

An Optimality Theoretic Account of
Optionality and Variation in Stylistic Fronting

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ABSTRACT

This paper accounts for a phenomenon known as Stylistic Fronting (Maling 1980/1990) within an Optimality-Theoretic (OT) framework (Prince & Smolensky 1993/2004). The primary aim of this paper is to extend the notion of Floating Constraints (FCs) (previously proposed in Reynolds 1994 and Nagy & Reynolds 1997) to the domain of OT syntax as conceived by Grimshaw (1997) and others. Floating Constraints has been used to account for intra-speaker language variation without positing several grammars in one speaker by allowing some constraints within a grammar to float within a fixed domain among other “anchored” constraints. This approach has the advantage of accounting not only accounting for variants but also for the frequency of their appearance. Crucially, a Floating Constraint approach can only work in syntax when the variants are completely optional ways of realizing the same proposition and argument structure. This seems to be the case for Icelandic Stylistic Fronting (see Burton-Roberts & Poole 2006, Holmberg 2000, and Poole 1997), and this thesis argues that an Optimality-Theoretic account, using Floating Constraints, can parsimoniously account for

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the basic and more problematic properties of Stylistic Fronting along with the frequency with which the relevant constructions appear.

OVERVIEW OF STYLISTIC FRONTING

Icelandic Stylistic Fronting (SF), first observed by Maling (1980/1990), is a phenomenon whereby a post-verbal constituent such as a negative adverb, perfect or passive participle, verbal particle, or a predicative adjective moves to the pre-verbal (canonically) subject position in clauses with a subject gap. Any clauses with such a gap can exhibit SF, including relative clauses, impersonal main clauses, and certain kinds of complement clauses. Some researchers (Maling 1980/1990, Maling 1981, Rögnvaldsson & Thráinsson 1990, and Burton-Roberts & Poole 2006, among others) have associated the phenomenon with the general property of Icelandic verb-second (V2), while others (such as Holmberg 2000) have associated it more specifically with some form of the Extended Projection Principle (EPP), the requirement that the specifier of the (highest) inflection phrase (IP, TP, AgrSP, etc.) be overtly filled.

Consider first the impersonal sentences in (1):²

Impersonal Main Clauses

(From Jónsson 1991):

1. **a. Expletive Insertion**

Það hefur verið tekin erfið ákvörðun.
Exp. has been taken difficult decision
'A difficult decision has been made.'

b. Stylistic Fronting

Tekin hefur verið erfið ákvörðun.
Taken has been difficult decision

² All examples will be credited to the source where I found them. However, I sometimes modify them slightly to highlight certain aspects of grammaticality or ungrammaticality.

c. Passivization

Erfið ákvörðun hefur verið tekin.
Difficult decision has been taken.

d. *Verb First

*Hefur verið tekin erfið ákvörðun.
Has been taken difficult decision

The above sentences show that an Icelandic speaker wishing to generate a sentence with the arguments <*take(difficult decision) have*> has the options in (1a-c) available to him, but not (1d). The sentence in (1a) chooses the pure expletive option, the one in (1b) is Stylistic Fronting of the participle *tekin* ‘taken,’ and (1c) is passivization. In (1d), however, the pre-verbal position is left empty and is ungrammatical. The optionality here is key, and we can think of (1a-c) as three variants of the same variable.

Stylistic Fronting is very common in subject relative clauses, where the subject is extracted to a position outside its clause. Consider the following relatives:

Subject Relative Clauses

(From *Hrafnbjargarson 2004*):

2.
 - a. Hann syndi mér flöskurnar sem hafði verið smyglað inn
He showed me the-bottles which had been smuggled in
 - b. Hann syndi mér flöskurnar sem inn hafði verið smyglað
He showed me the-bottles which in had been smuggled.
 - c. Hann syndi mér flöskurnar sem smyglað hafði verið inn
He showed me the-bottles which smuggled had been in
 - d. *Hann syndi mér flöskurnar sem verið hafði smyglað inn.
He showed me the-bottles which been had smuggled in
 - e. *Hann syndi mér flöskurnar sem það hafði verið smyglað inn
He showed me the-bottles which (exp) had been smuggled in

The example in (2a) is a relative clause where SF has not taken place. *Flöskurnar* ‘the bottles’ has been extracted out of its clause and there is nothing in the space between *sem*

‘which’ and *hafði* ‘had.’ In (2b) and (2c), respectively, the verbal particle *inn* ‘in’ and the participle *smyglað* ‘smuggled’ have been Stylistically Fronted to the position in front of the finite verb. Note, though, that (2d) is ungrammatical, illustrating a general property of SF: it cannot affect auxiliaries. (2e) illustrates that expletives cannot fill the preverbal position in subject relative clauses. The variants for (2) are thus (a) through (c).

SF can also occur in complement clauses where the subject has been extracted.

Consider (3):

Complement Clauses

(From Jónsson 1991):

3. a. Hver heldur þú að hafi stolið hjólinu
Who think you that has stolen the-bike

- b. Hver heldur þú að stolið hafi hjólinu
Who think you that stolen has the-bike
‘Who do you think stole the bike?’

In (3a) and (3b) the subject wh-word has been extracted from the complement clause, leaving a subject gap. In (3a), this subject gap is left open, whereas in (3b) it is filled with the Stylistically Fronted participle *stolið* ‘stolen.’

Another interesting property of SF is the wide number of categories it can affect. Most generally, it can affect a negative (or sentential) adverb, a predicative adjective, a verbal particle or participle. We have seen the latter two in all of the examples above. The examples in (2), in particular, demonstrate the alternation between particles and participles. As noted in Maling (1980/1990) and in accounts of SF since, there is also an accessibility hierarchy concerning what constituent may be fronted when SF takes place, given that sometimes more than one Stylistically Frontable constituent is present in a clause. This hierarchy describes the fact that a Stylistically Frontable constituent may not

be fronted if a higher element is present in the same clause. The accessibility hierarchy is shown in (4).

Accessibility Hierarchy

(From Maling 1980/1990):

4. Neg. Adverb > Predicative Adjective > {Particle, Participle}

Note that *Neg. Adverb* should be thought of as encompassing sentential adverbs in general. The hierarchy in (4) illustrates that if a sentential adverb is present, it is the only constituent which can be stylistically fronted. This is shown by the permutations in (5):

- 5.
- a. Hann syndi mér flöskurnar sem hafði ekki verið smyglað inn.
He showed me the-bottles which had not been smuggled in
 - b. Hann syndi mér flöskurnar sem ekki hafði verið smyglað inn.
He showed me the-bottles which not had been smuggled in
 - c. *Hann syndi mér flöskurnar sem smyglað hafði ekki verið inn
He showed me the-bottles which smuggled had not been in
 - d. *Hann syndi mér flöskurnar sem inn hafði ekki verið smyglað.
He showed me the-bottles which in had not been smuggled

In (5c) and (5d), a sentential adverb *ekki* ‘not’ is in the clause, and thus the participle and particle cannot be fronted; only *ekki* ‘not’ can be fronted. Note that (5c) and (5d) attempt to front the very same constituents which were grammatically fronted in (2a) and (2b).

This is because (5c) and (5d) violate the accessibility hierarchy. The example in (6) shows an adjective undergoing stylistic fronting.

(From Burton-Roberts and Poole 2006):

6. Þetta er eini maðurinn sem hreykinn er af Kalla
This is only the-man that proud is of Kalli.

In addition to this, it was later observed (first in Jónsson 1991) that in some situations a DP or PP can undergo SF. What circumstances allow a DP or PP to undergo

SF is unclear, but Sigurðsson (1997) notes that a DP is much easier to front if it denotes an abstract entity. Consider (7) and (8) below:

Stylistic Fronting of DPs and PPs

(From Sigurðsson 1997):

7. a. Þeir sem verða að taka þessa erfiðu ákvörðun
Those that have to take this difficult decision
- b. Þeir sem þessa erfiðu ákvörðun verða að taka
Those that this difficult decision have to take

(From Holmberg 2000):

8. a. Þeir sem hafa verið í Ósló segja að...
Those that have been in Oslo say that...
- b. Þeir sem í Ósló hafa verið segja að...
Those that in Oslo have been say that...

In (7b), the DP *þessa erfiðu ákvörðun* ‘this difficult decision’ has been stylistically fronted. In (8b) the PP *í Ósló* ‘in Oslo’ has been Stylistically Fronted. I do not treat DPs and PPs specially in this paper, but later suggest how they might emerge from my analysis.

In this paper I argue that Stylistic Fronting is the result of competition between competing constraints. The pre-verbal position wants to be filled. I follow Holmberg (2000) and others in analyzing this position as Spec,IP. At the same time, movement is dispreferred if it can be avoided. Economy considerations make optional movement such as SF hard to account for. Without going into detail just yet, it is my hypothesis that SF takes place when filling Spec,IP is more important than economy constraints. More generally, I argue for an account whereby (1) optionality is a product of the grammar, (2) competing constraints evaluate candidates and the one which best satisfies the highest ranking constraints is grammatical (specifically, an Optimality Theoretic account (Prince & Smolensky 1993/2004)), and (3) the ranking of those constraints is not completely

fixed. This last idea was originally conceived of in Reynolds (1994) and Nagy & Reynolds (1997). I discuss the details of this in what follows, and argue that the Floating Constraints hypothesis has predictive power and can account not only for the variants themselves but also for the frequency of their occurrence.

