

Scandinavian Clause Structure and Object Shift

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Abstract

This paper focusses on the theory of clause structure in Icelandic, contrasting it along the way with that of another Scandinavian language, Swedish. I argue that LFG provides a very simple and appealing account of two distinguishing properties of Icelandic: (i) the presence of two apparent subject positions in the ‘Transitive Expletive’ construction, and (ii) the phenomenon of ‘Object Shift’, where a direct object appears to the left of its expected VP-internal position.

There is in fact a natural correlation between (i) and (ii) in the LFG analysis, something not successfully captured in any of the many previous analyses. In Icelandic, the Transitive Expletive structure requires the IP-over-S clausal analysis that LFG provides. Object Shift, I argue, is what happens when the object is generated outside of VP. In Icelandic, this possibility arises given the availability of S and its alternative expansion as XP^+ . In contrast, Swedish lacks the Transitive Expletive construction, and so has no clause-internal S structure. Swedish Object Shift only affects weak pronouns, and this restricted Object Shift is naturally analyzed as attraction to I, again obviating the need for the pronoun to be contained within a surface VP.

1. Subject Positions

Icelandic is a Germanic language which shows VO order if both verb and object remain within the VP. Unlike many of the Germanic languages, Icelandic shows symmetric V2 structure, which means that the finite verb appears in second position in both main and embedded clauses. Examples of embedded V2 are shown in (1), taken from Holmberg (1986).

- (1) a. það var gott að hann keypti ekki bókina. Ice.
it was good that he bought not the-book
- b. Ég veit ekki hvers vegna Sigga setur aldrei hlutina á réttan stað. Ice.
I know not why Sigga puts never the-things in the right place

The fact that the verb (underlined) in the embedded clause is in the second position can be seen here from its position preceding the negative adverbs in these examples. The standard analysis of Icelandic developed primarily in the Government-Binding and Minimalist Program literature is that the verb appears in the highest functional head position in all finite clause types, and I will adopt this characterization, though not necessarily the details of the actual functional categories proposed in that literature.

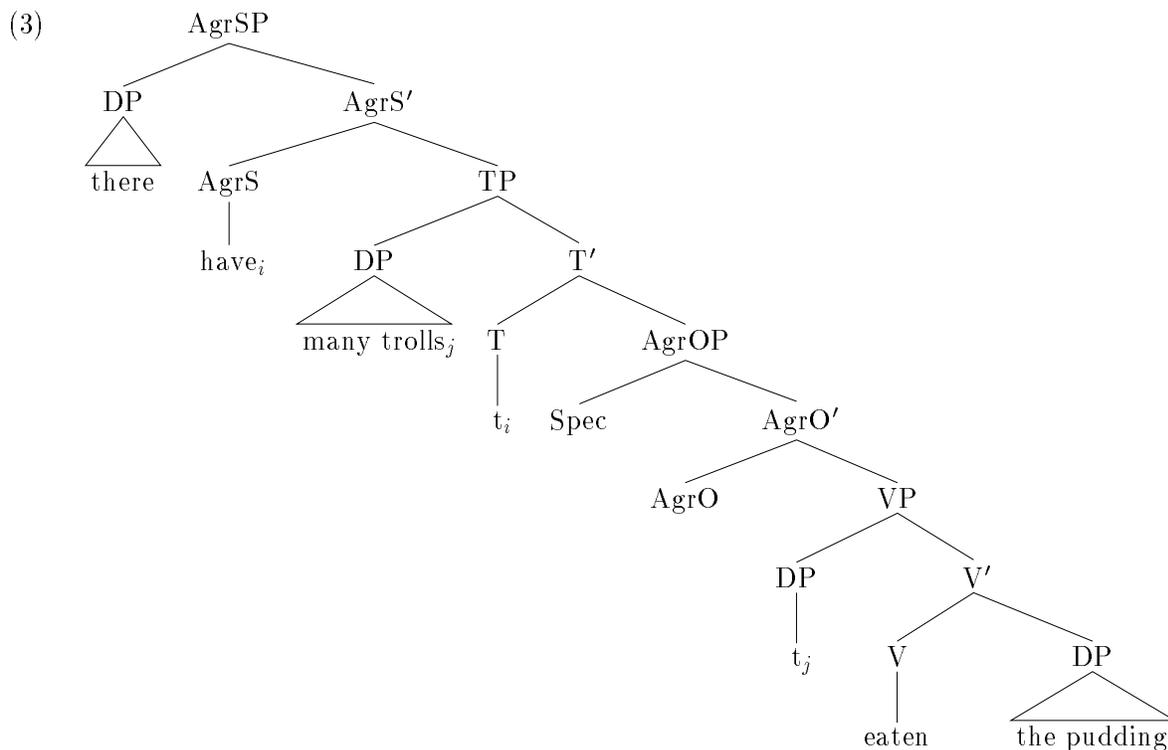
Swedish is a ‘mainland Scandinavian’ language, which also shows basic VO order within the VP. However, simplifying a little, Swedish only shows V2 in main clauses, as is more typical of the Germanic languages. One famous point of difference between Icelandic and Swedish is that Icelandic alone allows the Transitive Expletive construction, as seen in the examples in (2), where the verb in second position is preceded by an expletive and immediately followed by the thematic subject.

