

Topic prominence and null subjects¹

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This chapter presents data from Brazilian Portuguese, Finnish and Chinese which show that, at least in these languages, phonologically null subjects may be licensed and identified without the participation of verbal agreement. The analysis proposed treats those cases of null subjects as elided topics (PF-deleted elements) and so it relates the presence of null subjects in these languages to a parameter involving topic prominence. Some implications of the analysis are then discussed, based on Brazilian Portuguese data.

Keywords: Null Subject Parameter; Topic Prominence; Finnish; Brazilian Portuguese; Chinese

1. Introduction

Several authors (notably Rizzi 1982, 1986) have related a cluster of properties with a parameter, which came to be known as the Null Subject Parameter (NSP). These properties include allowing the subject position of finite clauses to be null whether they have a non-referential or a definite pronominal (referential) interpretation; disallowing overt non-referential (expletive) pronouns; allowing free subject inversion; allowing *wh*-extraction of an embedded subject across an overt complementizer and from embedded questions; and, most importantly, presenting “rich”²

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2. “Rich” appears in scare quotes because the term is used here without a proper definition. As noted by Speas (1994), the property that makes agreement “rich” is difficult to pin down. Most researchers use the term “rich” to mean “bearing enough morphology to provide non-ambiguous information on the person and number (and maybe gender) of the subject.” However, this raises the question of how rich the inflection must be to license null arguments. See Jaeggli and Safir

subject-verb agreement marking. The presence of “rich” agreement has probably been the most discussed of these properties. The reason is that there is irrefutable evidence from several languages that agreement is indeed related to the presence of null subjects (in fact, of null arguments in general), and that it is responsible for allowing them. However, some languages, e.g., Chinese, present null subjects even though there is no agreement. A great deal of effort has been put into explaining how these languages fit into the NSP picture, but numerous problems remain. Another complicating factor is that there are languages which do not comply with the NSP as described by Rizzi. Brazilian Portuguese (BP) presents an agreement paradigm that should most certainly be regarded as “poor”: 2nd and 3rd persons are identical both in the singular and in the plural in all tenses; therefore it is not surprising that postverbal subjects are ungrammatical, except with unaccusative verbs. Null subjects are, however, allowed in BP. Similarly, Finnish has overt non-referential (expletive) pronouns, and yet it allows null referential subjects (cf. Holmberg 2005).

There are three ways to go about the problem: either one gives up the idea that there is a parameter setting that involves more than just the presence or absence of null subjects; or one tries to accommodate the not-so-well-behaved languages into the NSP somehow; or, finally, one explains the presence of null subjects in those languages by other means. The first possibility is not interesting and will consequently not be pursued here. The second option was taken by many authors during the 1980s (see especially Huang 1984), with relative success. The third possibility has not, to my knowledge, been explored and it will be this one that I will defend in this paper.

Although I will not try to precisely define here what “rich” agreement is, I will assume the intuitive idea that, for agreement to allow null pronominal subjects, it must furnish (at least some) unambiguous information about number and person (and possibly gender in some languages). This excludes languages like Chinese and BP from the group of Null Subject Languages (NSLs) and their non-compliance with the cluster of properties associated with the NSP is therefore straightforwardly explained. The presence of null subjects in these languages, on the other hand, will clearly have to be related to another parameter. Here I will propose that the relevant parameter is the one distinguishing *subject-prominent* and *topic-prominent* languages, as discussed in Tsao (1977), Li and Thompson (1976) (and references therein). It will be argued that topic-prominent languages are those in which the EPP is double-faced: not only do clauses need to have a

(1989), Speas (1994), Rohrbacher (1994) and Vikner (1997) for tentative attempts at making the notion of “richness” more precise.

subject in these languages, but they also need to have a “topic”. Matrix topics may then bind ϕ Ps, in the sense of Holmberg (2005), in the embedded subject position, accounting for the availability of referential null subjects.³

2. Delimiting the problem

Huang (1984) showed that there is an important asymmetry between the interpretation of overt pronouns in English, for instance, and an empty category (EC) in languages like Chinese when the pronoun or EC occupies the object position of complement clauses. Compare (1) with (2) (Huang’s (20) and (19) respectively):

- (1) a. *He came.*
 b. *Bill saw him.*
 c. *John said that he knew Bill.*
 d. *John said that Bill knew him.*
- (2) a. *e lai-le.*
 come-PERF
 ‘He came.’
- b. *Lisi hen xihuan e.*
 Lisi very like
 ‘Lisi likes him a lot.’
- c. *Zhangsan shuo [e bu renshi Lisi].*
 Zhangsan say not know Lisi
 ‘Zhangsan said he did not know Lisi.’
- d. *Zhangsan shuo [Lisi bu renshi e].*
 Zhangsan say Lisi not know
 ‘Zhangsan said Lisi did not know him.’

There is a striking similarity in distribution and reference possibilities between overt pronouns in English and ECs in Chinese. However, when we turn to (1d) and (2d), an important difference emerges. In (1d), the pronoun is free to refer to the matrix subject *John* or to someone else. In (2d), on the other hand, the EC object may only refer to someone whose reference is fixed outside of the entire sentence. Importantly, it may not refer to the matrix subject *Zhangsan*. In order

3. An analysis of the BP facts discussed in the text below was put forth in Modesto (2000a,b). This chapter presents a slight revision, including Finnish data and modifying the analysis so that it becomes more compatible with the Minimalist Program (cf. Chomsky 1995, 2000, 2001, 2004, 2005, to appear).

to construct a sentence in Chinese with the same interpretative possibilities as the English counterpart, the EC would have to be replaced by an overt pronoun.

Huang explains this difference by taking the EC in (2d) to be a variable bound by a (null) discourse topic. Since it is not identified by agreement, it cannot corefer (with the matrix subject, for instance); it cannot be used deictically, or in an out-of-the-blue context. The same is true, according to Huang, of the ECs in (2a) and (2b), which are also bound by (null) discourse topics. Since empty categories are not contextually defined, according to recent generative theory, it can be assumed that the null arguments in (2a,b,d) are ϕ Ps in the sense of Holmberg (2005): a bundle of valued ϕ -features which is not referential by itself and needs to be bound in order to be interpreted, and which is bound by a discourse topic that may itself be null. Since the chain formed by the null topic and the ϕ P can be characterized as an A'-chain, the null argument is interpreted at LF as a variable.

What about the EC in (2c)? Since it is not identified by agreement, it should not be able to corefer to the matrix subject. Huang argues that the EC is a pronominal which is controlled by the closest nominal element (or simply in its control domain if it has one, as in Huang 1989). Huang therefore solves the problem Chinese poses to the NSP in the following manner: since there is no verbal agreement, null pronominals are not usually allowed, as expected. Where they do occur, however, null arguments are, in fact, variables bound by (null or overt) topics. Null pronominal subjects may perhaps be licensed by the fact that Chinese uniformly lacks agreement, as suggested by Jaeggli and Safir (1989)), but they cannot be identified (by agreement, as subjects of this type are in languages like Italian); therefore they are possible only when controlled by a higher argument. The correlation between *pro*-drop and richness of agreement is then maintained.

Taking the null subject in (2c) to be controlled is, however, problematic; and Huang's Generalized Control Rule (GCR) cannot account for the whole range of facts. As seen in (3b), the embedded null subject in Chinese does not behave like a normal pronoun in English, nor like a controlled subject:

- (3) a. *Bill₁ told Joe₂ that he_{1/2} had won the championship.*
 b. *Zhangsan₁ gaosu Lisi₂ e_{1/2} ying le guanjun.*
 Zhangsan tell Lisi win PERF championship
 ‘Zhangsan told Lisi he had won the championship.’
 c. *Bill₁ told Joe₂ e*_{1/2} to win the championship.*

(3a) may be interpreted as saying that Bill was the one giving the good news to Joe that Joe had won the championship. This same reading is absent from (3b). The fact that the EC in (3b) can only take the matrix subject as its antecedent casts serious doubts that ECs in subject position in Chinese find their referent

according to Huang's GCR. If Control were really involved, one would expect exactly the opposite to take place, i.e., that the EC would take the matrix object as its antecedent (as in (3c)).⁴ In that case, null embedded subjects in Chinese still present a problem for theories which try to explain the cluster of properties associated with the NSP.

In what follows, it will be argued that the peculiar behavior of null embedded subjects in Chinese follows from the fact that all subjects in that language occupy a "topic" position (to be defined more clearly below); therefore a matrix topic/subject may bind a ϕ P in embedded subject position. In this way, all null arguments in Chinese will be treated in the same manner: as ϕ Ps bound by a (null or overt) topic. BP and Finnish null embedded subjects will be explained in the same manner. Section 3 below gives an overview of the interpretative characteristics of null subjects in BP, Finnish and Chinese. These characteristics are then accounted for in section 4. Section 5 discusses what properties may be involved with the Topic Prominence Parameter and section 6 offers some concluding remarks.