REGISTER VARIATION

In a project investigating register variation in Icelandic, I calculated the rate of occurrence of SF, considering SF and no-SF to be two variants of the same argument structure (see Wood, forthcoming). This analysis was conducted as follows. I collected two corpora, one of online newspapers (9,740 words) and another of online blogs (9,444 words). I found all examples where SF was possible, and coded them for either exhibiting or not exhibiting the phenomenon. Since complement clauses where SF was possible were rare, I counted only subject relative clauses and impersonal main clauses. In impersonal main clauses, as discussed above, an expletive is generated when nothing else fills the pre-verbal position. Thus, expletives and SF are in complementary distribution.³ The results of this count are presented in Tables 1 and 2 below.

Table 1 Stylistic Fronting in Impersonal Main Clauses

	BLOGS	NEWSPAPERS	TOTAL
EXPLETIVE INSERTION	45 (=63.4 %)	8 (=7.0 %)	53
STYLISTIC FRONTING	26 (=36.6%)	106 (=93.0%)	132
TOTAL	71	114	185

This distribution is significant (Chi-squared=67.99 p < .001 d.f.=1)

³ As we will discuss in depth below, Holmberg (2000) argued that SF is really just a special kind of expletive, that the phonological features of the fronted word appear in Spec,IP for this purpose. For the most part, though, I refer to the pure expletive *það* using the term ‘expletive,’ although according to Holmberg’s perspective, both Stylistic Fronting clauses and pure expletive clauses are kinds of expletive clauses.

Table 2 Stylistic Fronting in Subject Relative Clauses

	BLOGS	NEWSPAPERS	TOTAL
NO STYLISTIC FRONTING	17 (=65.4%)	17 (=30.4%)	34
STYLISTIC FRONTING	9 (=34.6%)	39 (=69.6%)	48
TOTAL	26	56	82

This distribution is significant (Chi-squared=8.98 p < .01 d.f.=1)

It is clear these structures are distributed meaningfully between the two registers. Blogs choose Stylistic Fronting in a little more than 1/3 of the cases where it is possible in both subject relatives (34.6%) and impersonal main clauses (36.6%). Newspapers almost never allow expletives (7%) and exploit SF in most subject relatives (69.6%).

Although the optionality of SF has generally been accepted in the literature (Maling 1980/1990, Jónsson 1991, Poole 1997, Sigurðsson 1997, Holmberg 2000, Burton-Roberts & Poole 2006), the recent account of Hrafnbjargarson (2004) claims SF is driven by a focus feature and is thus not optional. Sigurðsson (1997) notes that focus is easily achieved with SF, but says (p.c.) along with Jóhannes Gísli Jónsson (p.c.) that focus is not a requirement of SF, and they disagree with Hrafnbjargarson's analysis. Given a list of eight sentences exhibiting Stylistic Fronting, all from my own corpus, neither Jónsson nor Sigurðsson said that focus would be natural on the fronted constituent in them. Although Hrafnbjargarson's account brings up many interesting points (some of which are discussed in the analysis below), I adopt the more common view that Stylistic Fronting is a case of optional movement.

OPTIMALITY THEORY AND SYNTAX

Optimality Theory is a theory of constraint interaction. It is a system where universal constraints govern language, but, crucially, those constraints are violable.

Constraints are ranked in language-specific hierarchies; languages differ from one another only in the ranking of those universal constraints. A candidate set is generated by GEN, and each candidate is evaluated by EVAL. The grammatical output is the candidate that best satisfies the highest-ranking constraints. Constraints must be simple and general, and, since they are violable, are not necessarily surface true (Prince & Smolensky 1993/2004, Grimshaw 1997).

OT has been applied to many aspects of syntax. Grimshaw (1997) applies OT to various English syntactic structures, such as *do*-support, *wh*-questions, and *wh*-asymmetry. She proposed a number of simple, universal constraints, and a ranking which accounted for these and other phenomena. A fruitful line of inquiry in OT syntax has since been pursued, such as in Samek-Lodovici (2005), Hrafnbjargarson (2001), Vogel (2006) and the collected volume of papers in Legendre et al. (2001) among many others. Grimshaw later revised and expanded upon some aspects of her earlier analyses, deriving economy of structure and movement as a theorem of OT (Grimshaw 2002, 2006), by showing the conflicts between obligatory element constraints (which require that structures have heads and specifiers) and alignment constraints (where all positions compete for the left-edge of the projection). Most of the constraints I exploit in the present analysis were adapted from these works.

OT Syntax as done in the above referenced works and this paper as well considers the input to be the lexical-conceptual structure of the proposition, the verb and its arguments. Candidates are generated following basic X-bar rules, and every possible permutation of them is evaluated by the set of universal constraints. The candidate that best satisfies the highest ranking constraints is optimal, and is the only grammatical one.

The constraints considered in this paper have proved useful in the analysis of other structures/languages. The most important constraints in this paper are as follows (their abbreviations are in parentheses after the descriptions):⁴

Obligatory Specifiers (Grimshaw 2002): Projections have specifiers (OBSPEC).

Unique (Grimshaw 2006): There is only one item in the output for each item in the input (UNIQUE).

Full Interpretation (Grimshaw 1997): Lexical-conceptual structure is parsed (FULLINT).

Non-Initial Finiteness (Legendre 2001): Finiteness is not realized in intonational phrase-initial position (NONINITIAL(F); NI(F)).

OBSPEC is violated whenever a projection has either no specifier or an empty specifier. Traces/copies do not violate OBSPEC, but a specifier filled with only abstract features does. UNIQUE is violated by chains: each trace is an extra copy of some item in the input.⁵ Therefore, one trace plus one pronounced copy of a word results in two outputs for one input. One violation is thus incurred for each trace/copy. FULLINT is a ban on expletives. In Grimshaw (1997) FULLINT is violated by *do* as a helping verb and by the expletive *it*. In Icelandic, the expletive is *það*. Lastly NONINITIAL(F) is a prosodic-syntactic constraint against finiteness being realized in the initial position of an intonation phrase. Legendre (2001) used this constraint (among others) to describe finiteness-second (F2) effects in Breton and Macedonian. She used the term F2 as a blanket term to refer to all finiteness in the second position, whether realized on a verb or not. In Icelandic, this will refer to the verb, which is where finiteness is always realized.

⁴ Other constraints will be defined/discussed as appropriate.

⁵ For transparency, I will notate all traces as deleted copies, but the present analysis requires no particular commitment to the copy theory of movement.

FLOATING CONSTRAINTS

Purely optional movement is difficult to account for in derivational accounts of syntax such as the Minimalist Program (Chomsky 1995). This is because economy considerations force the conclusion that movement should not occur unless it is forced. If a movement is not forced, it should not occur, and should therefore not be optional. Some types of optionality can be accounted for under a local conception of economy. For example, Collins (1997) argued in his monograph that local economy sometimes allows more than one way of satisfying some requirement at a particular stage of a derivation, even if that choice eventually leads to a more complex derivation. In this way, he accounts for phenomena in English such as Locative Inversion and Quotative Inversion.

But Stylistic Fronting is more difficult, because, at least ostensibly, it is not a phenomenon whereby one or another movement satisfies some syntactic requirement. Rather, it is a phenomenon whereby a movement either does or does not take place; since it need not take place, it should not. The optionality problem has been dealt with in several ways. As mentioned Hrafnbjargarson (2004) rejected the optionality completely. Holmberg (2000) relegated the optionality to numeration, where, briefly, either an empty relative operator or a DP was chosen for merge in the relative clause; depending on which was chosen, SF would or would not take place, and the result was optionality. Dissatisfaction with these proposals led Burton-Roberts & Poole (2006) to abandon realizational syntax completely, choosing Representational Hypothesis (Burton-Roberts 2000, Carr 2000) to account for the phenomenon.⁶

⁶ Still, Burton-Roberts & Poole (2006:598) admitted: “In dealing with SF optionality, $\mathfrak{R}[V_{fin}]/2$ violability and associated variation and gradience of acceptability, we have entered what is acknowledged as a ‘messy’ area of Icelandic.” It seems that this conclusion is, to some extent, inevitable no matter what SF analysis is considered.

Optionality has proved difficult in Optimality Theory as well, but for different reasons. The main problem of optionality in OT is that rigid constraint hierarchies tend to choose one and only one optimal form. Situations where two or more candidates fare equally well on all constraints are the most attractive explanations for optionality, since such situations would preclude the need for additional machinery or stipulations. Unfortunately, such situations tend to be difficult to maintain, since any constraint, no matter how low ranking, has the potential to break a tie. Another solution is a constraint tie, a solution proposed in Legendre (2001) when two constraints conflict in such a way that there is no way to resolve the conflict by ranking. Such a solution requires, though, that independently-needed constraints really do conflict with one another in an unresolvable, unrankable way.

