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# Holmberg's Generalization

## Blocking and push up

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Holmberg's (1999) formulation of Holmberg's Generalization states that Scandinavian object shift cannot cross any phonologically realized VP-internal material. This correctly predicts that object shift may not apply in, e.g., embedded clauses in Danish: since in these languages V-to-I applies in main clauses only, the main verb occupies a VP-internal position in embedded clauses, and object shift would therefore violate HG. Generally, this is considered the end of the story, but it is not as HG can in principle be satisfied in two ways: either the verb blocks object shift, or object shift pushes the verb up into the I-position. A full explanation therefore requires an answer to the question of why the latter option is not chosen in Danish.

### 1. The problem

This article adopts as its point of departure the version of Holmberg's Generalization (HG) in (1), according to which Scandinavian object shift (OS) cannot cross a VP-internal verb or VP-internal arguments, but it can cross their traces (as well as adverbial phrases).<sup>1</sup>

- (1) **Holmberg's Generalization** (Holmberg 1999: 15): Scandinavian OS cannot apply across a phonologically visible category asymmetrically c-commanding the object position except adjuncts ( $\approx$  cannot cross a VP-internal verb or argument).

Now consider the examples in (2), taken from Vikner (2006), which show that Danish has pronominal OS in main but not in embedded clauses. Since Danish has no V-to-I in embedded clauses, this is precisely what we expect on the basis of (1): OS is allowed in main clause (2a) since it only crosses the trace of the main verb, which has been

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1. In Swedish, but not the other Scandinavian languages, OS can also be blocked by verbal particles; cf., e.g., Holmberg (1999) and Vikner (2006: section 2.1.2). I will not go into this here and refer to Broekhuis (2008: section 3.2.4) for discussion and analysis.

moved via the I-position into C, whereas OS is excluded in embedded clause (2b) since it crosses the main verb itself.<sup>2</sup>

- (2) a. *Hvorfor læste Peter <den> aldrig* [<sub>VP</sub> *t<sub>V</sub><\*den>*]?  
       why read Peter it never
- b. *Jeg spurgte why Peter <\*den> aldrig* [<sub>VP</sub> *læste <den>*].  
       I asked why Peter it never read

Generally, this is considered the end of the story, but it is not since HG could in principle be satisfied *in two ways*: either the verb blocks OS, as in the example (2b), or OS pushes the verb up into the empty I-position.

- (3) a. **Blocking strategy**: a VP-internal main verb blocks OS.  
       b. **Push-up strategy**: OS forces V-to-I of the main verb.

Option (3b) gives rise to a hypothetical language that behaves like Danish, but in which OS forces V-to-I to apply in embedded clauses. Given that Danish has no OS with lexical DPs, this would result in the asymmetry given in (4): V-to-I applies in embedded clauses when the object is a weak pronoun, but not when it is a lexical DP.

- (4) • Hypothetical language: “Danish” with push up of the main verb
- a. *Jeg spurgte hvorfor Peter aldrig* [<sub>VP</sub> *læste den.her bog*]  
       I asked why Peter never read this book
- b. *Jeg spurgte hvorfor Peter læste den aldrig* [<sub>VP</sub> *t<sub>V</sub> t<sub>DO</sub>*].  
       I asked why Peter read it never

Since example (4b) satisfies HG, we must answer the question of why Danish prefers the blocking strategy in (2b) to the push-up strategy in (4b). A possible answer is that this reflects an inherent property of the language system. One option would be that the preference for blocking follows from the architecture of the language system. This comes close to the proposal by Holmberg (1999), who adopts the standard assumption that syntactic derivations are cyclic and adds to this the claim that any step in the derivation must satisfy HG in (1). Holmberg notes that these conditions cannot be simultaneously satisfied if OS is a syntactic operation: applying OS before V-to-I results in a violation of HG, and applying V-to-I before OS results in a counter-cyclic derivation. Holmberg therefore concludes that OS is a post-syntactic operation. From

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2. It is not categorically impossible to move an object across the main verb: *wh*-movement and Topicalization are possible, and the same holds for Neg/Q-movement (movement of negated and certain quantified DPs). These movements differ from OS in that they arguably involve A'-movement instead of A-movement. For more discussion on *wh*-movement and Topicalization, see Holmberg and Platzack (1995), and for Neg/Q-movement, see Svenonius (2000), Christensen (2005) and Broekhuis (2008: section 4.3.2).

this, it may follow that OS is inherently incapable of forcing syntactic operations like V-to-I as it applies in a grammatical module that can only be accessed after the application of the rules of core syntax. Push up is consequently excluded for principled reasons, so that blocking is the only remaining option. However, there is good reason to doubt that OS is a post-syntactic operation: Chomsky (2001: 15) has pointed out that it is not expected for post-syntactic rules to be semantically restricted, so that the fact illustrated in (5) below that Icelandic OS can only apply to presuppositional material leads to the conclusion that OS is a syntactic operation after all. It also implies that we must drop Holmberg's assumption that HG is a condition on derivations, and assume that it is rather a filter on output representations.

A plausible alternative hypothesis of a more syntactic nature takes recourse to the notion of economy, and relies on the fact that the push-up strategy involves application of an otherwise unforced movement: in Danish, V-to-I need not apply in embedded clauses and therefore its application in (4b) is blocked by economy. The discussion of the Icelandic examples below will show that this hypothesis cannot be maintained either. Of course, Icelandic does not involve push up of the finite verb given that V-to-I is obligatory in Icelandic for independent reasons (cf. section 4), but we can observe the push-up strategy in double object constructions. First, consider the examples in (5). The first two examples show that OS of lexical DPs is "optional" in Icelandic, the choice between them being dependent on the information structure of the clause: in (5a) the DP is part of the focus ('new' information) of the clause, whereas in (5b) it is part of the presupposition of the clause. Example (5c) shows that pronoun shift is obligatory.

- (5) • Icelandic (core data)
- |    |   |  |
|----|---|--|
| a. | <i>Jón las ekki þessa bók.</i>                | ( <i>þessa bók</i> $\subset$ focus)          |
|    | Jón read not this book                        |  |
| b. | <i>Jón las þessa bók ekki t<sub>DO</sub>.</i> | ( <i>þessa bók</i> $\subset$ presupposition) |
|    | Jón read this book not                        |  |
| c. | <i>Jón las ⟨hana⟩ ekki ⟨*hana⟩</i>            | ( <i>hana</i> = pronoun)                     |
|    | Jón read it not                               |  |

These examples lead to certain expectations for Icelandic double object constructions. The most interesting case is the one in (6) with an indirect object DP and a pronominal direct object. First, assume that the indirect object is part of the *presupposition* of the clause. The judgments are then exactly as expected on the basis of the observations in (5): both the indirect object and the pronominal object will undergo OS, as in (6c).

- (6) a. \**Pétur sýndi oft Maríu hana.*  
       Pétur showed often Maríu it
- b. \**Pétur sýndi Maríu oft t<sub>IO</sub> hana.*
- c. *Pétur sýndi Maríu<sub>i</sub> hana<sub>j</sub> oft t<sub>IO</sub> t<sub>DO</sub>.*
- d. \**Pétur sýndi hana<sub>j</sub> oft Maríu t<sub>DO</sub>.*

We do not expect, however, that (6c) must also be used when the indirect object is part of the *focus* of the clause: the observations in (5) rather lead to the expectation that in this case the indirect object prefers to stay in its base position, whereas the direct object undergoes OS. Both preferences can be satisfied simultaneously by shifting the direct object across the indirect object, as in (6d), but this is excluded by the formulation of HG in (1). This leaves us with the two alternatives in (7): the blocking strategy wrongly selects example (6a) as the grammatical one, whereas the push-up strategy correctly selects (6c). This shows that, in this case, it is the push-up strategy that has the desired result.

- (7) a. **Blocking strategy:** a VP-internal non-presuppositional indirect object blocks OS of a pronominal direct object.  
 b. **Push-up strategy:** OS of a pronominal direct object forces OS of a VP-internal non-presuppositional indirect object.