4. The preceding statements deserve some clarification. That null subjects in Chinese are subject-oriented (unless interpreted as bound by a discourse topic) was also claimed by Battistella (1985) and this was confirmed by several informants. James Huang (p.c.) agreed that the EC in (3b) takes the matrix subject as its antecedent. However, due to contrasts of the following kind (already mentioned by Battistella), he maintained his skepticism towards the subject-orientation theory (cf. Huang 1989: 21ff):

- (i) a. *Zhangsan₁ gaosu Lisi₂ e_{1/*2} bu neng lai.*
 Zhangsan told Lisi not can come
 'Zhangsan told Lisi that [he] can't come.'
- b. *Zhangsan₁ gaosu Lisi₂ e_{-1/2} bu keyi lai.*
 Zhangsan told Lisi not may come
 'Zhangsan told Lisi [he] may not come.'

I will follow Battistella in assuming that contrasts of the kind showed by the sentences in (i) are explained by pragmatics. In fact, Huang (1984: ff. 6) himself stressed the point that, in languages like Chinese, "pragmatics appears to "override" grammar". Trying to explain how the EC in object position in (ii) below could be referentially dependent on the matrix subject, Huang claimed that, in that sentence, "the object EC can refer to the matrix subject "thief", since this is pragmatically the most natural way to interpret the sentence."

- (ii) *Xiaotou yiwei meiyou ren kanjian e, na le dongxi jiu pao.*
 thief think no man see take PERF thing then run
 'The thief thought no one saw him so he took the things and ran.'

Whatever the explanation for why sentences with modals behave differently, subject orientation is also a factor in sentences which do not contain modals, exemplified by (3b) in the text, and this fact calls for an explanation.

3. The interpretation of null embedded subjects in BP, Finnish and Chinese

Languages not related to Chinese, such as BP and Finnish, present similar facts to those discussed in section 2. Null embedded subjects are allowed when they apparently should not be. Agreement in BP has become “poor”, which has caused the subject position generally to be preferably filled by overt pronouns in spoken language (cf. Galves 1993; Duarte 1995; Figueiredo Silva 1996). Null subjects are only allowed when the discourse provides a topic so they can be analyzed in the same way as in Chinese. Embedded null subjects, however, are possible in out-of-the-blue contexts, but, in that case, they take the subject of the next clause up as their antecedent; they cannot be interpreted deictically nor as coreferent with the matrix object (cf. Modesto 2000a,b):

- (4) a. *O Feco₁ convenceu a Dani₂ que e_{1/*2/*3} ganhou o campeonato.*⁵
 the Feco convinced the Dani that won the championship
 ‘Feco convinced Dani that he won championship.’
- b. *O Feco₁ avisou a Dani₂ que e_{1/*2/*3} vai ganhar.*
 the Feco warned the Dani that will win-INF
 ‘Feco warned Dani that he will win.’

In Finnish, null subjects are only allowed with 1st and 2nd person interpretation despite agreement in the language being “rich”. 3rd person null subjects are not allowed, at least not in matrix contexts. However, as noted by Holmberg (2005), “the use of 1st and 2nd person null subjects is largely restricted to formal varieties of Finnish, including standard written Finnish” (cf. also Vainikka 1989; Vainikka & Levy 1999; Heinonen 1995). He also notes that “in written Finnish the use of the expletive *sitü*, which is common in spoken language, is proscribed ...” So it seems

5. Note that *convencer* is an object control verb, as shown below in (i). That makes even clearer that control is not involved in the identification of the EC in (4a).

- (i) *O Feco₁ convenceu a Dani₂ a PRO_{*1/2} fazer o teste.*
 the Feco convinced to Dani to take-INF the test
 ‘Feco convinced Dani to take the test.’

Throughout the text, I use the verbs *convencer* (to convince) and *avisar* (to warn) as examples, but all the verbs in BP which take a nominal object followed by a sentential argument (including *falar* (to say), *dizer* (to tell), *informar* (to inform), *gritar* (to yell), *assegurar* (to assure), among others) behave in exactly the same way. Rodrigues (2004) tried to attribute the facts in (4a) to a peculiarity of the verb *convencer*, which cannot be correct, as extensively argued in Modesto (in press).

that, although Standard Finnish is a (partial) *pro*-drop language, colloquial Finnish has become a non-null subject language, like BP. Unexpectedly, however, even colloquial Finnish allows 3rd person null subjects in embedded clauses (in out-of-the-blue contexts). Once again, these embedded null subjects cannot be interpreted deictically nor as coreferent with the matrix object (cf. Gutman 2004; Halmari 1996):

- (5) a. *Liisa*₁ *vakuutti* *Jussille*₂, *että* *e*_{1/*2/*3} *voi tulla valituksi.*
 Liisa assured Jussi that can come elected
 'Liisa assured Jussi that she can be elected.'
- b. *Liisa*₁ *takasi* *Jussille*₂, *että* *e*_{1/*2/*3} *saa ylennyksen.*
 Liisa guaranteed Jussi that may promotion
 'Liisa guaranteed to Jussi that she will get the promotion.'

Besides subject-orientation, null embedded subjects in BP, Finnish and Chinese exhibit a peculiar behavior with respect to their possible interpretations. As noted by Negrão (1997), null subjects in BP can only take *c*-commanding phrases as their antecedent. Sentences (6b), taken from Vainikka & Levy (1999), and (6c) indicate that the same is true in Finnish and Chinese:⁶

6. An anonymous reviewer notes that Holmberg (2005) gives examples where the subject orientation and/or the *c*-command requirement seem(s) to be violated in Finnish. According to Holmberg, the allative argument in (i) is a possible antecedent for the null pronoun despite not being a subject; and according to both Holmberg and the reviewer, Tarjalle in (ii) is a possible antecedent, although it does not *c*-command the null subject:

- (i) *Anu*₁ *sanoi* *Jarille*₂ *että* *hän*_{1/2/3}/*Ø*_{1/2/*3} *ottaa kitaran mukaan.*
 Anu said Jari-ALL that he takes guitar along
 'Anu said to Jari that he (= Anu or Jari) will take the guitar along'
- (ii) *Se oli* *Tarjalle*₁ *pettymys* *ettei* *hän*_{1/2}/*Ø*_{1/*2} *saanut lukea latinaa*
 it was Tarja-ALL disappointment that.not she could study Latin
koulussa.
 school-INE
 'It was a disappointment to Tarja that she could not study Latin at school'

Both examples pose a problem for the analysis to be presented and will have to be accounted for by some different mechanism. It is interesting to note that both examples would be translated using a subjunctive in Romance languages. Although this is not a definite solution, it is my belief that (ii) is acceptable because the embedded clause may contain a hidden subjunctive. As shown by Landau (2004), subjunctives in Hebrew and Balkan languages, though finite, admit controlled (PRO) subjects. In that case, Finnish may have an additional source for null subjects besides the one argued for in this work. Although Finnish has no morphological subjunctive, the conditional mood is sometimes used where Romance would use a subjunctive. Although the indicative may not be replaced by the conditional in (ii), it may be in (i) and that change makes it easier for speakers to take the allative argument as the antecedent of the null subject:

- (6) a. [O amigo do Feco]₂₁ disse que e_{1/*2/*3} ganhou a competição.
the friend of Feco said that won the championship
'Feco's friend said that he won the championship.'
- b. [Veljeni₂ vaimo]₁ oli niin iloinen, ettei e_{1/*2/*3} voinut nukkua.
brother-GEN wife was so happy that.not could sleep
'My brother's wife was so happy that she could not sleep.'
- c. [Zhangsan₂ fangwen de ren]₁ xiwang e_{1/*2/*3} neg ying.
Zhangsan visit DE person hope can win
'The person who Zhangsan visited hoped he could win.'

There is a locality restriction involving the antecedent of a null subject in those languages: the closest subject must be the antecedent.

- (7) a. O Feco₁ disse que a Dani₂ acha que e_{1/2} ganhou na loto.
the Feco said that the Dani thinks that won the lottery
'Feco said that Dani thinks that she won the lottery.'

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- (iii) Anu₁ sanoi Jarille₂ että Ø₂ ottaisi kitaran mukaan.
Anu said Jari-ALL that take-CON guitar along
'Anu told Jari to bring the guitar along.'

The same contrast can be seen in (iv) below (Anders Holmberg, p.c.). The null subject in the (a) sentence, which has a verb in the indicative, can only be interpreted as taking the higher subject (Pekka) as its antecedent. In the (b) sentence, with a conditional, however, both Pekka and Tarja can be the antecedent of the null subject:

- (iv) a. Pekka₁ sanoi Tarjalle₂ ettei Ø_{1/*2} puhu liian hiljaa.
Pekka said Tarja-ALL that-not speak-IND too low
'Pekka told Tarja that he does not speak too low.'
- b. Pekka sanoi Tarjalle ettei Ø_{1/2} puhuisi liian hiljaa.
Pekka said Tarja-ALL that-not speak-CON too low
'Pekka told Tarja that s/he should not speak too low.'