Still another approach, Floating Constraints (FCs), was developed in Reynolds (1994) and Nagy & Reynolds (1997). The idea is this. Optimality Theory is a principled way of formalizing the insight that constraints can be simultaneously active and violable. In order to put this into practice, constraint hierarchies are needed. But there is no a priori reason why strict constraint domination could not be modified when intra-speaker variation seems to be part of a native speaker's general competence. That is, there is no reason why constraint domination must be completely rigid and linear. If a language learner has evidence that a constraint variably occupies two different positions in a hierarchy, then that learner could acquire a grammar wherein the relevant constraint floats in a particular domain, as illustrated in (9) below (Reynolds 1994:116):

9.

$$\text{CONW} \gg \left\{ \begin{array}{c} \dots\dots\dots \text{CONX} \dots\dots\dots \\ \text{CONY}_1 \gg \text{CONY}_2 \gg \dots \gg \text{CONY}_n \end{array} \right\} \gg \text{CONZ}$$

In the above hierarchy, CONX is a floating constraint. It is always dominated by CONW and always dominates CONZ. But it varies with respect to its position between CONY₁ and CONY_n, sometimes dominating CONY₁ and sometimes dominated by CONY_n. Further, by hypothesis, CONX spends an equal amount of time in each position within its domain. It is this aspect of the theory that has been used to derive the frequencies of various variable forms in, for example, Faetar, a Francoprovençal dialect spoken by about 600 people in two villages in Apulia (Faeto and Celle di San Vito), in southern Italy (Nagy & Reynolds 1997).

The Floating Constraints hypothesis can be used to account for stable synchronic variation or a change in progress. In the case of synchronic variation, a representation along the lines of (9) above is adequate; the floating constraint configuration is part of the grammar of its speakers and the domain determines the frequencies of the various variants. When there is a change in progress, the above representation is simply modified with an arrow showing the direction of the change. This captures the generalization that synchronic variation is sometimes due to a change in progress. A grammar can either maintain a floating configuration, or the floating constraint can drift one way or the other until it rests at a new ranking.

Floating Constraints is the solution I propose to the optionality problem of Stylistic Fronting in modern Icelandic. My general hypothesis is that Stylistic Fronting is a reflex of the grammar's attempt to simultaneously fill the specifier of IP, preserve

prosodic well-formedness, and avoid unnecessary movement. The floating constraint is UNIQUE, and its various positions result in constraint conflicts which derive SF optionality in relative clauses and alternation with the pure expletive *það* in main clauses. This model predicts the frequency of each variant quite accurately. I then present an OT analysis of basic Icelandic word order to put the SF analysis in the overall context of Icelandic syntax.

AN OT ANALYSIS OF STYLISTIC FRONTING

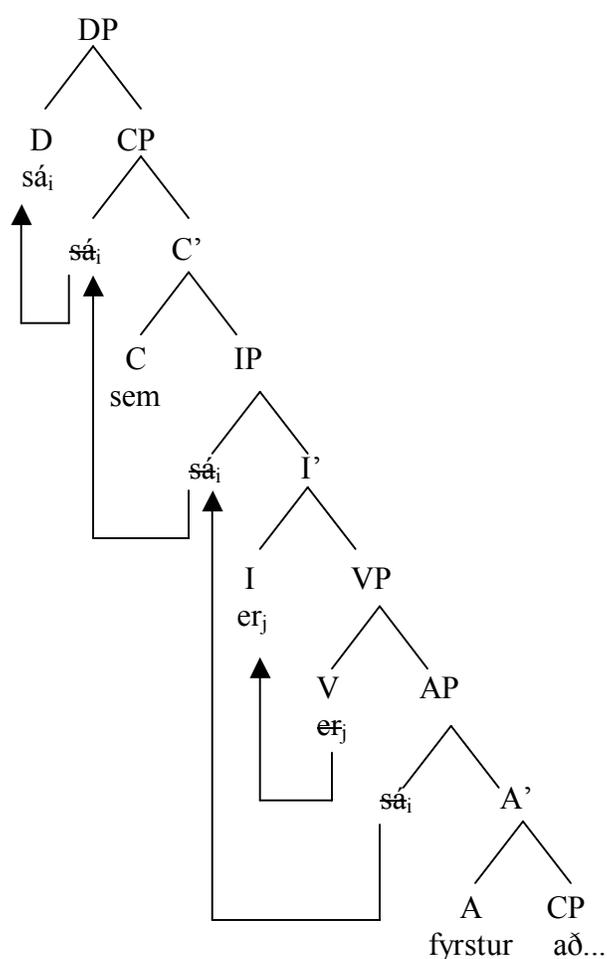
In this analysis, I will assume the basic syntactic operations of SF explicated in Holmberg (2000). I differ in that I do not think SF is optional due to numeration. His account claims that the basic function of SF is to satisfy the EPP. Specifically, he splits the EPP into two parts, a D-feature (nominal feature) and a P-feature (phonetic feature). Often, both features will be checked at the same time by the raising of a DP to Spec,IP. But when such a DP is not available, I can either merge an expletive or extract the P-features of the nearest constituent (excepting auxiliaries, which I cannot see due to their lack of a formal feature matrix). SF is optional in relative clauses because there are two ways of forming relative clauses.⁷ First, the speaker can select the DP-trace option. This is where the (eventual) head of the relative clause is merged in its theta-position and raises cyclically through Spec,IP, Spec,CP, and then to the head of the relative clause. When it passes through Spec,IP, it checks P- and D-features of I (satisfying the EPP) and

⁷ Holmberg (2000) does not make reference to optionality in main clauses with *það*-alternation. This is because *það*-alternation can easily be relegated to numeration, and since he does this in a more abstract way in relative clauses, there is no reason not to do this in main clauses as well. As we will see, an OT account need not refer to numeration for main or relative clauses.

no Stylistic Fronting takes place. This type of derivation is represented below in (11) for the sentence in (10a).⁸

10. a. Sá sem er fyrstur að...
 He who is first to...
 ‘The one who is first to...’
- b. Sá sem fyrstur er að...
 He who first is to...

11. No-SF (10a)

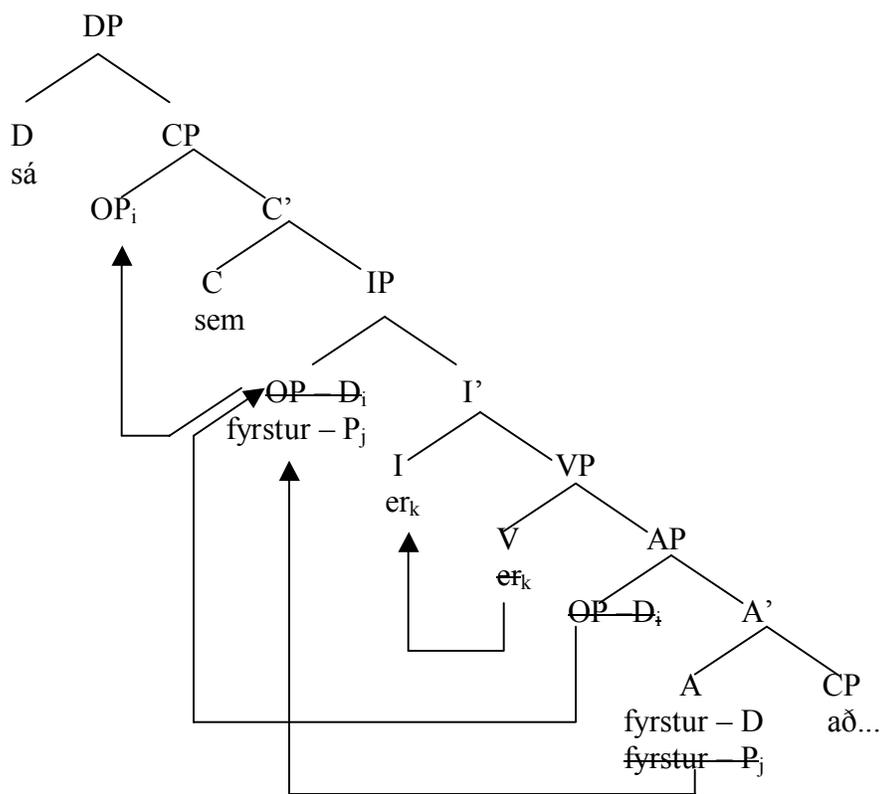


⁸ I abstract away from whether or not the VP needs a specifier. The minimalist theory from which I adapted these representations would not necessarily require it, but the OT account I provide would seem to. For the purposes of this analysis, the matter is irrelevant, because either (a) there is a specifier, and every candidate will get an extra UNIQUE violation equally, since the DP/Operator would need to pass through it on its way up, or (b) there is no specifier, and every candidate equally incurs one more OBSPEC violation than is indicated in the tableaux. Either way, the presence or absence of a VP specifier does not affect the outcome of the competition.

In the above representation, I represent $V \rightarrow I$ movement, but I will not discuss it since $V \rightarrow I$ in Icelandic was thoroughly treated in an OT framework in Vikner (2001). Notice in the above representation that *sá* 'he,' one item in the input, corresponds to four items in the output, including the relative head. This incurs three violations of UNIQUE, since only the pronounced copy has the necessary one-to-one relationship. (Also, $V \rightarrow I$ movement results in one more violation of UNIQUE.) Although this seems costly, consider the alternative.

The other way Holmberg (2000) claimed relatives could be derived was by merging a null-operator in the theta-position of the relative clause. This operator, OP, raises cyclically just like the DP in the above derivation, only rests at Spec,CP. When it passes through Spec,IP, it checks the D-feature of I, but, lacking a P-feature matrix entirely, leaves the P-feature unchecked. I then attracts the nearest P-feature matrix it sees, leaving the formal feature matrix behind. This P-feature matrix checks the P-feature of I, in Spec,IP, and the result is Stylistic Fronting. Such a derivation is represented in (12) below.

