Conditions on argument drop

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This work pursues the idea that null-arguments are derived without any statement or parameter, instead following 'naturally' from 3rd factor principles and effects (in the sense of Chomsky 2005). The article thus contributes to the program of eliminating statements in grammar in favor of interacting general factors. More specifically, the article develops a theory of C/Edge-linking in terms of syntactically active but silent C-features, where all referential definite arguments, overt and silent, must match these features in order to be successfully C/Edge-linked (interpreted). On the approach pursued radically silent arguments, like Germanic zero topics and controlled 3 person null-subjects in Finnish, commonly raise across a lexical C (a complementizer or a V2 verb) into the edge of the C-domain for the purpose of successful C/Edge-linking (circumventing C-intervention), thereby showing A'-behavior not observed for other types of arguments (including the Romance type of *pro*). Silent arguments are universally available in syntax, whereas their C/Edge-linking is preconditioned by factors (such as Germanic V2) that may or may not be present or active in individual languages and constructions.

Keywords: argument drop, C/Edge-linking, context-linking, intervention, pro, topic drop

1. Introduction[*]

Three types of referential null-subjects are often distinguished (C.-T. J. Huang 1984, 1989, 1991 and many since, e.g. Holmberg 2005, Neeleman & Szendrõi 2007):

A. The Romance *pro drop* type, conditioned by agreement
B. The Germanic *topic drop* type, conditioned by an empty Spec-C
C. The Chinese *discourse drop* type, not clause-internally constrained[1]

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In addition, Finnish, Hebrew and a number of other languages have controlled pro in subordinate clauses that shares properties with Germanic topic drop and Chinese discourse drop.

Types A-C are exemplified in (1)-(3) ((3) is from C.-T. J. Huang (1984:533, 1989:187); Ø-AGR in (2) and (3) indicates 'no agreement':

(1)	Parl**o**/Parl**i**	islandese.	*Italian*
	speak.1SG/2SG	Icelandic	subject-verb agreement
	'I/You speak Icelandic.'		
(2)	Kommer	tillbaks imorgon.	*Swedish*
	come.Ø-AGR	back tomorrow	empty Spec-C, but no agreement
	'[I/We/She, etc.] will be back tomorrow.'		
(3)	Kanjian	ta le.	*Chinese*
	see.Ø-AGR	him PERF.Ø-AGR	no clause-internal restrictions
	'[He/She, etc.] saw him.'		

Romance null-subjects differ from the Germanic and the Chinese types in being conditioned by *verb agreement*. Germanic null-subjects, in turn, differ from the other types in being confined to clauses with an *empty Spec-C*. Compare (2) and (4):

(4)	Imorgon	kommer	*(jag/hon/ …) tillbaks.	*Swedish*
	tomorrow	come.Ø-AGR	*(I/she/ …) back	

Germanic referential null-subjects must thus have access to Spec-C (see sections 4 and 5). Following Sigurðsson & Maling (2007, 2008), I refer to this restriction as the *Empty Left Edge Condition*, ELEC.

Null-objects are like null-subjects in either being or not being clause-internally constrained, and the clause-internal conditions are either agreement or access to Spec-C. This is exemplified in (5)-(7). The Pashto example in (5) and the Chinese example in (7) are modeled on C.-T. J. Huang (1984:533, 536); notice that the subject in (6) is phonologically reduced (the full form being *jag*), an issue I will return to:

(5)	mā	wəxwar**a**	*Pashto*
	me.ERG	eaten.3.F.SG	object-verb agreement

[1] The 'Chinese type' is particularly common in East- and Southeast Asia, whereas the 'Romance type' is highly frequent in most other parts of the world (see Dryer 2005b).

'I ate it.' (e.g. the apple)

(6) Såg 'ja igår. *Swedish*
saw. Ø-AGR I yesterday empty Spec-C, reduced subject,
'I saw [him/her, etc.] yesterday.' but no agreement

(7) Ta kanjian le. *Chinese*
he see.Ø-AGR PERF.Ø-AGR no clause-internal restrictions
'He saw [him/her, etc.].'

In C.-T. J. Huang's approach (1984, 1989), and in other GB-theoretic approaches inspired by his work (Cole 1987, Cardinaletti 1990, Sigurðsson 1993, among many), a lexical (featural) distinction was drawn between Romance *pro* drop and Germanic *topic* drop (see section 2). The Chinese type of discourse drop, in turn, was analyzed as involving subject pro or PRO, but zero object topics.

I will here explore and argue for a unified minimalist approach to referential null-arguments, where all types of (overt and silent) definite arguments require *C/Edge-linking* (see shortly). Even so, it is necessary to distinguish between φ-agreement types of argument drop (Romance, Pashto, etc.) and φ-silent types (Germanic, Finnish, Chinese, etc). Romance null-subjects have much the same distribution and referential properties as weak pronouns in languages like English and the Germanic V2 languages (Cardinaletti & Starke 1999), and I will thus adopt an analysis (Alexiadou & Anagnostopoulou 1998, Platzack 2004, Roberts 2008, Holmberg et al. 2009) where verbal agreement in languages like Italian *is* a pronoun, incorporated into T, henceforth **Ø–T$_{\varphi}$** (cf. the notion 'I-subject' in Borer 1986, 1989).[2] Being φ-visible or φ-overt, Romance Ø–T$_{\varphi}$ does not instantiate true null anaphora, nor does licensing (in the sense of Rizzi 1982, 1986) distinguish between it and Germanic weak pronouns (see also Frascarelli 2007). Indeed, as we will see in section 4, Romance Ø–T$_{\varphi}$ behaves like overt weak subject pronouns and not like φ-silent anaphora with respect to C/Edge-linking.

The leading ideas I pursue are as follows: First, I suggest that Universal Grammar does not contain any null-subject parameter, licensing of null-arguments instead following from the interaction of general factors (in the spirit of Chomsky 2005). Second, any definite argument, overt or silent, positively matches at least one *C/Edge-linker* in its local C-domain, where

[2] In this language type, non-incorporated subjects, like *Io* in *Io parlo islandese*, are not in Spec-T (cf. e.g. Alexiadou & Anagnostopoulou 1998, Cardinaletti 2004, 2009).

C/Edge-linkers include Top(ic) features and speech participant features ('speaker', 'hearer').[3] I refer to this as the *C/Edge-linking Generalization* (see (30) in section 4) and argue that C/Edge-linking is a computational, syntactic phenomenon. Third, however, like any other syntactic phenomenon, C/Edge-linking must be interpretable at the interfaces. Radically φ-silent arguments differ from φ-overt arguments (including Romance Ø–T_{φ}) in that their C/Edge-linking is invisible hence uninterpretable across a spelled-out intervener in the C-system. However, such *C-intervention* can in certain cases be circumvented by movement of the null-argument. Thus, Germanic null-topics are interpretable when they have raised across the finite verb, into the C-domain (and this is only possible when Spec-C is not lexicalized by internal merge). Finally, I will speculate (and present some evidence) that languages like Chinese do not display any clause-internal restrictions on pro drop because they lack lexical C categories in their clausal left periphery, thus not showing any C-intervention effects on C/Edge-linking.

The analysis pursued is based on the hypothesis that C/Edge-linking is syntactic, interacting with rather than merely boiling down to pragmatics.[4] C-intervention, in contrast, applies in PF, blocking C/Edge-linking from being visible and successfully interpreted in the case of a true (φ-silent) null-argument, whereas it does not affect the C/Edge-linking interpretation of overt arguments (these being φ-visible in PF). The well-formedness of a structure thus depends on both the syntactic derivation and its PF-interpretation (hence its processing), that is, it can crash in PF even when it is perfectly well-derived in syntax. A still stronger view, which I adopt here, is that a structure can *only* crash in PF, syntax itself being crash-proof (cf. Frampton & Gutman 2002, Putnam 2010, among many).

I adopt the Strong Minimalist Thesis and hence the single cycle hypothesis (Chomsky 2000, 2001, 2005, 2007, 2008), i.e. the hypothesis that the syntactic computation proceeds in a single cycle, deriving a representation that is legible to both the interfaces (albeit in different terms, semantic vs. expressive). No generally received approach to null-argument phenomena has been developed within the minimalist program, so I start out, in section 2, by briefly laying out the Government and Binding approach to Romance pro drop and Germanic topic drop, arguing that an alternative minimalist analysis must be developed. In section 3, I present and discuss a number of facts illustrating that agreement is not the key factor in argument drop phenomena, even though it affects argument identification. In section 4, I define the notion of C/Edge-linking, pursuing the idea that successful C/Edge-linking is the crucial factor

[3] In contrast, impersonal generic arguments are not C/Edge-linked (see section 5) and the same is true of most other indefinite arguments. For reasons of space, I will not discuss full NPs here (but see Sigurðsson 2010 for a discussion of the relationship between Person and definiteness).

[4] In its broadest sense, C/Edge-linking extends to spatial and temporal anchoring, but space limits prevent me from discussing this here. In this work, I will thus only discuss C/Edge-linking of overt and silent arguments. For a recent more general minimalist discussion of C/Edge-linking (context-linking), see Sigurðsson 2010 and Sigurðsson & Maling 2010.

that identifies radically silent arguments. Section 5 discusses intervention effects upon C/Edge-linking in Germanic and section 6 tentatively extends the C/Edge-linking approach to controlled pro in Finnish and to the Chinese type of discourse drop.

2. On the GB distinction between pro drop and topic drop

In GB theory there were several seemingly good reasons to distinguish between Germanic and Romance argument drop. One of these reasons was that not only subjects but also objects can be dropped in Germanic, as illustrated in (6) above. Another, related reason was that Germanic topic drop is not generally contingent on verb agreement, and a third reason, illustrated in (2) and (4), was that it is confined to clauses with an empty left edge (Spec-C). This is further illustrated in (8)-(9) for Germanic subject topic drop; the dash indicates the Spec-T position, whereas the initial position is Spec-C:[5]

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

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

The received analysis (see, C.-T. J. Huang 1984, 1989, 1991, Cole 1987, Sigurðsson 1989, 1993, Cardinaletti 1990, Haegaman 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:

(10) a. $[_{CP}\, Op_i \ldots [_{TP}\, e_i \ldots$

[5] The examples in (8) and (9) are from Sigurðsson (1993:254–255), see also Y. Huang (2000:79–80). Largely the same applies to Dutch (see Haegeman 1996, Ackema & Neeleman 2007), apart from complications that arise from the fact that Dutch has a special series of weak (as well as strong) pronouns, leading to the preference of weak pronouns over nulls in certain cases where a null would be the natural option in e.g. German (Hans Broekhuis, Marcel den Dikken, pers. comm.). As also discussed by Haegeman (1996), West-Flemish is exceptional among the V2 Germanic languages in not allowing topic drop (i.e., it would seem that the available clitic option rules out the null-option, entirely in West-Flemish and partly in Dutch, but this needs to be looked into much more carefully than I can possibly do here).

b. $[_{CP}$ ~~*NP*~~$_i$ ... $[_{TP}$ t_i ... (e.g., ~~*Ich*~~ kenne __ das nicht)

The empty Spec-T position (then referred to as Spec,IP) could thus be analyzed as being both identified and licensed under A'-binding from Spec-C. In Italian examples like (1) above (*Parlo/Parli islandese*), on the other hand, the silent Spec-T subject was taken to be licensed and identified by the rich agreement morphology of T (Infl) in languages of this sort (Rizzi 1986):

(11) $[_{CP}$ ... $[_{TP}$ *pro*$_i$ T/AGR$_i$ ...

