O</u>		*		*	*	(30)a
b	S Aux	Adv V <u>Pron-O</u> Prt	t_O	*!			*	*	(30)b
c	S Aux <u>Pron-O</u> Adv V-Prt		t_{Prt} t_O		*	*!*		**	(30)c
d	S Aux <u>Pron-O</u> Adv V t'_O		Prt t_O	*!		*		**	(30)c

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[12] Whether the verb *in situ* and the incorporated particle, which are both crossed in candidate c, count as two distinct constituents or just one is not crucial, not even in Tableau 11, since one violation of ORDPRES is sufficient to rule out the candidate.

Consider now the interaction between OS and particle verbs. If the particle verb is itself finite and thus moves to C° because of V2, the object of a particle verb has to undergo OS in Danish, (31), but it cannot do so in Swedish, (32):

(31) Da a. *Jeg smed   ikke [VP ___   [PrtP   ud   <u>det</u>]].
                I   *threw*   *not*   *out* *it*
        b. *Jeg smed   ikke [VP ___   [PrtP <u>det</u> ud   ___]].
        c. Jeg smed <u>det</u> ikke [VP ___   [PrtP   ud   ___]].

(32) Sw a. Jag kastade   inte [VP ___   [PrtP   bort <u>den</u>]].
                I   *threw*   *not*   *out* *it*
        b. *Jag kastade   inte [VP ___   [PrtP <u>den</u> bort ___]]
        c. *Jag kastade <u>den</u> inte [VP ___   [PrtP   bort ___]].

As shown in Tableau 12 and Tableau 13, ORDPRES plays no part in the choice between the two non-incorporating candidates, b and d, as neither candidate violates it (the verb has moved, the particle was crossed before case assignment). The crucial constraint in the Danish Tableau 12 then becomes SHIFTPRON, which favours the candidate with OS. ORDPRES does play a part, however, in the choice between the two incorporating candidates, a and c (see the Swedish Tableau 13), as it is fatally violated by c, where the particle is crossed after case assignment.

Tableau 12: OS with moved particle verb in Danish

Da				No Inc	No ECM	Ord Pres	Shift Pron	Stay	ex.
	a	S V	Adv t_V-Prt t_{Prt} <u>Pron-O</u>	*!			*	*	0a
	b	S V	Adv t_V <u>Pron-O</u> Prt t_O		*		*!	*	0b
	c	S V <u>Pron-O</u> Adv t_V-Prt t_{Prt} t_O		*!		*		**	0c
☞	d	S V <u>Pron-O</u> Adv t_V t'_O Prt t_O			*			**	0c

Tableau 13: OS with moved particle verb in Swedish

Sw				No ECM	No Inc	Ord Pres	Shift Pron	Stay	ex.
☞	a	S V	Adv t_V-Prt t_{Prt} <u>Pron-O</u>		*		*	*	0a
	b	S V	Adv t_V <u>Pron-O</u> Prt t_O	*!			*	*	0b
	c	S V <u>Pron-O</u> Adv t_V-Prt t_{Prt} t_O		*	*!		**		0c
	d	S V <u>Pron-O</u> Adv t_V t'_O Prt t_O	*!				**		0c

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[14] Candidate a in Tableau 15 (which also corresponds to a grammatical sentence, (34)a), presumably wins a competition different from Tableau 15, namely the one where the object is also marked for topichood. In the competitions discussed in this subsection, Tableau 10-Tableau 15, the object is not marked for topichood, although the verb and the particle are.

We are now in a position to consider the interaction between particle verbs and remnant VP-topicalisations. In Danish, the only option is to topicalise the entire VP, (33). In Swedish, on the other hand, remnant VP-topicalisation is possible, (34).

(33) Da a. *[_{VP} Lukket   ind   <u>den</u>]   har   jeg   ikke ...
          *let   in   it   have   I   not

     b. [_{VP} Lukket   <u>den</u>   ind   ___]   har   jeg   ikke ...

     c. *[_{VP} Lukket   ind   ___]   har   jeg   <u>den</u>   ikke ...

(34) Sw a. [_{VP} Släppt   in   <u>den</u>]   har   jag   inte ...
          let   in   it   have   I   not

     b. *[_{VP} Släppt   <u>den</u>   in   ___]   har   jag   inte ...

     c. [_{VP} Släppt   in   ___]   har   jag   <u>den</u>   inte ...

((34)c is from Holmberg 2005: 148)

Tableau 14 and Tableau 15 in a certain sense present a mirror image of Tableau 12 and Tableau 13 above: Because the particle here is part of the remnant VP that moves to Spec,CP, ORDPRES does not play a part in the choice between the two incorporating candidates, a and c, as the order remains V<Prt<Obj. The crucial constraint in the Swedish Tableau 15 then becomes SHIFTPRON, which favours the candidate with OS.[14] ORDPRES does play a part, however, in the choice between the two non-incorporating candidates, b and d (see the Danish Tableau 14), as it is fatally violated by d, where the order is Prt<Obj at the surface, but it was Obj<Prt at case assignment.

Tableau 14: OS with remnant VP-topicalisation of particle verb in Danish

Da	Topic: V & Prt	NO INC	NO ECM	ORD PRES	SHIFT PRON	STAY	ex.
a	[_{VP} **V-Prt** t_{Prt} <u>Pr-O</u>] Aux S Adv t_{VP}	*!			*	*	(33)a
☞ b	[_{VP} **V** <u>Pr-O</u> **Prt** t_O] Aux S Adv t_{VP}		*		*	*	(33)b
c	[_{VP} **V-Prt** t_{Prt} t_O] Aux S <u>Pr-O</u> Adv t_{VP}	*!				**	(33)c
d	[_{VP} **V** t'_O **Prt** t_O] Aux S <u>Pr-O</u> Adv t_{VP}		*	*!		**	(33)c

Tableau 15: OS with remnant VP-topicalisation of particle verb in Swedish

Sw	Topic: V & Prt	NO ECM	NO INC	ORD PRES	SHIFT PRON	STAY	ex.
a	[_{VP} **V-Prt** t_{Prt} <u>Pr-O</u>] Aux S Adv t_{VP}		*		*!	*	(34)a
b	[_{VP} **V** <u>Pr-O</u> **Prt** t_O] Aux S Adv t_{VP}	*!			*	*	(34)b
☞ c	[_{VP} **V-Prt** t_{Prt} t_O] Aux S <u>Pr-O</u> Adv t_{VP}		*			**	(34)c
d	[_{VP} **V** t'_O **Prt** t_O] Aux S <u>Pr-O</u> Adv t_{VP}	*!		*		**	(34)c

The situation in *let*-constructions is parallel to the one in particle verb constructions. In Danish, the object of a subjectless infinitive under the causative verb *let* precedes the infinitival verb, (35), whereas it follows the infinitive in Swedish, (36); see Vikner (1987: 262-266) and many others.

(35) Da a. *Jeg har   [VP ladet [VP   støvsuge   tæppet]]
          I   have   let   vacuum-clean carpet-the
       b. Jeg har   [VP ladet [VP tæppet støvsuge   _____]]
                                             (adapted from Vikner 1987: 262)

(36) Sw a. Jag har   [VP låtit [VP   dammsuga   mattan]]
          I   have   let   vacuum-clean carpet-the
       b. *Jag har   [VP låtit [VP mattan dammsuga   _____]]
                                             (adapted from Vikner 1987: 262)

In the present analysis, this contrast again follows from differences in the relative ranking of NoINC and NoECM. In Danish, the object undergoes movement to SpecVP to be assigned case (NoINC >> NoECM) while the infinitival verb incorporates into *let* in Swedish to make case assignment possible (NoECM >> NoINC). This is thus completely parallel to Tableau 8 and Tableau 9.