12. Stylistic Fronting – 10b



Notice now that there is even more movement. I do not consider OP to be in the input.

This incurs a DEP-IO violation, DEP-IO being violated whenever something in the output was not present in the input. But DEP-IO is low enough ranked to (sometimes) allow the above structure, if it satisfies other constraints. Still, OP violates UNIQUE twice since there are three copies of it. In addition, *fyrstur* ‘first,’ one item in the input, also corresponds to three items in the output: the P-copy in Spec,IP, the deleted P-copy in Head,AP, and the D-copy in Head,AP. We thus have two more violations of UNIQUE, and one final one, as above, due to $V \rightarrow I$ movement. The total count is now five violations of UNIQUE. All other things being equal, UNIQUE prefers no-SF to SF.

Now consider main clauses, which are much more straightforward. In a sentence such as (13) below, the input does not give many options for filling Spec,IP.

13. a. Það er sagt að...
Exp. is said that...
- b. Sagt er að...
Said is that...
- c. *Er sagt að...
is said that...
'It is said that...'

As (13) illustrates, in an impersonal passive, either an expletive or a Stylistically Fronted element can fill Spec,IP, but the specifier may not (usually) be left empty.⁹ The derivation for main clauses would be as follows. When there is no Stylistic Fronting, Spec,IP is filled with an expletive. This violates FULLINT, but satisfies UNIQUE, since there is no movement and there is a one-to-one input-output correspondence for all elements. On the other hand, Stylistic Fronting violates UNIQUE twice (since it corresponds to three items: the pronounced output, the deleted P-feature *sagt* and the undeleted formal matrix of *sagt*). But, it satisfies FULLINT because there are no expletives.

We could account for main clause alternation quite easily if we accepted that UNIQUE and FULLINT shifted positions with respect to each other. Interestingly, an alternating hierarchical position for STAY has been suggested in Samek-Lodovici (2005:FN18) as possibly being responsible for English heavy NP shift.¹⁰ But what about relative clauses? Why, if OBSPEC is satisfied with either derivation, would we ever end up with Stylistic Fronting, which violates UNIQUE more than the alternative?

⁹ Exceptions are known as Narrative Inversion (Sigurðsson 1990).

¹⁰ STAY was used in many earlier OT syntax analyses (e.g. Grimshaw 1997) for economy purposes, but was later found to be redundant in light of some alignment constraints (Grimshaw 2002) and the copying constraint used here, UNIQUE (Grimshaw 2006).

If we look to the literature, it has long been suggested that SF should be related to a general property of Icelandic verb-second (see, for example, Maling 1980/1990, Rögnvaldsson & Thráinsson 1990, and Burton-Roberts & Poole 2006). In OT terms, this translates into Legendre's (2001) more general NONINITIAL(FINITENESS), (NI(F)), a prosodic constraint evaluated at PF. The constraint requires that finiteness not be realized in the initial position of an intonational phrase. Since prosodic constraints have been independently shown to interact directly with syntactic constraints (such as in Samek-Lodovici 2005 and Vogel 2006), and Icelandic's V2 properties are well-known, it seems that a prosodic constraint such as NI(F) would have a role in picking the best-formed Icelandic sentence. Thus, Stylistic Fronting does not only conspire to ensure that Spec,IP is overtly filled, but it also helps ensure prosodic well-formedness. In relative clauses, since *sem* 'that, which' is a function word, and thus not part of an intonational phrase (see Vogel 2006, Selkirk 1996), it cannot prevent the finite verb from being realized first in its intonation phrase, in violation of NI(F). From the perspective of NI(F), Stylistic Fronting, with its additional UNIQUE violations, is preferable. An expletive cannot satisfy NI(F) in relative clauses because it would break up the chain between the head and the tail of the relative clause, resulting in a violation of an (apparently) undominated constraint I call *True Chain* (TRCHN). (This is similar to the solution for the same question in Holmberg 2000, where the existence of formal features on the expletive would prevent OP or the DP from passing through Spec,IP.)¹¹ In main clauses, NI(F) tends to be satisfied

¹¹ Note that TRCHN is not violated by Stylistic Fronting. Since SF manipulates only P-features and OP consists of only formal features, they can co-occur so long as they head complementary chains. Expletives have at least one formal feature (possibly [PERSON]) and thus can not interfere with a chain of any kind. This entire line of thinking is taken directly from Holmberg (2000), modified only that I take his intuition that the formal feature(s) of the expletive is the cause of its ungrammaticality in (for example) relative clauses to be formalized as an undominated constraint in OT, TRCHN.

automatically by any competitors also satisfying OBSPEC. A shifting relationship between UNIQUE and NI(F) will derive both variants of the relative clause.

But there is never a situation where NI(F) or FULLINT conflict directly. Consider why. Whenever OBSPEC eliminates candidates without specifiers in main clauses, NI(F) evaluates only candidates which already have the verb in a non-initial position, while it is FULLINT which has a preference, preferring SF to expletives. Likewise, in relative clauses, expletives have been eliminated by TRCHN long before such candidates reach FULLINT. Out of all the remaining candidates, FULLINT has no preference, but NI(F) prefers Stylistic Fronting. Thus, we cannot know how they are ranked with respect to each other. We can only know that they each change their relationship with respect to UNIQUE, deriving the various types of Stylistically- and non-Stylistically-Fronted clauses. If there is indeed no way to tell which way they are ranked, it is also reasonable to assume that a speaker acquiring the language will not know which way they are ranked, and the result is an ambiguously Floating Constraint. The floating is ambiguous because (a) we have no evidence of how they are ranked hierarchically with respect to each other and (b) there is no way to know which of the two constraints is the floating one. In practice, (b) does not even matter, of course.

Before I summarize the constraint relationships we have discussed so far, I will discuss one more possibility. I have already suggested that there are essentially two types of floating constraints, which I will call Evidential Floating Constraints (EFCs) and Ambiguously Floating Constraints (AFCs). EFCs float visibly within the grammar, and are acquired based on evidence. That is, when a speaker is acquiring a grammar (which in OT means acquiring the language-specific hierarchy of universal constraints), if he

observes variation/optionality, he determines that the relevant constraint can occupy two distinct positions within the hierarchy. Consider a speaker noticing the following rankings:

14.
 - a. Sometimes, CONA >> CONX
 - b. Sometimes, CONX >> CONC
 - c. Always, CONC >> CONB >> CONA

The evidence in (14) would suggest to the speaker that CONX is an Evidential Floating Constraint with a domain that ranks as high as above CONC (as in (14b)) and as low as below CONA (as in (14a)). Its domain so far would give it four positions independent of any evidence of constraint ranking with regards to CONB.

The other type of Floating Constraint is the Ambiguously Floating Constraint. When two adjacent constraints are quite clearly in the same constraint “block” (i.e. they are both crucially ranked with respect to some of the same constraints), but cannot be ranked with respect to each other, they float across each other. They have a relationship of alternating domination with 50% frequency each. This is the case I have already suggested for NI(F) and FULLINT. The basic idea is based on negative evidence: the speaker has no evidence that NI(F) does not outrank FULLINT, and vice-versa. Note the implications of this idea for Evidential Floating Constraints. When CONX above comes to outrank CONC, it becomes adjacent to a new constraint, say COND. The extent of the constraint CONX’s domain is determined by its relationship with COND. If there is evidence that COND >> CONX, then the determination is made; CONX’s domain will be as described above, and COND will outrank the entire floating configuration. But if there is no evidence of any ranking between COND and CONX, CONX will extend its domain above COND. This is simply extending the idea of Ambiguously Floating Constraints.

There is no evidence that CONX does not outrank COND, but there is evidence that CONX floats. My hypothesis is that CONX, once it floats, continues to float until it reaches a constraint which unambiguously dominates it.

In the present context, I suggest that UNIQUE can even dominate OBSPEC. This is because there is no evidence that it does not. When OBSPEC >> UNIQUE, OBSPEC first eliminates all V1 clauses and then UNIQUE eliminates all Stylistic Fronting. The optimal choice in this case is, of course, the expletive clause. When UNIQUE >> OBSPEC, UNIQUE first eliminates all Stylistic Fronting and then OBSPEC eliminates all V1, and the optimal candidate is still the expletive clause. Thus, it cannot be determined which outranks which, so UNIQUE, the Evidential Floating Constraint, floats above OBSPEC in the absence of evidence to the contrary.

We may wonder why, if this were the case, subjects do not remain in their VP-internal position when UNIQUE >> OBSPEC. First of all, arguments do not always raise to Spec,IP. Icelandic has expletive clauses with transitive, intransitive, unaccusative, and passive arguments. All cases are discussed below in examples (25-28). Second, Icelandic is a topicalizing language, implemented formally here by a high ranking of TOPFIRST (Costa 2001), which requires that topics be sentence initial, and prohibits non-topics from being sentence initial. Under these considerations, I consider the following consequences. Most main clauses have a topic, either the subject or object (or any argument or adjunct, really). The few cases of V1, Narrative Inversion (NI) (Sigurðsson 1990), are instances where the action itself is the topic (resulting in its narrative feel). Expletives reveal a sentence which has an impersonal topic (related to Rögnvaldsson & Thráinsson's (1990) suggestion that expletives signify a themeless clause). SF is a special kind of expletive, so

in such cases the choice between an expletive and SF is determined by the ranking of FULLINT and UNIQUE. UNIQUE cannot outrank TOPFIRST because such a configuration would prevent topicalization. I explore these ideas in the section about basic Icelandic clause structure, and now present a summary of my proposed constraint rankings relevant to our discussion so far.

