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The True Nature of Holmberg's Generalization<sup>1</sup>

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Scandinavian Object Shift is dependent on verb movement in the sense that an unmoved verb will always block Object Shift, as shown in (1). (All examples in this paper are Swedish, except where indicated otherwise;  $t_V$  = verb trace,  $t_O$  = object trace,  $t_S$  = subject trace,  $t_{iO}$  = indirect object trace.)

- |       |                                                   |     |                               |
|-------|---------------------------------------------------|-----|-------------------------------|
| (1)a. | Jag kysste <b>henne</b> inte [VP $t_V$ $t_O$ ]    | a'. | (*)Jag kysste inte henne.     |
|       | I kissed her not                                  |     | I kissed not her              |
| b.    | *Jag har <b>henne</b> inte [VP kysst $t_O$ ].     | b'. | Jag har inte kysst henne.     |
|       | I have her not kissed                             |     | I have not kissed her         |
| c.    | *...att jag <b>henne</b> inte [VP kysste $t_O$ ]. | c'. | ...att jag inte kysste henne. |
|       | that I her not kissed                             |     | that I not kissed her         |

(1a) is a licit application of Object Shift derived by V-to-I-to-C and movement of a weak pronoun, while (1b,c) are illicit because the verb governing the object position has not moved. In (1b) the verb has not moved because the auxiliary verb blocks movement of the main verb, and in (1c) because there is no verb movement in embedded clauses in Swedish (and generally Mainland Scandinavian). The status of (1a') varies across Scandinavian languages and dialects; in Swedish it is acceptable to most speakers even when the object is a weak pronoun. This interplay of verb movement and Object Shift is well known, and referred to as "Holmberg's Generalization" (henceforth HG) in some of the literature. Less often mentioned, but no less true, is the fact that not just an unmoved verb, but any phonologically visible category inside VP preceding the object position will block Object Shift.<sup>2</sup> Consider the examples in (2):

- |       |                                           |     |                            |
|-------|-------------------------------------------|-----|----------------------------|
| (2)a. | *Jag talade <b>henne</b> inte med $t_O$ . | a'. | Jag talade inte med henne. |
|       | I spoke her not with                      |     | I talked not with her      |
| b.    | *Jag gav <b>den</b> inte Elsa $t_O$ .     | b'. | Jag gav inte Elsa den      |
|       | I gave it not Elsa                        |     | I gave not Elsa it         |
| c.    | *Dom kastade <b>mej</b> inte ut $t_O$ .   | c'. | Dom kastade inte ut mej.   |
|       | they threw me not out                     |     | they threw not out me      |

<sup>1</sup> Thanks to Halldór Á. Sigurðsson, Thorbjörg Hróarsdóttir, the audiences of NELS 27 and CGSW 13, and especially to Tarald Taraldsen for some observations which inspired me to write this article.

<sup>2</sup> Cf. Holmberg (1986) where I referred to this generalization as "the phonetic adjacency condition" on Object Shift: The object has to be "phonetically adjacent" to the adjuncts around which it is shifted.

In all of these examples the verb has moved, yet Object Shift is illicit, in (2a) because it has shifted across a preposition, in (2c) because it has shifted across an indirect object, and in (2c) because it has shifted across a verb particle. Note that the object always follows the verb particle in Swedish, even when it is a pronoun; see (2c'). In Danish the object always precedes the verb particle, while Norwegian is like English in that the object precedes the particle if it is a pronoun. Consequently, in Danish and Norwegian Object Shift can apply to a pronominal object of a verb particle construction:

- (3) De kastet meg ikke t<sub>0</sub> ut. (Norwegian)  
they threw me not out

The question is: Is there a unified explanation for the cases in (1) and (2), or must we assume different explanations, perhaps one for (1b,c) and up to three distinct explanations for (2a,b,c)? For instance Collins and Thrainsson (1996: 420ff.) imply that (2b) is ruled out by a condition which is specific to double object constructions. In Holmberg (1986) I proposed a unified explanation, based on the facts illustrated in (1) and (2). This is also the position taken in Holmberg & Platzack (1995). Quite recently certain hitherto unnoted facts have been brought to light which strengthen my conviction that there is a unified explanation, and that it makes crucial reference to phonological visibility. The details of the explanation are still unclear, though, and dependent on the role assigned to phonological visibility in syntactic theory. In Holmberg (1986) I sketched one solution, here I will sketch another, within the framework of feature movement theory.

I will discuss mainly Object Shift of weak pronouns, characteristic of Mainland Scandinavian. At the end of the paper I will comment on full DP Object Shift as found in Icelandic, to show that the two operations behave the same as regards HG.

*Two explanations of HG: equidistance and morphological merger*

Various explanations of HG have been proposed in the literature. Probably the best known one from recent years is the one found in Chomsky (1993). The problem faced by Object Shift, according to Chomsky (1993), is how to move the object out of VP, by hypothesis to specAgrOP, without violating Shortest Move, given that there is an A-position intervening between the object and specAgrOP, namely specVP, hosting the subject. The mechanism which makes this possible, according to Chomsky, is V-movement to AgrO. This has the effect of extending the verb's domain in a sense, so that specAgrOP and specVP following V-movement are equidistant from the object position, which entails that movement of the object to specAgrOP is technically the shortest move.