⁰I am grateful to Avery Andrews, Joan Bresnan, Lizanne Kaiser and Yukiko Morimoto for useful comments and suggestions. This short paper represents an intermediate stage of my thinking on the phenomena and issues here—a much longer work is in preparation.

- (2) a. það hafa margir jólasveinar borðað þúðinginn. Ice.
 there have many Christmas-trolls eaten the-pudding
 ‘Many Christmas trolls have eaten the pudding.’
- b. *Det har många män ätit puddingen. Swe.
 there have many men eaten the-pudding

1.1. Minimalist Accounts

Bobaljik and Jonas (1996) propose that the expletive in Icelandic occupies the SpecAgrSP position, with the finite verb in the AgrS head position, and the logical subject ‘many Christmas trolls’ in SpecTP, based on the universal grammar template postulating clause-internal categories of AgrSP, TP, AgrOP, and VP (see (3) for (2)a). Their work crucially motivates the presence of two subject positions, the specifiers of AgrS and T, with an intervening head position.



Building on Bobaljik and Jonas (1996) and other earlier work both on the Scandinavian languages and on the theory of clause structure in the Minimalist Program, Jonas (1996) and Thráinsson (1996) propose some correlating differences between Icelandic and a mainland Scandinavian language such as Swedish with regard to clause structure. In particular, they relate the position of the tensed verb and the presence of certain subject positions. These can be summarized as in (4).

- (4) a. Icelandic has separate projections for T(P) and AgrS(P); Swedish does not.
- b. Icelandic has the Transitive Expletive structure, in which SpecAgrSP and SpecTP are filled independently; Swedish does not, as there is no SpecTP position.

- c. The *V* raises overtly from its base position to the heads *T* and *AgrS* in Icelandic; in Swedish the *V* remains in *VP*, abstracting away from main clause *V2* effects.

With regard to (4)a, Thráinsson (1996) argues that *AgrS* and *T* are simply collapsed as *I(NFL)* in Swedish; Jonas (1996) makes the standard minimalist assumption that in Swedish *TP* lacks a specifier, and that *T* moves obligatorily to *AgrS*. As Thráinsson observes, this has the same effect as positing a single *I* in the first place. (4)b allows Icelandic to have the Transitive Expletive construction; naturally, in regular clauses, the subject raises through *SpecTP* to surface in *SpecAgrSP*. With regard to (4)c, we have seen that Icelandic shows verb raising in both main and embedded tensed clauses, a fact that has been taken in the Minimalist literature to show that the verb raises overtly to the highest inflectional head due to a motivation independent of that which gives *V2* structures; this particular feature will not be directly relevant in the rest of this paper.

The account that I will develop below accepts (4a–c), except for notational differences. One point of contrast is that, as there clearly are two specifiers (of *AgrSP* and *TP*), standard *X'*-assumptions lead to the expectation that there must be two different heads which these are projected from, an expectation which is not fulfilled.

1.2. The LFG Analysis

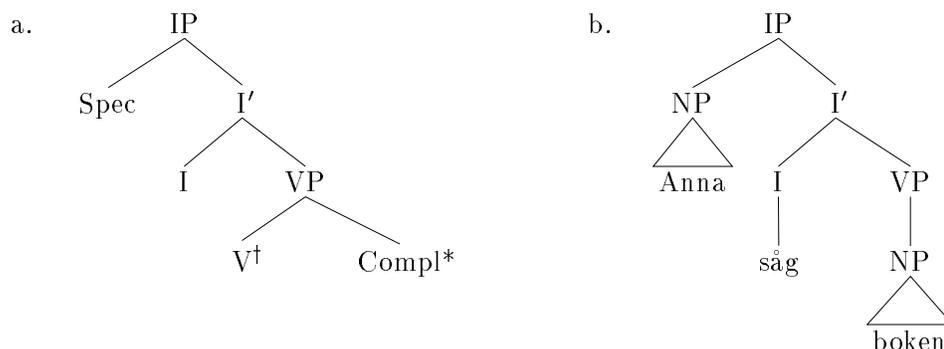
The LFG theory of phrase structure provides functional categories as well as lexical categories. In this paper, only the functional category *I(NFL)* and its projection will be relevant. Functional categories differ from lexical categories in the functional annotations on their specifiers and complements. The main features of structure-function association are given in (5), from Bresnan (1997a, 93).

- (5) Principles of Structure-Function Association:
 - a. C-structure heads are f-structure heads.
 - b. Specifiers of functional categories are the syntacticized discourse functions (here, only *SUBJ* is relevant).
 - c. Complements of functional categories are f-structure co-heads.
 - d. Complements of lexical categories are the non-discourse argument functions.