15. Icelandic Constraints

$$\text{TRCHN, TOPICFIRST} \gg \left\{ \begin{array}{l} \dots\dots\dots \text{UNIQUE} \dots\dots\dots \\ {}_1\text{OBSPEC} \gg {}_2\{\text{NONINITIAL } {}_3\text{FULLINT}\} {}_4 \end{array} \right\}$$

As indicated above, UNIQUE is the floating constraint, landing in one of four positions, shown as subscripts 1, 2, 3, 4. The floating configuration is dominated by TOPICFIRST, and TRCHN, with no particular ranking proposed between the two of them.

In the following tableaux, the most reasonable candidates are considered: those with expletives, those with Stylistic Fronting, and those with an empty specifier position. Note that expletives and operators are not in the input. This is in line with the basic idea of OT that GEN generates an infinite number of candidates of every imaginable form (restrained only by very basic X-bar rules, see Grimshaw 1997). Grimshaw (1997) suggested that the reason *it* is the nominal expletive and *do* the verbal expletive in English was because they have, for their respective categories, the simplest lexical-conceptual structure. Thus, stripping them of their meaning involves the least serious violation of FULLINT (but a violation nonetheless). This is completely consistent with the Icelandic facts, since the Icelandic expletive *það* is homophonous with the neuter third-person singular nominative pronoun. Icelandic is in fact simpler than English in that there

is no complication of a quasi-expletive such as *there* in English.¹² In Grimshaw's analyses, the question of whether English *it* is in the input has not been crucial, but in this analysis, it is quite crucial in explaining the alternation between the expletive and Stylistic Fronting that *bað* not be in the input. Otherwise, we would lose the generalization that the alternation and its frequency can be predicted based on the various constraint configurations. Similarly, I see no reason to include the null operator OP in the input of relative clauses—instead, GEN generates candidates of all forms, including ones with and without OP; which ones are selected is a matter of constraint interaction. Prosody sometimes demands more complicated syntactic representations. Stylistic Fronting, the representation where OP happens to be generated, is selected whenever prosody (NI(F)) gets its way. We assume, then, that the constraint DEP-IO, which prohibits structures with elements which were not in the input, is ranked low enough that its violation is acceptable to satisfy these other constraints.

Remember that there are two floating constraints: UNIQUE in its four-place domain and the FULLINT/NI(F) alternation. Let us consider first some tableaux where NI(F) >> FULLINT. Tableaux 1.1 – 1.4 show the competition between candidates in relative clauses. Tableaux are labeled with the clause type, the FULLINT/NI(F) ranking, and the UNIQUE configuration number which corresponds to the positions indicated in (15) above. The candidates are shown without structure, but structures correspond to those in (11) and (12) above for SF and No-SF. Expletives, of course, crucially occupy the Spec,IP position.

¹² See Kayne (2006) for arguments that *there* is not a true expletive.

Tableau 1.1 Relative Clauses NI(F) >> FULLINT, with UNIQUE configuration 1

Candidates	TRCHN	UNIQUE	OBSPEC	NI(F)	FULLINT
a. SF sá sem fyrstur er að...		*****!			
☞ b. No-SF sá sem er fyrstur að...		****		*	
c. Exp. sá sem það er fyrstur að...	*!	***			*

Tableau 1.2 Relative Clauses NI(F) >> FULLINT, with UNIQUE configuration 2

Candidates	TRCHN	OBSPEC	UNIQUE	NI(F)	FULLINT
a. SF sá sem fyrstur er að...			*****!		
☞ b. No-SF sá sem er fyrstur að...			****	*	
c. Exp. sá sem það er fyrstur að...	*!		***		*

Tableau 1.3 Relative Clauses NI(F) >> FULLINT, with UNIQUE configuration 3

Candidates	TRCHN	OBSPEC	NI(F)	UNIQUE	FULLINT
☞ a. SF sá sem fyrstur er að...				*****	
b. No-SF sá sem er fyrstur að...			*!	****	
c. Exp. sá sem það er fyrstur að...	*!			***	*

Tableau 1.4 Relative Clauses NI(F) >> FULLINT, with UNIQUE configuration 4

Candidates	TRCHN	OBSPEC	NI(F)	FULLINT	UNIQUE
☞ a. SF sá sem fyrstur er að...					*****
b. No-SF sá sem er fyrstur að...			*!		****
c. Exp. sá sem það er fyrstur að...	*!			*	***

The above tableaux show that when NI(F) >> UNIQUE, which is the case in Tableaux 1.3 and 1.4, no number of UNIQUE violations can match the one NI(F) violation, illustrating the general property of OT strict domination. They also show that when NI(F) >> FULLINT, the four positions of UNIQUE produce two cases of Stylistic Fronting and two cases of no Stylistic Fronting, since NI(F) only gets to make the crucial decision when it outranks UNIQUE, and this happens in only two configurations.

Now consider these same exact configurations with main clauses, illustrating the sentence in (13) above, in Tableaux 2.1 – 2.4.

Tableau 2.1 Main Clauses NI(F) >> FULLINT, with UNIQUE configuration 1

Candidates	TRCHN	UNIQUE	OBSPEC	NI(F)	FULLINT
a. SF sagt er að...		**!*			
b. No-SF er sagt að...		*	*!	*	
☞ c. Exp. það er sagt að...		*			*

Tableau 2.2 Main Clauses NI(F) >> FULLINT, with UNIQUE configuration 2

Candidates	TRCHN	OBSPEC	UNIQUE	NI(F)	FULLINT
a. SF sagt er að...			**!*		
b. No-SF er sagt að...		*!	*	*	
☞ c. Exp. það er sagt að...			*		*

Tableau 2.3 Main Clauses NI(F) >> FULLINT, with UNIQUE configuration 3

Candidates	TRCHN	OBSPEC	NI(F)	UNIQUE	FULLINT
a. SF sagt er að...				**!*	
b. No-SF er sagt að...		*!	*	*	
☞ c. Exp. það er sagt að...				*	*

Tableau 2.4 Main Clauses NI(F) >> FULLINT, with UNIQUE configuration 4

Candidates	TRCHN	OBSPEC	NI(F)	FULLINT	UNIQUE
☞ a. SF sagt er að...					***
b. No-SF er sagt að...		*!	*		*
c. Exp. það er sagt að...				*!	*

In Tableaux 2.1 – 2.4, it is the position of FULLINT rather than NI(F) with respect to UNIQUE which selects the optimal candidate. This is because any candidate that violates NI(F) also violates the higher ranking OBSPEC, and thus NI(F) is already satisfied in all remaining candidates. When NI(F) >> FULLINT, expletives are chosen three out of four times. Stylistic Fronting is only chosen when UNIQUE is in configuration 4, because that is the only position where FULLINT >> UNIQUE.

Since we have suggested that NI(F) and FULLINT are floating with respect to each other, we should assume that for each configuration of UNIQUE, NI(F) will outrank FULLINT only half of the time, and the reverse ranking will apply the other half of the time. So let us consider what the results will be when FULLINT >> NI(F). Tableaux 3.1 – 3.4 illustrate this for relative clauses.

Tableau 3.1 Relative Clauses FULLINT >> NI(F), with UNIQUE configuration 1

Candidates	TRCHN	UNIQUE	OBSPEC	FULLINT	NI(F)
a. SF sá sem fyrstur er að...		****!*			
☞ b. No-SF sá sem er fyrstur að...		****			*
c. Exp. sá sem það er fyrstur að...	*!	***		*	

Tableau 3.2 Relative Clauses FULLINT >> NI(F), with UNIQUE configuration 2

Candidates	TRCHN	OBSPEC	UNIQUE	FULLINT	NI(F)
a. SF sá sem fyrstur er að...			****!*		
☞ b. No-SF sá sem er fyrstur að...			****		*
c. Exp. sá sem það er fyrstur að...	*!		***	*	

Tableau 3.3 Relative Clauses FULLINT >> NI(F), with UNIQUE configuration 3

Candidates	TRCHN	OBSPEC	FULLINT	UNIQUE	NI(F)
a. SF sá sem fyrstur er að...				****!*	
☞ b. No-SF sá sem er fyrstur að...				****	*
c. Exp. sá sem það er fyrstur að...	*!		*	***	

Tableau 3.4 Relative Clauses FULLINT >> NI(F), with UNIQUE configuration 4

Candidates	TRCHN	OBSPEC	FULLINT	NI(F)	UNIQUE
☞ a. SF sá sem fyrstur er að...					*****
b. No-SF sá sem er fyrstur að...				*!	****
c. Exp. sá sem það er fyrstur að...	*!		*		***

Notice the opposite ranking of FULLINT and NI(F) changes the balance of the competition. Since relative clauses only allow Stylistic Fronting when NI(F) outranks UNIQUE, there is only one position UNIQUE can be in where SF can be chosen. In all other cases, the option with fewer UNIQUE violations at the expense of NI(F) is chosen.

Lastly, consider main clauses under these same configurations. Tableaux 4.1 – 4.4 show the same inputs as in Tableaux 2.1 – 2.4 with the constraint rankings of Tableaux 3.1 – 3.4.

