

**Syntax vs phonology: A representational approach to stylistic fronting  
and verb-second in Icelandic\***

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**Abstract.**

In the standard ‘double interface’ view of language, expressions are assigned a semantically interpretable syntax and a phonology. The role of phonology is to realise the syntactic computation (up to Spell-Out) in Phonetic Form (PF). This is achieved by pied-piping of phonological features into and within the syntax. In default of being thus determined by the syntax, properties of PF are determined by strictly phonological considerations. Icelandic Stylistic Fronting (SF) presents a challenge to this ‘realisational’ view of phonology, its scope and its relation to syntax. We argue that the SF effect—a distinctive word order at PF—is neither due to a syntactic operation nor explainable in strictly phonological terms. Previous analyses, syntactic and phonological, are considered and rejected (including Holmberg 2000, in which the syntax is allowed to target just phonological features). We outline an alternative view of the role and scope of phonology: rather than being realisational, phonology has a representational role with respect to the syntactic computation and the (phonology-free) expressions it generates. The wider scope of representational phonology makes possible a simpler, more declarative, account of the SF effect that links it to a (representationally reconstructed) version of the verb-second phenomenon.

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## 0. Introduction

‘There are open questions as to whether certain operations and properties we have assigned to the LF component do not in fact belong to the PF component. Similar questions arise about the actual ‘division of labour’ between the PF component and the overt syntax’.

Chomsky (1995: 125).

In this paper we address the question of what Chomsky calls ‘the division of labour’ between (overt and covert) syntax and phonology. Assigning a given property or operation to phonology may well have the effect of minimalising the syntax and perhaps resolving syntactic problems. However, given usual assumptions about the nature of phonology and its relation to syntax, this move seems to us problematic. The usual assumption is that phonology is ‘realisational’ of the syntactic computation: word order properties of PF are brought about by (are an epiphenomenal consequence or expression of) syntactic operations. This realisational view of the role of phonology means that properties of PF should either [a] be motivated and explainable by reference to the syntactic computation or, failing that, [b] be motivated and explainable in narrowly phonological terms, strictly construed as such (i.e. recognisable *as* phonological by *phonologists*). The assumption that phonology is realisational thus restricts the scope of what strictly counts as phonology in such a way that phonology should not be capable of assuming responsibility for what have been traditionally regarded as syntactic properties. Otherwise, ‘phonology’ just becomes a wastepaper basket for syntax. Given realisational assumptions, in short, we cannot off-load onto phonology a given property simply because, from some theoretical or conceptual perspective, it is syntactically convenient to do so. We argue that re-assigning a given property to phonology calls for a radically different conception of the nature of phonology and of its relation to syntax.

Stylistic Fronting (SF) in Icelandic is directly relevant here. In Icelandic, a range of elements may appear linearly *before or after* finite verb forms. In previous analyses an optional syntactic displacement has been posited to capture the facts. Against these analyses, we argue that SF cannot be a syntactic operation. In this connection, we consider Holmberg’s (2000) syntactic account. From this it might seem to follow that SF must be phonological. However, this encounters the general empirical problem just outlined. In this connection, we consider Poole’s (1996b, 1997, 2001) phonological

account. If we are right about the problems facing syntactic and phonological accounts, we are faced with the paradox that SF is neither syntactic nor phonological—at least, on traditional assumptions about the phonology-syntax relation.

We develop the idea that, rather than being *realisational* of the syntactic computation, phonological systems have a *representational* role with respect to syntax. This is the leading idea of the Representational Hypothesis (e.g., Burton-Roberts 2000, Carr 2000, Burton-Roberts & Carr 1999, Chng 1999). The Hypothesis makes a radical distinction between a wholly internal, innate, invariant, exclusively syntactic computation on the one hand and, on the other, language-particular (phonologically constituted) systems of conventions for the external representation of that computation in the phonetic medium. The Hypothesis has implications for ‘division of labour’ issues, for the respective scopes of syntax and of phonology, and for the structure of the human faculty of language. We explain the Hypothesis below and argue that it makes possible a simple account of SF effects. The account is phonological, but not as traditionally understood. Furthermore, it involves no movement or other operation. We also argue that this representational view of the syntax/phonology relation is able to link so-called SF with other phenomena in Icelandic which we claim are also phonologically constituted: second-position and expletive placement.

In order to motivate both the empirical and conceptual content of our Representational account, we first consider the general properties of SF and the nature of the syntax/phonology relationship as traditionally conceived. In the light of this, we then consider one syntactic and one phonological account and their problems. Finally, we turn to the Representational Hypothesis and our account of SF.

## 1. SF and its properties

SF is exemplified by word-order contrasts such as those in (1).

- (1) a. Þetta er maður sem hefur leikið níutíu leiki  
This is a man that has played ninety games  
b. Þetta er maður sem **leikið** hefur \_\_\_ níutíu leiki  
This is a man that **played** has \_\_\_\_\_ ninety games.<sup>1</sup>

There seems to be general agreement (e.g., Maling (1980/90), Jónsson (1991), Poole (1996a, 1997), Holmberg (2000)) about the following core properties of SF.

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<sup>1</sup> We will assume in this section that SF instantiates leftward movement. Not all analyses of SF assume this, however. See below.

First, there is no meaning difference associated with SF. (1b) is simply considered a stylistic variant of (1a). Crucially, there is not even any associated emphasis in (1b). This is related to the fact that SF is optional, at least in cases like (1). (See Section 9 for further discussion.)

As to the elements that can undergo SF, they appear quite varied. SF can target past participles, as in (1), negation (2), verbal particles (3), and adjectives (4).<sup>2</sup>

- (2)        Þetta er tilboð sem **ekki** er \_\_\_\_ hægt að hafna  
 This is an offer that **not** is \_\_\_\_ possible to reject
- (3)        Þegar **fram** fara \_\_\_\_ kosningar eru blöðin full af áróðri  
 When **forth** go \_\_\_\_ elections are the papers full of propaganda  
 'When elections are held, the papers are full of propaganda'
- (4)        Þetta er eini maðurinn sem **hreykinn** er \_\_\_\_ af Kalla  
 This is only man-the that **proud** is \_\_\_\_ of Kalli.

These examples might suggest that SF operates on heads. In (1b), for example, a verb has undergone SF, stranding its direct object *ninety games*, and in (4) the adjective *proud* has moved, stranding its complement *of Kalli*. However, it also appears as though XPs can undergo SF.<sup>3</sup>

- (5)        Þeir sem **fyrir svona fyrirtæki** vinna \_\_\_\_ fá mjög há laun  
 those who **for such companies** work \_\_\_\_ get very high salaries.

This is not an instance of Topicalization as there is no associated emphasis.

Furthermore, there are constraints on SF that do not apply to Topicalisation.

There is, for example, a restriction on the elements that can occur in subject position of the finite clause in which SF applies. The descriptive generalization, due to Maling (1980/90), is that SF requires a 'subject gap.' What this means is that SF cannot apply if there is a phonologically realized element in subject position. (6b) and (c) are ill-formed.<sup>4</sup>

- (6) a. Ég held að Jón hafi ekki séð þessa mynd.  
 I think that Jon has not seen this film
- b.\*Ég held að Jón **ekki** hafi \_\_\_\_ séð þessa mynd.  
 I think that Jon **not** has \_\_\_\_ seen this film
- c.\*Ég held að Jón **séð** hafi ekki \_\_\_\_ þessa mynd.  
 I think that Jon **seen** has not \_\_\_\_ this film.

<sup>2</sup>(4) is due to Höskuldur Thráinsson (p.c.).

<sup>3</sup>(5) is due to Jóhannes G. Jónsson (p.c.).

<sup>4</sup>These are due to Höskuldur Thráinsson (p.c.).

If there is no overt subject in subject position, SF is acceptable. There are three configurations in which this situation obtains. First, when the subject has been extracted through Wh-movement, as in (1b), repeated here.

- (1b) Þetta er maður<sub>i</sub> Op<sub>i</sub> sem [AgrSP t<sub>i</sub> **leikið** hefur \_\_\_\_ níutíu leiki]  
 This is a man that **played** has ninety games.

Second, in impersonal constructions.

- (7) Það var haett að rigna þegar pro<sub>expl</sub> **komið** var \_\_\_\_ þangað  
 It was stopped to rain when **arrived** was thither  
 'It had stopped raining when we/they arrived there'

Third, when the subject has been 'inverted'. This process is roughly analogous to situations in which 'there'-insertion is required in English, though it is more productive (see Thráinsson (1979)).

- (8) Þetta er baerinn þar sem pro<sub>expl</sub> **faeddir** eru fraegustu  
 This is town-the where **born** are most-famous  
 menn þjóðarinnar  
 men the nation (GEN)  
 'This is the town where the most famous men of the nation have been born'

A further constraint on SF involves 'blocking effects'. Roughly speaking, given any two elements, either of which could undergo SF, only one of them can. Maling (1980/90) presents a descriptive hierarchy characterizing the observed blocking effects:<sup>5</sup>

- (9) negation > predicate adjective >  $\left. \begin{array}{l} \text{past participle} \\ \text{verbal particle} \end{array} \right\}$

To illustrate, consider (10) and (11).

- (10)a. Þetta er nokkuð sem **ekki** er \_\_\_\_ haegt að gera við  
 This is something that **not** is \_\_\_\_ possible to fix PRT  
 b. \*Þetta er nokkuð sem **haegt** er ekki \_\_\_\_ að gera við  
 This is something that **possible** is not to fix PRT

<sup>5</sup> Participles and particles are equal in that, when they co-occur, either may undergo SF (provided no other SF-able element is present).

- (11)      Þetta er nokkuð    sem **hægt** er \_\_\_\_ að gera við  
              This is something that **possible** is \_\_\_\_ to fix PRT

In (10), we see that the presence of negation, an SF-able element, blocks SF of the adjective *hægt* ‘possible’. But *hægt* can undergo SF if negation is absent, as in (11).

Finally on the properties of SF, there is its optionality. In embedded clauses where the subject has been extracted, SF is entirely optional. (1a) and (1b) above are equally possible. In other cases involving embedded clauses (where the ‘subject gap’ is a null expletive – e.g., (7) and (8) above), there is a preference for SF, although it does not seem obligatory. Insertion of the expletive *það* ‘there’ is also an alternative in some circumstances, in which case SF cannot apply. Turning to main clauses, a crucial fact is that declarative sentences with an initial finite verb are generally impossible in Icelandic (although see Sigurðsson 1990 for discussion). In contrast to embedded clauses, main clauses which lack a ‘grammatical’ subject are frequently introduced by the expletive *það*, as in (12a). However, *það* must be omitted if SF takes place, as indicated by (12b) and the impossibility of (12c).

- (12)a.      Það hefur komið fram að...  
              There has come forth that  
              ‘It has appeared that...’  
              b.      **Komið** hefur \_\_\_\_ fram að....  
                  **Come** has \_\_\_\_ forth that  
              c.      \*Það **komið** hefur \_\_\_\_ fram að....

Thus, as noted by Holmberg (2000), expanding on Maling (1980/90), SF is in complementary distribution with an overt expletive.

## 2. Realisational Phonology

As mentioned, it is our view that the main barrier to a satisfactory account of SF effects in Icelandic lies in the traditional conception of the relation that phonology bears to syntax. In this section, we briefly discuss these assumptions, with a view toward showing in later sections how they are problematic in the context of SF.

Generative grammar of all varieties embodies the traditional assumption that linguistic expressions (or at least all complex expressions) have both a sound and a meaning. In the Minimalist Program, this is reflected in what Chomsky (1995: 2) calls the ‘double interface property’ of the linguistic computation: the objects generated are interpreted both at the LF interface and at the PF interface. The phonological

component is traditionally thought of as responsible for ‘realizing’ or instantiating syntactically generated objects in Phonetic Form. In Minimalism, the operation that engages the phonological computation is ‘Spell-Out’. Phonology ‘spells out’ (overtly realises) the syntactic computation up to that point.

This realizational/instantiation view implies that the phonology be, or canonically should be, in a ‘homomorphic’ relationship to the syntax. That is, for every significant element (word)  $P_i$  appearing in the pronounced string, there must be a syntactic element  $S_i$ , such that  $P_i$  is the *realization* of  $S_i$ .<sup>6</sup> Consider (13)-(14) for example:

- (13) I know that John is here.  
(14) I know John is here.

In (13), *that* is an element present in the pronounced string. It is precisely this presence in the *phonetics* that—in a realisational view of phonology's relation to syntax—drives the postulation of a *syntactic* category C, which then by X'-Theory projects a C' and CP. Given this, we say that the syntactic category C is present even when there is no element in the pronounced string, as in (14). Here we say the syntactic category C is not ‘realized’.

It follows from the homomorphy of the realisational picture of phonology and its relation to syntax that linear order in PF is to be regarded as some kind of consequence of hierarchical relations in the syntax. Linear order in PF has no particular status in the syntax itself. In that sense, it is a realisational *epiphenomenon* of syntactic structure. This idea finds its fullest expression in Kayne (1994) but is present from the earliest writings in generative grammar. On these terms, any change in linear order comes about as an effect of a syntactic operation, its ‘realization’. Consider (15):

- (15) Which book does John like?

