Some Notes on Scrambling and Object Shift*

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1 Introduction

Though object shift in Scandinavian and one type of scrambling in West Germanic have the same information-structural trigger – discourse-given objects move across adverbs taken to mark the boundary of vP – they differ in a number of respects: First, object shift typically applies to weak pronouns and is widely taken to be obligatory (for an opposing view see Josefsson 2003), while scrambling in West Germanic can apply to pronominal DPs, nominal DPs and PP complements alike and is taken to be optional. Second, object shift in Scandinavian, including the shift of nominal DPs in Icelandic, is subject to a minimality condition, while scrambling of German DPs applies freely, thus allowing for any kind of order between the arguments of the verb. Third, object shift may occur only in contexts where the main verb has moved out of the vP ("Holmberg's generalization," cf. Holmberg 1986). Since there is no verb movement in embedded clauses in Mainland Scandinavian, object shift is generally absent in these clauses, as it is missing in main clauses with periphrastic tenses. No such restriction holds for scrambling in West Germanic.

Most accounts of these phenomena thus assume that object shift and scrambling are different operations (e.g. Haider and Rosengren 1998). Such proposals also posit that scrambling and object shift are defined in purely syntactic terms which reflect language-specific restrictions. Hardly any approach argues that there is a unique universal operation of preposing discourse-given objects and relates the

language-specific properties to independent differences between the languages at hand.

The present paper tries to explore the ramifications of such a general account. In particular, it tries to relate language-specific peculiarities to different properties in the mapping between syntactic structure and prosodic structure.

2   Differences and Similarities between Scrambling and Object Shift

In this section, I will discuss these differences in greater detail and try to show that they are mostly superficial and in any event explainable in terms of other differences between the respective languages.

First, we need to take note of the fact that scrambling in the West Germanic languages German and Dutch comes in two varieties. There is so-called F-scrambling (cf. Neeleman 1994, also called T-scrambling in Haider and Rosengren 1998 and I-topicalization in Jacobs 1997) in which the scrambled element carries stress and is interpreted as a contrastive topic. And there is scrambling proper in which the scrambled element receives no stress and is interpreted as a discourse-given element, that is, as familiar topic in the terminology of Frascarelli and Hinterhölzl (2007). The difference between the two operations is best illustrated in Dutch. Dutch, like German, allows for scrambling of its arguments across adjuncts (1a), but may not permute arguments, as is illustrated in (1b). However, if the operation is accompanied with the special intonation of a contrastive topic, scrambling of the object across the subject is fine, as is illustrated in (1c), where letters of stressed syllables are given in small capitals:

(1)   a.   dat Jan de boeken niet koopt
             that Jan the books   not buys
             'that Jan does not buy the books'

       b.   * dat de boeken Jan niet koopt
             that the books   Jan not buys
             'that Jan does not buy the books'

       c.   dat √ZULke boeken selfs \JAN niet koopt
             that such   books even Jan not buys
             'that even Jan does not buy such books'

While F-scrambling displays clear properties of A'-movement – for instance, it is not clause-bound –, scrambling proper displays clear properties of A-movement (cf. Hinterhölzl 2004). Thus, object shift and F-scrambling are clearly different operations. But it seems worthwhile to further investigate whether object shift and scrambling proper constitute essentially the same operation. In the following sections, I will compare the properties of object shift in Scandinavian with the properties of scrambling proper, henceforth simply called scrambling, in West Germanic.

2.1   Minimality and Case

Let us start with the second observation and discuss minimality effects in scrambling operations in more detail. While scrambling in Dutch and in German essentially has the same properties, scrambling in Dutch is subject to the same minimality condition as object shift is in Icelandic. As we have seen in (1a,b) above arguments may freely move across adverbials, but they may not pass each other in Dutch. The same restriction holds for Icelandic, as indicated in (2). As is shown in (3), no such restriction applies in German:

(2)   a.   Pétur keypti bókina   ekki.
           Peter bought book.THE not
           'Peter did not buy the book'

      b.   * Pétur sýndi   bókina   oft   Maríu.
           Peter showed book.THE often Mary
           'Peter often showed Mary the book'