If *let* now undergoes finite verb movement, OS becomes possible in Danish, (37), but not in Swedish, where the object would have to move across the infinitival verb, violating ORDPRES, (38). This is thus exactly the same situation as in Tableau 12 and Tableau 13.

(37) Da a. *Jeg lod   ikke [VP ____ [PrtP   støvsuge   det]].
          I   let   not   vacuum-clean it
       b. *Jeg lod   ikke [VP ____ [PrtP det støvsuge   ____]].
       c. Jeg lod   det   ikke [VP ____ [PrtP ____ støvsuge   ____]].
                                             (adapted from Vikner 1989: 145)

(38) Sw a. Jag lät   inte [VP ____ [PrtP   dammsuga   den]].
          I   let   not   vacuum-clean it
       b. *Jag lät   inte [VP ____ [PrtP den dammsuga   ____]]
       c. *Jag lät   den   inte [VP ____ [PrtP ____ dammsuga   ____]]

In contrast, if the infinitive undergoes VP-topicalisation together with non-finite *let*, stranding of the object is impossible in Danish as it is non-peripheral within VP, (39), whereas it is acceptable in Swedish, where the relative ordering between VP-internal constituents is maintained, (40). This situation is thus the same as the one analysed in Tableau 14 and Tableau 15:

(39) Da   Jeg har godt nok bemærket at at der ligger en del krummer på tæppet i spisesalen men...

        (*I did notice that there are a lot of crumbs on the carpet in the dining hall, but ...*)

a.	*... [VP ladet		støvsuge	<u>det</u>]	har	jeg	ikke.
			vacuum-clean	*it*	*have*	*I*	*not*
b.	... [VP ladet	<u>det</u>	støvsuge	____]	har	jeg	ikke.
c.	*... [VP ladet		støvsuge	____]	har	jeg	<u>det</u> ikke.

(40) Sw   Jag har nog märkt att det ligger en del smulor på mattan i matsalen, men ...

        (*I did notice that there are a lot of crumbs on the carpet in the dining hall, but ...*)

a.	... [VP låtit		dammsuga	<u>den</u>]	har	jag	inte.
			vacuum-clean	*it*	*have*	*I*	*not*
b.	* ... [VP låtit	<u>den</u>	dammsuga	____]	har	jag	inte.
c.	?... [VP låtit		dammsuga	____]	har	jag	<u>den</u> inte.

                                       (Anders Holmberg, p.c.)

Furthermore, notice that if the infinitive has an overt subject, the object follows the infinitival verb in both Danish and Swedish, see (41) and (42).

(41) Da a.

	Jeg	har	ladet	Poul	støvsuge	<u>tæppet</u>.
	I	*have*	*let*	*Poul*	*vacuum-clean*	*carpet-the*
b.	*Jeg	har	ladet	Poul	<u>tæppet</u> støvsuge	_____.

(42) Sw a.

	Jag	har	låtit	Paul	dammsuga	<u>mattan</u>.
	I	*have*	*let*	*Paul*	*vacuum-clean*	*carpet-the*
b.	*Jag	har	låtit	Paul	<u>mattan</u> dammsuga	_____.

If *let* is finite and thus undergoes V°-to-I°-to-C° movement, OS of the infinitival subject is possible while OS of the infinitival object is prohibited, as it would have to cross the infinitival verb.

(43) Da a.

	*Jeg	lod	ikke	<u>ham</u>	støvsuge	<u>det</u>.
	I	*let*	*not*	*him*	*vacuum-clean*	*it*
b.	Jeg	lod <u>ham</u>	ikke ___		støvsuge	<u>det</u>.
c.	*Jeg	lod <u>ham</u>	<u>det</u> ikke ___		støvsuge	___.

(44) Sw a.

	Jag	lät	inte	<u>honom</u>	dammsuga	<u>den</u>.
	I	*let*	*not*	*him*	*vacuum-clean*	*it*
b.	Jag	lät <u>honom</u>	inte _____		dammsuga	<u>den</u>.
c.	*Jag	lät <u>honom</u>	<u>den</u> inte _____		dammsuga	___.

Moreover, if the infinitive undergoes VP-topicalisation together with non-finite *let*, neither the infinitival subject nor the infinitival object may be stranded; cf. (45) and (46).

(45) Da Jeg har godt nok bemærket at at der ligger en del krummer på tæppet i spisesalen men...
(I did notice that there are a lot of crumbs on the carpet in the dining hall, but ...)

a.	... [_{VP} ladet	<u>ham</u>	støvsuge	<u>det</u>]	har	jeg	ikke.
	let	*him*	*vacuum-clean*	*it*	*have*	*I*	*not*
b.	*... [_{VP} ladet	___	støvsuge	det]	har	jeg <u>ham</u>	ikke.
c.	*... [_{VP} ladet	<u>ham</u>	støvsuge	___]	har	jeg	<u>det</u> ikke.
d.	*... [_{VP} ladet	___	støvsuge	___]	har	jeg <u>ham</u>	<u>det</u> ikke.

(46) Sw Jag har nog märkt att det ligger en del smulor på mattan i matsalen, men ...
(I did notice that there are a lot of crumbs on the carpet in the dining hall, but ...)

a.	... [_{VP} låtit	<u>honom</u>	dammsuga	<u>den</u>]	har	jag	inte.
	let	*him*	*vacuum-clean*	*it*	*have*	*I*	*not*
b.	*... [_{VP} låtit	_____	dammsuga	<u>den</u>]	har	jag <u>honom</u>	inte.
c.	*... [_{VP} låtit	<u>honom</u>	dammsuga	___]	har	jag	<u>den</u> inte.
d.	*... [_{VP} låtit	_____	dammsuga	___]	har	jag <u>honom</u>	<u>den</u> inte.

That OS of the infinitival subject is not possible under remnant VP-topicalisation is expected in the present analysis since the infinitival subject occurs in a non-peripheral position. The infinitival object cannot be stranded although it is right-peripheral within VP. Stranding of the infinitival object is ruled out by the fact that SHIFTPRON requires adjunction to the maximal extended VP of the case-assigning verb (see the definition in (8) above). As the object is assigned case by (only) the infinitival verb in the presence of an infinitival subject, SHIFTPRON does not require the object to adjoin as high as to the extended VP of *let*; instead, the object would have to adjoin to the infinitival VP to satisfy SHIFTPRON, which is ruled out by the higher ranking constraint ORDPRES.[16] (The infinitival subject, in contrast, is assigned case by *let* and may thus undergo OS into the matrix clause as long as order preservation is observed.)