- (4) [AgrOP obj [AgrO' V+AgrO [VP subj [V' tv t<sub>0</sub> ]]]

The operation is then repeated with the subject: V+AgrO moves on to T, and the subject to specTP (somewhat simplifying Chomsky's analysis), so that the order is eventually SVO with the object outside VP. In (1b,c) the verb has not moved, so they violate Shortest Move (or Relativized Minimality or the Minimal Link Condition). This explanation obviously has nothing to say about the cases in (2). In all of them the verb has moved, so there is something else blocking Object Shift. Below I will argue that the equidistance condition is irrelevant for Object Shift.

Another explanation is advanced in Bobaljik (1994, 1995). According to Bobaljik, (1c) is ill formed because the shifted object intervenes between I and the finite verb thereby blocking "morphological merger" of I and the verb.

- (5) att [ jag I henne inte [vP kysste t<sub>0</sub> ] ]

Morphological merger is a process which creates inflected form of a word from a lexical and a functional head. The crucial condition is that the lexical and functional head should be adjacent in the syntax, which they are not in (5), due to the shifted object (by stipulation adverbials don't count for adjacency). Bobaljik's explanation, too, has nothing to say about the cases in (2): In all of them V and I are adjacent due to verb movement to I. In fact, on closer inspection it turns out that Bobaljik's theory does not even explain why (1b) is ill formed. Note that the negation (and other sentence adverbs) in the Scandinavian languages precede the auxiliary verb's base position, as can be seen in any embedded clause containing auxiliary verbs; recall that there is no verb movement in embedded clauses in Mainland Scandinavian.

- (6) a. Det är möjligt [att Per **inte** har kysst henne].  
 it is possible that Per not has kissed her
- b. \*Det är möjligt [att Per **har** **inte** kysst henne].

This fact is overlooked by Bobaljik (1995), who postulates a low position for the negation, adjoined to VP, and hence assumes that the object has moved to specAgrO, which takes VP as complement. Bobaljik's analysis is (roughly) (7), where *Part* is 'Participle':

- (7)  
 [IP Per [I' har+I [AuxP tau<sub>x</sub> [PartP Part [AgrOP henne<sub>O</sub> AgrO [VP inte [VP kysst t<sub>O</sub> ]]]]]]]

In this construction the object blocks adjacency and hence morphological merger between Part and the main verb. However, the analysis of (1b) should rather be (8):

- (8) [IP Per [I' har+I [henne [inte [AuxP tau<sub>x</sub> [PartP Part [VP kysst t<sub>O</sub> ]]]]]]]

The object does not intervene between I and the auxiliary (since the auxiliary has moved to I) or between Part and the main verb. Consequently (1b) does not violate morphological merger; only (1c) does. This rather seriously weakens Bobaljik's (1994, 1995) explanation of HG in terms of morphological merger.

#### *Verb Topicalization*

Consider the construction (9) (brought to my attention by Tarald Taraldsen, p.c.):

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

This looks like a case of VP-fronting, except that the object has been left behind, and has undergone Object Shift. The semantic/pragmatic effect is that the verb is contrastively focused. (9) is in this respect similar if not identical to (10), an ordinary case of VP-fronting.<sup>3</sup>

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

<sup>3</sup> Elisabeth Engdahl (p.c.) tells me that she rejects (9) with the continuation given in the parenthesis. Instead the continuation should be *bara hållit i handen* 'only held by the hand', without repetition of the pronoun. In this way the focus would be narrowly on the verb, not the VP. I do not share this intuition: the focus seems to be on the verb whether the (weak) pronoun is repeated or not.

A possible, initially plausible analysis of (9) is that it is a case of Remnant Topicalization, a term coined by den Besten & Webelhuth (1989) for the German construction (11):

- (11) Ein Buch gegeben hat er dem Jungen nicht.  
 a book given has he the boy not  
 "He hasn't given the boy a BOOK."

The analysis which den Besten & Webelhuth argued for is that the indirect object has first been scrambled out of VP, after which the VP containing the trace of the indirect object has been topicalized. Analogously, we might analyze (9) as derived by Object Shift of the pronoun out of VP followed by Remnant Topicalization of the VP to specCP. Note, however, that in order to derive (9) this way, Object Shift must apply across an unmoved verb, violating HG. But then the structure is repaired by topicalizing the VP, thus in a way obliterating the traces of the violation. The derivation is sketched in (12):

- (12) 1. \*Jag har **henne** inte [VP t<sub>S</sub> [V' kysst t<sub>o</sub> ]]  
 2. [VP t<sub>S</sub> [V' kysst t<sub>o</sub> ] ] har jag henne inte t<sub>VP</sub>

This amounts to saying that HG is due to a surface filter: Violation of HG is all right so long as the structure undergoes other operations which yield the surface order where the object is followed by adjuncts but no other (visible) categories. (13) is a formulation of the putative filter:

- (13) The Object Shift Filter: \*Obj Adv X, unless X is phonologically empty.

It can be shown, however, that (13) is not empirically adequate, and that (12) is therefore most likely not the correct derivation of (9). Consider the following examples:

- (14) a. Jag såg **henne** inte [<sub>SC</sub> t arbeta].  
 I saw her not work ("I didn't see her working")  
 b. \*Jag har **henne** inte [v<sub>P</sub> sett [<sub>SC</sub> t arbeta]]  
 I have her not seen work

(14a,b) contain a perception verb taking a SC complement. The subject of the SC is a weak pronoun which has undergone Object Shift up into the matrix clause. Object Shift is licit in (14a), but illicit in (14c), where it crosses the unmoved main verb. The question now is, can we repair (14b) by topicalizing the VP containing the SC? The filter-based theory sketched above predicts that we can. The prediction is false, however: (15) is ill-formed.

