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The Empty Left Edge Condition

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Argument drop is commonly subject to the Empty Left Edge Condition, ELEC, requiring that the left edge of the clause not be spelled out. ELEC can be explained in terms of minimality, as an intervention effect (blocking context-linking of the null-argument). We argue that sensitivity to this effect is the most important ‘pro drop parametric’ factor and that there are no inherent or lexical differences between ‘different types’ of null-arguments. However, we also present striking evidence from Icelandic that emptiness conditions of this sort are operative in PF, a conclusion that suggests that much of ‘syntax’ in the traditional sense is actually morphosyntax or ‘PF syntax’, invisible to the semantic interface. If so, derivational crashes may occur (in the PF derivation), even though narrow syntax itself is crash-proof.

1. Introduction¹

Argument drop is subject to clause-external restrictions and often also to clause-internal ones. The best known type of clause-internal restrictions is Agr-linking, illustrated in (1) for Italian subject drop and in (2) for object drop in Pashto (modeled on C.-T.J. Huang 1984: 536):²

- (1) a. Parlo islandese.
 speak.1SG Icelandic
- b. Parli islandese.
 speak.2SG Icelandic

1. Parts of this work have been presented at several occasions: Workshop on Null Subjects and Parametric Variation, Reykjavík, June 2003, Grammatik i fokus (GIF 20), Lund, February 2006, IGG XXXII, Florence, March 2006, Workshop on Partial Pro-drop Languages, Cambridge, June 2006. We thank the organizers of these events for their hospitality and the audiences for welcome comments, and we are also grateful to Elisabet Engdahl and Mike Putnam for valuable remarks, to a reviewer of the present version and to two reviewers of a preliminary version. The research for this paper was supported in part by a grant from the Swedish Research Council, VR 421-2006-2086. A preliminary version (“Argument drop and the Empty Left Edge Condition”) was published 2008 in *Working Papers in Scandinavian Syntax* 81: 1–27.

2. We are adopting the notion ‘linked’ from Deal (2005).

- (2) mā wəxwara
 me.OBLIQUE eaten.3.F.SG
 'I ate it.' (e.g. the apple)

Other languages with Agr-linked (or Agr-dependent) object drop include, for instance, Georgian, Swahili (Y. Huang 2000: 54–55) and Chicheŵa, another Bantu language (Baker 2001: 144f).³

Agr-linked object drop does not seem to be cross-linguistically common (see the overview in Y. Huang 2000: 78ff). In contrast, many languages have clause-externally conditioned object drop. This is illustrated in (3) for four such languages (all lacking object Agr); the underlined matrix subjects are either obligatory (3b,c) or possible (3d) antecedents of the null-objects:

- (3) a. *Old Norse* (Sigurðsson 1993: 259):
 ... ok munu nú taka ___ óvinir þínir.
 ... and will now take (it) enemies your
 '... and your enemies will now take (*your inheritance*).'
- b. *Burmese* (Y. Huang 2000: 85):
Hkalei amei ahphyit ___ tinte lou htinte.
 child mother blame (him/her) put that thinks
 'The child thinks that mom will blame (*him/her*).'
- c. *Imbabura Quechua* (Cole 1987: 600):
Juzi nin Marya ___ juyanata.
 Juzi says Marya (him) will-love
- d. *Finnish* (Y. Huang 2000: 86):⁴
Kalle väittää että Pekka uhkaili ___.
 Kalle claims that Pekka threatened (him/...)

In languages of this sort, the silent object is TOPIC-LINKED, as in (3a), ANTECEDENT-LINKED, as in (3b) and (3c), or optionally linked to either an antecedent or a (distinct) topic, as in (3d).⁵ Other languages that have clause-externally linked

3. It should however be noted that it is often difficult to distinguish between incorporated pronominal objects and 'true' object agreement in languages of this sort (see the discussion in Baker 2001: 145ff).

4. According to Y. Huang (2000), the null-object may either refer to the matrix subject *Kalle* or to some clause-external discourse topic. It should be noticed, however, that Finnish does not allow 'uncontrolled' 3 person subjects (see Holmberg 2005), a fact that would seem to indicate that the 'uncontrolled' null-object in this example is arbitrary or accidentally coreferential with a discourse topic.

5. Since C.-T.J. Huang (1984, 1989), antecedent-linking is often referred to as control.

object drop include Chamorro, Chinese, Hungarian, Japanese, Korean and Thai (Y. Huang 2000: 85ff). However, even though referential object drop of this relatively unrestricted sort is more common than often assumed (cf. the discussion in Cummins & Roberge 2005), it seems to have a more limited distribution than referential subject drop. It is for instance absent from Italian, as illustrated in (4) (example (4a) is from Rizzi 1986: 517):

- (4) a. *Mario ha costretto ___ a partire.
 Mario has.3SG forced (me/her/ ...) to leave
 b. *Gianni sa che Maria ___ vide.
 Gianni knows.3SG that Maria (him) saw

Topic-linking and antecedent-linking are two types of CONTEXT-LINKING. It is clear that object drop of the Pashto type in (2) is not only Agr-dependent but also topic-linked. Also, 3 person subject drop of the Italian type has to link to an aboutness topic, usually the closest one (see Grimshaw and Samek-Lodovici 1998; Frascarelli 2007). Linking of 1 and 2 person pro to the speaker and hearer is also context-linking of sorts. In Sigurðsson (2004a, 2004b), the speaker/hearer features are referred to as the logophoric agent (speaker) and the logophoric patient (hearer), Λ_A and Λ_P for short.⁶ Given these and a Top(ic) feature, in the spirit of Rizzi (1997), the relevant feature content of the C-domain for our purposes is as sketched in (5):

- (5) [_{CP} .. Top ... Λ_A ... Λ_P ... [_{TP} ...

We can now state the CONTEXT-LINKING GENERALIZATION in (6):

- (6) a. Context-linking features of the C-domain include at least Λ_A , Λ_P and Top
 b. Any referential pronoun, overt or silent, positively matches a context-linking C-feature

Thus, the context-linking features of the C-domain enter into two-directional matching relations, one with clause internal elements (that may or may not be spelled-out) and one with clause-external topics and/or participants of the speech event. Context-linking is thus a ‘transitive’ matching relation (where $A \leftrightarrow B$ reads ‘A is matched by B’ or ‘B is interpreted in relation to A’):

- (7) Context \leftrightarrow C-features \leftrightarrow TP-internal elements

6. ‘Lambda’ in line with ‘phi’ and ‘theta’ (but capital Λ to avoid confusion with lambda calculus). As argued in Sigurðsson (2004b), the simple notions speaker and hearer or addressee are too simple and thus misleading, see also below.