The discussion above unequivocally shows that the hypothesis that push up is blocked by considerations of economy cannot be maintained. Blocking and push up are both available: failure to apply V-to-I to the main verb in Danish *blocks* OS, whereas OS of a pronominal direct object *forces* OS of a non-pronominal indirect object in Icelandic. This article will investigate what determines which of the two strategies is applied in which case. The proposed analysis contains three basic ingredients. First, HG in (1) will be derived by assuming that Scandinavian OS is subject to a number of shape conservation constraints (cf. Williams 2003; Müller 2000/2001, and Fox & Pesetsky 2005). Secondly, I will propose a maximally simple theory of V-to-I that accounts for some of the core facts in the Germanic languages. Thirdly, I will formulate a proposal concerning the question of how order preservation and V-to-I interact. The analysis is phrased in terms of the derivation-and-evaluation analysis of OS in Broekhuis (2000/2008), which will be reviewed in section 2.<sup>3</sup>

## 2. The derivation-and-evaluation model

This section briefly introduces some background assumptions adopted in the derivation-and-evaluation (D&E) framework; cf. Broekhuis (2008) for a more elaborate discussion. In much current linguistic theorizing, the focus of attention is one-sidedly restricted either to the derivation (as in most minimalist studies) or to the evaluation of the output of the derivation (as in most optimality-theoretic work).

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3. Given the space limitations, it is neither possible to do justice to the vast literature on OS nor to discuss the relation between OS and Dutch/German Scrambling. I refer to Broekhuis (2008) for extensive discussion of these issues.

The basic claim of the D&E framework is that in order to arrive at a descriptively and explanatorily adequate theory, it is needed to integrate both aspects into a single overarching framework. In order to obtain this, Broekhuis and Dekkers (2000) have argued in favor of the model in Figure 1, in which some version of the computational system  $C_{HL}$  functions as a generator, which produces an output that is evaluated in an optimality-theoretic manner.



Figure 1. The derivation-and-evaluation model

Just as in most minimalist work,  $C_{HL}$  consists of at least two operations, which are subject to inviolable conditions. The first operation is external merge that selects/copies some element from the lexicon and merges it with some other lexical element or with some syntactic object already formed.<sup>4</sup> I will refer to this operation as *Select*, and follow Hornstein (2001) in assuming that it is subject to last resort, that is, triggered by some unsaturated  $\theta$ -feature. The second operation is internal merge that selects/copies some element from the structure already formed and merges it to the root of that structure. I will refer to this operation as *Move* and follow the standard assumption that it is subject to last resort (triggered by some unvalued formal feature), locality conditions, the extension condition, etc.

The main difference between D&E and the 'standard' versions of the minimalist program is that the former claims that  $C_{HL}$  is a truly autonomous system in the sense that it is not sensitive to *STRENGTH/EPP*-features that force or block the application of a certain operation; in fact, it is claimed that there are no such features. At any point in the derivation, then,  $C_{HL}$  may randomly choose between applying or not applying the operation(s) that could in principle be performed (= satisfy the last resort condition), as in Figure 2. Consequently, the number of candidates in the candidate set is therefore at most  $2^n$ , where  $n$  is the number of operations that satisfy Last Resort. The actual number of candidates even radically decreases when we adopt phase theory: when we have a single cycle with 16 operations that satisfy last resort, this derives at most  $65.536 (= 2^{16})$  candidates; however, when we divide this cycle into 4 phases of 4 operations each, the number of candidates is at most  $64 (= 4 \times 2^4)$ , provided, of course, that we have some form of cyclic optimization.

4. See Broekhuis and Klooster (2007) and Broekhuis (2008) for empirical reasons against the claim that selection of lexical elements involves the construction of a numeration and in favor of the assumption that lexical items are taken from the lexicon directly.

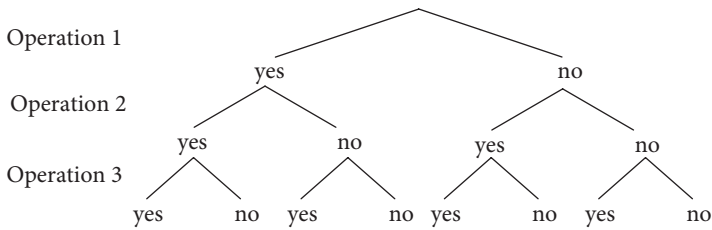


Figure 2. The construction of the candidate set

The advantage of assuming that  $C_{HL}$  restricts the number of candidates in the candidate set is that this enables us to drastically reduce the universal constraint set CON postulated by OT. Furthermore, since the candidates differ from each other in a small number of predictable ways (see Figure 2), we may also expect the number of constraint *types* to be rather small. Let us therefore assume that the OT-evaluator is actually a formalization of the interface conditions postulated in the minimalist program. If so, the syntactic constraints in CON must be related to the three components involved: the computational system  $C_{HL}$ , which creates the relevant syntactic representations in the candidate set, and the articulatory-perceptual and the conceptual-intentional systems, which interpret these representations. Consequently, the syntactic constraints are of the two basic types in (8a&b).

(8) **The syntactic constraints in CON**

- a.  $C_{HL}$  constraints:
  - (i) EPP constraints: probe F attracts its goal (cf. (9)).
  - (ii) Economy constraints: constraints on internal (or external) merge (cf. (10)).
- b. Interface constraints:
  - (i) LF constraints: semantic constraints on Move (cf. (12)).
  - (ii) PF constraints: constraints on e.g., linearization (cf. (15)) and deletion.

As is shown in (8a), the  $C_{HL}$  constraints come in two subtypes. Constraints of the first subtype favor movement, and will be referred to as EPP constraints since they all require that some unvalued formal feature attracts its goal. The EPP constraints used below are given in (9). The constraints EPP( $\varphi$ ) and EPP(case) define two instances of OS: section 3 will briefly discuss OS triggered by the unvalued  $\varphi$ -features on V, and section 5 will discuss OS triggered by the unvalued case features on  $\nu$ . The constraint \*STRAY FEATURE will enter the analysis of verb movement in section 4.

(9) **EPP constraints:**

- a. EPP( $\varphi$ ): unvalued  $\varphi$ -features attract their goal.
- b. EPP(case): an unvalued case-feature attracts its goal.
- c. \*STRAY FEATURE: amalgamate formal features of the functional heads with the root they are associated with (e.g., unvalued verbal features on  $\nu$ , Asp and I attract their goal).

The second subtype of  $C_{HL}$  constraints are economy constraints that disfavor movement. The constraints used in the discussion below are taken from Grimshaw (1997) and given in (10).

- (10) **Economy constraints:**
- a. \*MOVE (STAY): don't apply internal merge.
  - b. NOLEXM: don't apply internal merge to lexical ( $\theta$ -role assigning) verbs.

Word order variation between languages can now be accounted for by assuming that the EPP and economy constraints interact in an OT-fashion. Ranking (11a), for example, expresses that the case feature on  $\nu$  (normally) does not trigger OS, because it is more important to satisfy the economy constraint \*MOVE than EPP(case). This ranking will be called 'weak', since it is more or less equivalent to saying that the case feature is weak or has no EPP-feature associated with it. Ranking (11b) expresses that the unvalued case feature (normally) triggers OS, because it is more important to satisfy EPP(case) than \*MOVE. This ranking will be called 'strong', since it is more or less equivalent to saying that the case feature is strong or has an EPP-feature associated with it. The rankings in (11a&b) thus distinguish languages like Icelandic, in which the case feature on  $\nu$  normally triggers OS, from languages in which this is not the case. An important advantage of this formalization of "feature strength" is that we do not categorically block or force movement: even under the weak ranking OS can be forced provided that there is some higher ranked constraint A that favors it (cf. (11a')), and even under the strong ranking OS can be blocked provided there is some higher ranked constraint B that disfavors it (cf. (11b')).