Tableau 4.1 Main Clauses FULLINT >> NI(F), with UNIQUE configuration 1

Candidates	TRCHN	UNIQUE	OBSPec	FULLINT	NI(F)
a. SF sagt er að...		**!*			
b. No-SF er sagt að...		*	*!		*
☞ c. Exp. það er sagt að...		*		*	

Tableau 4.2 Main Clauses FULLINT >> NI(F), with UNIQUE configuration 2

Candidates	TRCHN	OBSPec	UNIQUE	FULLINT	NI(F)
a. SF sagt er að...			**!*		
b. No-SF er sagt að...		*!	*		*
☞ c. Exp. það er sagt að...			*	*	

Tableau 4.3 Main Clauses FULLINT >> NI(F), with UNIQUE configuration 3

Candidates	TRCHN	OBSPec	FULLINT	UNIQUE	NI(F)
☞ a. SF sagt er að...				***	
b. No-SF er sagt að...		*!		*	*
c. Exp. það er sagt að...			*!	*	

Tableau 4.4 Main Clauses FULLINT >> NI(F), with UNIQUE configuration 4

Candidates	TRCHN	OBSPec	FULLINT	NI(F)	UNIQUE
☞ a. SF sagt er að...					***
b. No-SF er sagt að...		*!		*	*
c. Exp. það er sagt að...			*!		*

Notice that the opposite has happened in the above tableaux: the off-balance results of Tableaux 2.1 – 2. 4 (where three out of four configurations preferred expletives to SF) are replaced by an even balance: half of the time, SF is chosen, and the other half of the time expletives are chosen. Tables 3 and 4 below summarize the above results.

Table 3 Impersonal Main-Clause Competition Winners with Floating UNIQUE

	NI(F) >> FULLINT	FULLINT >> NI(F)	TOTAL
EXPLETIVE INSERTION	3	2	5 (=62.5%)
STYLISTIC FRONTING	1	2	3 (=37.5%)

Table 4 Relative-Clause Competition Winners with Floating UNIQUE

	NI(F) >> FULLINT	FULLINT >> NI(F)	TOTAL
NO STYLISTIC FRONTING	2	3	5 (=62.5%)
STYLISTIC FRONTING	2	1	3 (=37.5%)

These numbers are almost exactly the numbers we saw in Tables 1 and 2 above for these constructions in blogs. Tables 5 and 6 compare the predicted frequency of each construction with the actual frequency in blogs and newspapers.

Table 5 Impersonal Main Clauses – Predicted vs. Actual Frequencies

	PREDICTED	BLOGS	NEWSPAPERS
EXPLETIVE INSERTION	62.5%	63.4%	7.0%
STYLISTIC FRONTING	37.5%	36.6%	93.0%

Table 6 Relative Clauses – Predicted vs. Actual Frequencies

	PREDICTED	BLOGS	NEWSPAPERS
NO STYLISTIC FRONTING	62.5%	65.4%	30.4%
STYLISTIC FRONTING	37.5%	34.6%	69.6%

It is immediately clear that blogs follow almost exactly the predicted pattern; there are only slight differences between the predicted forms and the produced forms. But newspapers follow a pattern which is markedly different from blogs. Why should this be?

Let us assume for a moment that expletives are prohibited in newspapers. This is plausible for several reasons. First of all, in the data set for impersonal main clauses, of

the 7% of the 114 impersonal clauses where expletives were chosen, only one example was not a quotative phrase. That is, only one expletive occurred in all of the main text; it is natural that quotative phrases might deviate from main-text conventions in the name of quoting more accurately or naturally. Second, Icelandic has a strong literary tradition rooted in Old Norse, which had no expletives. Expletives are thus marked in formal/literary registers. Third, expletives are a less compact way of delivering information. Newspapers are a register where compact delivery of information is naturally preferred, especially when the writers are given word and space limits. The second and third of these reasons are, of course, speculative, but the first is not: the data show that expletives generally do not appear in newspapers.

Now consider an Icelandic journalist who is writing in this constrained register. He has access to several grammatical forms of his language, but only certain forms are allowed in the register in question. In newspapers, FULLINT must always outrank UNIQUE. His grammar is thus reduced; out of the eight configurations illustrated above, only three are left, indicated in (16) below:

16. **Constraint configurations available when FULLINT >> UNIQUE**
- a. NI(F) >> FULLINT >> UNIQUE
 - b. FULLINT >> NI(F) >> UNIQUE
 - c. FULLINT >> UNIQUE >> NI(F)

The Floating Constraints hypothesis would predict that each configuration would be chosen an equal number of times. No matter which of the three above were chosen, expletives would not be optimal (since the register-specific banning of expletives is the impetus for the speaker reducing his grammar to these three configurations in the first place). But recall that Stylistic Fronting in relative clauses is governed by the relationship

between NI(F) and UNIQUE. Only in (16c) above does UNIQUE outrank NI(F), resulting in non-Stylistically Fronted relative clauses. (16c), we would predict, would be chosen 33% of the time; 30.4% is the number that we actually see.

OTHER PROPERTIES OF STYLISTIC FRONTING

Now consider how we can account for some other properties of SF in this kind of grammar. Hrafnbjargarson (2004) points out that SF can take place in the presence of a light subject pronoun. This fact is not often noted in the literature and indeed is problematic in most accounts, since it is difficult to see how SF can require a subject gap and also be possible when a weak pronoun occupies that gap. Consider the sentence in (17).

*(From Hrafnbjargarson 2004):*¹³

17. a. ?Allt sem'ann lesið hafði í bókinni var satt.
 All that-he.WEAK read had in the-book was true
 'All that he had read in the book was true.'

In the present analysis, the above sentence would require SF to satisfy NI(F), since by definition weak subject pronouns cannot project prosodic words (see Selkirk 1996). Without SF, the finite verb would be intonation-phrase initial if the subject was not part of the intonation phrase. Hrafnbjargarson also noted that SF in the presence of such pronouns was limited to heads, and used this as evidence that SF targets the articulated split-CP domain of Rizzi (1997), specifically FocusP. In this analysis we do not make reference to focus as a motivation for SF. But the fact that SF in these cases seems to involve CP-recursion is unproblematic. Recall that in the framework we are using, GEN generates all sorts of structures consistent with X-bar theory, including structures with

¹³ Not all speakers find this sentence well-formed.

additional (indeed infinite) projections. Grimshaw (1997) suggested that such a view renders labels notational. The structure of the above sentence, then, could be seen as something like (18).

18. a. **Stylistic Fronting with Weak Subject Pronouns**

[_{CP} OP sem [_{CP} ‘ann_i lesið_j [_{IP} ‘ann_i hafði_k [_{VP} hafði_k [_{VP} ‘ann_i lesið_j [_{PP} í bokinni...]]]]]]]
 which he-WEAK read had in the-book

b. **No Stylistic Fronting with Weak Subject Pronouns**

[_{CP} OP sem [_{IP} ‘ann_i hafði_j [_{VP} hafði_j [_{VP} ‘ann_i lesið [_{PP} í bokinni...]]]]]]]
 which he-WEAK read had in the-book

The structure in (18a) has one more layer of structure than (18b). Why would the additional layer be preferable? Remember again that in any of the configurations where NI(F) outranks UNIQUE, NI(F) must be satisfied. The four UNIQUE violations of this structure are preferable to any structure, no matter how simple, which violates NI(F).¹⁴ Since the weak subject pronoun does not prevent the finite verb from being intonation-phrase initial, this structure will be preferred whenever NI(F) has its say.¹⁵ This competition is represented in Tableau 5, which shows only one of the three configurations where the crucial ranking of NI(F) >> UNIQUE is present.

Tableau 5 Stylistic Fronting with Weak Subject Pronouns

Candidates	TRCHN	OBSPEC	FULLINT	NI(F)	UNIQUE
☞ a. SF Allt sem ‘ann lesið hafði... (18a)					****
b. No-SF Allt sem ‘ann hafði lesið... (18b)				*!	**

¹⁴ This also presumes that NI(F) outranks the alignment constraints HDLFT/CMLFT of Grimshaw (2002) or the *STRUCTURE of earlier versions of OT syntax.

¹⁵ Notice that here the Stylistically Fronted constituent does not occupy a specifier position. In these cases, SF must not interact directly with OBSPEC, but instead with only NI(F). Thus, in this analysis, SF in these cases is structurally different (since it should not need to involve P-features only), but it is still a reflex of the same constraint interactions.

SF can take place in sentences with postposed indefinite NPs, such as in (19) below.

(From *Hrafnbjargarson 2004*):

19. a. ...hvort drukkið hafi einhverjir Danir bjór.
 ... if drunk have some Danes beer.
- b. ...hvort einhverjir Danir hafi drukkið bjór.
 ...if some Danes have drunk beer.
- c. ...hvort það hafi einhverjir Danir drukkið bjór.
 ...if exp. have some Danes drukkið bjór.
 ‘... if some Danes have drunk beer.’