On this understanding, all referential argument drop is subject to one of two types of restrictions:

- (8) a. context-linking only, or
b. context-linking *and* some kind of clause-internal restriction

As mentioned above, Agr-linking is the best known type of clause-internal restriction on null-arguments, common for subject drop, less common for object drop. However, null-arguments in many languages are subject to another much more salient clause-internal condition or restriction. We refer to this condition as the EMPTY LEFT EDGE CONDITION, ELEC:

- (9) The left edge of a clause containing a silent referential argument must be phonetically empty (in language or construction X)⁷

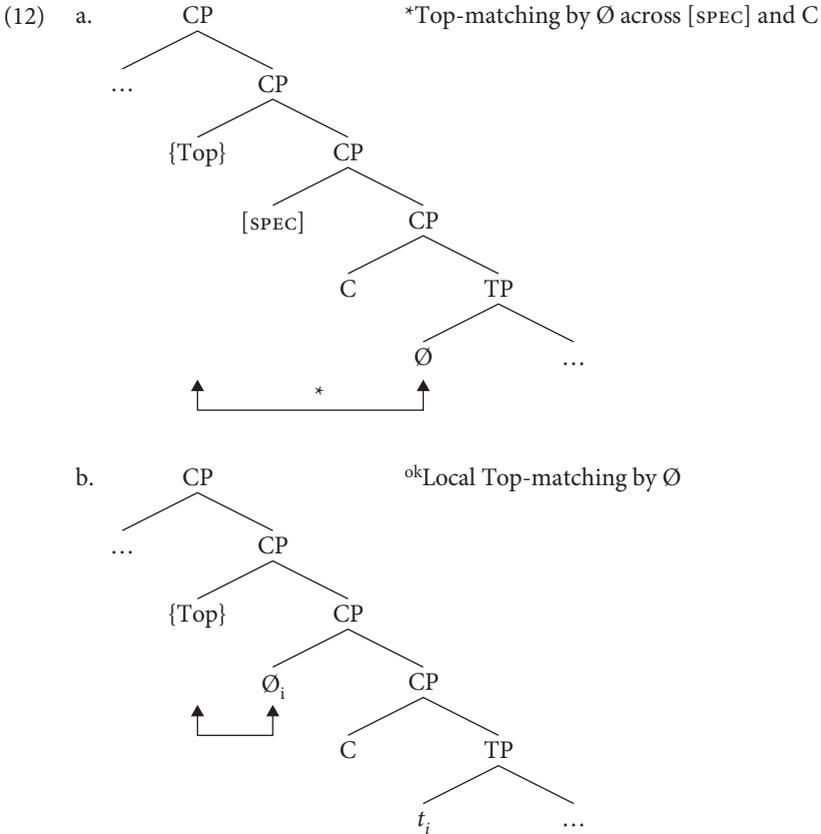
ELEC is a salient feature of Germanic null-argument constructions, as illustrated for Icelandic subject drop in (10); the initial dash indicates Spec-C and the post-verbal dash indicates Spec-T:

- (10) a. ___ Kem ___ til baka á morgun
 come.1SG to back on tomorrow
 ‘I’ll be back tomorrow.’
b. ___ Kemur ___ enn einu sinni of seint.
 come.2/3SG still one time too late
 ‘You/He/She come(s) too late once again.’
c. ___ Komum ___ ekki á morgun.
 come.1PL not on tomorrow
 ‘We are not coming tomorrow.’
- (11) a. *Á morgun kem ___ til baka.
 on tomorrow come to back
b. *Enn einu sinni kemur ___ of seint.
 still one time come too late
c. *Á morgun komum ___ ekki.
 on tomorrow come not

We pursue the idea that context-linking of null-arguments is generally blocked in Germanic if Spec-C is lexicalized. This is sketched in the simplified structures in (12) for only the Top feature (relevant for 3 person pro; for 1 and 2 person pro, the context-linking feature is Λ_A or Λ_P , respectively). As indicated, we assume that \emptyset

7. In Kayne’s (2006) approach to ‘principles of pronunciation’, the empty left edge would be a Spec,Phase (whereas a licit overt left edge would be a Spec of some non-phase).

has raised into the C-domain in the well-formed (12b) as opposed to the illicit (12a); [SPEC] denotes a spelled-out Spec-C and {Top} a silent but syntactically active Top feature:⁸



We will here study the properties and domain of ELEC and other similar emptiness conditions, above all in the Germanic languages. On the analysis in (12), ELEC is basically an intervention effect. In spite of this ‘syntactic appearance’, there is strong evidence, above all from Icelandic, that emptiness conditions of this sort are *operative in PF*.

8. Following Chomsky (2001) and much related work, we use the notions C/CP and T/TP as cover terms for richer systems (where e.g. Top is a ‘C-type head’). For further discussion of the analysis pursued, see Sigurðsson (2010), and, for related ideas, see Haegeman (1987, 1990), Cardinaletti (1990), Mörnjsjö (2002). As argued in Sigurðsson (2010), V2 lexicalization of C is in fact sufficient to rule out the null-argument (argument drop thus being excluded in V1 questions, see also Engdahl 2009), but we will not discuss this here.

We will come to two conclusions that are of central theoretical interest and importance:

- A. There are no inherent or ‘lexical’ differences between different types of null-arguments, such as pro and null-topics or null-variables (null-arguments being universally available). Rather, the differences between, e.g. pro drop in Romance and many Asian languages and so-called topic drop in Germanic boil down to PF intervention.
- B. The computation proceeds after transfer to PF, that is, much of syntax in the traditional sense is actually morphosyntax or ‘PF syntax’, invisible to the semantic interface. It follows that a crash can arise in the PF derivation even in cases where the narrowly syntactic derivation is flawless. In other words, derivational crashes may occur but that does not mean that they occur in syntax.