The Spec-T subject was thus an empty variable in (10) but a pro(noun) in (11), in accordance with the classification of overt and covert NPs in Government and Binding theory (Chomsky 1982:78f; see also Y. Huang 2000:17):

(12)		*Overt*	*Covert*
a.	[–anaphor, +pronominal]	pronoun	**pro**
b.	[–anaphor, –pronominal]	R-expression	**variable**
c.	[+anaphor, +pronominal]	----	PRO
d.	[+anaphor, –pronominal]	lexical anaphor	NP-trace

It followed that the Romance type of null-subjects was predicted to obey condition B of the binding theory (saying, roughly, that pronouns have to be free in a local A domain), whereas the Germanic type of null-arguments was predicted to obey condition C (saying that R-expressions / variables are A-free). Accordingly, the Germanic type was expected to be subject to much the same island constraints and crossover effects as overt A'-movement. This was commonly assumed to be borne out, at least by and large (see e.g. the discussion in C.-T. J. Huang 1984, Cole 1987, Sigurðsson 1993, Y. Huang 2000).

Referential indices violate the Inclusiveness Condition, stated as follows by Chomsky (1995:228):

> A 'perfect language' should meet the condition of inclusiveness: any structure is … constituted of elements already present in … [the] N[umeration]; no new objects are added in the course of computation … in particular, no indices, bar-levels in the sense of X-bar theory, etc. …

More generally, indices "are basically the expression of a relationship, not entities in their own right" (Chomsky 1995:217, fn. 53). Thus, the binding conditions cannot be stated in terms of indices, hence not in terms of the GB theoretic sense of binding. In addition, the binding conditions are conditions on representational levels (basically D-structure), which are

non-existent in the minimalism, and they cannot be stated in any alternative derivational terms without resorting to either look-ahead or backtracking (violating locality and cyclicity). The binding theory has accordingly been abandoned in most minimalist approaches. It does not follow, of course, that referential conditions on NPs are non-existent in language. Several different but conceptually related minimalist accounts of binding and control phenomena have been proposed, involving overt movement or only Agree or a combination of both (Reuland 2001, Hornstein 2001, Kayne 2002, Zwart 2002, Landau 2000, 2004, 2008, Heinat 2006, etc.).

If binding is non-existent in syntax, the different properties of null-argument types cannot be syntactically analyzed in terms of binding or the binding conditions. In addition, the notions 'anaphor' and 'pronominal', that were supposed to be the very defining features of pro versus variables (cf. (13) above), do not have any content or reference outside of GB theory, i.e., they only describe the distribution of anaphoric items in GB theoretic terms. They are not themselves features of language or "entities in their own right", as seen by the fact that they get no interpretation at the semantic interface. Thus, it is not an option to abandon the binding theory and keep the [–anaphor, +/–pronominal] understanding of (the typically) Romance and Germanic null-argument types. The combinations [–anaphor, +pronominal] vs. [–anaphor, –pronominal] have no status or meaning other than 'obeys condition B vs. condition C of the GB binding theory.' In particular, they do not have any status as lexical primitives (cf. Safir 2004a).

The notion 'variable' does not make the correct distinction between argument drop types either. A pronoun with an established reference may function as a constant in a given context, but, apart from that, any pronoun is basically a (partial) variable.[6] A claim to the effect that different types of null-arguments differ in 'variability' amounts to claiming that they have different referential properties, but that seems to be incorrect. The typical A'-/A-distinctions between GB-theoretic variables and 'non-variables' are real, but they arise not because of inherent feature differences between individual items (cf. Safir 2004a), but because different items typically take part in different types of dependencies (TP-bounded A-dependencies vs. TP external A'-dependencies).

A novel understanding of referential null-argument types is called for. Two different lines of reasoning suggest themselves: A lexical one and a derivational one. On a lexical approach, a null-topic of the Germanic type would have an extra feature, say +Topic, not shared by the Romance type of null-subjects. This is not particularly abstract or radical – phonological zeros commonly represent complex semantic/syntactic structures.[7] In fact, much generative work on null-anaphora, including the work of C.-T. J. Huang (1984, 1989, 1991),

[6] I largely put bound variable readings aside here, though (but for some remarks see footnotes 27 and 28 below).

[7] The references here are copious, I mention only Chomsky 1981, 1995, Merchand 2001, Sigurðsson & Egerland 2009.

has presupposed the lexical approach. However, an approach along these lines does not seem to make the correct distinctions between referential null-argument types (not any more than an account in terms of 'anaphor' and 'pronominal'). First, it is unclear why languages should differ such that some have and some lack +Topic null-anaphora; that assumption would seem to be independently refuted by the cross-linguistic availability of +Topic PRO (cf. Landau 2000 *et seq.*, Sigurðsson 2008). Second, the assumption or claim that Germanic null-arguments are somehow more topical than Romance null-subjects is unfounded. First and second person pronouns are inherently C/Edge-linked, and it has been meticulously demonstrated that Italian third person null subjects must be aboutness topics, as will be discussed in more detail in sections 3 and 4. I will thus argue that both types of null-arguments are pronouns, hence in need of being successfully C/Edge-linked. Radical (φ-silent) nulls of the Germanic type, however, must raise into the C-domain in order for their C/Edge-linking to be interpretable, thereby showing A'-behavior not observed for φ-visible pronouns, including Italian Ø–T_{φ}.

Chomsky (2005:6) distinguishes between "three factors that enter into the growth of language in the individual", that is:

- The language- and species-specific *1st factor* (referred to as the faculty of language in the narrow sense, FLN, by Hauser et al. 2002).
- The *2nd factor* of experience, leading to variation.
- The *3rd factor* of "principles [of biological and computational systems, HS] not specific to the faculty of language".

The 3rd factor includes "language-independent principles of data processing, structural architecture, and computational efficiency" (Chomsky 2005:9), whereas the 1st factor or FLN, according to Hauser et al. (2002:1573), "comprises only the core computational mechanisms of recursion as they appear in narrow syntax and the mappings to the interfaces", that is to say, unbounded Merge, yielding "a discrete infinity of structured expressions" (Chomsky 2007:5). Thus, "much of the complexity manifested in language derives from complexity in the peripheral components … [i.e., 3rd factor components, HS], especially those underlying the sensory-motor (speech or sign) and conceptual-intentional interfaces, combined with sociocultural and communicative contingencies" (Hauser et al. 2002:1573).

Adopting this general approach, I propose that the language faculty does not contain any wired in parametric instructions, the desirable goal being to analyze language variation in terms of interacting general 2nd and 3rd factor effects and principles. One such effect is incorporation. It can be formulated as a simple statement saying "Incorporate Y into X". One instantiation of this general architectural operation is "Incorporate φ into X", yielding Ø–X_{φ} (e.g. Ø–T_{φ}, as in Italian). The other options are "Copy φ onto X", yielding φ ... X_{φ} (as in

French, German, Icelandic), and the null option of not operating on or tampering with φ (yielding φ ... X, as in Chinese, Japanese, Mainland Scandinavian). For expository ease, one may wish to refer to these options as 'parametric'. However, it is not clear that there are any further options here, so enriching the model of Universal Grammar by postulating a special biologically wired in statement yielding these trivial options would seem to be redundant. In addition, it is unclear, to say the least, how such a statement could be explained from an evolutionary point of view (cf. Boeckx 2009).

Narrow Syntax comprises not only the 1st factor but also 3rd factor components. While φ-features are presumably language-specific, the operations "Incorporate Y into X" and "Copy Y onto X" are not.[8] Regardless of how we conceive of these options, it is in any case clear that language does not contain any primitive statement saying "do/do not spell out your subjects", that is, the null-subject phenomenon is an epiphenomenon that cannot be described or stated in terms of the notion 'null-subject' (the notion 'subject' itself is not a primitive of language, cf. Chomsky 1981:10). In addition, languages of the Italian type cannot be said to have null-subjects in any meaningful sense. As we will see, Italian Ø–T_{φ} behaves like a φ-overt weak pronoun in for instance the Germanic languages.

In the next section, I will demonstrate that agreement is not the key factor in argument drop phenomena. Subsequent sections discuss the notion of C/Edge-linking (and intervention blocking of C/Edge-linking).

3. On the role of agreement

Reconsider the Pashto object drop example in (5), repeated here as (13):

(13) mā wəxwar**a**
me.ERG eaten.3.F.SG
'I ate it.' (e.g. the apple)

[8] Which is not to say that the Romance type of φ-incorporation is a 'non-linguistic' phenomenon. Incorporation is just not *specific* to language. It is frequently found in the biological world, outside of language. As Juan Uriagereka (pers. comm.) puts it: "… In the 'classical' biological world, you have various forms, ranging from parasitism to even more direct forms of dependency (e.g. bacteria in digestive systems) that clearly lead to stable forms of mutual dependency among organisms. This sort of reasoning was pushed dramatically by Lynn Margulis 'endosymbiotic theory' … These days the logic has been amplified to viral dependencies too, and for instance the RAG genes (relevant of adaptive immunity) seem to have been the result of some sort of incorporated virus, which rather than being eliminated got coopted in our common ancestor with sharks." Massimo Piattelli-Palmarini (pers. comm.) further explains: "Instances of incorporation of genetic material into genomes is ubiquitous (horizontal transfer, Transposable Elements). 45% of our genome has that origin, though only a few are still active. Carl Woese, the one who has discovered and labeled the third kingdom, the archaea, questions neo-Darwinism on that basis. The longest time of evolution has witnessed horizontal transfer. See the attached [Woese 2002, Woese & Goldenfeld 2009]."

As Pashto is a split ergative language, it can be shown that dropped arguments, both subjects and objects, have to agree with the verb.[9] C.-T. J. Huang (1984:535f) demonstrates this very clearly, and I will not repeat his arguments here (see also Y. Huang 2000:55, Neeleman & Szendrõi 2007:672). Even so, it is evident that the referent of the object must *also* be identified or recovered from the context, like regular overt pronouns. There is no way of knowing that the dropped object in (13) refers to 'the apple' unless 'the apple' has been (or is being) established as an aboutness topic, either deictically or in discourse. In other words, the null object is not only clause-internally but also clause-externally conditioned.