It is possible, then, to imagine that the speakers who accept Jari as the antecedent in (i) are taking the embedded clause to be a subjunctive, despite the lack of morphological evidence. In fact, even for BP, something additional would have to be said for subjects of subjunctive clauses (probably that they involve a case of (finite) control). They do behave differently than subjects of clauses in the indicative. As seen in (v), for instance, the object is (necessarily) the controller of the null embedded subject:

- (v) O rei₁ ordenou ao soldado₂ que e_{1/2} matasse o prisioneiro.
the king ordered to.the soldier that kill-SUBJ the prisoner
'The king ordered the soldier to kill the prisoner.'

- b. *Jukka₁ sanoi että Liisa₂ ajattelee että e_{1/2} oli voittanut arpajaisissa.*
 Jukka said that Liisa thinks that had won lottery
 'Jukka said that Liisa thinks that she won the lottery.'
- c. *Zhangsan₁ yiwei Lisi₂ chengren yiqian e_{1/2} zuocuo shi le.*
 Zhangsan think Lisi admit before do.wrong matter ASP
 'Zhangsan thinks Lisi admitted that he did wrong.'

As noted by Figueiredo Silva (1996), a null subject cannot take split antecedents in BP. Note that (8a) is perfectly acceptable (in the intended reading) in European Portuguese, a language which is relatively uncontroversially an NSL. The BP sentence, however, is grammatical only in a reading where the null embedded subject is "arbitrary" in the sense of Egerland (2003). Once again, the data can be reproduced in Finnish⁷ and Chinese:

- (8) a. **O Feco₁ disse pra Dani₂ que e₁₊₂ fizeram besteira.*
 the Feco said to.the Dani that did something-wrong
 'Feco told Dani that they did something wrong.'
- b. **Jukka₁ kysyi vaimoltaan₂ e₁₊₂ voivatko mennä Espanjaan lomalle.*
 Jukka asked his.wife can go to Spain for.vacation
 'Jukka asked his wife if they could go to Spain for vacations.'
- c. **Zhangsan gaosu Lisi (shuo) e₁₊₂ zuocuo shi le.*
 Zhangsan told Lisi (that) do.wrong matter PERF
 'Zhangsan told Lisi that they did something wrong.'

Negrão (1999) and Negrão and Viotti (2000) show that in BP, under VP ellipsis, only a sloppy reading is available for an embedded null subject. With *only*-NP antecedents, the null embedded subject receives a covariant interpretation, i.e., the invariant interpretation, which is possible when the subject is overt, is absent (on the covariant versus invariant interpretations see Higginbotham 1992; see also Duguine, this volume). According to Rodrigues (2004), the same is true in Finnish in both cases:⁸

7. Sentences (7b) and (8b) are taken from Rodrigues (2004).

8. Chinese informants were not consistent with respect to VP-ellipsis and sentences with *only*-NP antecedents. Although speakers perceived only a sloppy reading in VP-ellipsis structures like (ia) below, (ib) was said to be ambiguous. Sentences with *only*-NP antecedents were also judged to be ambiguous. As suggested by Jairo Nunes (p.c.), Chinese may employ deep anaphora (cf. Hankamer & Sag 1976) in these cases.

- (i) a. *Zhangsan shuo e mei shijian, Lisi ye zheyang shuo.*
 Zhangsan say have-no time Lisi also this-way say
 'Zhangsan said he has no time, Lisi did too.'

- (9) a. *O Pedro₁ acha que e₁ é inteligente e o Paulo também.*
 the Pedro thinks that is intelligent and the Paulo too
 ‘Pedro thinks that he is intelligent and Paulo does too.’
- b. *Só o Maluf acha que e vai ganhar as eleições.*
 only the Maluf thinks that will win the elections
 ‘Only Maluf thinks that he will win the elections.’
- (10) a. *Jukka₁ sanoi että e₁ oli voittanut arpajaisissa, ja niin Pekkakin.*
 Jukka said that had won lottery and so Pekka.also
 ‘Jukka said that he won the lottery and Pekka did too.’
- b. *Vain Jukka₁ ajatteli että e₁ oli voittanut arpajaisissa.*
 only Jukka thought that had won lottery
 ‘Only Jukka thought that he won the lottery.’

The facts listed so far clearly show that the relation between the null embedded subject and its antecedent in BP, Finnish and Chinese involves some kind of variable-binding relation. More evidence towards that conclusion is given by the fact that movement may alter the possible antecedent relations. As seen in (5) above, a matrix object cannot be taken to be the antecedent of a null embedded subject in BP. However, if the matrix object is *wh*-moved, relativized, clefted or topicalized, then it becomes a possible antecedent.⁹ In fact, when there is *wh*-movement, relativization or clefting of the object, it becomes the only possible antecedent for the null subject:¹⁰

- b. *Zhangsan shuo e yiding yingde xuanju, Lisi ye shi.*
 Zhangsan say definitely win election Lisi also be
 ‘Zhangsan said he would win the election, Lisi also did.’

9. Passivization also changes the interpretative possibilities (IMP signifies imperfect PAST tense):

- (i) a. *O Feco₁ viu a Dani₂ quando e_{1/2} chegava em casa.*
 The Feco saw the Dani when arrive-IMP in home.
 ‘Feco saw Dani when he was arriving home.’
- b. *A Dani₂ foi vista pelo Feco₁ quando e_{*1/2} chegava em casa.*
 The Dani was seen by Feco when arrive-IMP in home
 ‘Dani was seen by Feco when she was arriving home.’

10. The fact that there is a relation between movement and being the antecedent of a null subject in BP was already observed by Modesto (2000a,b). I have tried to use pragmatically neutral examples, since, as noted in footnote 4 above, knowledge of the world may interfere with the readings. As pointed out by Jairo Nunes (p.c.), for instance, the subject in a sentence like (i) below can still be interpreted as the antecedent of the null embedded pronoun, although the object has *wh*-moved. That reflects the fact that people generally assume students to miss classes more often than teachers do.

- (11) a. *Quem₂ que o Feco₁ avisou t₂ que e*_{1/2} precisa trabalhar até*
 who that the Feco warned that needs work-INF until
mais tarde?
 more late
 ‘Who did Feco warn that s/he has to work till late?’
- b. *O cara₂ que o Feco₁ avisou t₂ que e*_{1/2} precisa trabalhar mais*
 the guy that the Feco warned that needs work-INF more
já chegou.
 already arrived
 ‘The guy who Feco warned that he has to work harder has already arrived.’
- c. *Foi a Dani₂ que o Feco₁ avisou t₂ que e*_{1/2} precisa trabalhar*
 was the Dani that the Feco warned that needs work-INF
até mais tarde.
 until more late
 ‘It was Dani that Feco warned that she has to work till late.’
- d. *A Dani₂, o Feco₁ avisou t₂ que e_{1/2} precisa trabalhar até*
 the Dani the Feco warned that needs work-INF until
mais tarde.
 more late
 ‘(Speaking of) Dani, Feco warned her that s/he has to work till late.’
- (12) a. *Quem₂ que o Feco₁ convenceu t₂ que e*_{1/2} pode se eleger?*
 who that the Feco convinced that can REFL elect-INF
 ‘Who did Feco convince that s/he can get elected?’
- b. *O cara₂ que o Feco₁ convenceu t₂ que e*_{1/2} pode se eleger*
 the guy that the Feco convinced that can REFL elect-INF
já chegou.
 already arrived
 ‘The guy who Feco convinced that he can get elected is already here.’
- c. *Foi a Dani₂ que o Feco₁ convenceu t₂ que e*_{1/2} pode se eleger.*
 was the Dani that the Feco convinced that can REFL elect-INF
 ‘It was Dani that Feco convinced that she can get elected.’
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- (i) *Que professor₂ o aluno₁ avisou t₂ que e_{1/2} ia faltar a aula?*
 which professor the student warned that was-going miss-INF the class
 ‘Which professor did the student warn that he was going to miss the class?’

- d. *A Dani₂, o Feco₁ convenceu t₂ que e_{1/2} pode se eleger.*
 the Dani the Feco convinced that can REFL elect-INF
 '(Speaking of) Dani, Feco convinced her that s/he can get elected.'

In (11a,b,c) and (12a,b,c), the only possible antecedent for the null embedded subject is the moved matrix object. To get a reading where the matrix subject is the antecedent, an overt pronoun is required in the downstairs subject position (and that makes the sentences ambiguous). (11d) and (12d), on the other hand, are ambiguous with an EC in subject position. These facts seem to correlate with another: only a topic can be base-generated in its dislocated position, as shown by the full acceptability of (13d):¹¹

- (13) a. **Quem₁ que o Feco conhece o jornalista que entrevistou e₁?*
 who that the Feco knows the journalist that interviewed
 'Who does Feco know the journalist who interviewed?'
 b. **O cara₁ que o Feco conhece o jornalista que entrevistou e₁*
 the guy that the Feco knows the journalist that interviewed
já chegou.
 already arrived
 'The guy that Feco knows the journalist who interviewed him is here.'
 c. **É a Dani₁ que o Feco conhece o jornalista que entrevistou e₁*
 is the Dani that the Feco knows the journalist that interviewed
 'It is Dani that Feco knows the journalist who interviewed her.'
 d. *A Dani₁, o Feco conhece o jornalista que entrevistou e₁.*
 the Dani the Feco knows the journalist that interviewed
 '(Speaking of) Dani, Feco knows the journalist who interviewed her.'