2. A uniform approach to null-arguments

In the pioneering work of C.-T.J. Huang (1984, 1989), a sharp distinction was drawn between pro drop and ‘topic drop’, and this has since been the prevailing view in generative syntax. Thus, while the silent subject in Romance examples like the Italian ones in (1) above were analyzed as pro, the null-subject in Germanic examples like the ones in (10) above and in (13) below were taken to be null-topics (the examples in (13) are from Sigurðsson 1993: 254, see also Y. Huang 2000: 79–80); the dash indicates the Spec-T position, whereas the initial position is Spec-C:

- | | | | | | |
|------|-----|--------------|----|------------|-----------|
| (13) | a. | (Ich) kenne | __ | das nicht. | German |
| | b. | (Jag) känner | __ | det inte. | Swedish |
| | c. | (Ég) þekki | __ | það ekki. | Icelandic |
| | (I) | recognize | __ | that not | |

The major reason why silent subjects in examples of this sort were taken to be null-topics was that they are confined to clauses with an empty left edge (Spec-C) as illustrated in (14) (from Sigurðsson 1993: 255):

- | | | | | | | |
|------|----|--------|---------------|----|------------|-----------|
| (14) | a. | *Jetzt | kenne | __ | das nicht. | German |
| | b. | *Nu | känner | __ | det inte. | Swedish |
| | c. | *Núna | þekki | __ | það ekki. | Icelandic |
| | | now | recognize (I) | | that not | |

The generally assumed Government and Binding theoretic analysis (see C.-T.J. Huang 1984; Cole 1987; Sigurðsson 1989, 1993; Haegeman 1990, 1996, among many),

was that the silent argument is either an empty operator in Spec-C, or an NP that has been moved into the Spec-C position and deleted from there:

- (15) a. $[_{CP} OP_i \dots [_{TP} e_i \dots]$
 b. $[_{CP} NP_i \dots [_{TP} t_i \dots]$ (e.g. *Ich kenne __ das nicht*)

The prevailing assumption was that the Spec-C position had to be accessible to the null-topic and hence filling that position with some other element would render the null-topic ill-formed. However, it was never explained why silent topics should differ in this respect from spelled-out (aboutness) topics, which are quite ‘happy’ regardless of whether they move to the left periphery, as illustrated for Icelandic in (16):

- (16) A: Þarna kemur Ólafur.
 there comes Olaf
 Ba: Ég vil ekki heilsa **honum**.
 I want not greet him
 ‘I don’t want to greet him.’
 Bb: **Honum** vil ég ekki heilsa.
 him want I not greet
 ‘Him, I don’t want to greet.’

The pronoun *honum* ‘him’ is equally topical in (16Ba) and (16Bb). Thus, even though so-called ‘topicalization’ applies to topics (as well as some non-topics), it does not turn anything into topics. Hence, even though Germanic null-topics have to link to an empty Spec-C position, it cannot be the case that they have to move into Spec-C ‘in order to become legitimate topics.’ A different account of the ungrammaticality of examples like the ones in (14) is called for. As indicated in (12b), we thus assume that Germanic zero topics have to locally match a context-linking feature in the high C-domain and that they cannot do so across a spelled-out left edge.

On both analyses in (15), the empty subject is a variable in the sense of Government and Binding theory (see Chomsky 1982: 78ff), that is, an empty [– pronominal] category, whereas the Italian type of subject *pro* was analyzed as an empty [+ pronominal] category. Accordingly, the Germanic type of null-subjects fell under binding principle C, like R(eferential)-expressions, while Italian *pro* was subject to binding principle B. This approach made the prediction that Germanic null-arguments should be excluded from being A-bound, in accordance with binding principle C, thus crucially differing from pronominal categories, including overt pronouns and Italian *pro*.

It is not clear how this would translate into the minimalism, where the binding theory has been abandoned, and where the properties and distribution

of ‘different’ empty categories accordingly cannot be defined or derived in terms of binding principles or even in terms of only binding as such (in violation of the Inclusiveness Condition, cf. Chomsky 1995: 228). Referential conditions on NPs are of course ‘real’ (cf. the discussion in e.g. Kayne 2002; Zwart 2002; Landau 2000, 2004, 2008; Heintz 2006), but the Government and Binding theoretic approach to null-topics was in our view mistaken, as suggested by the fact that Germanic null-arguments have all the typical properties of pronominals, and not those of names and other R-expressions, including their referential properties and ϕ -features, an issue we will return to (in Section 5). Their only ‘crime’ is that they are topic-linked pronouns, like Italian null-subjects (Frascarelli 2007) and like overt referential pronouns, for instance the pronouns in (16Ba,b) above.

Instead of trying to develop the Government and Binding theoretic distinction between null-topics and null-pronouns, we pursue the ‘obvious’ alternative, the UNIFORM APPROACH TO NULL-ARGUMENTS, stated in (17):

- (17) Null-arguments are uniform in the sense that there are no underlying inherent or ‘lexical’ differences between them. The differences between seemingly different types of null-arguments stem from restrictions in the PF component of language, not from the properties of putative ‘lexical zeros’.

Notice that it does *not* follow that null-arguments should always have all the same properties as overt pronouns, they typically do not (language internally). Overt pronouns tend to be more specific or ‘bigger’ than null-arguments in the sense that they express some additional properties like Focus or Shifted Topic, not present in corresponding null-argument constructions. Plausibly, a feature structure is the more likely to get partly spelled-out the more complex or marked it is, that is to say, the more information it contains (cf. Cardinaletti & Starke 1999).

As a matter of fact, full-fledged pronouns, overt or silent, are not input to the syntactic computation but its output, that is, syntax computes or ‘produces’ pronouns by matching and bundling up features.⁹ Thus, the person value of a pronoun is the result of a twofold matching process (under syntactic Agree, cf. Sigurðsson 2004b *et seq.*). First, an argument or event participant (i.e. θ) is matched against an interpretable clausal P(erso)n head or feature in the T-domain, as being either +Pn or –Pn, as sketched in (18) below. Second, as shown in (19), +Pn arguments

9. However, we are not adopting Distributed Morphology. Rather, we assume that morphology and the PF lexicon are ‘radically disentangled’ from syntax, see (22) below.

are matched against the above mentioned silent logophoric agent ('speaker') and the logophoric patient ('hearer') features in the C-domain, Λ_A and Λ_P .¹⁰

- (18) $\theta \leftrightarrow +/ -P_n$
- (19) a. $+P_n \leftrightarrow +\Lambda_A, -\Lambda_P = 1P$ by computation
 b. $+P_n \leftrightarrow -\Lambda_A, +\Lambda_P = 2P$ by computation
 c. $+P_n \leftrightarrow -\Lambda_A, -\Lambda_P = 3P$ by computation
 d. $-P_n = 3P$ by default

The logophoric agent and patient features may be conceived of as either the actual or the represented (or intended) speaker vs. hearer. If the identity of these speech event participants changes from the actual to the represented speaker and hearer, the reference of the person values changes accordingly. This is what happens in direct speech in languages like English (for a classic discussion of phenomena of this sort, see Banfield 1982):

- (20) a. John said to me that he would vote for me.
 b. John said to me: "I will vote for you".

