Null subjects in Brazilian Portuguese and Finnish: they are not derived by movement.[*]

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0.   Introduction

It is well known that some languages, despite presenting subjects which are phonetically null, do not present exactly the characteristics usually associated with the Null Subject Parameter as proposed by Rizzi (1982, 1986). In the eighties, there was much debate about languages such as Chinese, which present no overt verbal agreement and still allow for the subject position to be null. More recently, languages like Brazilian Portuguese (BP) and (colloquial) Finnish have been discussed. In those languages, third person null referential subjects are not allowed in matrix contexts, which has been related to the fact that (at least in BP) verbal agreement is "poor".[1] However, third person null referential subjects are productive in embedded contexts in both languages, which is problematic for theories which try to explain the Null Subject Parameter.

In a series of works (Modesto 2000a, 2000b, 2004, in press), I have demonstrated that embedded null subjects in BP show all the properties which are characteristic of obligatorily controlled subjects of non finite clauses. Rodrigues (2004) has also demonstrated that the same applies to Finnish. The properties are as follows: they must have an antecedent (example (01)); the antecedent has to c-command the subject empty category (02); the antecedent has to be local (03); the antecedent may not be split (04); in VP ellipsis contexts, only a sloppy reading is possible (05); and with "only NP" antecedents, only a covariant interpretation is possible (06):

(01) a.   * *e* telefonou.   BP
              called
       b.   *Parece que *e* telefonou.   BP
              seems that   called
       c.   * *e* oli soittanut.   Finnish
              called
       d.   * Vaikuttaa siltä että *e* oli soittanut.   Finnish
              seems   it   that   called

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[1] The definition of "rich" and "poor" inflection is debatable. In here, I take "rich" agreement to mean loosely a system "bearing enough morphology to provide non-ambiguous information on the person and number (and maybe gender) of the subject", as in Speas (1994). Finnish is not usually considered a poor agreement language, although there is no morphological difference between singular and plural in the 3rd person. In BP, there is no difference between 2nd and 3rd person both in the singular and in the plural, and the system is usually considered poor.

(02) a. [O amigo do Feco$_2$]$_1$ disse que $e_{1/*2/*3}$ ganhou a competição.   BP
   the friend of Feco   said   that   won the championship
   'Feco's friend said that he had won the championship.'

    b. [Veljeni$_2$ vaimo]$_1$ oli niin iloinen, ettei $e_{1/*2/*3}$ voinut nukkua.   Finnish
   Brother-GEN wife was so happy that-not   could sleep.
   'My brother's wife was so happy that she could not sleep.'

(03) a. O Feco$_1$ disse que a Dani$_2$ acha que $e_{*1/2}$ ganhou na   loto.   BP
   the Feco said that the Dani thinks that   won   in.the lottery
   'Feco said that Dani thinks that she won the lottery.'

    b. Jukka$_1$ sanoi että Liisa$_2$ ajattelee että $e_{*1/2}$ oli voittanut arpajaisissa.   Finnish
   Jukka said that Liisa thinks that   had won   lottery
   'Jukka said that Liisa thinks that she won the lottery.'

(04) a. *O Feco$_1$ disse que a Dani$_2$ acredita que e_{1+2} vão morar juntos.   BP
   the Feco said that the Dani thinks   that   will live together
   'Feco said that Dani thinks that they will live together.'

    b. *Jukka$_1$ kysyi vaimoltaan$_2$ e_{1+2} voivatko mennä Espanjaan lomalle.   Finnish
   Jukka   asked his.wife   can   go   to.Spain for.vacation
   'Jukka asked his wife if they can go to Spain for vacation.'

(05) a. O Pedro$_1$ acha   que e_1 é inteligente e   o   Paulo também.   BP
   the Pedro thinks that   is intelligent and the Paulo too
   'Pedro thinks that he is intelligent and Paulo does too.'

    b. Jukka$_1$ sanoi että e_1 oli voittanut arpajaisissa, ja niin Pekkakin.   Finnish
   Jukka said   that   had won   the.lottery   and so Pekka.also
   'Jukka said that he had won the lottery and Pekka did too.'

