

An Optimality-Theoretic Analysis of Scandinavian Object Shift and Remnant VP-Topicalisation

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Holmberg (1997, 1999) assumes that Holmberg's generalisation (HG) is derivational, prohibiting Object Shift (OS) across an intervening non-adverbial element at any point in the derivation. Counterexamples to this hypothesis are given in Fox & Pesetsky (2005) which show that remnant VP-topicalisations are possible in Scandinavian as long as the VP-internal order relations are maintained. Extending the empirical basis concerning remnant VP-topicalisations, we argue that HG and the restrictions on object stranding result from the same, more general condition on order preservation. Considering this condition to be violable and to interact with various constraints on movement in an Optimality-theoretic fashion, we suggest an account for various asymmetries in the interaction between remnant VP-topicalisations and both OS and other movement operations (especially subject raising) as to their order preserving characteristics and stranding abilities.

Keywords: Object Shift, VP-topicalisation, Order preservation.

1 Introduction

In the Scandinavian languages, a pronominal object may move from its base position to a position to the left of a sentential adverbial. This movement operation is called **Object Shift** (OS).¹

¹ Icelandic differs from the Mainland Scandinavian languages in that not only pronominal objects but also full DPs may undergo OS (Vikner 2005: 394).

- (1) Da a. *Hvorfor læste Peter aldrig ___ den?
 why read Peter never it
 b. Hvorfor læste Peter den aldrig ___ ___?

A defining characteristic of OS is that it depends on verb movement. OS is only possible if the main verb moves itself. In other words, the pronominal object cannot undergo OS if the main verb remains within VP, as e.g. in clauses with a non-finite main verb, (2), or in embedded clauses in the Mainland Scandinavian languages (MSc, i.e. Danish, Norwegian, and Swedish), cf. (3).²

- (2) Da a. Hvorfor havde Peter aldrig læst den?
 why had Peter never read it
 b. *Hvorfor havde Peter den aldrig læst ___?
 (3) Da a. Jeg spurgte hvorfor Peter aldrig læste den.
 I asked why Peter never read it
 b. *Jeg spurgte hvorfor Peter den aldrig læste ___.

- (i) Ic a. Af hverju las Pétur aldrei ___ þessa bók?
 why read Pétur never this book
 b. Af hverju las Pétur þessa bók aldrei ___ ___?
 (ii) Da a. Hvorfor læste Peter aldrei ___ bogen?
 why read Peter never book-the
 b. *Hvorfor læste Peter bogen aldrei ___ ___?

² Icelandic differs from MSc in that finite verb movement (V° -to- I° -to- C° movement) and, consequently, OS is restricted to main clauses in MSc, (1) vs. (3), while finite verb movement (V° -to- I° movement) and OS also take place in embedded clauses in Icelandic, (ii); cf. (Vikner 2005: 394/6).

- (i) Ic a. *Af hverju las Pétur aldrei ___ hana?
 why read Pétur never it
 b. Af hverju las Pétur hana aldrei ___ ___?
 (ii) Ic a. *Ég spurði af hverju Pétur læsi aldrei ___ hana.
 I asked why Pétur read never it
 b. Ég spurði af hverju Pétur læsi hana aldrei ___ ___.

The observation that the object only moves if the main verb has moved forms the basis of what is called Holmberg's generalisation (Holmberg 1986: 165, 1999: 15).

- (4) **Holmberg's Generalisation (HG)** (Holmberg 1999: 15)
Object Shift cannot *apply* across a phonologically visible category asymmetrically c-commanding the object position except adjuncts.

HG does not specifically refer to main verbs but to any intervening non-adverbial element. As shown in (5), a verbal particle precedes an object in Swedish, and OS cannot take place across the particle, (6). However, OS is possible if the verbal particle has moved itself, cf. (7).³

- (5) Sw a. Jag har inte skrivit upp det.
I have not written up it
b. *Jag har inte skrivit det upp.
- (6) Sw a. Jag skrev inte upp det.
I wrote not up it
b. *Jag skrev det inte upp ____.
- (7) 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)
(All right, I will feed your cat but)
IN släpper jag den inte ____.
in let I it not (Holmberg 1997: 209)

³ In Danish, Norwegian, and Icelandic, a pronominal object precedes a verbal particle, (i), and, consequently, OS may take place, (ii).

- (i) Da a. *Jeg har ikke skrevet op det.
I have not written up it
b. Jeg har ikke skrevet det op.
- (ii) Da a. *Jeg skrev ikke det op.
I wrote not it up
b. Jeg skrev det ikke ____ op.

- (10) Sw a. Kysst har jag henne inte ___ ___, ...
 kissed have I her not
 (... bara hållit henne i handen).
 only held her by hand-the (Holmberg 1997: 205)
- Da b. Kysset har jeg hende ikke ___ ___, ...
 kissed have I her not
 (... bare holdt hende i hånden).
 only held her in hand-the (Vikner 2005: 407)
- Ic c. Kysst hef ég hana ekki ___ ___, ...
 kissed have I her not
 (... bara haldið í höndina á henni).
 only held in hand-the on her (Vikner 2005: 431)
- (11) 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

In the following sections we will discuss a number of properties of OS in remnant VP-topicalisation constructions such as (10). Section 2 reviews Holmberg's (1997, 1999) and Fox & Pesetsky's (2005) approaches to OS in clauses with topicalised verbs. In section 3 we present an Optimality-theoretic approach to OS in remnant VP-topicalisations. The results are summarized in section 4.

