EPP revisited: evidence from null subject languages*

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Abstract

The present paper examines the correlation between the *pro*-drop parameter and rich verbal morphology. With evidence from Greek, Old French (OF) and Brazilian Portuguese (BP), it is shown that null subjects are not licensed only in languages that have rich verbal morphology (e.g. Greek), but also in languages in which the verb may lack some agreement properties (e.g. OF and BP). Moreover, it is argued that the licensing of null subjects is triggered not only for syntactic but also for discourse reasons. Based on evidence from the aforementioned languages the featural requirement represented by the EPP is revisited; EPP simply encodes a P(honological)-feature.

Keywords: (partially) pro-drop, EPP, Morphological Uniformity Condition, agreement

1. Introductory remarks

The aim of this paper is to investigate the agreement properties and the null subject licensing patterns that emerge from three types of null subject languages (NSLs) (non-exhaustive), and to try to account for EPP-satisfaction in these languages. More specifically, the present work investigates Greek, an NSL with rich agreement, Old French (OF), an NSL that arguably lacks pronominal agreement (based on Sitaridou 2004, 2005), and Brazilian Portuguese (BP), an NSL which displays impoverished verbal morphology. What all the aforementioned languages have in common is their ability to license null subjects. Our interest in these languages lies on how they license null subjects given the different nature of their morphological paradigm.

Since the verbal morphology of NSLs is not always as rich as we would expect (i.e., lack of some agreement properties), Sifaki's (2004b) analysis of the EPP will be employed. According to the aforementioned analysis, EPP only represents a P-feature and therefore, it requires an overt syntactic category to raise in order to satisfy it. Further data which support such a treatment are drawn from null subjects in OF and BP. What reinforces the application of the EPP as P analysis in these languages is the fact that null subject licensing is not only syntactically driven, but may be also triggered for discourse reasons.

The paper is organised as follows. Section 2 discusses the different types of verbal agreement and how these interact with the *pro*-drop parameter. Section 3 presents previous analyses of NSLs and the problems they face. More explicitly: in section 3.1 we discuss problematic facts from Greek impersonal constructions; in section 3.2 null subjects in OF are presented; and in section 3.3 we discuss data from null subjects in BP. Next, in section 4, the EPP is revisited and we articulate an account whereby

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syntactic licensing and semantic identification interact with each other. Finally, section 5 offers some concluding remarks.

2. Pro-drop parameter in correlation with verbal morphology

There is a long-standing intuition that there is a relationship between rich agreement morphology and the licensing of null arguments (cf. Rizzi 1986; Barbosa 1995; Alexiadou & Anagnostopoulou 1998; Roberts & Roussou 2002; Vangsnes 2002, among many others). This is most notably captured by Jaeggli & Safir's (1989: 30) Morphological Uniformity Condition (MUC):

 Morphological Uniformity Condition (Jaeggli & Safir 1989: 30) An Inflectional paradigm in a language L is morphologically uniform iff P has either only underived inflectional forms or only derived inflectional forms.

It looks as if the MUC makes an extremely strong prediction about the crosslinguistic distribution of null thematic subjects. Namely, there are paradigms that fail to validate this rule: German is a morphologically uniform language in having rich agreement by forming verbs by the use of stem plus some affix. Contra predictions, German does not allow null thematic subjects.

Additionally, the MUC, as it stands, seems to be unable to cope with another group of languages for which the *pro*-drop parameter does not apply across the board (i.e. it applies in certain environments but not in others). This prompts us to reformulate the MUC as condition A and B so that it can cope with the cross-linguistic evidence.

(2) *Reformulation of MUC*

- A. In languages with morphologically uniform paradigms, null subjects can occur either in the environment of rich agreement or no agreement at all. In this case the language either has or does not have null subjects.
- B. In languages with morphologically non-uniform paradigms, the result could vary: languages either have or do not have null subjects. So far A and B make the same predictions. Crucially though, when they allow null subjects, the pro-drop parameter is partially instantiated, and the language shows mixed properties vis-à-vis null subjects.

First, with regard to A, that is when the morphological paradigm is uniform in either having or not having agreement: the results predicted are null subjects or non-null subjects (cf. MUC, Jaeggli & Safir 1989). In this category fall languages such as Greek (cf. Table A1), English (cf. Table A1), and German. Type A language will include (i) languages that: lack agreement and still license null subjects, e.g. Japanese (or else discourse *pro*-drop languages); (ii) languages that do not have rich agreement and do not license null subjects (e.g. English); (iii) languages with rich agreement that may license null subjects, e.g. Greek, Italian, and Spanish; (iv) languages that have rich agreement, but fail to license null subjects (e.g. German). In essence, this rule may give rise to four different parameters. This paper will only deal with those languages that exhibit rich agreement and license null subjects (i.e. Greek, Italian, and Spanish). All these types will appear under the generalised label type A NSL.