In the direct speech in (20b), the represented speaker and hearer, Λ_A and Λ_P , are identical not with the overall, actual speaker and hearer but with the matrix clause arguments, *John* and *me*. hence these arguments are referred to not by 3 vs. 1 person, *he/me*, but by 1 vs. 2 person, *I/you*. Or rather, 1 and 2 person in the direct speech refer to or match the Λ_A and Λ_P features in their local C-domain, and these logophoric features are in turn identical with the matrix arguments (and not with the overall, actual speaker and hearer). This is sketched in (21), where *i* and *k* are the indexes of the actual speaker and hearer but *j* and *l* the indexes of the logophoric features in the subordinate C-domain, inherited from the matrix arguments:¹¹

- (21) $[_{CP} \dots \{\Lambda_A\}_i \dots \{\Lambda_P\}_k \dots [_{TP} \dots \mathbf{John}_j \dots \mathbf{me}_l \dots [_{CP} \dots \{\Lambda_A\}_j \dots \{\Lambda_P\}_l \dots [_{TP} \dots I_j \dots \mathbf{you}_l \dots$

Importantly, this is *not* or at least not exclusively extra-syntactic. The same kind of person switch is seen in regular subordination in many languages, including Amharic, Donno So, Navajo, Kannada, Tamil, Hindi, Kurdish, Persian and Punjabi

10. We are abstracting away from number and inclusiveness here.

11. We are not assuming that indexes are syntactic objects but using them for simple expository purposes, to indicate matching relations.

(see Sigurðsson 2004b: 235–236, 246 n. 40, and the references cited there).¹² In short, the constant referential meaning of 1 and 2 person is *coreference with their local logophoric features*, Λ_A and Λ_P .¹³

It is evident that full-fledged pronouns or φ -feature bundles are not elements of the syntax lexicon, that is, they are not syntactic primitives or objects in the numeration. Thus (adopting the general understanding in Sigurðsson 2004a, 2004b, 2006a, 2006b), we take an anti-lexicalist approach:

- (22) The inventory of non-computed syntactic objects (the syntax lexicon) contains only abstract features and abstract roots (ROOT_{99} , etc.), subject to matching and bundling up. These bundles of syntactic information do not have any phonological feature values, but may (or may not) be expressed or represented, more or less accurately, by complex symbols and structures in PF.¹⁴ Thus, the ‘lexicon’ in the traditional sense is not a syntactic but a phonological lexicon, stored on the PF side, where the syntactic message (the output of the computation) gets its arbitrary phonological form.

Thus, in our approach, all pronominal arguments are syntactically computed feature bundles that may or may not be spelled out in PF, depending on PF parametric options and/or language-specific low-level PF spell-out rules and constraints.¹⁵

12. This is a very common or even a general trait of Indo-Aryan and Dravidian languages (K.V. Subbarao, p.c.).

13. We say ‘referential meaning’ because at least the second person may be generic.

14. Splitting morphology between ‘lexical’ roots and functional elements violates Minimal Design (Chomsky’s Strong Minimalist Thesis). Adopting the approach in Sigurðsson (2006a, 2006b), we assume that PF, including morphology, is a complex layered system that interprets syntax rather than ‘reproducing’ or ‘restating’ it, i.e. the correlation between the two is not that of a simple one-to-one mapping. In particular, we do not assume any ‘vocabulary insertion’ into syntactic trees nor do we assume that all terminal nodes are represented by PF words.

15. We assume that all grammar variation is on the PF side (Sigurðsson 2000 and subsequent work, see also e.g. Putnam 2007, Ch. 5.3). It is of some historical interest to notice that Chomsky considered an approach that is partly similar to the ideas pursued here in the early 1980s, namely that overt pronouns are not part of ‘deep syntax’: “Suppose that a pronoun is simply the ‘spelling out’ of ... *pro*. In other words, at S-structure, we insert the appropriate phonological matrix for a pure pronominal EC ...” (Chomsky 1982: 86). Holmberg (2005: 560) suggests more or less the same understanding: “Narrow syntax is oblivious to whether pronouns or inflectional affixes do or do not end up being pronounced.” We take one step further by claiming that even silent arguments are not part of ‘deep syntax’ but the output of syntactic matching and bundling up of features. Unfortunately, Chomsky’s suggestion or intuition never became the prevailing understanding in mainstream generative syntax, including his own work.

In short, the simplest approach, which we adopt here, is that all spell-out morphology and phonology is post-syntactic.

An argument is not a DP or a position in a tree but a set of matched and interrelated features, minimally θ , φ -features, and the logophoric features (Sigurðsson 2004b: 226):

- (23) The minimal referential syntactic argument = $\{\theta \leftrightarrow \varphi \leftrightarrow \Lambda\}$

But notice that (specified) sets of this sort are, as already stated, not the input to but the outcome of syntactic matching and bundling up processes. Since arguments do not enter syntax with any fixed feature settings, it is impossible to formulate any generalizations across seemingly different types of null-arguments in terms of inherently differing feature settings like $[\pm \text{pronominal}]$. Arguably, also, ‘pronominal’ is not a primitive of language, that is, it is not visible or accessible to syntax as an object or a unit (as suggested by the fact that ‘pronominal’ gets no interpretation at the interfaces). Notice, further, that there is no room for uninterpretable syntactic features in the present approach (Sigurðsson 2006a, see also Putnam & Stroik 2010). Rather, syntactic features are interpretable but still uninterpreted when they enter the derivation, getting interpreted (valued) in the course of the derivation. Starting out with uninterpretable or ‘wrong’ features, leading to a crash, is not an option.

We conclude that Germanic ‘null-topics’ are just ordinary null-arguments. In fact, they are more radically null than the Romance type of null-arguments. The question that arises is why they are subject to clause-internal restrictions (seemingly) not operative in prototypical pro drop languages of the Romance type. In the next section, we present a brief overview of Germanic argument drop, illustrating that it is generally subject to the Empty Left Edge Condition, ELEC. It should be emphasized, however, that our goal is to develop a general understanding of argument-drop phenomena, and *not* to develop a narrowly grammatical analysis of the details of the null-argument variation found across languages and internally to individual languages. In our view, much of this variation is decided by (strictly speaking) grammar-external phenomena.