*Which book* is the direct object of *like*, but does not appear in PF immediately following the verb, which is the linear position in which English canonically ‘realizes’ the syntactic relation object-of-a-verb. The conclusion reached from (15) is that the different linear position of *which book* in PF is the realisational epiphenomenon of a syntactic operation that displaces it to some higher syntactic position.

Given this realisational view of the phonology-syntax relation under traditional approaches, it is not surprising that attempts to account for relevant differences in the linear order of words in Icelandic have overwhelmingly taken it to be the realisational effect of a syntactic displacement, namely Stylistic Fronting (SF).

### 3. Problems with a syntactic account of SF

The core claim of syntactic approaches to SF is that the element undergoing SF moves in the syntax from its base-generated position to some higher position, either the subject position (e.g., Maling (1980/90), Holmberg (2000)) or adjoined to I (e.g., Jónsson (1991), Poole (1996a)). We will refer to the word orders that are supposed to 'realise' this operation as 'SF effects' but, for reasons which will become apparent, without commitment to the existence of an operation of SF.

Ironically, it is precisely the assumed homomorphism (of phonology with respect to syntax) that makes a syntactic account of SF effects look problematic. The basic datum is actually very simple: in Icelandic, different linear orders are possible at PF.

However, if linear order is an epiphenomenal effect of the syntactic computation, we are committed to *engineering* a derivation which will give rise to the attested orders. Since linear order has no status in syntax, though, this must be achieved without making reference to such orders. The order must be made to fall out (as a realisational theorem) from considerations that are order-independent. This is what it means to say that order in PF is epiphenomenal with respect to the syntax.

But when we look at the noted properties of SF, it seems profoundly resistant to such 'engineering'. Here, we focus on Holmberg (2000), as it constitutes an especially thorough attempt to model SF as a syntactic phenomenon within the Minimalist Program. In our view, it illustrates rather clearly some of the problems that assumptions of homomorphism and epiphenomenality give rise to (see Burton-Roberts & Poole (ms/in prep)).

*3.1 Optionality.* From a syntactic point of view, the most serious problem is the optionality. The syntactic computation in Minimalism is much more highly constrained than in GB Theory (with Move- $\alpha$  — 'move anything anywhere'). In particular, the

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<sup>6</sup> The reverse is not the case; that is, syntax is not homomorphic with respect to phonology, since not all elements participating in the syntactic computation are realized phonologically. PRO is one example.



leading ideas of Minimalism (Economy of Derivation, Last Resort, the Minimal Link Condition as a defining property of Attract/Agree) conspire to rule out the very possibility of any movement being optional. Movement must be driven by some syntactic imperative. However, SF seems absolutely optional in certain cases (e.g., (1) above). This seems related to the fact that the SF effect is not associated with any other difference in syntax or interpretation at LF. There appears to be no syntactic trigger for the displacement, in short. In Minimalism, then, a syntactic operation of SF should simply not be possible. Against this, since (1a) and (1b) are both well formed, it must be allowed, but not forced, to apply.

SF might thus appear to pose a problem for Minimalism. However, our argument is anyway that, since there are associated with it no effects relevant to the syntactic computation or the interface it serves, SF is not a syntactic operation. Since Minimalism casts doubt on a syntactic operation of SF, this counts for us as a merit of its greater restrictiveness.

Unfortunately, matters are not so simple, for it is always possible to engineer things so that the optionality problem is side-stepped. This can be done by arranging for the optionality to arise elsewhere. An obvious strategy would be to have the movement obligatorily triggered by a property optionally included in the Numeration. This might save SF as a syntactic operation. In the next section, we consider one such approach, arguing that it is not attractive either conceptually or technically.<sup>7</sup>

*3.1.1 Holmberg's (2000) Account.* Holmberg's account of SF involves some special assumptions and novel claims about the syntactic computation. The most central of these is his claim that the Extended Projection Principle (EPP) feature as traditionally conceived should be 'split' into two separate featural requirements. The first requirement is that a 'D-feature' of I must be checked, essentially requiring that Spec-IP (the subject position) be filled by (syntactic and semantic features of) a nominal category. The second requirement is that a 'P-feature' of I must be checked, essentially requiring that Spec-IP be filled by an element with phonological features.

As he notes, in most cases both requirements (D and P) are satisfied simultaneously by the attraction of the subject to Spec-IP. Consider (16):

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<sup>7</sup> More generally, allowing the numeration to act as an 'escape hatch' for the purposes of accommodating optionality fundamentally undermines the putative restrictiveness of the general program.

- (16) Jón hefur barið Guðmund.  
John has hit Guðmundur

When *Jón* raises from Spec-VP to Spec-IP, it checks off the D-feature of I. Since *Jón* has phonological content, it also checks the P-feature of I. But when the subject does not have phonological content, it fails to check the P-feature, so SF is forced to apply. Consider (17):

- (17) Ef **gengið** er eftir Laugaveginum....  
If walked is along the-Laugavegur....  
'If one walks along the Laugavegur...'

The subject of (17) is *pro<sub>arb</sub>*, which cannot check off the P-feature of I, having no phonological content. To keep the derivation from crashing, the phonological features of the nearest element, here the participle *gengið*, are attracted to Spec-IP.

Let's now turn to cases where SF is optional. Consider first (18), which does not involve SF and which is straightforwardly accounted for:

- (18) Hann spurði [<sub>CP</sub> hver [<sub>IP</sub> hefði [<sub>VP</sub> sagt fra þessu ] ] ].  
He asked who had said from this  
'He asked who had said this.'

The wh-word *hver* is base-generated in Spec-VP and moves to Spec-CP via Spec-IP. In passing through Spec-IP, it checks both the D-feature of I and the P-feature of I. As a result, SF does not apply since there is no unchecked feature to trigger the displacement.

Compare (19), however, in which the past participle *sagt* has undergone SF:

- (19) Hann spurði hver **sagt** hefði \_\_\_\_ fra þessu.  
He asked who said had \_\_\_\_ from this

For Holmberg, the difference between (18) and (19) is that, in (19), a phonologically empty wh-operator *Op* is selected from the lexicon, rather than a 'full' wh-word like *hver*. When this phonologically empty operator moves through Spec-IP, it checks the D-feature of I but cannot check the P-feature of I. To check the P-feature of I, the phonological features of the nearest element with phonological content (in this case the participle *sagt*) are attracted to Spec-IP.

Holmberg discusses various technical assumptions needed to make the account work, but what is of interest here is what is needed to account for the optionality. It is,

on the surface at least, a straightforward choice between different lexical items. The numeration in (18) contains a full wh-word *hver*, whereas the numeration in (19) contains a phonologically null wh-operator (Op). Note, however, that something additional is required in order to explain where the PF material of *hver* comes from in (19), since Holmberg's account crucially claims that the wh-operator in the numeration is phonologically null.

Holmberg briefly discusses two possibilities (note 28). The first is that the empty operator Op is a wh-phrase which is only associated with a phonological form *after* reaching Spec-CP. As he notes, this requires that syntactic feature complexes can be introduced at one point in the derivation and only provided with phonological features at a later point. This calls for a radical departure from the theory of lexical insertion. Equally, it departs from the standard assumption that phonological features can appear in displaced positions only by being pied-piped along with other features (see Burton-Roberts & Poole (ms/in prep) for further discussion of this).

Holmberg's other suggestion is that there is an empty operator Op. This is a 'pure' wh-operator, distinct from both *hver* itself and the Op that is eventually assigned *hver*'s phonological features. This pure operator is distinct in that it moves to C rather than Spec-CP. The wh-phrase *hver*, containing both semantic and phonological features, is then merged into Spec-CP. This seems hardly more attractive. In particular, it seems problematic for those cases in which long-distance movement takes place, as in (20).

- (20) Hver heldur þú að stolið hafi hjólinu?  
 Who think you that stolen has the-bike  
 'Who do you think has stolen the bike?'

Since SF has applied in the lower clause, we must assume that it is the 'pure' wh-operator that has been chosen from the lexicon. This, presumably, must ultimately move to the matrix C in order to check off the wh-feature there. However, it is not clear how it is supposed to do this, particularly given the presence of the embedded complementizer *að*.

Holmberg's claim that SF is triggered by the need to have phonological material check the P-feature of I thus requires substantial additional assumptions to account for cases like (19), and, potentially, (20). In the absence of independent justification, these special assumptions and further machinery seem out of proportion to the phenomenon to be explained.

3.2 *The Minimal Link Condition.* A second problem for a syntactic account of SF under current assumptions is that there are circumstances in which SF violates the Minimal Link Condition (MLC), which requires that only the nearest possible element can undergo a given operation. The fact that Maling's accessibility hierarchy corresponds quite closely with hierarchical superiority has led researchers to suggest that the MLC (or, earlier, Relativized Minimality) is implicated in SF (e.g., Jónsson (1991)). On this account, only the closest SF-able element to the finite verb should be able to undergo SF. However, some applications of SF violate the MLC. Consider (21):

- (21)      Þetta er versta bók sem **skrifuð** hefur verið \_\_\_\_  
             This is worst book that **written** has been \_\_\_\_  
             ‘This is the worst book that has (ever) been written.’

Here the participle *skrifuð* has been moved by SF, despite the intervening participle *verið*, thus violating the MLC. As widely noted, this is related to the fact that the passive *verið* itself cannot undergo SF.

- (22)      \*Þetta er versta bók sem **verið** hefur \_\_\_\_ skrifuð  
             This is worst book that been has \_\_\_\_ written

If the MLC (and the Attract/Agree operation more generally) operates on features, the descriptive generalization that SF moves the closest SF-able element will be difficult to capture, short of assigning an ad hoc 'SF feature' to *skrifuð* but not to *verið*.

3.3. *The elements that undergo SF.* A further problem from a syntactic perspective is the heterogeneity of SF-able elements. As mentioned, SF is able to target elements as diverse as negation, past participles, verbal particles, and adjectives. To our knowledge, only Holmberg (2000) attempts to account for this. Since SF, for Holmberg, is the attraction of phonological features to satisfy the requirement that Spec-IP be filled phonologically, the syntactic category of the attracted element should be irrelevant (but see Section 3.5. below). However, we have seen (Section 3.1.) that this requires splitting the EPP feature into two separate features, and introduces further complications to account for other properties of SF.

3.4 *Chain Formation*. Also problematic for a syntactic account is the fact that SF appears not to form any chain. Evidence for this is that there is no interpretative difference between PF strings that realise derivations in which SF has applied and ones that realise derivations in which it has not applied. Were SF regarded as chain-forming, it would have to be regarded as deriving a different LF ( $\lambda_j$ ) from that derived by not applying SF ( $\lambda_k$ ). But for all interpretative purposes served by LF,  $\lambda_j$  and  $\lambda_k$  are identical. This is a reflex of the optionality problem: the optionality of SF is precisely a function of the fact that no interpretative difference is associated with it.<sup>8</sup> Notice also that, if as Brody (1995) persuasively argues, Form Chain and Move should be identified (but see Poole (1996a)), the lack of any chain formed by SF casts further doubt on SF as syntactic movement.

3.5. *Syntax vs Phonology*. In the previous section, we've given several grounds for questioning the assumption that SF is a syntactic operation. The assumed epiphenomenal character of linear order in syntax makes it logical to assume that SF is syntactic. However, we have argued that SF seems not to exhibit the properties expected of a syntactic operation.

But if SF is not a syntactic operation, it must be some kind of phonological operation. Against this, Holmberg appears to have a strong argument that SF must be syntactic: it calls for reference to 'auxiliary verb' in contrast to 'main verb'.

- (23)a. \*Þetta er versta bók sem **verið** hefur skrifuð  
 This is the worst book that been has written  
 'This is the worst book that has ever been written'
- b. Þeir sem **verið** hafa veikir þurfa að fara til læknis  
 Those who been have sick must see a doctor  
 'Those who have been sick must see a doctor'

This contrast follows from the (already noted) inability of auxiliary *verið* to undergo SF—(23a). However, as a main verb—(23b)—*verið* does undergo SF. Presumably, the two *verið*s are identical at PF. Hence, a phonological account (at least as traditionally conceived) will not be able to distinguish the two cases.

Although this argument for a syntactic account is persuasive (given standard assumptions), it is an oddity of Holmberg's analysis that it requires/allows a syntactic operation to move purely phonological features. It might then seem to be a sort of

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<sup>8</sup> See Burton-Roberts & Poole (ms/in prep) for further discussion of chains in the context of SF.

implicit phonological account. Notice that it rests on the assumption that Spec-IP must be filled phonologically.

Poole (1996b, 1997, 2001) proposes an account that is explicitly phonological. We turn to this proposal now.