The same point is demonstrated for Italian subject drop in the careful study of Frascarelli (2007).[10] I quote one of Frascarelli's examples and her discussion around it (2007:703f):

> Consider first the following passage, in which the speaker (who works in a radio station) is talking about her boss and a colleague of hers:
>
> (13) [***il mio capo***]$_i$ *come diceva Carlo* […] **pro$_i$** *è un exreporter* […] **pro$_i$** *è stato in giro per il mondo* […] **pro$_i$** *mi ha preso in simpatia solo che siccome* **pro$_i$** *è mostruosamente lunatico, è capace che domani non* ***gli$_i$*** *sto più simpatica e* **pro$_i$** *mi sbatte fuori* […] *comunque a parte questo* **pro$_i$** *mi diverte moltissimo - poi c'è* ***M.F.$_k$*** *che è questo che appunto sta facendo tipo praticantato per poi andare a fare l'esame da giornalista/ fra un anno e mezzo quindi* ***lui$_k$*** *c'ha quanto meno la garanzia che* **pro$_k$** *può rimanere lì finché* **pro$_k$** *non farà l'esame cioè ehm* ***lui$_i$*** *poi gli deve fare / scrivere le referenze…*
>
> '[**my boss**]$_i$ as Carlo used to say […] **pro$_i$** is a former reporter […] **pro$_i$** has been all over the world […] **pro$_i$** likes me, however, as **pro$_i$** is extremely moody, maybe tomorrow **pro$_i$** does not like me any longer and **pro$_i$** fires me […] anyway, apart from this, **pro$_i$** is really funny - then there is **M.F.$_k$** who is practicing for his exam as a journalist/ in one and a half years, so at least **he$_k$** has a guarantee that **pro$_k$** will stay there till **pro$_k$** has made the exam because **he$_i$** then must make/ write a report …'

> The initial DP *il mio capo* ('my boss') qualifies as an Aboutness-shift Topic … Once established as the Aboutness Topic, 'my boss' is interpreted as the subject of a number of following sentences, in which a N[ull]S[ubject] is used. Then, a new referent is introduced (i.e., *M.F*) and, interestingly, even though the following sentence has this referent as a subject and recoverability is not at stake, the speaker does not use NS. A strong pronoun is produced, which starts a Topic chain with two pros in the following sentences … Finally, the speaker shifts the conversation to her boss and a strong subject pronoun is realized again … The short passage given in (13) … shows that strong subjects are not produced to avoid featural ambiguities: the speaker is talking about two men and the φ-features expressed with the pronoun *lui* cannot be helpful to identify either (possible) referent. Strong pronouns, on the other hand, avoid ambiguities at a discourse

[9] In this respect Pashto differs from Hindi/Urdu, which can drop non-agreeing arguments under control (cf. Butt & King 1997), like Chinese.

[10] Related observations have recently been independently made for a number of languages by Cole 2009.

level, since they are used to obviate coreference with respect to the current Aboutness Topic (and, eventually, to propose a shift).

This passage also shows that NSs are always interpreted in relation with the *closest* [overt or covert] Aboutness-shift Topic without ambiguities (consistent throughout the corpus). This proves that the interpretation of referential pro does not depend on the agreement features of the licensing head, but on a matching relation with the local Aboutness-shift Topic …

Notice in passing that overt weak subject pronouns in Germanic must be maintained aboutness(-shift) topics in much the same manner as Italian Ø–T_{φ} (if a different aboutness topic is to be established, this requires a shift from a weak pronoun like *he* to a different lexical item like *the other man*, *the former*, etc.). As Italian Ø–T_{φ} is φ-overt, this parallelism with overt weak pronouns is expected. Frascarelli's study indicates that φ-visible arguments in general require contextual identification, regardless of φ-incorporation (see further below).

Other facts also suggest that the role of agreement for licensing and identifying of null-arguments, whether φ-silent or φ-visible, has been commonly misjudged in the generative literature. One such fact is that Icelandic generally lost subject drop in subordinate clauses and in main clauses with a lexicalized Spec-C without any concomitant change of grammar, in particular, without any relevant weakening of its robust agreement morphology (commonly with 5 distinct verb forms, see (18) below, Sigurðsson 1993, Thráinsson 2007). The change accelerated in the 18th century and very few examples of 'genuine' pro drop are found after 1850 (Hjartardóttir 1987). The following examples are the most recent ones I have come across, from around 1940.[11]

(14) Ætlun skipstjóra$_i$ var að sigla fram á 230 faðma dýpi,
intention captain's was to sail forth to 230 fathom's depth
en __$_i$ hætt**i** við það. Þarna var legið í tvo sólarhringa,
but stopped.3SG with that. there was laid for two day-and-nights
en __ sá**um** ekkert skip.
but saw.1PL no ship
'The captain's intention was to sail into 230 fathom's deep water, but (**he**) changed his mind. Our ship lay there [in the previously mentioned waters] for two days and nights, but (**we**) saw no other ship.'

Spelling out the subjects is obligatory in present day Icelandic, as shown in (15):

(15) Ætlun skipstjóra$_i$ var að sigla fram á 230 faðma dýpi,
intention captain's was to sail forth to 230 fathom's depth

[11] From an interview with Sveinn Magnússon (1866-1947), a farmer and fisherman, taken around 1940 but published 1988 in *Skagfirðingabók* 17:43-56. The examples are on p. 52.

en	hann$_i$ / *__$_i$	hætt**i**	við	það.	Þarna	var	legið	í two	sólarhringa,
but	he	stopped.3SG	with	that.	there	was	laid	for two	day-and-nights
en	við / *__	sá**um**	ekkert	skip.					
but	we	saw.1PL	no	ship					

As seen, the *only* differences between the two historical stages is the absence vs. the presence of the subjects. In particular, the verb form *sáum* 'saw' is unambiguously 1PL at both stages, as it has been throughout the history of Icelandic (whereas *hætti* 'stopped' is ambiguous between 1 and 3 person singular).

Oevdalian or Övdalian ('Älvdalsmålet') is a Scandinavian language, spoken by around 2.500 people in the north western part of Dalarna in Sweden (see Garbacz 2010). It is closely related to Icelandic and shares many typological traits with it, but it differs from it in having referential pro drop in the 1 and 2 person plural, as illustrated in (16)-(17). The Oevdalian examples in (16) are modeled on examples in Rosenkvist (2006):[12]

(16) a. … um (wi̧ð) ir**um** iema. *Oevdalian*
… if (we) are.1PL home
'… if we are at home.'

b. … um (ið) ir**ið** iema.
… if (you) are.2PL home
'… if you are at home.'

(17) a. … ef *(við) er**um** heima. *Icelandic*
… if *(we) are.1PL home

b. … ef *(þið) er**uð** heima.[13]
… if *(you) are.2PL home

This difference is remarkable in view of the fact that 1 and 2 person plural endings are person/number distinct from all other verb endings in both languages. Consider the present indicative paradigm in (18) of the verb meaning 'bite' (see Rosenkvist 2006:147):

(18) *O e v d a l i a n* *I c e l a n d i c*

[12] The 'Romance similar' type of argument drop is confined to 1 and 2 person plural in Oevdalian. Both may drop in subordinate clauses, as in (16), and 2PL may also drop rather freely in main clauses, in the Romance style. In contrast, 1PL only drops in the Germanic style in main clauses, that is, in the presence of an empty Spec-C. See Rosenkvist 2009a, 2009b. See also Cole 2009 for a more general discussion of split or mixed argument drop systems.

[13] The general 2PL ending is *-ið*, just as in Oevdalian. The verb *vera* 'be' is exceptional in applying *-uð* instead.

SG	1	bait	PL	1	bait-**um**	SG	1	bít	PL	1	bít-**um**
	2	bait		2	bait-**ið**		2	bít-ur		2	bít-**ið**
	3	bait		3	bait-a		3	bít-ur		3	bít-a

There can be no question that the Icelandic 1/2PL forms give unambiguous person/number information about their subjects, just like Oevdalian 1/2PL forms and like the 1PL form *sáum* '(we) saw' in (14) above. This is confirmed by the fact that these forms are used in subjectless exhortatives, like the following:

(19) a. Ger**um** __ eitthvað annað!
do.1PL something else
'Let's do something else!

b. Ger**ið** __ eitthvað annað!
do.2PL something else
'Do something else!'

Compare these exhortatives with the declaratives and interrogatives in (20)-(21):

(20) a. Nú ger**um** við eitthvað annað.
now do.1PL we something else
'Now, we do something else.'

b. * Nú ger**um** __ eitthvað annað.
now do.1PL something else

c. * Ger**um** __ eitthvað annað?
do.1PL something else

(21) a. Nú ger**ið** þið eitthvað annað.
now do.2PL you something else
'Now, you do something else.'

b. * Nú ger**ið** __ eitthvað annað.
now do.2PL something else

c. * Ger**ið** __ eitthvað annað?
do.2PL something else

Plainly, something more than just unambiguous person and number marking is involved in null-subject interpretation. In sections 4-6, I will argue that the crucial factor is successful C/Edge-linking.[14]

The marginal cross-linguistic importance of agreement is seen even more clearly for null-objects. Languages with agreement conditioned object drop include Pashto, as discussed above, and, for instance, Georgian, Swahili (Y. Huang 2000:54-55) and Chichewa, another Bantu language (Baker 2001:144f).[15] However, object drop of this sort is rather rare (see the overview in Y. Huang 2000:78ff), whereas many languages have clause-externally conditioned referential object drop. This is illustrated in (22) for three such languages (all lacking general object agreement); the underlined matrix subjects in (22b,c) are obligatorily antecedents of the null-objects:

(22) 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

In languages of this sort, the silent object is *discourse-linked*, as in (22a), or *controlled* (antecedent-linked), as in (22b) and (22c). Other languages that have clause-externally conditioned referential object drop include Chinese, Japanese, Korean, Thai, Malayalam, Chamorro and Hungarian (Y. Huang 2000:85ff). Some object drop languages, for example Chinese, allow only discourse-linked null topics, whereas e.g. Old Norse had both discourse-linked and controlled object drop (cf. Hjartardóttir 1987:56ff).[16]

[14] As seen in the c-examples, topic drop is impossible in direct questions, even though they have a (segmentally) silent Spec-C, and this holds true across Germanic (except perhaps in some echo-questions). See further the discussion in sections 5 and 6 below.

[15] 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).

[16] According to the description of Finnish in Y. Huang (2000:87), it is like Old Norse in having controlled as well as discourse-linked null-objects, but many or most speakers dislike controlled definite null-objects (Anders Holmberg pers. comm.).

Germanic topic drop is obviously not preconditioned by agreement. Even within Germanic, however, agreement *constrains* identification. We can see this by comparing e.g. Swedish (no agreement) and Icelandic (agreement). Consider the Swedish clauses in (23), where the dashes indicate silent Spec-C and Spec-T:

(23) a. __ Ligger __ bara på stranden.
lie.Ø-AGR just on beach.the
b. __ Kommer __ strax.
come.Ø-AGR right-away

In most contexts, the salient reading of Swedish null-subjects of this sort is a 1 person reading, especially 1SG. Given the right context, however, the null-subjects can be interpreted as 1, 2, and 3 person, singular or plural (Mörnsjö 2002:70ff). It is often hard to get 2 person readings, and I will disregard them here. Third person readings are also more constrained than 1 person readings, often requiring a conversational context (speaker shift), rather than a simple narrative (speaker bound) context:

(24) A: Var är Anna?
where is Anna
B1: Ligger bara på stranden.
'She is just lying on the beach.'
B2: Kommer strax.
'She'll be here in a minute.'