- (11) a. \*MOVE >> EPP(case) (Weak ranking: case features normally do not trigger OS)  
 a'. A >> \*MOVE >> EPP(case) (If A favors OS, 'Procrastinate' is overruled)  
 b. EPP(case) >> \*MOVE (Strong ranking: case features normally trigger OS)  
 b'. B >> EPP(case) >> \*MOVE (If B disfavors OS, 'Strength' is overruled)

The weak and strong rankings are typically overruled by the interface constraints in (8b): the role of A and B in (11a'&b') can be respectively performed by the LF-constraints in (12a&b). The constraint D-PRONOUN in (12a) essentially adapts Diesing's (1997) claim that definite pronouns are variables that cannot occur in the domain of existential closure.<sup>5</sup> The constraint ALIGNFOCUS, taken from Costa (1998),

5. I am passing over at least two important issues here. First, there are also proposals that attribute the tendency of pronouns to shift to their phonological weakness (cf. Vogel 2006), which would make D-PRONOUN a PF-constraint. It is not really important for the present discussion which proposal is the correct one, given that we would be dealing with an interface condition in both cases. Second, the pronoun of course moves into the local domain of  $\nu$ , so that one could dispute the claim that its landing site is  $\nu$ P-externally: what is intended here is that the pronoun is moved across the base position of the subject.



formalizes the well-known observation that new information tend to occur in the right periphery of the clause.

(12) **LF constraints:**

- a. D-PRONOUN: a definite pronoun must be  $\nu$ P-external:  $*[_{\nu P} \dots \text{pron}_{[+def]} \dots ]$ .
- b. ALIGNFOCUS (AF): the prosodically unmarked focus is the rightmost constituent in its clause.

First, consider the case in (11a'), which can be illustrated by means of the Danish examples in (13). Broekhuis (2000) argued that Danish OS in (13a) is blocked by the weak ranking  $*\text{MOVE} \gg \text{EPP}(\text{case})$ . The fact that OS is nevertheless possible when the object is a definite pronoun is due to the fact that  $*\text{MOVE}$  is outranked by D-PRONOUN, which requires that the pronominal object be  $\nu$ P-external.

(13) Danish: D-PRONOUN  $\gg$   $*\text{MOVE} \gg$  EPP(case)

- a. *Hvorfor læste studenterne*  $\langle *artiklen \rangle$  *ikke*  $\langle artiklen \rangle$ ?  
Why read the.students the.article not
- b. *Hvorfor læste studenterne*  $\langle den \rangle$  *ikke*  $\langle *den \rangle$ ?  
why read the.students it not

This shows that we can readily account for the fact that languages differ to the extent that they exhibit OS: languages like Icelandic allow OS both with pronominal and lexical DPs due to the fact that they have a strong ranking of EPP(case), languages like Danish have the ranking D-PRONOUN  $\gg$   $*\text{MOVE} \gg$  EPP(case) and therefore allow OS of pronouns only, and languages like Finnish Swedish do not have any form of regular OS because  $*\text{MOVE}$  outranks both EPP(case) and D-PRONOUN. This gives rise to the following macro-parameterization.

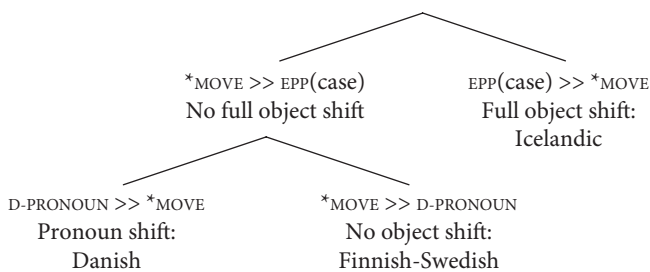


Figure 3. Macro-parameterization of languages with respect to OS

Now, consider the case in (11b'), which can be illustrated by means of the Icelandic examples in (5a&b), repeated here in a slightly different form as (14), in which the angled brackets indicate alternative placements of the object. By assuming that ALIGNFOCUS outranks EPP(case), we account for the fact that OS is excluded when

the object is part of the focus of the clause given that the high ranking of ALIGNFOCUS requires it to be the rightmost constituent in its clause.

- (14) Icelandic: AF >> EPP(case) >> \*MOVE
- a. *Jón las ⟨\*þessa bók⟩ ekki ⟨þessa bók⟩.* (þessa bók ⊂ focus)
- b. *Jón las ⟨þessa bók⟩ ekki ⟨\*þessa bók⟩.* (þessa bók ⊂ presupposition)

We will see later that the PF-constraints in (15a&b) also block OS that would normally apply if this results in distorting the underlying word order: this will derive HG in (1). The constraint in (15c) may force verb movement that is otherwise not allowed: we will see that this constraint accounts for the asymmetry that some languages exhibit with respect to V-to-I in embedded and main clauses.

- (15) PF constraints:
- a. H-COMPL: a head precedes all terminals dominated by its complement.
- b. Relativized Minimality (RELMIN): If the foot of X-chain  $\alpha$  c-commands the foot of X-chain  $\beta$ , the head of X-chain  $\alpha$  c-commands the head of X-chain  $\beta$  (where X-chain = A-, A'-, or head chain).
- c. LEXICALLY FILL TOP F (LFTF): the highest head position in an extended projection must be lexically filled.

### 3. VO- versus OV-languages and short OS

The shape conservation constraints in (15a) and (15b) prohibit changing the underlying order of respectively heads and their complements, and of the arguments. These constraints imply some version of Kayne's (1994) "universal base" hypothesis, and this, in turn, raises the question of how so-called VO- and OV-languages differ. This will be the topic of this section.

#### 3.1 The universal base hypothesis

For reasons discussed in Broekhuis (2008), I will follow Kayne (1994) in assuming that the universal order is *specifier-head-complement*. Furthermore, I will adopt Hale and Keyser's (1993) proposal that verbs consist of a root and some verbalizing element: I will refer to the verbalizing element that combines with finite verbs as *v*, and to the verbalizing element that combines with participles as *Asp*. The base orders for present/past and perfect tense constructions are as given in (16a) and (16b), respectively. Finally, I follow Broekhuis (2000) in assuming that the root *V/aux* and the light verb *v* are associated with different nominal features: *V/aux* has unvalued  $\phi$ -features, whereas *v* has unvalued case-features (cf. Chomsky 2005, who adopts a similar claim in the guise of feature inheritance).

(16) • **Universal base hypothesis**

- a. [... I ... [(S) ...  $v_{[ucase]}$  [...  $V_{[u\phi]}$  OBJ]]]]  
 b. [... I ... [(S) ...  $v_{[ucase]}$  [...  $aux_{[u\phi]}$  [... Asp [...  $V_{[u\phi]}$  OBJ]]]]]]]

Since unvalued features act as probes, (16) implies that we must distinguish two types of OS. The first type is triggered by the case features on  $v$ , and since it is this type that is normally discussed in the literature on OS, I will refer to it as *regular* OS. The second type is triggered by the unvalued  $\phi$ -features on the verbal roots  $V/aux$ ; since the landing site of this type of OS is lower than that of regular OS, I will refer to this type as *short* OS. This section focuses on short OS, since it can readily be seen from (16) that the question of whether a certain language surfaces with a VO- or an OV-order depends on the application of this movement and  $V\text{-to-}v/Asp$ , that is, the ranking of the EPP constraints  $EPP(\phi)$  and  $*STRAY\ FEATURE$  in (9a&c) with respect to the economy constraint  $*MOVE$ .