For the data at hand, (c) is the crucial principle. When *I* takes a complement, such as *VP*, both *I* and *VP* are co-heads, and thus all functional information is unified—the functional domains of *VP* and *IP* are the same. Clauses where tensed verbs appear in a designated position outside of *VP* will have the tensed verb in *I* (see, for example King (1995) on Russian and Bresnan (1997a, 110ff.) on Welsh). The complements of the verb in *I* will typically appear dominated by a *VP* node, even though that *VP* has no c-structure head (for the verb is in *I*, by assumption).

These properties can be illustrated for Swedish, in which the structure of the clause is such that the complement of *IP* would be *VP*. This analysis predicts all of the Swedish properties in (4), providing single head and specifier positions above *VP*. The schematic clause structure is shown in (6)a, with the structure of a simple example *Anna såg boken* ('Anna saw the book.') in (6)b.

(6) Swedish clause structure:



(6)b illustrates the V2 effect in main clauses: if there is a single tensed verb, it will appear in I. LFG allows projective phrases such as VP to lack a c-structure head, but requires that all projective phrases have an ‘extended head’ (see Bresnan (1997a)). I is the extended head of VP in (6)b as it is a c-structure head and IP maps to the same functional domain as VP.

In the schematic structure in (6)a, the position V^\dagger will be filled by a non-finite verb just in case there is an auxiliary verb in I. By the principles in (5), there is only one SUBJ position in (6)a, namely SpecIP. SUBJ cannot be associated with a phrasal position internal to VP, and so it is the non-SUBJ functions that will be generated as XP daughters of VP.

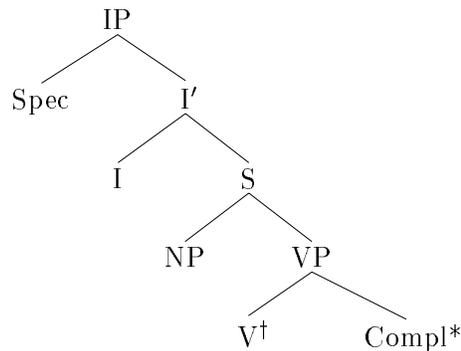
Bresnan (1997a) identifies two forces in syntax—‘endocentricity’ and ‘lexocentricity’. The former provides headed structures according to X' -theory, such as the projections for IP and VP just considered. The latter “associates syntactic functions directly with features borne by words rather than with the configurational relations of phrases in syntax” (p.103). The syntax here employs a non-projective category, S, a category lacking a c-structure head, which hosts words and phrases in ‘lexocentric’ environments. In radically non-configurational languages, S expands as C^+ , that is, some number of categories of any type and bar level. S may also expand as NP – XP, giving a canonical and configurational subject-predicate structure.

Combined with the endocentric structures, the theory offers a range of typological possibilities as to the surface manifestation of grammatical functions: at least through structural position, relative order, head-marking, and dependent-marking. While none of these options are mutually exclusive, general principles of economy of expression and structure-function mapping lead us to expect languages to effectively choose some properties and not others. For example, radically non-configurational languages probably do not manifest the NP – XP expansion for S, while the Celtic languages show only that expansion for S.

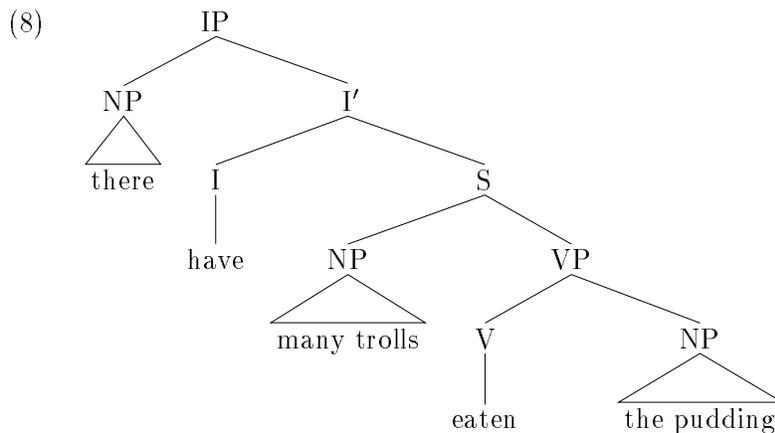
S can be the complement to I, and when it is, it is a co-head with I, by (5c). This is structure by which LFG provides ‘internal subject’ structures, where S expands as NP – VP. Given such a possibility, the properties of Icelandic subject positions would be analyzed perfectly on the assumption that Icelandic has an IP structure with an S complement. This structure will provide two ‘subject positions’, SpecIP and the subject of S, with an intervening head position, I, where tensed verbs will be generated. However, as S can have no X^0 head, there will be no expectation of a second head position (corresponding to the head of TP in (3)). We will see in all the examples below that S dominates only phrasal (XP) constituents. The schematic structure of the clause is shown in (7);

again the c-structure head of VP, V^\dagger , is filled only by a non-finite verb in the presence of a tensed auxiliary verb in I.