Depending on the verb form, each of the Swedish clauses in (23) gets four different 1 and 3 person translations in Icelandic (and three different 1 and 3 person translations in e.g. German). The 1 and 3 person translations of (23a) are given in (25):

(25) a. __ Ligg __ bara á ströndinni. 1SG
b. __ Ligg**ur** __ bara á ströndinni. 3SG
c. __ Liggj**um** __ bara á ströndinni. 1PL
d. __ Liggj**a** __ bara á ströndinni. 3PL

There is no way of interpreting e.g. the null-subjects in (25a) and (25c) as anything else than 'I' vs. 'we', respectively. Even so, Icelandic null-subjects of this sort are like Swedish null-subjects in requiring access to Spec-C, generally showing very similar distributional properties as null-subjects in the other V2 Germanic topic drop languages (as shown in Sigurðsson 1989:145ff, 1993, see also Mörnsjö 2002).

It is thus evident that agreement affects the identification of null-subjects but it is also clear that null-arguments can 'survive' in some languages and constructions that lack agreement. This is further evidenced by object drop constructions in the Germanic languages, as objects do not usually trigger verb agreement in Germanic. Consider the examples in (26) (see also Sigurðsson 1993:254f); as indicated, the subject pronoun is unstressed and (at least phonologically) cliticized onto the verb, a fact I will return to:

(26)	a.	__	Kenn'i(ch)	__	nicht.	*German*
	b.	__	Känner'ja	__	inte.	*Swedish*
	c.	__	Þekk'é	__	ekki.	*Icelandic*
			recognize'I		not	

Much as dropped subjects, dropped objects in V2 Germanic usually must have access to an empty Spec-C. Compare (26) to (27)-(28):[17]

(27)	a.	*	Jetzt	kenn'i(ch)	__	nicht.	*German*
	b.	*	Nu	känner'ja	__	inte.	*Swedish*
	c.	*	Núna	þekk'é	__	ekki.	*Icelandic*
			now	recognize'I	(that)	not	

(28)	a.	*	Ich	kenne	__	nicht.	*German*
	b.	*	Jag	känner	__	inte.	*Swedish*
	c.	*	Ég	þekki	__	ekki.	*Icelandic*
			I	recognize		not	

All these facts suggest that C/Edge-linking of null-arguments is a crucial factor. I consider this issue in more detail in the next section.

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[17] For a discussion of more object drop types in the Scandinavian languages, illustrating that object drop is commonly conditioned by phonological reduction of the subject, see Sigurðsson & Maling (2007, 2008). Nonetheless, there are exceptional cases with a dropped [–HUMAN] object and a weak clause-initial subject, like the Swedish clause in (ia), acceptable to at least some speakers (Verner Egerland, pers. comm.):

(i)		Rapporten	har	kommit.				
		report.the	has	arrived				
	a.	Jag	skickar	__	med	internpost	imorgon.	
		I	send		with	internal mail	tomorrow	
	b.	* Imorgon	skickar	jag	__	med	internpost.	
		tomorrow	send	I		with	internal mail	

'The report has arrived. I'll send *it* with internal mail tomorrow.'

4. C/Edge-linking

Frascarelli (2007) and Frascarelli & Hinterhölzl (2007) distinguish between *aboutness-shift topics*, *contrastive topics* and *familiar topics*, arguing that each type heads its own projection in the broad CP (ForceP) domain, as sketched in a simplified manner in (29) (where other categories in the C-domain are not shown):

(29) [… [$_{\text{ShiftP}}$ … [$_{\text{ContrP}}$ … [$_{\text{FamP}}$ …

Following Holmberg et al. (2009), I refer to aboutness-shift topics as *A-Top*(ics). In the same vein, we can refer to contrastive topics as *C-Top*(ics) and to familiar topics as *Fam-Top*(ics).[18]

As mentioned and partly illustrated above, Frascarelli presents thorough and convincing evidence that Italian third person null-subjects always match a maintained A-Top feature, which, according to Frascarelli (2007:697), is "base-generated in the C-domain".[19] I adopt her analysis in this respect, assuming, in addition, that the C-domain contains silent but probing (i.e., syntactically active) 'speaker' and 'hearer' features, referred to as the *logophoric agent* (Λ_A) and the *logophoric patient* (Λ_P) in Sigurðsson (2004a, 2004b, 2010).[20] Generalizing, we can refer to these logophoric features and the Top features as C/Edge-linking features or C/Edge-linkers, **CLn**, and state the *C/Edge-linking Generalization* in (30):

(30) Any definite argument, overt or silent, *positively* matches *at least one* CLn in its local C-domain, CLn $\in \{\Lambda_A, \Lambda_P, \text{Top}, \ldots\}$.

I adopt the cartographic approach, inspired by the work of Rizzi (1997, etc.), Cinque (1999, etc.), Cardinaletti (2004) and others (the 'Italian school', if one likes). I will not discuss the virtues or the properties of this approach in any detail here, as the C/Edge-linkers ('Speaker', 'Hearer', 'X-Topic') are the only C-features that matter for my purposes. For the sake of

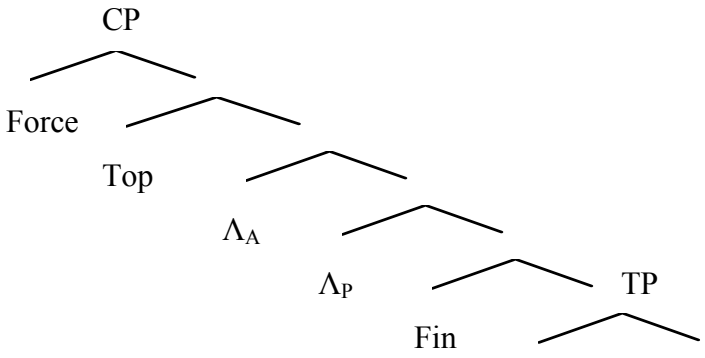
[18] See also Cardinaletti 2009 (but for a somewhat different understanding, see Neeleman et al. 2007). Bianchi & Frascarelli 2009 refer to Fam-Top as Given topic, G-topic.

[19] Overt Italian pronouns, in turn (as well as some overt pronouns in other languages), may either match C-Top or Fam-Top.

[20] For closely related ideas, see Bianchi 2006. This approach is conceptually related to the performative hypothesis (Ross 1970), but it is technically different from it (importantly, it is embedded in a general feature matching theory and it does not involve any performative null-predicate, thus escaping the inherent circularity problem of Ross' approach). It is largely adopted in Frascarelli 2007, Baker 2008 and Holmberg et al. 2009, see further Holmberg 2010. Similar approaches have been developed in semantic terms in earlier works, including Sigurðsson 1990 and the influential study of Schlenker 2003 (see also Hill 2007 and Giorgi 2010 for a somewhat different take on this).

explicitness, however, I sketch the CP structure that I am assuming (abstracting away from specifiers, left dislocated constituents, Foc(us), and different Top types):

(31)



For further discussion, see Sigurðsson (2010). Throughout, I also assume the approach in Sigurðsson (e.g. 2006, 2010) and in Sigurðsson & Holmberg (2008), where movement tucks in to the right of its probe rather than adding structure to its left.[21]

Matching takes place under Agree (cf. Chomsky 2001, Landau 2004), where a goal *positively* matches a probe if it gets positively valued in relation to it. Thus, a 1 person pronoun in the T-domain positively matches the 'speaker' feature in the C-domain, thereby being valued as [+Λ_A, …], a 2 person pronoun is [+Λ_P, …], and a definite 3 person argument is [+Top, …] ([+A-Top, …] in the contexts discussed here). Indefinite arguments, in contrast, do not usually positively match the C/Edge-linkers.[22]

Any finite C-domain has its own set of C/Edge-linkers, Λ_A, Λ_P, Top, ….,[23] either independently valued, as in prototypical main clauses, or valued in relation to a preceding category. Thus, direct speech in English, as in (*He said to Mary*:) *"I will help you"*, values its local speaker/hearer features, Λ_A and Λ_P, in relation to the matrix arguments, *He* and *Mary*, as sketched in (32) below (where, for reasons of space, I do not show the Top feature, positively matched by *He* in the matrix clause); the curly brackets indicate that a category is silent (the indices are used for expository purposes only, to indicate identity matching):

(32) a. He said to Mary: "I will help you".

b. $[_{CP}$ .. $\{\Lambda_A\}_i$ .. $\{\Lambda_P\}_j$ .. $[_{TP}$ .. **he$_k$** .. **Mary$_l$** .. $[_{CP}$ .. **$\{\Lambda_A\}_k$** .. **$\{\Lambda_P\}_l$** .. $[_{TP}$ .. I_k .. you$_l$ ..

[21] However, what I have to say here can also be stated (in a more complicated and costly fashion) in the traditional Spec approach to phrasal movement (but for arguments against specifiers, see Chomsky 2010, Lohndal in progr.).

[22] Sigurðsson 2010 argues that NPs match a Person head in the T-domain, Pn (T_φ in Chomsky 2001), as being either +Pn or –Pn, and that NPs that are valued as +Pn further positively match some of the C/Edge-linkers, whereas NPs valued as –Pn do not usually match any C/Edge-linkers and are thus commonly exempted from (high) A-movement.

[23] Root and non-root CPs differ in other respects, an issue I put aside here.

While the third person arguments in the matrix clause are negatively valued in relation to their local speaker/hearer features (as being distinct from them, $[-\{\Lambda_A\}_i, -\{\Lambda_P\}_j]$), the first and second person pronouns in the subordinate clause are positively valued in relation to one of their local speaker/hearer features, $\{\Lambda_A\}_k$ and $\{\Lambda_P\}_l$, which in turn inherit their reference under distant Agree with the matrix arguments. Intuitively, we can think of the embedded Λ_A and Λ_P features as 'switchers' that can (but need not) redefine the clause's conceived local speaker and hearer. I will henceforth simply refer to all C/Edge-linkers as CLn, unless further specification is called for.

The deictic switch seen in direct speech is in part a syntactic phenomenon, and not merely a matter of pragmatics, just like deictic switch in questions and answers, as in (33), is partly a syntactic phenomenon:

(33) a. Hey, John, are *you* invited? **John$_l$** … $[_{CP}$ ... **$\{\Lambda_P\}_l$** ... $[_{TP}$ ... you$_l$ ...
↑_____↑

b. No, Sandra, but *you* are. **Sandra$_k$** … $[_{CP}$ ... **$\{\Lambda_P\}_k$** ... $[_{TP}$ ... you$_k$ ...
↑_____↑

That deictic switch of this sort is partly a syntactic phenomenon is further evidenced by the fact that the same kind of switch is found in regular subordination in many languages,[24] yielding the type in (34):

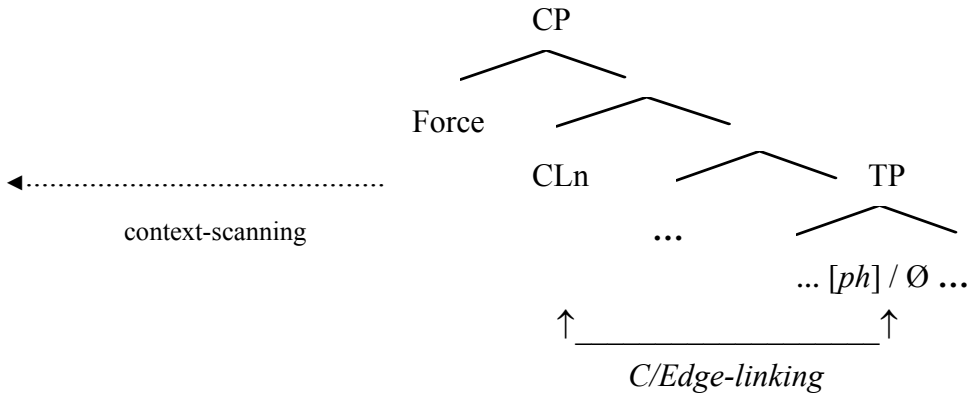
(34) /he Mary told that *I you* help will/
= 'He told Mary that <u>he</u> would help <u>her</u>.'