#### 4. Poole's Phonological Account of SF

Having noted the problems with a syntactic account of SF, Poole (1996b, 1997, 2001) questions whether SF is a syntactic operation. He draws attention to the interdependence between a syntactic account and the heterogeneity of the elements that must be assumed to undergo SF. If SF is a movement in the syntactic computation, then (given standard assumptions about syntax) it must be a raising operation, which will be 'realised' epiphenomenally in PF as a leftward displacement. It is the assumption that SF is 'leftward' that gives rise to the heterogeneity of SF-able elements. Recall (2)-(4) from Section 1:

- (2)      Þetta er tilboð sem **ekki** er \_\_\_\_ haegt að hafna  
 This is an offer that not is possible to reject
- (3)      Þegar **fram** fara \_\_\_\_ kosningar eru blöðin full af áróðri  
 When forth go elections are the papers full of propaganda  
 'When elections are held, the papers are full of propaganda'
- (4)      Þetta er eini maðurinn sem **hreykinn** er \_\_\_\_ af Kalla  
 This is only man-the that proud is of Kalli

Were the movement recast as 'rightward', a descriptive generalisation could be captured and the heterogeneity would disappear: all cases of SF (as rightward) would be movements of a finite verb (*italicised*). However, the rightward movement required in this particular case would—since it is clearly not movement to the (right) periphery—have to be a 'lowering' operation. This is not consistent with the assumption that all syntactic movement is raising.

Poole proposes that the movement is indeed rightward and must therefore be thought of as operating, not in the syntax, but in the phonology.

- (24)      Þetta er maður sem \_\_\_\_ leikið **hefur** níutíu leiki  
 This is a man that played has ninety games

Poole's proposal, then, does provide motivation for regarding SF as non-syntactic. However, as noted, whatever the motivation for regarding SF as non-syntactic, it does

not necessarily follow that SF is a phonological operation, at least as phonology is generally conceived. In 4.1 we outline Poole's attempt to provide positive motivation for a phonological account and in 4.2 we discuss the problems the proposal encounters.

*4.1 'Prosodic flip'.* Poole adapts a 'prosodic flip' analysis proposed by Hale (1996) for clitic conjunctions in Vedic Sanskrit. He hypothesizes that the auxiliary verb in (24) is a prosodically deficient left-leaning clitic. When there is no phonologically realized subject, Poole's algorithm results in the auxiliary verb being 'stranded' as the sole member of its phonological phrase. The 'prosodic flip' repair rule is then triggered, moving the auxiliary verb over the element to the right, with the result that there is now an element on the auxiliary's left for it to cliticize onto.

In addition to eliminating the heterogeneity of moved elements, this account explains the 'subject gap' condition on SF. Indeed, it is the lack of an overt (i.e. *phonologically realised*) subject that provides the trigger for SF. As our italics indicate (and noted in connection with Holmberg's account), this trigger is naturally expressed in phonological terms. These considerations seem to favour a phonological account.

*4.2 Problems.* Despite these advantages, Poole's proposal faces fundamental problems. In certain cases, problems faced by the syntactic account re-emerge in different guises.

*4.2.1. The nature of the moved element.* Assuming the SF effect is indeed the result of movement, Poole's argument that it is the result of moving a finite verb is persuasive. However, a finite verb (auxiliary or not) is a syntactically, not phonologically, defined object. This was what motivated Holmberg's syntactic analysis. As a syntactic object, it can only be subject to syntactic operations. It is true that finite verbs are traditionally thought of as having phonological as well as syntactic features. However, viewed just as *phonological* objects, the range of SF movers is, again, highly heterogeneous (*/hevur/*, */fara/*, */er/* etc). Phonologically they have nothing in common. All that unites them is their syntax. But it is beyond the power of phonology as traditionally conceived to recognise this unity. This follows, in Minimalism, from the Principle of Full Interpretation (FI)—Chomsky 1995:Chap 2. FI ensures that, in a convergent derivation, Spell-Out strips out and feeds to the phonological component all *and only* P-features. At the point at which SF is supposed to apply on Poole's analysis, then, finite verbs as such

do not exist.<sup>9</sup> Given the auxiliary/main verb contrast seen in (23), it is—as Holmberg argued—difficult to see how SF could be a purely phonological operation.

4.2.2. *Is SF actually necessary on the prosodic proposal?* Poole's proposal is that verbs undergoing SF are prosodically defective clitics that need to move in order to have a prosodic host to their left. In fact, however, this does not properly motivate the movement. At least, it fails to explain why an alternative, and arguably more economical, repair strategy is not available, namely: that the clitic remains *in situ* and simply attaches to a prosodic host to the left of its *in situ* position.

4.2.3. *Optionality.* Although re-siting SF in the phonology avoids the problems involving derivational optionality in syntax, the problem of optionality arises in another guise. To account for the optionality, Poole's phonological analysis is obliged to claim, for each verb that can undergo SF (prosodic flip), that there are in fact two verbs, one of which is a clitic, the other not. Thus, like Holmberg, Poole claims that the optionality resides in a difference in lexical choice. When the clitic form is chosen, SF applies, as in (24) above. By contrast, when the non-clitic form is chosen, the prosodic repair rule is not triggered, and no change in word order arises (25).

- (25)        Petta er maður sem hefur leikið níutíu leiki  
              This is a man that has played ninety games

But Poole provides no evidence in support of the proposal that the auxiliary verb is a clitic when it undergoes SF other than the fact that it undergoes SF. As a phonological *explanation* of SF, the proposal might therefore be regarded as circular. Furthermore, this distinction between clitic and non-clitic counterparts seems difficult to sustain at an observational level. At least, Poole provides no independent evidence to suggest that the hypothesised 'clitics' are not in all respects identical to their non-clitic counterparts.

The problem noted in Section 4.2.2 might be thought to offer a way out of the optionality problem. There we noted the possibility of an alternative to movement as a prosodic repair strategy, namely an *in situ* repair strategy. Could it be that the optionality consists, not in the choice between a clitic and non-clitic auxiliary, but in the

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<sup>9</sup> FI effectively guarantees that phonology is indeed realisational. As realisational, phonology cannot perform operations which should—or could—be performed by the syntactic computation, because the relevant features are simply not there to be manipulated.



choice of prosodic repair strategy? While this might seem attractive, it does not answer a further fundamental objection to the prosodic account. We turn to this now.

4.2.4. *Hefur and fara*. Optionality aside, there is a (narrow) phonological consideration that militates against any analysis of SF that appeals to prosodic defectiveness. Among the verbs that, by hypothesis, undergo SF are *hefur* 'have' and *fara* 'go'. Each of these is a disyllable, with a strong-weak prosodic contour. The fact that the first syllable is metrically strong implies that the whole form constitutes a foot—a syllabic trochee (for Icelandic as a syllabic trochee language, see e.g. Hayes 1995). *Hefur* and *fara* cannot then be analysed as phonological clitics, since a phonological clitic, as ordinarily understood, is an unfooted syllable. This suggests that *hefur* and *fara* are not prosodically defective, and thus not clitics. This counts strongly against a phonological account, at least as traditionally (narrowly) conceived.

4.2.5 *Phonology vs syntax again*. As discussed in the Introduction, in a realisational conception of phonology, there are two kinds of determinant of the phonetic form  $\pi$  of a given complex expression  $\varepsilon$ — $\pi_{(\varepsilon)}$ . **(i)** Certain properties of  $\pi_{(\varepsilon)}$  are determined by the lexicon and by the syntactic computation generating  $\varepsilon$ . This kind of determinant is not motivated in strictly phonological terms. Phonology is here simply in thrall to—realisational of—*other* aspects of the language faculty. However, **(ii)** all other properties of  $\pi_{(\varepsilon)}$ —all properties that are not simply realisational—must be *phonologically/phonetically* motivated. It is this that, under realisational assumptions, determines and constrains the scope of traditional phonology as such. Given this realisational account of the phonology-syntax relation, it is not sufficient—in arguing that a given property is phonological—to show that it is not syntactic. It must, more positively, be shown to have phonological motivation, narrowly construed in terms of the traditional scope of phonology. Since Poole was arguing that the SF in Icelandic was a (non-realisational) effect of the second kind, he was right to try to find narrow phonological motivation for it. Nevertheless, it is just such motivation that his proposal, on inspection, failed to establish.

More generally, given realisational assumptions, it cannot be a mere question of the 'division of labour' whether an operation is syntactic or phonological. A given property of PF should be *either* realisational *or* phonological strictly/narrowly construed (i.e. as by phonologists). If we are claiming it is the latter, we should expect to be able to

defend it in narrow *phonological* terms. Our argument is that re-assigning a given effect to the phonology in the absence of such motivation calls for a different, and broader, notion of phonology and its scope. We turn to this now.

## 5. The Representational Hypothesis

We have shown there are conceptual and empirical problems both with a syntactic analysis of SF and with a phonological analysis, at least as phonology is traditionally conceived. We have reached an impasse. The basic intuition driving Poole's proposal is, we believe, broadly correct—the phenomenon is not syntactic. However, we have seen that it does not follow that it is phonological as traditionally understood. This would follow, we suggest, only given a radically different conception of the relation between syntax and phonology and of what the contrast between them amounts to. Here we consider the different conception of phonology suggested by the Representational Hypothesis (RH). We outline the RH in summary (see earlier references for more detail), contrasting a *realisational* with a *representational* view of phonology. In section 6, we show how a representational approach makes available a simple account of SF.

*5.1. Tensions associated with realisational phonology and a response.* As noted, the traditional, realisational conception of phonology is embodied in the idea that the language faculty consists in a 'double interface property' (e.g., Chomsky 1995:2). It is a system that derives representations both at the LF interface with conceptual-intentional systems and at a PF interface with articulatory-perceptual systems and defines the relation between these. It must therefore include a phonological component whose function is, in Chomsky's word, to 'convert' generated objects 'to a form that external systems can use' (1995:221).

Despite the centrality of this 'double interface' idea in Minimalism, there is a tension surrounding both it and the inclusion of phonology in the language faculty. As regards the idea itself, it reconstructs the traditional Saussurian (indeed Aristotelian) view of language as 'sound with a meaning' (Chomsky 1995:2). But this entails that the language faculty is the locus of Saussurian arbitrariness/conventionality. This, we suggest, is not consistent with Chomsky's contention (1995:11) that the language faculty is 'a real object of the *natural* world' (our emphasis). Chomsky seems to implicitly acknowledge a problem here since, when he mentions Saussurian arbitrariness, it is only among matters 'which I set aside' (1995:8) or 'henceforth ignore' (ibid: 170).

Furthermore, despite its inclusion within the language faculty, phonology is consistently characterised as 'peripheral' and 'extraneous' (e.g., Chomsky 1995: 8, 221, 229). The 'core' of the language faculty is supposed to lie just in the derivation of LF representations, achieved by the syntactic computation. This manipulates expressions, the vast majority of which are constituted by both syntactico-semantic (S-) features and phonological (P-) features.

This cluster of ideas requires that the syntactic computation manipulate P-features. This is something of an anomaly, particularly in Minimalism (see Jackendoff 1997:25-30). Not being interpretable at LF, P-features make no contribution to the 'core' function of the syntactic computation, the derivation of LF representations. Only S-features are relevant to the syntactic computation and interpretable at LF. The anomaly seems acknowledged, but hardly resolved, by the assumption that the computation manipulates P-features only incidentally, by having P-features 'pied-piped' along with S-features. This might seem to preserve the intuition that the computation actually targets just S-features, serving ('in essence' or 'at core') just the LF interface, and the idea that properties of PF are a peripheral epiphenomenon of the syntax.<sup>10</sup>

Nevertheless, these ideas have the consequence that the syntactic computation, besides being responsible for the form of LF representations, is responsible also for aspects of PF representations. It serves two masters, in short. This give rise to a further tension in Minimalism. Although order at PF is supposed to be irrelevant to the syntax (e.g., Chomsky 1995:334), the pre-Spell-Out part of the computation (the 'overt syntax') is in fact wholly driven by the need to engineer well-formed PF representations. Even the (post-Spell-Out) 'covert syntax' reflects the demands imposed by PF, in having to rectify—by e.g. reconstruction or deletion—aspects of the computation not interpretable at LF but necessitated in overt syntax by the demands of PF.

We have alluded to Chomsky's 'core' vs 'periphery' contrast. This contrast seems to hint—but no more than hint—that the minimalist *ideal* would in fact be a language faculty that served *just* the LF interface. That ideal would of course mean abandoning the 'double interface' assumption, central to Minimalism (but inherited from Saussure). Nevertheless, the core/periphery contrast anyway seems to us an implicit *qualification* of the double interface assumption, an implicit acknowledgement of a tension between

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<sup>10</sup> Holmberg in fact abandons the Pied-Piping assumption in allowing P-features to be moved (within the 'syntax') independently of the categories they are P-features of. As a consequence, although Holmberg subscribes to the standard (realisational) view of phonology's relation to

the goals of Minimalism and the Saussurian tradition. Since the theoretical status of the core/periphery contrast is so obscure, it seems an unsatisfactory response to that tension. Chomsky himself comments 'core-periphery should, in my view be regarded as an expository device, reflecting a level of understanding that should be superseded as clarification of the nature of linguistic inquiry advances' (1995:163).

The Representational Hypothesis (RH) offers a way to pursue the hinted-at ideal, explicitly and without qualification. The Hypothesis denies that the language faculty as such has the double interface property. The RH implies a much narrower conception of the language faculty—henceforth 'language' or 'L'. It implies, in particular, that phonology *has no place* in the computation or lexicon of L. In terms of the RH, phonological systems are seen as systems distinct from L. They are distinct because of the hypothesised *representational* relation/function they have with respect to L.