Summing up, the contrasts between Danish and Swedish as to OS and remnant VP-topicalisation with particle verbs and *let*-constructions discussed in this subsection support the order preservation approach suggested here. Due to differences in case assignment captured by the relative ranking of NOINC and NoECM, an object precedes particle and subjectless infinitival verb in Danish but follows them in Swedish. As a consequence, the two languages display mirror images with regard to OS in these constructions. The ranking ORDPRES >> SHIFTPRON predicts that OS is only possible if it retains the VP-internal ordering relations. Finite verb movement of the particle verb/*let* paves the way for OS in Danish but not in Swedish, where the object would still have to cross the particle/infinitival verb. In contrast, stranding of the object during remnant VP-topicalisation is possible in Swedish but not in Danish as the object is right-peripheral within VP in the former but not in the latter. Though right-peripheral, stranding of an object during remnant VP-topicalisation is ruled out in *let*-constructions with an infinitival subject due to the fact that *let* is not involved in assigning case to the object and

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[16] Notice that the ungrammaticality of (45)c and (46)c shows that constraint SHIFTPRON must require surface occurrence of a weak pronoun in OS position and cannot be satisfied by a trace. Otherwise, the examples in (45)c and (46)c with further movement from the position adjoined to the infinitival VP to the higher position adjoined to the extended *let*-VP would be expected to be optimal under the ranking ORDPRES >> SHIFTPRON >> STAY.

SHIFTPRON thus does not require the object to move as high up.[17]

3.3   Stranding of a subject vs. stranding of an object

As shown in the preceding sections, the ranking ORDPRES >> SHIFTPRON predicts that remnant VP-topicalisation may strand an object in OS position as long as the VP-internal precedence relations are maintained. 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 and the contrast between Danish and Swedish regarding remnant topicalisation of particle verbs and *let*-constructions.

In addition, there is an asymmetry between stranding of an object and stranding of a subject during 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 (47)a/(48)a vs. (47)b/(48)b.

(47) Da a. *[VP Lukket   ___   ind]   har   jeg   <u>den</u>   ikke.
                    let   *in*   *have* *I*   *it*   *not*
        b.   [VP Lukket   ___   ind]   blev   <u>den</u>   ikke.
                    let   *in*   *was*   *it*   *not*

(48) Da a. *[VP Stillet   ___ på bordet] har   jeg   <u>det</u>   ikke.
                    put   *on table-the* *have* *I*   *it*   *not*
        b. ?[VP Stillet   ___ på bordet] blev   <u>det</u>   ikke.
                    put   *on table-the* *was*   *it*   *not*

As stated in the definition in (10), ORDPRES is violated if ordering relations between non-adverbial constituents are changed after the point in derivation where case assignment takes place. Given that subject movement to SpecIP is driven by case (and therefore takes place before case assignment), it does not count for ORDPRES. As a consequence, remnant VP-topicalisation is expected to be able to strand a non-peripheral DP in subject position though it cannot strand a non-peripheral DP in OS position.[18]

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[17] Notice that in this discussion of particle verbs, we have completely disregarded the constraint tie between STAY <> SHIFTPRON in Swedish discussed in footnote 6. Because these two constraints are not "active" in Tableau 11, Tableau 13, and Tableau 15, such a tie would not make any difference for the data concerning particle verbs.

[18] That ORDPRES is based on the order subsequent to movement to subject position is supported by the fact that movement to subject position does not presuppose verb movement; i.e. subject movement may cross an intervening verb (ib, ic):

(i)   Da a.   Derfor   har   <u>Elsa</u>   ikke   ___   ringet.
                   therefore *has*   *Elsa*   *not*   *called*
           b.   Derfor   er   <u>Elsa</u>   ikke   kommet ___.
                   therefore *is*   *Elsa*   *not*   *come*
           c.   Derfor   blev   <u>Elsa</u>   ikke   fotograferet ____.
                   therefore *was*   *Elsa*   *not*   *photograhed*

Tableau 16: Stranding of an Object vs. Stranding of a Subject

Da	Topic: V & Prt	SUBJECT	ORDPRES	SHIFTPRON	STAY	Ex.
☞ 1a	[$_{VP}$ **V** <u>Pron-O</u> **Prt**] Aux S Adv t$_{VP}$			*		(33)a
1b	[$_{VP}$ **V** t$_O$ **Prt**] Aux S <u>Pron-O</u> Adv t$_{VP}$		*!		*	(47)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$_{VP}$			*	*	(47)b

Whether or not it is possible to strand a phrase that is non-peripheral within VP during remnant VP-topicalisation is thus a matter of which kind of movement this phrase has undergone, subject movement vs. OS, and whether this movement is subject to order preservation.

3.4   Remnant VP-topicalisation out of a main vs. an embedded clause

Finally, 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), i.e. Danish, Norwegian and Swedish.

While the finite verb undergoes V2 (i.e. V°-to-I°-to-C° movement) in main clauses, it stays *in situ* in embedded clauses in MSc, (49). As a consequence, OS is not possible in embedded clauses (ORDPRES >> SHIFTPRON); cf. (50).

(49)   Da a.   Jeg   spurgte   hvorfor   Peter   aldrig   <u>læste</u>   bogen.
             I   *asked*   *why*   *Peter*   *never*   *read*   *book-the*
       b. *Jeg   spurgte   hvorfor   Peter   <u>læste</u>   aldrig   ____   bogen.

(50)   Da a.   Jeg   spurgte   hvorfor   Peter   aldrig   læste   <u>den</u>.
             I   *asked*   *why*   *Peter*   *never*   *read*   *it*
       b. *Jeg   spurgte   hvorfor   Peter   <u>den</u>   aldrig   læste   ___ .

As shown in (51), full VP may be topicalised from both main clauses and embedded clauses.

(51)   Da a. [_{VP} Set   <u>ham</u>]   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   <u>ham</u>]   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, (52)a, not out of an embedded clause in Danish: The stranded object may neither follow the finite auxiliary (in its base position), (52)b, nor may it precede it, (52)c.

(52)   Da a. ?[_{VP}   Set ____] har   jeg   <u>ham</u>   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] <u>ham</u>, ...