Second, with regard to B: this category can be further broken down to (i) languages like French (cf. Table A2), in which the verbal paradigm is not uniform and the language fails to license null subjects, and (ii) into languages with mixed type of properties, namely languages which may license null subjects in some syntactic contexts but not in others (partially *pro*-drop languages), such as OF (cf. Table A2), BP (cf. Table A3), Finnish, and Hebrew. As in the case of type A language, the discussion in this work will focus on type B language that are partially *pro*-drop languages. Therefore, the discussion in this paper targets fully *pro*-drop languages and partially *pro*-drop languages – everything else falls outside the remit of this paper.

The fact that there exist languages that may not license null subjects in all environments is particularly intriguing since it highlights the need to identify other – apart from inflection – triggers of null subjects. This atypical null subject behaviour will later be explained as a result of the fact that null subjects are licensed not only for syntactic reasons but also for semantic ones, or more accurately for discourse ones. Crucially, the prediction made is that type A language, if it has null subjects, then these will be licensed in all contexts (what Holmberg (2005) calls consistent NSLs), whereas type B language if it has null subjects, then these will be attested only in some environments (non-consistent or partially *pro*-drop NSLs). Table 1 summarises type (A) and (B) language.

Paradigms	NNSLs	NSLs	
		in all contexts	in some contexts
morphologically uniform	✓	✓	×
paradigms			
morphologically non-	✓	×	✓
uniform paradigms			

Table 1. Interaction of the morphological paradigm with null subjects

3. Previous analyses of NSLs and problematic facts

The standard analysis of NSLs (as in Rizzi 1982, 1986) in relation to EPP-satisfaction is to assume that there is a covert pronoun *pro*, which takes the place of the subject in the specifier of the inflectional projection and picks up its properties from INFL by virtue of the *phi*-features of the verb. Due to the inapplicability of a referential *pro* in languages like Chinese and Japanese in which INFL lacks person and number properties, a number of other types of *pro* were postulated, i.e. non-referential *pro* which does not need to inherit any features, and quasi-referential *pro* that requires only number feature specifications (for a discussion of these different types of *pro*, see Huang (1984) and Zushi (2003)).

Recent analyses, such as those of Barbosa (1995) and Alexiadou & Anagnostopoulou (1998), have claimed that V-I/T raising (the agreement properties of the verb) can delete the requisite D-feature of the EPP in T. Nevertheless, their account runs into problems with verb-initial impersonal constructions evident in Greek and other NSLs (e.g. Italian, Spanish, Slavic languages). In the next sections, we present three case studies which provide evidence that there are alternative ways of licensing null subjects.

3.1 Impersonal constructions in Greek

Greek permits weather, existential, and other impersonal constructions that surface as V-initial. Due to the lack of (c) overt expletives in the system of Greek, merging an expletive in SpecTP is not an option.

Based on assumptions entertained originally in Holmberg (2000) and further elaborated in Sifaki (2003), EPP may represent a D- and a P-feature. If EPP represents a D-feature, then this D-feature cannot be deleted/satisfied by the raised element in these impersonal constructions, irrespectively of the type of analysis one adopts (i.e. V- I/T raising, or VP-Preposing).

Evidence towards such an analysis is derived from Greek impersonal constructions (see ex. (3a)-(3c) from Sifaki $(2004: 10-11))^1$:

- (3a) Ehi zesti. has.₃₈ heat 'It is hot.'
- (3b) Egine samatas. happen._{PAST.3S} argument 'There was an argument.'
- (3c) Vrehi/hionizi.
 rain/snow.₃₈
 'It is raining/snowing.'

The examples above involve an impersonal verb which displays default 3^{rd} person singular subject agreement. The verbal morphology in these constructions seems to lack a person feature (in the case of weather verbs a number feature too, cf. *vrehun/rain._{3P}). The lack of person feature interpretation in the verb agreement morpheme (non-referential verbal features) results in the absence of the nominal feature which is otherwise necessary to delete the D-feature of the EPP. These phenomena question the featural requirement EPP represents.

The best way to account for the examples in (3) is to postulate that EPP in T simply encodes a P-feature, i.e. EPP simply expresses the requirement that a phonologically overt element is displaced to SpecTP or even to T. If EPP comprises solely a P-feature, then all the above examples can be accommodated².

Assuming that the featural requirement EPP represents is of a more general nature, then languages like OF and BP, in which null subjects may be licensed for discourse reasons, can still satisfy the EPP.