We explain this, and what we mean by 'representation', directly. In the meantime note that, with P-features excluded, L can without qualification be seen as serving just the LF interface. L consists of a syntactic computation that manipulates exclusively syntactico-semantic elements selected from a phonology-free lexicon. There is, then, no operation of Spell-Out and thus no distinction between 'overt' and 'covert' syntax. The computation is wholly 'covert'. Put another way, it is wholly internal (mentally constituted). In fact, as conceived in the Hypothesis, it is *radically* internal. By this we mean [a] that it is not 'externalisable'—not capable of being 'realised' in, or 'converted' to, any 'overt' mind-external form (e.g., sound)—and furthermore [b] that no aspect of the computation is 'internalised' (from the external). What we mean by [b] is that no aspect of L itself is acquired or learned. It is wholly innate, biologically determined and invariant, across individuals of the species and across stages in their maturation.<sup>11</sup> On these terms, L can, without qualification, be thought of as wholly natural. Saussurian arbitrariness and convention, we claim, lies elsewhere.

5.2. *'Representation' and representational phonology.* The above view of L as a wholly innate, radically internal, invariant, phonology-free syntactic computation and lexicon rests on the idea that phenomena capable of being assigned a phonological description—certain phonetic phenomena—stand in a relation of *conventional representation* to the syntactic computation constituted by L.

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syntax, PF order is not, in fact, an epiphenomenon of syntax strictly (traditionally) understood. See Burton-Roberts & Poole (ms/in prep).

By 'representation' we emphatically mean a *relation*, an asymmetric relation between **R** (*Representans*) and **O** (the Object of representation, *representatum*). The distinction between R and O is essential ( $R \neq O$ ). It is simply—but crucially—the distinction between a perceptual *sign* (R) and what it is sign of (O).<sup>12</sup> To emphasize this, Burton-Roberts (e.g., 2000) coins the term 'm-representation', 'm' for Magritte, in honour of his painting 'La Trahison des Images', in which the image of a smoker's pipe is accompanied by the words 'Ceci n'est pas une pipe'. The point is that, in looking at the representation-of-a-pipe (*signifiant*), we are not looking at a pipe (*signifié*).

This sense of 'representation' contrasts with how 'representation' is used in linguistics, and by Chomsky in particular (hence our insistence on using 'm-'). Chomsky notes that, used by him, 'representation' is 'not to be understood relationally, as 'representation of'' (1995:135). For example, Chomsky's suggestion (1972:61) that 'language has no objective existence apart from its mental representation' clearly illustrates this non-relational sense of 'representation': language is here being thought of as not distinct from, but actually *constituted* in, that representation. Similarly, 'phonological/syntactic representations' as usually understood are not representations of anything, they just *are* (constitutive of) the syntax/ phonology. By contrast, a representation—understood, in our terms, as an m-representation—is not constitutive of what it is a representation of.

By the Hypothesis, linguistic properties are no more converted to—transduced into, physically instantiated in, or realised as—acoustic phenomena than some smoker's pipe was converted to paint (transduced into, physically instantiated in, or realised as paint) by Magritte. By the Hypothesis, we do not hear or produce or parse what L generates. Rather, what we hear, produce and parse, are only external, phonetically constituted *m-representations* of what L generates. Speech, in other words, is conventionally m-representational of the linguistic, not an external facet or realisation of it.

The Hypothesis thus implies a radical separation of syntactico-semantic properties of the linguistic computation (the representatum, O) and phonology. The central claim is that no single entity or phenomenon has *both* syntactico-semantic properties *and* phonological/phonetic properties. To assume otherwise would be to conflate properties

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<sup>11</sup> The Hypothesis thus takes literally the suggestion of Epstein et al 1996:3 that 'there is in effect only one human language'. See also Freidin 2002.

<sup>12</sup> Saussure effectively rejects this distinction by insisting that a sign is (in part) *constituted* by what it is a sign of (the signifié). Chomsky's double-interface conception of grammar perpetuates this.

of the *representans* (R, the sign) and properties of the *representatum* O (L in this case, what R is a sign of).

Phonetic phenomena have exclusively phonetic properties. They neither share nor resemble any of the linguistic properties they are m-representational of. And, even when produced *as* m-representations, phonetic phenomena are not *intrinsically* m-representational. What makes certain acoustic phenomena construable as m-representational of L is extrinsic to them, constituted in a system of representational conventions. Phonetic events can be construed as m-representational of L only by a person who has internalised—acquired/learned—a particular set of representational conventions which she takes to apply to those phonetic events.

This is where (and what) phonology is, we claim.<sup>13</sup> By the Hypothesis, the conventions of a system for m-representation (of L) in the phonetic medium are *phonologically constituted*. So viewed, the function and rationale of a phonological system is to harness phonetic phenomena to the enterprise of m-representing L. On these (representational) terms, syntactic objects are not pronounced or pronounceable; what are (and must be) pronounced are phonetic m-representations of them. The syntactic computation does not determine pronunciation (as in a realisational framework). Pronunciation is determined wholly by language-particular conventions governing how the syntactic computation is to be m-represented.

On these terms, Saussurian arbitrariness/convention lies, not within the unique, radically internal, natural computation L itself, but in the m-representational *relation* between L and external, non-linguistic, phonetic phenomena—a relation effected by a diversity of phonologically constituted systems of conventions. If 'mapping' is a relevant concept here, the nature of the mapping is m-representational.

A phonological system, then, is to be thought of as a Conventional System for the Phonetic (m-)Representation of L—a  $CSPR_{(L)}$ .<sup>14</sup> Since the rationale of phonology is m-representational with respect to L, phonology is indeed 'extraneous' to L. This is because it is simply, and without qualification, *not in* L. By the same token, it is not 'peripheral' to L. Nor does it have an 'epiphenomenal' role with respect to L. On the contrary, within its own (representational, communicative) domain, phonology is essential. We assume that it is for the purposes of *communication* that humans need to m-represent, in an

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<sup>13</sup> With Chomsky, we assume that morphology is included in phonology.

<sup>14</sup> If 'phonetic' means 'articulatory/acoustic', this excludes sign languages. However, we can generalise across spoken and non-spoken (signed) languages by allowing the 'P' of ' $CSPR_{(L)}$ ' to stand more generally for 'Perceptual' rather than specifically 'Phonetic'.

external perceptual medium, the radically internal—non-perceptual—system L. Chomsky comments 'If humans could communicate by telepathy, there would be no need for a phonological component' (1995:221). We agree, but would argue that—with language and communication (speech) distinguished and related *m-representationally*—the fact that humans can communicate, but not by telepathy, emphatically does *not* require that L include phonology. From a representational perspective, that imports into L—WHAT-is-m-represented—logically independent facts about HOW-it-is-m-represented in the phonetic medium.

5.3. *L and 'languages'*. The Hypothesis identifies so-called (particular) languages, including Icelandic, as  $CSPR_{(L)}S$ . On these terms, so-called languages are not *instantiations* of L—an idea Chomsky (1995:6 and n. 6) has questioned anyway—but are, quite distinctly, systems of conventions for its external m-representation. This is consistent with there literally being just one language. But that one language is m-represented by a variety of  $CSPR_{(L)}S$ . On these terms, relevant diversity is not linguistic (i.e. pertaining to L) but m-representational. Parameters pertain, not to *what* is m-represented (O), only to *how* it is m-represented (R).<sup>15</sup>

We have made two identifications: [a] 'languages' have been identified as  $CSPR_{(L)}S$  and [b]  $CSPR_{(L)}S$  have been identified as exclusively phonological systems. Our claim then is that 'languages' (individuals' representational systems) *are* phonological systems. They are not themselves, even in part, syntactico-semantically constituted; rather, they are *for* the m-representation of what *is* syntactico-semantically constituted (namely, L). Consider parsing in this connection. We take parsing to be an activity that puts something (e.g., an acoustic event) that *lacks* linguistic structure/properties into correspondence with something that *has* linguistic structure/properties. The 'correspondence' relation, by hypothesis, is m-representational. Parsing of relevant phonetic phenomena is necessary precisely because they do *not* possess the syntactico-semantic structure they are m-representational of. This is a central aspect of the conventionality of the relation.<sup>16 17</sup>

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<sup>15</sup> As Chomsky notes, the diversity is radical, distinguishing, not just 'Icelandic' from other so-called languages, but among speakers of 'Icelandic' itself. In contrast to the sub-personal system L, a particular representational system is the result of an individual's personal experience of overlapping socio-cultural communities and their representational practices. See below.

<sup>16</sup> We would have called L 'Universal Grammar (UG)' were it not for the fact that 'UG' is often understood in what Burton-Roberts (2000:39-41) calls 'generic' terms. Construed generically, UG is a characterisation of what all languages have in common. See Freidin 2002. This is

5.4. *The scope of representational phonology.* The distinction between L itself and how L is m-represented by individual 'languages' ( $\text{CSPR}_{(L)S}$ ) seems clear enough, at least in principle. Equally clearly, this is not a methodological question of the division of labour among components (or of core vs periphery) within a theory of L. It is, more substantively, a question of the nature of language itself and, quite distinctly, the character of systems for its m-representation.

This is what the contrast between syntax and phonology amounts to, from a representational perspective. Viewed from this perspective, linguistic theory generally conflates facts about *what* is represented (O) and facts about *how* it is represented (R). As a result—and anyway—the empirical task of determining, for any given property, whether it pertains to L (O) or its m-representation R may in practice be more intricate than the clear conceptual distinction between them might suggest.

This is not to say that there aren't conceptually motivated general principles governing this determination. For example, phonological properties as traditionally, narrowly conceived clearly pertain to R rather than to L (O) itself and thus fall within the scope of representational phonology. Other general principles, however, crucially suggest that the scope of representational phonology will be considerably wider than this. In fact, it will include much—if not everything—that traditionally passes for *language-particular* morphology and syntax.

One such principle involves diversity. Relevant diversity is diversity among 'languages' and thus, in our terms, among conventional systems for the m-representation of L ( $\text{CSPR}_{(L)S}$ ). Their diversity is an inevitable concomitant of their conventionality. As a matter of conceptual necessity, then, if a given feature—even when traditionally regarded as syntactic—is not universal, we must assume that it falls within the scope of representational phonology and thus pertains to R, not L.<sup>18</sup>

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emphatically not what we mean by 'L'. L is a natural object quite distinct from 'languages' ( $\text{CSPR}_{(L)S}$ ). By the RH, L is the unique system that is m-represented by all  $\text{CSPR}_{(L)S}$ .

<sup>17</sup> It is worth noting that, if it is L that has a (syntactico-semantic) lexicon, then 'languages' (as  $\text{CSPR}_{(L)S}$ ) don't have lexicons. Instead, we shall say, they have 'vocabularies'. In contrast to L's lexicon, vocabularies are phonologically constituted. The vocabularies of  $\text{CSPR}_{(L)S}$  thus stand in a relation of m-representation to the lexicon. However, they may also m-represent complexes not present in the lexicon itself but generated by the computation.

<sup>18</sup> However, it does not follow from the universality of a given feature that it is to be attributed to L rather than R. To assume otherwise would be to assume that there are no purely m-representational universals, which seems unlikely. In this context, incidentally, it makes no sense to talk of 'universals' in connection with L itself. L is the unique representatum of a diversity of 'languages', *not* a 'Universal Grammar' instantiated in all 'languages'. L is 'universal' because instantiated, not in all 'languages', but in all individuals.



Another general principle involves interpretability at LF. Under the RH, the syntactic computation that constitutes L is relieved of the need to serve PF. Rather than 'realising' (any part of the) syntactic computation, PF is determined independently, by language-particular representational principles. Since L itself thus serves just the LF interface, it seems reasonable, at the very least, to insist that no property can be a candidate for inclusion in L unless it can be shown to be interpretable at LF. In fact, the RH offers an explanation of the non-interpretability of properties traditionally regarded as syntactic but not interpretable, and simultaneously offers a reason for excluding them from L. The hypothesis suggests that, as merely *m-representational* of (interpretable) properties that do figure in L, they have no possible function (or interpretation) *within* L itself. A systematic reconstruction of such 'syntactic' features in representational (i.e. phonological) terms is an enterprise well beyond the scope of this paper, however. We deal here only with aspects of it relevant to Icelandic SF.

In this connection, note that Icelandic SF is not interpretable. That is, the SF effect—the difference in word-order in PF associated with SF—is not associated with any difference at LF, as already noted. This seems to us to constitute, in itself, sufficient conceptual grounds for denying that SF is syntactic. By the RH, then, it simply cannot pertain to L. However, it is manifest in Icelandic—and Icelandic, by the RH, is one particular (phonologically constituted) system for the m-representation of L in the phonetic medium. On these terms, it does follow that the SF effect is a purely phonological phenomenon, as 'phonological' is understood in representational terms.

As a matter of principle, furthermore, linear order in general is not interpretable at LF. Gazdar et al (1985) were the first to propose formally that Immediate Dominance (hierarchical constituent structure) should be handled independently of Linear Precedence (cf their ID/LP format). What was striking, given this proposal, was the extent to which syntax-semantics could proceed without reference to LP. This assumption has become standard. Chomsky (1995: 334), for example, observes 'there is no clear evidence that order plays a role at LF or in the computation to LF'. He assumes that order is 'assigned' by phonology.