(7) Icelandic clause structure:



With these assumptions, (8) is the structure of (2)a.¹



In the case of a prototypical clause with a subject only in SpecIP, usual principles of structural economy will favor a simple VP complement to I, over a structure with S dominating only a VP, giving a structure just like (6)a.

At this level of analysis, the IP-S structure in LFG perfectly models the AgrSP-TP structure proposed in the Minimalist literature, with the exception of not making the prediction that the head positions of AgrS and T ought to be filled independently of each other. The upper parts of (3) and (8) are essentially identical, though the structures diverge radically below T' and VP respectively. The following section takes up the question of this lower structure, examining some other properties of the non-projective category S.

¹Though not shown here, I assume that the expletive lacks an independent PRED and maps with the thematic subject to the SUBJ function.

2. Flat vs. Hierarchical Structures and Object Shift

2.1. Kaplan and Zaenen (1989)

An important precursor to the analysis I present below can be found in Kaplan and Zaenen (1989), who independently proposed an S structure for Icelandic. They noticed that Icelandic shows evidence for a flat S structure when there is a single tensed verb in the clause, but when there is a tensed auxiliary, the non-finite verb heads a structured VP.

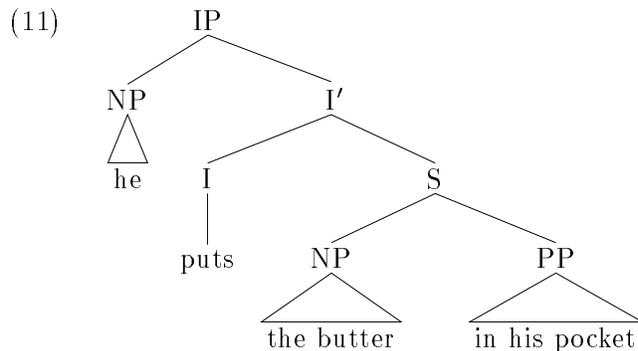
The facts that motivated their analysis are as follows. An adverb such as *sjaldan* ('seldom') may flank a VP, but not appear between constituents of VP, when there is an auxiliary. This is seen in the contrast in the examples in (9), with the adverb underlined.

- (9) a. Hann mun (sjaldan) [_{VP} stinga smjörinu í vasann] (sjaldan). Ice.
 he will (seldom) [_{VP} put butter-the in pocket-the] (seldom)
 'He will seldom put the butter in his pocket.'
- b. Hann mun [_{VP} stinga (*sjaldan) smjörinu (*sjaldan) í vasann]. Ice.
 he will [_{VP} put (*seldom) butter-the (*seldom) in pocket-the]

However, when the main verb is in second position, not in VP, the adverb can appear between any constituents:

- (10) Hann stingur (sjaldan) smjörinu (sjaldan) í vasann (sjaldan). Ice.
 he puts (seldom) butter-the (seldom) in pocket-the (seldom)

This shows that there is an analysis of (10) that does not appeal to a surface VP. Updating the structures of Kaplan and Zaenen (1989) to fit with current LFG, their structure for (10) would be as in (11).



The NP and PP dominated by S both fulfill argument functions here, as the non-subject complements of the verb. This expansion of S is different from the predicating NP – VP expansion discussed above; (10) shows that Icelandic must allow an expansion of S where each daughter phrase has an argument or adjunct function.

However, this rather simple conclusion is challenged by Holmberg (1985), who observes that the data in (10) could be handled by an account with a structured VP in deep structure, with transformations of verb movement to INFL and an Object Shift rule **applying only to NPs**. A base-generated version of this account would give a structure just like (11) except that the PP would be the sole constituent within a VP, where that VP is sister to the NP ‘the butter’. Although I cannot do justice to the rationale for this slightly more complex analysis here, I will adopt it below in section 2.4 and subsequent sections.

2.2. The Phenomenon of Object Shift

Object Shift is a phenomenon which shifts direct objects leftwards out of the VP, where the leftward movement is visible due to the position of negation and other adverbs. The examples in (12)–(13) from Holmberg (1986, 217) illustrate Object Shift in Icelandic within embedded clauses, where the verb nevertheless raises into the V2 position. Object Shift is generally optional in Icelandic, so the pairs of examples show the unshifted and shifted versions, with the object underlined.