2 Remnant VP-topicalisation

2.1 Holmberg's (1997, 1999) V^o-topicalisation approach

As discussed in the previous section, OS is blocked by intervening non-adverbial material, but it may take place if this material has moved itself.

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- (i) Sw a. Mannen såg inte den.
 man-the saw not it
 b. Mannen såg den inte ___. (Josefsson 2003: 201)

Holmberg (1997, 1999) observes that although OS of an infinitival clause subject is possible as long as there is no intervening non-adverbial material, (12)a, movement across the non-finite main verb cannot be rescued by subsequent topicalisation of the verb, (12)d.⁶

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

Holmberg (1997, 1999) concludes that HG is a matter of derivation, not representation: A violation of HG as in (12)c cannot be repaired by subsequent operations as in (12)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. Consequently, the grammatical sentences in (10) cannot involve OS prior to (remnant) VP-topicalisation since that would violate HG, cf. (13). Rather, they must be derived by V^o-topicalisation, with subsequent OS, cf. (14). The examples in (13) and (14) are from Swedish.

⁶ That the movement of the infinitival subject involved in (12)a is OS is shown by the fact that it may only apply to weak pronominals in MSc, (i)a,b.

- (i) Sw a. *Jag såg Maria inte ____ [IP ____ arbeta].
 I saw Maria not work
 b. Jag såg inte ____ [IP Maria arbeta].

Moreover, it is possible to topicalise the whole VP.

- (ii) Sw [VP Sett henne arbeta] har jag inte.
 seen her work have I not (Holmberg 1997: 206)

(13) Remnant VP-topicalisation? Holmberg (1997, 1999): NO!

- a. [CP har [IP jag [VP1 inte [VP2 kysst henne]]]]
- b. [CP har [IP jag henne [VP1 inte [VP2 kysst _____]]]]
- ↑
x x x
violation of HG!!!
- c. [CP [VP2 Kysst _____] har [IP jag henne [VP1 inte _____]]]
- ↑

(14) V°-topicalisation? Holmberg (1997, 1999): YES!

- a. [CP har [IP jag [VP1 inte [VP2 kysst henne]]]]
- b. [CP [V° Kysst] har [IP jag [VP1 inte [VP2 _____ henne]]]]
- ↑
- c. [CP [V° Kysst] har [IP jag henne [VP1 inte [VP2 _____]]]]
- ↑

Note that OS in the V°-topicalisation analysis is countercyclic: It targets a lower position than the previous movement of V°, which is why Holmberg (1997, 1999) has to assume that OS does not take place in syntax proper but in a special part of the grammar, Stylistic Syntax, where Chomsky's (1993: 22) Extension Condition does not hold. Moreover, the V°-topicalisation analysis involves movement of an X° to an XP-position.

Furthermore, if V°-topicalisation would be possible, we would expect the sentences in (15)b/(16)b to be acceptable, contrary to fact.

- (15) Da a. Jeg har ikke smidt den ud.
I have not thrown it out
- b. *Smidt har jeg den ikke _____ ud.
- (16) 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.

main clause and the pronominal object undergoes OS, maintaining their relative order V<O.

- (18) Da a. Jeg kyssede hende ikke ____ ____.
 I kissed her not
 b. VP: [VP V O]
Ordering: V<O
 c. CP: [CP S V [IP t_S O Adv [VP t_V t_O]]]
Ordering: S<V V<O
 V<O
 O<Adv
 Adv<VP → ∅

By contrast, OS is impossible in an embedded clause as (19) in MSc. The ordering statements produced at Spell-out of CP, (19)c, contradict the statement "V<O" established at Spell-out of VP, (19)b: Given that at CP, the object precedes the adverb ("O<Adv") which in turn precedes the verb ("Adv<V"), the object must precede the verb - in contrast to their relative order at VP.

- (19) Da a. *... at jeg hende ikke kyssede ____.
 that I her not kissed
 b. VP: [VP V O]
Ordering: V<O
 c. CP: [CP Comp [IP S O Adv [VP V t_O]]]
Ordering: C<S V<O
 S<O
 O<Adv
 Adv<VP → Adv<V

Hence, Fox & Pesetsky (2005) derives HG from ordering contradictions. OS cannot take place if it results in ordering statements at CP that contradict those established at Spell-out of VP. Correspondingly, the asymmetry between stranding of an IO and stranding of a DO by remnant VP-topicalisation illustrated in (17) 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 maintained at the Spell-out of CP in (17)a but not in (17)b.

Note that Fox & Pesetsky (2005) predicts that movement operations that do not obey HG have to proceed successive cyclically: The underlined constituents in (20) have to move through 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), *wh*-movement, topicalisation, and subject raising.

(20) Da	a. Måske	har	han	<u>ingen bøger</u>	læst	_____.
	probably	has	he	no books	read	
	b. <u>Hvad</u>	har	du		læst	_____?
	what	have	you		read	
	c. <u>Bøgerne</u>	har	jeg		læst	_____.
	books-the	have	I		read	
	d. Måske	blev	<u>bøgerne</u>		læst	_____.
	perhaps	were	books-the		read	

Hence, the crucial difference between the various movement operations in (20) and OS is that the former may - and indeed must – go through the edge of VP, but as Fox & Pesetsky (2003) states, in their analysis OS cannot involve movement to the edge of VP.