11. D-linked wh-phrases and inanimate heads of relative clauses may be base-generated in their dislocated position in BP, as shown in (ia,b). Note, however, that it is probably not the case that the DP can be base-generated in (ib) because it is inanimate, but because being inanimate makes its relation to the ϕ P in object position unambiguous. That fact confirms that languages like BP are highly sensitive to pragmatics and knowledge of the world when accessing antecedent possibilities:

- (i) a. *Que professor₁ o Feco conhece o jornalista que entrevistou e₁?*
 which professor the Feco knows the journalist that interviewed
 'Which professor does Feco know the journalist who interviewed him?'
 b. *Este é o livro₁ que o Feco conhece o jornalista que escreveu e₁.*
 this is the book that the Feco knows the journalist that wrote
 'This is the book that Feco knows the journalist who wrote it.'

The ambiguity of (11d) and (12d), then, seems to be caused by the possibility of base-generating the topic, in the following manner: when the topic is moved to its surface position, it seems appropriate to suppose that the topic is the only possible antecedent for the null pronoun, as in the *wh*-movement, clefting and relativization cases. When the topic is base-generated, on the other hand, the matrix subject becomes a possible antecedent, perhaps the only possible one, as the remarks immediately below seem to indicate.

To confirm the relation between movement and the possibility of being the antecedent for the null subject, observe that (13b) can be rescued by (overt) resumption. In that case, the most plausible analysis is that there was no movement (and therefore the island violation is ameliorated). Importantly, when there is resumption, the head of the relative clause is no longer a possible antecedent for the null subject in (14b); that reading is only possible if an overt pronoun occupies the subject position:

- (14) a. ?*O cara₂ que o Feco₁ conhece o jornalista que entrevistou ele₂*
 the guy that the Feco knows the journalist that interviewed him
 já chegou.
 already arrived

‘The guy that Feco knows the journalist who interviewed him has arrived.’

- b. ?*O cara₂ que o Feco₁ convenceu ele₂ que e_{1/2} pode se*
 the guy that the Feco convinced him that can REFL elect-INF
 eleger já chegou.
 already arrived

‘The guy that Feco convinced him that he can get elected has arrived.’

The same happens with topicalized elements. If the topic has been base-generated, as shown by the presence of a resumptive pronoun, it can no longer be taken as the antecedent of the null subject.

- (15) *A Dani₂, o Feco₁ convenceu ela₂ que e_{1/2} pode se eleger.*
 the Dani the Feco convinced her that can REFL elect-INF
 ‘(Speaking of) Dani, Feco convinced her that he can get elected.’

The fact that *wh*-phrases left in situ also cannot be taken as the antecedent of a null embedded subject confirms the claim made here that there is a relation between movement and the choice of antecedent.

- (16) *O Feco₁ convenceu quem₂ que e_{1/2} pode se eleger?*
 the Feco convinced who that can REFL elect-INF
 ‘Who did Feco convince that he can get elected?’

Further confirmation comes from the fact that in Finnish, movement of a matrix object also tends to improve its chances of being interpreted as the antecedent of a null embedded subject:

- (17) a. *Kenelle₂ Liisa₁ vakuutti t₂ että e_{1/?2} voi tulla valituksi?*
 to-whom Liisa assured that can come elected
 ‘Who did Liisa assure that s/he can get elected?’
- b. *Henkilö₂ jolle Liisa₁ vakuutti t₂ että e_{1/?2} voi tulla valituksi*
 the person that Liisa assured that can come elected
saapui jo.
 arrived already
 ‘The person to whom Liisa assured that s/he can get elected has arrived.’
- c. *Jussille₂ vakuutti Liisa₁ että e_{1/?2} voi tulla valituksi.*
 Jussi-to assured Liisa that can come elected
 ‘Jussi, Liisa assured him that s/he can get elected.’
- (18) a. *Kenelle₂ Liisa₁ takasi t₂ että e_{1/?2} saa ylennyksen?*
 to-whom Liisa guaranteed that will-get promotion
 ‘To whom did Liisa guarantee that s/he will get the promotion?’
- b. *Henkilö₂ jolle Liisa₁ takasi t₂ että e_{1/?2} saa ylennyksen*
 the person that Liisa guaranteed that will-get promotion
saapui jo.
 arrived already
 ‘The person to whom Liisa guarantee that s/he will get the promotion has arrived.’
- c. *Jussille₂ takasi Liisa₁ että e_{1/?2} saa ylennyksen.*
 Jussi-to guaranteed Liisa that will-get promotion
 ‘To Jussi, Liisa guaranteed that s/he will get the promotion.’

As seen in (5) above, in Finnish, just as in BP, a matrix object cannot be interpreted as the antecedent of a null embedded subject. However, as (17) and (18) show, a *wh*-moved, relativized or topicalized object becomes a possible antecedent. The question mark in the readings where the moved matrix object is the antecedent of the null pronoun means that informants, although accepting that reading, said that the reading where the matrix subject is the antecedent was still the preferred one. Since none of my informants accepted a matrix object as the antecedent in (5) above, the contrast seen in BP is maintained in Finnish. What needs to be explained, though, is the fact that a moved object is the preferred antecedent in BP but not in Finnish. I will present my analysis of the facts and then return to that difference between BP and Finnish.¹²

12. Unfortunately, Chinese cannot be used to test the relation between movement and

4. The analysis in detail

4.1 A general overview

The proposal I want to put forward here is that non-*pro*-drop languages like BP and Finnish allow null embedded subjects by virtue of being topic-prominent languages. Chinese, on this perspective, is also a non-null subject language since it has no agreement and all occurrences of null subjects can also be explained by the same strategy. The main assumption is that what distinguishes topic-prominent and subject-prominent languages is the fact that, in the former, a head F ,¹³ above TP, always bears an OCC (= EPP) feature (see Chomsky 2004) which causes one constituent necessarily to be moved to its specifier position. Such a moved constituent is interpreted as an unmarked topic, meaning simply that it has a predication relation with the whole TP (see discussion in section 4.2 below). Chinese is uncontroversially a topic-prominent language; Finnish and BP have also been argued to be topic-prominent or discourse-oriented (see Holmberg & Nikanne 2002; and Negrão & Viotti 2000 respectively). The claim is, then, that null embedded subjects are possible in all of these languages because subjects occupy a higher (A-bar) position and so matrix subjects are able to identify null embedded subjects by binding them. An example sentence in BP is presented below (here and below, traces stand for copies deleted at PF and “*e*” stands for an unpronounced set of features, irrelevant details omitted throughout):

- (19) [FP *o Feco*₁ [TP *t*₁ *convenceu a Dani*₂ [CP *que* [FP *e*₁ [[TP *t*₁ *pode se*
 the Feco convinced the Dani that can REFL
 eleger]]]]]
 elect-INF

Following Holmberg (2005), I assume that null subjects are non-referential sets of ϕ -features, ϕ Ps in his terminology. In “rich” agreement languages, referentiality is supplied by verbal agreement, making ϕ Ps behave like overt pronouns. In the languages discussed here, since agreement cannot provide a reference (or identify) the ϕ P, the only way to interpret it will be taking it to be a variable at LF. In other words, ϕ Ps will only be possible in weak agreement languages when A'-bound.

antecedenthood. On one hand, Chinese does not present (overt) *wh*-movement. On the other hand, extraction of an object (be it by relativization or topicalization) of verbs taking two complements gives bad results for unclear and independent reasons (Audrey Li p.c.).

13. Holmberg and Nikanne (2002) refer to F , a category which stands for “Finite”, but which is related to Uriagereka’s (1995) F head, where F stands for “Functional”. Since the category I am employing here corresponds quite closely to the categories used by those authors, I use the same label. However, F here, as in the latter work cited, stands for “functional”.

Specifically, in (19), the ϕ P gets bound by the higher subject that has been moved to SpecFP, to check its OCC feature. The chain formed by the two topics is nothing more than the application of the regular chain formation operation that applies between copies (cf. Nunes 1995). In this case, it may apply to distinct elements since they have the same set of ϕ -features.¹⁴ An overt pronoun could be also merged in the embedded subject position in all of those languages. In that case, coreference with the higher subject would be accidental and non-coreference would be possible. The ϕ P, however, does not refer by itself and can only be interpreted when bound. It is, therefore, the fact that those languages are topic-prominent, with subjects being moved to an A-bar position (SpecFP), that allows ϕ Ps in the embedded subject position. This explains why English-type languages do not show null embedded subjects of the kind described here: subjects in English-type languages remain in SpecTP and so cannot variable-bind an embedded subject.