3. Germanic argument drop and the ELEC

As has been widely discussed (at least since Ross 1982 and C.-T.J. Huang 1984), referential null-subjects are common in various types of informal written and spoken registers in the Germanic V2 languages, for instance in diaries, various kinds of short messages, and in conversations (mainly in

replies to questions).¹⁶ We illustrate this kind of SUBJECT DROP in (24) and (25) for Icelandic:

- (24) A. Hvar er Pétur?
 where is.3SG Peter
 B. Kemur þarna.
 comes.3SG there
 'He is coming (there)./Here he comes.'
- (25) a. Ligg á ströndinni og slappa af.
 lie.1SG on beach.the and relax.1SG off
 'I'm lying on the beach, relaxing.'
 b. Komum strax.
 come.1PL right-away
 'We'll be there in a minute.'

The agreement morphology is clearly not needed to identify the null-subject, as seen by the simple fact that the Mainland Scandinavian languages allow this type of subject drop, despite not having any verb agreement. Compare (25) to the Swedish (26), where \emptyset -AGR indicates 'no agreement':

- (26) a. Ligger på stranden och kopplar av.
 lie(s). \emptyset -AGR on beach.the and relax(es) off
 b. Kommer strax.
 come(s). \emptyset -AGR right-away

In one respect, however, there is an interesting difference here between topic drop languages with and without verb agreement: Although not needed to identify the silent argument, agreement *constrains* or limits its interpretation. Given the right context, the null-subjects in the Swedish (26) can be interpreted as 1, 2, and 3, person, singular or plural, although a 1 person reading, especially in the singular, is the salient one in most contexts (cf. Mörnjö 2002). The interpretation of the silent subjects in the Icelandic examples in (25), on the other hand, is confined to the person/number of the agreement morphology (1SG in (25a) vs. 1PL (25b)).

This is an important fact. It has often been suggested that agreement morphology is in some sense less 'powerful' or less 'pronominal' in Icelandic than in for instance Italian (e.g. Sigurðsson 1993, partly contra Hjartardóttir 1987, Holmberg & Platzack 1995; Platzack 2004). However, the strict referential limitations imposed by Icelandic verbal agreement in examples like (25), suggests that such approaches have partly been on the wrong track. Rather, by reducing

16. To an extent the same applies to English (see, e.g. Haegeman 1990; Horsey 1998; Deal 2005), but, for convenience, we exclude English from our discussion.

ambiguity, agreement morphology both facilitates and constrains interpretation or identification in both Italian and Icelandic, but it does not have any licensing effect or power in either language. As we will discuss in Section 6, though, subject agreement is stronger in Italian than in Icelandic in the sense that it acts, not as a licenser, but as an intervener, thereby blocking referential object pro.

To our knowledge, all modern V2 Germanic varieties that have subject drop of this sort obey the ELEC, that is, the left edge or the Spec-C of the clause must be phonetically empty.¹⁷ This was shown in (13)–(14) above for German, Icelandic and Swedish, and is illustrated for Dutch in (27) (from Ackema & Neeleman 2005):

(27) A: Wat is er met Jan aan de hand?
 what is there with John on the hand
 ‘What is the matter with John?’

B1: ___ Moet ___ morgen naar de tandarts.
 must tomorrow to the dentist
 ‘He has to go to the dentist tomorrow.’

B2: *Morgen moet ___ naar de tandarts.
 tomorrow must to the dentist
 ‘He has to go to the dentist tomorrow.’

Regular Conjunction Reduction is generally also subject to ELEC. This is illustrated for Icelandic and Swedish in (28)–(29), respectively:¹⁸

(28) a. María keypti blaðið en ___ vildi ___ ekki kaupa bókina.
 Mary bought paper.the but wanted not buy book.the
 ‘Mary bought the newspaper, but she did not want to buy the book.’

b. *María keypti blaðið en **bókina** vildi ___ ekki kaupa.
 Mary bought paper.the but book.the wanted not buy

c. María keypti blaðið en **bókina** vildi **hún** ekki kaupa.
 Mary bought paper.the but book.the wanted she not buy

(29) a. Maria köpte tidningen men ___ ville ___ inte köpa boken.
 Mary bought newspaper.the but wanted not buy book.the

b. *Maria köpte tidningen men **boken** ville ___ inte köpa.
 Mary bought newspaper.the but book.the wanted not buy

c. Maria köpte tidningen men **boken** ville **hon** inte köpa boken.
 Mary bought newspaper.the but book.the wanted she not buy

17. West Flemish does not seem to have any subject drop of this sort (Haegeman 1996; Rizzi 2005).

18. Conjunction Reduction in at least Dutch and German tolerates certain exceptions to ELEC (see te Velde 2006).

As seen, ELEC applies when the second conjunct contains a null-subject, but not when it contains an overt, postverbal one. This might seem to be a matter of course, but we will argue that this is an important observation (see Section 5).

V2 Germanic OBJECT DROP is illustrated for German, Icelandic and Swedish in (30)–(32), respectively. The dashes show the empty left edge (Spec-C) and the canonical object position. As indicated, the subject pronoun is preferably cliticized onto the verb in examples of this sort:¹⁹

- (30) A: Was meinst du über den neuen Hausmeister?
 what mean you over the new janitor
 ‘What do you think of the new janitor?’
 B: ___ Weiß’ich ___ nicht, ___ hab’ich ___ noch nicht gesehen.
 know’I not, have’I still not seen
 ‘I don’t know (*that*), I have still not seen (*him*).’
- (31) A: Hvað finnst þér um nýja húsvörðinn?
 what think you about new janitor.the
 B: ___ Veit’(g) ___ ekki, ___ hef’(g) ekki séð ___ enn.
 know’I not, have’I not seen yet
- (32) A: Vad tycker du om den nya vaktmästaren?
 what think you about the new janitor.the
 B: ___ Vet’ja(g) ___ inte, ___ har’ja(g) fortfarande inte sett ___.²⁰
 know’I not, have’I still not seen

Many Scandinavian varieties also have object drop in second conjuncts, under coreference with an overt object in the first conjunct (cf. Áfarli & Creider 1987; Rögnvaldsson 1990). This CONJUNCT OBJECT DROP, COD, is illustrated in (33). The Icelandic example in (33a) is a newspaper headline (mbl.is | 27.12.2005), the

19. Similar types of topic object drop are found in some Romance varieties:

- (i) a. Vi en la televisión. Quiteño Spanish, Ecuador
 saw in the television Suñer and Yépez (1988: 513)
 ‘I saw it/them[–anim] on television.’
 b. Ya le alcanzo. River Plate Spanish
 right-away you.DAT reach Masullo (2003)
 ‘I’ll get it for you right away.’