(3)   a.   dass das Buch Hans nicht las
           that the book Hans not   read
           'that Hans did not read the book'

      b.   Peter zeigte   das Buch oft   Maria.
           Peter showed the book often Mary
           'Peter often showed Mary the book'

One major difference between Dutch and German is that Dutch lexical DPs have lost their Case distinctions. It stands to reason that word order in German is completely free, at least from a syntactic point of view – yet not from an information-structural point of view (see below) –, since syntactic functions are directly encoded

in the Case morphology. That is to say that German Case morphology clearly in-
dicates whether a certain argument is to be interpreted as a subject, a direct object
or an indirect object, regardless of word order. Hence I propose the minimality
condition in (4), which can be taken to hold for scrambling in German and Dutch
as well as for object shift in Scandinavian alike, provided that a certain type of Case
morphology renders DP-arguments categorically distinct.

(4)   Minimality (for A-movement):
        An argument cannot move across a categorically non-distinct argu-
        ment.

Obviously, Case must be expressed morphologically to achieve such a distinction.
However, this will not do. One might ask why Icelandic displays minimality effects
despite its rich morphological Case system. Note, however, that there is an im-
portant difference in the role of Case morphology between German and Icelandic:
While nominative and dative in German unambiguously identify the subject and
the (indirect) object, Icelandic allows for nominative objects and dative subjects.
This necessitates the following fine-tuning of the term "categorically distinct:"

(5)   Categorical Distinction:
        A morphological Case system that unambiguously identifies gram-
        matical functions renders its DP-arguments categorically distinct.

These observations explain why scrambling in Dutch and object shift in Icelandic
and Mainland Scandinavian show minimality effects, while scrambling in Ger-
man does not. Hence, instead of assuming that scrambling in German must be
considered as a type of A'-movement because of its lack of minimality effects (as
proposed by e.g. Vikner 1994), we can now interpret scrambling and object shift
as instances of A-movement, considering the role of Case morphology (see also
Hinterhölzl 2006, where it is argued that scrambling targets the specifiers of func-
tional heads licensing weak pronouns in West Germanic).

2.2   Object Shift and Verb Movement

Object shift, as opposed to scrambling, is traditionally assumed to depend on verb
movement. For instance, the difference in grammaticality in (6) has often been
explained in terms of impossible verb (head) movement in (6b), which would
extend the domain for A-movement of the object pronoun.

(6) a.   Jag kysste **henne** inte.   (SWEDISH)
          I   kissed her   not
          'I did not kiss her.'

     b. * Jag har   **henne** inte kysst.
          I   have her   not kissed
          'I have not kissed her.'

But as (7) shows, object shift may be blocked even though the verb raises, especially
if other phonological material intervenes between the base position of the object
and its licensing position. In (7a), the phonological intervener is a preposition, in
(7b) it is a verb particle:

(7) a. * Jag talade **henne** inte med.   (SWEDISH)
          I   talked her   not with
          'I did not talk with her.'

     b. * Dom kastade **mej** inte ut.
          they threw   me not out
          'They did not throw me out.'

To unify the ungrammatical cases, Holmberg (1999) proposes that object shift in
(6b) is blocked by the intervening participle and argues that object shift is blocked
by any phonological material intervening between the base position in the VP and
its licensing position. The only exceptions to this rule are adjuncts. Holmberg con-
cludes from these observations that object shift should be treated as phonological
movement that is subject to a phonological type of minimality effect. However, it
remains mysterious under this account why adjuncts fail to induce a violation of
phonological minimality.

   I would like to propose that object shift represents syntactic movement after all,
applying in all contexts in which its trigger is satisfied irrespective of intervening
phonological material. However, the object is not always spelled-out in its check-
ing position in the middle field, since I take weak pronouns to be spelled out in the
smallest domain that contains a (phonological) host for them to restructure with.
In particular, I propose that weak pronouns are subject to the following prosodic
constraint at PF.

(8)   Spell-out of pronouns (Scandinavian)
         An object pronoun can only form a phonological phrase on its own
         if it receives stress.