Note that any phrase could check F's OCC feature but, for locality reasons, it is always the subject, the closest element, which is moved to SpecFP, both in the matrix and the embedded clause (unless some other constituent has an uninterpretable feature to check, see section 4.2 below). The fact that objects are not good antecedents for null subjects in those languages is therefore straightforwardly explained.

The analysis presented, then, explains all the characteristics listed in section 3. The variable-like characteristics of the embedded null subject have their origins in the fact that the ϕ P must be A'-bound by the higher subject/topic. The c-command requirement on antecedents is obviously explained by the fact that chains can only be formed if there is a c-command relation. Locality requirements are also expected: an A'-chain cannot be formed if there is an intervening topic or any other intervening operator. The ban on split antecedents is due to the fact that a ϕ P cannot be bound simultaneously by two distinct elements.¹⁵ In VP ellipsis and *only*-NP sentences, the absence of strict and invariant readings is explained

14. In other words, it could be assumed that chain formation is possible here because a ϕ P is nothing more than a set of ϕ -features and, since the ϕ -features of the embedded and the higher subject are the same, the ϕ P is indistinguishable from its antecedent.

15. Obviously, full pronouns, both those occupying the same unmarked topic position and those in marked topic positions, will behave differently since they can be inherently referential and so will be able to corefer with more than one phrase, as in (i):

- (i) *O João convenceu a Maria que eles a polícia não pega.*
 the João convinced the Maria that they the police not catch
 'João convinced Maria that the police will not catch THEM.'

since the ϕ P is in fact a variable, bound by the preceding topic and cannot therefore be interpreted as referential.¹⁶

Although the analysis as presented so far is empirically adequate, many problems have still not been addressed. One may wonder, for instance, what will happen if the subject of a sentence is not referential, which topics are usually thought of as being. Having laid out the gist of the analysis, I will now clarify in section 4.2 why SpecFP may host non-canonical topics. The effects of topicalization, *wh*-movement and relativization on the choice of the antecedent of the null subject in BP and Finnish are the focus of sections 4.3 and 4.4 respectively. Finally, section 4.5 provides support for the analysis from intervention effects observed in both languages.

4.2 Two topic positions

Taking the alternation in (20) as their point of departure, Holmberg and Nikanne (2002) claim that the EPP in Finnish requires a topic in sentence-initial position (which the authors identify as SpecIP). Here topic is understood as an expression denoting an individual or a group already established in the discourse, about which the predicate says something new.

- (20) a. *Graham Greene on kirjoittanut tämän kirjan.*
 Graham Greene has written this book
 ‘Graham Greene has written this book.’
- b. *Tämän kirjan on kirjoittanut Graham Greene.*
 this book has written Graham Greene
 ‘This book, Graham Greene has written.’

Holmberg (2005) says that “if the sentence contains one or more categories which can check the EPP, then one of them must remerge with IP (i.e., move to SpecIP), or an expletive must be merged with IP.” The reason for the conditional clause is that the EPP seems to be suspended in Finnish if the sentence does not contain a referential category capable of serving as a topic, but the idea that any referential category (so not only the subject) may check the EPP is maintained. As noted by

16. Note that all the characteristics listed are the same ones encountered when dealing with obligatorily controlled (PRO) subjects. This fact has misled some researchers (e.g., Rodrigues 2004 and Ferreira 2004) into thinking that BP presents a case of finite control, as defined in Landau (2004). Although that may be true in some cases (e.g., when the complement clause is in the subjunctive, cf. footnote 6), it is certainly not true for subjects of indicative verbs, as shown in Modesto (in press).

Holmberg (in press), however, “it is not true that the EPP can only be checked by referential categories, capable of serving a topic function”:

- (21) a. *Kuka tahansa voi tulla tänne.*
 who ever can come here
 ‘Anyone can come here.’
- b. *Tänne voi tulla kuka tahansa.*
 here can come who ever
 ‘Anyone can come here.’
- c. **Voi tulla kuka tahansa (tänne).*
 can come who ever here
 ‘Anyone can come here.’

In (21a), *kuka tahansa* is an indeterminate quantifier and, as such, it is not referential or capable of functioning as a topic. The author then resorts to the descriptive generalization that “the subject may check the EPP even if it is not a referential category, but, for example a quantified NP, but non-subjects have to be referential and interpretable as topics, to check the EPP”, as exemplified in (21b). (21c) shows that if neither the subject nor another (referential) category is moved to the topic position, the sentence is ungrammatical, since the EPP-feature is not checked.

The relevance of this discussion in the present scenario is that a non-referential subject may be the antecedent of a null embedded pronoun in Finnish and BP, as noted by an anonymous reviewer (cf. 22a,b). Furthermore, the weak pronoun *cê* in BP may also fulfill that role, although it may not occur as a (marked) topic (cf. 22c,d):

- (22) a. [*Kuka tahansa*]₁ *pettyy jollei e₁ saa työtä.*
 who ever gets.disappointed if.not gets work
 ‘Anyone gets disappointed if he doesn’t get work.’
- b. *Alguém₁ acha que e₁ sabe a resposta.*
 someone thinks that knows the answer
 ‘Someone thinks that he knows the answer.’
- c. *Cê₁ disse que e₁ sabe a resposta?*
 you said that knows the answer
 ‘Did you say that you know the answer?’
- d. **Cê/ *alguém₁, o Feco disse que e₁ sabe a resposta.*
 you/ someone the Feco said that knows the answer
 ‘Feco said that you/someone knows the answer.’

The existence of sentences such as (21a) and (22a) does not invalidate the argument made here, nor the argument that the EPP in Finnish requires a topic in SpecFP. As discussed in Martins and Nunes (2005), two different topic positions

are independently motivated in BP. They discuss what they call “double subject constructions” in BP:

- (23) *Os professores₁ parecem que eles₁ gostam da Maria.*
 the teachers seem-3PL that they like of.the Maria
 ‘The teachers seem to like Maria.’

Modifying their analysis somewhat, we can assume that the higher subject is allowed to surface without a θ -role because it is a topic. In present terms, we can assume that it checks all features of the higher TP and then moves to the SpecFP position to check F’s OCC feature.¹⁷ But what is interesting about double subject constructions is that they allow weak pronouns in the subject position:

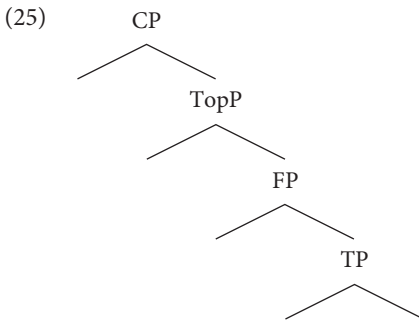
- (24) *Cê₁ parece que cê₁ sabe a resposta.*
 you seem that you know the answer
 ‘You seem to know the answer.’

According to Martins and Nunes (2005), the weak pronoun in (24) occupies an unmarked topic position above TP which does not exclude weak pronouns. I am arguing that all subjects in BP and Finnish occupy this unmarked topic position, which is different to the marked topic position in the left periphery of the sentence, reserved for constituents marked with a topic feature. Holmberg’s generalization that subjects may check the EPP even if they are non-referential categories, whereas non-subjects have to be referential and interpretable as topics to check the EPP in Finnish, can thus be explained. In both Finnish and BP, subjects are moved to SpecFP to check F’s OCC feature, but only because they are the closest goal found by the probe F. They are, then, a kind of grammatical topic, but do not need to be interpreted as fully-fledged semantic topics (nor do they need to have

17. Martins and Nunes’ analysis of (23) is that the matrix topic checks the agreement features, but not the nominative Case feature of the matrix T since it is specified for “Topic Case”. The embedded T is defective in the sense that it does not check the Nominative Case of the embedded subject which is then moved in the covert component and adjoin to the matrix T. They claim that the sentence in (i) below is ungrammatical because, if the embedded object were to check the Case of the matrix T in the covert component, the embedded subject should induce a minimality violation. I do not understand how their analysis accords with the Phase Impenetrability Condition of Chomsky (2001, 2004). The interpretation in the text does not incur that problem, but seems to predict that (i), which is taken to be ungrammatical by the authors, is grammatical. In fact, sentences like (23) and (i) do not exist in my dialect, so I have little to say on the contrast between them.

- (i) **Os professores parecem que a Maria gosta deles.*
 the teachers seem-3PL that the Maria likes them
 ‘It seems that Maria likes the teachers’

the semantic characteristics of a topic).¹⁸ If a non-subject is moved to (a marked) topic position (possibly checking the OCC feature of F on its way there), it is only because it has been merged with a Topic feature that needs to be checked in the left periphery. That position, unlike SpecFP, requires a referential category and excludes weak pronouns. Phrasal structure in BP and Finnish would then include the partial tree in (25), where SpecTopP is reserved for marked topics:



The word order differences between the two languages is accounted for if we assume that the verb in Finnish is moved as high as Top^0 when that category is merged; otherwise it raises to F^0 , deriving the order topic-verb-subject. In BP, on the other hand, the verb does not raise as high, staying at T^0 (or even below), thereby delivering the order topic-subject-verb.