¹ Spyropoulos & Philippaki-Warburton (2001) were the first to note the problematic aspect of those constructions.

² If EPP reduces only to P, then one prediction that follows is that it can only be satisfied by an overt element, thus no null operators or null expletives can be invoked for its satisfaction in different environments. Additionally, in recent advances of the Minimalist Program (MP), Chomsky (2002) views EPP not as a categorial feature, but as a diacritic instead, as a mark that creates a specifier position, and as a result EPP on I can be dissociated from D. Assuming this to be true, then, it is even more reasonable if EPP reduces to P. Thanks to Anna Roussou for both remarks.

3.2 Null subjects in Old French

Based on Sitaridou (2004, 2005), OF is an NSL lacking pronominal agreement (contra Adams 1987; Roberts 1993; Vance 1997). Null subjects are licensed in the environments shown in (4):

(4a) XP V(OF)
(4b) si V
(4c) *V

An example of (4a) and (4b) is shown in (5) and (6), respectively:

- (5) lors li gita ses braz ... after him throw._{PAST.3S} his arms
 'after that, he threw his arms around him' (OF, Sept Sages 7, 8-9 in Sitaridou 2005: 361)
- (6) Si commencierent la plus riche navie que onques fist vue si start._{PAST.3P} the most rich ship that ever be._{PAST.3S} see._{PART.FEM}
 'They started (to build up) the most significant ship that was ever seen.' (OF, Clari, 22, 1-2 in Sitaridou 2005: 363)

The pattern attested in OF indicates that for null subjects to be licensed an XP needs to appear in clause-initial position. In most analyses this has been captured as a result of the V2 parameter being operative. However, Sitaridou (2004, 2005) has argued that agreement in OF is not of the same type as agreement in other NSLs, namely it is non-pronominal³. In OF, null subjects cannot be licensed only on the basis of agreement; otherwise null referential subjects as the one in (4c) would have been possible. Crucially, they are not. It follows that agreement cannot check the EPP. For the latter to be satisfied another phonologically overt category must be merged/moved (in the sense of Holmberg 2000; Sifaki 2003). Thus, the V2 word order is achieved for EPP requirements rather than finiteness requirements of C⁰.

3.3 Null subjects in Brazilian Portuguese

It is well-known that BP is undergoing a change from a null subject language to a nonnull subject language (see Duarte 1996; Kato & Negrão 2000, among many others). For the purpose of this paper we are interested in the contexts that retained the ability to license null subjects. However, before doing so, let us have a quick look at the contexts which lost the ability to license null subjects.

First, referential (definite and indefinite) pronominal subjects in BP today are preferably phonetically represented, rather than null, hence the ungrammaticality of (7):

(7) *Vai ao cinema. (BP) go._{3S} to-the cinema 'He goes to the cinema.'

Moreover, probably as a correlated loss, VSO word orders are no longer possible in BP, as in (8):

³ For full argumentation see Sitaridou (2004, 2005) and references therein.

(8) Comeu o Pedro o bolo. eat._{PAST.3S} the Pedro the cake 'Peter ate the cake.'

(*BP/EP, Costa & Galves 2002: 5)

Next, let us turn to the contexts that retained null subjects. First, expletive null subjects are possible when in third person impersonal constructions, as shown in (9):

(9) Há/tem muita violência na cidade.
 be/have._{3S} much violence downtown
 'There is a lot of violence downtown.'

(BP, Kato & Duarte 2003: 1)

Second, they can also be null in the raising construction in (10):

(10) Parece que vocês não pensam a sério na vida.
 seem._{3S} that you not think._{3P} in serious in-the life
 'It seems that you don't take life seriously.'

(BP, Duarte 2000: 32)

Another important facet of the change is the interaction of syntax with semantics. In the literature, it has been claimed that BP is a topic prominent language. What is the evidence that BP is a topic prominent language? Costa & Galves (2002) have suggested that BP is a topic-oriented language, in the sense that it allows for a topic to agree with the verb (cf. Galves 1998). This kind of construction is illustrated in (11):

(11) O relógio estragou os ponteiros.
 the clock damaged._{PAST.3S} the hands
 'The hands of the clock broke down.'

(BP/*EP, Costa & Galves 2002: 5)

In the next section, we will attempt to show how BP and OF are different from other NSLs in the way syntax interacts with discourse.