To understand facts of this sort, it is necessary to distinguish between *reference* and C/Edge-linking. While arguments are φ-computed under CLn-matching in narrow syntax, their definite reference is decided by clause-external *context-scanning*, either under distant Agree/control, as in (32) and (34), or by extra-syntactic means. Together, CLn-matching and context-scanning yield *context-linking*,[25] as informally sketched for referential arguments in (35):

[24] Including Zasaki and Slave (Anand & Nevins 2004), Amharic, Donno Sɔ, Navajo, Kannada, Tamil, Kurdish, Persian and Punjabi (see Sigurðsson 2004a:235f, 246 n. 40, and the references cited there). This is a common trait of Indo-Aryan and Dravidian languages (K.V. Subbarao, pers. comm.).

[25] Cf. the (less precise) notion of Discourse-linking or D-linking in Pesetsky 1987 and much subsequent work. The crucial distinction made here between context-scanning and intra-clausal C/Edge-linking was not observed in Sigurðsson & Maling 2007, 2008. I will not discuss the nature of context-scanning here, interesting as it is. Informally put, there can be many potential 'yous', 'shes', 'theys', etc. in a given context, and to decide which 'you', 'she' etc. is being referred to, the context must be scanned, but, regardless of which 'you' etc. is being scanned, its φ-features must be computed clause-internally, under C/Edge-linking: Does the argument positively

(35) *Context-linking (= C/Edge-linking + context-scanning) of referential arguments*:



This approach thus formalizes the assumption that referential arguments, overt or covert, link to or match their linguistic and/or deictic context, and it also makes the reasonable claim that they do so via their C-domain.[26, 27]

There is much confusion regarding these issues. A popular view is that argument interpretation is exclusively 'pragmatic' or extra-syntactic in some other sense (see Y. Huang 2007 and the references cited there). However, this view is refuted by the deictic switch facts just discussed. Assuming, for instance, that the 'speaker' and 'hearer' features are just

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match Λ_P, for instance? If so, it is 2p, regardless of who or what it may refer to (which is not to say that its reference is arbitrary, a complex issue that I cannot discuss here, cf. e.g. Safir 2004b).

[26] A reviewer makes the remark that "the standard view in formal semantics [is] that interpretations are assigned relative to a domain of individuals, a possible world, and a context of utterance", correctly pointing out that my claim "goes beyond this [in that] the context of utterance can only be accessed via a syntactic channel." In my view, there can be no doubt that this is an important step forward (as suggested and supported by the facts discussed in this and the next section), compatible with cyclicity and locality and in fact forced by the single cycle hypothesis, where syntax 'feeds' both the interfaces. Moreover, it does not contradict formal semantics, rather being entirely compatible with it, bridging a long standing and a troublesome gap between it and syntax (by 'cooperation' of C/Edge-linking with context scanning). It does not follow, of course, that all semantics and pragmatics is syntactically channeled or even syntactically related, a big issue that I cannot address here (but for a general discussion of the relation between syntax and semantics, see Chomsky 2007, 2008).

[27] For simplicity, I limit the main text discussion to plain 'minimal pronouns'. Intriguing problems are raised by a number of phenomena, including bound variable readings (cf. Rullmann 2004, Kratzer 2009). A bound variable reading of a pronoun (including fake indexicals) arises when the pronoun enters an Agree chain that includes the subordinate (positively or negatively matched) Λ-features and its matrix antecedent while excluding the root Λ-features (which, if included, would yield a referential, deictic reading). That is, in a clause like *Only* I_1 *got a question that* I_2 *understood* = [... Λ_1 … Only I_1 … [... Λ_2 … I_2 …]], the subordinate subject I_2 either enters a chain that includes Λ_2 (yielding $+\Lambda_A/-\Lambda_P$) and the matrix subject *Only* I_1, excluding the Λ_1 of the root (the bound variable reading), or a chain that includes Λ_1 (the deictic reading). Racalcitrant problems also arise in the interaction of number and inclusiveness with person as well as in the φ-resolution in coordinated NPs. I have to put these issues aside here

redundantly given in each speech or utterance event makes the prediction that 1 and 2 person singular pronouns should invariably refer to the actual speaker and addressee, contrary to fact, and assuming that they can be copied under overt antecedent control is off the track, as best seen in cases like (32) and in speaker shift contexts. The computation of the CLn-values, $+\Lambda_A$, etc., must be completed in syntax, prior to spell-out, or else correct overt pronoun forms could not be derived or produced.[28] Also, given the basic minimalist single cycle hypothesis adopted here, the intra-clausal computation of CLn-values must be purely syntactic, and not, say, the result of a mixed syntactic + pragmatic computation, pragmatics being extra-syntactic on this view of language. However, as stated above, *context-linking* involves not only CLn-matching but also pragmatic/semantic context-scanning (about which I have nothing much to say here). It is also worth underlining that developing a full-fledged theory of how clauses merge with and fit their context is a non-trivial task, beyond the scope of this study. What matters for our purposes is, first, that clause-internal C/Edge-linking is a prerequisite for clause-context merge (as for instance evidenced by indirect discourse shift as in (32) above), and, second, that C/Edge-linking accounts for the distribution of φ-silent arguments, as will be demonstrated in the following.

Given the C/Edge-linking Generalization, a regular, overt subject pronoun in e.g. Germanic enters an Agree relation with a CLn-feature, as sketched in (36):

(36) a. $[_{CP}$ ... (Then) … $[_{TP}$ *he* said to her ... *English*, etc.

b. $[_{CP}$ ... {CLn} ... **(X)** ... $[_{TP}$ *pronoun* T ....

↑_____↑

As indicated, the presence/absence of an overt element, **X** (here *Then*), in Spec-C does not, of course, affect the grammaticality of the subject. The V2 Germanic languages share this pattern with English (in declarative main clauses), except for the fact that the finite verb generally raises into the C-domain in the former, to a position between X and Spec-T (the V2 effect).

Adopting the hypothesis that Italian agreement morphology is a pronoun, incorporated into T,[29] we can analyze Italian null-subject clauses in a parallel fashion, as illustrated in (37). The n-dash between Ø and T_φ indicates that the two make up one phonological unit:[30]

[28] This includes bound variable readings. The semantic (conceptual-intentional) interface must be able to 'read off' such readings from the syntactic computation, that is, the exclusion of the root Λ-features (the crucial factor in bound variable readings) must take place in syntax or at least be compatible with the syntactic computation.

[29] The formal properties of the incorporation are immaterial for my purposes, and I will accordingly not discuss them here (but for several slightly different analyses, see Platzack 2004, Holmberg 2005, Roberts 2008, Holmberg et al. 2009).

[30] Spec-T should thus be invisible to the interfaces (cf. Alexiadou & Anagnostopoulou 1998, Platzack 2004). For arguments in favor of a visible Spec-T in Finnish null-subject clauses, see Holmberg 2005.

(37) $[_{CP}$ ... {CLn} ... (**X**) ... $[_{TP}$ Ø–T_{φ} ... *Italian*

↑_____↑

Since 1 and 2 person are inherently C/Edge-linked, this simply says that Italian Ø–T_{φ} must either be 1 or 2 person pronouns or a C/Edge-linked (A-Top-linked) 3 person pronoun, which is precisely the claim made by Frascarelli (2007; see also Grimshaw & Samek-Lodovici 1998, Butt & King 1997, Cole 2009).

Much as in the Germanic structure in (36b), the presence/absence of an overt element, X, in Spec-C does not affect the grammaticality of the subject (Ø–T_{φ}). This is illustrated in (38):

(38) (Talvolta) parlo islandese.
(sometimes) speak.1.SG Icelandic
'Sometimes I speak Icelandic.'

Like an ordinary pronoun, Italian Ø–T_{φ} is also identifiable across clause boundaries, as in (39):

(39) a. Gianni dice che parlo islandese.
Gianni says that speak.1SG Icelandic
'Gianni says that **I** speak Icelandic.'
b. (Ieri ho visto Paolo.)
(yesterday have.1SG seen Paolo)
Credo che parli islandese.
believe.1SG that speaks.SG Icelandic
'(Yesterday, I saw Paolo.) I believe that **he** speaks Icelandic.'

Given the C/Edge-linking Generalization in (30), the clauses in (39) get the analysis in (40):

(40) $[_{CP}$ ... {CLn} ... $[_{TP}$ ... $[_{CP}$ ... {CLn} ... $[_{TP}$ Ø–T_{φ}
↑_____↑↑_____↑

In (39a), the positively matched CLn feature is Λ_A (the speaker feature), whereas it is A-Top in (39b). Notice that the overt matrix subject in (39a) does not intervene, as it is feature-distinct from the subordinate Ø–T_{φ} and the relevant CLn features (Λ_A and A-Top). In

Frascarelli's (2007) terms, it is a familiar topic (on a neutral, non-contrastive reading), thus matching a Fam-Top feature in its local C-domain (not indicated in (40)).[31]

In all relevant respects, then, Italian Ø–T_{φ} behaves like regular weak pronouns do in e.g. the Germanic languages (see Cardinaletti & Starke 1999, Roberts 2008), thus bearing on the nature and behavior of φ-overt pronouns, rather than of nulls (in the present approach as well as in the approach in e.g. Roberts 2008 and Holmberg et al. 2009). From the perspective of null-anaphora, this type of pro drop might thus seem to be uninteresting, and there is a grain of truth in that. Importantly, though, the Italian type of null-subjects highlights the fact that not only φ-silent arguments but also Ø–T_{φ} and other φ-visible pronouns need to be successfully C/Edge-linked.