- (15) \*[v<sub>P</sub> sett arbeta] har jag henne inte t<sub>VP</sub>.  
 seen work have I her not

Topicalizing a VP containing a SC is not a problem in general, as shown by (16).

- (16) Sett henne arbeta har jag inte.  
 seen her work have I not

Apparently (15) is ill-formed because its derivation includes an illicit application of Object Shift. That is to say, HG is not a matter of surface word order but derivation: A violation of HG cannot be repaired by subsequent operations. This implies that (9) is not derived as

shown in (12), i.e. by Object Shift followed by Remnant Topicalization.<sup>4</sup> Instead I claim that it is derived by Verb Topicalization to specCP, followed by Object Shift. The derivation is as shown in (17):

- (17) 1. Infl [inte [har [vp jag [v' kysst henne]]]]  
           not have I kissed her
2. [CP kysstv [C' haraux [IP jags Infl inte taux [vp ts [v' tv henne]]]]]
3. [CP kysstv [C' haraux [IP jags Infl henne<sub>O</sub> inte taux [vp ts [v' tv to ]]]]]

(17.1) is the underlying structure. In (17.2) the subject has moved to specIP, the finite auxiliary verb to C, presumably via Infl, while the main verb has moved to specCP. In (17.3), finally, the object has shifted to a position preceding the negation.

The only really controversial aspect of this derivation is that the verb, a head, has been moved to a spec-position, namely specCP. But this is something that the theory very likely has to allow for anyway. Verb Topicalization has been observed in other languages. Consider the following Yiddish example, from Källgren and Prince (1989):

- (18)a. Veysn veyst er gornit. (Yiddish)  
       know knows he nothing
- b. [CP veysn [C' [C veyst] [IP er ...gornit]

According to Källgren and Prince this is Verb Topicalization but leaving a copy instead of a trace (where in this case the copy is moved to C in accordance with V2). Their analysis is essentially as shown in (18b). They argue that it is indeed a case of movement-by-copying. See Koopman (1984: ch. 6) on a similar construction (the predicate cleft construction) in Vata. Another rather different case of head movement to a spec-position is Scandinavian Stylistic Fronting, which I now believe is head movement to SpecIP (as claimed by Rögnavaldsson and Thrainsson (1991), contra Holmberg & Platzack (1995); see Holmberg (1997) for a programmatic overview).

- (19) Fallið hafa margir hermenn í þessu stríði. (Icelandic; from Jónsson (1991))  
       died have many soldiers in this war

Yet another potential case of head movement to sentence-initial spec-position is Long Head Movement, found in South Slavic languages, some Romance languages, and Breton, although Long Head Movement is customarily analyzed as adjunction to a head, usually taken to be C; see Borsley & al. The construction under discussion here, that is (9), is very unlikely to be a case of adjunction to C. For one thing, it has the interpretation characteristic of 'topicalization' of VP-internal non-wh-categories, namely, the fronted category is contrastively focused. Second, if the verb is adjoined to C we predict that specCP is available for some other category, for instance a wh-phrase: a false prediction. Just as in the case of topicalization, and more generally a filled specCP (in V2 languages), the fronted, contrastively focused verb cannot be preceded by anything.

<sup>4</sup> Possibly Scandinavian does not have Remnant Topicalization. In German, constructions corresponding to (15) seem to be grammatical (Gert Webelhuth and Hans den Besten, p.c.):

(i) Rauchen gelassen hat er sein Tochter nicht.  
       smoke allowed has he his daughter not  
       "He hasn't allowed his daughter to smoke."

If (9) is an instance of Verb Topicalization, it does respect HG: The verb is moved, which paves the way for Object Shift. But the verb has presumably not moved to AgrO, but directly to specCP, in the manner of ordinary topicalization and other movements to specCP. This means that the equidistance-based explanation of HG is on the wrong track. Object Shift is dependent on verb movement, but it does not matter where the verb moves, or (presumably) at which point in the derivation, so long as it precedes Object Shift.

It is technically possible to assume that the verb in (9) first moves to AgrO before moving to specCP. Note, however, that the sentence contains an auxiliary verb. This means that the main verb does not move from a postulated AgrO to T, which should entail under the equidistance account that the subject is stuck in specVP, which of course it isn't. Note further, that the shifted object in (9) must precede the auxiliary verb's base position, since it precedes the negation, and the negation precedes the auxiliary verb's base position; cf. the discussion above around (6). This means that the landing site of Object Shift is not specAgrO under the usual analysis where AgrO is close to the VP containing the object. That is to say, Object Shift needs neither AgrO itself or specAgrO, and therefore provides no empirical support for the existence of the abstract functional head AgrO.

*Object Shift and phonological features*

Why does the verb have to move, in order for Object Shift to apply? I claim that it is because Object Shift cannot cross any category with phonological features other than adjuncts. I suggest (20) as the proper formulation of HG:

- (20) Object Shift is blocked by any phonologically visible category preceding/c-commanding the object position within VP.