This basic idea—that linear precedence is phonological—is fully consistent with the Representational Hypothesis. Linearity is a property of phonetic m-representations, not of what is m-represented. However, there are crucial differences between a realisational and a representational treatment of linear order as phonological. For Chomsky, LP must be assigned as part of the realisation process that 'converts' generated objects to a form

that external systems can use. Performed by the language faculty, this is a process of 'linearisation'—linearisation of generated expressions. On a representational conception of phonology, by contrast, expressions of L are not, and in no sense become, linear. No linearisation is involved. Linearity and precedence are inalienable (and unambiguously temporal) properties of—and only of—phonetic *m-representations* of expressions. Not only is linear precedence not necessary for interpretation at LF, it is not interpretable there. This, by the RH, is because it pertains not to L but to its m-representation. A further central feature of the *conventionality* of m-representation, then, consists in the fact that the linguistic representata are hierarchical but not linear, and are conventionally m-represented by events that exhibit only (temporal) linearity.

In this connection, we need to make a crucial distinction before proceeding. Properties of a representation—including linear order—are not always exploited for specifically *representational* purposes. Above the word, only some languages (CSPR<sub>(L)</sub>S) exploit linear order specifically in aid of m-representing properties of L (hierarchical structure in particular). So-called configurational languages do. But in so-called non-configurational languages, order above the word is not thus exploited consistently. This leaves order free to be exploited for other—not strictly representational—purposes: information structure, prosody, empathy, ease of parsing etc.<sup>19</sup> We will therefore distinguish between properties of the representation that are 'strictly' representational and those that are not. Linear (temporal) order is always a property of representations but it is not always *strictly* representational.

## 6. A representational approach to aspects of Icelandic

Here we develop an account of 'Stylistic Fronting' in Icelandic in terms of the Representational Hypothesis. We develop the suggestion of Maling (1980/90), Anderson (1993) and others that the SF effect is a reflex of 'verb-second' (V/2). In 6.1 we consider the anomalous status of V/2 in a 'double interface' conception of language and outline a representational reconstruction of V/2. In 6.2., we show how this interacts with other representational conventions that must be assumed for Icelandic and, in 6.3., how it interacts with the SF effect.

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<sup>19</sup> Below the word, order *is* exploited for strictly representational purposes in all languages; that is, ordering of phonological segments—e.g., /tip/ vs /pit/ in English—is always strictly representational.

6.1. *'Verb second'*. In a realisational view of phonology, verb second (V/2) is a classic case of epiphenomenality. That is, V/2 is an ordering phenomenon but one which is beyond the expressive power of traditional phonology to effect. It is assumed to involve the ordering of a verb, but 'verb' is not a category available to traditional (narrowly defined) phonology. Nor is there any obvious narrowly phonological motivation for V/2. On the other hand, as an ordering generalisation, V/2 cannot be syntactic either: linear order (and counting) has no status in the syntax. V/2 thus combines two properties, one not consistent with its being syntactic ('2'), the other not consistent with its being phonological ('V'). On traditional assumptions, then, 'V/2' must be made fall out as an epiphenomenon—derived as an incidental, realisational consequence of distinct, independently motivated, syntactic processes and properties.

Nevertheless, as often noted (see particularly Anderson (1993)), this creates 'engineering problems'. Within GB, the problem consists in determining which syntactic position the verb could be moving to when 'realized' in second position. If we focus on languages like German, which is V/2-asymmetric in displaying V/2 just in main clauses, it might seem that the engineering problem has a clear solution. Under the traditional analysis (often attributed to den Besten (1981)), if the verb is moving to C, and CP is the root node, then the second position effect can be accounted for. German embedded clauses, by contrast, do not display V/2 because, in them, C is filled independently.

Other languages present a problem, however, particularly symmetric V/2 languages like Icelandic where, unlike German, V/2 is observed in virtually all declarative clauses, both main, (26), and embedded, (27).

- (26) Maríu hef ég aldrei hitt.  
 Mary-Acc have I never met  
 'I have never met Mary'
- (27) Jón harmar að þessa bók skuli ég hafa lesið.  
 Jon regrets that this book shall I have read  
 'Jon regrets that I have read this book.'

Since an overt complementizer and V/2 are not in complementary distribution here, this undermines movement to C as a general explanation for V/2 and reopens the engineering question. The debate has continued in the Germanic syntax literature (see Rögvaldsson & Thráinsson (1990) for an overview of two approaches).

However difficult the engineering problems within GB, they become yet more difficult in Minimalism. Economy considerations, for example, mean that the transformational operation is highly constrained, with all movements needing independent motivation. In addition to the question about what position that verb moves to, the question (quite rightly) arises *why* it should move in the first place.

Our claim is that ‘verb-second’ is not an epiphenomenon—of syntax or anything else. Rather, assigned to its proper domain, it is what we will call a ‘first order phenomenon’ within that domain. As explained, the RH distinguishes two domains, that of the linguistic object O, whose structures have hierarchical properties, and that of the m-representation, R (of O), which has only linear properties. Corresponding to the two domains, the RH defines two sortally distinct notions of ‘position’: [1] ‘**O-position**’, a syntactic node in hierarchical structure generated by L; [2] ‘**R-position**’, a precedence relation between phonetic forms within representational strings. Ordering generalisations thus fall within the representational domain, where they are first order phenomena. That is, insofar as there are systematic constraints on order, these are to be defined directly by conventions of the given  $CSPR_{(L)}$ .

Crucially, it is only *representational* entities that are, or could be, ordered by such conventions. So—assuming that ‘verb’ is an O-property, i.e. one that figures in the representatum L—it is not verbs themselves that are ordered second but their m-representations. Notationally: it is not any linear position of  $V_{fin}$ — $V_{fin}$  has no linear position—but of the phonetic object  $\mathfrak{R}[V_{fin}]$  that is at issue. We are dealing, not with some epiphenomenon of syntax,  $[V_{fin}]/2$ , but with a first order *representational* phenomenon  $\mathfrak{R}[V_{fin}]/2$ , to be captured directly and as such by a (declarative) representational convention. We assume that the representational domain for determining  $\mathfrak{R}[V_{fin}]/2$  is  $\mathfrak{R}[IP]$ . The  $CSPR_{(L)}$  constituted by Icelandic thus must be assumed to include:

**(28) The Representational ‘Verb Second’ Convention— $\mathfrak{R}[V]/2$ :**

The m-representation of a finite verb— $\mathfrak{R}[V_{fin}]$ —must appear as the second element in the m-representation of the IP that contains it ( $\mathfrak{R}[IP]$ ).

The paradoxical character  $V/2$  was due to the assumption that it is (syntactic) verbs themselves that have or acquire a syntactically undefinable property, namely a certain linear position. This was necessary in the ‘double interface’ conception: since verbs have P-features as well as S-features, the verb to which those P-features belong had to be

assigned a linear position. Within the RH, by contrast, there *is* no such concept as 'verb in second position' (V/2); it incorporates a category mistake due to failure to distinguish what is m-represented ( $[V_{\text{fin}}]$ ) from its m-representation  $\mathfrak{R}[V_{\text{fin}}]$ .

Since  $\mathfrak{R}[V_{\text{fin}}]/2$  is a representational phenomenon, this pre-empts the vexed (engineering) question of which syntactic position is the landing site for 'verbs in second position'. Notice also that Convention (28) illustrates a crucial property of *representational* phonology: it is entirely natural—conceptually necessary, in fact—to regard representational phonology as having access to properties of the syntactic computation (which is, after all, the *representatum*).

There is no (literal or metaphorical) movement—syntactic (in O) or phonological (in R)—associated with Convention (28). In fact, it is quite possible that in O there is no verb-movement in general.<sup>20</sup> The RH by no means eliminates the possibility of syntactic movement—or chains, at least—provided there is an identifiable effect on interpretation at LF. But the mere fact of so-called 'displacement' is not enough under the RH to justify postulating a syntactic operation.<sup>21</sup> Whether there is V-to-I movement in L is an empirical question, but it is not one we can pursue here. Simply for the purposes of setting this to one side, we will here depart as little as possible from current assumptions and assume that finite verbs do raise from V to I for 'narrow syntax' (i.e. O) reasons, or at least that there is a V-I chain.<sup>22</sup> What we do reject is the assumption that any further raising of  $V_{\text{fin}}$  is required simply to capture/engineer  $\mathfrak{R}[V_{\text{fin}}]/2$ . On this assumption,  $\mathfrak{R}[V_{\text{fin}}]$ , irrespective of its (linear) R-position relative to other representational elements, is the m-representation of an O-element,  $[V_{\text{fin}}]$ , in the hierarchical O-position defined by the syntactic node I. We return to this important point—and its conceptual necessity—after we have introduced further conventions.

6.2. *Further representational conventions of Icelandic.* Icelandic is a 'head-initial', 'configurational' language, in which order is (to a high degree) constrained. In terms of the RH, these properties are due to the fact that, in general, Icelandic does exploit order above the word for strictly representational purposes (i.e. for the m-representation of

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<sup>20</sup> In this, our proposal resonates with Chomsky's (1999) suggestion that all head-movement is 'phonological'. Chomsky's assumptions about the phonology/syntax relation are of course radically different from those being developed here. Nevertheless, we maintain that a representational account of phonology provides a more appropriate general framework for Chomsky's proposal.

<sup>21</sup> For an explanation of the quotes round 'displacement', see below.

hierarchical structure in L). Specifically, we assume that in Icelandic the left-right relation in R is m-representational (a) of higher-lower relations in O and (b) of head-complement relations in O, all other things being equal. Thus:

(29) **Default Precedence Convention for M-Representations**

- a. Asymmetric c-command between elements  $\alpha$  and  $\beta$  of O is m-represented by the m-representation of  $\alpha$  ( $\mathfrak{R}[\alpha]$ ) preceding the m-representation of  $\beta$  ( $\mathfrak{R}[\beta]$ ).
- b. Symmetric c-command between a head  $\alpha$  and its complement  $\beta$  in O is m-represented by the m-representation of  $\alpha$  ( $\mathfrak{R}[\alpha]$ ) being adjacent to and preceding the m-representation of  $\beta$  ( $\mathfrak{R}[\beta]$ ).

These conventions have to be expressed as defaults because, we shall see, they can be overridden by other conventions, in particular by (28),  $\mathfrak{R}[V]/2$ .

In keeping with our attempt to depart minimally from current assumptions, we adhere to the assumption that in L itself the subject ‘moves’ from Spec-VP to Spec-IP, i.e. that in L there is a chain, the highest (head,  $\alpha$ ) member of which is in Spec-IP and the lowest (tail,  $\beta$ ) in Spec-VP. (See below on Chains.) In Icelandic, as in English, chains are generally m-represented by m-representing just their heads.

(30) **Default Convention for the M-Representation of Chains:**

A chain in L with head  $\alpha$  and tail  $\beta$  is m-represented by  $\mathfrak{R}[\alpha]$ .

Conventions (29) and (30), taken together, have the result that chains in Icelandic are generally m-represented in the leftmost possible position in R.<sup>23</sup>

To see how these conventions—(28), (29), (30)—determine precedence relations in Icelandic m-representations, consider first a simple m-representation such as (31), which we assume has (32) as its object of m-representation (i.e. (31) =  $\mathfrak{R}[(32)]$ ).

(31) Jón hefur barið Guðmund.

Jón has hit Guðmundur

(32) [CP [IP Jón<sub>i</sub> [I hefur<sub>j</sub>] [VP Jón<sub>i</sub> hefur<sub>j</sub> barið Guðmund ] ] ]<sup>24</sup>

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<sup>22</sup> We are not assuming a ‘split’ Infl for convenience only. We assume that nothing substantively changes if ‘T’ is replaced by ‘T and/or AgrS’.

<sup>23</sup> (29) and (30) are merely the RH analogues of stipulations which must be made irrespective of framework.

<sup>24</sup> (31b) is the English translation of (31a). In other words, (31b) is the English m-representation of the expression of L m-represented in Icelandic by (31a). (32), by contrast, is a citation of (31)'s *representatum*, an expression of L itself. Citing an expression of L *as such* can't be done without actually m-representing it in some way. This involves linear order and choosing the

In conformity with convention (30), m-representation of the subject chain is effected by m-representation of its head in Spec-IP. By the Default Precedence Conventions (29a-b), the representation will be ordered as in (31). Notice that in (31) the R-position of  $\mathfrak{R}[V_{\text{fin}}]$ , *hefur*, automatically satisfies Convention (28),  $\mathfrak{R}[V_{\text{fin}}]/2$ .