From (8), it follows that a de-accented object pronoun cannot form a phonological phrase on its own and thus must restructure with the phonological phrase of a suitable host. Therefore, an 'intervening' verb, noun or preposition will induce the pronoun to be spelled out in its base position and to restructure with the preceding verb, preposition or particle in (6b) and (7a,b), respectively.

This account raises the question why something like (8) should hold. It is generally assumed (cf. Selkirk 1995) that functional material remains without word-level stress, unless it is focused. If such a functional constituent forms a phonological phrase on its own, the default stress that is assigned to it at the phrase level would lead to a situation in which stress at one level does not correspond to a strong (stressed) element on a lower level. I will leave this issue for further research.

At this point the question arises why a weak pronoun should not be able to restructure with a preceding adjunct. In a Neo-Davidsonian approach to modification, adjuncts are interpreted as predicates on the event argument introduced by the verb, as is illustrated in (9) (cf. Davidson 1966):

(9)   a.   John met Mary in the park.

       b.   ∃e met(j, m, e) & in the park (e)

In the minimalist program, it is assumed that vP constitutes a phase, since it coincides with a domain in which a predicate and all its arguments are introduced (cf. Chomsky 2001). In the above approach, an adjunct introduces a separate predication domain into the clausal skeleton and will thus constitute a separate phase with respect to the verb and its arguments (cf. Hinterhölzl 2009). If we further assume that elements can only restructure with elements that belong to the same phase, it follows that the pronoun in (6a) cannot be spelled out in its base position, since it can neither restructure with the phonological phrase preceding it, nor form a phonological phrase on its own, as is illustrated in (10) and discussed below. The round brackets in (10) are meant to indicate phonological phrases.

(10)   (Jag) (kysste *henne*) (inte) (*henne*)

Spelling out the pronoun in the lower position will either yield a violation of the prosodic constraint in (8), if the pronoun is de-accented, or yield a wrong information-structural interpretation if the pronoun is stressed to form a valid separate prosodic phrase.

This explanation of the above data is supported by an observation that is due to Vikner (1994). He shows that object shift cannot land a pronoun in between

adverbs (8a) and argues that object shift and scrambling need to be distinguished since scrambling is not subject to such a condition, as is illustrated in German in (11b).[1] Note, however, that the restriction exemplified in (11a) cannot be treated as an intrinsic property of object shift but constitutes a general property of weak pronouns in the environment of adjuncts: The same restriction exists in German, once we replace the scrambled full DP with a pronoun, as is illustrated in (11c).

(11) a. Igår   læste Peter den uden   tvivl (*den) ikke (*den).
          yesterday read Peter it   without doubt it   not   it
          'Yesterday, Peter undoubtedly did not read it.'

     b. Gestern las   Peter (das Buch) ohne   Zweifel (das Buch) nicht
          yesterday read Peter the book without doubt   the book not
          (das Buch).
          the book
          'Yesterday Peter undoubtedly did not read the book.'

     c. Gestern traf (ihn) Peter (ihn) ohne   Zweifel (*ihn) nicht
          yesterday met him Peter him without doubt   him   not
          (*ihn).
          him
          'Yesterday Peter undoubtedly did not meet him.'

Furthermore, Holmberg (1999) discusses an example of object shift in Norwegian (credited to Nilsen 1997) in which a scrambled DP can be inserted in between all types of adverbs, with the only exception of the position between an adverb and the negation, as shown in (12):

(12)   Etter dete slo   Guri (Per) heldigvis (?Per) ikke (Per) lenger (Per)
          after this beat Guri Per   luckily   Per   not Per   longer Per
          alltid (Per) i sjakk.
          always Per   in chess
          'After this, Guri luckily didn't always beat Per any longer in chess.'

Summing up, the examples in (11) and (12) show that weak pronouns in general cannot be licensed in an adjunct-adjacent position since – contrary to (scrambled) full DPs – they cannot form a phonological phrase of their own and their restructuring with an adjunct is blocked.

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[1] A discourse-given argument is in fact excluded in the position after the negation, since the object in this position receives stress and is interpreted as a contrastive focus. The same may hold for the position preceding the negation in (9). I will leave this issue to further research.