This entails that Object Shift is not blocked by traces or by adjuncts. Other formulations of the generalization can be imagined; it is far from obvious that "within VP" is the crucial feature. The limited space does not allow a discussion of alternative formulations, though.<sup>5</sup> Now consider the other cases of failed Object Shift discussed above, repeated here as (21):

- |                                                                                   |                                                         |
|-----------------------------------------------------------------------------------|---------------------------------------------------------|
| (21)a. *Jag talade <b>henne</b> inte med t <sub>0</sub> .<br>I spoke her not with | a'. Jag talade inte med henne.<br>I talked not with her |
| b. *Jag gav <b>den</b> inte Elsa t <sub>0</sub> .<br>I gave it not Elsa           | b'. Jag gav inte Elsa den<br>I gave not Elsa it         |
| c. *Dom kastade <b>mej</b> inte ut t <sub>0</sub> .<br>they threw me not out      | c'. Dom kastade inte ut mej.<br>they threw not out me   |

The claim is that the reason why the object cannot shift across the preposition, the indirect object or the verb particle is that these have phonological features. The prediction is that if their phonological features can be removed, Object Shift will be possible. Let us put (21a) aside, since we cannot remove the phonological features of the preposition. In (21b,c) the prediction can be tested, however, and the prediction holds. Consider (22):

- (22)a. Vemj<sub>0</sub> gav du **den**<sub>0</sub> inte t<sub>ij</sub> t<sub>0</sub> ?  
who gave you it not  
"Who didn't you give it to?"

<sup>5</sup> The object shifts across a floated quantifier, a potential counterexample to "within VP". However, floated quantifiers are always external to VP in Scandinavian, as can be seen in any embedded clause containing an unmoved auxiliary:

(i) ... om studenterna inte (alla) skulle (\*alla) åka till Lund.  
if the-students not (all) would (all) go to Lund

- b. Henne<sub>JO</sub> visar jag den<sub>O</sub> helst inte t<sub>JO</sub> t<sub>O</sub>.  
 her show I it rather not  
 "I'd rather not show it to HER."

Here the phonological features of the indirect object have been removed, along with topicalization of the indirect object. All that remains in VP is a trace, and the trace does not block Object Shift. Now consider (23):

- (23)a. UT<sub>P</sub> kastade dom mej<sub>JO</sub> inte t<sub>P</sub> t<sub>O</sub> (bara ned för trappan).  
 out threw they me not (only down the stairs)
- b. (Ja ja, jag ska mata din katt, men) IN<sub>P</sub> släpper jag den<sub>O</sub> inte t<sub>P</sub> t<sub>O</sub>.  
 (All right, I will feed your cat but) in let I it not

Here the phonological features of the particle have been removed along with topicalization of the particle (possible in strongly contrastive contexts). As predicted, Object Shift is possible.<sup>6</sup>

*Object Shift as a PF-operation*

I conclude that Object Shift is blocked by phonological features, and furthermore only by phonological features. That is to say, Object Shift does not see traces, only phonologically visible categories. This suggests that Object Shift is a PF-operation. In fact, a number of other properties which are characteristic of Object Shift, and which have been discussed in the literature are consistent with the hypothesis that Object Shift is a PF-operation; see in particular Holmberg and Platzack (1995: ch. 6).

- (24)a. It does not license a parasitic gap.  
 b. It has no effect on binding relations.  
 c. It violates strict cyclicity/the extension condition (Chomsky 1995).

Property (24a) shows that Object Shift is not A-bar movement. Property (24b) shows that it is not A-movement. I repeat some examples from Holmberg & Platzack (1995):

- (25) a. Vi ansåg till deras<sub>J</sub> /\*sin<sub>J</sub> besvikelse [Per och Martin<sub>J</sub> vara odugliga].  
 we considered to their / REFL disappointment Per and Martin be incompetent
- b. Vi ansåg dem<sub>J</sub> till deras<sub>J</sub> /\*sin<sub>J</sub> besvikelse [t<sub>J</sub> vara odugliga].  
 we considered them to their / REFL disappointment be incompetent
- c. De<sub>J</sub> ansågs till \*deras<sub>J</sub> / sin<sub>J</sub> besvikelse [t<sub>J</sub> vara odugliga].  
 they consider-PASS to their / REFL disappointment be incompetent  
 "To their disappointment they were considered to be incompetent."

In (25a) the matrix clause contains an adverbial containing a possessive pronoun or a possessive reflexive coindexed with the embedded small clause subject. The possessive pronoun may, of course, be coreferent with the small clause subject but the possessive

<sup>6</sup> The prediction is that deletion of a blocking category (or its phonological features) will also have the effect of making Object Shift possible. The only deletion of a head which preserves its complement is gapping (thanks to Chris Wilder for pointing out this prediction). However, it is characteristic of gapping that the 'remnants' are always contrastively focused. Since focused objects do not undergo Object Shift, the prediction cannot be tested with gapping.



reflexive may not. In (25b) the small clause subject, now a pronoun, has been shifted up into the matrix clause. Although the small clause subject now c-commands the pronoun or the reflexive, the binding relations remain the same: the pronoun is fine, the reflexive is out: Object Shift has no effect on binding relations, unlike standard cases of A-movement such as movement of the small clause subject to the matrix specIP in the passive in (25c).