(06) a. Só   o   Maluf acha   que e vai ganhar as eleições.   BP
   only the Maluf thinks that   will win   the elections
   'Only Maluf thinks that he will win the elections.'

    b. Vain Jukka ajatteli että e oli voittanut arpajaisissa.   Finnish
   only Jukka thought that had won   the.lottery
   'Only Jukka thought that he had won the lottery.'

The fact that null subjects in BP and Finnish present Obligatory Control-like characteristics led Rodrigues (2004) to propose a movement analysis of null subjects in those languages following a trend initiated by Hornstein's (1999) analysis of Control. In this paper, I will show that a movement analysis of null subjects of finite clauses in BP and Finnish is not a good analysis for two reasons: a) it leaves some of the data unaccounted for, and b) it is not the simplest analysis. After proving that this is truly the case, although the data to be presented here is not actually related to the Control versus Raising issue, I will speculate if the movement analysis of Control may also be mistaken. In turn, I will propose, following Modesto (in press), a modification of Modesto's (2000a, 2000b) analyses in which embedded null subjects are taken to be ϕPs, in the sense of Holmberg (2005), which are A'-bound by a topic.

## 1.	The movement analysis of null subjects in BP and Finnish: Rodrigues (2004)

Before I start, it should be noted that I will review Rodrigues' analysis as an example, noting that any other implementation of a movement analysis of the facts presented here would have to deal with the same type of problems. So I am not arguing against any specific implementation, but to the idea that null subjects of finite clauses may be derived by movement out of a Case domain.[2]

The first obvious problem that any movement analysis of null subjects of finite clauses would have to deal with is the fact that A-movement takes place out of a phase: a case-marked domain. To deal with that problem, Rodrigues makes the assumptions in (7):[3]

(07)	a.	in null subject languages (with strong Agr systems), **verbal affixes are listed in the lexicon as separate lexical items and carry a D-feature, ϕ-features and possibly a Case feature**, but in non-null subject languages (with weak Agr systems), verbal affixes are not independent units, entering the derivation already attached to their hosts.

b.	**in BP and Finnish, verbal agreement became ϕ-defective** (i.e. weak), so a ϕ-complete item must be inserted in the complement domain of T, such that θ-role of the verb and the ϕ-features of T can be checked (by the operation Agree).

c.	**in BP and Finnish, verbal affixes still carry a D-feature**, so verb movement to T can check T's EPP feature and Spec TP need not be projected.

d.	**a structural Case feature is only checked in a spec-head relation, not by Agree** (contra Chomsky 2000 and thereafter).

e.	**movement may be greedy,** i.e. it may happen to satisfy the requirements of the moved element alone.

f.	**DPs are moved to [Spec FP] before moving out of a phase**.

g.	The phase-impenetrability condition (PIC) is defined in a way such that **inside the domain of a strong phase (HP), only sub-domains that are themselves phases are not accessible to operations outside HP.** That means that only TP is spelled out when C is reached but intermediate projections which would constitute an expanded CP domain are still accessible to the derivation.

To give a concrete example, take the sentence in (08), with numeration (09a). The first relevant step in the derivation is after (09b) is formed. T has its EPP feature checked by the verbal affix and its ϕ-features by the DP *o João*, after the operation Agree takes place.[4]

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[2]	There is one other movement analysis of null subjects in BP that I am aware of: Ferreira (2000). Ferreira's analysis will not be reviewed here because it is not as elaborated as Rodrigues' and because it does not consider the most crucial facts presented in Modesto (2000a, 2000b) which are reproduced in (26-27) below. It will be easy for the interested reader to confirm that Ferreira's analysis leaves such data unaccounted for, in addition to all the data that Rodrigues also does not account for.

[3]	Obviously, besides the assumptions in (7), Rodrigues incorporates all the assumptions made in Hornstein (1999) to make a movement analysis of control work, such as that θ-roles are features and that DPs can check, or have, several θ-roles.

[4]	Here and below, traces stand for copies deleted at PF; irrelevant details omitted throughout.

(08) O João$_1$ disse que e_1 comprou um carro.
     the João said that   bought a   car
     'João said that he bought a car.'