3 An Optimality-theoretic approach to object shift and remnant VP-topicalisation

3.1 Object shift and order preservation

Although there are a number of OT analyses of OS, the ones we are familiar with, e.g. Broekhuis (2000) or Vogel (2004), predate Fox & Pesetsky (2005) and do not consider remnant VP-topicalisation at all. As far as we can tell, these analyses would not be able to account for it.

Building on the insights of Fox & Pesetsky (2005), we consider HG to be a linear restriction. The condition on order preservation is expressed by the constraint in (21)a that requires base order precedence relations among non-adverbial elements to be maintained at the final representation; cf. Déprez (1994), Müller (2001), Sells (2001), and Williams (2003). Pronominal OS is taken to be triggered by the constraint SHIFTPRONOUN in (21)b:⁷

- (21) a. ORDER PRESERVATION (ORDPRES):
 If the foot of the chain of some non-adverbial element α precedes the foot of the chain of some element β , the head of the chain of α also precedes the head of the chain of β .
- b. SHIFTPRONOUN (SHIFTPRON):
 A weak pronoun precedes and c-commands the lowest VP (of the same clause) that contains all other VPs and all VP-adjoined adverbials.

SHIFTPRON requires movement of a pronoun to a position at the left edge of VP; ORDPRES penalizes this movement if it results in the reversal of the order of non-adverbial elements. Hence, the ranking ORDPRES \gg SHIFTPRON captures HG: The violation of ORDPRES blocks OS across an intervening non-adverbial element such as the *in situ* main verb in Tableau 1. However, if the main verb moves itself to a position to the left of the target position of OS, OS is possible since the base order precedence relation between the verb and its object are maintained in accordance with ORDPRES; compare Tableau 2.⁸

⁷ As mentioned in footnote 1, OS may also apply to full DPs in Icelandic. Vikner & Engels (2006) considers full DP Shift to be triggered by a more general constraint SHIFT that requires a non-focused constituent to precede and c-command the lowest VP (of the same clause). The contrast between Icelandic and MSc in the applicability of OS to full DPs depends on the relative ranking between SHIFT and STAY, see (31) below.

⁸ In contrast to HG in (4), ORDPRES is not restricted to OS; rather, the constraint penalizes any kind of movement that changes the order of elements. The fact that OS contrasts with other types of movement operations, such as the ones mentioned in (20) above, in that the latter ones do not have to preserve the base order can be captured by differences in the ranking of ORDPRES relative to the constraints that require the corresponding movements.

Tableau 1: Blocking of OS by intervening verb

Da	ORDPRES	SHIFTPRON	ex.
☞ a Sub Aux Adv <u>V</u> <u>Pron-Obj</u>		*	(2)a
b Sub Aux <u>Pron-Obj</u> Adv <u>V</u> <u>t_O</u>	*!		(2)b

Tableau 2: Object Shift

Da	ORDPRES	SHIFTPRON	ex.
a Sub <u>V</u> Adv <u>t_v</u> <u>Pron-Obj</u>		*!	(1)a
☞ b Sub <u>V</u> <u>Pron-Obj</u> Adv <u>t_v</u> <u>t_O</u>			(1)b

The ranking ORDPRES >> SHIFTPRON does not only predict that OS is blocked by intervening non-adverbial elements, it also accounts for the fact that multiple OS has to maintain the order of elements.

- (22) Da a. *Jeg gav ikke hende det.
 I gave not her it
 b. *Jeg gav hende ikke det.
 c. *Jeg gav det hende ikke det.
 d. Jeg gav hende det ikke det.

For example, ORDPRES is outranked by the constraint WHSPEC that requires *wh*-movement to Spec,CP (WHSPEC >> ORDPRES), predicting that unlike OS, *wh*-movement is not blocked by an intervening verb, verbal particle, or object; compare (2), (6), and (8), respectively.

- (i) Da a. Hvad har Peter læst ___?
 what has Peter read
 Sw b. Vad smutsade Kalle ner ___?
 what dirtied Kalle down
 Sw c. Vad gav Kalle Elsa ___?
 what gave Kalle Elsa

((i)b,c from Bobaljik 2002: 236)

Tableau 3: Multiple OS

Da	ORDPRES	SHIFTPRON	ex.
a Sub V Adv <u>Pron-IO</u> <u>Pron-DO</u>		*!*	(22)a
b Sub V <u>Pron-IO</u> Adv t _{IO} <u>Pron-DO</u>		*!	(22)b
c Sub V <u>Pron-DO</u> <u>Pron-IO</u> Adv t _{IO} t _{DO}	*!		(22)c
☞ d Sub V <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{IO} t _{DO}			(22)d

3.2 Asymmetry I: Stranding of IO vs. stranding of DO

As shown in the preceding section, the ranking $ORDPRES \gg SHIFTPRON$ captures the fact that OS is blocked by an intervening non-adverbial element, predicting that OS is dependent on movement of the main verb. However for OS to be possible, the main verb does not necessarily have to undergo V° -to- I° -to- C° movement as in Tableau 2. What is crucial is that the main verb moves to a position in front of the target position of OS, such that their relative order is preserved. This can also be achieved by placing a non-finite verb in topic position, as illustrated in Tableau 4.