- (12) a. það var gott að hann keypti ekki bókina. Ice.
it was good that he bought not the-book
- b. það var gott að hann keypti bókina ekki. Ice.
it was good that he bought the-book not
- (13) a. Ég veit ekki hvers vegna Sigga setur aldrei hlutina á réttan stað. Ice.
I know not why Sigga puts never the-things in the right place
- b. Ég veit ekki hvers vegna Sigga setur hlutina aldrei á réttan stað. Ice.
I know not why Sigga puts the-things never in the right place

In Icelandic, all types of direct object NPs can undergo Object Shift. In Swedish, only pronominal objects undergo Object Shift.² Object Shift has been associated with a correlation known as ‘Holmberg’s Generalization’, following the pioneering work of Holmberg (1986), and it says that Object Shift is possible just in case the V has raised out of the VP to the highest functional head position.

The following Swedish examples from Holmberg (1997) illustrate pronominal Object Shift; if the main verb does not leave VP, due to the presence of an auxiliary, as in (14)b, or due to the fact that there is no verb movement in an embedded clause at all, as in (14)c, Object Shift is not licensed. Following Holmberg’s representations, I indicate the base positions of the verb and object by traces, though such empty elements will not feature in the analysis that I propose.

- (14) a. Jag kysste_V henne_O inte [_{VP} t_V t_O]. Swe.
I kissed her not
- b. *Jag har henne_O inte [_{VP} kysst t_O]. Swe.
I have her not kissed

²Norwegian, Swedish, and Danish all show pronominal Object Shift.

- c. *... att jag henne_O inte [_{VP} kysste t_O]. Swe.
 ... that I her not kissed

According to Holmberg (1997), Object Shift is somewhat optional in (14)a, so the corresponding unshifted version in (15)a is acceptable to some speakers; for all speakers the acceptable versions of the (b–c) examples involve no Object Shift.

- (15) a. %Jag kysste inte [_{VP} henne]. Swe.
 I kissed not her
- b. Jag har inte [_{VP} kysst henne]. Swe.
 I have not kissed her
- c. ... att jag inte [_{VP} kysste henne]. Swe.
 ... that I not kissed her

As just noted, Object Shift applies in principle to all NPs in Icelandic, and is somewhat optional;³ in Swedish, it applies only to pronominal objects, and is largely obligatory. The variable optional/obligatory nature of Object Shift seems to be related to aspects of semantic and pragmatic interpretation depending on whether the object is in the VP or not. I will ignore these interpretive effects in this paper; for discussion, see Diesing (1997) and Vikner (1997).

In the examples so far, the shifted object immediately follows the tensed verb, giving the appearance that the object has moved to a designated ‘Object Shift position’. This intuition has guided many of the recent transformational analyses. However, there is no evidence for such a distinguished position, and in Icelandic, at least two XP constituents may intervene between the inflected verb and the shifted object. First, it is possible to have both the Transitive Expletive structure and Object Shift (Bobaljik and Jonas (1996, 213–4)). As shown below the first example, the thematic subject in the Transitive Expletive structure follows the verb in I, but precedes the shifted object. This relative positioning is one of the main factual points that Bobaljik and Jonas (1996) wished to establish.

- (16) a. það lauk einhver verkefningu alveg. Ice.
 there finished someone the-assignment completely
 I SUBJ OBJ ADV
- b. það borðuðu margir strákar þjúgun ekki. Ice.
 there ate many boys the-sausages not

Second, with double-object verbs, the indirect object must precede the direct object, regardless of whether the direct object is shifted or not. With both objects in situ, the indirect object (underlined in (17)) must immediately follow the V head of VP:

- (17) Ég hef ekki [_{VP} lánað Maríu bækurnar]. Ice.
 I have not [_{VP} lent Maria.DAT the-books]
 ‘I have not lent Maria the books.’

³All object NPs in Icelandic can undergo Object Shift, regardless of their surface case (Collins and Thráinsson (1996, 399)).

The indirect object may appear in front of negation, with the direct object apparently still in VP, following negation, as shown in (18)a. However, reversing the objects leads to ungrammaticality, as in (18)b.

- (18) a. Ég lána Maríu ekki bækurnar. Ice.
 I lent Maria.DAT not the-books
 ‘I did not lend Maria the books.’
- b. *Ég lána bækurnar ekki Maríu. Ice.
 I lent the-books not Maria.DAT
 ‘I did not lend Maria the books.’

Additionally, subject to various pragmatic felicities associated with intonational patterns (see Collins and Thráinsson (1996)), both objects may shift. In these cases, the indirect object must precede the direct object; this is the same order that is found when both objects remain within the VP.

- (19) Ég lána Maríu bækurnar ekki. Ice.
 I lent Maria.DAT the-books not
 ‘I did not lend Maria the books.’

In fact what these data show is that the indirect object and direct object are always at the same level: whether both within the VP, or both out of the VP, the indirect object must precede the direct object, as (19) confirms. Overall, (17)–(19) indicate that when both objects shift, the indirect object must precede both negation and the direct object, but the relative order of the latter two constituents is somewhat free. On the correct assumption that negation cannot appear within the VP, naturally negation will precede both indirect and direct objects when they remain within the VP, as in (17).