To see that Object Shift does not respect strict cyclicity or Chomsky's (1993, 1995) extension condition, see the derivation in (17): First the verb moves to specCP, which is possible only when the derivation has reached the matrix C, containing the feature attracting the contrastively focused verb (following Chomsky's (1995) approach to wh-movement and similar operations). Following verb movement, Object Shift applies, moving the object to a position much lower in the tree. This is consistent with the hypothesis that (a) Object Shift applies after spell-out, on the PF-side, and (b) only operations in the syntax (overt and covert syntax) are subject to the extension condition. Alternatively, given that the extension condition allows adjunction to lower positions (see Chomsky 1995: 327), constructions such as (9) show that Object Shift is adjunction (as argued in Holmberg & Platzack 1995), not movement to a spec-position.

Finally, the fact that Object Shift does not see traces is consistent with the hypothesis that Object Shift is a PF-operation. It is, presumably, characteristic of PF-operations that they only see categories with phonological features.<sup>7</sup> Now if Object Shift is a PF-operation HG can be explained as a Relativized Minimality effect pertaining to PF-operations: Assuming that PF-operations affect phonological features, let us say that a PF-operation cannot move a phonological matrix over another phonological matrix. In other words, PF-movement would always be string-vacuous. This seems to be true of typical PF-

<sup>7</sup> *Wanna*-contraction, under the classical analysis (Chomsky (1977: 187ff.)), is supposed to see the presence of a trace, though.

<sup>8</sup> It seems obvious, in the framework of current syntactic theory, that traces are visible to other movements (standard A-movement, A-bar-movement, and head movement). It is surprisingly hard to show that this is the case, though (thanks to Øystein Nilsen for pointing this out to me). Indeed, Chomsky (1995) claims that traces are not visible to Attraction, which means that traces have no effect on the MLC (i.e. Relativized Minimality), if all movement is Attraction. The following is a case, however, where a wh-trace appears to be visible for A-movement.

- (i) Mér hefur alltaf virst Ólafur vera gáfaður. (Icelandic)  
me.D has always seemed Ólafur.N be intelligent  
"Ólafur has always seemed to me to be intelligent"
- (ii) Ólafur hefur alltaf virst vera gáfaður.  
Ólafur has always seemed be intelligent
- (iii) \*Ólafur hefur alltaf mér virst / virst mér vera gáfaður.  
Ólafur has always me seemed / seemed me be intelligent

A raising verb in Icelandic may optionally take a dative-marked experiencer object. If present, the experiencer obligatorily undergoes raising to specIP, the embedded nominative-marked subject of the infinitival remaining in situ; see Sigurðsson (1989/1992). If there is no experiencer, the embedded subject undergoes raising to specIP. Raising of the embedded subject across the experiencer is very plausibly ruled out by the MLC: The feature attracting an argument to specIP (let us say, the "EPP-feature") picks the closest argument, which is the experiencer if there is one. The question is, what happens if the experiencer is a trace? Does this permit raising of the embedded subject. This can only be tested for wh-trace, but for wh-trace the answer is that the embedded subject cannot raise across the trace. The structure of (iv) is shown in (v) (assuming that the experiencer is merged in specVP).

- (iv) \*Hverjum hefur Ólafur alltaf virst vera gáfaður?  
who.D has Ólafur.N always seemed be intelligent
- (v) hverjum<sub>IO</sub> [C' hefur [[P Ólafur<sub>S</sub> alltaf [VP t<sub>IO</sub> [V' virst [SC t<sub>S</sub> vera gáfaður]]]]]

Unless the ill-formedness of (iv) can be explained in some other way, we may conclude that A-movement sees wh-traces. As shown in the text above, in particular in (22), Object Shift does not see wh-traces.

operations such as contraction.<sup>9</sup> There are many problems, though, associated with this hypothesis, and it is far from clear that this is the right way of looking at Object Shift and HG. I will come back to this point below, but first I will briefly discuss a construction which has been claimed (by me, in Holmberg (1986) and Holmberg and Platzack (1995)) to be a counterexample to the hypothesis that Object Shift is a PF-rule.

- (26) Trogen var han henne inte.  
 faithful was he her not  
 "He wasn't FAITHFUL to her."

The claim made in the works mentioned is that this sentence is derived from the underlying structure (27) by first shifting the object out of the AP and then moving the remnant AP to specCP.<sup>10</sup>

- (27) han var inte [AP henne trogen]

That is to say, it would be derived by Remnant Topicalization. In that case Object Shift precedes Topicalization. Since the latter is not a PF-rule, Object Shift cannot be a PF-rule either. The analysis is based on the axiom that only maximal phrases can move to specCP. If that axiom is given up, as I believe it should be, (29) may be analyzed as movement of just the adjective to specCP. In that case it may apply before Object Shift, in which case Object Shift may, indeed, apply after spell-out. If so, there is no argument from rule ordering (that I am aware of) against the hypothesis that Object Shift is a PF-operation.

#### *Object Shift and Focus*

To resume, if Object Shift is a PF-operation then HG might be a consequence of a Relativized Minimality-like locality condition holding for PF-operations. But of course Object Shift is not string-vacuous. If it were, we would probably not know that it exists. Object Shift does not move an object across visible categories within VP (i.e. across verb complements), but it does move an object across VP-external adjuncts. In this respect it does not look like a typical phonological process. Claims have been made in the literature to the effect that adjuncts are invisible to certain syntactic processes. For instance, Áfarli (1996) presents a theory where adjuncts occur in a different dimension than verbs and their arguments at the point when Object Shift applies.<sup>11</sup> But that point cannot then be after spell-out, i.e. in the component where phonological features are operated on, because in that component, at any rate, the adjuncts do intervene between the launching site and the landing site of Object Shift.