4. Interaction of syntax and discourse in partially pro-drop languages

In the literature there is a long-standing intuition that discourse factors play an undeniable role in the identification of null subjects and pronouns in general. This intuition has been formed on the basis of languages such as Japanese which is a non-rich agreement language whereby null subjects are not triggered for syntactic reasons; in other words, the dropping of thematic subjects may be attributed to the fact that the missing pronominal subject has been previously introduced in the discourse, and is mutually known to the interlocutors, thus it becomes redundant. Some of these discourse-related accounts include: (a) Principle of Informativeness (Greenfield & Smith 1976), whereby omission of easily recoverable information was advocated (argued against by Hyams & Wexler 1993); (b) Pragmatic effects (Hyams 1986), whereby null subjects can be dropped only if certain discourse conditions (e.g. the subject must refer to an established discourse topic) are met; (c) Null subjects as topic-drop (Jaeggli & Hyams 1988; Wexler 1998) (in presence of verbal inflection only),

whereby pronominal subjects are null if contextually salient (Very Strong Topic of Wexler (1998)).

The question that we seek to answer here is precisely why, given that by and large discourse factors – in the basic understanding of this term, i.e. topic/focus structure, familiarity, presupposition, etc. – do not vary in significant ways, the grammar of certain languages allows discourse identification of the null element in specific environments only, and crucially not in others that are equally – structurally speaking – good candidates for such identification? Assuming that discourse context remains more or less constant, what is it about the structural representations that allow this option?

This is an empirical question and it cannot be answered in an aprioristic fashion. Hopefully, the cases of partially *pro*-drop languages discussed in this paper can help us answer exactly this: namely, how the licensing and identification of null subjects takes place in these languages where agreement is not rich. If licensing of null subjects can take place because of EPP satisfaction via XP-preposing – among other ways, then we are still left to explain how the retrieval of person and number features is made possible. For us, when EPP satisfaction is not via agreement, the right identification for person and number information does not come 'for free', as in the cases of EPP satisfaction via agreement.

To tackle the issue of identification of null subjects we capitalize on two ideas. First, in Sifaki (2003) it was shown that the issue of the behaviour of topics in Greek is due to the structural and featural representation of functional heads and it is the latter that explains the behaviour of topics, not the fact that they are topics in the discourse sense. And yet this structural configuration is demonstrably the most appropriate, perhaps the only one, for the expression of topichood. In other words, the answer here may lie in the nature of the functional projections in X language and their featural content that are different from those in a Y language. Second, for acquisition it was claimed by Tsimpli (2004), Tsimpli et al. (2004) and Tsimpli & Mastropavlou (2007) that null subjects comprise both interpretable and uninterpretable features but only the former receive an interpretation at LF and this is why we find only interpretable features affected in attrited or SLI individuals. From this follows that null subjects are not just a question of Narrow Syntax, instead they are a syntax-LF interface phenomenon.

We claim, along with the aforementioned authors, and all of us essentially following Chomsky (1995), that the locus of cross-linguistic parameterisation is the uninterpretable features (e.g. *phi* features on the verb, Case) and in particular how these are linked to the interpretable ones (person, number and gender on the nouns). When the former come with fully specified *phi*-features, then this rich agreement is in effect absorbing/saturating the person, number and gender features (=interpretable features) of the null subject. So when reaching LF, those interpretable features have already been assigned reference/value via agreement. It follows that in this case LF assigns the interpretation that has already been determined in syntax. Crucially, for the partially pro-drop languages, the interpretable features are not fully specified at syntax so when the otherwise convergent derivation reaches LF, the right interpretation has to be assigned to these interpretable features. As it has been shown, partially pro-drop languages tend to disallow null subjects in 3rd person. 3rd person had been standardly assumed to lack referentiality, lack the person feature specification. As a result, the verb in this case does not receive a value for all phi-features, namely it is deficient. Effectively, the uninterpretable features of the verb cannot 'incorporate' the nominal argument itself. In this case, the uninterpretable feature leaves syntax unable to receive an interpretation at LF. From then on, the semantic component is looking into the identification of the null subject.

Let us now apply these theoretical assumptions to concrete examples of OF null subjects. We distinguish two cases. First, consider a case of identification because of discourse saliency:

(12) Ci commence l'istoire de ceus qui conquisent Constantinople; si vous dirons après qui il furent et par quele raison il i alerent.'Here starts the story of those who conquered Constantinople: next, we are gong to tell you who they were and for which reason they left.'

(OF Clari 17, 1-2)

In (12) there is a null subject in the phrase *si vous dirons* 'we will tell you'. The question that arises in (12) is how we retrieve the right person and number information given the analysis presented so far, whereby agreement is non-pronominal and the EPP is satisfied via merging of *si*. We would like to suggest that the right person and number information, namely first person plural, is retrieved because of the discourse: the reader knows that those who recite the story are 'we' – first person – as indeed is the way most epic prose starts.