For comparison, consider a situation where that is not the case. For expository purposes only, assume that Topicalization is a syntactic operation in O (which, let's say, adjoins the topicalized element to IP).<sup>25</sup> On this assumption, and with [Guðmund] in (32) topicalized, we have (33) as a distinct expression of L:

(33) [CP [IP Guðmund<sub>j</sub> [IP Jón<sub>i</sub> [I hefur<sub>k</sub>] [VP Jón<sub>i</sub> hefur<sub>k</sub> barið Guðmund<sub>j</sub>] ] ] ]

In this case, conventions (28), (29) and (30) combine to make (34) the only possible m-representation of (33):

(34) Guðmund hefur Jón barið.  
 Guðmundur has Jón hit  
 ‘Guðmundur, Jón has hit’

The (leftmost) R-position of *Guðmund* (=  $\mathfrak{R}[\text{Guðmund}]$ ) is dictated by (29a) and (30), assuming a chain-creating, raising operation of Topicalisation in L. Given that (34) m-represents (33), blind adherence to convention (29) would have yielded the different order *Guðmund Jón hefur barið*. But that violates the  $\mathfrak{R}[V]/2$  convention (28). The R-position of *hefur* in (34) is dictated by (28), yielding the order *hefur* > *Jón* in (34) as compared with *Jón* > *hefur* in (31). Here, then, (28) overrides (29).

This involves no movement of  $\mathfrak{R}[\text{hefur}]$  to second R-position from some other R-position. Simply, it *is* in second position—in (34) as in (31)—in conformity with convention (28). Furthermore, from this representational fact, no special assumption is necessitated about the O-position of [hefur] itself. Syntactically, there is no reason not to assume—and (see below) every reason to assume—that, in O, [hefur] is in the syntactic position in which it is interpreted (I, by assumption). Evidence for this is that, apart from the topicalisation of [Guðmund] (and even this is debatable, see note 25),

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vocabulary of some  $\text{CSPR}_{(L)}$  to m-represent it. We have chosen Icelandic. The double occurrence of *Jón<sub>i</sub>* in (32) is a chain in O. On chains, see below.

<sup>25</sup> There is, of course, a strong possibility that Topicalization is *not* a syntactic operation (in O).

there is no interpretative difference at LF (i.e. in O) between the expression of L m-represented by (31) and that m-represented by (34).

In a realisational framework, the different orders of *Jón* and *hefur* in (34) and (31) would have to be the realisational effect of some syntactic movement in addition to the Topicalisation of [Guðmund]. Presumably (since movement is raising), this would be movement of [hefur] from I to some higher position, to be identified. For Chomsky, this would exemplify 'the fact that objects appear in the sensory output in positions "displaced" from those in which they are interpreted' (1995:221-2). However, it is only within a 'double interface' view of the language faculty—requiring that syntactic objects be furnished with P-features so as to allow the computation to serve the PF as well as the LF interface—that such 'displacement' is required.

Chomsky seems to intend this 'displacement' locution as applying not just to cases like (34) but across the board, as including wh-elements in Spec-CP—despite the fact that wh-elements *are* interpreted at LF as being in Spec-CP, albeit *in addition to* some other position. From a representational perspective, whether there is a particular 'movement' in O amounts to whether there is a particular legitimate chain in O (see also Brody 1995). A chain is not legitimate if not interpretable *as* a chain at LF. Chain-interpretation calls for interpretations of all chain-members in their respective O-positions, plus an interpretation of each member as being *strictly* identical.<sup>26</sup> A legitimate chain thus consists in a single syntactic object being interpreted at LF in more than one O-position. There is no need here for—or, surely, sense in—an object being 'displaced from a position in which it is interpreted'.

This seems important, for the RH allows us to insist on what seems to us a matter of conceptual necessity (and not just in the RH): that every syntactic element is—by definition—in the O-position in which it is interpreted at LF. There is, we suggest, no other conceivable criterion for syntactic (O-) position in L.

Returning to our example: although the RH rejects the idea that [hefur] itself could be in ('displaced to') any O-position other than that in which it is interpreted, it does nevertheless offer an indirect reconstruction of 'displacement' in (34). To see this, we

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<sup>26</sup> In a representational account there is no concept of 'trace' in O or R. Chain members by definition are *strictly* identical, having only—and exactly the same—S-features (no P-features). 'Traces' are simply chain-members that are not m-represented. This is a representational fact, not a fact about what is represented. By contrast Brody, who is committed to the double interface assumption ('it is a truism that grammar relates sound and meaning' (1995:1)), is obliged to postulate (L)LF chains consisting of 'contentives' and traces (which he calls 'expletives'). However, since the distribution of contentives and expletives varies cross-linguistically, (L)LF has to be parameterised (Brody 1995:3 et passim).



need to consider the interaction between the Default Precedence Convention (29a) and Convention (28),  $\mathfrak{R}[V_{\text{fin}}]/2$ . Insofar as (34) manifests ‘displacement’, this is a function of its including an m-representation in R-position  $n$  ( $=2$ ) which is perceived as the m-representation of an expression in an O-position (I, by assumption) that would ‘normally’—i.e. by convention (29a)—be m-represented by an m-representation in another R-position,  $m$ . Briefly, it is a function of convention (28) overriding convention (29a) in (34). Compare (34) with (31), where the R-position of  $\mathfrak{R}[\text{hefur}]$  satisfies both (28) and (29a). The “displacement” effect evident in (34) simply involves a *comparison* between two m-representations rather than any *transformation* from one to the other.

One consequence of all this is that, although  $\mathfrak{R}[V_{\text{fin}}]/2$  is an R-phenomenon, it is not *strictly* representational. Convention (28) differs from other conventions introduced, which do determine strictly representational properties. (29a), for example, makes reference to hierarchical relations in O, specifying how they are to be linearly m-represented. (28) does not; it merely dictates that  $\mathfrak{R}[V_{\text{fin}}]$  be in second R-position, *irrespective of the O-position of  $[V_{\text{fin}}]$*  and therefore, on occasion, overriding (29a). It is in this sense that (28) determines an R-property that is not strictly representational.

In default of their being *strictly* representational, we should expect properties of m-representations to have some other function or motivation, especially if consistently manifested (as  $\mathfrak{R}[V_{\text{fin}}]/2$  is in Icelandic). This raises the question of what other function/motivation  $\mathfrak{R}[V_{\text{fin}}]/2$  might have. Beyond suggesting that, in languages that have convention (28),  $\mathfrak{R}[V_{\text{fin}}]/2$  aids parsing, we will not attempt to develop an answer to this here. Nevertheless, it is in the (functional) representational domain, we believe, that the answer is to be sought, rather than engineering a syntactic explanation for it.<sup>27</sup>

Notice finally that in this section we have restricted ourselves to discussing standard declarative clauses. These do in general exhibit a ‘verb-second’ order. As regards questions—i.e., main clause interrogatives (yes/no or wh)—we assume that these require raising of  $V_{\text{fin}}$  *out of* IP to C. In questions, then, the  $\mathfrak{R}[V_{\text{fin}}]/2$  Convention (28) is simply not applicable, since  $V_{\text{fin}}$  will not be in the syntactic domain relevant to that convention, namely IP. Assuming the Default Precedence Convention (29) and the Default Chain Convention (30),  $\mathfrak{R}[V_{\text{fin}}]$  in yes/no questions will be in initial position. In wh-questions, again assuming those conventions,  $\mathfrak{R}[V_{\text{fin}}]$  will be in second position,

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<sup>27</sup> Alternatively, it is quite possible that the  $\mathfrak{R}[V_{\text{fin}}]/2$  convention of modern Icelandic has no synchronic motivation, but is the conventional residue of an earlier stage of the language when it did.

but not as a result of the  $\mathfrak{R}[V_{\text{fin}}]/2$  Convention, since this is second-position in CP (rather than IP).

6.3. *'Verb second' and the SF effect.* In this section we argue that the SF effect is simply a by-product of adherence to  $\mathfrak{R}[V_{\text{fin}}]/2$ . We call it 'the SF effect' because on our analysis it involves no movement but is merely the linear order dictated by the interaction of  $\mathfrak{R}[V_{\text{fin}}]/2$  with other representational conventions.

Consider the m-representation (35):

- (35) Ef gengið er eftir Laugaveginum....  
 If walked is along the-Laugavegur....  
 'If one walks along the Laugavegur...'

The expression m-represented by (35) is (36) (details omitted):

- (36)  $[_{\text{CP}} \text{ef} [_{\text{IP}} \text{pro}_{\text{arb}} [_{\text{I}} \text{er}] \text{gengið eftir Laugaveginum} ] ]$

This case is in some sense the inverse of the Topicalization case in (33)/(34). By the conventions of Icelandic,  $\text{pro}_{\text{arb}}$  is not m-represented. This means that, although  $\text{pro}_{\text{arb}}$  is in the O-position Spec-IP, there is no m-representation of that O-position in (35). Given this, blind adherence to the Default Precedence Convention (29) would result in a phonetic form not fully consistent with the conventions of Icelandic.

- (37) \*Ef er gengið eftir Laugveginum....

By contrast, (35) is an m-representation fully consistent with those conventions, including  $\mathfrak{R}[V_{\text{fin}}]/2$ . By that convention,  $\mathfrak{R}[\text{er}]$  must immediately follow whatever m-representation is leftmost in  $\mathfrak{R}[\text{IP}]$ . Assuming that [gengið] is a directional verb, taking [eftir Laugveginum] as complement,  $\mathfrak{R}[\text{gengið}]$  must precede  $\mathfrak{R}[\text{eftir Laugveginum}]$ , by convention (29b). Together with the fact that the subject  $\text{pro}_{\text{arb}}$  is not m-represented, this means that, apart from  $\mathfrak{R}[\text{er}]$ , no other expression is m-represented. Hence  $\mathfrak{R}[\text{gengið}]$  is first and  $\mathfrak{R}[\text{er}]$  must follow it.

(35) displays the 'SF effect'. But, again, it involves no rightward phonological movement of  $\mathfrak{R}[\text{er}]$  over  $\mathfrak{R}[\text{gengið}]$ . Nor, since no meaning difference is associated with the SF effect, need we assume that, within the expression m-represented by (35), [er] is

not in I, the (O-)position in which it is interpreted. Equally, from the fact that  $\mathfrak{R}[\text{gengi}\delta]$  precedes  $\mathfrak{R}[\text{er}]$ , it does not follow that  $[\text{gengi}\delta]$  itself is in a syntactic position higher than I, syntactically displaced there from the lower position in which it is interpreted (head of the VP complement of  $[\text{er}]$ , we assume).

The difference between (35) and (37) pertains wholly to R, not O. That is, it is a difference between m-representations, but the difference between them is not 'strictly' representational. It is exhaustively described by the statement that the order in (35) ( $\mathfrak{R}[\text{gengi}\delta] > \mathfrak{R}[\text{er}]$ ) conforms to convention (28), while that in (37) ( $\mathfrak{R}[\text{er}] > \mathfrak{R}[\text{gengi}\delta]$ ) does not. In other words, (37) is ill-formed. Insofar as (37) can—despite not conforming to the conventions—be parsed as the m-representation of an expression at all, it will be parsed as m-representing the same expression as that m-represented by (35). Insofar as (37) is the representation of *any* expression in L, then, it constitutes a *mis*-representation of it.

The ill-formedness of (37) then is wholly representational, not syntactic. In fact, we suggest that ill-formedness in general *could* only be representational. In providing a domain distinct from—but representationally related to—the linguistic, the RH resolves a conceptual problem associated with what is usually regarded as *linguistic* ill-formedness, or 'ungrammaticality'. The problem is this. The linguistic computation is defined by generative principles that are (in Chomsky's word) 'intensional'.

Expressions of L are said to be 'generated' only in the sense that L is constituted by principles that define the intension 'expression', or convergence in L. On these terms, it seems to us conceptually impossible that any derivation of the computation *could* be non-convergent (derive an 'ungrammatical' expression). Quite simply, the generative procedure that constitutes L cannot flout its own constitutive principles. But this intensional account of generative principle is undermined by the double-interface conception of grammar and realisational phonology. This is because, in a double-interface realisational account, the ill-formedness has to be (and generally is) regarded as the *realisation* of a syntactically defined 'ungrammaticality' or 'non-convergent derivation'. In the RH, by contrast, it is and can only be *m-representations* that are ill-formed, resulting in a mis-representation or a non-representation of a—or any—(by definition well-formed) expression of L. <sup>28</sup>

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<sup>28</sup> The point we seek to make here is that "ill-formedness" arises, and can only arise, from the behavioural fact that speaking agents are capable of physically producing (or imagining) m-representations that don't conform to the conventions of their language (their  $\text{CSPR}_{(L)}$ ). By contrast the (sub-personal) syntactic computation is, by definition, incapable of generating

## 7. Some interim conclusions.

Neither the syntactic nor the phonological account considered earlier clearly connects the SF effect to ‘V/2’. Holmberg’s (2000) account explains why SF and expletives should be in complementary distribution (both are devices by which the P-feature of I can be checked). However, the wider connection to ‘V/2’ is missed because, on that account, it is accidental that both SF and expletives result in the verb being second (‘V/2’ being epiphenomenal). Poole’s account makes some attempt to connect SF and ‘V/2’. Auxiliary verbs end up in second position because phonologically defective. Leaving aside the empirical problems with that proposal, however, it surely won’t generalise to main verbs or form the basis for a general account of synchronic ‘V/2’.