Summing up, we have the following generalizations about constituent order:

- (20) a. SUBJ precedes all other XP constituents.
 b. IOBJ precedes all other non-SUBJ XP constituents.

2.3. Additional Facts

Holmberg (1997) presents some important new facts concerning Object Shift, illustrating with examples of pronominal object shift from Swedish. Crucially, verb raising is shown to be a necessary but not sufficient condition on Object Shift; what Holmberg shows is that the correct generalization is that there should be no overt material whatsoever within the VP.

For example, a particle left within the VP blocks Object Shift.⁴

- (21) a. *Dom kastade mej_O inte [_{VP} ut t_O]. Swe.
 they threw me not out

⁴In the other Scandinavian languages, a particle cannot appear between a verb and a pronominal object. Swedish differs in that only (21)b is acceptable (see Josefsson (1992, 87)). This fact will be important in section 2.6.

- b. Dom kastade inte [_{VP} ut mej]. Swe.
 they threw not out me

(21)a shows that V movement is not a sufficient condition on Object Shift: rather, there must be nothing overtly within VP (or, to be more precise, there should be no overt material between the left edge of VP and the base position of the object, within VP, according to Holmberg).

Additionally, and strikingly, Holmberg (1997) shows that V-topicalization in the presence of an auxiliary can license Object Shift:

- (22) Kysst_V jag har henne_O inte [_{VP} t_V t_O]. Swe.
 kissed I have her not

This example is important, as it shows that V-raising through the functional heads of the clause is irrelevant to the licensing of Object Shift; all that matters is that there is no verb in VP. Fronting of other elements also provides the conditions for Object Shift to occur:

- (23) a. Vem_{IO} gav du den_O inte [_{VP} t_{IO} t_O]? Swe.
 who gave you it not
- b. Henne_{IO} visar jag den_O helst [_{VP} t_{IO} t_O]. Swe.
 her show I it rather
- c. Ut_P kastade dom mej_O inte [_{VP} t_P t_O]. Swe.
 out threw they me not

Holmberg's proposal for the analysis of Object Shift that these new facts necessitate is one that involves not a syntactic movement operation, but rather 'PF-movement'—movement of just a phonological matrix. This movement is subject to the principle of Relativized Minimality (see Rizzi (1990)), extended to allow for what Holmberg presents as a 'Relativized Minimality effect pertaining to PF-operations'. This has the effect that 'PF-operations cannot move a phonological matrix over another phonological matrix'. Along with some other assumptions (see Holmberg (1997, 214)), this blocks Object Shift when there is intervening overt phonological material in the VP. The motivation for the movement is that pronouns are specified as non-focal ([−Foc]), and must move out of the focal domain. In Holmberg's proposal, all non-focal elements move at least covertly out of the focal domain, and pronouns move overtly.

This proposal may be descriptively adequate, but it explains little about the licensing conditions for Object Shift, as it involves essentially new theoretical devices just for the purpose of Object Shift. Holmberg suggests that some properties of the proposal would relate to conditions on other PF-operations, such as cliticization or contraction. This has some credence for Swedish, where the elements that undergo Object Shift are weak pronouns, which levitate towards I, but it fails completely to offer any insight for Icelandic, where full NPs undergo shifting. Holmberg suggests that the category-internal feature structure of all Icelandic NPs is like that of Swedish pronominals. Even if this were true—and could be shown to be true—it fails to relate Object Shift in Icelandic to the availability of the Transitive Expletive construction.

2.4. The LFG analysis

Prefacing the analysis to come, the basic idea is extremely simple: the object ‘shifts’ when there is no VP to contain it, as would be possible just in case there were no other overt elements that required a VP to contain them. This is possible in Icelandic due to the availability of S, shown by the adverb facts from Zaenen and Kaplan (1989) and the Transitive Expletive construction. In Swedish, there is no possibility for S, but VP need not be present to host an object pronoun, in certain restricted circumstances, described below. This simple idea does not provide a fully general account, though, and a slightly more articulated structure can be shown to be present in some cases of Object Shift.

The unifying generalization about Object Shift brought out in Holmberg (1997) is that Object Shift is not possible if any overt element which should precede the object is present in VP. This generalization might follow naturally in the LFG account—VP would be absent if it dominated no overt material, as there are no traces in c-structure, and natural principles of structural economy will not allow a VP to be projected if it is not necessary (cf. Bresnan (1997a) ‘Economy of Expression’). However, the facts of PP and Particle positioning (section 2.6) show that there may be a surface VP even if an object has ‘shifted’ out of it, so long as what ‘remains’ in VP would have followed the object in the unshifted structure.