Furthermore, Object Shift is clearly a special case of a very general, if not universal phenomenon: Sentence constituents which encode 'old information' move leftwards, out of VP. Scrambling, as found in German, Dutch, and many other languages, is another well known case. Clitic pronoun placement in the left periphery, characteristic of many languages, is yet another case. Are these all PF-operations? Scrambling in German has certain properties not expected from a PF-operation (see Webelhuth 1992); for instance, it affects binding relations. Object Shift is not exactly like Scrambling, nor is it exactly like clitic placement,<sup>12</sup> but it is no doubt a closely related operation. It might be the case that

<sup>9</sup> But there are various assimilation processes where phonological features seem to spread to non-adjacent segments. It is unclear to me how to distinguish between the string-vacuous and non-string-vacuous processes.

<sup>10</sup> The experiencer object of adjectives of this class preferably occur in pre-adjectival position irrespective of Object Shift. Hence HG would not be violated at any stage of the derivation.

<sup>11</sup> See Nilsen (1997) for arguments against Áfarli (1996).

<sup>12</sup> See Vikner (1994), Holmberg & Platzack (1995).

this universal syntactic process has been 'grammatized' in Scandinavian as a PF-operation, applying after spell-out, while it remains pre-spell-out in other languages, such as German. Alternatively the division between pre- vs. post-spell-out operations characteristic of the T-model of grammar is too strict. In the following I will assume a version of the 'single output hypothesis' (see Groat and O'Neil 1996) assuming feature movement (following Chomsky 1995: ch. 4). According to this model a syntactic derivation consists of the operations Merge and Move, and terminates in an LF-like representation which is the input to Phonology, that is the rules which operate on phonological features (meaning individual phonological features, such as [±nasal], etc.), and Semantics, that is rules which operate on semantic features. There is no spell-out-point in the derivation prior to the LF-like output. Move affects features, not whole categories other than derivatively. The properties of a movement depend on which features are included in the movement, i.e. which feature is selected for movement, and which features are pied-piped along with the moved feature. For instance, whether a movement is overt or covert depends on whether the phonological feature matrix is moved along or not.

I now assume that Object Shift moves the feature [-Foc] (non-focus), taken to be a feature of arguments. This captures what I take to be common for Object Shift, Scrambling, and Clitic Movement: They move arguments (in some cases including locative and temporal PPs, in other cases only a subcategory of arguments such as pronouns) which are not focused out of VP (cf. Diesing and Jelinek (1993) for a related theory). There is at least one good reason to assume that the crucial feature is negatively specified, encoding absence of a property, rather than presence of a property: expletive pronouns undergo Object Shift. This can be seen in some small clause constructions where the SC subject is expletive (or perhaps 'quasi-argumental'), as in the expression *ta det lugnt* 'take it easy':

- (27) Han tar det<sub>s</sub> mycket sällan [SC t<sub>s</sub>lugnt]  
 he takes it very seldom easy

If the triggering feature was, say, [+specific], or [+strong] (in the sense of de Hoop 1992) as has occasionally been claimed, we would not expect the expletive small clause subject to undergo movement. The expletive does not refer, does not have any interpretation, so it cannot have a specific or strong interpretation. We may, however, ascribe to the expletive a feature [-Foc], and assume that this feature triggers movement of the expletive pronoun.<sup>13</sup>

In the case of weak pronouns, movement of [-Foc] pied-pipes the phonological features. In other words, the movement is overt. In the case of full DPs (lexical DPs and proper names) movement of [-Foc] does not pied-pipe the phonological features, i.e. the movement is covert. The reason why the phonological features are pied-piped in the case of weak pronouns is that the feature [-Foc] and the phonological feature form what I call a *feature group*. In this sense [-Foc] is an inherent property of weak pronouns, while in the case of full DPs [-Foc] is added to the DP, I assume, when it enters the numeration. This is true of the complementary feature [+Foc] as well: in the case of pronouns [+Foc] cannot be detached from the phonological matrix, while it can be in the case of full DPs. Consider (28), where capitals encode primary stress.

- (28) Jag träffade inte ELSA.  
 I met not Elsa

<sup>13</sup> The proposal is related to that of Cardinaletti and Starke (to appear), who argue that the reason why clitics and weak pronouns move is that they are defective in a certain sense.

In terms of information structure this sentence is ambiguous: Either just the object is focus (in which case it can be continued: *utan Johan*'but Johan'), or the VP is focus (in which case it can be continued: *Jag stannade hemma* 'I stayed home'); see Vallduví and Engdahl (1996). In the latter case the stress is determined by the 'unmarked focus rule', placing primary stress on the most deeply embedded constituent (cf. Cinque (1993)). But if the object is a stressed pronoun, the sentence is unambiguous: it can only have narrow focus on the object.

- (29) Jag träffade inte HENNE.  
 I met not her

The following is a way to express this difference between (28) and (29) formally: In (28) the feature [+Foc], accompanied by the phonological feature [stress], is introduced in the derivation along with the object, being added to the DP as it enters the numeration. But in the course of the derivation [+Foc] may move from the object DP to the VP node ('Focus Projection'), leaving stress and the other phonological features of the object unaffected. In (29) the feature [+Foc] enters the derivation as an inherent feature of the pronoun, dominated by its phonological matrix, and may therefore not 'project to VP', i.e. be detached from stress and the other phonological features of the pronoun. Hence the only interpretation of (29) is with narrow focus on the object.