2.3 Scrambling and Optionality

The above account of the differences between (11) and (12) also opens up a way of explaining the presumed difference in optionality between object shift on the one hand and scrambling on the other. In essence, the difference boils down to different phonological properties: De-accented full DPs can be realized in various positions in the clause, whereas pronominal DPs depend on a phonological host. Since in German, de-accented elements may also be spelled out in their base position, scrambling of discourse-given DPs has generally been taken to be optional, as is illustrated in (13).

(13)　　Wem hat Hans das Buch gegeben?
　　　　who has Hans the book given?
　　　　'Who did Hans give the book to?'

　　a.　Hans hat das Buch Peter gegeben.
　　　　Hans has the book Peter given

　　b.　Hans hat Peter das Buch gegeben.
　　　　Hans has Peter the book given
　　　　'Hans has given Peter the book.'

In (13), both answers are possible with a slight preference for (13a). In (13a), the discourse-given direct object has been scrambled across the discourse-new indirect object, which receives the nuclear stress. In (13b), the object arguably has not been scrambled and seems to be de-accented *in situ*. Thus, the data in (13) strongly indicates that the trigger for scrambling cannot be phonological but must be syntactic or information-structural. Examples such as (13b), however, have also been taken as an indicator that the trigger is somehow negligible or optional.

　　This is problematic, since scrambling for reasons of scope-taking is strictly obligatory in German, as is illustrated in (14). (14a) with the object *in situ*, contrary to the parallel sentence in English (14b),[2] is not ambiguous in German and only allows for the narrow scope reading of the universal quantifier. If the intended reading is to imply that there is a potentially different man for every woman to love her, the scrambled order in (14c) is required:

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　　[2] The ambiguity in the English sentence should not be accounted for in terms of QR, but rather be interpreted as an indication that also English allows for scrambling (for reasons of scope taking). However, in English the lower copy must be spelled out (cf. Hinterhölzl 2002 for details).

(14) a. weil ein Mann jede Frau   liebt
          since a   man   every woman loves
          'since a man loves every woman'

      b. A man loves every woman.

      c. weil jede Frau   ein Mann *t* liebt
          since every woman a   man   loves
          'since a man loves every woman'

However, both operations – i.e. scrambling for discourse reasons (13) and scrambling for scope-taking (14) – have the same syntactic properties: They are instances of A-movement, since both cases are exempt from WCO-effects, they create new binding positions, and they are strictly clause-bound (see Hinterhölzl 2006 for a more detailed discussion). But if they constitute an identical syntactic operation, how can it be that one is obligatory and the other is optional? The reason for this difference should not be a core syntactic property but be a consequence of a difference at the interfaces.

The German middle-field is scope-transparent in the sense that arguments and adjuncts appear in their relative scope positions. A unified account of the data in (13) and (14) will therefore have to presuppose that scrambling for reasons of discourse-givenness is as obligatory as scrambling for reasons of scope-taking is, but that the spell-out of the respective copies is determined by interface properties. In particular, I will assume that the constraint in (15) determines that the direct object in (14) must be spelled out in its derived position.

(15) a. Scope transparency (cf. Bobaljik and Wurmbrand 2008 and others):
          If *a* takes scope over *b*, the spelled-out copy of *a* must c-command
          the spelled-out copy of *b*.

Along these lines, we must assume that the direct object has undergone scrambling also in (13b), for the same reason that motivates scrambling in (13a), the difference being that the direct object is spelled out in its base-position (given that scope is not at stake in this case).

This account of the data in (13) has the additional advantage that it explains why (13b) is more marked than (13a). Note that (13b) constitutes an alternative derivation to (13a), but is more costly since in addition to scrambling it also involves a stress shift from the unmarked preverbal position (the position of the nuclear accent) to a higher position in the tree. In consequence, (13b) is more

marked from a phonological point of view, since main stress does not fall on the last phonological phrase within the intonational phrase of an utterance (cf. Hayes and Lahiri 1991).

To summarize this proposal, the optionality in (13) only lies in the speaker's freedom to choose a more or less marked option for his/her communicative purposes, but the grammar itself is deterministic in that it requires that discourse-given elements are scrambled and de-accented.