## 3.2 Germanic VO-languages (simple tense constructions)

The constraints  $EPP(\phi)$ ,  $*STRAY\ FEATURE$  and  $*MOVE$  can in principle be ranked in six different ways, and five of these rankings will derive the VO-order. These five rankings are given in (17), where  $\{A,B\}$  expresses that the rankings  $A \gg B$  and  $B \gg A$  give rise to the same result. The rankings in (17) define three alternative ways of deriving the VO-order. The first option is to assume that the economy constraint  $*MOVE$  outranks both  $EPP(\phi)$  and  $*STRAY\ FEATURE$ : this predicts that  $V\text{-to-}v$  and short OS are both blocked. The second option is to assume that  $*MOVE$  is outranked by  $*STRAY\ FEATURE$  but not by  $EPP(\phi)$ : this predicts  $V\text{-to-}v$  to be possible but short OS to be excluded. The third option is to assume that the two EPP constraints both outrank  $*MOVE$ : this predicts that  $V\text{-to-}v$  and short OS apply both. Finally, assume that VP-adverbs are adjoined to the projection of the verb root  $V$ , and that both  $V\text{-to-}v$  and short OS cross these adverbs (Chomsky 1995a: 329ff.). The ranking in (17a) then predicts that both the verb and the object will follow the VP-adverb, (17b) that the VP-adverb appears in between the verb and the object, and (17c) that the verb and the object both precede the VP-adverb, and (18) shows that (17c) makes the correct predictions for English.<sup>6</sup>

6. I have nothing to say about the question of what determines whether a certain adverbial phrase is used as a VP- or as a sentential adverbial: for our present purpose it suffices that adverbs that are normally assumed to be 'low' (like manner, time and place adverbials) must follow both the verb and the object, whereas those that are assumed to be 'high' (like modal and many frequency adverbials) precede them. This means that the question of why *every day* rather behaves like a time than like a frequency adverb is far beyond the scope of this paper.

- (17) Germanic VO-languages: 5 potential rankings
- Option I:  $*\text{MOVE} \gg \{\text{EPP}(\varphi), *\text{STRAY FEATURE}\} \Rightarrow [\dots v \text{ adverb } V \text{ OBJ}]$
  - Option II:  $*\text{STRAY FEATURE} \gg *\text{MOVE} \gg \text{EPP}(\varphi) \Rightarrow [\dots v+V \text{ adverb } t_V \text{ OBJ}]$
  - Option III:  $\{\text{EPP}(\varphi), *\text{STRAY FEATURE}\} \gg *\text{MOVE} \Rightarrow [v+V \text{ OBJ adverb } t_V t_{\text{OBJ}}]$
- (18) a. *\*that John every day reads books.*  
 b. *\*that John reads every day  $t_V$  books.*  
 c. *that John reads books every day  $t_V t_{\text{DO}}$ .*

The evaluation of the examples in (18) is given in Tableau 1. Since there are two operations that can in principle apply (in the relevant part of the derivation), there are four ( $= 2^2$ ) candidates. The selection of (18c) as the optimal candidate does not depend on the ranking of the constraints  $\text{EPP}(\varphi)$  and  $*\text{STRAY FEATURE}$ , which is indicated in Tableau 1 by placing a dashed line between the two constraints; the angled brackets “>” and “<” indicate in which constraint order the relevant constraint incurs a fatal violation; the exclamation mark indicates that the constraint is fatal on both orders.<sup>7</sup>

Tableau 1: VO-languages

	$\text{EPP}(\varphi)$	$*\text{STRAY FEATURE}$	$*\text{MOVE}$
$[v \text{ adv } [V \text{ O}]]$	*>	*<	
$[v+V \text{ adv } [t_V \text{ O}]]$	*!		*
$[v \text{ [O adv } [V t_O]]]$		*!	*
$[v+V \text{ [O adv } [t_V t_O]]]$ ☞			**

There are additional reasons to assume that option III, with short OS and V-to- $v$ , is the correct one for English. For example, Johnson (1991) has argued on the basis of the placement of the object in particle verb constructions like *John looked <the information> up <the information>* that English has some sort of object movement that moves the object in front of the particle. Overt OS has also been proposed by Lasnik (1999a/1999b) on the basis of examples like *The DA proved the defendants to be guilty*

7. The present proposal also correctly predicts that sentential objects must follow the post-verbal (low) adverbs: since sentential objects do not have  $\varphi$ -features, they are not suitable goals for the unvalued  $\varphi$ -features on the root V so that they must remain in their base position following the VP-adverbs; the strong ranking of  $*\text{STRAY FEATURE}$  forces V-to- $v$  and as a result the adverb appears in between the verb and the sentential object: *that John said yesterday  $t_V$  that he will come*. The proposal does, however, not predict that PP-complements may either precede or follow the VP-adverbs in English.

during *each other's* trials: the subject of the infinitival clause must be shifted into the matrix clause in order to be able to bind the anaphor *each other* embedded in the adverbial phrase of the matrix clause. A cursory look at the position of the VP-adverbs in the Scandinavian languages suggests that they behave just like English. For this reason, I will adopt as a working hypothesis that all Germanic VO-languages are like English in having obligatory short OS, and hence that they all have the partial constraint ranking in (17c).

### 3.3 Germanic OV-languages (Dutch/German)

Example (17) gives us five out of the six possible rankings of the constraints  $EPP(\varphi)$ ,  $*STRAY\ FEATURE$  and  $*MOVE$ . This leaves the ranking in (19), and it is this ranking that gives rise to the Germanic OV-languages. The subranking  $EPP(\varphi) \gg *MOVE$  expresses that the  $\varphi$ -features of V trigger short OS, whereas the subranking  $*MOVE \gg *STRAY\ FEATURE$  expresses that V-to- $v$  normally does not apply. The evaluation in Tableau 2 shows that this correctly predicts that the nominal object is obligatorily placed in a position preceding the clause-final verb.<sup>8</sup>

- (19) Germanic OV-languages:  $EPP(\varphi) \gg *MOVE \gg *STRAY\ FEATURE$
- a. *\*dat Jan leest dat boek.*  
that Jan reads that book
- b. *dat Jan dat boek leest t<sub>DO</sub>.*

Tableau 2: OV-languages (simple tense)

	$EPP(\varphi)$	$*MOVE$	$*STRAY\ FEATURE$
$[v [V O]]$	*!		*
$[v+V [t_V O]]$	*!	*	
$[v [O [V t_O]]]$ $\varphi$		*	*
$[v+V [O t_V [t_V t_O]]]$		**!	

So far we have only considered examples with simple tenses. The Dutch examples in (20) show that in perfect tense examples the object must also precede the auxiliary.

8. The present proposal also correctly predicts that sentential objects do not precede the verb; since sentential objects do not have  $\varphi$ -features, they are not suitable goals for the unvalued  $\varphi$ -features on the root V so that they must remain in their base position following the clause-final verb: *dat Jan zei [<sub>S</sub> dat hij ziek was]* 'that Jan said that he was ill'. The proposal does, however, not predict that PP-complements may either precede or follow the clause-final verbs in Dutch.

This follows under the assumption in (16b) that both the root of the main verb and the root of the auxiliary are endowed with  $\varphi$ -features: the strong ranking of  $EPP(\varphi)$  does not only force movement of the object into the local domain of the verbal root of V but also into that of the auxiliary. Note that I have added the sentential adverb *waarschijnlijk* 'probably' to these examples in order to exclude the possibility that (20c) is derived by regular OS, which would target a position *to the left* of this adverb. The proposal that auxiliaries have  $\varphi$ -features is originally due to Broekhuis and Van Dijk (1995), who argue that auxiliaries can also assign case, in more current terminology, that auxiliaries are associated with a light verb *v*.<sup>9</sup>

- (20) a. \**dat Jan waarschijnlijk heeft gelezen dit boek.*  
 b. \**dat Jan waarschijnlijk heeft dit boek gelezen t<sub>DO</sub>.*  
 c. *dat Jan waarschijnlijk dit boek heeft t'<sub>DO</sub> gelezen t<sub>DO</sub>.*  
     that Jan probably this book has read  
     'that Jan has probably read this book.'

The evaluation is given in the following tableau; in order to save space, this tableau does not include candidates with V-to-Asp or aux-to-*v*, which are all excluded due to the weak ranking of \*STRAY FEATURE, which is also omitted from this tableau.