Germanic null-topics have a more limited distribution than weak pronouns. Thus, a lexical element in Spec-C generally renders Germanic null-subjects ungrammatical, as we saw in (4) and (8)-(9) above and as further illustrated for Icelandic in (41) (compare it with (38)):

(41) a. Tala stundum íslensku.
speak.1.SG sometimes Icelandic
'I sometimes speak Icelandic.'

b. * **Stundum** tala íslensku.
sometimes speak.1.SG Icelandic

These facts can be analyzed as in (42) (I will discuss the location of the null-argument in more detail in section 5). As seen, I make the fairly uncontroversial assumption that Germanic finite verb agreement is true (uninterpretable) agreement, and not an incorporated pronoun ('Agr' is a cover term for clausal Person and Number heads, cf. Sigurðsson & Holmberg 2008 and the references cited there):

(42) $[_{CP}$ ... {CLn} ... (***X**) ... $Ø_i$ ... Agr_i... *Icelandic*
↑_____↑↑___↑

The same analysis applies to German, Dutch and Faroese, whereas Afrikaans and the mainland Scandinavian languages, having no finite verb agreement, display the pattern in (43) (where Agr is, again, a cover term for clausal Person and Number heads, the zero index simply indicating that these heads are not expressed in morphology):

[31] Notice that C/Edge-linking suggests that vPs are not full phases, in contrast to (canonical) finite CPs. There are many indications that the phase notion needs to be relativized with respect to features and domains, but that is a big issue into which I cannot go here (some such indications are briefly mentioned in e.g. Landau 2008 and Sigurðsson 2010).

(43) $[_{CP}$ ... {CLn} ... (***X**) ... Ø ... $Agr_{Ø}$ *Mainland Scandinavian*
↑_____↑↑___↑

In the Icelandic configuration in (42), the C/Edge-linking relation has to be feature non-distinct from Agr_i, as discussed above, whereas there is no such constraining parallelism in the mainland Scandinavian languages and Afrikaans. Common to all V2 Germanic topic drop is the condition that Spec-C be empty, that is, successful C/Edge-linking is the central condition on V2 Germanic topic drop, as seen in (42)-(43), and as will be further discussed shortly.

Before proceeding, however, it should be noticed that the Spec-C position in question is not the absolutely highest Spec-C position. Thus, in contrast to fronted (internally merged) arguments and adverbials, high discourse particles and left dislocated elements do not induce intervention between {CLn}and Ø.[32] This is illustrated for Icelandic in (44)-(45) (but these observations apply to V2 topic drop Germanic in general):

(44) a. Nei, __ hef __ ekki séð hann lengi. *Icelandic*
no, have.1SG not seen him for_long
'No, I have not seen him for a long time.'
b. Nei, Jóhann, __ hef __ ekki séð hann.
no, John, have.1SG not seen him
'No, John, I have not seen him.'

(45) a. * Nei, **nú** hef __ ekki séð hann lengi. *Icelandic*
no, now have.1SG not seen him for_long
b. * Nei, Jóhann, **hann** hef __ ekki séð.
no, John, him have.1SG not seen

Discourse particles and left dislocated (LD) elements thus seem to occupy structurally higher positions than {CLn}, hence not intervening between {CLn}and Ø, as sketched in (46) for LD:[33]

(46) a. ... LD ... {CLn} ... Ø ... LDs do not intervene
↑_____↑

[32] On dislocation in Icelandic, see Thráinsson (1979), Rögnvaldsson & Thráinsson (1990), Thráinsson (2007).

[33] In the 'privilege of the root approach' (Rizzi 2006, etc., cf. also Kayne 2006), the complement but not the Spec of a phase head is sent to spell out. This is largely compatible with my approach, the main difference being that I am making the specific claim that the 'privilege of the root' boils down to C/Edge-linking. The facts in (44) suggest that discourse particles and LD constituents are in some sense 'outside the root'.

b. * ... (LD) ... {CLn} ... $\mathbf{X_i}$ ... Ø ... ~~X_i~~ Fronted elements intervene

↑_____*___↑

Recall that topicalized or fronted constituents do not (of course) render weak pronouns ungrammatical. In contrast to radical nulls of the Germanic type, overtly φ-specified referential pronouns, including Italian Ø–T_{φ}, are obviously PF-visible/interpretable, regardless of overt elements in the clausal left periphery. Germanic null-arguments, on the other hand, cannot be interpreted as φ-specified unless they are locally C/Edge-linked, that is to say, they have to be able to escape the intervention effect in (46b). In the next section, I present evidence that they do so by raising into the C-domain.

5. C/Edge-linking, C-intervention, ELEC

As mentioned in section 2, it has commonly been assumed (Huang 1984, Cardinaletti 1990, Haegaman 1990, 1996 and others) that the silent argument in Germanic topic drop can be analyzed as either a silent operator in Spec-C, binding an empty argument position, or an NP that has been moved into Spec-C and deleted from there. Either way, the fact that Germanic topic drop clauses cannot have Spec-C lexicalized by movement (internal merge) has been commonly assumed to follow from a ban on doubly filled Spec-C in the Germanic languages (containing a lexical element + the dropped argument). However, the appeal of such an approach is diminished, first, by the fact that it is only descriptive (or at least not obviously principled), and, second, by the fact that discourse particles and left dislocated elements do not block topic drop, that is, there is no simple surface ban on more than one phrase in front of the the finite verb in C. In addition, as we will see, Germanic topic drop clauses show a number of properties that do not follow from a doubly filled Spec-C filter. In this section, I will analyze these properties in terms of C/Edge-linking and minimality.

The only elements that are readily and generally dropped are pronominal arguments, more precisely, subjects, direct objects and complements of prepositions (Mörnsjö 2002:56ff).[34] Consider the following Swedish example:

(47) **Ofta** har kungen träffat drottningen på stan.
often has king.the met queen.the in town
'Often the King has met the Queen down town.'

[34] Indirect objects and anaphoric light adverbials (*there*/*here* and *then*) can also be dropped, albeit somewhat reluctantly. In contrast, nominal genitives are never dropped (at least not in the Scandinavian languages; Dutch seems to be less clear cut in this respect).

Dropping the temporal adverbial (in this declarative clause) leads to ungrammaticality:

(48) *__ Har kungen träffat drottningen på stan.
has king.the met queen.the in town

This restriction is not predicted by a doubly filled Spec-C prohibition. It is not incompatible with such a filter, but the putative filter does not bear on it in any obvious way. That is, the ungrammaticality of (48) has another explanation, namely, that a silent adverbial like {often} differs from null-arguments in that it cannot be identified under C/Edge-linking (plus context scanning).

The subject can be dropped, but the null can only get a pronominal reading:

(49) a. **Kungen** har ofta träffat drottningen på stan.
king.the has often met queen.the in town
b. __ Har ofta träffat drottningen på stan.
have(/has) often met queen.the in town

The 1 person singular is the most salient interpretation of the dropped argument in (49b), but other pronominal interpretations are available, given the right context. Crucially, a non-pronominal reading is always excluded. Reference to 'the King' is not excluded, but it must be interpretable as a (null-)pronominal reference, i.e., 'the King' must be a maintained A-topic (regardless of whether 'the King' is overtly pronominalized as well, before being dropped): '… the King$_i$ … (he$_i$) … [$_{CP}$ … {he$_i$} has often met the Queen down town].' Also this restriction is independent of a putative doubly filled Spec-C prohibition.

Topic drop is subject to fine-grained constraints, not observed for overtly A'-moved constituents. As discussed by Cardinaletti (1990) and Mörnsjö (2002), dropped objects (of verbs and prepositions) are normally possible *in the 3 person only*. In view of the fact that dropped subjects are not constrained in the same fashion, rather the opposite, this is a remarkable restriction, call it the *Cardinaletti Puzzle*.

As a matter of fact, most of the dropped objects Mörnsjö found in her careful study of Swedish corpora did not refer to arguments but to propositions, in a similar fashion as overt *det* 'it, that' commonly does. One of Mörnsjö's examples (2002:57):

(50) [Context: About throwing away something that someone has manufactured with hard work]
__ Tycker'ja är okänsligt på nåt sätt.
(that) find'I is insensitive in a way
'That, I find is insensitive in a way.'

However, null-objects with nominal reference can be found (cf. Mörnsjö 2002:59), and there do not in fact seem to be any absolute blockings in grammar of null-objects with some special types of reference (see Mörnsjö 2002:70ff on Swedish). Rather, it seems that the *Relative Specificity Constraint*, RSC, in (51) holds:

(51) RSC: The dropped object *cannot be more specific* than the subject

– where 1 and 2 person are more specific than 3 person, and where + HUMAN is more specific than –HUMAN.[35] Thus, dropping a 1 and 2 person object 'across' a 3 person subject clitic is sharply unacceptable, as in (52):[36]

(52) [Context: "This is Johnson over there, the new manager. We should say hello to him."]

*__	Vill'an	säkert	inte	prata	med	nu.	*$Ø_{1P}$ … 3P
(us/me)	wants'(h)e	certainly	not	talk	with	now	

Dropping a referential 3rd person +HUMAN pronoun is often awkward (in the Scandinavian languages), but the following example is much better than (52):

(53) [Context: "This is Johnson over there, the new manager. He wants to say hello to you."]

? __	Vill'ja	inte	prata	med	nu.	?$Ø_{3P}$ … 1P
(him)	want'I	not	talk	with	now	

'Him, I don't want to talk to now.'

Similarly, a –HUMAN object can be dropped across a +HUMAN subject, but not vice versa:

(54) [Context: "Yes, this is very interesting. You heard Johnson's talk the other day. He is knowledgeable about this. What does he say about it?"]

__	Vill'an	inte	uttala	sig	om.	$Ø_{–HUM}$ … +HUM
(that)	wants'(h)e	not	express	himself	about	

'That, he does not want to express himself about.'

(55) [Context: "Yes, this is very interesting. You heard Johnson take a stand on this the other day. What does that tell us about him?"]

[35] I'm making the fairly uncontroversial assumption that a feature value is the more specific the more marked it is in the sense of general markedness theory, where positive values are marked in relation to absent or negative values (see, e.g., the discussion in Bresnan 2001). Given this understanding, RSC makes more predictions than those discussed in the main text, but as the speaker intuitions are delicate I will not go into further details here.

[36] I use the term '(direct) object' to refer to both objects of verbs and prepositions (the facts discussed here do not suggest any relevant distinction between prepositional and direct verbal objects).

* __	Kan'de	inte	säga	nåt	om.	*$Ø_{+HUM}$ … –HUM
(him)	can'it	not	say	anything	about	

The very same answer, in (55), is well-formed in contexts where the dropped argument can be understood as –HUMAN *det* 'it, that'.

The Relative Specificity Constraint is puzzling at first sight. However, given the C/Edge-linking Generalization in (30), it can be analyzed as a minimality violation, i.e., an intervention effect. The reason why this is so is that not only the dropped argument but also the subject must be C/Edge-linked.

Consider this more closely. In case the subject is a full pronoun, object drop is often degraded, as shown in (56b):[37]

(56) a. __ Kan'ja inte veta.
(that) can'I not know
'That, I cannot know.'

b. ?? __ Kan jag inte veta.
(that) can I not know

Plausibly, the reason for the awkwardness of (56b) is that the (structurally high) subject is too strong an intervener, the *v*P- or AgrOP-internal zero object thus being unable to match C/Edge-linkers, CLn, across the subject:

(57) ??[$_{CP}$ ... {CLn} ... [$_{TP}$ subj ... Ø(obj) ...