                  seen   *believe* *I*   *not*   *that*   *she*   *has*   *him*

        c. *[_{VP}   Set ____] tror   jeg   ikke   at   hun   <u>ham</u> [_{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 independently, in this case by SHIFTPRON, and does not violate higher ranking principles (ORDPRES). If the object had not been pronominal, none of the candidates would violate SHIFTPRON, and the only well-formed version would be predicted to be full VP-topicalisation. See appendix 1 for discussion of which DPs qualify as pronouns for SHIFTPRON, and see appendix 3 for discussion of different ways of motivating both OS and West Germanic Scrambling.
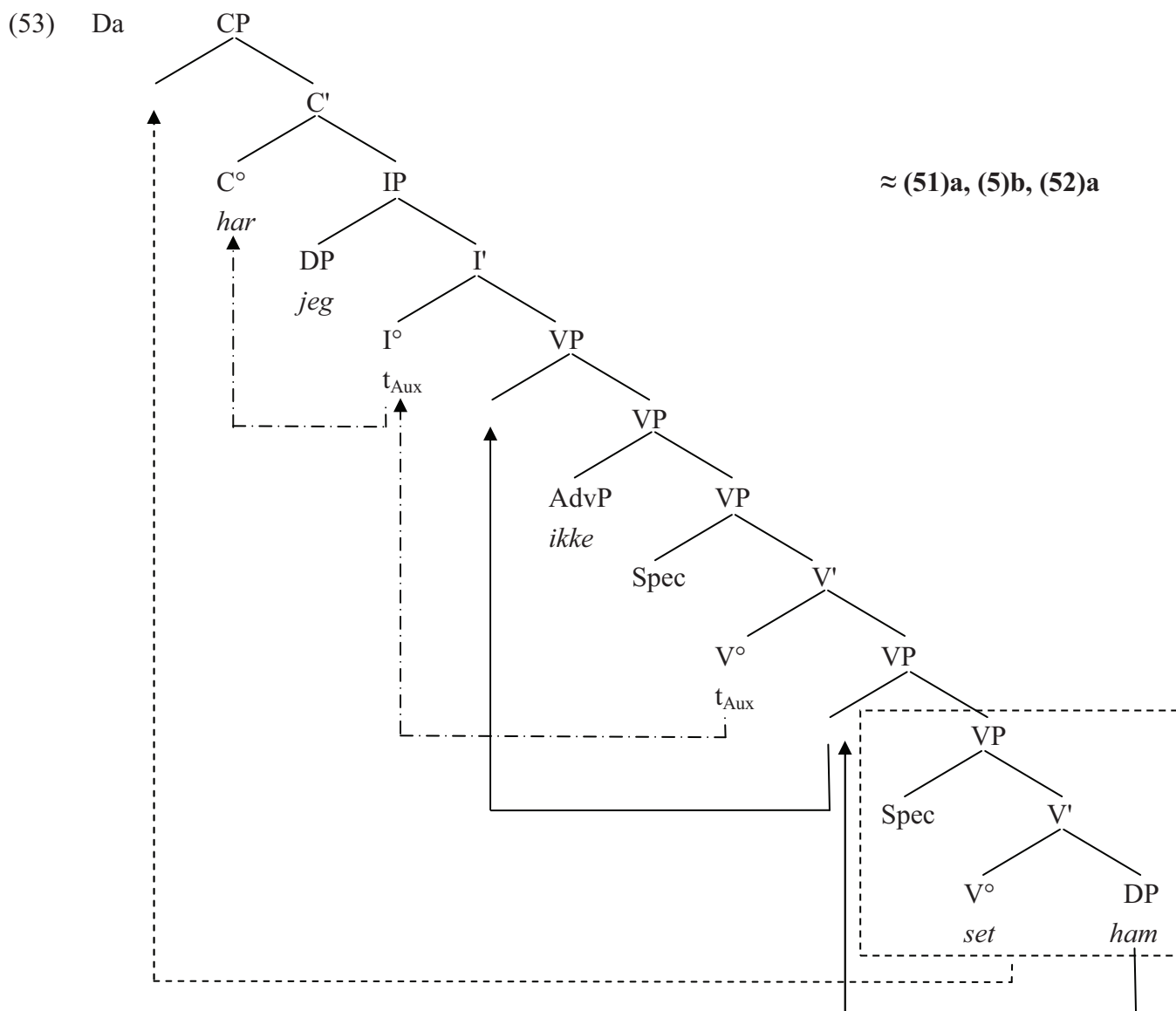
(53) Da

≈ **(51)a, (5)b, (52)a**

Tree (53) labels: CP, C', C° *har*, IP, DP *jeg*, I', I° t$_{Aux}$, VP, VP, AdvP *ikke*, VP, Spec, V', V° t$_{Aux}$, VP, VP, Spec, V', V° *set*, DP *ham*

Tableau 17: Remnant VP-topicalisation out of a main clause

Da	Topic: V	ORDPRES	SHIFTPRON	STAY	ex.
a	[$_{VP}$ **V** <u>Pron-O</u>] Aux S Adv t$_{VP}$		*!		(51)a[19]
b	[$_{VP}$ **V** t$_O$] Aux S Adv <u>Pron-O</u> t$_{VP}$		*!	*	(5)b
☞ c	[$_{VP}$ **V** t$_O$] Aux S <u>Pron-O</u> Adv t$_{VP}$			*	(52)a

---

[19] Candidate a (which also corresponds to a grammatical sentence, (51)a), presumably wins a different competition, namely the one where the object is also marked for topichood. In the two competitions discussed in this subsection, the object is not marked for topichood, only the verb is.

(54)   Da

CP
└─ C'
   ├─ *tror jeg ikke*   CP
   │   ├─ C°
   │   │   *at*
   │   └─ IP
   │   ├─ DP
   │   │   *hun*
   │   └─ I'
   │   ├─ I°
   │   └─ VP
   │   └─ VP
   │   ├─ Spec
   │   └─ V'
   │   ├─ V°
   │   │   *har*
   │   └─ VP
   │   └─ VP
   │   ├─ Spec
   │   └─ V'
   │   ├─ V°
   │   │   *set*
   │   └─ DP
   │   *ham*

≈ **(51)b, (52)b,c**

X   X   X

X   X   X
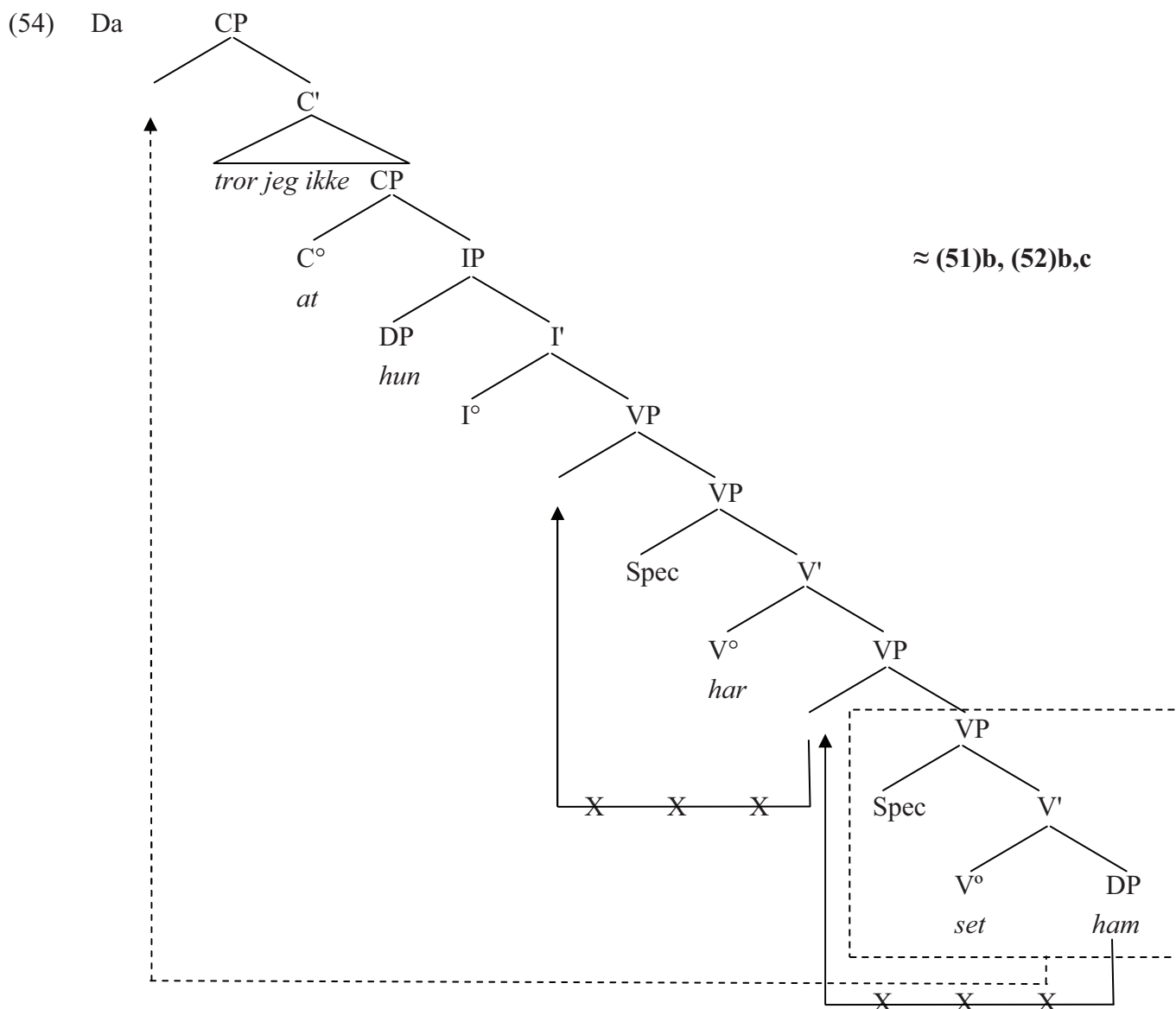
Tableau 18: No remnant VP-topicalisation out of an embedded clause