Tableau 4: OS with remnant VP-topicalisation

Da	ORDPRES	SHIFTPRON	ex.
a <u>V</u> Aux Sub Adv <u>Pron-Obj</u>		*!	(11)
☞ b <u>V</u> Aux Sub <u>Pron-Obj</u> Adv			(10)

We propose that in this case the pronominal object undergoes OS prior to remnant VP-topicalisation. 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, compare (13) above. The OT constraint $ORDPRES$, by contrast, is representational: Constraint violations are computed based on the final structure of the candidates. Hence, although the

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

Tableau 5: VP-topicalisation, taking along both IO and DO

Da/Sw	Topic: V & Pron-IO & Pron-DO	TOPIC	ORDPRES	SHIFTPRON	ex.
☞ a	[_{VP} V <u>Pron-IO</u> <u>Pron-DO</u>] Aux Sub Adv t _{VP}			**	(24)a
b	[_{VP} V <u>Pron-IO</u> t _{DO}] Aux Sub <u>Pron-DO</u> Adv t _{VP}	*!		*	(23)a
c	[_{VP} V t _{IO} <u>Pron-DO</u>] Aux Sub <u>Pron-IO</u> Adv t _{VP}	*!	*	*	(23)b
d	[_{VP} V t _{IO} t _{DO}] Aux Sub <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}	*!*			(24)b

Tableau 6: Remnant VP-topicalisation, stranding both IO and DO

Da/Sw	Topic: V	TOPIC	ORDPRES	SHIFTPRON	ex.
a	[_{VP} V <u>Pron-IO</u> <u>Pron-DO</u>] Aux Sub Adv t _{VP}			*!*	(24)a
b	[_{VP} V <u>Pron-IO</u> t _{DO}] Aux Sub <u>Pron-DO</u> Adv t _{VP}			*!	(23)a
c	[_{VP} V t _{IO} <u>Pron-DO</u>] Aux Sub <u>Pron-IO</u> Adv t _{VP}		*!	*	(23)b
☞ d	[_{VP} V t _{IO} t _{DO}] Aux Sub <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}				(24)b

As Tableau 5 and Tableau 6 show, SHIFTPRON favors stranding of a pronoun which is, however, only possible if the pronoun is not marked [+topic]. The asymmetry between stranding of a DO and stranding of an IO is expected by the ranking ORDPRES >> SHIFTPRON. OS of a DO maintains the ordering relations in remnant VP-topicalisations, satisfying ORDPRES (see Tableau 7).¹⁰ 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

¹⁰ 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 (23)a, the c-command relations are not - neither the verb nor the IO c-commands the shifted DO.

IO in OS position, compare Tableau 8 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 8. (But note that stranding of the IO is possible if it does not result in a violation of ORDPRES, namely if both objects are stranded as in (24)b.)

Tableau 7: Remnant VP-topicalisation that strands DO

Da/Sw Topic: V & Pron-IO	TOPIC	ORDPRES	SHIFTPRON	ex.
a [VP V <u>Pron-IO</u> Pron-DO] Aux Sub Adv t _{VP}			**!	(24)a
☞ b [VP V <u>Pron-IO</u> t _{DO}] Aux Sub <u>Pron-DO</u> Adv t _{VP}			*	(23)a
c [VP V t _{IO} <u>Pron-DO</u>] Aux Sub <u>Pron-IO</u> Adv t _{VP}	*!	*	*	(23)b
d [VP V t _{IO} t _{DO}] Aux Sub <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}	*!			(24)b

Tableau 8: No remnant VP-topicalisation that strands IO

Da/Sw Topic: V & Pron-DO	TOPIC	ORDPRES	SHIFTPRON	ex.
☞ a [VP V <u>Pron-IO</u> <u>Pron-DO</u>] Aux Sub Adv t _{VP}			**	(24)a
b [VP V <u>Pron-IO</u> t _{DO}] Aux Sub <u>Pron-DO</u> Adv t _{VP}	*!		*	(23)a
c [VP V t _{IO} <u>Pron-DO</u>] Aux Sub <u>Pron-IO</u> Adv t _{VP}		*!	*	(23)b
d [VP V t _{IO} t _{DO}] Aux Sub <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}	*!			(24)b

Similarly, the unacceptable sentence in (12)d, repeated here as (26)c, is ruled out by the violation of ORDPRES. These data led Holmberg (1997, 1999) to assume that remnant VP-topicalisation is not possible.

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

Tableau 9: No stranding of an infinitival clause subject

Sw	Topic: V & V	TOPIC	ORDPRES	SHIFTPRON	ex.
☞ a	[_{VP} V <u>Pron</u> V] Aux Sub Adv			*	(26)b
b	[_{VP} V t _{Pron} V] Aux Sub <u>Pron</u> Adv		*!		(26)c

Moreover, the order preservation approach to remnant VP-topicalisation predicts that stranding of the object is unacceptable in constructions in which the object is followed by other elements within VP, e.g. in constructions with a particle verb or a verb with an additional PP-complement, see (27)b/(28)b. In contrast, topicalisation of the full VP is possible.

- (27) Da a. [_{VP} Smidt den ud] har jeg ikke.
 thrown it out have I not
 b. * [_{VP} Smidt ___ ud] har jeg den ikke.
 (28) 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.

Although they occupy a right-peripheral position within VP, particles and PPs cannot be left behind either (irrespective of whether or not the object is taken along by VP-topicalisation or stranded as well).¹¹

¹¹ Notice that according to Holmberg (1999), stranding of a PP complement is possible in Swedish, in contrast to the judgment reported in (30).