To make the analysis more specific, I propose that there are 3 possible expansions for S, labelling the new option the ‘multi-NP’ option. The multi-NP option is a kind of ‘semi-configurational’ structure, halfway between the fully non-configurational S introduced in Kroeger’s (1993) analysis of Tagalog and the regular predicating or small clause structure:

- (24) Expansions of S:
- a. $S \rightarrow C^+$ (‘non-configurational’)
 - b. $S \rightarrow NP^+ VP$ (‘multi-NP’)
 - c. $S \rightarrow NP XP$ (‘predicating’)

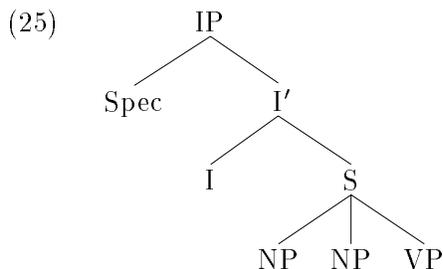
In the multi-NP expansion, any functional annotation on NP is possible with the exception of the pure discourse functions of TOP and FOC. Hence, any NP argument that could appear in a projective endocentric structure can also appear in the multi-NP S. Clearly Icelandic is not a non-configurational language, so (24)a is not available; that expansion is primarily motivated for ‘radically non-configurational languages’ as are found in Australia (see e.g. Nordlinger (1998)). The other two expansions of S are available—the predicating option for the Transitive Expletive structure (without Object Shift), and the multi-NP option for Object Shift. Finally, as there are alternate expansions for S, and the possibility of VP complement to I, Object Shift is not obligatory; even with the verb in I, nothing prevents a structure in Icelandic with a VP containing the object (in the simplest case, parallel to (6)b).

To reiterate, the leading idea of the LFG analysis is that Object Shift will be possible just in case a clausal structure with an object outside of VP can be generated. This is what unifies all the Scandinavian languages; the extra feature of Icelandic, that it has S, gives it more structural possibilities than the other languages. In Swedish, Object Shift only occurs with weak pronouns: plausibly these weak pronouns can appear dominated by I in the c-structure, as can negation.

The crucial question, of course, is where the ‘multi-NP’ expansion comes from, and how to motivate the restriction to only NPs. Following a suggestion by Joan Bresnan, I believe that this motivation can be thought of along the following lines, though the ideas are not well-developed yet. Taking the idea of constructive case as developed in Nordlinger (1998), let us suppose that the rich case marking on Icelandic NPs allows their GF to be determined without reference to a specific structural position—any easy supposition, given the relative freedom of NP placement that we observe. Then, the predicating expansion of S would be what we find in a language like English which has only configurational determination of GFs, while further options for daughters under S would be available to due to rich case marking in Icelandic. (Another way to think about this would be that the multi-NP option is available in English, but as the subject must be defined as ‘the sister of VP’, no more than one instantiation of NP is possible.)

2.5. Icelandic

As we have seen, Icelandic allows S as a complement to IP. If S expands as NP – VP, with VP annotated as a co-head ($\uparrow=\downarrow$), we will have a standard structure with a fully articulated VP. Negation and other adverbs will be left-adjoined to that VP. However, another option for S is to expand as XP^+ , where each node is annotated ($\uparrow GF$) = \downarrow . Such a structure is shown schematically in (25) (cf. (11)).



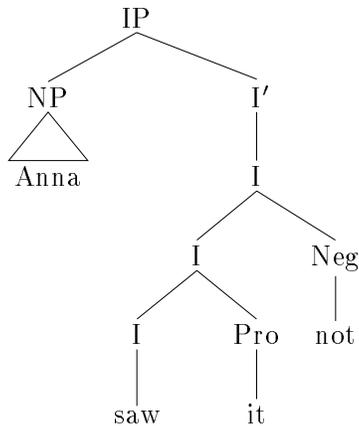
The next step is to get the order of constituents correct. Some of the generalizations about this order were given in (20) above. Strictly speaking, the analysis that I offer here requires the ordering principles to be ranked in terms of their violability, as would naturally be expressed as Optimality Theory constraints, but I will not formalize that part of the analysis in this short paper.

The standard assumption for ordering principles is that they only hold between sister elements. However, there are two structures in LFG over which constraints can be stated: c-structure or f-structure. I will propose that principles stated in terms of c-structure categories hold among mutually c-commanding elements, while those in f-structure hold among mutually f-commanding elements.⁵

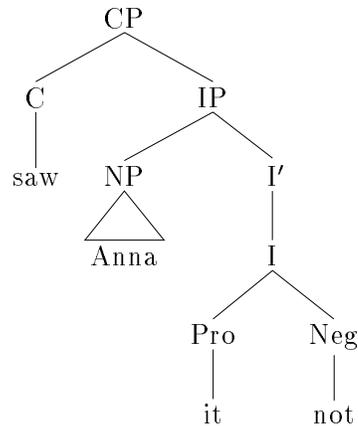
- (26) Icelandic ordering principles:
- a. TOPIC is initial.
 - b. X^0 head is initial.

⁵Strictly speaking, we need to appeal to ‘f-precedence’ in the latter case.