Tableau 3: OV-languages (complex tenses)

candidates with V-movement ignored	$EPP(\varphi)$	*MOVE
... <i>v</i> [... aux [... Asp [... V O]]]	**!	
... <i>v</i> [... aux [... Asp [O... V t <sub>O</sub> ]]]	*!	*
... <i>v</i> [O ... aux [... Asp+V [t <sub>O</sub> ... V t <sub>O</sub> ]]]     ☞		**

### 3.4 The Germanic VO-languages again: perfect tense examples

The proposed analysis of the perfect tense constructions in Dutch creates a new problem for the analysis of the VO-languages. Since we have seen that these languages also have a strong ranking of  $EPP(\varphi)$ , we wrongly predict that in these languages the object must also be moved into the local domain of the auxiliary root, and should therefore cross the main verb. This means that short OS must be

9. Of course, it is also possible to have the participle in the position preceding the auxiliary (which is, in fact, the only option in German). Since the space is simply lacking to discuss this issue properly, I have to refer the reader to Broekhuis (2008: section 5.3) for an analysis of this fact in terms of predicate movement.

selectively blocked: the shift in (21b) must be forced, whereas the additional shift in (21b'), which results in a violation of HG in (1), must be blocked. This can be obtained by assuming that the shape conserving constraint H-COMPL in (15a) is ranked above EPP( $\varphi$ ), as in (21).

- (21) Type A: H-COMPL >> {EPP( $\varphi$ ), \*STRAY FEATURE} >> \*MOVE
- a. [...  $v+V$  [OBJ ...  $t_V t_{OBJ}$ ]] (simple tense)
- b. [...  $v+aux$  [...  $t_{aux}$  [... Asp+V [OBJ ...  $t_V t_{OBJ}$ ]]]] (perfect tense)
- b'. \* [...  $v+aux$  [OBJ ...  $t_{aux}$  [ $t'_{OBJ}$  ... Asp+V [ $t_{OBJ}$  ...  $t_V t_{OBJ}$ ]]]]

The evaluations of the simple and perfect tense examples in Tableaux 4 and 5 show that the ranking in (21) allows short OS to apply as long as it does not invert the object and the main verb; this excludes the output representation in (21b'). In order to save space, Tableau 5 only contains the candidates with verb movement; the candidates without verb movement are all excluded due to the strong ranking of \*STRAY FEATURE, which is also omitted from this tableau.

Tableau 4: VO-languages, hypothetical type A (simple tense)

	H-COMPL	EPP( $\varphi$ )	*STRAY FEATURE	*MOVE
[ $v$ adv [V O]]		*>	*<	
[ $v+V$ adv [ $t_V$ O]]		*!		*
[ $v$ [O adv [V $t_O$ ]]]	*!		*	*
[ $v+V$ [O adv [ $t_V t_O$ ]]] $\mathcal{F}$				**

Tableau 5: VO-languages, hypothetical type A (perfect tense)

candidates without V-movement ignored	H-COMPL	EPP( $\varphi$ )	*MOVE
[ $v$ +aux [... $t_{aux}$ [... Asp+V [... $t_V$ O]]]]		**!	**
[ $v$ +aux [... $t_{aux}$ [... Asp+V [O... $t_V t_O$ ]]]] $\mathcal{F}$		*	***
[ $v$ +aux [O... $t_{aux}$ [... Asp+V [ $t_O$ ... $t_V t_O$ ]]]]	*!		****

Now consider the evaluations in Tableaux 6 and 7. These tableaux show that the introduction of the partial ranking H-COMPL >> EPP( $\varphi$ ) >> \*MOVE makes it possible to derive the same result while postulating a weak ranking of \*STRAY FEATURE. Languages with this ranking exhibit the VO-order due to a **push-up** strategy: EPP( $\varphi$ ) >> \*MOVE favors short OS; H-COMPL >> EPP( $\varphi$ ) disfavors movement of the object across the verb, and EPP( $\varphi$ ) >> \*MOVE >> \*STRAY FEATURE favors push up of the verbal root

V over blocking of short OS. Below I will argue that this VO-type indeed exists and is instantiated by Danish.<sup>10</sup>

- (22) Type B: H-COMPL >> EPP( $\varphi$ ) >> \*MOVE >> \*STRAY FEATURE
- [...  $v+V$  [OBJ] ...  $t_V t_{OBJ}$ ]]
  - [...  $v+aux$  [...  $t_{aux}$  [... Asp+V [OBJ] ...  $t_V t_{OBJ}$ ]]]]
  - \*[...  $v+aux$  [OBJ] ...  $t_{aux}$  [ $t'_{OBJ}$  ... Asp+V [ $t_{OBJ}$  ...  $t_V t_{OBJ}$ ]]]]

Tableau 6: VO-languages, hypothetical type B (simple tense)

simple tense	H-COMPL	EPP( $\varphi$ )	*MOVE	*STRAY FEATURE
[ $v$ adv [V O]]		*!		*
[ $v+V$ adv [ $t_V$ O]]		*!	*	
[ $v$ [O adv [V $t_O$ ]]]	*!		*	*
[ $v+V$ [O adv [ $t_V t_O$ ]]] $\varnothing$			**	

Tableau 7: VO-languages, hypothetical type B (perfect tense)

	H-COMPL	EPP( $\varphi$ )	*MOVE	*STRAY FEATURE
[ $v$ [... aux [... Asp [... V O]]]]		**!		**
[ $v$ [... aux [... Asp+V [... $t_V$ O]]]]		**!	*	*
[ $v+aux$ [... $t_{aux}$ [... Asp [... V O]]]]		**!	*	*
[ $v+aux$ [... $t_{aux}$ [... Asp+V [... $t_V$ O]]]]		**!	**	
[ $v$ [... aux [... Asp [O ... V $t_O$ ]]]]	*!	*	*	**
[ $v$ [... aux [... Asp+V [O ... $t_V t_O$ ]]]] $\varnothing$		*	**	*
[ $v+aux$ [... $t_{aux}$ [... Asp [O ... V $t_O$ ]]]]	*!	*	**	*
[ $v+aux$ [... $t_{aux}$ [... Asp+V [O ... $t_V t_O$ ]]]]		*	***!	
[ $v$ [O ... aux [... Asp [ $t_O$ ... V $t_O$ ]]]]	*!		**	**
[ $v$ [O ... aux [... Asp+V [ $t_O$ ... $t_V t_O$ ]]]]	*!		***	*
[ $v+aux$ [O ... $t_{aux}$ [... Asp [ $t_O$ ... V $t_O$ ]]]]	*!		***	*
[ $v+aux$ [O ... $t_{aux}$ [... Asp+V [ $t_O$ ... $t_V t_O$ ]]]]	*!		****	

10. Type B languages should not have V-to- $v$  when the object remains in situ. In order to account for the fact that V-to- $v$  also applies with sentential complements, we can no longer adopt the assumption from fn.7/8 that these complements remain VP-internally. Broekhuis (2008) solves this problem by following Den Dikken (1995) and Kayne (2005: ch.11) in assuming that “extraposed” clauses are actually “intraposed” and end up in postverbal position as the result of remnant VP-movement to the left. An analysis along the same line is given for the placement of PP-complements.