Da	Topic: V	ORDPRES	SHIFTPRON	STAY	ex.
☞ a	[VP **V** Pron-O] V S Adv Comp S Aux tVP		*		(51)b
b	[VP **V** tO] V S Adv Comp S Aux Pron-O tVP		*	*!	(52)b
c	[VP **V** tO] V S Adv Comp S Pron-O Aux tVP	*!		*	(52)c

VP-topicalisation out of an embedded clause with finite auxiliary *in situ*, (52), is completely parallel to the examples of VP-topicalisation out of a main clause with non-finite auxiliary *in situ* in (18) above, repeated here as (55). In both cases, the presence of an auxiliary *in situ* means that ORDPRES makes it impossible to comply with SHIFTPRON, and there is therefore no reason for the object to leave the VP at all (cf. also that Tableau 18 and Tableau 3 are completely parallel).

(55) Da a. [_{VP} Kysse <u>hende</u>] har jeg   aldrig villet.
                 kiss   her   *have I*   *never wanted*
        b. *[_{VP} Kysse _____] har jeg   aldrig villet <u>hende</u>.
        c. *[_{VP} Kysse _____] har jeg <u>hende</u> aldrig villet.

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-topicalisation in Icelandic. Icelandic which has Vº-to-Iº movement and therefore also OS in embedded clauses (cf. (56) and footnote 2 above), permits a remnant object in VP-topicalisation out of an embedded clause (as opposed to the Danish (52)b,c which are completely ungrammatical).

(56) Ic a. *Ég   spurði   af hverju Pétur   aldrei <u>læsi</u> <u>hana</u>.
             I   asked   why   Pétur   never read it
        b. Ég   spurði   af hverju Pétur <u>læsi</u> <u>hana</u> aldrei _____ _____.
                                                                          (Vikner 2005: 396)

(57) Ic   ?[_{VP} Kysst _____] hélt   ég ekki að   þú   [_{Iº} hefðir] <u>hana</u> 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 SHIFTPRON can be satisfied without violating the higher ranking constraint ORDPRES due to movement of the finite auxiliary: OS is order-preserving; see Tableau 1919 below.

(58) Ic

CP
C'
hélt ég ekki CP
C° IP
að
≈ **(51)b, (52)b,c**
DP I'
þú
I° VP
hefðir
DP VP
hana Spec V'
V° VP
t_{Aux}
VP
Spec V'
V° DP
kysst
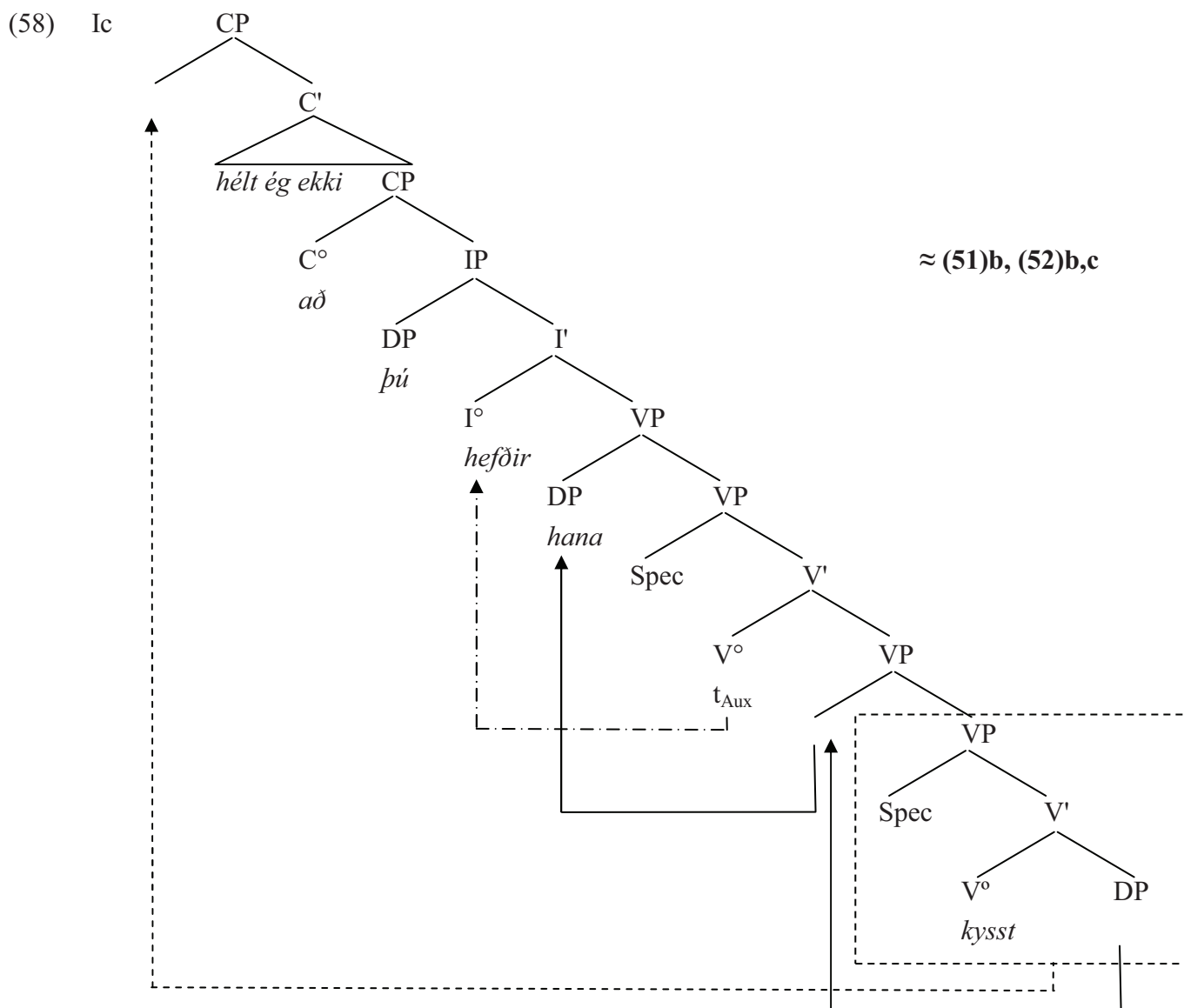
Tableau 19: Remnant VP-topicalisation out of an embedded clause in Icelandic

Ic	Topic: V	ORDPRES	SHIFTPRON	STAY	ex.
a	[$_{VP}$ **V** <u>Pron-O</u>] V S Adv Comp S Aux t_{Aux} t_{VP}		*		-
b	[$_{VP}$ **V** t_O] V S Adv Comp S Aux t_{Aux} <u>Pron-O</u> t_{VP}		*	*!	(57)
☞ c	[$_{VP}$ **V** t_O] V S Adv Comp S Aux <u>Pron-O</u> t_{Aux} t_{VP}			*	(57)

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

(59) Ic a. [_{VP} Kyssa <u>hana</u>] hef ég aldrei viljað ...
           kiss her have I never wanted

       b. *[_{VP} Kyssa ____] hef ég aldrei viljað <u>hana</u> ...

       c. *[_{VP} Kyssa ____] hef ég <u>hana</u> aldrei viljað ...