4.3 The relation between movement and antecedenthood in BP

It is clear from the data given in section 3 that the subject in BP is always the antecedent of the embedded null subject except when another constituent has features to check in (and so is moved to) the CP domain. It is, then, very plausible to assume that whenever a constituent other than the subject is moved in BP (either by *wh*-movement, relativization or topicalization), it is that constituent which will check F's OCC feature, occupying SpecFP as an intermediate position on its way to SpecCP or other positions.¹⁹ Since that constituent (or a copy thereof)

18. The distinction made here is then reminiscent of the distinction between 'primary' and 'secondary' topicalization made by Hope (1974). Hope discusses how languages like Lisu, where every sentence seems to have "topic + comment" structure, may have sentences like (i) below, where a non-referential phrase appears marked as a topic:

(i) *swu nya atha do - a*
 one topic-marker knife forge decl.-marker
 'Someone is forging a knife.'

19. Note that moving a constituent to SpecFP is required to check F's OCC feature and that

occupies the (unmarked) topic position, the topic-chain formed will result in a null subject which has a non-subject as its antecedent. If, however, as seen before, the constituent is base-generated in its ultimate position, which is possible for marked topics, the subject still has to move to SpecFP (to satisfy F's OCC feature) and so it will be interpreted as the antecedent of the null embedded pronoun.

The option of moving the subject to SpecFP and then moving another constituent (the object, for instance) to a higher position is excluded in BP due to Relativized Minimality (as in Rizzi 1990). Sentence (26) below exemplifies this Minimality effect by showing that *wh*-phrases may not move over a topic; therefore, the structure of a sentence involving *wh*-movement of an object (such as (12a), repeated as (27a) below) has to be (27b) and not (27c). In (27b), the object *wh*-phrase moves from its original position to SpecFP and then to its final position in SpecCP. That structure correctly predicts that, when the *wh*-object is moved, it becomes the only possible antecedent for the embedded null subject. The structure depicted in (27c) is ungrammatical for the same reason (26) is, i.e., Relativized Minimality:

- (26) **Quem, esses livros, leu?*
 who these books read
 'Who did read these books?'
- (27) a. *Quem₂ que o Feco₁ convenceu t₂ que e_{*1/2} pode se eleger?*
 who that the Feco convinced that can REFL elect-INF
 'Who did Feco convince that s/he can get elected?'
- b. [CP *quem₂ que* [FP *t₂* [TP *o Feco₁ convenceu t₂* [CP *que* [FP *e₂* [TP
 who that the Feco convinced that
t₂ pode se eleger]]]]]]]
 can REFL elect-INF
- c. *[CP *quem₂ que* [FP *o Feco₁* [TP *t₁ convenceu t₂* [CP *que* [FP *e₁*
 who that the Feco convinced that
 [TP *t₁ pode se eleger*]]]]]]]
 can REFL elect-INF

The same kind of intervention effect can be seen in relative clauses. Sentence (28) shows that movement over a topic is impossible in relative clauses. Therefore, the analysis of a sentence like (12b), repeated as (29a), must be (29b), where the

this constituent does not need to have a Topic feature or any other special feature in order to land in that position. Therefore, even a *wh*-phrase, which can never be interpreted as a topic, may stop at SpecFP on its way to CP.

subject stays in SpecTP, and not (29c), where the relative operator moves over the subject in SpecFP:

- (28) **O cara₁ que, esses livros₂, leu t₂ já chegou.*
 the guy that these books read already arrived
 ‘The guy who read these books has already arrived’
- (29) a. *O cara₂ que o Feco₁ convenceu t₂ que e_{1/2} pode se eleger*
 the guy that the Feco convinced that can REFL elect-INF
já chegou.
 already arrived
 ‘The guy who Feco convinced that he can get elected is already here.’
- b. [*o cara₂ [CP Op₂ que [FP t₂ [TP o Feco₁ convenceu t₂ [CP que [FP e₂*
 the guy that the Feco convinced that
[TP t₂ pode se eleger]]]]]]]]
 can REFL elect-INF
- c. **[o cara₂ [CP Op₂ que [FP o Feco₁ [TP t₁ convenceu t₂ [CP que [FP e₁*
 the guy that the Feco convinced that
[TP t₁ pode se eleger]]]]]]]]
 can REFL elect-INF

Things are slightly different with topicalization. The discussion about sentences (13) above has shown that topics, unlike *wh*-phrases and relative operators, can be either moved or base-generated. Movement of a topic over another topic is barred by Minimality, as expected (see (30a)). However, a topic may intervene between a base-generated topic and its related position, as shown in (30b). This shows that the structure assigned to sentence (12d), repeated here as (31a), may be (31b or c) but not (31d). That BP allows structures (31b and c) explains why sentences in which an object is topicalized are ambiguous between an interpretation where the antecedent of the embedded null subject is the object, and another where the antecedent is the matrix subject.

- (30) a. **O Feco₁, esses livros₂, t₁ já leu t₂.*
 the Feco these books already read
- b. *O Feco₁, esses livros₂, ele₁ já leu t₂.*
 the Feco these books he already read
 ‘Feco has already read these books’
- (31) a. *A Dani₂, o Feco₁ convenceu t₂ que e_{1/2} pode se eleger.*
 the Dani the Feco convinced that can REFL elect-INF
 ‘(Speaking of) Dani, Feco convinced her that s/he can get elected.’

- b. [TopP *a Dani*₂ [FP *t*₂ [TP *o Feco*₁ *convenceu* *t*₂ [CP *que* [FP *e*₂ [TP *t*₂
the Dani the Feco convinced that
pode se eleger]]]]]]
can REFL elect-INF
- c. [TopP *a Dani*₂ [FP *o Feco*₁ [TP *t*₁ *convenceu* *e*₂ [CP *que* [FP *e*₁ [TP *t*₁
the Dani the Feco convinced that
pode se eleger]]]]]]
can REFL elect-INF
- d. *[TopP *a Dani*₂ [FP *o Feco*₁ [TP *t*₁ *convenceu* *t*₂ [CP *que* [FP *e*₂ [TP *t*₂
the Dani the Feco convinced that
pode se eleger]]]]]]
can REFL elect-INF

I have shown that, due to Minimality, if the subject moves to SpecFP and another phrase moves over it to SpecCP or another position, the result is ungrammatical ((31c) is grammatical only because the higher topic has been base-generated, not moved). However, since the subject has to move to SpecFP when no other constituent is moved to the CP domain, by virtue of its being the closest DP which can satisfy the OCC feature of F, the system seems to involve some kind of look ahead. When the F head is merged in the tree, the system has to know if the object needs to check some feature at a later time in order to allow attraction of the subject DP or not. This problem is avoided if we assume with Chomsky (2001) that all evaluation is done at the phase level. Movement of any constituent to SpecFP is actually free. At the phase level, however, a derivation where an object has been moved to SpecFP crashes as a violation of the Minimal Link Condition, i.e., the subject is a closer phrase which could have checked the OCC feature of F. If, however, at the phase level, the object sits in SpecCP checking a *wh*-feature or some other position, checking some other feature, the fact that it has also checked the OCC feature of F is overlooked since any other derivation would have violated Minimality. (For another way of deriving the same facts, see Richards (1998), particularly his discussion of French participle agreement, in which movement of an element may violate Shortest Move if a following application of Move involving that element respects it.).

4.4 The relation between movement and antecedenthood in Finnish

Unlike BP, Finnish does not show Minimality effects, i.e., a *wh*-phrase is moved over a topic without degrading the sentence, as seen in (32):

- (32) a. *Kuka tämän kirjan on kirjoittanut?*
who this book has written
‘Who wrote this book?’

- b. *henkilö joka tämän kirjan on kirjoittanut saapui jo.*
 the person who this book has written arrived already
 ‘The person who wrote this book has already arrived.’