The claim is that in the case of Scandinavian weak pronouns the feature [-Foc] and the phonological matrix make up a feature group. Case is (presumably) a member of that feature group as well, since case distinctions are reflected in the phonology of pronouns. But the other formal features, i.e. number, gender, and [+human] are not members of the same feature group. The feature structure of the Swedish weak object pronoun meaning "her" is as shown in (30), where *henne* represents the phonological feature matrix.

- (30)  $\left[ \begin{array}{l} \textit{henne} \\ \text{-stress} \\ \text{-Foc} \\ \text{+acc} \end{array} \right] \left[ \begin{array}{l} \text{3 sing} \\ \text{+hum} \\ \text{+fem} \end{array} \right] \quad \text{"her"} \text{ (weak)}$

I now propose that Object Shift pied-pipes just the feature group on the left, leaving the formal features (other than possibly Case) behind. This accounts for part of the "PF-character" of Object Shift: Since the phi-features are not moved, it follows that the head of the chain is invisible for binding, A- as well as A-bar-binding. The features restricting the reference of the chain are all found in the tail of the chain. The head of the chain encodes just the information that the chain is nonfocus (i.e. "old information"), in addition to the phonological features and Case. In the case of the passive, the phi-features are moved, along with the phonological feature group, leaving behind perhaps just the theta-feature. Consequently the head of the chain is referential and visible to binding. I now assume that the reason why overt Object Shift is blocked by the phonological features of a c-commanding verb or verb complement is that Object Shift is movement of a member of the 'phonological feature group'. Assume that the relation between the feature [-Foc] and the phonological matrix in (30) is more precisely (31):

- (31)  $\begin{array}{c} \textit{henne} \\ \swarrow \quad \searrow \\ \textit{henne} \quad \text{-Foc} \end{array}$

The phonological feature matrix dominates [-Foc]. (Alternatively, [-Foc] is an adjunct to the phonological matrix, thus not dominated but also not excluded by the phonological

features.) Thus, when [-Foc] is selected for movement, preservation of feature group integrity demands that the phonological feature matrix containing [-Foc] (possibly as an adjunct) moves. This movement, I assume, is blocked by a preceding/c-commanding phonological feature group. The principle I have to postulate is one that prevents movement of phonological features across other phonological features, except when the moved phonological features are pied piped as part of a larger feature group. Assume, for example, that movement of an argument to SpecIP is triggered by the need to check a D-feature in I (as in Chomsky 1995: ch. 4). Assume that [D] is a feature which dominates the phonological features (as well as the phi-features) of a DP. Then movement of [D] may be overt without being affected by any intervening phonological features. As noted above, the principle may be viewed as a special case of Relativized Minimality, relativized to phonological features. I shall refer to it as 'Phonological RM'.

If there is a verb or other category with a phonological feature matrix (other than adjuncts) c-commanding the object, overt Object Shift is impossible. The solution is covert movement, i.e. extraction of the feature [-Foc] from the phonological feature group. This violates feature group integrity, but on the other hand it respects the main economy principle of feature movement theory: 'Move as few features as possible' (henceforth Move Few Features). The present theory assumes a ranking among constraints, along the lines of Optimality Theory: Phonological RM > Feature Group Integrity > Move Few Features. Phonological RM is never violated: see (1b,c) and (2). At least in all those varieties of Scandinavian where Object Shift of weak pronouns is obligatory,<sup>14</sup> Feature Group Integrity wins over Move Few Features, meaning that Object Shift is overt if it can apply without violating Phonological RM. Thus, in the present theory the grammatical examples (2a', b', c') are derived by covert movement of just the feature [-Foc] to a position outside VP. (I have deliberately remained vague regarding the nature of the landing site of Object Shift, except that I have noted that the position is relatively high, close to I.)

As it stands the theory does not account for why adjuncts are invisible to Object Shift. As pointed out by Nilsen (1996), if Object Shift is Attraction (following Chomsky 1995: ch.4) of, say, [-Foc] to a designated position, it follows that adverbs and any other categories which are not specified for [ $\pm$ Foc] are not visible for the movement. On the other hand Attraction alone does not explain HG: verbs, prepositions and particles are not specified for [ $\pm$ Foc], either (recall the [ $\pm$ Foc] is here regarded as a feature of arguments). Therefore I have to assume a separate RM-like constraint to account for HG, which does not see adjuncts.

#### *On Object Shift in Icelandic*

As well known, Icelandic is exceptional among the Scandinavian languages in that Object Shift applies not just to weak pronouns but to other DPs as well, provided they are definite, or more correctly specific, and are not focused.<sup>15</sup> See Holmberg and Platzack (1995: ch. 6) for arguments that Icelandic full DP Object Shift is the same process as Object Shift of pronouns; it seems to have all of the same "PF-characteristics" as pronoun shift, listed above under (24).<sup>16</sup> In particular full DP Object Shift behaves just the same as pronoun

<sup>14</sup> In many varieties of Swedish and some varieties of Norwegian Object Shift seems to be essentially optional. In terms of constraint ranking, Feature Group Integrity and Move Few Features would be ranked equal in these varieties (in the case of Object Shift; I doubt whether the dialects which have optional Object Shift can be characterized as generally having less obligatory overt movement than the dialects which have obligatory Object Shift).

<sup>15</sup> The difference is not as sharp as usually described. Nilsen (1997) shows that Mainland Scandinavian allows full DP Object Shift quite freely under certain conditions.