By the RH, ‘ $V_{fin}/2$ ’—as  $\mathfrak{R}[V_{fin}]/2$ —is addressed directly and as such, as a (‘first order’) phenomenon in the R-domain. Our argument has been that the rationale of the SF effect is wholly to support  $\mathfrak{R}[V_{fin}]/2$ , rather than the EPP, as Holmberg claims. Therefore, since  $\mathfrak{R}[V_{fin}]/2$  is not strictly representational (of any property in O), the SF effect itself is not strictly representational. In fact, we claim that occurrence in 1st position of the m-representation of some expression [e]—abbreviate this as ‘ $\mathfrak{R}[e]/1$ ’—constitutes an instance of the SF effect if and only if  $\mathfrak{R}[e]/1$  is *solely* motivated by the  $\mathfrak{R}[V_{fin}]/2$  Convention, rather than the Default Precedence Convention (29). It is exactly when that is the case that  $\mathfrak{R}[e]/1$  is not ‘strictly representational’ of the syntactic O-position in which [e] is interpreted. Cases where  $\mathfrak{R}[e]/1$  is motivated by the Default Precedence Convention, by contrast, are *not* instances of the SF effect, even if  $\mathfrak{R}[e]/1$  results in  $\mathfrak{R}[V_{fin}]/2$ . In these cases  $\mathfrak{R}[e]/1$  is strictly representational—of [e] being in Spec-IP. In other words, 1st position is here occupied by an m-representation of the *subject*.

The fact that the SF effect is not strictly representational (of any property of the syntactic computation) is consistent with its being ‘stylistic’ and captures the semantic vacuity of the SF effect noted at the outset. Relatedly, it is consistent with the SF effect not being associated with any syntactic chain.

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objects that don’t conform to its own constitutive principles. Interestingly, Epstein et al. (1996:7) characterise ill-formedness in terms of what is not ‘a licit sound’. This approach to ill-formedness is unusual—and surely not consistent with a traditional view of phonology and its relation to syntax. However, being PF-based, it is fully consistent with the RH and its account of ill-formedness.

Complexities associated with syntactic accounts of SF are not accidental, we suggest. SF is not syntactic. But nor it can be phonological as traditionally understood, because it (a) calls for reference to syntactic properties not available to narrow phonology and (b) lacks narrow phonological motivation. The RH resolves this dilemma. Within the RH, the syntax-phonology distinction/relation amounts to the distinction between the syntactic computation, L itself (O), and the m-representation of L (R). We have argued that the SF effect is not in the O-domain (is not syntactic). Nevertheless, it *is* manifested by a particular, phonologically constituted,  $CSPR_{(L)}$ , namely Icelandic. It *must* then fall within the phonologically constituted R-domain. We have outlined a principled case for the much broader conception of phonology this implies. Since the whole rationale of a phonological system is to provide for the *m-representation* of the syntactic computation, phonological systems must be thought of as having access to that computation. The fact that modelling the SF effect (and 'verb second') calls for reference to syntactic categories cannot therefore count as an objection to a phonological account conceived of in representational terms.

It is significant that Holmberg's syntactic and Poole's phonological analyses both allow for the manipulation of phonological features *independently* of syntactic features but, crucially, not in terms legitimised by phonology narrowly understood. This constitutes both a substantive retreat from the double-interface conception of the language faculty—the assumption that P-features are possessed by (and pied-pipe with) syntactic objects—and a departure from narrow phonology. The RH offers a general framework that makes this separation of syntax and phonology—and the broadening of the latter—fully explicit and, we believe, puts them on a more principled and self-consistent conceptual footing.

## **8. Further properties of SF revisited.**

Here we return to properties of and constraints on SF noted earlier, showing how they are reconstructed and connected in our analysis.

*8.1. Maling's 'subject gap' condition.* This is reconstructed by our analysis—but incidentally, as part of a much wider pattern. We have assumed that a subject in O is a chain, the head of which is in Spec-IP, all things being equal. If the m-representation of such subject chains— $\mathfrak{R}[\text{subject}]$ —conforms to both the Chain Representation Convention (30) and the Default Precedence Convention (29),  $\mathfrak{R}[\text{subject}]$  will be in 1st

position in  $\mathfrak{R}[\text{IP}]$ . Since  $[\text{V}_{\text{fin}}]$  is in I, the Default Precedence Convention will ensure that  $\mathfrak{R}[\text{V}_{\text{fin}}]$  will immediately follow  $\mathfrak{R}[\text{subject}]$ , thereby conforming automatically to  $\mathfrak{R}[\text{V}_{\text{fin}}]/2$ , as well. In such cases no SF effect is observed. Maling's 'subject gap' cases are ones in which the subject chain is either not m-represented (cf *pro<sub>arb</sub>*) or not m-represented as being in Spec-IP. It is in these cases that the SF effect is observed, ensuring conformity with  $\mathfrak{R}[\text{V}_{\text{fin}}]/2$ .

A merit of our account is that it avoids the need to claim, with Maling, that elements displaying the SF effect (negation, past participles, adjectives etc) are in Spec-IP, the subject position. Spec-IP is certainly not the O-position in which they are interpreted. Maling concedes this in allowing that they are not really subjects, but she is obliged to claim that they are in subject position by the assumption that linear (R) position is realisational of some syntactically defined (O) position.

Holmberg's analysis makes interesting comparison here. Like Maling, Holmberg analyses SF as a movement to Spec-IP. Holmberg avoids the interpretative problem (of elements being in Spec-IP but not interpreted as subject) by having only phonological features moved—and these are stripped away at Spell-Out. However, this solution is achieved at the cost of making the highly unorthodox assumption that, at some point in the derivation, Spec-IP can play host simultaneously to the S-features of one element and the P-features of another completely different element. (See Burton-Roberts & Poole (ms/in prep) for further discussion.)

Our approach to SF and the 'subject gap' condition also explains Holmberg's observation that SF and *það* are in complementary distribution. Recall the contrast in (12):

- (12)a. *Það* hefur komið fram að....  
 There has come forth that  
 “It has appeared that....”  
 b. *Komið* hefur fram að....  
 c. \**Það* komið hefur fram að...

For Holmberg, the expletive *það* provides a way of satisfying the EPP, consistent with the tradition in which phonetic *það* is the realisation of a syntactic element, an expletive in Spec-IP that will eventually have to be deleted because not interpretable at LF. Our account of *það* is rather different. Since *það* is not interpretable and does not serve LF, it *cannot* figure in the syntactic computation O, by the RH. Phonetic *það* cannot therefore be regarded as the m-representation ( $\mathfrak{R}$ ) of a syntactic expletive in Spec-IP (a subject).

Instead, *það* on our account is a ‘purely’ (i.e. not strictly) representational phonetic form whose sole function is to support  $\mathfrak{R}[V_{\text{fin}}]/2$  by occupying 1st position. Since *það* in 1st position is motivated solely by  $\mathfrak{R}[V_{\text{fin}}]/2$ , it is functionally equivalent to the SF effect. Hence the complementary distribution displayed in (12). Note that our claim that *það* is not (the representation of) a subject, and is independent of the EPP, is consistent with the widely noted but otherwise unexplained fact that, unlike *there* in English, it does not participate in ‘subject-aux inversion’. (See note 34 for more on *það*, however).

Our claim that it is not (any version of) the EPP, but rather  $\mathfrak{R}[V_{\text{fin}}]/2$ , that motivates both the SF effect and the occurrence of *það* receives support from the fact that the SF effect is also in complementary distribution with topicalisation.

- (38) \*Þetta er hundurinn sem minkinn        drepið hefur  
           This is the-dog        that the-mink-ACC killed has

Topicalisation is not of course motivated by  $\mathfrak{R}[V_{\text{fin}}]/2$ . Nevertheless, it has the incidental effect of pre-empting the need for either *það* or the SF effect in maintaining  $\mathfrak{R}[V_{\text{fin}}]/2$ , in ‘subject gap’ cases. Since topicalisation is clearly independent of the EPP, this seems to confirm the SF effect’s independence of the EPP.<sup>29</sup>

The relevant complementary distribution is thus pervasive, cutting four ways: (i) subjects m-represented as in Spec-IP, (ii) topicalisation, (iii) the SF-effect, and (iv) *það*. What unites these is that each individually offers a candidate for 1st R-position, thereby supporting  $\mathfrak{R}[V_{\text{fin}}]/2$ . The (strictly representational) cases (i) and (ii) support  $\mathfrak{R}[V_{\text{fin}}]/2$  incidentally, while the (purely representational) cases (iii) and (iv) do so directly.

8.2. *Maling’s accessibility hierarchy*. Maling’s hierarchy, repeated here,

- (9)        negation > predicate adjective >  $\left\{ \begin{array}{l} \text{past participle} \\ \text{verbal particle} \end{array} \right\}$

was invoked to explain contrasts like that in (39):

- (39)a.    Þetta er nokkuð    sem **ekki** er \_\_ haegt    að gera við  
           This is something that **not** is possible to fix PRT  
       b.    \*Þetta er nokkuð    sem **haegt** er ekki \_\_ að gera við  
           This is something that **possible** is not to fix PRT

<sup>29</sup> Ricardo Bermúdez-Otero has pointed out to us that a similar point is made in respect of German by Legendre (2001).

Previous researchers have suggested that the hierarchy corresponds essentially to phrase-structure superiority. In what follows we suggest that just such a hierarchy falls out naturally in representational terms, given how the  $\mathfrak{R}[V_{\text{fin}}]/2$  Convention interacts with the Default Precedence Convention (29).

(29) is a convention whereby Icelandic harnesses linear order in R in aid of m-representing hierarchical relations in the linguistic object O. But (29) is a *default* convention: blindly conforming to (29) can result in ill-formed representations in which  $\mathfrak{R}[V_{\text{fin}}]$  is in 1st position. Nevertheless, the fact that (29) can be over-ridden is not a license to m-represent anything anywhere. Hierarchical relations in O must still be m-represented to the greatest extent possible. That is, (29) still applies, excepting *only* that it can be over-ridden by  $\mathfrak{R}[V_{\text{fin}}]/2$ , Convention (28). This results in a sort of ‘minimal disturbance’ effect. To m-represent a linguistic object using the conventions of Icelandic, (40a) must be represented as (40b), not (40c).

- (40) a.  $[_{\text{IP}} V_{\text{fin}} A B C]$   
 b.  $\mathfrak{R}[A V_{\text{fin}} B C]$   
 c.  $*\mathfrak{R}[B V_{\text{fin}} A C]$

This minimal disturbance effect reconstructs, without special stipulation, the earlier (‘locality’) observation that the presence of a ‘closer’ SF-able element prevents any SF-able element further away from doing so.<sup>30</sup>

8.3. *Heterogeneity.* Our reconstruction of Maling's subject gap condition has a bearing on the putative syntactic heterogeneity of 'SF-able' elements. Consistent with realisational homomorphism, Maling assumed that it is 'categories' that are moved to Spec-IP—i.e. expressions with their constitutive S-features and P-features. Hence the heterogeneity. Since Holmberg's paper is sub-titled 'How any category can be an expletive', it might be thought that his analysis inherits the problem. It is true that, for

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<sup>30</sup> A persistent problem in the literature on SF is that, as Maling's hierarchy shows, participles and verbal particles do not show the blocking effect. Either is SF-able.

- a. (*Fundurinn sem*) **farið** hafði \_\_ fram í Osló.....  
 (The meeting that) **gone** had on in Oslo  
 b. (*Fundurinn sem*) **fram** hafði farið \_\_ í Osló...  
 (The meeting that) **on** had gone in Oslo

Holmberg (2000: 464) suggests an explanation might lie in Johnson (1991)'s proposal that participle and particle are sisters. If so, participle and particle are in a non-asymmetric c-command, non head-complement relation. Interestingly, the Default Precedence Convention



Holmberg, SF is ostensibly a syntactic movement, applying in the syntax and involving a syntactic landing site. In other respects, though, it is phonological movement: it is not syntactic categories that are moved but their phonological features. It might be argued therefore that Holmberg's analysis succeeds in dispelling the syntactic heterogeneity of SF. Against this, his analysis still calls for reference to the syntactic category whose P-features are moved, since it is only the P-features of main verb *verið*, not auxiliary *verið*, that are SF-able.<sup>31</sup>

The representational account more clearly and unambiguously disposes of a syntactic operation that targets a heterogeneous range of categories. It is explicitly phonological, not syntactic, appealing to conventions regarded as phonological on the grounds that they determine what constitutes a well-formed m-representation in the phonetic medium. While the conventions necessarily and unproblematically have access to syntactic properties (as representata), they in no sense apply to (or operate on) such properties. They apply, quite distinctly, to phonetic phenomena produced by speakers with the intention of m-representing those properties.

Heterogeneity, then, is not the problem. If there is a problem it is, rather, why there should be *any* restriction on the elements that can display the SF effect. SF's interaction with adverbs, for example, is not well understood (see e.g., Holmberg (2000: note 21)).

- (41) Þetta er fugl sem **seð** hafa kannski oft \_\_ margir Íslendingar  
 This is a bird that **seen** have maybe often many Icelanders

Given the 'minimal disturbance' effect articulated above, it is odd that the m-representation of the participle is in first position, rather than that of either of the adverbs. Some adverbs (e.g., *aldrei* 'never', *sennilega* 'possibly') participate in SF, some not.