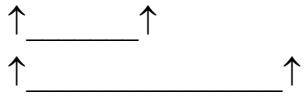
[37] This is at least commonly true when the subject is a familiar topic. If the subject is a contrastive topic, on the other hand, object drop across it is possible in certain cases. This is illustrated in (i) for a 'late' strong subject pronoun (such 'late' subject pronouns are found in Swedish and Norwegian as opposed to Icelandic and Danish):

(i) __ Kan väl inte **JAG** veta!
(that) can well not I know
'Well, that **I** cannot know!' (Anders Holmberg, pers. comm.)

The late subject is structurally low. Possibly, the null-object can 'escape' across it by *v*P adjunction (or via a Spec,AgrOP-like position), subsequently being free to move into the C-domain. Icelandic also allows object drop across contrastively stressed subjects, at least marginally, but disallows it across prosodically neutral subjects (neither weakly pronounced nor heavily stressed). It seems that German and Dutch are more liberal here than Icelandic and Swedish, allowing object drop across more types of subjects (but without a scrutiny of German and Dutch information structure and stress patterns, I cannot make any claim to this effect). The following description is limited to Swedish, largely applying to Norwegian (Terje Lohndal, pers. comm.) and Icelandic as well.

If the subject is phonologically cliticized, as in (56a), it evidently becomes invisible as an intervener. This can be accommodated if we assume that Germanic null-topics can only be C/Edge-linked under *strict locality* (for a more precise formulation in terms of intervention, see shortly). If so, the zero object has to move across the subject into the C-domain. However, it cannot easily do so unless the (structurally high) subject is a phonological clitic, in which case it is prosodically parasitical on the verb in the V2 position.[38] This gives rise to the structure in (58) (where the arrows only indicate CLn-matching, movement in contrast being indicated by indices); the n-dash between the null-argument and the finite verb indicates that the two make up a phonological unit (much like Italian Ø–T_{φ}):

(58) $[_{CP} \ldots \{CLn\} \ \ldots \ Ø(obj)_i\text{–}V_{Fin}\text{+clitic}_k \ldots [_{TP} \ t_k \ldots t_i \ldots$



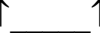
As indicated, not only the zero object but also the subject clitic matches C/Edge-linkers. In (56a), for instance, the zero object matches A-Top positively and the speaker and hearer features (Λ_A and Λ_P) negatively, whereas the subject matches the speaker feature (and the Fam-Top feature) positively and other CLn-features negatively.[39]

We now have a natural account of the Relative Specificity Constraint: The dropped object cannot be featurally 'bigger' than the subject clitic because it would then intervene between {CLn} and the clitic, thereby violating Relativized Feature Minimality (cf. Starke 2001, Rizzi 2001).

It does not obviously follow that Germanic null-subjects must also move into the C-domain, like Germanic null-objects. That is, subject drop clauses like (49b) above ('__ *Has often met the Queen down town*') are structurally ambiguous between the long distance linking analysis in (59) and the movement analysis in (60) (again, the arrow indicates only CLn-matching, the movement in (60) instead being indicated with indices). Anticipating the discussion below, I mark the structure in (59) as unacceptable:

(59) * $[_{CP} \ldots \{CLn\} \ \ldots \ V_{Fin} \ldots [_{TP} \ Ø(subj) \ldots$ Illicit long distance linking

(60) $[_{CP} \ldots \{CLn\} \ \ldots \ Ø(subj)_i\text{–}V_{Fin} \ldots [_{TP} \ t_i \ldots$ Successful C/Edge-linking



[38] Alternatively, the subject can be in a structurally low position, as in (i) in footnote 34.

[39] Multiple matching of C/Edge-linkers is not a theoretical assumption, it is just a fact that must be accommodated in any theory of C/Edge-linking.

An important indication that the structure in (59) is not available comes from *extraction drop*. Null-arguments can be extracted from subordinate clauses, as in the following examples (cf. Sigurðsson 1989:156f):

(61) a. __ Visste'ja inte [__ var förbjudet]. *Swedish*
knew'I not was forbidden
'That, I didn't know was forbidden.'
b. * Då visste'ja inte [__ var förbjudet].
then knew'I not was forbidden

(62) a. __ Viss'é ekki [að __ væri bannað]. *Icelandic*
knew'I not that was forbidden
b. * Þá viss'é ekki [að __ væri bannað].
then knew'I not that was forbidden

The example in (50) above (from Mörnsjö 2002) is also of this extraction drop type. As seen in the *b*-clauses in (61) and (62), extraction drop is subject to the (matrix) Empty Left Edge Condition, just like clause-bounded topic drop (this is also true of extraction object drop). Moreover, the extracted argument is interpreted as the meagre *det/detta* 'it, this, that' in Swedish and the corresponding *það/þetta* in Icelandic, that is, it obeys the Relative Specificity Constraint in (51).[40] Extraction subject drop can thus be analyzed as in (63):

(63) $[_{CP} \ldots \{CLn\} \ldots \emptyset_i\text{–}V_{Fin}\text{+clitic}_k \ldots [_{TP} \ t_k \ldots [_{CP} \ldots t_i \ \ldots [_{TP} \ t_i \ \ldots [_{vP} \ t_i \ \ldots$
↑____↑

Presumably, the null-subject moves cyclically within the matrix TP, although this is not shown in (63). For simplicity, the CLn-matching of the matrix subject clitic, across the meagre extracted null-subject, is not indicated either.

In view of these extraction facts, I conclude that V2 Germanic null-arguments always raise into the root C-domain, the analysis in (59) being excluded, (60) instead being on the right track. We will see further evidence in favor of this conclusion shortly.

While Relativized Feature Minimality accounts nicely for the Relative Specificity Constraint, it does not account for the Empty Left Edge Condition, as *any* category that moves into Spec-C blocks topic drop, regardless of its feature content. This is illustrated for Swedish in (64)-(65):

(64) a. __ Skulle'ja troligen vilja se __ ofta, i så fall.

[40] Given that RSC can and should be reformulated in terms of "$NP_j \ldots NP_i$" instead of "object ... subject".

would'I probably want see often, in such case
'That/It, I would probably want to see often, in that case.'

b. Jag skulle troligen vilja se ***(det)** ofta, i så fall.
I would probably want see *(it) often, in such case

c. Troligen skulle jag vilja se ***(det)** ofta, i så fall.

d. I så fall skulle jag troligen vilja se ***(det)** ofta.

(65) a. __ Skulle __ troligen vilja se det ofta, i så fall.
'I would probaly want to see it often, in that case.'

b. Det skulle ***(jag)** troligen vilja se ofta, i så fall.

c. Troligen skulla ***(jag)** vilja se det ofta, i så fall.

d. I så fall skulle ***(jag)** troligen vilja se det ofta.

That is, regardless of the grammatical content of Spec-C, the spelling out of its phonological matrix, *[ph]*, leads to unacceptability of null-argument structures. Parallel facts are found in the other V2 Germanic topic drop languages.

It might seem simple enough to accommodate these facts by assuming the putative doubly filled Spec-C 'filter', mentioned at the beginning of this section. However, as also mentioned, topic drop clauses with initial discourse particles and left dislocated elements (as in (44)) show that there is no simple surface ban on more than one phrase in front of the finite verb in C. It thus seems more promising to assume that it is movement (internal merge) of more than one constituent across the finite verb in C that is blocked (for reasons that remain to be explicated, cf. the discussion in Cardinaletti 2004, 2009). Either way, null-arguments are blocked from moving into the C-domain in the presence of a lexical Spec-C. If long distance linking is also excluded, as indicated for extraction drop in (59) above, the only well-formed option in (66) is (66c):

(66) a. * $[_{CP}$ ... {CLn}... (XP) ..... V_{Fin} ... $[_{TP}$ ... Ø ... Illicit long distance linking
↑_____*_____↑

b. * $[_{CP}$ ... {CLn}... $Ø_i$–XP ... V_{Fin} ... $[_{TP}$ ... t_i ... Illicit raising across a filled Spec-C
↑_____↑

c. $[_{CP}$ ... {CLn}..... $Ø_i$–V_{Fin} ... $[_{TP}$ ... t_i ... Successful C/Edge-linking
↑_____↑

I hypothesize that the long distance C/Edge-linking in (66a) is blocked by C-intervention. That is, the null cannot successfully match CLn across V_{Fin} in C (regardless of whether or not Spec-C is lexicalized, cf. the ungrammatical subject drop V1 questions in (20)-(21) above).

6. On controlled pro and discourse drop

In this section I discuss facts from Finnish and Chinese as well as further facts from Germanic, suggesting that radically empty arguments are generally blocked by C-intervention but also commonly able to circumvent the intervention by raising into the C-domain, across a lexical C.

Finnish definite 3 person null-subjects must be antecedent-linked or controlled, as illustrated in (67) (based on Holmberg 2005:539; as also illustrated by Holmberg the same restriction is found in the plural):

(67)	a.	***(Hän)**	puhuu	englantia.			
		he/she	speaks.3SG	English			
	b.	Pekka_1	väittää että	$\_\__{i/*j}$	puhuu	englantia	hyvin.
		Pekka	claims that	__	speaks.3SG	English	well
	c.	Pekka_1	väittää että	**hän**$_{i/j}$	puhuu	englantia	hyvin.
		Pekka	claims that	he	speaks.3SG	English	well

Much the same facts are found in e.g. Brazilian Portuguese (Holmberg 2005:553, Holmberg et al. 2009), Russian (e.g. Matushansky 1998, Cabredo Hofherr 2006), and Hebrew (e.g. Borer 1989, Shlonsky 2009).

As has been widely discussed (den Besten 1983, Platzack 1986, etc.) complementizers share properties with the finite verb in V2 Germanic. Presumably, the V2 verb and complementizers like Finnish *että*, English *that*, Hebrew *še*, etc., lexicalize Fin in the low C-domain, whereas CLn features are situated higher in the C-domain (cf. (31) above and the approach in e.g. Rizzi & Shlonsky 2007, Sigurðsson 2010). If so, the Germanic null-subject structure in (68) parallels the Finnish null-subject structure in (67b), sketched in (69) below (where I, by and large, adopt the Agree model of control developed by Landau 2000, 2004, 2008, etc.):

(68) $[_{CP} \ldots \{CLn\} \ldots Ø_i\text{–}\mathbf{V_{Fin}} \ldots [_{TP} \ t_i \ldots$ *V2 Germanic*

↑_____↑

(69) NP … $[_{CP} \ldots \{CLn\} \ldots Ø_i\text{–}$**että** … $[_{TP} \ t_i \ldots$ *Finnish*

↑.....↑↑_____↑

'*control*'

In both cases, the null-subject has to move across a lexical C (or else C intervenes between the null and CLn, rendering its C/Edge-linking invisible/uninterpretable). The nulls are thus

silent pro-clitics, behaving similarly as object clitics in Romance (as described by Kayne 1975 and many since, e.g. Belletti 1999).