- (i) Sw Bo ska han ___ i Malmö, men han ska jobba i Köpenhamn.
 live will he in Malmö but he will work in Copenhagen
 (Holmberg 1999: 12)

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

Tableau 10: No stranding of other VP-internal right-peripheral constituents

Da Topic: V & Pron-Obj	TOPIC	ORDPRES	SHIFTPRON	STAY	ex.
☞ a [VP V Pron-Obj PP] Aux Sub Adv					(28)a
b [VP V Pron-Obj t _{PP}] Aux Sub Adv PP				*!	(30)a

By contrast, right-peripheral constituents that are not included in VP and thus do not have to be moved out of VP prior to VP-topicalisation can be stranded:

- (32) Da a. *Jeg kan ikke uden briller [VP læse den].
 I can not without glasses read it
 b. Jeg kan ikke [VP læse den] uden briller.
 c. [VP Læse den] kan jeg ikke _____ uden briller.

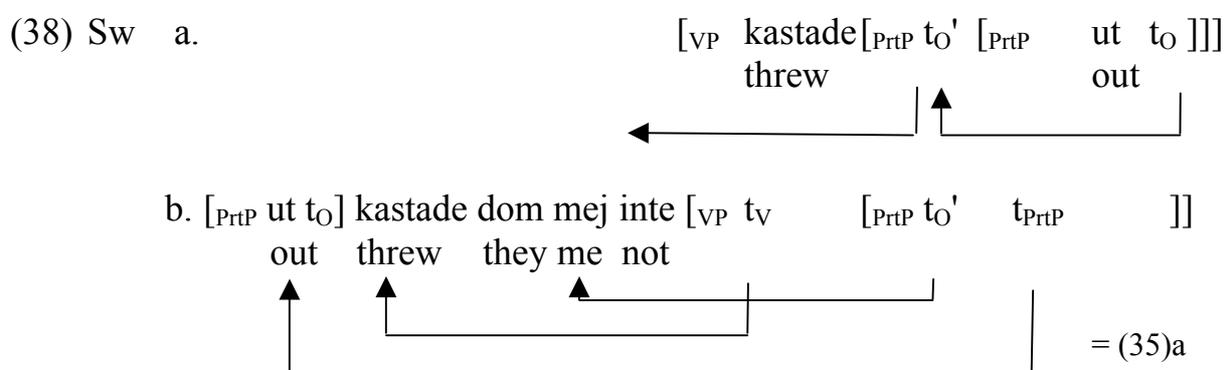
3.3 Not all right-peripheral objects can be stranded

From the discussion in the previous section, we might expect that all that matters is that the stranded object originally occupied a right-peripheral position in the topicalised remnant VP, because then all orderings are preserved. 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.

- (iii)Sw Har du verkligen lånat Per din gamla dator?
 ('Have you really lent Per your old computer?')
 Lånat honom har jag inte det gamla skitet, jag har GETT honom det.
 lent him have I not the old crap I have given him it
 (Gunlög Josefsson, p.c.)

Spec,CP in both (36) and (37)) may be licensed in a different way, e.g. simply by being in a thematic position.¹⁴

The difference between (34) and (35) is now that in (35), only the PrtP is topicalised (the verb is also moved, but by a different movement, V°-to-I°-to-C° movement) and so there does not have to be an intermediate trace inside VP, and, therefore it is possible for remnant VP-topicalisation to take place without an intermediate trace occurring in Spec,CP.



To sum up, remnant VP-topicalisation may strand an object in OS position as long as the precedence relations are maintained (ORDPRES >> SHIFTPRON) and its base position is not too deeply embedded (i.e. the topicalised VP does not

¹⁴ Under the assumption that the intermediate step has to target the minimal XP of the selecting/theta-assigning head (excluding any adjuncts to XP), the ungrammaticality of (i)c follows: The intermediate trace of the object is adjoined to the inner segment of VP such that topicalisation of the outermost segment of VP necessarily takes this trace along. In contrast, remnant topicalisation of the innermost VP (excluding the intermediate trace) is marginally acceptable.

- (i) Da. a. Han har måske nok [_{VP} omhyggeligt læst den]
 he has possibly well carefully read it
 men har han forstået den?
 but has he understood it?
- b. ?[_{VP} Omhyggeligt [_{VP} læst den]] har han måske nok, ...
- c. *[_{VP} Omhyggeligt [_{VP} t_O' [_{VP} læst t_O]]] har han den måske nok, ...
- d. ??[_{VP} Læst t_O] har han den ikke [_{VP} omhyggeligt [_{VP} t_O' t_{VP}]],
 read has he it not carefully,
 kun ret overfladisk.
 only rather superficially

contain an intermediate trace). 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.

3.4 Asymmetry II: Object shift vs. subject raising

Apart from the asymmetry between stranding of a DO and stranding of an IO discussed in section 3.2, there is an asymmetry between remnant VP-topicalisation leaving behind an argument in OS position and remnant VP-topicalisation leaving behind an argument in subject position. This indicates 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 element that has left VP occurs in subject position (as in passives), while the order cannot be changed if it occurs in OS position, see (39)b/(41)b vs. (40)b/(42)b.