(09) a. Num = {T$_2$, F$_1$, o$_1$, João$_1$, disse$_1$, que$_1$, comprou$_1$, um$_1$, carro$_1$ }
     b. [$_{TP}$ [$_T$ comprou$_{1\phi def,D}$ +T$_{-\phi EPP}$] [$_{VP}$ [$_{DP}$ o João]$_{Case,\phi}$ [$_{V'}$ t_1 [$_{DP}$ um carro]]]]]
     c. [$_{FP}$ [$_{DP}$ o João]$_{2\ Case,\phi}$ [$_{F'}$ [$_{TP}$ [comprou$_{1\phi def,D}$ +T$_{-\phi EEP}$] [$_{VP}$ t_2 [$_{V'}$ t_1 [$_{DP}$ um carro]]]]]]]

At this point of the derivation, Rodrigues claims that the system can either move *o João* to [spec, TP] or continue the derivation by merging the next item in the numeration. Movement is allowed since T and *o João* have agreed in ϕ-features. However, since the probe has already checked its EPP feature, I would assume that Merge over Move requires that the derivation continue by merging the next item in the numeration. So F is inserted and *o João* moves to its specifier position, as in (09c).[5] Rodrigues does not discuss what licenses such movement, but if it is not done, the DP will not be able to get out of its phase. The head C is then inserted and the derivation proceeds with movement of *o João* to matrix vP, as in (10). It puzzles me how such a movement is not an instance of improper movement. I imagine it is because the DP has not checked its Case yet, but that is not discussed by Rodrigues and it is not clear why that should be so. The derivation then proceeds as shown in (11).

(10) [$_{VP}$ [$_{DP}$ o João]$_{2\ Case,\ \phi}$ [$_{V'}$ disse$_{\phi,def,\ D}$ [$_{CP}$ que [$_{FP}$ t_2 [$_{F'}$ [$_{TP}$ [comprou$_{1\phi def,D}$ +T$_{-\phi EEP}$] [$_{VP}$ t_2 [$_{V'}$ t_1 [$_{DP}$ um carro]]]]]]]]]]]
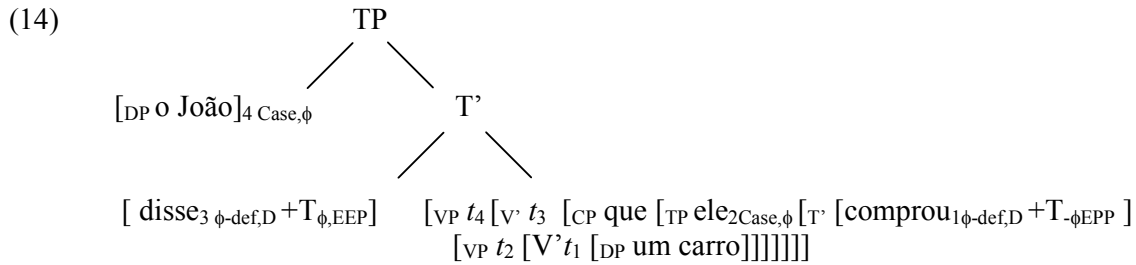
(11)
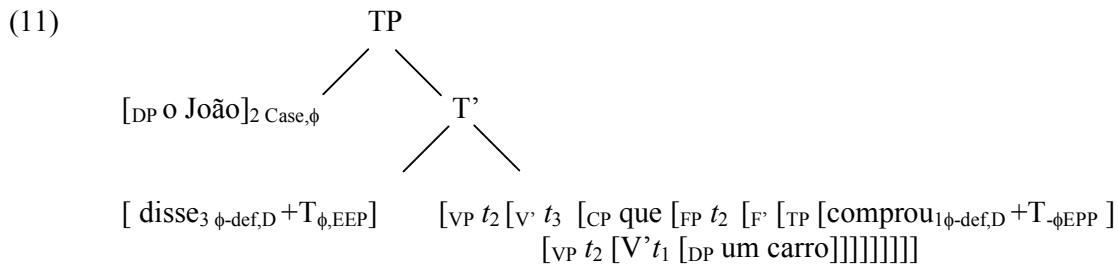
Consider now sentence (12) with the numeration in (13a). The first relevant step of the derivation is the one after (13b) is formed. T has already checked its EPP and ϕ-features. In this case, the pronoun does move to Spec TP to check its own Case feature, as shown in (13c), although T has no feature to check. In other words, besides the probe/goal/Agree system, movement may happen for completely selfish reasons of the moved element, according to Rodrigues. Movement of the DP to Spec TP (over merge of the next item in the numeration), in this case, is licensed by the fact that if it did not happen at this point, the derivation would not converge: the Case feature of *ele* would remain unchecked since at the matrix level the DP *o João* is inserted as the subject. It is important to keep in mind that