                           ... bara haldið í höndina á henni.
                           only held in hand-the on her
                           (Gunnar Hrafn Hrafnbjargarson, p.c.)

Finally, note that remnant VP-topicalisation from embedded clauses is possible in passives, i.e. if the phrase left behind occurs in subject position. This follows from the fact that subject movement does not count for ORDPRES (see section 3.3 above).

(60) Da a. [_{VP} Set ____] blev <u>han</u> ikke, ...
            seen was he not

       b. [_{VP} Set ____] tror jeg ikke at <u>han</u> blev, ...
            seen think I not that he was

                     ... men der var nok mange der hørte ham.
                     but there were probably many who heard him

Likewise, long-distance topicalisation of a VP that contains a trace of a *wh*-moved object is possible, (60). In contrast to subject movement, *wh*-movement takes place after case assignment. 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 Tableau 2. 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.

(61) Da a. ?[_{VP} Læst __] ved jeg ikke <u>hvad for nogen bøger</u> 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. ?[_{VP} Smidt ___ ud] ved jeg ikke <u>hvor mange bøger</u> 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-topicalisation out of a main clause and remnant VP-topicalisation 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. SHIFTPRON) and complies with higher ranking principles (e.g. ORDPRES) is stranding during VP-topicalisation possible.

4   Conclusion

Holmberg's well-known generalisation prohibits OS of a DP across non-adverbial constituents to the left of the DP. The present paper argued that the condition on order preservation is more general. As observed by Fox & Pesetsky (2005a), stranding of an object during remnant VP-topicalisation is only possible if it preserves the VP-internal ordering relations.

Based on an extended set of data concerning remnant VP-topicalisation, the present OT-approach considered the condition on order preservation to be a 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. In particular, the ranking ORDPRES >> SHIFTPRON predicts that OS may only take place as long as it is order preserving (section 2.1).

In contrast, Fox & Pesetsky (2005a) suggest a minimalist analysis where Spell-out applies at various points in the derivation (in particular, at VP and at CP) and where the linearisation of the material of a newly constructed Spell-out domain must not contradict the cumulated linearisation information from previous applications of Spell-out. Fox & Pesetsky (2005a) capture that OS differs radically from other types of (A- and A-bar-) movement that may result in a reversal of the order of elements, such as e.g. *wh*-movement or subject raising, by positing that most movements except OS have to proceed successive cyclically via the left edge of VP. In addition, Fox & Pesetsky's (2005a) approach makes incorrect predictions as to remnant VP-topicalisation in constructions with an auxiliary verb *in situ*.

Section 3 discussed four asymmetries as to remnant VP-topicalisation.

The asymmetry between stranding of an IO and stranding of a DO examined in section 3.1 showed that only objects that originate in a right-peripheral position within VP may be left behind during remnant VP-topicalisation, as stranding preserves the VP-internal ordering relations.

The order preservation approach to OS was supported by the contrasts between Danish and Swedish particle verb and *let*-constructions investigated in section 3.2. Differences in the VP-internal object position (V<DP<X in Danish and V<X<DP in Swedish), which were taken to result from differences in case assignment, were argued to give rise to mirror images with regard to OS in clauses with finite verb movement of the matrix main verb (OS possible in Danish but not in Swedish) and remnant VP-topicalisation (OS possible in Swedish but not in Danish).

Moreover, the asymmetry between stranding of a subject and stranding of an object discussed in section 3.3 showed that a non-peripheral trace within a topicalised remnant VP is not problematic as such. Instead, whether or not a non-peripheral phrase may be stranded by remnant VP-topicalisation depends on whether or not the extracting movement operation has to be order preserving.

Finally, the asymmetry between main and embedded clauses as to the applicability of remnant VP-topicalisation in Mainland Scandinavian (section 3.4) illustrated that stranding is only possible if it is independently motivated and complies with higher ranking principles. Hence, stranding of a pronominal object during remnant VP-topicalisation is ruled out as the auxiliary *in situ* prevents OS from complying with order preservation.

Appendix 1: Syntactic complexity of pronouns and "min = max"

In MSc, OS may only apply to weak pronouns, (62) repeated from (1); neither full DPs, (63), nor syntactically complex pronouns, i.e. modified or conjoined ones, (64) and (65), may undergo OS (cf. footnote 4 on full DP shift in Icelandic).

(62) Da a. *Jeg kyssede ikke _____ hende.
  I kissed not her
  b. Jeg kyssede hende ikke _____ _____.

(63) Da a. Hvorfor læste Peter aldrig _____ bogen?
  why read Peter never book-the
  b. *Hvorfor læste Peter bogen aldrig _____ _____?

(64) Da a. Hvorfor læste Peter aldrig _____ den her?
  why read Peter never this here
  b. *Hvorfor læste Peter den her aldrig _____ _____?   (Vikner 2005: 417)

(65) 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.

(66) 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 (8), repeated here as (67).

(67) SHIFT PRONOUN (SHIFTPRON):
  A [-focus] proform ("min = max") must adjoin to the maximal extended VP of its case–assigning verb.

The fact that focused pronouns do not move is captured by the restriction of SHIFTPRON to [-focus] constituents. Furthermore, a syntactically simple pronoun, (68)a, differs from a modified, (68)b, or conjoined one, (68)c, in that the phrasal status of the former but not the one of the latter two is "min = max" (cf. also Josefsson 1999).
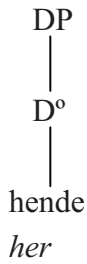
(68)   a. simple pronoun   b. modified pronoun   c. conjoined pronoun
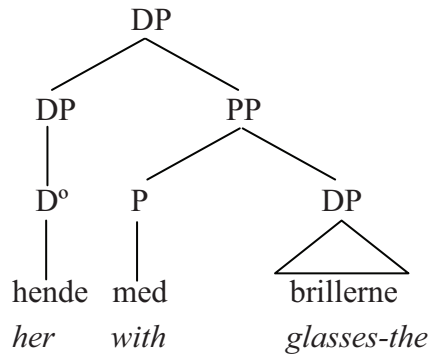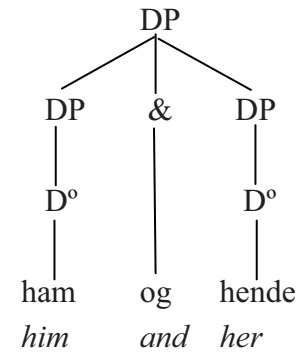
By "min = max", we thus mean that the amount of lexical material (i.e. phonologically visible material) dominated by the highest XP (here: DP) must be the same as the amount of lexical material dominated by the lowest X° (here: D°). This is fulfilled in (68)a, but not in (68)b,c. Hence, SHIFTPRON does not affect modified or conjoined pronouns; they are thus expected to remain *in situ* due to STAY in MSc.[20]