Recall also that SF effects are never seen with auxiliaries (or rather their m-representations). In (43) *verið* m-represents a main verb and participates in SF, but in (42) it m-represents an auxiliary and does not.

- (42)a. \*(Þetta er versta bók sem) **verið** hefur \_\_ skrifuð  
 (This is the-worst book that) **been** has \_\_ written  
 b. (Þetta er versta bók sem) **skrifuð** hefur verið \_\_  
 (This is the-worst book that) **written** has been \_\_

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(29) does not apply to such relations (in this respect, Icelandic is representationally indeterminate). Possibly, this is why either element can show the SF effect.

<sup>31</sup> Auxiliary *verið* is thus *not* among the categories that can be an expletive, contra Holmberg's subtitle.

- (43)a. (Þeir sem) **verið** hafa\_\_ veikir (þurfa að fara til laeknis)  
 (Those who) **been** have sick (must see a doctor)
- b. ??(Þeir sem) **veikir** hafa verið\_\_ (þurfa að fara til laeknis)  
 (Those who) **sick** have been (must see a doctor)

The significance of this in a realisational framework was that SF had to be regarded as a syntactic phenomenon since it required reference to a syntactic distinction, auxiliary vs lexical verb. However, as a syntactic operation, it violated the Minimal Link Condition (MLC). As far as expressing the descriptive fact that auxiliaries don't participate in the SF effect, there is, as mentioned, no difficulty in allowing that representational phonology is sensitive to the verb/auxiliary distinction. Furthermore, since the representational account involves no movement (let alone syntactic movement), it avoids the need to postulate any violation of the MLC.

The descriptive fact seems related to a generalisation that holds in both Icelandic and English, which we will call 'Constant Inviolable Auxiliary Order' (CIAO):

**CIAO:** the order of a sequence of m-representations of auxiliaries is constant and inviolable, namely:  
 $\mathfrak{R}[\text{modal}] > \mathfrak{R}[\text{perfect } have] > \mathfrak{R}[\text{progressive } be] > \mathfrak{R}[\text{passive } be]$ .

For an explanation of the 'order of auxiliaries' (more strictly, their hierarchical relations) within a realisational framework, see e.g., Huddleston & Pullum (2002:1219). Given the Default Precedence Convention (29), this can be carried over into the RH in accounting for the linear order of their m-representations.

Clearly, the only auxiliary m-representation that could display the SF effect (and thereby appear in 1st position in IP) without disturbing CIAO would be the *first* such representation. But this is impossible if, as we have claimed, the whole rationale of the SF effect is to support  $\mathfrak{R}[V_{\text{fin}}]/2$ . Since the first auxiliary is always tensed (finite), it counts itself as  $[V_{\text{fin}}]$ . Placing its m-representation in 1st position could not therefore support  $\mathfrak{R}[V_{\text{fin}}]/2$ ; in fact it would contradict  $\mathfrak{R}[V_{\text{fin}}]/2$ . Thus (42a) violates CIAO while (43a) does not.<sup>32</sup>

## 9. *Optionality.*

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<sup>32</sup> Notice, however, this account assumes, rather than explains, CIAO. It still remains to explain CIAO—that is, *why* the order of auxiliary m-representations is *inviolable*, not to be overridden by Convention (28),  $\mathfrak{R}[V_{\text{fin}}]/2$ .

We come now to the optionality of the SF effect (in certain cases). Before getting down to cases, it should be noted that, since the SF effect is emphatically not syntactic on our account, the 'engineering' that a syntactic account of the optionality requires does not arise. Neither need we claim that the lexicon contains both clitic and non-clitic variants of Icelandic auxiliaries. Furthermore, we have analysed the SF effect as a (purely) m-representational phenomenon; we see no principled reason why optionality in the (R) domain should be problematic. Given our analysis, the potential problem takes a different form. Consider (44a-b), both of which are well-formed.

- (44)a. Þeir vissu hver [IP \_\_\_**genginn** væri]  
 they knew who **gone** was
- b. Þeir vissu hver [IP \_\_\_væri genginn]  
 they knew who was gone

From our perspective, what these examples crucially show is the link between SF and  $\mathfrak{R}[V_{\text{fin}}]/2$ . As (44b) illustrates, cases in which the SF effect *could* be displayed, but *isn't*, constitute 'violations' of  $\mathfrak{R}[V_{\text{fin}}]/2$ . The question then is not so much why SF is optional, but why  $\mathfrak{R}[V_{\text{fin}}]/2$  is violatable (optional in certain cases). Notice, though, that this is an empirical question rather than a framework-specific *problem* as such.<sup>33</sup>

The traditional claim is that SF is optional (see particularly Poole (1996a)). However, if our informants are to be believed, there appears to be a gradience of acceptability (and variability among speakers) of cases that fail to show the SF effect and thereby depart from  $\mathfrak{R}[V_{\text{fin}}]/2$ . Cases of absolute optionality—as in (44), where (a) and (b) are equally acceptable—are in fact rather circumscribed.

Our claim is that this gradience is related to whether, and if so how, the subject is m-represented. A subject is a chain one of whose members is in Spec-IP. The Default Precedence Convention and the Default Chain Convention together determine that—all things being equal—the canonical position of  $\mathfrak{R}[\text{subject}]$  is to the left of  $\mathfrak{R}[V_{\text{fin}}]$  and to the right of  $\mathfrak{R}[\text{Spec-CP}]$ . This constitutes 1<sup>st</sup> position in  $\mathfrak{R}[\text{IP}]$ . However, those same conventions can determine that *other* R-positions are canonical if the subject has properties in addition to being subject.

<sup>33</sup> The exceptions to  $\mathfrak{R}[V_{\text{fin}}]/2$  which we discuss below are cases of  $\mathfrak{R}[V_{\text{fin}}]/1$ . There is also a class of  $\mathfrak{R}[V_{\text{fin}}]/3$  exceptions, which involve a subject-adverb-verb order. We have nothing of interest to offer regarding those cases. See Thráinsson (1986: 174-6) for discussion. Furthermore, as pointed out to us by Anders Holmberg, Faroese also seems to allow an SF-like operation in embedded clauses even though they characteristically have an  $\mathfrak{R}[V_{\text{fin}}]/3$  subject-adverb-verb order.

In (44), for example, the subject is also a wh-element. As such, it is canonically m-represented as being in Spec-CP rather than in Spec-IP. The order of R-elements in  $\mathfrak{R}[IP]$  in (44a) conforms to  $\mathfrak{R}[V_{fin}]/2$ . However, the order of those R-elements in (44b) does not conform to  $\mathfrak{R}[V_{fin}]/2$ . We claim that this violation of  $\mathfrak{R}[V_{fin}]/2$  in (44b) is tolerated because the subject chain in (44b) is m-represented by means of an m-representation of its head and in the leftmost possible position, consistent with conventions (29) and (30). Thus, the full acceptability of (44b)—a subject extraction case—is a function of the fact that the subject chain *is* m-represented and in a maximally canonical fashion.<sup>34</sup>

In other cases there is significant idiolectal variation, noted by Maling (1980/90: note 10) and Rögnvaldsson & Thráinsson (1990:31). Examples of  $\mathfrak{R}[V_{fin}]/1$  with a linearly 'delayed'  $\mathfrak{R}[\text{subject}]$  are generally acceptable, but less so than (44b) above.

- (45) %? Jón vissi ekki hvernig [<sub>IP</sub> \_\_ hefðu komist **svona margir** í mark.]  
 Jon knew not how had come **so many** in goal  
 “Jon did not know how so many people reached the goal.”

Again, a subject is a chain with head in Spec-IP. By Convention (30), a canonical m-representation of this subject-chain would be by means of an m-representation of its head, and this (by Convention (29)) would canonically appear leftmost in  $\mathfrak{R}[IP]$ . The word order in (45) (with the delayed  $\mathfrak{R}(\text{subject})$ ) is the result of m-representing the subject-chain by a different chain member. This is possible when the subject is indefinite, and this is why we have presented the Convention for M-Representation of Chains (30) as a *default* convention. The fact that (45) is slightly less acceptable than (44b), we suggest, is because, although m-represented, the subject is m-represented less canonically. (45) constitutes a departure from the default conventions, a 'deliberate' choice on the speaker's part, made for a discourse reason. As expected, with an expletive—and  $\mathfrak{R}[V_{fin}]$  in 2nd position—(45) is fully acceptable, as in (46):<sup>35</sup>

<sup>34</sup> We have considered the possibility that the optionality in (44) was due to the Spec-CP/Spec-IP chain being 'string-vacuous', having no effect on the m-representation. However, non-string-vacuous subject extractions also display SF with equal optionality:

- (i) Hver heldur þú að \_ hafi stolið hjólinu? (Who think you that has stolen the-bike).  
 (ii) Hver heldur þú að \_ stolið hafi hjólinu? (Who think you that stolen has the-bike).

<sup>35</sup> Insertion of *það* is not a possible strategy for observing  $\mathfrak{R}[V_{fin}]/2$  in subject-extraction cases:

- (i) \**Þeir vissu hver það væri genginn* (they knew who there was gone)

This might suggest that *það* is a subject expletive, contrary to what we claimed earlier.

However Rögnvaldsson & Thráinsson (1990: 33-34) note that even extraction of non-subjects from *það*-clauses is generally degraded, not just in subject-extraction cases. They suggest this is

(46) Jón vissi ekki hvernig það hefðu komist svona margir í mark.

M-representations that seem subject to the greatest amount of variation are ones in which  $\mathfrak{R}[V_{\text{fin}}]/1$  arises from an arbitrary *pro* subject. In (37) (*\*Ef er gengið eftir Laugveginum...*) above,  $\mathfrak{R}[V_{\text{fin}}]/1$  is universally rejected. But consider cases like (47)

(47) %?? Það var hætt að rigna þegar \_\_\_ var komið þangað.  
 It was stopped to rain when \_\_\_ was arrived thither  
 'It had stopped raining when we/they/one arrived there.'

While these have been cited in the literature as well-formed, several of our informants find them marginal. For these speakers, the difference may be attributable to the fact that, in contrast to (45) or (44b), there is in (47) no m-representation of the subject whatsoever.

In dealing with SF optionality,  $\mathfrak{R}[V_{\text{fin}}]/2$  violability and associated variation and gradience of acceptability, we have entered what is acknowledged as a 'messy' area of Icelandic. Such 'mess' is manifested by all 'languages'. This, we believe, constitutes a fundamental problem for a framework in which phonetic forms are regarded as 'realisations' of a computation which is supposed to serve LF and to be governed by innate, invariant, sub-personal, syntactic principle. In giving a representational account of the relation of phonetic form (in Icelandic) to that internal computation, we have identified a distinct external domain (R) in which convention, functionality, and all the complexities of behaviour hold sway, and in which relevant (representational) knowledge is acquired on the basis of personal idiosyncratic experience of a diversity of socio-cultural communities and their representational practices. It is only to be expected that R should be subject to 'mess'. Viewed as *representational*, none of this undermines the (invariant, natural, innate, formal, radical internal) character that Chomsky has attributed to the language faculty, identified here as the representatum, L.

## 10. Conclusion

Within the traditional, realisational, view of the syntax-phonology relation, any property systematically manifested in Phonetic Form should either [a] be the realisation of some

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because *það* signals that the clause is themeless, and extracted elements are usually thematic. (i) might therefore illustrate the strongest possible conflict, since a subject is the most canonically

syntactic property or operation or, failing that, [b] be describable and explained in narrow, strictly phonological terms. Phenomena like Stylistic Fronting in Icelandic pose a fundamental problem for that view of syntax-phonology. It is only with difficulty, involving considerable 'engineering', that SF can be thought of as syntactic, and the claim that SF is phonological, strictly understood in the traditional sense, appears empirically untenable. Exactly the same seems true of the 'verb-second' effect.

We have suggested that the dilemma can be resolved if the distinction/relation between phonology and syntax is recast in representational terms: viewing phonological systems as systems of conventions governing the (linear) m-representation in the phonetic medium of a distinct (hierarchical) syntactic computation. In these terms, 'verb second' itself is treated directly and declaratively, as a (purely) representational phenomenon, thereby resolving the theoretical unease that surrounds it in the realisation framework. The role of the SF effect, the m-representation of Spec-IP, topicalisation and the expletive *það* in sustaining 'verb second' has been captured in a natural and plausible manner, and with a simplicity that seems to match that of the phenomena to be accounted for.

The representational framework's distinction between L (O, *what-is-represented*—a syntactic system) and  $R_{(L)}$  (*how-L-is-represented* by speakers in the phonetic medium) is conceptually clear and theoretically substantive. It obviates the core-periphery contrast, whose theoretical status and implications have always been obscure. More generally, we suggest, it offers a possible way of resolving the formal-functional debate. The language faculty itself—here identified as the *representatum* L—is a radically internal, sub-personal, domain of purely formal, invariant syntactic principle. As the *representatum*, it is to be radically distinguished from the domain of the *representans* ( $R_{(L)}$ ), an external domain which it is reasonable to think of as the locus of the functional, the communicative, the behavioural and of socio-cultural variation.

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