Since we are dealing with silent elements, it is not easy to find decisive evidence in favor of this analysis, excluding alternative analytical possibilities (such as a non-raising analysis of the null-subject). However, the analysis gains support from V2 Germanic extraction drop (briefly mentioned above, cf. (61)-(62)). Consider the Icelandic examples in (70) (cf. also Sigurðsson 1989:156):[41]

(70) a. **Ø$_i$**–Vissi‘é [að t_i mundi gerast]. *Icelandic*
knew’I that would happen
‘This, I knew would happen.’
b. * Ég vissi [**Ø$_i$**–að t_i mundi gerast].
I knew that would happen

As seen, the silent subject cannot drop from the subordinate C-domain, instead having to raise all the way into the matrix C-domain, that is, this is the exact reverse of the Finnish facts in (67a, b). The same facts are found in Swedish, and both languages show parallel behavior with respect to object drop (cf. Sigurðsson 1989:156f). The object drop facts are illustrated for Swedish in (71):

(71) a. **Ø$_i$**–Visste’ja att du skulle säga t_i. *Swedish*
knew’I that you would say
‘This, I knew you would say.’
b. * Jag visste **Ø$_i$**–att du skulle säga t_i.
I knew that you would say

This ‘polarized’ behavior of Finnish vs. Icelandic and Swedish is puzzling at first sight. However, there is a common generalization behind these facts, stated in (72):

(72) a. Ø has to raise across all lexical Cs
b. Ø cannot raise into the C-domain unless it has a lexical C-head to adjoin to

Languages like Chinese, that do not have lexical Cs, are obviously exempted from this generalization (see shortly).

[41] Some speakers frown upon examples like (70a), when confronted with them, but all speakers I have consulted agree that it is very much better than (70b).

Now, consider the fact that C/Edge-linking of the null-subject is unsuccessful in the Finnish matrix clause in (67a), **Puhuu englantia*, 'speaks.3SG English'. Two different analyses of this fact come to mind, but they are evidently both ill-formed, as sketched in (73):

(73) a. * [$_{CP}$ ... {CLn} ... [$_{TP}$ Ø ...

b. * [$_{CP}$ ... {CLn} ... $\emptyset_{\mathbf{i}}$ ... [$_{TP}$ ... $\boldsymbol{t}_{\mathbf{i}}$

While (73b) is ruled out by (72b), it is not immediately obvious why (73a) is unavailable in Finnish (as opposed to Chinese, see below). Its ill-formedness would be accounted for if there is a requirement to the effect that definite zero arguments either always or never raise in a given language. However, I will not pursue this further.

Since impersonal null-subjects need not be C/Edge-linked, instead getting impersonal reading by default, we expect that such nulls need not raise into the C-domain, and are hence grammatical in main clauses. This is borne out, as shown in the Finnish (74), from Holmberg (2005:540):

(74) Täällä ei saa polttaa.
here not.3SG may smoke
'One can't smoke here.'

Indeed, Holmberg (2005) argues, that Finnish impersonal pro differs from definite pro in not raising out of *v*P. I assume that CLn features are not activated in examples of this sort (none of them being positively matched), their relevant structure thus being as sketched in (75):

(75) [$_{CP}$ ... [$_{TP}$ ... [$_{vP}$ Ø-subject ...

Now, consider the function or effect of 'control' in (67b)/(69). It is arguably not a licensing condition on antecedent-linked null-arguments in Finnish (or elsewhere). First, as discussed by Holmberg (2005, etc.) the null-subject-antecedent relation does not necessarily involve c-command. Rather, it:

> seems that the antecedent can have any syntactic function as long as it is the only possible antecedent in the next clause up … [but if] there are several arguments in that clause, then a hierarchy of accessibility applies … where the subject is the favored antecedent … [also] the antecedent must be in the next clause up (Holmberg 2005:540, fn. 4)

In other words, it seems that the null-subject, by context-scanning, picks up the reference of the structurally and semantically 'most prominent' antecedent in its immediate linguistic context, raising into the C-domain for this purpose. If no such 'plausible' antecedent is found,

the null-subject does not raise and gets an indefinite, non-referential interpretation (as a last resort, according to Holmberg).

Second, even if we take the liberty of referring to all overt antecedent-linking as 'control', regardless of c-command, it is clear from impersonal null-subject examples like (74) above that 'control' is not required to license the null-subject. Rather, it is only the C/Edge-linked, φ-specified definite reading of the null-subject that requires definite control, i.e., the antecedent-linking is an interpretational strategy rather than a licensing strategy. That makes sense if the acceptability of definite (as opposed to indefinite) null-arguments boils down to successful C/Edge-linking.

Icelandic has a parallel impersonal construction, as illustrated in (76), where the dash indicates Spec-T:

(76) a. Hér má __ ekki reykja.
here may.3SG not smoke
'One can't smoke here. / It is not allowed to smoke here.'

b. Má __ ekki reykja hér?
may.3SG not smoke here
'Can one not smoke here? / Is it not allowed to smoke here?'

The fact that the impersonal null subject is possible in both declarative clauses with a filled Spec-C, as in (76a), and in questions, as in (76b), illustrates that it is not subject to the C/Edge-linking requirements met by zero topics (cf. e.g. (20)-(21) above).[42]

Finally, consider Chinese, if only tentatively and briefly. It differs from Finnish in allowing definite 3 person null-subjects in both main and subordinate clauses. Compare (3) = (77), and (78) (both examples are modeled on examples in C.-T. J. Huang 1989:187):

(77) __ Kanjian ta le.
see.Ø-AGR him PERF.Ø-AGR
'[He/She, etc.] saw him.'

(78) Zhangsan$_i$ shuo [__$_i$ hen xihuan Lisi].
Zhangsan say.Ø-AGR very like.Ø-AGR Lisi

[42] However, much as overt impersonals in many languages, impersonal nulls in both Finnish and Icelandic are commonly ambiguous between generic, arbitrary and more specific readings (e.g. speaker inclusive ones). See the discussion in Sigurðsson & Egerland 2009. A reviewer raises the good question of why zero impersonals are not generally licensed in English (or universally). Possibly, an EPP or a 'nexus' requirement on the finite verb is involved in languages like French and English, cf. the contrast between *(It is) nice to be here* and **(It) is nice to be here*. The constraint is somehow lifted or circumvented in environments that allow or require null-subjects (*As (*it) will be shown, this gains support from English*, etc.).

'*Zhangsan* said that *he* liked Lisi.'

That is, the main clause null-subject in (77) differs from the Finnish null-subject in (67a)/(73) in being successfully C/Edge-linked. There are more than one ways of conceiving of this fact (either in terms of C/Edge-linking or raising of the null). I tentatively assume that Chinese null-subjects can match CLn under distant Agree, hence do not have to raise into the C-domain for the purpose of successful C/Edge-linking (nor can they raise, given (72b) above).[43] If so, the structure in (79), without any lexical material in the C-domain, is well-formed (or 'well-interpreted') in Chinese, as opposed to Finnish and V2 Germanic. For ease of comparison, the relevant Finnish and V2 Germanic structures are given in (80) and (81):

(79) $[_{CP}$ ... {CLn} ... $[_{TP}$ ... $[_{vP}$ Ø ... *Chinese*
↑_____↑

(80) $[_{CP}$ ... {CLn} ... $Ø_i$–**V$_{Fin}$** ... $[_{TP}$ t_i ... *V2 Germanic*
↑_____↑

(81) NP … $[_{CP}$ ... {CLn} ... $Ø_i$–**että** … $[_{TP}$ t_i ... *Finnish*
↑.....↑↑_____↑
'*control*'

Traditional Chinese does not have a declarative *that*-type complementizer, nor does it, of course, have verb raising to C in main clauses. Thus, Chinese null-arguments are exempted from C-intervention, as formulated in (82):

(82) A zero argument cannot match C/Edge-linkers (and hence it cannot be context-linked) across a lexical C

Zero arguments in SOV discourse drop languages like Japanese and Korean (with right-hand lexical complementizers) are also exempted from C-intervention, whereas Finnish and V2 Germanic circumvent it by raising their zeros into the C-domain.[44]

[43] This might relate to the fact that Chinese and many other discourse drop languages are *wh*-in-situ or at least non-initial *wh*-languages, but the correlation is not a strong one (see Dryer 2005a, 2005b).

[44] In addition, of course, overt verb agreement does not constrain or interfere with the identification of zero arguments in the Asian discourse drop languages, in contrast to many of the European languages considered here (as pointed out by Rizzi 1986). Recall, however, that this also applies to Afrikaans and the Mainland Scandinavian languages.

As a matter of fact, the verb *shuo* 'say' is in the process of being grammaticalized as a declarative complementizer in colloquial present-day Chinese. Interestingly, null-subjects are ungrammatical in its presence, as illustrated in (83) (C.-T. J. Huang, pers. comm.):

(83) a. Zhangsan mengjiang shuo ta kanjian-le Mali.
Zhangsan dream 'say' he see-PERF Mali
'John dreamed that he saw Mary.'
b. * Zhangsan mengjiang shuo __ kanjian-le Mali.
Zhangsan dream 'say' see-PERF Mali

We have an account of the ungrammaticality of (83b), if *shuo* is a barrier to raising of Ø as well as to its C/Edge-linking in Chinese, whereas lexical Cs do not block Ø-raising in Finnish and V2 Germanic. In view of the fact that *shuo* is still in the process of being grammaticalized as a declarative complementizer, one might speculate that it will gradually become more like Finnish *että* and the finite main clause verb in V2 Germanic, allowing Ø-raising.[45]

7. Concluding remarks

In this article I have discussed and analyzed various types of argument drop phenomena. My central claim is that all types of definite arguments, including Romance pro (Ø–T_{φ}), German null-topics, Chinese discourse drop, and Finnish/Hebrew controlled pro, must be successfully C/Edge-linked, in accordance with the C/Edge-linking Generalization in (30):

(30) Any definite argument, overt or silent, *positively* matches *at least one* CLn in its local C-domain, CLn $\in$ {Λ_A, Λ_P, Top, …}.

- where Λ_A, Λ_P, Top are 'speaker', 'hearer' and topic features.

While Romance Ø–T_{φ} is like a regular weak pronoun in being able to match CLn features across lexical categories, overt C-intervention blocks the necessary C/Edge-linking of

[45] Interesting problems remain. Thus, I have not developed any analysis of the fact that neither Chinese, Italian nor modern V2 Germanic allow definite controlled zero objects, as opposed to e.g. Old Norse, Brazilian Portuguese, Hungarian, Chamorro, Imbabura Quechua, Japanese, Korean, Thai, and Burmese (see Y. Huang 2000:85 and the references there). Also, unless somehow augmented the present approach would seem to suggest that English and French should have the Finnish type of controlled null-subjects. However, these languages have an exceptionally strong 'subject coercion' (cf. Dreyer 2005b), perhaps (as mentioned in fn. 41 above) as a result of a special EPP or 'nexus' requirement on the finite verb. I must put these issues aside here.

radically null (φ-silent) arguments from being visible and successfully interpreted. In case φ-silent arguments can raise across C, however, they circumvent intervention.[46]

On the present approach, null-arguments, being bundles of active but silent features, are universally available in syntax, whereas their distribution is constrained by surface factors (V2, lexical complementizers, ...), acting as interpretative limitations. While these factors are linguistic, without obvious parallels outside of language, the blocking effects they exert are plausibly general architectural (3rd factor) phenomena.

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[46] Given that the C-system values the features of the T-system, this is a rather natural restriction (see also Richards 2007, Chomsky 2007, 2008, who assume that T 'inherits' features from C).

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