Tableau 20

Da		SHIFT PRON	STAY	ex.
	1a Sub V [$_{VP}$ Adv [$_{VP}$ ... [$_{DP=D°}$ <u>Pron-Obj</u>]]]	*!		(62)a
☞	1b Sub V [$_{VP}$ [$_{DP=D°}$ <u>Pron-Obj</u>] [$_{VP}$ Adv [$_{VP}$ ... t$_{Obj}$]]]		*	(62)b
☞	2a Sub V [$_{VP}$ Adv [$_{VP}$ ... [$_{DP≠D°}$ <u>Pron-Obj</u> <u>Mod</u>]]]			(64)a
	2b Sub V [$_{VP}$ [$_{DP≠D°}$ <u>Pron-Obj</u> <u>Mod</u>] [$_{VP}$ Adv [$_{VP}$ ... t$_{Obj}$]]]		*!	(64)b
☞	3a Sub V [$_{VP}$ Adv [$_{VP}$ ... [$_{DP≠D°}$ <u>Pron-Obj</u> & <u>Pron-Obj</u>]]]			(65)a
	3b Sub V [$_{VP}$ [$_{DP≠D°}$ <u>Pron-Obj</u> & <u>Pron-Obj</u>] [$_{VP}$ Adv [$_{VP}$ ... t$_{Obj}$]]]		*!	(65)b

As mentioned in footnote 1, OS is not restricted to weak pronouns in Icelandic; it may also apply to full DPs, (69). Likewise, syntactically complex pronouns may undergo OS; cf. (70) and (71).

(69) Ic a. Af hverju las   Pétur   aldrei ____ <u>þessa bók</u>?
              why   *read* *Pétur*   *never*   *this book*
          b. Af hverju las   Pétur <u>þessa bók</u> aldrei ____ _____?

(70) Ic a. Af hverju las   Pétur   aldrei ____ <u>þessa hérna</u>?
              why   *read* *Pétur*   *never*   *this here*
          b. Af hverju las   Pétur <u>þessa hérna</u> aldrei ____ _____? (Vikner 2005: 417)

---

[20] Note that there are elements which are "min = max" in the conjoined structure in (68)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).

(71) Ic a. Ég þekki   ekki   ____   <u>hann og hana</u>.
            I   know   *not*   *him and her*
       b. Ég þekki <u>hann og hana</u> 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.

(72)   SHIFT:
         A [-focus] element must adjoin to the maximal extended VP of its case-assigning verb.

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.

(73)   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 (74)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 the adjunction requirement and with the definition of "min = max".

If multiple OS was movement of one constituent including several pronouns, then the shifted objects would not themselves be adjoined to the relevant VP, (75)a. The formulation of SHIFTPRON and of SHIFT is such that every shifted object must fulfill the condition that a shifted object is adjoined to the relevant VP, as is indeed the case in the alternative analysis, where the objects move individually, (75)b; cf. also candidate d in Tableau 2121.

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 (68)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.
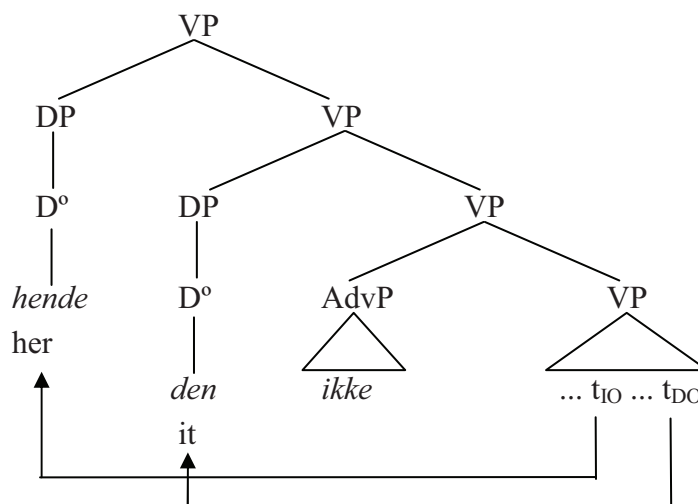
(74) Da a. *Jeg gav   ikke   ____   <u>hende</u> <u>den</u>.
            I   *gave*   *not*   *her*   *it*
       b. *Jeg gav   <u>hende</u>   ikke   ____   ____   <u>den</u>.
       c. Jeg gav   <u>hende</u> <u>den</u> ikke   ____   ____ ___.

(75) Da a. *Jeg gav...*
      I   gave   ≈ **(74)c**

```
                              VP
                 ┌─────────────┴─────────────┐
                VP                           VP
          ┌──────┴──────┐             ┌──────┴──────┐
         DP            V'           AdvP           VP
          │        ┌────┴────┐        △             △
         D°       V°        DP      ikke         ... t_VP
          │        │         │       not
       hende      t_V        D°
        her                  │
                            den
                             it
```

b. *Jeg gav...*
    I   gave   ≈ **(74)c**

```
                        VP
               ┌────────┴────────┐
              DP                 VP
               │          ┌───────┴───────┐
              D°         DP               VP
               │          │        ┌───────┴───────┐
            hende        D°       AdvP             VP
             her          │        △               △
                         den     ikke        ... t_IO ... t_DO
                          it
```
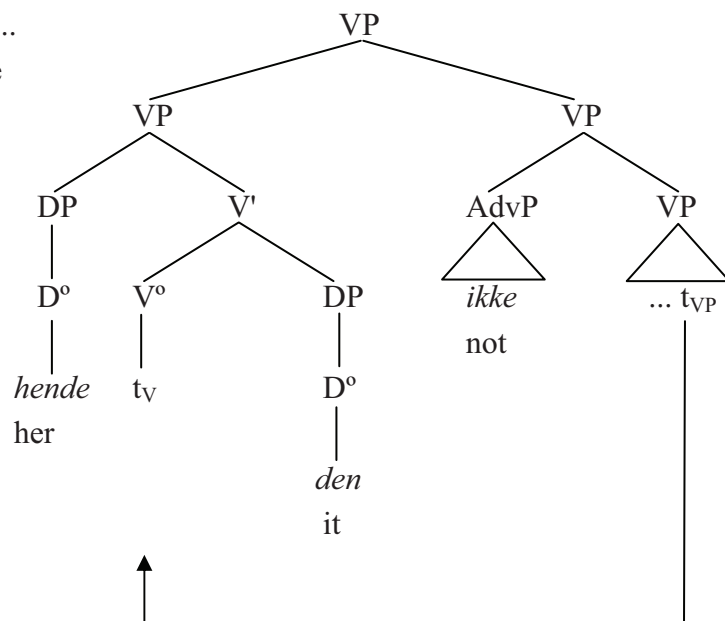
Tableau 21