- (39) Da a. [_{VP} Smidt den ud] har jeg ikke.
 thrown it out have I not
 b. *_{VP} Smidt ___ ud] har jeg den ikke.
- (40) Da a. *_{VP} Smidt den ud] blev ikke.
 thrown it out was not
 b. [_{VP} Smidt ___ ud] blev den ikke.
- (41) Da a. [_{VP} Stillet det på bordet] har jeg ikke.
 put it on table-the have I not
 b. *_{VP} Stillet ___ på bordet] har j eg det ikke.
- (42) Da a. *_{VP} Stillet det på bordet] blev ikke.
 put it on table-the was not
 b. [_{VP} Stillet ___ på bordet] blev det ikke.

This contrast is accounted for if ORDPRES is outranked by the constraint that triggers subject movement to Spec,IP, cf. Grimshaw & Samek-Lodovici (1995), Samek-Lodovici (1996, 1998).¹⁵

- (43) SUBJECT: The highest A-specifier is structurally realized.
(Samek-Lodovici 1998: 4)

Tableau 11: No object stranding in Danish particle verb constructions

Da	Topic: V & Prt	SUBJECT	ORD PRES	SHIFT PRON	STAY	ex.
☞ a	[_{VP} V <u>Pron-Obj</u> Prt] Aux Sub Adv			*		(39)a
b	[_{VP} V t _O Prt] Aux Sub <u>Pron-Obj</u> Adv		*!		*	(39)b

Tableau 12: Subject stranding in Danish particle verb constructions

Da	Topic: V & Prt	SUBJECT	ORD PRES	SHIFT PRON	STAY	ex.
a	[_{VP} V <u>Pron-Sub</u> Prt] Aux e Adv	*!		*		(40)a
☞ b	[_{VP} V t _S Prt] Aux <u>Pron-Sub</u> Adv		*		*	(40)b

The ranking SUBJECT >> ORDPRES is supported by the fact that movement to subject position does not depend on verb movement; i.e. subject movement may cross an intervening (unaccusative) verb.

- (44) Da a. Derfor har Elsa ikke _____ ringet.
 therefore has Elsa not _____ called
 b. Derfor er Elsa ikke kommet _____.
 therefore is Elsa not _____ come

¹⁵ Under the assumption that all extraction out of VP has to proceed via adjunction to the minimal XP containing the selecting/theta-assigning head (see section 3.3), the grammaticality of (40)b suggests that the prohibition against intermediate traces in Spec,CP also is a violable constraint (which is outranked by SUBJECT). *Den* ('it') in (40)b originates in the complement position of the particle and it would thus have to adjoin to PrtP before moving on to the subject position. Consequently, the topicalised VP includes an intermediate trace of the subject.

(i) Da [_{VP} Smidt [_{PrtP} t' [_{PrtP} ud t]]] blev den ikke.

Tableau 13: Subject raising

Da	SUBJECT	ORDPRES	SHIFTPRON	STAY	ex.
a e Aux V <u>DP</u>	*!				-
☞ b <u>DP</u> Aux V t _{DP}		*		*	(44)b

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 and English.¹⁶

- (45) Da a. Derfor har jeg ikke givet Elsa bogen.
 therefore have I not given Elsa book-the
 b. Derfor blev Elsa ikke givet ___ bogen.
 therefore was Elsa not given ___ book-the
 c. *Derfor blev bogen ikke givet Elsa _____.
- (46) En a. I did not give Elsa the book.
 b. Elsa was not given ___ the book.
 c. *The book was not given Elsa _____.

Tableau 14: Promotion to subject in passive double object constructions

Da	SUBJECT	ORDPRES	SHIFTPRON	STAY	ex.
a e Aux V <u>DP DP</u>	*!				-
☞ b <u>DP</u> Aux V t _{DP} <u>DP</u>		*		*	(45)b
c <u>DP</u> Aux V <u>DP</u> t _{DP}		**!		*	(45)c

¹⁶ However, promotion of the DO to subject in passive double object constructions is possible in Swedish and Norwegian.

- (i) No a. Marie gav ham den.
 Maria gave him it
 b. Han ble gitt ___ den.
 he was given it
 c. Den ble gitt ham ___.
 it was given him

As expected by ORDPRES, promotion of the DO to the subject of a passive is possible if the recipient is expressed by a PP because in that case the DO precedes the PP in the base order.

- (47) Da a. Derfor har jeg ikke givet bogen til Elsa.
 therefore have I not given book-the to Elsa
 b. Derfor blev bogen ikke givet _____ til Elsa.
 therefore was book-the not given _____ to Elsa
 c. *Derfor blev Elsa ikke givet bogen til _____.
- (48) En a. I did not give the book to Elsa.
 b. The book was not given _____ to Elsa.
 c. *Elsa was not given the book to _____.

Tableau 15: Promotion to subject in passive DP PP constructions

Da	SUBJECT	ORDPRES	SHIFTPRON	STAY	ex.
a e Aux V <u>DP</u> <u>PP</u>	*!				-
☞ b <u>DP</u> Aux V t _{DP} <u>PP</u>		*		*	(47)b
c <u>DP</u> Aux V <u>DP</u> [P t _{DP}]		***!*		*	(47)c

Hence, the asymmetry between a subject and an object not moving along in remnant VP-topicalisations is accounted for by the difference in the ranking of SUBJECT and SHIFTPRON relative to ORDPRES: SUBJECT >> ORDPRES >> SHIFTPRON predicts that OS but not subject raising is blocked whenever it would result in a reversal of the order relations.