### 3.5 Conclusion

This section has argued that there are in principle two different types of Germanic VO-languages. Type A in (21) requires V-to-v/Asp because of a strong ranking of \*STRAY FEATURE. Type B in (22) has a weak ranking of \*STRAY FEATURE, but exhibits V-to-v/Asp as a result of push up due to a high ranking of H-COMPL. The OV-languages also have a weak ranking of \*STRAY FEATURE, but do not exhibit push up of the verbal root due to a low ranking of H-COMPL.<sup>11</sup>

## 4. V-to-I

This section argues that the two types of VO-languages distinguished in Section 3 do indeed occur in Germanic: Icelandic is a language of type A, while Danish is of type B. The reason for this claim is that the two language types can be distinguished by taking into consideration other verb movement operations like V-to-I. Since type A has a strong ranking of \*STRAY FEATURE it is expected that languages of this type (normally) have V-to-I, as is indeed the case in Icelandic. Type B in (22), on the other hand, has a weak ranking of \*STRAY FEATURE, so that it is expected that in languages of this type V-to-I is (normally) blocked; this is the case in Danish, in which V-to-I is more or less restricted to root clauses. Note that the OV-languages also have a weak ranking of \*STRAY FEATURE, and are therefore correctly expected to behave like Danish with respect to V-to-I.<sup>12</sup>

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11. One of the reviewers raises the interesting question of what the low ranking of H-COMPL in the Germanic OV-languages implies for categories other than the verb, given that we know that nominal and adjectival phrases are mostly head initial. Of course, the low ranking of H-COMPL does not entail that projections must be head-final; this will only be the case if movement of the complement across the head is needed for independent reasons. Given that nouns and adjectives normally neither agree with nor assign case to their complement, the latter need not be moved so that they will follow the head. In this connection it is important to note that the exceptional adjectives that do take a nominal complement do end up *after* it (cf., e.g., Van Riemsdijk 1983): *Jan is dat gezeur zat* 'Jan is sick of that nagging'. This would follow if, contrary to what is normally assumed, these adjectives assign structural case to their nominal complement. The big challenge is the word order in PPs: prepositions do assign case to their complements but still may precede them in Dutch and German. At least in Dutch there is evidence that the word order is affected by semantic considerations: directional PPs are mostly postpositional, whereas non-directional PPs are prepositional. It will be clear that this opens up the possibility that at least one additional LF-constraint may be involved that may overrule the strong ranking of EPP(case) in this case.

12. The relative order of EPP( $\varphi$ ) and \*STRAY FEATURE has not yet been established for Icelandic, but I will provisionally assume that it is the same as in Danish in order to make

- (23) a. **Germanic VO-languages:**  
 (i) Icelandic: H-COMPL >> EPP( $\varphi$ ) >> \*STRAY FEATURE >> \*MOVE  $\Rightarrow$  V-to-I.  
 (ii) Danish: H-COMPL >> EPP( $\varphi$ ) >> \*MOVE >> \*STRAY FEATURE  $\Rightarrow$  no V-to-I.
- b. **Germanic OV-languages:**  
 EPP( $\varphi$ ) >> \*MOVE >> { \*STRAY FEATURE, H-COMPL }  $\Rightarrow$  no V-to-I.

Since Icelandic has obligatory V-to-I in most contexts, nothing more needs be said about this language, but the fact that Danish and the OV-languages do have V-to-I in root contexts still need to be explained. I propose that this is due to the constraint LEXICALLY FILL TOP F in (15c), which requires that the highest head in an extended projection be lexically filled (cf. also Zwart 2001). When this constraint outranks the economy constraint \*MOVE, V-second will be forced in main clauses. In embedded clauses, on the other hand, the highest head position in the extended verbal projection (= C) is lexically filled by the complementizer, so that V-to-I is blocked by the weak ranking of \*STRAY FEATURE.<sup>13</sup>

- (24) a. Icelandic: \*STRAY FEATURE >> \*MOVE  $\Rightarrow$  V-to-I in all context.  
 b. Danish: LFTF >> \*MOVE >> \*STRAY FEATURE  $\Rightarrow$  V-to-I in main clauses only.  
 c. Dutch/German: LFTF >> \*MOVE >> \*STRAY FEATURE  $\Rightarrow$  V-to-I in main clauses only.

Putting aside exceptional cases of embedded V-second, the above proposal captures the basic distinctions concerning V-to-I. However, the proposal raises a new question: Given that Danish is a VO-language of type B, in which short OS pushes V into  $\nu$ , why doesn't regular OS push up the  $\nu$ +V complex into I in Danish? In order to answer this question, we first have to look at the analysis of regular OS in the D&E framework.

## 5. Push up and blocking with regular OS

This section will discuss the push up and blocking strategy in OS constructions in Icelandic and Danish. Section 5.1 and 5.2 will start with discussing push up and blocking in double object constructions, and section 5.3 will conclude with discussing the question of why regular OS in Danish does not force V-to-I in embedded clauses.

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the difference between the two rankings in (a) as small as possible. Given that \*STRAY FEATURE outranks \*MOVE, this seems innocuous.

13. We must of course still account for the fact that insertion of a lexical complementizer is excluded in root contexts. A plausible assumption is that declarative/interrogative complementizers like *that/if* must be licensed/selected by some matrix verb. Also note that the notion 'lexically filled' in (15c) must be distinguished from the notion 'phonetically realized' since the constraint TEL from Pesetsky (1998) may result in complementizers that are syntactically present but phonetically empty; cf. embedded *wh*-questions like *I wonder* [<sub>CP</sub> *what*  $\emptyset$  [<sub>IP</sub> *Bill bought* *t<sub>what</sub>*]]].

### 5.1 Icelandic regular OS in double object constructions

In Icelandic double object constructions regular OS can derive the orders in (25a–c). The order in (25d) violates HG in (1) and is ungrammatical. We will see below that the actual choice of the word orders in (25) is related to the information structure of the clause. Since we have seen earlier that the relevant properties of Icelandic regular OS can be derived by postulating the subranking  $AF \gg EPP(case) \gg *MOVE$ , let us see what this subranking predicts for (25).<sup>14</sup>

- (25) a. *Pétur sýndi oft Maríu bókina.*  
           Pétur showed often Maríu the.book  
       b. *Pétur sýndi Maríu oft t<sub>IO</sub> bókina.*  
       c. *Pétur sýndi Maríu bókina oft t<sub>IO</sub> t<sub>DO</sub>.*  
       d. *\*Pétur sýndi bókina oft Maríu t<sub>DO</sub>.*

When both the direct and the indirect object belong to the presupposition of the clause, the strong ranking of  $EPP(case)$  predicts that both objects must move, so that (25c) is correctly selected as the optimal candidate. Since  $ALIGNFOCUS$  overrules the strong ranking of  $EPP(case)$ , we predict that OS of the two objects is blocked when both are part of the focus of the clause, so that (25a) is correctly selected as the optimal candidate in this case. The ranking  $AF \gg EPP(case) \gg *MOVE$  also correctly predicts that (25b) is acceptable: this order arises when the indirect object is part of the presupposition and the direct object is part the focus of the clause. A problem arises, however, when the direct object is part of the presupposition and the indirect object is part of the focus of the clause: the strong ranking of  $EPP(case)$  now forces movement of the direct object, while  $ALIGNFOCUS$  blocks OS of the indirect object, so that we wrongly predict (25d) to be grammatical. This problem can be solved by adopting the constraint  $RELMIN$  in (15b), which disfavors the output configuration of this example. When we assume that  $RELMIN$  outranks  $ALIGNFOCUS$ , the evaluation is given as in Tableau 8, which correctly selects example (25a) as the optimal candidate. Note that  $ALIGNFOCUS$  is a so-called gradient constraint, which means that a violation is added for each constituent that follows the focused phrases: in the b- and c-candidate the indirect object is followed by the adverbial phrase and the direct object, which results in two violations of  $ALIGNFOCUS$ .

14. The fact that the indirect object may undergo OS implies that dative is a structural case assigned by the verb. This seems uncontroversial as far as English and the Scandinavian languages are concerned, given that the indirect object may be promoted to subject in passive constructions (Holmberg & Platzack 1995: 215ff.), but in fact the same can be shown for Dutch and German, in which it is normally the direct object that is promoted to subject in passive constructions; see Broekhuis and Cornips (1994) for discussion.

Tableau 8: Icelandic (IO in focus; DO not in focus)

	REL MIN	AF	EPP (case)	*MOVE ( $t_O$ only)
a. Subj I+V Adv $t_V$ IO DO $\wp$		*	**	
b. Subj I+V IO Adv $t_V$ $t_{IO}$ DO		**!	*	*
c. Subj I+V IO DO Adv $t_V$ $t_{IO}$ $t_{DO}$		**!		**
d. Subj I+V DO Adv $t_V$ IO $t_{DO}$	*!		*	*

Tableau 8 shows that violation of RELMIN is avoided by means of the blocking strategy, that is, by not applying OS of the direct object. When the direct object is a pronoun, on the other hand, it is clear that the alternative push-up strategy is used. This can be readily observed from (26): if pronoun shift were blocked by an indirect object that is part of the focus of the clause, we incorrectly predict (26a) to be acceptable next to (26c), which would then only arise in case the indirect object is part of the presupposition of the clause.