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movement of the embedded subject to Spec TP is only allowed as a last resort. The derivation then continues as shown in (14).

(12) O João$_1$ disse que ele$_1$ comprou um carro.
 the João said that he bought a car
 'João said that he bought a car.'

(13) a. Num = {T$_2$, o$_1$, João$_1$, disse$_1$, que$_1$, ele$_1$, comprou$_1$, um$_1$, carro$_1$ }
 b. [$_{TP}$ [comprou$_{1\phi def, D}$ +T$_{\phi EPP}$] [$_{VP}$ ele$_{Case,\phi}$ [$_{V'}$ t_1 [$_{DP}$ um carro]]]]
 c. [$_{TP}$ ele$_{2\ Case,\phi}$ [$_{T'}$ [comprou$_{1\phi def, D}$ +T$_{\phi,EPP}$] [$_{VP}$ t_2 [$_{V'}$ t_1 [$_{DP}$ um carro]]]]]

(14)

TP
[$_{DP}$ o João]$_{4\ Case,\phi}$ T'
 [disse$_{3\ \phi\text{-def},D}$ +T$_{\phi,EEP}$]   [$_{VP}$ t_4 [$_{V'}$ t_3 [$_{CP}$ que [$_{TP}$ ele$_{2Case,\phi}$ [$_{T'}$ [comprou$_{1\phi\text{-def},D}$ +T$_{-\phi EPP}$]
 [$_{VP}$ t_2 [$_{V'}$$t_1$ [$_{DP}$ um carro]]]]]]]]

Concluding this very brief presentation of her analysis, I hope to have shown that Rodrigues uses the assumptions in (07) to account for the fact that the subject DP sometimes checks case in the embedded clause (when it is overt) and sometimes not (when it is null). What is left to be done, although I will not do it here, is to check if there is any independent support for the assumptions in (07).

Now that we know the gist of Rodrigues' proposal, we can start looking at some problems.

As noted by Modesto (2000a, 2000b), contrary to what movement analyses would predict, the choice of the antecedent of the null subject in BP does not accord to the Minimal Distance Principle. Considering verbs that take a direct object plus a sentential argument with a null subject, it is always the matrix subject, never the object, which is the antecedent of the null embedded subject, as seen in (15). The same happens in Finnish, as seen in (16).

(15) a. A Dani$_1$ convenceu o Feco$_2$ que $e_{1/*2}$ pode se eleger.   BP
 the Dani convinced the Feco that can self to.elect
 'Dani convinced Feco that she can get elected.'
 b. A Dani$_1$ avisou o Feco$_2$ que $e_{1/*2}$ precisa trabalhar até mais tarde.
 the Dani warned the Feco that has to.work until more late
 'Dani warned Feco that she has to work until late.'

(16) a. Liisa$_1$ vakuutti Jussille$_2$ että $e_{1/*2}$ voi tulla valituksi.   Finnish
 Liisa assured to.Jussi that could become elected
 'Liisa assured Jussi that she can get elected.'
 b. Liisa$_1$ takasi Jussille$_2$ että $e_{1/*2}$ saa ylennyksen.
 Liisa guaranteed to.Jussi that will.get promotion
 'Liisa guaranteed Jussi that she would get the promotion.'

Although I give here only examples with two verbs in BP, there are others which behave exactly the same way. They are: *informar* (to inform), *alertar* (to alert), *prevenir* (to

forewarn) and *instruir* (to instruct), among others which take an indirect object plus a sentential complement. I will keep using examples with the verb *convencer* (to convince) of example (15a), for that verb is a good representative of that class of verbs but all the facts are reproducible with all the other verbs.