3.5 Asymmetry III: Remnant VP-topicalisation out of a main clause vs. an embedded clause

A third asymmetry in the availability of remnant VP-topicalisation concerns the depth of embedding of the topicalised VP, namely whether the remnant VP is topicalised out of a main clause or out of an embedded clause.

As shown in (49), a full VP may be topicalised from both main clauses and embedded clauses.

- (49) Da a. [_{VP} Set ham] har jeg ikke, ...
 seen him have I not
 ... hvis jeg skal være 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 du har, ...
 seen him believe I not that you have
 ... men du kan måske nok have talt i telefon med ham.
 but you may perhaps well have spoken in phone with him

Topicalisation of a remnant VP, by contrast, is only possible out of a main clause, (50)a, not out of an embedded clause in Danish: The stranded object may neither follow the finite auxiliary (in its base position), (50)b, nor may it precede it, (50)c:

- (50) Da a. [_{VP} Set _____] har jeg ham ikke, ...
 seen have I him not
 ... hvis jeg skal være 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 du [_{V°} har] ham, ...
 seen believe I not that you have him
- c. * [_{VP} Set _____] tror jeg ikke at du ham [_{V°} har], ...
 seen believe I not that you him have
 ... men du kan måske nok have talt i telefon med ham.
 but you may perhaps well have spoken in phone with him

This asymmetry is expected under the present analysis: As discussed in section 3.2, stranding of an object involves OS (it is motivated by SHIFTPRON); constituents whose movement out of VP is not independently triggered by some constraint cannot be stranded by remnant VP-topicalisation due to STAY. Targeting a position to the left of the base position of the finite verb, OS is only available if the verb has itself left its base position (ORDPRES >> SHIFTPRON) which it does not in embedded clauses in MSc; cf. (3) above. Hence, the difference between main clauses and embedded clauses in finite verb movement

is crucial for the asymmetry of remnant VP-topicalisation out of main clauses vs. out of embedded clauses.

Tableau 16: Remnant VP-topicalisation out of a main clause

Da	Topic: V	ORDPRES	SHIFTPRON	STAY	ex.
a	[_{VP} V <u>Pron-Obj</u>] Aux Sub Adv t _{VP}		*!		(49)a
b	[_{VP} V t _O] Aux Sub Adv <u>Pron-Obj</u> t _{VP}		*!	*	-
☞ c	[_{VP} V t _O] Aux Sub <u>Pron-Obj</u> Adv t _{VP}			*	(50)a

Tableau 17: No remnant VP-topicalisation out of an embedded clause

Da	Topic: V	ORDPRES	SHIFTPRON	STAY	ex.
☞ a	[_{VP} V <u>Pron-Obj</u>] V Sub Adv Comp Sub [_{VP} Aux t _{VP}]		*		(49)b
b	[_{VP} V t _O] V Sub Adv Comp Sub [_{VP} Aux <u>Pron-Obj</u> t _{VP}]		*	*!	(50)b
c	[_{VP} V t _O] V Sub Adv Comp Sub <u>Pron-Obj</u> [_{VP} Aux t _{VP}]	*!		*	(50)c

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 13 above.

- (51) Da a. [_{VP} Set _____] blev han ikke, ...
 seen was he not
 b. [_{VP} Set _____] tror jeg ikke at han blev, ...
 seen think I not that he was
 ... men der var nok mange der hørte ham.
 but there were probably many who heard him

The hypothesis that object stranding has to involve OS seems to be supported by the fact that Icelandic (which has V^o-to-I^o movement and, consequently, also OS in embedded clauses, cf. footnote 2), marginally permits a stranded object in

proceed successive cyclically through the left edge of VP while this is impossible for OS.

In contrast, in our OT approach, order preservation is required by a violable constraint. This means that it is the ranking of the ORDERPRESERVATION constraint relative to the constraints that motivate the various types of movement which 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 our 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 intermediate trace of a shifted object. Moreover, we presented new data that showed that subject raising does not underly either of these restrictions, and 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 finite verb movement has taken place, something that would be expected if any object left behind during remnant VP-topicalisation would have to undergo OS (and that as always, OS has to respect order preservation).

Appendix 1: 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. (23) and (24) 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.

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

- (54) STRUCTURE PRESERVATION (STRUCPRES):
 If the foot of the chain of some non-adverbial element α c-commands the foot of the chain of some element β , the head of the chain of α also c-commands the head of the chain of β .

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 (55)b changes the c-command relation between the verb and the shifted object.

- (55) 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 (53)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 18: No remnant VP-topicalisation

Da	Topic: V	TOPIC	STRUCPRES	SHIFTPRON	ex.
☞ a	[_{VP} V <u>Pron-IO</u> <u>Pron-DO</u>] Aux Sub Adv t _{VP}			*!*	(53)a
b	[_{VP} V t _{IO} t _{DO}] Aux Sub <u>Pron-IO</u> <u>Pron-DO</u> Adv t _{VP}		*!*		(53)b
c	[_{VP} V <u>Pron-IO</u> t _{DO}] Aux Sub <u>Pron-DO</u> Adv t _{VP}		*!*	*	(53)c
d	[_{VP} V t _{IO} <u>Pron-DO</u>] Aux Sub <u>Pron-IO</u> Adv t _{VP}		*!*	*	(53)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 2: Remnant VP-topicalisation in German and Dutch

As observed by Fox & Pesetsky (2005) for Swedish, there is also an asymmetry between stranding IO and stranding DO by remnant VP-topicalisation in

German. However, it goes in the opposite direction: Stranding of the IO is preferred over stranding of the DO though the contrast is not as sharp as in Swedish/Danish, (56)c being marginal but not ungrammatical. In other words, changing the base order of the objects as in (56)b is preferable to keeping the base order as in (56)c under remnant VP-topicalisation in German. Furthermore, note that remnant VP-topicalisation in an OV language necessarily reverses the order between the verb and the stranded object.