- (26) a. \**Pétur sýndi oft Maríu hana.* ◀ \* blocking ▶  
       Pétur showed often Maríu it
- b. \**Pétur sýndi Maríu oft  $t_{IO}$  hana.*
- c. *Pétur sýndi Maríu hana oft  $t_{IO}$   $t_{DO}$ .* ◀  $\sqrt{\phantom{x}}$  push up ▶
- d. \**Pétur sýndi hana oft Maríu  $t_{DO}$ .* ◀ Holmberg's Generalization ▶

The fact that in the case of pronouns the push-up strategy is used can be readily accounted for by assuming that the constraint D-PRONOUN, which forces regular OS of weak pronouns, is ranked higher than ALIGNFOCUS, which disfavors regular OS of an indirect object that is part of the focus of the clause. Tableaux 9 and 10 provide the evaluation of the examples in (26). Tableau 9 shows that when the indirect object is part of the presupposition of the clause, the strong ranking of EPP(case) forces OS of the indirect object, so that pronoun shift can apply without causing a violation of RELMIN; (26c) is therefore selected as the optimal candidate.

Tableau 9: Icelandic (DO pronoun; IO not in focus)

	RELMIN	D-PRONOUN	AF	EPP(case)	*MOVE ( $t_O$ only)
a. Subj I+V Adv $t_V$ IO pron		*!		**	
b. Subj I+V IO Adv $t_V$ $t_{IO}$ pron		*!		*	*
c. Subj I+V IO pron Adv $t_V$ $t_{IO}$ $t_{DO}$ $\wp$					**
d. Subj I+V pron Adv $t_V$ IO $t_{DO}$	*!			*	*

Tableau 10 provides the evaluation for cases in which the indirect object is part of the focus of the clause: *ALIGNFOCUS* disfavors movement of the indirect object and hence favors the blocking strategy, but this is overruled by the higher ranked constraint *D-PRONOUN* which favors the push-up strategy. Consequently, (26c) is again selected as the optimal candidate.

Tableau 10: Icelandic (DO pronoun; IO in focus)

	RELMIN	D-PRONOUN	AF	EPP(case)	*MOVE ( $t_O$ only)
a. Subj I+V Adv $t_V$ IO pron		*!	*	**	
b. Subj I+V IO Adv $t_V$ $t_{IO}$ pron		*!	**	*	*
c. Subj I+V IO pron Adv $t_V$ $t_{IO}$ $t_{DO}$ $\wp$			**		**
d. Subj I+V pron Adv $t_V$ IO $t_{DO}$	*!			*	*

This section has shown that, due to the subranking *ALIGNFOCUS* >> *EPP(case)*, a non-presuppositional indirect object blocks regular OS of a presuppositional direct object (cf. Tableau 8), whereas due to the *D-PRONOUN* >> *ALIGNFOCUS* a pronominal direct object forces regular OS of a non-presuppositional indirect object (cf. Tableau 10). This shows that both the blocking and the push-up strategy are attested.

## 5.2 Danish regular OS in double object constructions

The previous subsection has shown that we can find both the blocking and the push up strategy in Icelandic double object constructions. This section will show that the same holds for Danish double object constructions. But let us first briefly discuss the less problematic cases: we will restrict our attention to examples that contain at least one pronoun given that OS of lexical DPs is normally blocked in Danish due to the weak ranking of *EPP(case)*. First consider the examples in (27), in which both the direct and the indirect object are a pronoun. The earlier established subranking *D-PRONOUN* >> *\*MOVE* >> *EPP(case)* straightforwardly predicts that the object pronouns must shift, so that (27c) is the optimal candidate. This subranking also straightforwardly predicts that in (28), in which the indirect object is a pronoun and the direct object is a lexical DP, only the former can be shifted.

- (27) a. \**Peter viste jo hende den.*  
       Peter showed indeed her it  
       b. \**Peter viste hende jo  $t_{IO}$  den.*  
       c. *Peter viste hende den jo  $t_{IO}$   $t_{DO}$ .*  
       d. \**Peter viste den jo hende  $t_{DO}$ .*

- (28) a. \*Peter viste jo hende bogen.  
 Peter showed indeed her the.book  
 b. Peter viste hende jo  $t_{IO}$  bogen.  
 c. \*Peter viste hende bogen jo  $t_{IO} t_{DO}$ .  
 d. \*Peter viste bogen jo hende  $t_{DO}$ .

The situation is more complex, however, when the indirect object is a lexical DP and the direct object a pronoun, as in (29). The judgments assigned to these examples by Vikner (1989/1990) suggest that there is some uncertainty concerning the grammatical status of the examples in (29a&c). Furthermore, there seem to be disagreement on example (29a) as similar examples are judged fully acceptable by Christensen (2005: 155). Unfortunately, Christensen does not discuss examples like (29c), but since Vikner judges the two examples as equally acceptable, it seems safe to assume that both are grammatical (the same is reported for Swedish in Anagnostopoulou 2003: 128).

- (29) Danish (judgments from Vikner 1989)  
 a. %Peter viste jo Marie den.  
 Peter showed indeed Marie it  
 b. \*Peter viste Marie jo  $t_{IO}$  den.  
 c. %Peter viste Marie den jo  $t_{IO} t_{DO}$   
 d. \*Peter viste den jo Marie  $t_{DO}$

The conclusion that (29c) is acceptable is remarkable, as this shows that Danish allows OS of lexical DPs in double object constructions, despite the fact that this is categorically blocked in monotransitive constructions.<sup>15</sup> The evaluation in Tableau 11 shows that this follows immediately when we introduce the constraint RELMIN and assume that it outranks \*MOVE, which is independently needed to exclude example (29d). The evaluation in Tableau 11 also makes it clear that, just like in Icelandic, the constraint D-PRONOUN favors the push-up strategy.

Tableau 11: Danish (DO-pronoun only)

	RELMIN	D-PRONOUN	*MOVE ( $t_O$ only)	EPP(case)
a. Subj I+V Adv $t_V$ IO pron		*!		**
b. Subj I+V IO Adv $t_V t_{IO}$ pron		*!	*	*
c. Subj I+V IO pron Adv $t_V t_{IO} t_{DO}$ ☞			**	
d. Subj I+V pron Adv $t_V$ IO $t_{DO}$	*!		*	*

15. Tarald Taraldsen has brought to my attention that in Norwegian and some varieties of Swedish, OS of lexical indirect object DPs is possible without push up. This does, however, not hold for Danish (Holmberg & Platzack 1995: 172).

What we have not accounted for yet is that example (29a) is also acceptable in Danish. Since this example involves the blocking strategy, and we have seen in the discussion of Icelandic that *ALIGNFOCUS* favors this strategy, we may conclude that *ALIGNFOCUS* outranks *D-PRONOUN*. Tableaux 12 and 13 further show that this will correctly predict the pattern in (29) provided that *ALIGNFOCUS* in its turn is outranked by *RELMIN*: the blocking strategy in (29a) will be preferred over the push-up strategy when the indirect object is part of the focus of the clause, whereas the push-up strategy in (29c) is preferred when the indirect object is part of the presupposition of the clause.

Tableau 12: Danish (DO-pronoun; IO not in focus)

	RELMIN	AF	D-PRONOUN	*MOVE ( $t_O$ only)	EPP(case)
a. Subj I+V Adv $t_V$ IO pron			*!		**
b. Subj I+V IO Adv $t_V$ $t_{IO}$ pron			*!	*	*
c. Subj I+V IO pron Adv $t_V$ $t_{IO}$ $t_{DO}$ $\mathcal{E}$				**	
d. Subj I+V pron Adv $t_V$ IO $t_{DO}$	*!			*	*

Tableau 13: Danish (DO-pronoun; IO in focus)

	RELMIN	AF	D-PRONOUN	*MOVE ( $t_O$ only)	EPP(case)
a. Subj I+V Adv $t_V$ IO pron $\mathcal{E}$		*	*		**
b. Subj I+V IO Adv $t_V$ $t_{IO}$ pron		**!	*	*	*
c. Subj I+V IO pron Adv $t_V$ $t_{IO}$ $t_{DO}$		**!		**	
d. Subj I+V pron Adv $t_V$ IO $t_{DO}$	*!			*	*

The conclusion we can draw from this section is that Danish double object constructions exhibit both the blocking and the push-up strategy. The results are summarized in (30).