I take each sentence in (19) to have the corresponding structure in (20).¹⁶

20. a. ...hvort [_{IP} drukkið_i hafi_j [_{VP} ~~hafi_j~~ [_{VP} einhverjir Danir drukkið_i [_{DP} bjór]]]]
 drunk have some Danes beer
- b. ...hvort [_{IP} einhverjir Danir_i hafi_j [_{VP} ~~hafi_j~~ [_{VP} einhverjir Danir_i drukkið [_{DP} bjór]]]]
 some Danes have drunk beer
- c. ...hvort [_{IP} það hafi_i [_{VP} ~~hafi_i~~ [_{VP} einhverjir Danir drukkið [_{DP} bjór]]]]
 exp have some Danes drunk beer

Notice that (19a) has three violations of UNIQUE, (19b) two, and (19c) only one. The choice between Stylistic Fronting (19a) and the expletive (19c) is straightforward; it is a result of the same competition as in any Stylistic Fronting. Essentially, as Holmberg (2000) claims, SF is a different kind of expletive, but an expletive nevertheless. The question is why in the above example it would not be better to choose (19b) over (19a) whenever FULLINT outranks UNIQUE. All of the above representations satisfy OBSPEC and NI(F) equally, and whenever UNIQUE outranks FULLINT the winner would be (19c). But when FULLINT outranks UNIQUE, (19b) should be chosen, since it is a less serious violation of UNIQUE. I have already mentioned that Icelandic is a topicalizing language,

¹⁶ I take the SF construction in (19a) to be P-feature movement and as such the formal matrix of *drukkið* ‘drunk’ is still in its VP-internal position. I omit representation of this for reasons of space, but (19a) should be thought of as having three UNIQUE violations.

indicated in (15) by the high ranking of TOPFIRST (Costa 2001). The reason I propose that (19a) is allowed is that when there are nominal arguments is that an expletive is preferred where the input specifies the topic as “impersonal.” When such is the case, an expletive of some sort must be chosen, since (19b) forces the interpretation of the NP *einhverjir Danir* ‘some Danes’ as being [+TOPIC]. TOPFIRST not only requires topics to be first but also prohibits non-topics from being first, so if the proposition’s topic is “impersonal,” the construction in (19b) fatally violates TOPFIRST; in such cases some expletive-like construction, (19a) or (19c) must be chosen. The decision as to which expletive is chosen, the pure expletive or the SF option, is passed on to the floating configuration. When the NP is marked [+TOPIC], (19b) is the only grammatical choice. Consider Tableaux 6.1 and 6.2, which show this competition.¹⁷

Tableau 6.1 Stylistic Fronting – Topic = Impersonal

Candidates: Topic = Impersonal	TOPFIRST	OBSPEC	FULLINT	NI(F)	UNIQUE
☞ a. SF hvort drukkið hafi einhverjir Danir bjór. (19a)					***
b. No-SF hvort einhverjir Danir hafi drukkið bjór. (19b)	*!				**
c. Exp. hvort það hafi einhverjir Danir drukkið bjór. (19c)			*!		*

In the above tableau, the topic is impersonal. Since anything other than an expletive being chosen in such a case (as in candidate (b)) results in a TOPFIRST violation, only the SF or expletive constructions are available. In the above ranking, FULLINT >> UNIQUE, so SF is preferable. With one of the five configurations where this ranking is reversed, candidate (c) would be optimal. Tableau 6.2 shows that when *einhverjir Danir* ‘some Danes’ is

¹⁷ For reasons of space, I only show one possible configuration of UNIQUE, NI(F), and FULLINT, since the other configurations are irrelevant to the present discussion.

marked as [+TOPIC], only candidate (b) is grammatical; the SF and expletive options involve fatal violations of TOPFIRST.

Tableau 6.2 No-SF – NP = [+TOPIC]

Candidates: einhverjir Danir = [+TOPIC]	TPFRST	OBSPEC	FULLINT	NI(F)	UNIQUE
a. SF hvort drukkið hafi einhverjir Danir bjór. (19a)	*!				***
b. No-SF hvort einhverjir Danir hafi drukkið bjór. (19b)					**
c. Exp. hvort það hafi einhverjir Danir drukkið bjór. (19c)	*!				*

Although I do not treat DPs and PPs specially, note that SF of DPs and PPs are preferred under the appropriate constraint rankings, just as with any other kind of SF. Whenever UNIQUE is dominated by NI(F), the candidate with *something* preceding the finite verb is optimal. If this happens to be a DP, as in (7) or a PP as in (8), either in Spec,IP is preferable to a violation of NI(F). It seems that these tend to be chosen as a last resort, when there is nothing else to Stylistically Front.

The last aspect of SF I will discuss is the fact that it cannot apply to auxiliaries.

Consider the sentences from (2), repeated here as (21):

- 21.
- a. Hann syndi mér flöskurnar sem hafði verið smyglað inn
He showed me the-bottles which had been smuggled in
 - b. Hann syndi mér flöskurnar sem inn hafði verið smyglað
He showed me the-bottles which in had been smuggled.
 - c. Hann syndi mér flöskurnar sem smyglað hafði verið inn
He showed me the-bottles which smuggled had been in
 - d. *Hann syndi mér flöskurnar sem verið hafði smyglað inn.
He showed me the-bottles which been had smuggled in

(21b) and (21c) are interchangeable because *inn* ‘in’ and *smyglað* ‘smuggled’ are equidistant and are thus a rare example of matching constraint profiles. When the constraint configuration prefers Stylistic Fronting, either one can be chosen for P-feature extraction because they each incur the exact same violations of UNIQUE. But why can the auxiliary not be fronted? Burton-Roberts & Poole (2006) suggest a “Constant Inviolable Auxiliary Order” under the framework of Representational Hypothesis (RH), the details of which do not concern the present analysis. They based this idea, though, on Huddleston and Pullum (2002:1219), who propose that auxiliary verb strings universally form a constituent called a Verb Group (VGp), the internal structure of which is fixed for reasons they explicate. Both lead to the conclusion that auxiliaries must be ordered as Modal > Perfect *have* > Progressive *be* > Passive *be*. Stylistic Fronting of an auxiliary would obviously disrupt this order. These conclusions could translate into an OT analysis in two ways. First, there could be a constraint (or series of constraints) requiring a certain order/structure of auxiliaries, and this constraint would be very highly ranked in English, Icelandic, and any other language which seemed to follow it. Such a constraint would easily disallow SF of an auxiliary. The other option (the preferable option in the absence of evidence to the contrary) is that GEN is constrained such that it cannot even generate structures which do not obey the above order. For example, if GEN was only able to generate VGp of Huddleston and Pullum (2002) in such a way that nothing but the final element in the group is able to be removed, we would get the desired result.¹⁸ I do not pursue the idea in this paper, but it seems like a reasonable approach to the auxiliary

¹⁸ This general idea is related to the idea of Grimshaw (1997) that when we see an apparently universally undominated constraint, it may be that it is a constraint of GEN rather than of EVAL. This was suggested for the “theta criterion” and is generally subsumed under the idea that GEN only produces candidates consistent with X-bar rules.

question. The question of whether the order of auxiliaries is determined by GEN or EVAL, however, is an empirical question which is outside the scope of this paper.

ANALYSIS OF BASIC ICELANDIC CLAUSE STRUCTURE

I have already anticipated the analysis in this section with my analysis of SF of postposed NPs in (19) and Tableaux 6.1 and 6.2 above. Essentially, what ends up in the preverbal position is governed by TOPFIRST. When the topic in an input is “impersonal,” an expletive construction is chosen. When an external argument is a definite DP, it is a default topic, so a DP in Spec,IP is always preferred to an expletive construction with an internal DP (the latter being ungrammatical). Indefinite NPs, even when external arguments, can remain in their VP internal position and in such cases the topic can be “impersonal.” The basic declarative sentence in (22) is an example of this. If nothing is marked as [+TOPIC], and the external argument is a DP, not an NP, then the DP, being a definite (and thus specifically specified) entity and an external argument is automatically the topic.

22. a. Hundurinn kyssir músina.
The-dog kisses the-mouse
- b. *Það kyssir hundurinn músina.
Exp. kisses the-dog the-mouse
- c. Músina kyssir hundurinn.
The-mouse kisses the-dog.

Note that (22a) is grammatical in an unmarked context (i.e. with no topic) or when *hundurinn* ‘the dog’ is [+TOPIC] and (22c) is grammatical when *músina* ‘the mouse’ is marked [+TOPIC]. Although various representations have been proposed to deal with Topicalization in general and in Icelandic in particular, I will take the following

approach. I do not analyze V → I movement in this paper, and instead refer to the OT analysis in Vikner (2001). I take the IP to always be projected in Icelandic, but follow Grimshaw's (1997, 2002) overall conclusions that projections are only generated as needed, and therefore (22a) and (22c) are both seen as IPs with the structures in (23).¹⁹

23. a. [_{IP} Hundurinn_i kyssir_j [_{VP} hundurinn_i kyssir_j [_{DP} músina_i]]].
 The-dog kisses the-mouse
 ‘The dog kisses the mouse.’
- b. [_{IP} Músina_i kyssir_j [_{VP} hundurinn kyssir_j [_{DP} músina_i]]].
 The-mouse kisses the-dog
 ‘The mouse, the dog kisses.’

The choice between these structures involves only the marking of topic. When *músina* ‘the mouse’ is marked [+TOPIC] in the input, only (23b) is grammatical. Note that not only arguments can be marked [+TOPIC], but adjuncts as well. In these cases, EVAL selects the structure where the topical adjunct is phrase-initial. In this paper, I take all topicalized constituents to occupy the specifier of the projection headed by the finite verb; in the examples I give, this is IP. Consider the unaccusative sentence in (24):²⁰

Adjunct Topicalization

24. a. að [_{IP} þar_i geti_j [_{VP} geti_j [_{VP} þrífist líf [_{AP} þar_i]]]]
 that there can thrive life
 ‘...that life can thrive there.’