20. However, object drop is much more marked in the second clause than in the first one in Icelandic and Swedish (even unacceptable to some speakers). In general, dropping HUMAN objects is more marked than dropping NON-HUMAN objects in both languages.

Norwegian example in (33b) is from Faarlund et al. (1997: 715), and the Swedish one in (33c) is from Egerland (1996: 290):

- (33) a. ___ Stal bil og ___ eyðilagði ___.
 stole car and destroyed
 ‘Stole a car and destroyed *it*.’
- b. Han hogg juletre og ___ selde ___ i byen.
 he cut-down Christmas-tree and sold in town
 ‘He cut down a Christmas tree and sold *it* in town.’
- c. Han tog boken och ___ läste ___.
 he took book.the and read
 ‘He took the book and read *it*.’

Similar instances of Conjunct Object Drop were frequent in Old Italian (see Egerland 1996: 284ff), and can even be sporadically found in Modern Italian. The Modern Italian example in (34) is from Egerland (1996: 285); the dash indicates the canonical pre-verbal object-clitic position:

- (34) Lo baciai e ___ abbracciai.
 him I-kissed and I-embraced
 ‘I kissed him and embraced *him*.’

COD is also found in, e.g. Polish and Russian (see McShane 2005).

Both these object drop types, the general type and COD, observe the ELEC in the Germanic V2 languages. This is illustrated for the general type in (35)–(37) (see also Sigurðsson 1993: 254–255):

- (35) a. (Das) kenne’ich ___ nicht. German
 b. (Det) känner’ja(g) ___ inte. Swedish
 c. (Það) þekki’ég ___ ekki. Icelandic
 (that) recognize’I not
- (36) a. *Jetzt kenne’ich ___ nicht. German
 b. *Nu känner’ja(g) ___ inte. Swedish
 c. *Núna þekki’ég ___ ekki. Icelandic
 now recognize’I (that) not
- (37) a. *Ich kenne ___ nicht. German
 b. *Jag känner ___ inte. Swedish
 c. *Ég þekki ___ ekki. Icelandic
 I recognize not

As illustrated for COD in (38) below, both subjects and non-subjects in the left edge of the second conjunct render the null-object illicit; the first dash indicates the left edge (Spec-C), the second one indicates Spec-T, the third dash shows the

canonical object position, and the fourth one the canonical position of the adverb *síðan* ‘then, later on’:

- (38) a. Þeir kysstu hann fyrst og ___ föðmuðu ___ ___ síðan
 they kissed him first and embraced (they) (him) then
 b. *Þeir kysstu hann fyrst og **síðan** föðmuðu ___ ___ ___
 they kissed him first and then embraced (they) (him)
 c. *Þeir kysstu hann fyrst og **síðan** föðmuðu þeir ___ ___
 they kissed him first and then embraced they (him)
 d. *Þeir kysstu hann fyrst og **þeir** föðmuðu ___ ___ síðan
 they kissed him first and they embraced (him) then

We will return to the properties of ELEC (in Section 5), but before doing so, we need to take a look at more argument drop types that are sensitive to similar restrictions.

4. More cases of left edge sensitive argument drop

Chinese *subject drop* may either be topic-linked only, as in (39), or antecedent-linked (‘controlled’), as in (40). Both examples are from C.-T.J. Huang (1989: 187,193):

- (39) (Ta) kanjian (ta) le.
 (he) see (he) PERF
 ‘He saw him.’
 (40) Zhangsan shuo ___ hen xihuan Lisi.
 Zhangsan say very like Lisi
 ‘Zhangsan said that he liked Lisi.’

In contrast, Chinese *object drop*, as in (41) “must refer to the discourse topic, but not to the matrix subject” (C.-T.J. Huang 1989: 188). That is, it must not be ‘controlled’ or, in our terms, antecedent-linked:

- (41) Zhangsan shuo Lisi hen xihuan ___.
 Zhangsan say Lisi very like
 a. ‘Zhangsan₁ said that Lisi₂ liked *him*₃.’
 b. *‘Zhangsan₁ said that Lisi₂ liked *him*₁.’

In this respect, Chinese object drop differs from object drop in languages like Korean and Imbabura Quechua. Reconsider the Imbabura Quechua example in (3c) above = (42):

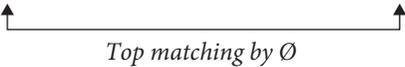
- (42) Juzi nin Marya ___ juyanata.
 Juzi says Marya (him) will-love

In Government and Binding theory approaches, this kind of difference was seen as an argument that the Chinese object drop type involved topic drop, whereas languages like Imbabura Quechua were assumed to allow ‘genuine’ object pro (Cole 1987). On an approach along these lines, Finnish, in contrast, would be a language with two different types of null-objects, that is, null-topics as well as pro (given the analysis in Y. Huang 2000: 86). Reconsider the Finnish example in (3d) = (43):

- (43) Kalle väittää että Pekka uhkaili ____.
 Kalle₁ claims that Pekka₂ threatened (him_{1/3})

A double analysis of this sort was pursued for Old Norse in Sigurðsson (1993). As discussed above, however, assuming inherent or ‘lexical’ differences between occurrences of zero pronouns is not an option to us. A different approach to this cross-linguistic variation is thus called for.

According to the Context-Linking Generalization in (6) above, any referential pronoun, overt or covert, positively matches a silent context-linking C-feature, for instance Top. We thus consider ‘control’ or antecedent-linking of 3 person null-arguments to be just a subcase of a more general topic-linking. One possibility would be to allow the null-argument to link to the matrix Top feature across an overt antecedent, as sketched in (44) for the Quechua example in (42) above:

- (44) [CP ... Top ... [TP Juzi_i ... [CP ... [TP Marya ... Ø_i ...


This is a crossover configuration, so if this is what is going on in languages that allow antecedent-linking, we have to assume that such languages can in some cases relax crossover restrictions, at least when the initial or topmost member of the ‘crossover chain’ is silent. As evidenced by (41b), this option is not available in Chinese.

Alternatively, the subordinate CP has its own Top feature, matching the overt antecedent, as illustrated in (45):

- (45) [CP ... Top ... [TP Juzi_i ... [CP ... Top ... [TP Marya ... Ø_i ...


If so, the two readings of (41) get the following analyses:

- (46) [CP ... Top ... [TP Zhangsan₁ ... [CP ... Top ... [TP Lisi₂ ... Ø₃ ...]]] cf. (41a)


- (47) * [CP ... Top ... [TP Zhangsan₁ ... [CP ... Top ... [TP Lisi₂ ... Ø₁ ...]]] cf. (41b)


More constructions may be used in recipe contexts in many languages (passives, subjunctives, etc.), but these are typically irrelevant with respect to ROD.