Structures in which a relativized or *wh*-object is moved over a subject sitting in SpecFP are, therefore, grammatical in Finnish. Lack of Minimality effects in this language, then, explains why Finnish speakers clearly prefer to take the matrix subject as the antecedent of the null embedded subject, even when an object has been moved. Sentences (17a,b), repeated below as (33a,b), will, then, be assigned the structures in (33c,d):

- (33) a. *Kenelle₂ Liisa₁ vakuutti t₂ että e_{1/?2} voi tulla valituksi?*
 who Liisa assured that can come elected
 ‘Who did Liisa assure that s/he can get elected?’
- b. *Henkilö₂ jolle Liisa₁ vakuutti t₂ että e_{1/?2} voi tulla
 the person that Liisa assured that can come
 valituksi saapui jo.*
 elected arrived already
 ‘The person who Liisa assured that s/he can get elected has arrived.’
- c. [CP *Kenelle₂* [FP *Liisa₁ vakuutti* [TP *t₁ t_v t₂* [CP *että* [FP *e₁* [TP *t₁ voi*
 who Liisa assured that can
*tulla valituksi]]]]]]]
 come elected*
- d. [*henkilö₂* [CP *jolle₂* [FP *Liisa₁ vakuutti* [TP *t₁ t_v t₂* [CP *että* [FP *e₁* [TP
 the person who Liisa assured that
*t₁ voi tulla valituksi]]]]]]]
 can come elected*

The fact that movement of the matrix object makes it possible to interpret the object as the antecedent of the null embedded subject (though as a marked option) is also explained by lack of intervention effects. In (33c,d), the operator in the CP domain binds its variable even though a topic intervenes. Finnish speakers, therefore, seem to allow binding of the null subject by the moved object, although the matrix subject would be a closer binder, as in (34a,b):

- (34) a. ?[CP *kenelle₂* [FP *Liisa₁ vakuutti* [TP *t₁ t_v t₂* [CP *että* [FP *e₂* [TP *t₂ voi*
 who Liisa assured that can
*tulla valituksi]]]]]]]
 come elected*

- b. ?[henkilö₂ [CP jolle₂ [FP Liisa₁ vakuutti [TP t₁ t_v t₂ [CP että [FP e₂
 the person who Liisa assured that
 [T t₂ voi tulla valituksi]]]]]]]
 can come elected

Although Finnish does not allow two topics to the left of the verb (whether they are based-generated or not, cf. Holmberg 1998), as shown in (35), movement of a topic to SpecTopP is allowed to cross the element in SpecFP, perhaps in virtue of the movement of the verb to Top⁰. Verb movement makes the two topics in (36) equidistant (cf. also Öztürk, this volume), allowing the higher topic to bind its variable in object position. The two possible structures for sentence (17c) where the matrix object is topicalized (cf. (36a), are given in (36b,c):

- (35) **Jussi tämän kirjan on kirjoittanut (hän).*
 Jussi this book has written he
 ‘Jussi, this book, he has written.’
- (36) a. *Jussille₂ vakuutti Liisa₁ että e_{1/2} voi tulla valituksi.*
 to.Jussi assured Liisa that can come elected
 ‘To Jussi, Liisa assured that s/he can get elected.’
- b. [TopP *Jussille₂ vakuutti* [FP *Liisa₁ t_v* [TP t₁ t_v t₂ [CP *että* [FP e₁ [TP t₁
 to.Jussi assured Liisa that
*voi tulla valituksi]]]]]]]
 can come elected*
- c. ?[TopP *Jussille₂ vakuutti* [FP *Liisa₁ t_v* [TP t₁ t_v t₂ [CP *että* [FP e₂ [TP t₂
 to.Jussi assured Liisa that
*voi tulla valituksi]]]]]]]
 can come elected*

4.5 Intervention effects

If it is true that, as I am claiming here, null embedded subjects in topic-prominent languages are bound, forming a (topic-) chain with a matrix constituent, one would expect to find intervention effects of the kind discussed in Rizzi (1990). This expectation is borne out. In the relevant languages, a topic in the embedded clause prevents a chain being formed between the higher and the embedded subject. Therefore, if the embedded subject is null, it must be generic:

- (37) a. *Oppilas₁ tietää ettei e₁ pysty ratkaisemaan tehtävää.*
 student knows that-not can solve assignment
 ‘The student knows that he can’t solve the assignment.’

- b. *Oppilas₁ tietää ettei tehtävää pysty e*₁ ratkaisemaan.*
 student knows that-not assignment can solve
 ‘The student knows that the assignment can’t be solved.’

In (37a), the embedded subject occupies its usual position, SpecFP, and may form a topic-chain with the higher subject *oppilas*. In (37b), on the other hand, although the embedded subject could still occupy the same position, the presence of the marked topic *tehtävää* in SpecTopP would prevent chain formation and, consequently, PF-deletion. The absence of a phonologically full subject in that clause, then, can only be interpreted as signaling a generic reading.

Consider now BP: (38a) is ambiguous between a generic reading and a bound (coreferent) reading, whereas (38b) has the generic reading only. Interestingly, (38c) also only has a generic reading when the adverb is taken to be related to the embedded event.

- (38) a. *O Feco₁ me falou que (e₁) vende cachorro quente na praia.*
 the Feco to-me said that sells dog hot on beach
 ‘Feco told me that he sells hot dogs/hot dogs are sold at the beach.’
- b. *O Feco₁ me falou que na praia e*₁ vende cachorro quente.*
 the Feco to-me said that on beach sells dog hot
 ‘Feco told me that hot dogs are sold at the beach.’
- c. *Na praia, o Feco₁ me falou que (e*₁) vende cachorro quente*
 on beach, the Feco to-me said that sells dog hot
 ‘Feco told me at the beach that he sells hot dogs.’
 ‘Feco told me that hot dogs are sold at the beach.’

Sentence (38a) shows that a null subject in BP can be interpreted as bound by the element in matrix SpecFP or that, in some circumstances, it can be interpreted as generic.²⁰ (38b) shows that if another phrase occupies SpecFP or has been base-generated in SpecTopP, a chain between the two subjects may not be formed and the embedded subject has to be interpreted as generic. Sentence (38c), however, is the most interesting case. If the locative *na praia* (“at the beach”) is taken to qualify the matrix event, it can already be merged in the higher SpecTopP and the sentence

20. The generic reading is absent when the locative adverb is not present:

- (i) *O Feco₁ me falou que e₁ vende cachorro quente.*
 the Feco to-me said that sells dog hot
 ‘Feco told me that he sells hot dogs/*hot dogs are sold at the beach.’

That seems to imply that, even in (38a) under the generic reading, the adverb is checking the OCC feature of F⁰ and has been extraposed.

can be interpreted as meaning that Feco told me, when we were at the beach, that he sells hot dogs (for a living). In this case, the matrix subject has moved to SpecFP. On the other hand, if the locative qualifies the embedded event, it presumably has to be moved from the embedded clause. Moving the locative over the matrix subject in SpecFP would cause a Minimality effect so it has to be moved to SpecFP before moving to SpecTopP. In that case, the matrix subject has to remain in SpecTP and no topic chain can be formed since the two topics do not share the same features and reference. Consequently, the embedded clause only has the generic reading. It is important to note that, in this case, an adverb in sentence-initial position prevents the null embedded subject from being interpreted as coreferent with the matrix subject. That this very surprising state of affairs is accounted for and explained by the analysis put forth here provides strong support to it.

5. The topic prominence parameter

5.1 Topic-prominent languages

So far, I have claimed that languages such as Chinese, BP and Finnish do not show all the properties related to the NSP because they are not, in fact, NSLs. The existence of null subjects in these languages is due to the fact that they are topic-prominent languages (and may be due to other factors as well, cf. footnote 6). So, if I am right, topic prominence determines a parameter which also has a cluster of properties associated with it, and one of those properties is the existence of phonological null subjects. In this section, I would like to investigate what other properties may be associated with such a parameter and how to characterize it properly.

In their characterization of a typology based on the grammatical relations subject-predicate and topic-comment, Li and Thompson (1976: 459) define four types of languages:

... (i) languages that are subject-prominent (a term introduced by E.L. Keenan); (ii) languages that are topic-prominent; (iii) languages that are both subject-prominent and topic-prominent; (iv) languages that are neither subject-prominent nor topic-prominent. In subject-prominent (Sp) languages, the structure of sentences favors a description in which the grammatical relation subject-predicate plays a major role; in topic-prominent (Tp) languages, the basic structure of sentences favors a description in which the grammatical relation topic-comment plays a major role. In type (iii) languages, there are two equally important distinct sentence constructions, the subject-predicate construction and the topic-comment construction; in type (iv) languages, the subject and the topic have merged and are no longer distinguishable in all sentence types.

The authors exemplify the first group with Indo-European languages; the second with Chinese and Lisu (a Lolo-Burmese language); the third with Japanese and Korean; and the fourth group with Tagalog. It is unclear (to me) how to characterize this last group, since the authors do not provide a systematic way of telling when a language is neither Sp nor Tp (they only list positive characteristics of Sp and Tp languages, no negative ones).