The adjunct *þar* ‘there’ is topicalized because, as it is marked [+TOPIC], only a structure such as (24), where *þar* ‘there’ is first would avoid a fatal violation of TOPFIRST. Since (24) is presumably the simplest structure where this is the case, I take (24) to be the correct analysis of such sentences in the present framework.

¹⁹ That is, I do not see a need to propose a string-vacuous CP layer in these cases. Note that this is the conclusion reached by Rögnvaldsson & Thráinsson (1990) as well. If such extra structure could be motivated from an OT perspective, I do not see how it could conflict with my analysis in general, though.

²⁰ The following example was taken from the newspaper website *Morgunblaðið* <http://www.mbl.is> on May 18, 2006.

When an indefinite NP is not marked as [+TOPIC], it is not moved to the sentence initial position by default as its definite counterpart would be. It instead remains in the VP position where it was generated, whether that happens to be the post-verbal unaccusative position or the external argument of the VP in a true intransitive or Transitive-Expletive Construction (TEC) (Jonas 1996, Alboiu 1995). Recently, it has been observed that constructions lacking external arguments can form expletive constructions as well, rather than undergo passivization (Maling & Sigurjónsdóttir 1997, 2002). Consider first the unaccusative sentence in (25).

Unaccusative Expletive

25. [IP Það komu_i [VP [PP í partíð] komu_i [NP margir stúdentar frá Akureyri.]]
 Exp. came to the-party many students from Akureyri
 ‘Many students from Akureyri came to the party.’

I take the adjunct PP to be left-adjoined to the VP. The above sentence has no constituent marked as [+TOPIC], but rather the topic is ‘impersonal,’ and anything other than an expletive in the Spec,IP position is ungrammatical: any alternative would constitute a fatal violation of TOPFIRST.²¹

Tableau 7 Impersonal Topic – Unaccusative

Candidates: Impersonal Topic	TPFRST	OBSPEC	FULLINT	NI(F)	UNIQUE
a. Það komu í partíð margir stúdentar frá Akureyri.			*		*
b. Í partíð komu margir stúdentar frá Akureyri.	*!				**
c. Margir stúdentar frá Akureyri komu í partíð.	*!				**

²¹ Note, though, that either argument could be marked as [+TOPIC], so other versions of the above sentence are indeed grammatical, but under a topicalized interpretation.

- i. PP Topic: Í partíð komu margir stúdentar frá Akureyri.
 In the-party came many students from Akureyri.
- ii. NP Topic: Margir stúdentar frá Akureyri komu í partíð.
 Many students from Akureyri came to the-party.

In general, these types of options are available in any of the expletive constructions we are discussing.

When the input is not specified for topic, all candidates violated TOPFIRST equally. In such situations it is possible to have some optionality due to identical constraint profiles. Such a situation is shown Tableau 8, where everything is exactly the same as in Tableau 7, except that there is no topic at all.

Tableau 8 No Topic

Candidates: No Topic	TPFRST	OBSPEC	FULLINT	NI(F)	UNIQUE
a. Það komu í partíð margir stúdentar frá Akureyri.	*		*!		*
b. Í partíð komu margir stúdentar frá Akureyri.	*				**
c. Margir stúdentar frá Akureyri komu í partíð.	*				**

When UNIQUE comes to outrank FULLINT, candidate (a) of Tableau 8 will be the only grammatical choice. The overall argument is that when there is no topic, the result can be any of the above candidates, depending on the constraint ranking. When the topic is impersonal, the expletive, either pure or SF, is chosen; when the topic is on an argument or adjunct, the structure with that topic in Spec,IP is chosen. This idea works for almost any conceivable argument structure. It seems that the only situation where expletives are not allowed is when the verb projects a definite DP as an external argument.²²

Transitive-Expletive Constructions

26. a. [_{IP} Það borðuðu_i [_{VP} margir kettir borðuðu_i [_{NP} allar mýsnar]]]
 Exp. ate many cats all the-mice
 ‘Many cats ate all the mice.’

²² Sentences (26) through (27) were all taken from Jonas 1996, modified to not show the adjuncts, which are not relevant for the present discussion. The structure proposed here differs, though. I propose a light vP shell for the causative constructions, but my analysis does not rest on this. As I already mentioned, OT syntax (in the sense of Grimshaw 1997, 2002, 2006) seems to render labels notational anyway.

- b. [_{IP} Það málaði_i [_{VP} stúdent málaði_i [_{VP} húsið málaði_i AP rautt]]]]
 Exp. painted student the-house red
 ‘A student painted the house red.’

Intransitive-Expletive Construction

27. a. [_{IP} Það reyktu_i [_{VP} margir stúdentar frá Akureyri reyktu_i]]
 Exp. smoked many students from Akureyri
 ‘Many students from Akureyri smoked.’

Lastly, consider the ‘New Impersonal’ (Maling & Sigurjónsdóttir 1997, 2002):

New Impersonal

28. a. [_{IP} Stúlkan_i var_j [_{VP} var_j [_{VP} lamið_k [_{VP} stúlkan_i lamið_k [_{PP} í klessu]]]]]]]
 the-girl was hit in mess
 ‘The girl was badly beaten.’
- b. [_{IP} Það var_i [_{VP} var_i [_{VP} lamið_j [_{VP} stúlkan_i lamið_j [_{PP} í klessu]]]]]]]
 Exp. was hit the-girl in mess
 ‘The girl was badly beaten.’

I take (27a) to be a passive sentence where *stúlkan* ‘the girl’ is [+TOPIC], and (27b) to be its impersonal counterpart. The wide variety of expletive constructions are all evidence in favor of the idea that arguments and adjuncts raise for topicalizing purposes. When the topic is impersonal, the candidate that best satisfies TOPFIRST is the expletive or SF construction. When there is no topic at all, all candidates violate TOPFIRST equally and the decision is passed on to the interaction between OBSPEC, FULLINT, UNIQUE, and NI(F). In main clauses, the optimal candidate depends on whether UNIQUE outranks FULLINT (in which case a pure expletive construction will be chosen) or vice-versa (in which case Stylistic Fronting or fronting of some constituent will be chosen). In relative clauses, the ranking between NI(F) and UNIQUE is the crucial one.

CONCLUSION

This analysis has made several claims. First, floating constraints were divided into two kinds: one, an Evidential Floating Constraint, is one which is acquired on the basis of positive evidence (i.e. a speaker acquires the floating configuration based on observed variation/optionality), and two, an Ambiguously Floating Constraint, is a situation where two constraints each have some relationship to a third constraint but cannot be ranked with respect to each other. The speaker acquires this kind of configuration based on negative evidence, the inability to determine a ranking in the grammar. It was further proposed that the domain of an EFC is not only determined by its evidential domain, but that the domain extends until positive evidence of constraint ranking can be inferred. I follow the basic tenet of earlier floating constraint analyses (Reynolds 1994, Nagy & Reynolds 1997) that each constraint configuration occurs with equal frequency; this is what allows the hypothesis its predictive power, since the frequency of the variants should follow from the possible constraint configurations.

I applied these ideas to a theoretic and quantitative analysis of Icelandic Stylistic Fronting. I motivated eight constraint configurations with two floating constraints (UNIQUE and {NI(F)/FULLINT}) to test the above hypotheses. These configurations produced all grammatical/optional forms, and predicted a frequency of occurrence very close to what is attested in my corpus.²³ I showed how some potential problematic aspects of SF can be accounted for in OT, specifically SF in the presence of light subject pronouns (which was argued to be only ostensibly the same phenomenon, but crucially a

²³ Interestingly, Hrafnbjargarson (2004:103) reports that 34% of 671 subject relative clauses exhibited Stylistic Fronting in Old Danish. This is strikingly close to the 34.6% of the present analysis for Modern Icelandic. This suggests that Old Danish may have had an SF grammar similar to the one proposed here.

reflex of the same constraint interactions), SF in the presence of indefinite post-posed NPs, and the inability of SF to apply to auxiliaries.

I then argued that much of the variation in Icelandic constituent order follows from a high ranking of the constraint TOPFIRST. Specifically, I claimed that when nominal arguments are part of the input, the decision of what occupies Spec,IP follows from topical specification in the input. When the input topic is “impersonal,” only an expletive or SF construction can be chosen, and this choice is governed by the same constraints as when inputs are purely verbal. The only exception to this is when the lexical verb projects a definite external argument, in which case the DP must raise. When the input specifies any other argument or adjunct as [+TOPIC], the optimal candidate will be the structure where that topic occupies the Spec,IP position.

A floating constraint OT analysis of Stylistic Fronting has advantages over other recent approaches. First, it takes optionality, problematic in many current approaches to syntax, as a starting point. When optionality is apparently part of linguistic competence, the grammar should account for this. Second, this kind of grammar not only produces grammatical forms, but also predicts the frequency with which the variants appear. This was shown to accurately account for the frequency of the variants in my corpus. Other analyses would be forced to (1) call such frequencies a coincidence in both main and relative clause constructions and (2) refer to numeration to explain not only expletive alternation but also the choice to merge a null operator or DP in the theta-position in relative clauses. Third, it makes reference almost exclusively to previously proposed, simple, universal constraints. It has in this sense the general advantage of OT in not requiring complex language-specific devices to account for inter-language variation.

When OT is modified to account for intra-speaker variation as well, the result is a simpler, more powerful grammar which resembles with greater precision language as we see it in the real world.

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