<sup>16</sup> This means that Groat and O'Neil's (1996) hypothesis that the object in Icelandic is base-generated in SpecAgrOP cannot be right.

shift with respect to HG. We cannot repeat the test from V-topicalization to Icelandic full DP Object Shift since Icelandic does not allow V-fronting (or VP-fronting). The test from the particle construction does not work either, since full DPs can always precede the particle in Icelandic (more or less as in Norwegian and English). The test from the double object construction can be repeated for Icelandic, though: The question is, given that a visible indirect object blocks Object Shift of a direct object (which it does if we control for the possibility of 'inversion' of the two objects; see Collins and Thrainsson 1996), does the trace of the indirect object do so, too? (32) shows that it does not :

- (32) a. Ég skilaði bókasafninu ekki bókunum.  
I returned the-library not the-book  
"I didn't return the book to the library."  
b. \*Ég skilaði bókunum ekki bókasafninu.  
c. ?Hvaða bókasafni skilaðir þú bókunum ekki?  
which library returned you the-book not  
"Which library didn't you return the book to?"

(32b,c) show that the visible indirect object blocks shift of the direct object (the verb chosen here excludes inversion; see Holmberg and Platzack 1995: ch. 7). If the phonological features of the indirect object are removed, as in (32d) by wh-movement, the direct object can be shifted. That is to say, apparently full DP Object Shift does not see traces (cf. footnote 8).

I assume that [-Foc] is optionally dominated by the phonological features in Icelandic. This ensures that Object Shift can operate on full DPs as well as on weak pronouns, and in the same way.<sup>17</sup>

As regards Dutch and German and other 'OV-languages' they are not necessarily counterexamples to the formulation of HG assumed here, following Holmberg 1986. Note that HG does not come into play if some other movement (a movement not selecting [-Foc]) moves the object around the verb and verb complements such as particles etc. (cf. the Norwegian example (3)). In OV languages objects are always moved to preverbal position (if they are not merged in this position). This is presumably movement of a larger portion of features including phi-features and phonological features, and therefore it is not be affected by Phonological RM.

#### *A note on Case*

Why have I not assumed that the feature moved by Object Shift is Case instead of [-Foc]? In most other accounts of Object Shift (including my own earlier writings) the movement is described as triggered by Case in one way or other. After all, Object Shift moves only nominal categories (with a few exceptions, mainly some argument-like locative proforms). The reasons are the following:

(a) The notion (abstract) Case, in spite of being widely used, is still not well understood, and may ultimately turn out to be superfluous. It is an abstract property of

<sup>17</sup> With regard to [+Foc] Icelandic apparently behaves like the other Scandinavian languages: A stressed full DP object may but need not have narrow focus.

It is tempting to relate the property of having [-Foc] dominated by the phonological features to the presence of case morphology: In Mainland Scandinavian only pronouns show overt case distinctions, while Icelandic has overt case distinctions on all classes of DPs. It is unclear what the relation might be, though. Since neither Faroese nor, according to Cecilia Falk, p.c., Old Scandinavian have full DP Object Shift, case morphology can be at most a necessary condition for the Icelandic type of full DP Object Shift.

nominal arguments which triggers movement or insertion of a preposition, but doesn't do anything else. It is supposed to be reflected morphologically as case-inflections, but the relation between the movement trigger Case and case morphology remains unclear; see for example Sigurðsson (1989) for some views. The notion [ $\pm$ Foc] is reflected in phonology (as stress) as well as in semantics (as focus), and therefore seems at least potentially less elusive than Case.

(b) Object Shift is not movement to check a particular Case, such as accusative. Nominal objects undergo Object Shift in the same way regardless of their Case. Even nominative objects (triggering verb agreement in the case of Icelandic) in ergative, passive, and psych-verb constructions undergo Object Shift if other conditions are met.

- (33) *Mér líkar hún/tölvu ekki.*  
 me-D like-3SG it/the-computer-N not  
 'I don't like it/the computer.'

Hence if the crucial triggering feature is Case, it is a general [+Case] without a specific value. This is more or less the same as saying that the crucial feature is [+Nominal]. But not all nominals undergo (overt) Object Shift. In particular, focused nominals do not.

(c) Strong pronouns are nominal and have Case morphology just as much as weak pronouns (cf. Cardinaletti and Starke, to appear). Object Shift (in Mainland Scandinavian) is triggered by something that distinguishes between strong and weak pronouns. [-Foc] suggests itself as a candidate.

### Conclusions

I have argued that the dependence of Object Shift on verb movement is only a special case of a general condition preventing Object Shift over any category with phonological features within VP. Correspondingly, Object Shift does not see any category which lacks phonological features, i.e. the presence of traces make no difference to Object Shift. Among other things this means that equidistance in the sense of Chomsky (1993) plays no role whatsoever for Object Shift. Since Object Shift and HG provided the original empirical support for the equidistance condition, this suggests that the condition is spurious.

The fact that Object Shift does not see traces is consistent with the hypothesis that Object Shift is a 'PF-operation'. The hypothesis is supported by other properties of Object Shift. I propose a particular formal account of the PF-characteristics of Object Shift within a version of the single output theory and feature movement: Object Shift is movement of the feature [-Foc]. When Object Shift is overt, the phonological features are pied-piped. Since [-Foc] is dominated by the phonological features, overt Object Shift is effectively movement of a phonological feature matrix, and is therefore blocked by categories with a phonological matrix.

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