(56) Ge

- a. [VP Dem Mann das Buch gegeben] hat sie schon gestern.
 the man the book given has she already yesterday
- b. [VP _____ Das Buch gegeben] hat sie dem Mann schon gestern.
- c. ??[VP Dem Mann _____ gegeben] hat sie das Buch schon gestern.
- d. [VP _____ _____ Gegeben] hat sie dem Mann das Buch schon gestern.

That German allows order reversal in remnant VP-topicalisations is not surprising. The fact that German scrambling of pronominal and non-pronominal elements may change the order of arguments as in (57) requires ORDPRES to be outranked by both SHIFTPRON and the more general constraint SHIFT (see footnote 7) which are taken to trigger scrambling in the continental West Germanic languages as well (see Vikner & Engels 2006). Consequently, it is expected that an argument may be stranded (satisfying SHIFT or SHIFTPRON) although stranding changes the base order precedence relations (violating ORDPRES). (Further research is needed concerning the marginal status of (56)c.)

- (57) Ge
- | | | | | | | | |
|--------|-----|-----------------|-----------------|-------------------|-----------------|-----------------|----------|
| a. Sie | hat | | | schon gestern | <u>dem Mann</u> | <u>das Buch</u> | gegeben. |
| she | has | | | already yesterday | the man | the book | given |
| b. Sie | hat | <u>das Buch</u> | | schon gestern | <u>dem Mann</u> | _____ | gegeben. |
| c. Sie | hat | <u>das Buch</u> | <u>dem Mann</u> | schon gestern | _____ | _____ | gegeben. |
| d. Sie | hat | <u>es</u> | | schon gestern | <u>dem Mann</u> | _____ | gegeben. |
| she | has | it | | already yesterday | the man | | given |
| e. Sie | hat | <u>es</u> | <u>dem Mann</u> | schon gestern | _____ | _____ | gegeben. |

In contrast to German, however, scrambling of full DPs has to maintain the order of arguments in Dutch, (58), indicating that the constraint ORDPRES outranks SHIFT.

- (58) Du
- | | | | | | | | |
|--------|-------|-----------------|-----------------|-----------|---------------|-----------------|----------|
| a. Ze | heeft | | | gisteren | <u>de man</u> | <u>het boek</u> | gegeven. |
| she | has | | | yesterday | the man | the book | given |
| b. Ze | heeft | <u>de man</u> | | gisteren | _____ | <u>het boek</u> | gegeven. |
| c. Ze | heeft | <u>de man</u> | <u>het boek</u> | gisteren | _____ | _____ | gegeven. |
| d. *Ze | heeft | | <u>het boek</u> | gisteren | <u>de man</u> | _____ | gegeven. |
| e. *Ze | heeft | <u>het boek</u> | <u>de man</u> | gisteren | _____ | _____ | gegeven. |

However, as pointed out to us by Hans Broekhuis (p.c.), the ranking ORDPRES >> SHIFT predicts that remnant topicalisation is not possible at all in Dutch, contrary to fact. Although as an OV-language Dutch necessarily reverses the order of topicalised verb and stranded object in remnant VP-topicalisations, stranding of the IO and stranding of both IO and DO during remnant VP topicalisation is acceptable; stranding of the DO, in contrast, is ungrammatical (59).

- (59) Du
- | | | |
|---|--|------------------------------|
| a. [_{VP} <u>De man</u> <u>het boek</u> gegeven] | heeft ze | gisteren al. |
| the man the book given | has she | yesterday already |
| b. [_{VP} _____ <u>Het boek</u> gegeven] | heeft ze <u>de man</u> | gisteren al. |
| c. * [_{VP} <u>De man</u> _____ gegeven] | heeft ze _____ | <u>het boek</u> gisteren al. |
| d. [_{VP} _____ _____ Gegeven] | heeft ze <u>de man</u> <u>het boek</u> | gisteren al. |
- (Hans Broekhuis, p.c.)

It is interesting to note that the scrambling operation that precedes VP-topicalisation does not violate HG in (59)b, but only in (59)c (compare (58)b,c above). Maybe the fact that (59)b is grammatical even though it violates ORDPRES says something about ORDPRES being a repair strategy in case HG is violated.

Remember that in the Scandinavian languages, stranding of an object during remnant VP-topicalisation necessarily involves a violation of HG and it is only possible if the base order of elements is maintained, as required by ORDPRES (cf. sections 2.2 and 3.2, respectively). In other words, remnant VP-topicalisation may give rise to a repair effect in these languages, re-establishing the base order relations. In contrast, remnant VP-topicalisation does not restore the base order relations in OV-languages. The violation of HG in (58)c cannot be repaired by remnant VP-topicalisation, (59)c. However, the derivation of (59)b does not violate HG and, consequently, no repair strategy is needed. The fact that remnant VP-topicalisation reverses the order of elements would seem to be irrelevant.

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