In all ROD languages we know of, *subjects* must never be spelled out in ROD clauses, not even in those languages where infinitives (rarely) or imperatives (more commonly) otherwise allow overt subjects. This is illustrated in (51)–(52) for English and French:

- (51) Take three eggs. (*You) beat __ well while someone else mixes the flour and the butter.
- (52) Prenez trois oeufs. (*Vous) déposez __ dans un bol. (*Vous)
 take three eggs. you break into a bowl. you
 battez __ doucement.²⁴
 beat gently

Thus, ROD generally observes an EMPTY SUBJECT CONDITION, ESC, reminiscent of the other empty left edge phenomena we have been looking at.

Icelandic has a rich system of imperative structures, thus bearing in an interesting way on ESC, so we will study Icelandic ROD more closely in the next subsection. Before turning to Icelandic, it is however worth noticing that referential null-objects seem to be generally acceptable under *strong deixis*, referring to objects present in the real world situation of the utterance, as in warning and instructing signs, instructions on packagings, ‘motherese’ instructions, and so on:

- (53) a. Here, read __!
 b. Open __ carefully.
 c. Shake __ well before opening __.
 d. Wet paint. Do not touch __.
 e. Police line. Do not cross __.

DEIXIS OBJECT DROP of this sort is found even in those languages that do not allow ROD. Expectedly, strong deixis facilitates context-linking in null-argument constructions. In Section 6, we will briefly address the question of why this Deixis Object Drop and ROD are more widespread than other types of object drop.

24. Provided by Yves Roberge.

5. The emptiness conditions are operative in PF

Recall our analysis in (12a) of violations against ELEC in Germanic as minimality violations or an intervention effect, sketched again in (54):

$$(54) \quad * [_{CP} \dots \{Top\} \dots [_{SPEC}] \dots [_{TP} \dots \emptyset \dots$$

The lexical material in Spec-C, here simply denoted as $[_{SPEC}]$, intervenes between the silent Top feature of the C-domain and the TP-internal (3 person) null-argument, thereby blocking Top matching by \emptyset .²⁵

It is a matter of debate whether or not the imperative verb raises into the high C-domain, across Top (cf. Jensen 2003 vs. Platzack & Rosengren 1997). Thus, even for V2 Germanic, it is also unclear whether the imperative subject raises into (a low) Spec-C.²⁶ If it does, then the Empty Subject Condition on Recipe Object Drop might be just a subcase of the general ELEC. However, in the absence of clear evidence, we do not take a stand on the issue here. For our purposes, it is sufficient that overt subjects in imperative ROD clauses evidently render the object drop ungrammatical. We illustrate this for Icelandic in (55):

- (55) a. Skerið (*þið) — í litla bita.
 cut.2PL (*you.PL) in small pieces
 ‘Cut in small pieces.’
- b. Skerið (þið) þau í litla bita.
 cut.2PL (you.PL) them in small pieces
 ‘(You) cut the them in small pieces.’

Regardless of the exact position of the verb and the subject, we can analyze the Empty Subject Condition on ROD as an intervention effect, in a parallel fashion as the general ELEC in V2 Germanic:

$$(56) \quad * [_{CP} \dots Top \dots [_{SUBJ}] \dots \emptyset \dots \quad *Top\text{-matching by } \emptyset \text{ across } [_{SUBJ}]$$

Thus, we seemingly have a syntactic account of ESC and of ELEC in general. Notice also that there are structural constraints on the empty left edge, that is,

25. Recall that the relevant context-linking features of 1 and 2 person pro are the ‘speaker’ and ‘hearer’ features, Λ_A and Λ_P . Many languages and/or constructions allow either only 1 and 2 person pro (successful Λ_A - or Λ_P -matching) or only 3 person pro (successful Top-matching).

26. We do not consider infinitive ROD here, since subjects are in any case disallowed in most infinitives in most languages, in spite of well-known exceptions, for example in Hungarian and Icelandic (see Dalmi 2005).

ELEC does not simply require that the ‘initial phonological stuff’ of an utterance not be spelled out, as illustrated in (57):

- (57) a. Nein, ___ kenne’ich ___ nicht.
 b. Nej, ___ känner’ja(g) ___ inte.
 c. Nei, ___ þekki’(g) ___ ekki.
 no, recognize’I not

However, if left edge emptiness conditions are clear cut syntactic conditions, then it is remarkable that overt objects are not constrained by any conditions of this sort. In accordance with the Context-Linking Generalization in (6), overt referential 3 person pronouns must also match Top, but they are obviously not ‘disturbed’ by overt left edge elements. We just saw this in (55b) for Icelandic imperatives, and the same fact was illustrated for potential Conjunction Reduction structures in Icelandic and Swedish in (28c) and (29c). The same holds for objects in potential object drop constructions. Consider for instance the unacceptability of the null-objects in (37c,d) = (58a,b), and compare it to the grammaticality of the corresponding overt pronouns in (59):

- (58) a. *Þeir kysstu hann fyrst og síðan föðmuðu þeir ___ ___
 they kissed him first and then embraced they (him)
 b. *Þeir kysstu hann fyrst og þeir föðmuðu ___ ___ síðan
 they kissed him first and they embraced (him) then
- (59) a. Þeir kysstu hann fyrst og síðan föðmuðu þeir hann ___
 they kissed him first and then embraced they him
 b. Þeir kysstu hann fyrst og þeir föðmuðu ___ hann síðan
 they kissed him first and they embraced (him) then

This would seem to suggest that ELEC and ESC are not really syntactic but rather due to some performance conditions applying in PF. As a matter of fact, Icelandic ROD is sensitive to reduction of the imperative subject, taking place in shallow phonology. We present data showing this below.

The basic 2 person singular imperative of most Icelandic verbs is formed on the basis of the infinitive, by cutting the infinitival suffix *-a*. This is illustrated for two verbs in (60):

- (60) a. Infinitive *brjóta* ‘break’ *fara* ‘go’
 b. Basic 2SG imperatives
 (poetic and biblical language) %*brjót* (*þú*) %*far* (*þú*)

We use the percent sign to indicate that the basic 2SG imperative is confined to solemn language. In language use of this sort, an overt full subject pronoun is optional, as indicated in (60b).