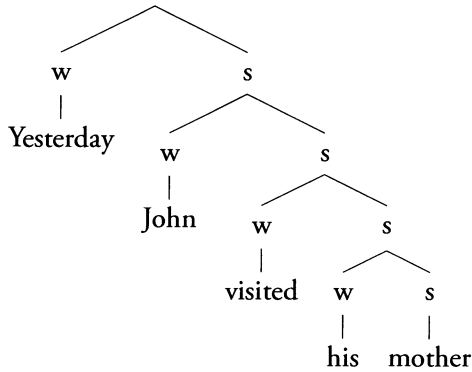## 2.4   Scrambling and Object Shift in Icelandic

The novel account to object shift in Scandinavian outlined above raises several questions. In Section 2.2, I have argued that the properties of object shift follow from the assumption that weak pronouns are spelled out in the smallest domain that contains an appropriate phonological host. At this point an empirical and a theoretical question arise. The theoretical question is why it should be the smallest and not the largest domain containing an appropriate phonological host. This question obviously has to do with the architecture of grammar and in particular with the question of when spell-out decisions are made in the course of the derivation.

The empirical question concerns the fact that also object shift of lexical DPs is related to verb movement in Icelandic. This fact remains unaccounted for by our treatment of object shift of pronominal DPs above.

Obviously, the latter question has to do with the VO-nature of Icelandic. However, to handle this fact by a simple account in terms of a head-complement parameter will not suffice. What is needed is an approach in terms of Fox and Pesetsky (2004), who postulate that precedence relations established in the v-domain are preserved throughout the derivation. In other words, a lexical DP object can undergo object shift, if the verb is moved as well, since verb movement will re-establish the initial verb-object order within the vP.

I will adopt a similar account here, but will argue that what is at stake is not the preservation of precedence, but an IP-preservation of the metrical relations established within the vP. The metrical relation between verb and object in the vP is (w s) per default, since the right-hand branch is generally assumed to be the dominant (strong) branch in a prosodic structure, as is illustrated in (16):

(16)   Yesterday John visited his mother.

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              ╱‾‾‾‾‾╲
           w           s
           │
        Yesterday    ╱‾‾‾‾╲
                  w         s
                  │
                John     ╱‾‾╲
                       w       s
                       │
                    visited  ╱‾╲
                            w    s
                            │    │
                           his  mother
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Thus, if object shift applies to a lexical DP in Icelandic, the prosodic w-s pattern between verb and object can only be preserved if the verb undergoes movement to a higher position, i.e. if the verb undergoes V-I or V-C movement.

Such an account presupposes a syntactic system that encompasses cyclic spell-out. This means that the output of syntactic computation is evaluated prosodically and semantically in a phase-based, stepwise fashion (cf. Chomsky 2001).

Adopting such a procedure will also provide an anwer to the above question why a weak pronoun must be spelled out in the *smallest* domain (containing a phonological host). Given the phase-based stepwise evaluation of syntactic structure, it follows that a weak pronoun will be spelled out in the vP, if this domain contains a suitable host, otherwise it will be spelled out in the I-domain.

2.5   Further Remaining Questions

Even though we succeeded in accounting for a number of differences between object shift and scrambling, there remain still a number of questions to be answered.

One question that to my knowledge has never been given a satisfactory answer is why Icelandic also allows for object shift of lexical DPs, while Mainland Scandinavian only allows for object shift of pronominal ones. The classic treatment of the difference was given in Holmberg (1986) who notes that only categories with morphological Case undergo object shift. However, this account is dismissed in Holmberg (1999), since the correlation is rather weak: there is object shift of lexical DPs in Mainland Scandinavian lacking morphological Case on nouns and there is no object shift of lexical DPs in Faroese, which does display morphological Case on nouns. But no alternative solution is proposed in Holmberg (1999).