(29) a.



b.



If the pronoun and negation can be generated under I, then there need be no VP, and we have the Object Shift structure. It is important to note that the pronouns and negation do not directly join up with the verb, for the verb alone appears in C, as in (29)b which represents (28)b. This separation shows that pronominal Object Shift is not true incorporation into V, as discussed in Vikner (1994, 504) and Kaiser (1997, 104–5). As an adjunction structure, it is reasonable that only X^0 elements can adjoin to I, with full NPs generated only in phrasal argument positions.

How can the pronominals in (29) be associated with a grammatical function? Sadler (1997) suggests that the natural principle of association is that a pronominal adjoined to an X^0 can be associated with whatever GFs would be normally expressed within the phrasal projection of the head. I expand on her ideas, and propose (30), where F refers to a functional category, using the notion of extended head (see Bresnan (1997a)). Here, only the functional category I is of relevance.

(30) A pronominal under F^0 is assigned a GF that would normally be assigned in the projection of the (extended) head of FP.

In (29)a, the head of IP is V; in (29)b the V in C is the extended head of the IP. In both cases, the pronominals in (29) will be associated with any non-SUBJ argument function, the argument functions which are expressed within VP.⁶

Now we need to find an account of the examples in which particles block Object Shift. I can only sketch the analysis here, and will do so with respect to (21)a.

(21)a. *Dom kastade mej inte [_{VP} ut]. Swe.
 they threw me not out

However it is formulated, there must be a Swedish-specific principle of ordering that requires the particle to precede the pronoun, as mentioned in section 2.3. I make the natural assumption that the particle cannot be generated adjoined to I, so there must be a VP to host it. Intuitively, the result we want is that if there is a VP, the particle should precede the pronominal under that VP; hence (21)a is out. However, we want to allow a pronominal adjoined to I to appear in the same clause as material dominated by VP which should follow the pronominal, such as the full (oblique) PP in (31).

⁶Both indirect and direct object pronominals can adjoin to I.

- (31) Han gav den inte [_{VP} till henne]. Swe.
 he gave it not to her

The difference is that the particle in (21)a is an X^0 , and plausibly a co-head; clearly the PP in (31) is not. Taking the idea of ‘lexical expression’ from Bresnan (1998), we can develop a notion of a ‘functional head’ and its relative ordering which will correctly discriminate between the two relevant structures. What we are interested in are those X^0 categories—lexical expressions—which correspond to the functional head of the clause. Formally, these will be X^0 elements for which a path of head annotations can be traced to the highest projection of the clause. Let us call this the ‘f-head’:

- (32) The f-head of a nucleus N is the set of X^0 elements which map to N .

In (21)a, the f-head is { I, Prt }; the verb is in I, and the Prt is the sole constituent of VP. In (31), the f-head is { I }. What we see from both examples is that the every member of the f-head must precede the complement pronoun. As we are using a system of ranked constraints, we can state an f-head ordering constraint to this effect, stating it as generally as possible, and let higher ranking constraints interact with this one, as in (33).

- (33) F-head is initial.
 (This replaces (26)b ‘ X^0 is initial’.)

The upshot of this account of the pronouns is this: a pronoun can be generated adjoined to I (giving object shift), or it can be generated within the VP. There are preferences concerning these two positions which I have not addressed here, and which seem to be subject to dialectal variation.⁷ Although (33) is ‘minimally’ simple, it has exactly the desired effect: a pronoun (in fact, any category) must be within the VP—hence unshifted—if there are other elements within VP which are f-heads which are in VP, such as a main verb or a particle. This captures neatly ‘Holmberg’s Generalization’ and accounts for the contrast between (21)a and (31).

Conclusion

In this paper I have shown that the LFG IP-S structure provides a convincing account of the availability of the Transitive Expletive and Object Shift constructions in Icelandic. The analysis of Object Shift crucially relies on the ability of objects to appear outside of VP, a possibility in a language which has S. In contrast to Icelandic, the fact that Swedish allows Object Shift only for pronominal objects follows from the natural assumption that such objects can be associated with I, again obviating the need for them to be within VP. A full account of Object Shift will require a more complete account of ordering principles and the domains of their application, and I have offered some suggestions as to what those might be. Although I have not provided any explicit discussion, this analysis of Object Shift compares favorably to recent proposals in the Minimalist Program, and provides a strong argument for the multi-NP expansion of S in LFG.

⁷See Kaiser (1997, 115–125) for a thorough discussion of these differences.

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The discussion of Scandinavian Object Shift shows that this is not just a reformulation of the original distinction, but has various desirable empirical consequences. The article concludes with a discussion of Scrambling of the Dutch/German type. Keywords: Artificial Intelligence Feature Strength Formal Feature Computational System Original Distinction. These keywords were added by machine and not by the authors. This process is experimental and the keywords may be updated as the learning algorithm improves. This is a preview of subscription content, log in to check access.

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