- (63) ... þrjú egg ...
 three eggs
- a. *Brjót þú ___ í skál og ...
 break.IMP you.SG (them) into bowl and ...
- b. ?Brjóttu ___ í skál og ...
 break.IMP-CL_{2SG} (them) into bowl and ...
- c. %Brjót ___ í skál og ... (% = solemn language)
 break.IMP (them) into bowl and ...

As seen, the more reduced the *subject* is, the more acceptable the *silent object*. Notice in particular that the plural ??*brjótiði* in (62b) is more marked than the singular ?*brjóttu* in (63b). The reason why is evidently that the plural clitic gets a secondary (trisyllabic) stress, whereas the singular clitic gets no such stress (Icelandic having a strict first syllable stress pattern, with no stress on the second syllable and a secondary stress on the third syllable). That is, the difference in acceptability between the plural and the singular seems to have a purely *phonological* source. Moreover, if the vowel of the singular clitic disappears, *due to hiatus*, then ROD becomes possible.

- (64) ... þrjú egg ... Brjótt' ___ í skál og ...
 three eggs break.IMP-CL_{2SG} into bowl and ...

Notice that the form of the imperative *brjótt'*, [prjɔuht], is distinct from the basic imperative *brjót*, [prjɔu:t], i.e. it has evidently arisen through cliticization of the subject and subsequent truncation of the vocalic part of the clitic:

- (65) /brjót+þú/ → *brjóttu* → *brjótt'*

In other words, the subject *is* there, but it must 'keep a low profile' *in prosody*.

We conclude that the emptiness conditions studied here are processing limitations, operative in PF rather than in narrow syntax.

6. Concluding remarks

The conclusion or result that empty left edge conditions on referential null-arguments are PF conditions may seem remarkable. However, on the anti-lexicalist, computational approach to pronouns (and other 'words'), taken here, this is what one would expect. Recall that in our approach pronominal arguments are syntactically computed feature bundles that may or may not be spelled out in PF, depending on PF parametric options and/or language-specific low-level PF spell-out rules and constraints. The left edge conditions we have been studying here are PF constraints of this sort.

Speaking in very general terms, we have here been following a long tradition in focusing on the conditions on silence, rather than on the conditions on sound, as it were. In Sigurðsson (2004a), however, it is suggested that we should take exactly the opposite view:

Lexicalization is arguably the last resort whenever a meaningful feature cannot be conveyed in a message by any other means than the costly means of overtly expressing some item that carries the feature. Thus, instead of looking for a ‘license’ to stay empty a category is ‘happy’ with whatever ‘excuse’ it has not to get lexicalized. This is the general program we should pursue, I believe.
(Sigurðsson 2004a, n. 27, p. 254)

At some level, language use is subject to AVOID SPELL-OUT:³⁰

- (66) Avoid spelling out any feature or element X of language. In other words, do not express X unless you have to (for linguistic or extra-linguistic reasons).

If so, the left edge phenomena we have been studying here are not really conditions on silent arguments. Rather, lexicalized or filled left edges force the spelling-out of arguments that would otherwise have been ‘happily silent’:

- (67) A referential argument must be spelled-out in a clause with a phonetically filled left edge (where ‘left edge’ varies across languages and constructions), or else it cannot be successfully context-linked.

We might refer to this as the Filled Left Edge Trigger. For expository purposes, however, we have here opted for talking about left edge emptiness conditions on null-arguments instead.

On the present approach, much of the cross-linguistic distribution of overt and silent arguments is accounted for in terms of ‘leftish’ phonological intervention. Thus, the Italian type of subject agreement can be analyzed as being a PF intervener, as opposed to agreement in the Germanic languages.³¹ It follows that referential null-objects are excluded in Italian, as we saw in (4) above, and as further illustrated in (68):

- (68) *Ha costretto — a partire.
 has.3SG forced to leave

30. Cf. ‘Avoid Pronoun’ in Chomsky (1981: 65). See also, much more generally, Grice (1975, 1978).

31. Cf. the approach pursued by Platzack (2004), where Agr is an incorporated pronoun in Italian as opposed to Icelandic. In a language like English, the overt subject acts as an intervener.

In this language type, then, subject agreement intervenes between the null-object and the context-linking features in the C-domain, thereby blocking the null-object (in contrast to an overt object clitic) from successfully matching Top or Λ_A/Λ_P . That is, Italian Agr behaves much like an overt weak pronoun in e.g. the Germanic languages (Cardinaletti & Starke 1999 and many since), thus inducing intervention effects. It obviously expresses the subject ϕ -features, much as weak pronouns, but it is not a licenser (any more than weak pronouns in general). On the approach pursued here, null-arguments are universally available in syntax, hence not licensed but either blocked or non-blocked in the PF of individual languages. In particular, ungrammatical pronominal zeros in non-null-argument languages or constructions are not the result of a crashing *syntactic* derivation.

Recall, that Italian allows Recipe Object Drop. In addition, it has Deixis Object Drop. That is, it is like English in accepting both these types of referential object drop. We illustrate this in (69)–(70):³²

- (69) ... tre uova ... Rompere in una scodella. Sbattere con cura.
 three eggs break.INF into a bowl. beat.INF with care
- (70) Vernice fresca. Non toccare.
 paint fresh. not touch
 ‘Fresh paint. Do not touch.’

Here, there is no intervening subject Agr, hence the grammaticality of the null-objects.

In both these object drop types, a large amount of information is given in the utterance context. Plausibly, the pressure to violate Avoid Spell-Out increases the less context information one has, formal written language scoring lower on the ‘context information scale’ than most other registers. If so, the explanation of why Recipe Object Drop and Deixis Object Drop are cross-linguistically more common than other object drop types is partly linguistic (absence of intervention) and partly communicative.

Given that both ELEC in general and the (perhaps more specific) Empty Subject Condition on Recipe Object Drop are processing limitations, operative in PF, it might seem unexpected that they can be analyzed in terms of minimality, as intervention effects on feature matching. However, as has been argued by Sigurðsson (e.g. in 2006a, 2006b), PF (including morphology) is clearly much more ‘syntactic’ than usually assumed. It is evidently a highly sophisticated layered system that is able to ‘see’ syntax and partly operates in a ‘syntactic manner’, with abstract feature values and feature matching processes, even though

32. Examples provided by Guiseppe Longobardi and Roberta D’Alessandro, respectively.

it takes place after transfer (from Narrow Syntax to the interfaces) and therefore operates on structures and elements that are no longer in sight for the semantic interface. That is, as easily observable language variation would seem to suggest, the formal computation proceeds on the PF side.

Accordingly, derivational crashes may occur in *language* (in PF), even though narrow *syntax* is crash-proof.

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