Second, consider cases of identification because of topic continuity:

(13) Quant li croisié surent que li cuens de Champaigne, leur sire, fu mors, et maistre Fouques aussi, si pro en furent molt dolent et molt corecié et molt esmari;
'When the believers found out that ... their lord, was dead as well as master Fouques, they were very sad ...'

(OF, Clari 19, 23-26)

In (13) the null subject of the verb *furent* is identified the same as the previously mentioned subject, namely *li croisié*. The verbal morphology in OF does not encode a person feature, and therefore it is not that easy to identify the subject. Yet the fact that these constructions have a topic continuity reading implies that the relevant agreement features are retrieved from previous constructions in the context, constructions in which the subject (and as a result the person) has been made clear.

Next let us turn to BP; consider example (14):

(14) Pedro disse₁ que pro_{1/*2} ganhou na loto.
Pedro say._{PAST.3S} that win._{PAST.3S} the lottery
'Pedro said that he won the lottery.'

(BP, Modesto 2000: 149)

The way Modesto (2000) accounts for the null referential subject is by means of binding of *pro* at LF by a higher DP argument.

At this stage, it is interesting to compare OF and BP. The first common property shared by BP and OF is that they both instantiate morphologically non-uniform paradigms and as a result both languages license null subjects in some environments but not in others – at any rate not in all environments. Second, they are both topic-oriented languages, in the sense that there is an interaction between syntax and discourse.

However, this is where the similarities end since they are not the same type of topicoriented languages. OF drops referential subjects when they are topics whereas BP seems to drop only non-referential subjects, i.e. expletives. If this is the only pattern of null subject distribution that is observed in BP, along with the observation that the verb tends to agree not with the subject but with the topic, it becomes obvious that the interaction between syntax and discourse revolves around topics but dropping them in the case of OF and retaining them in the case of BP. Prima facie, this might seem to be an unwanted result given the typology we have established so far: namely a three way distinction among the group of NSLs, that is (i) NSLs with rich Agreement; (ii) discourse NSLs; and (iii) partially *pro*-drop. However, it is implicit in our account that in partially *pro*-drop languages the linking between syntax and discourse can take various forms as it is clearly demonstrated in the case of OF and BP. This is ultimately due to the fact that the morpholexical makeup of functional heads in these two languages is different.

5. Concluding remarks

In this paper it was argued that:

- (a) The reformulation of the MUC can now correctly predict all the languages in which null subjects may occur.
- (b) Within the languages that may allow null subjects, we have identified three types: (i) rich Agreement NSLs, in which the licensing and the retrieval of the null subject information is the result of syntax, (ii) partially *pro*-drop languages, like OF and BP, which license null subjects in some syntactic environments but not in others. In the cases that null subjects occur, licensing takes place in syntax and identification may take place in discourse; (iii) discourse pro-drop languages, like Japanese and Chinese, in which licensing and identification is achieved solely in discourse.
- (c) The difference in the retrieval of null subjects in the first and second type of NSLs lies in the variation of the interpretability of the *phi*-features of the missing nominal.

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Appendix A

Greek	English
thel-o	I want- \emptyset
thel-is	you want- \oslash
thel-i	he/she/it want-s
thel-ume	we want-Ø
thel-ete	you want- \oslash
thel-un	they want- \varnothing

Table A1. Morphologically uniform languages: Greek and English verbal paradigms

Table A2. Morphologically non-uniform languages (I): Old and Modern French verbal paradigms (Foulet 1928: 197)

Present Tense of aimer 'love': Modern French		Present Tense of aimer 'love': Old French (13 th C.)	
J'aim-e	-Ø	aim-Ø	
tu aim-es	-Ø	aim-es	
il aim-e	-Ø	aim-e	
nous aim-ons	-/õ/	am-ons	
vous aim-ez	-/e/	am-ez	
ils aim-ent	-Ø	aim-ent	

Table A3. Morphologically non-uniform languages (II): BP verbal paradigms from1845 to 1992 (Duarte 1996)

Chronolog	V	1845	1937	1992
Number	Person	Paradigm 1	Paradigm 2	Paradigm 3
SG	1^{st}	cant-o	cant-o	cant-o
	2 nd direct	canta-s	Ø	Ø
	2 nd indirect	canta-Ø	canta-Ø	canta- \varnothing
	3 rd	canta- \varnothing	canta-Ø	canta-Ø
PL	1 st	canta-mos	canta-mos	canta- \emptyset
	2 nd direct	canta-is	Ø	Ø
	2 nd indirect	canta-m	canta-m	canta-m
	3 rd	canta-m	canta-m	canta-m