- (30) Danish: RELMIN >> ALIGNFOCUS >> D-PRONOUN >> \*MOVE >> EPP(case)
- a. D-PRONOUN >> \*MOVE >> EPP(case)  $\Rightarrow$  a pronominal direct object forces OS of a presuppositional indirect object DP
  - b. ALIGNFOCUS >> D-PRONOUN  $\Rightarrow$  a non-presuppositional indirect object DP blocks OS of a pronominal direct object.

## 5.3 V-to-I in Danish embedded clauses

Now that we have also discussed regular OS in Danish, we can finally tackle the question of why regular OS does not force V-to-I in (31), despite the fact that short OS does push up the verbal root V into *v*.

- (31) a. *Jeg spurgte hvorfor Peter aldrig [v<sub>VP</sub> læste den.her bog]* (Danish)  
 I asked why Peter never read this book
- b. *Jeg spurgte hvorfor Peter aldrig [v<sub>VP</sub> læste den]* ◀ √ blocking ▶  
 I asked why Peter never read it
- c. \**Jeg spurgte hvorfor Peter læste den aldrig [v<sub>VP</sub> t<sub>V</sub> t<sub>DO</sub>].* ◀ \* push up ▶  
 I asked why Peter read it never

Let us first determine the ranking of the constraints needed for our analysis. I want to propose the subranking in (32), which was in large part already independently established above; cf. (23), (24) and (30). The only addition is that EPP( $\varphi$ ) outranks ALIGNFOCUS, which has been independently motivated above by pointing out that short OS is not sensitive to the information structure of the clause.

- (32) Danish: {H-COMPL, LFTF} >> EPP( $\varphi$ ) >> ALIGNFOCUS >> D-PRONOUN >> \*MOVE  
 >> {\*STRAY FEATURE, EPP(case)}

We have seen that the subranking H-COMPL >> EPP( $\varphi$ ) >> \*MOVE >> \*STRAY FEATURE correctly predicts that short OS forces V-to-*v*: we can satisfy the highly ranked constraints H-COMPL and EPP( $\varphi$ ) by applying both short OS and V-to-*v* at the expense of violating the lower ranked constraint \*MOVE. However, for the same reason we expect on the basis of the subranking H-COMPL >> D-PRONOUN >> \*MOVE >> \*STRAY FEATURE that regular OS of a pronominal object forces *v*-to-I: we can satisfy the highly ranked constraints EPP( $\varphi$ ) and D-PRONOUN by applying both V-to-I and regular OS at the expense of violating the lower ranked constraint \*MOVE. However, this expectation is not borne out.

We can solve this problem by assuming that the independently motivated constraint NOLEXM in (10b), which was introduced by Grimshaw (1997) in order to capture Pollock's (1989) insight that in English V-to-I is blocked only when the finite verb is a  $\theta$ -role assigner, is ranked in between EPP( $\varphi$ ) and D-PRONOUN. The evaluation in Tableau 14 shows that the subranking EPP( $\varphi$ ) >> NOLEXM ensures that short OS will push up the verbal root V in order to satisfy H-COMPL, whereas the subranking NOLEXM >> D-PRONOUN will block regular OS, so that the push-up strategy cannot be used to satisfy H-COMPL. Consequently, the candidate with short OS and V-to-*v*/Asp, but no regular OS and V-to-I is now correctly selected as the optimal candidate. Note that none of the violations of D-PRONOUN is fatal. This correctly predicts that when we replace the pronominal object by a lexical DP the same candidate will be selected as the optimal one.



- (33) a. C ... I ... *v* ... V pronoun  
 a'. C ... I ... *v* ... pronoun V  $t_O$   
 a''. C ... I ... pronoun *v* ...  $t'_O$  V  $t_O$   
 b. C ... I ... V+*v* ...  $t_V$  pronoun  
 b'. C ... I ... V+*v* ... pronoun  $t_V$   $t_O$   
 b''. C ... I ... pronoun V+*v* ...  $t'_O$   $t_V$   $t_O$   
 c. C ... V+*v*+I ...  $t_V$   $t_V$  pronoun  
 c'. C ... V+*v*+I ...  $t_V$  pronoun  $t_V$   $t_O$   
 c''. C ... V+*v*+I ... pronoun  $t_V$  ...  $t'_O$   $t_V$   $t_O$

Tableau 14: V-to-I and regular object shift in Danish embedded clauses

	H-COMPL	LFTF	EPP( $\varphi$ )	NOLEXM	D-PRONOUN	*MOVE	*STRAYF	EPP (case)
(33a)			*!		*		**	*
(33a')	*!				*	*	**	*
(33a'')	*!					**	**	
(33b)			*!	*	*	*	*	*
(33b') $\mathcal{F}$				*	*	**	*	*
(33b'')	*!			*		***	*	
(33c)			*!	**	*	**		*
(33c')				**!	*	***		*
(33c'')				**!		****		

For completeness' sake, note that in main clauses (33c'') will be selected as the optimal candidate. The a- and b-candidates, in which V-to-I fails to apply, are then all excluded by H-COMPL and LEXICALLY FILL TOP F. Since the three remaining candidates violate NOLEXM to the same extent, EPP( $\varphi$ ) and D-PRONOUN get the final say: the optimal candidate is the one in which both short and regular OS of the pronominal object have applied, as in (34b). Note that when the object is a lexical DP, as in (34a), D-pronoun will not be violated, so that regular OS will be blocked by the weak ranking \*MOVE >> EPP(case).

- (34) a. *Hvorfor læste Peter* <\*den.her bog> *aldrig* <den her bog>.  
 Why read Peter this book never  
 b. *Hvorfor læste Peter* <den> *aldrig* <\*den>.  
 Why read Peter it never

This concludes our discussion of the Danish verb movement puzzle. The puzzle is solved by ranking the independently motivated economy constraint NOLEXM in

between EPP( $\varphi$ ) and D-PRONOUN: the subranking EPP( $\varphi$ ) >> NOLEXM accounts for the fact that short OS pushes up the verbal root V into  $v$ , whereas the subranking NOLEXM >> D-PRONOUN accounts for the fact that regular OS of pronouns is blocked when V-to-I does not apply for independent reasons.

## 6. Conclusion

This article has discussed Holmberg's Generalization in (1), and has shown that there are in principle two ways to satisfy this generalization. Either OS is blocked when it has to cross the main verb or some co-argument, or the moved object forces movement of these elements as well. We have seen that both strategies exist. This paper studied the two strategies and gave an analysis that straightforwardly predicts which strategy applies in which case. The desired effects were derived by the interaction of the PF-constraints H-COMPL and RELMIN, which disfavor movement of a direct object across the verb or a co-argument, respectively. Given Kayne's (1994) Linear Correspondence Axiom, one might expect that there is also a constraint SPEC-H that favors output representations in which heads follow the terminals dominated by their specifier. This was not investigated here, but if this is indeed the case, the three order preservation constraints SPEC-H, H-COMPL, and RELMIN may conspire such that, among other things, they derive the effects of Koenenman's (2006) principle of Thematic Shape Conservation (TSC), which requires that within the thematic domain of the clause the underlying order of the thematic categories (=  $\theta$ -role assigners and assignees) is maintained. As Koenenman points out, the TSC (and therefore also the present approach) immediately accounts for the fact that OS can be blocked by thematic categories, but not by adverbs. This voids the argument found in Holmberg (1999) and Bobaljik (2002) in favor of the claim that adverbs are PF-invisible, and for this reason do not block regular object shift.

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