Da		$\text{S}\small{HIFT}$ $\text{P}\small{RON}$	$\text{S}\small{TAY}$	ex.
	a Sub V [$_{VP}$ Adv [$_{VP}$ ... [$_{DP=D°}$ <u>Pron-IO</u>] [$_{DP=D°}$ <u>Pron-DO</u>]]]	*!*		(74)a
	b Sub V [$_{VP}$ [$_{DP=D°}$ <u>Pron-IO</u>] [$_{VP}$ Adv [$_{VP}$ ... t$_{IO}$ [$_{DP=D°}$ <u>Pron-DO</u>]]]]	*!	*	(74)b
	c Sub V [$_{VP}$ [$_{VP}$ ... [$_{DP=D°}$ <u>Pron-IO</u>] [$_{DP=D°}$ <u>Pron-DO</u>]] [$_{VP}$ Adv t$_{VP}$]]	*!*	*	(74)c= (75)a
☞	d Sub V [$_{VP}$ [$_{DP=D°}$ <u>Pron-IO</u>] [$_{VP}$ [$_{DP=D°}$ <u>Pron-DO</u>] [$_{VP}$ Adv [$_{VP}$ ... t$_{IO}$ t$_{DO}$]]]]		**	(74)c= (75)b

Appendix 2: Structure preservation

There are native speakers of Danish whose intuitions do not agree with the acceptability judgments given above (and the same is true for Swedish, Holmberg 1999:11). These speakers do not allow for object stranding during remnant VP-topicalisation at all, whereas topicalisation of a full VP is found acceptable:

(76) Da a. [_{VP} Givet <u>hende</u> <u>den</u>] har jeg ikke.
given her it have I not

     b. *[_{VP} Givet ____ ___] har jeg <u>hende</u> <u>den</u> ikke.

     c. *[_{VP} Givet <u>hende</u> ___] har jeg <u>den</u> ikke.

     d. *[_{VP} Givet ____ <u>den</u>] har jeg <u>hende</u> ikke.

These speakers thus contrast with the speakers whose intuitions were discussed in the main body of this paper, and who have remnant VP-topicalisation provided it observes a linear restriction, permitting stranding of an object in OS position as long as it does not change the VP-internal order of elements (cf. (20) and (21) above).

    The more restrictive pattern in (76) can be accounted for if in addition to order preservation, (10), a constraint on structure preservation is considered to restrict OS (cf. Déprez 1994, Müller 2001a, Sells 2001, and Williams 2003).

(77)   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 overrides SHIFTPRON, which predicts that OS cannot cross an intervening non-adverbial constituent: For example, OS across a verb *in situ* as in (78)b changes the c-command relation between the verb and the shifted object.

(78) Da a. Jeg spurgte hvorfor Peter aldrig læste <u>den</u>.
         I asked why Peter never read it

     b. *Jeg spurgte hvorfor Peter <u>den</u> 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 (76)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 22: No remnant VP-topicalisation

Da	Topic: V	TOPIC	STRUC PRES	SHIFT PRON	ex.
☞ a	[VP **V** Pron-IO Pron-DO] Aux Sub Adv tVP			**	(76)a
b	[VP **V** tIO tDO] Aux Sub Pron-IO Pron-DO Adv tVP		*!*		(76)b
c	[VP **V** Pron-IO tDO] Aux Sub Pron-DO Adv tVP		*!*	*	(76)c
d	[VP **V** tIO Pron-DO] Aux Sub Pron-IO Adv tVP		*!*	*	(76)d

Hence, variation between speakers as to the stranding possibilities for 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 (8), 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. (79)c,d/(80)c,d. The only option is to topicalise the whole VP as in (79)a and (80)a. (The b-sentences in (79) and (80) are ruled out by ORDPRES >> SHIFTPRON, see section 3.2 above.)

(79) 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.

(80) 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 (79)c/(80)c: 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 to much material to Spec,CP does not violate TOPIC.)

Tableau 23

Da		Topic: V & Obj-Pron	Topic	Ord Pres	Shift Pron	Stay	ex.
☞	a	[VP **V Obj-Pron** PP] Aux Sub Adv tVP			*		(80)a
	b	[VP **V** tPron PP] Aux Sub **Obj-Pron** Adv tVP	*!	*		*	(80)b
	c	[VP **V Obj-Pron** tPP] Aux Sub Adv PP tVP			*	*!	(80)c
	d	[VP **V** tPron tPP] Aux Sub **Obj-Pron** Adv PP tVP	*!			**	(80)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 24

Da		Topic: V	Topic	Ord Pres	Shift Pron	Stay	ex.
	a	[VP **V** Obj-Pron PP] Aux Sub Adv tVP			*!		(80)a
	b	[VP **V** tPron PP] Aux Sub Obj-Pron Adv tVP		*!		*	(80)b
	c	[VP **V** Obj-Pron tPP] Aux Sub Adv PP tVP			*!	*	(80)c
☹	d	[VP **V** tPron tPP] Aux Sub Obj-Pron Adv PP tVP				**	(80)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. (73).

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).

(81)   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).

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

(83) Da a. *Hvorfor læste Peter   ikke   _____ den?
            why   read   Peter   not   it
      b. Hvorfor læste Peter den   ikke   _____ ___?

Tableau 25

Da		TOPIC	ORD PRES	STAY COMPLEX	SHIFT	STAY	ex.
☞ 1a	wh V Sub Adv DP-Obj				*		(82)a
1b	wh V Sub DP-Obj Adv t$_{DP}$			*!		*	(82)b
2a	wh V Sub Adv Pron-Obj				*!		(83)a
☞ 2b	wh V Sub Pron-Obj Adv t$_{Pron}$					*	(83)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 26

Da	Topic: V	TOPIC	ORD PRES	STAY COMPL	SHIFT	STAY	ex.
☞ a	[$_{VP}$ **V** Pron-Obj PP] Aux Sub Adv t$_{VP}$				**		(80)a
b	[$_{VP}$ **V** t$_{Pron}$ PP] Aux Sub Pron-Obj Adv t$_{VP}$		*!		*	*	(80)b
c	[$_{VP}$ **V** Pron-Obj t$_{PP}$] Aux Sub Adv PP t$_{VP}$			*!	*	*	(80)c
d	[$_{VP}$ **V** t$_{Pron}$ t$_{PP}$] Aux Sub Pron-Obj Adv PP t$_{VP}$			*!		**	(80)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, (84), complex adverbials are not – independent of their syntactic category, PP or DP, and independent of whether they are free or selected for; cf. (85) and (86).

(84) Ic a. Býr Pétur   ekki lengur   _____ þar?
          lives Peter   *not longer*   *there*
      b. Býr Pétur þar   ekki lengur   _____ ___?   (Vikner 2005: 422)

(85) Ic a. Býr Pétur   ekki lengur   _____ í Kaupmannahöfn?
          lives Petur   *not longer*   *in Copenhagen*
      b. *Býr Pétur í Kaupmannahöfn ekki lengur   _____ _____?
                                                                            (Vikner 2005: 424)

(86) 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 27

Ic	ORD PRES	STAY COMP ADV	SHIFT	STAY COMP	STAY		ex.
☞ 1a wh V Sub Adv <u>PP-Adv</u>			*				(85)a
1b wh V Sub <u>PP-Adv</u> Adv t$_{PP}$		*!		*	*		(85)b
2a wh V Sub Adv <u>Pron-Adv</u>			*!				(84)a
☞ 2b wh V Sub <u>Pron-Adv</u> Adv t$_{Pron}$					*		(84)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).

(87) Du a. *... dat Jan   waarschijnlijk Marie 't   gegeven heeft.
              that Jan   *probably   Marie it   given   has*
      b. ... dat Jan   <u>'t</u>   waarschijnlijk Marie __   gegeven heeft.
      c. ... dat Jan   <u>'t</u> Marie waarschijnlijk _____ __   gegeven heeft.

(88) 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.

<div align="right">(De Hoop & Kosmeijer 1995:150)</div>

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.)

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