These are the characteristics of Tp languages that Li and Thompson cite, all of which are found in BP, Chinese and Finnish:

1. There is a “surface coding” for topics in those languages; they are coded by a special topic marker (Japanese, Korean) or appear in sentence-initial position (Chinese, BP and Finnish).
2. Passive constructions, which are common in Sp languages, are absent or marginal, and rarely used in speech, in Tp languages. The authors cite Lisu, Lahu and Chinese as examples. Turning to the languages under consideration here, Finnish does not even have a passive construction *strictu sensu*, using an OVS active construction to express the same meaning a passive sentence would have in Sp languages (cf. (20b) above); BP, in turn, can definitely be added to the list of languages where passives are rarely used in colloquial speech, as discussed below.
3. Dummy subjects are not found in Tp languages. Although this is true for Chinese and BP, it is not entirely true for Finnish, but that is not a problem, considering the approach adopted to topic-prominence in this work, namely that Tp languages have an extra EPP-feature to check. In Finnish, that feature is sometimes checked by a dummy subject.
4. Tp languages use “double subject” constructions. Again, Chinese is used as an example and BP fits the picture well, as seen in section 4.2, whereas Finnish, to my knowledge, differs.
5. The topic typically controls co-referential constituent deletion, which is almost exactly what I am arguing for in this work.
6. Tp languages tend to be V-final. Japanese, Korean, Lahu and Lisu exemplify this property. The authors argue that Chinese is in the process of becoming V-final and BP, as discussed below, is pervasively making transitive verbs into intransitives, which makes them sentence-final. Finnish again does not fit the picture exactly, although verb-final constructions may be found in that language as well (cf. Holmberg 2000).
7. In Tp languages, there are no constraints on what constituent may be the topic. The relevance of this last characteristic is questionable since many Sp languages, like English, also do not constrain what may be topicalized.
8. Topic-comment sentences are the basic sentence type in Tp languages. I will not address this last characteristic since ‘basic sentence type’ seems to be a rather ill-defined concept.

Note that Li and Thompson's fifth characteristic, that the topic typically controls co-referential constituent deletion, implies that all Tp languages present null arguments, which is the main claim made here. It also implies that the authors had in mind a mechanism of producing null arguments (involving deletion) which is rather similar to the one advocated here.

Having argued that Chinese, Finnish and BP are, in fact, Tp languages, I will now discuss some characteristics of BP which can be related to the Topic Prominence Parameter. BP seems particularly relevant, as it is a language that has gone through a parameter shift very recently (possibly even in the last few decades). The effects of the shift are therefore rather apparent.

5.2 The relation between the null subject and the topic prominence parameter

Holmberg and Nikanne (2002) state that "a language is subject-prominent when the argument which is externalized in an active sentence is always the subject ... A language is topic-prominent when the argument which is externalized need not be the subject, but can be any category capable of functioning as topic." They note that Greek and Spanish presumably qualify as Tp languages in their terms, due to the general possibility of OVS orders. Postverbal subjects, however, are characteristic of any NSL of the Romance kind, as discussed in Rizzi (1982, 1986). It may be the case, then, that the NSP is related to the Topic Prominence Parameter and that NSLs can be either Sp or Tp in Li and Thompson's (1976) terms. European Portuguese (EP) has several characteristics of a Tp language: it uses OVS order when the object has been previously introduced in the discourse (39a), and the topic controls the interpretation of empty constituents (39b). It, however, has to be considered Sp as well since passive and verb-initial constructions are common (39c,d). Finnish, a non-Sp language, on the other hand, usually does not permit verb-initial sentences due to the fact that an argument has to be externalized (as a topic, in Holmberg and Nikanne's terms) – cf. (40) in this connection:

- (39) a. *A sopa comeu o João.* (EP)
 the soup ate the João
 'João ate the soup.'

- b. *Essa árvore_i, as folhas dela são grandes demais então*
 this tree the leaves of.her are big too so
eu não vou plantar e_i.
 I not go plant-INF

'This tree, its leaves are too big, so I won't plant it.'

- c. *O prédio já foi construído.*
 the building already was built
 ‘The building has already been built.’
- d. *Pode-se nadar neste lago.*
 may-SE swim in.this lake
 ‘One may swim in this lake.’
- (40) a. **Istuu mukavasti tässä.*
 sits comfortably here
- b. *Tässä istuu mukavasti.*
 here sits comfortably
 ‘One sits comfortably here.’

BP has become a non-NSL, as argued here and elsewhere (cf. the collection of papers in Kato & Negrão 2000) and so, if the present speculations are correct, it has become a non-Sp language. An indication that this is indeed correct is that BP is becoming more like Finnish than EP in requiring a topic at the beginning of the sentence:²¹

- (41) a. *??Pode nadar neste lago.*
 may swim-INF in.this lake
- b. *Neste lago pode nadar.*
 in.this lake may swim-INF
 ‘One may swim in this lake.’

The shift from a NSL (and so from a Sp language) to a non-NSL (and so to a non-Sp language) has had other consequences in BP. As argued in Holmberg (in press) and witnessed in (41b) above, a generic null pronoun does not satisfy the EPP in Finnish or in BP.²² (EPP here refers to the OCC-feature of F⁰.) In impersonal structures, the languages in question, then, have to merge some referential phrase in the topic (SpecFP) position. This fact has had a domino effect in BP, creating a construction, now pervasive in the language, which is a mixture of a middle and an ergative construction (cf. Lekakou, this volume) that applies indiscriminately to nearly any transitive verb and that is now much more frequently used than the passive construction:

- (42) *O prédio já construiu.*
 the building already constructed
 ‘The building has already been constructed.’

21. Sentence (41a) requires a special intonation to be acceptable. For instance, it is much more acceptable as a question than as a statement. The loss of the Romance SE clitic in BP is probably related to the shift from NSL to non-NSL.

22. Probably since it stays in vP, as argued by Holmberg (in press).

Although (42) requires adverbial support (a characteristic of the English middle construction), it is compatible with the progressive tense and is not a generic statement in the sense that it may be about specific entities and describe a particular event in time, both characteristics of ergative constructions:

- (43) a. *Esse prédio está construindo rápido.*
 this building is constructing quick
 ‘This building is being built quickly.’
- b. *Esse prédio construiu em junho.*
 this building constructed in June
 ‘This building was built in June.’

Another tricky characteristic of this construction is that the verb agrees in number with the topic. That seems to imply that, contra Holmberg (in press), the null generic subject is assigned Case, but does not value the ϕ -features of T (at least in BP). The generic pronoun, being invisible to the EPP, remains vP-internal, where it gets its generic interpretation (cf. once again, Lekakou, this volume). Another phrase, therefore, has to (re-)merge in SpecTP and SpecFP to check the two OCC features. While the comments made here are clearly only of a preliminary and therefore necessarily sketchy nature, it is evident that the pervasive use of this construction in BP, and the consequent infrequency of passives, is related to the fact that this language has become non-Sp.

5.3 Scope facts

Top languages – taken to be the ones in which the subject usually occupies a (grammatical) topic position (when there is no overt topicalized element) – are expected to show slightly different interpretations of subjects than languages in which they do not occupy the topic position. That is indeed what one finds with respect to scope relations. Inverse scope readings – where a quantified object phrase (QP) scopes over a quantified subject – are common in English and other languages, but they are absent in BP and Chinese:²³

- (44) a. *Every student admires some professor.* (ambiguous)

23. In Finnish, since word order is “free”, inverse scope readings are usually encoded via OVS structures. In other words, object QPs scope over subject QPs when they are moved to a position higher than SpecFP; and subject QPs scope over object QPs in SVO sentences, as expected. However, some of my informants claim that, although the readings reflecting the surface word order are preferred, the sentences are still ambiguous with respect to scope. I will leave a full discussion of Finnish for another occasion.

- b. *Meige xuesheng dou mai-le yiben shu.* (unambiguous)
 every student all buy-ASP one book
 ‘Every student bought one/a book (but not necessarily the same one).’
- c. *Todo professor entrevistou um aluno.* (unambiguous)
 every professor interviewed a student
 ‘Every professor interviewed a (non-specific) student.’

The difference between BP and Chinese, on the one hand, and English, on the other, can be explained along the lines of the analysis presented here. Since subjects in the former group of languages occupy a topic position, a higher position than that occupied by subjects in the latter group, inverse scope readings cannot obtain, or are at least are harder to obtain.²⁴ In this way, lack of inverse scope readings can be seen as another property of topic-prominent languages.

6. Conclusions

Data presented in this paper show that there is an undeniable relation between movement and the possibility of being the antecedent of a null subject in both BP and Finnish. There also seems to be a relation between Minimality effects and the choice of the antecedent. Both relations appear to be accounted for if we assume that the antecedent of the null subject must pass through the topic position in these languages. Since BP shows Minimality effects, a matrix subject cannot be interpreted as the topic of the sentence when the object is *wh*-moved or relativized. In Finnish, on the other hand, the subject is most commonly moved to the topic position, with the consequence that no Minimality effects are attested.

If the explanation for the BP and Finnish facts is that the subject occupies the topic position (SpecFP) rather than the “canonical subject position” (SpecTP), the same analysis can be argued to hold for null subjects in Chinese-type languages, which are problematic for the NSP. These languages have long been said to be topic-prominent, a property which we here formalize as entailing subject movement to a specially designated topic position (SpecFP or SpecTopP). On the analysis presented here, null subjects in these traditionally “problematic” NSLs can therefore be explained as a property associated with a different parameter: one relating to topic-prominence.

24. For reasons of space, I will not give a full account of scope facts in these languages, nor will I comment on the exact nature of the syntax of scope. The interested reader is referred to chapter 4 of Modesto (2000b), where such an account can be found.

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