I cannot give a full account of this problem here. Instead, I would like to outline what the analysis within the approach advocated here might look like. If syntax is also constrained by metrical properties of constituents (as is indicated in the above approach to the VO-character of the Scandinavian languages in terms of preservation of metrical relations), then the pertinent distinction can be captured by assuming that the Mainland Scandinavian languages do not tolerate heavy arguments (branching constituents) in their I-domain, while there is no such restriction applying to the I-domain of Icelandic (note also that Icelandic allows for negative and quantified arguments in its I-domain).

The background for this proposal is the observation that in weight-sensitive mapping systems between syntactic structure and prosodic structure, a heavy, i.e. branching, syntactic constituent must occupy a dominant branch in prosodic structure, while a light, that is, non-branching syntactic constituent may occupy a dominant or a recessive branch (cf. Halle and Vergnaud 1987, Hinterhölzl 2011). If the object undergoes scrambling and is prosodically evaluated at this point of the derivation, it would occupy a weak, i.e. recessive branch with respect to the verb. Consequently, a branching DP object would have to be spelled-out in the vP, if the I-domain in a given language is weight-sensitive. I will have to leave a full specification of this account to a future discussion, but I hope that this short sketch is sufficient to outline a possible solution for this problem.

The other question that I have left unaddressed here is why pronominal PPs can undergo scrambling in German and Dutch but fail to undergo object shift in the Scandinavian languages. First note that speaker's judgements vary considerably with regard to scrambling of PP-arguments in German. Though I personally prefer option (17a) over (17b), it is safe to say that scrambling in these cases can be considered to be optional in the standard language:

(17)　a.　Hans hat auf sie nicht gewartet.
　　　　　Hans has for her not   waited
　　　　　'Hans did not wait for her.'

　　　b.　Hans hat nicht auf sie gewartet.
　　　　　Hans has not   for her waited
　　　　　'Hans did not wait for her.'

However, instead of claiming that scrambling is optional, one could argue that speakers differ with respect to their analyses of these PPs either (i) as arguments, which may scramble to a position in front of the negation, or (ii) as (parts of

complex) predicates, which are normally realized after the negation. Directional PPs take a special place in the German middle-field, as they resist scrambling even if they are discourse-given (18) and do not display a contrastive interpretation in the position after negation. One way of handling these facts is to assume that they are interpreted as forming a complex predicate with the verb:

(18)   a.   Was hat Hans in   den Kühlschrank gestellt?
              what has Hans into the refrigerator   put
              'What did Hans put into the refrigerator?'

        b.   * Hans hat in   den Kühlschrank die Milch gestellt.
              Hans has into the refrigerator   the milk   put
              'Hans put the milk into the refrigerator.'

Scrambling in (17) must be considered a case of pied-piping: The discourse-given pronoun triggers scrambling of the entire PP. The reason for pied-piping must be that the DP cannot extract from the containing PP. It is well-known that the Scandinavian languages (and English) allow for preposition stranding in passives and *wh*-questions targeting PP-complements. Note, however, that stranding the preposition would require that the pronoun is spelled-out in the vP, rather than in the I-domain (cf. (7a) above), since the preposition arguably counts as a phonological host that it could restructure with. This raises the question of what prevents the discourse-given pronouns from inducing pied-piping of the entire PP in Mainland Scandinavian. If the solution to Icelandic object shift in terms of metrical weight is on the right track, the answer might be that pied-piping is excluded in Scandinavian since PPs necessarily count as heavy syntactic constituents, leaving us with the question of why PPs resist scrambling in Icelandic.

An alternative solution to this problem might be to assume that the majority of these PPs are analyzed as forming complex predicates with their verbs[3] (predicate formation seems to me to be a reasonable precondition for preposition stranding) and as such resist object shift in the same way as predicative DPs and PPs resist scrambling in German, as shown in (18) above.

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[3] It has been argued that prepositions when stranded are reanalyzed as forming a complex predicate with the verb (cf. Hornstein and Weinberg 1981).

3   Summary

Summing up, I have outlined the tenets of a unified account of scrambling and object shift. We have seen that this approach is successful to a large extent. Even though the issue of why PP-arguments fail to undergo object shift must remain an open question for the purposes of this paper, the hypothesis that these elements are analysed as predicates in the Scandinavian languages seems promising and, in my opinion, merits further investigation.

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