To solve the problem at hand, Rodrigues assumes that the sentential argument of verbs of the *convencer* class is not a complement, but an adjunct to vP; and that movement of the subject out of the adjunct is an instance of sideward movement.[6] In that way, as seen in (17), movement of the embedded subject to the matrix object position is blocked by Merge over Move, and movement of the embedded subject to matrix subject position respects the MLC, since the matrix object does not c-command the embedded subject. In this case, we can assume that movement to Spec FP does not take place, since there is no need to escape the phase through its edge in sideward movement.

(17) The structure of (15a) according to Rodrigues (2004):
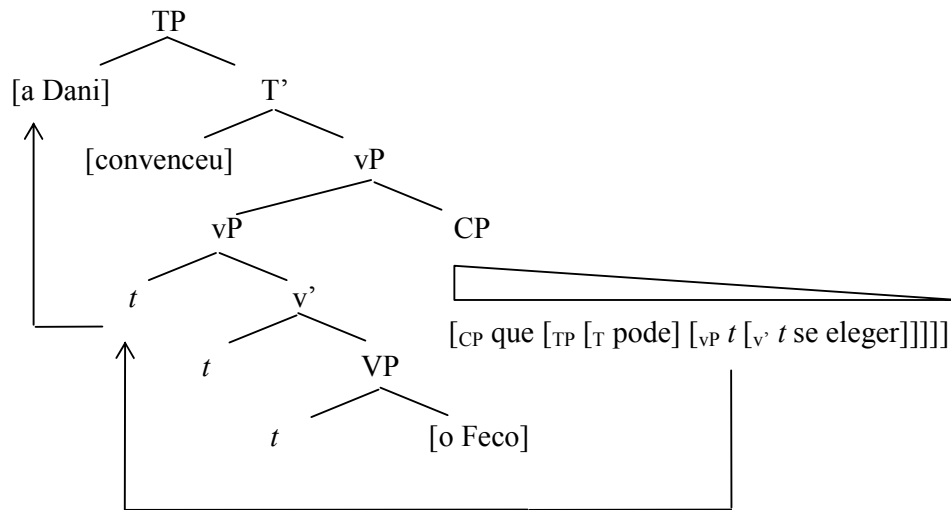
To back up her assumption that the sentential argument is an adjunct, Rodrigues evokes Larson's (1991) VP shell analysis of the 'promise' class of control verbs where the subject position is dethematized and the Case of the object is absorbed, much as in passives (although she adjoins the sentential complement much higher than Larson does). The problem with this is that Larson proposed such a structure for the 'promise' class because he wanted to account for several facts which indicate that promise-NP-infinitive constructions are analogous to double object structures, in clear opposition to verbs like 'persuade' and 'force'. Verbs like *convencer* in BP, however, clearly pattern with 'persuade' and 'force', not with 'promise', as seen in (18), (19) and (20).

(18) a. ??Who do you think John promised to leave?
      b. ??Who do you think John promised a sports car?
      c. Who do you think John persuaded to leave?

> d. Quem você acha que a   Dani convenceu a ir embora?
>   who   you think that the Dani convinced to go away
>   'Who do you think that Dani convinced to leave?'

(19) a. What did John promised Mary?   (answer: to leave at 5 o'clock)
     b. *What did John persuade Mary?   (answer: to leave at 5 o'clock)
     c. *O que a Dani convenceu o   Feco?
         what the Dani convinced the Feco?
         'What did Dani convince Feco?'

(20) a. John promised Ø to leave.
     b. ??John promised Mary Ø.
     c. *John persuaded Ø to leave.
     d. John persuaded Mary Ø.
     e. *A Dani convenceu Ø a sair.
        the Dani convinced Ø to to.leave
        '*Dani convinced to leave.'
     f. A Dani convenceu o Feco Ø.
        the Dani convinced the Feco Ø
        'Dani convinced Feco.'

Based on such data, it can easily be concluded that *convencer* is not a double object verb and, therefore, the structure proposed by Larson should not be applied to it. It becomes, then, clear that Rodrigues uses such structure for the *convencer* class of verbs only as a way to account for the data in (15) but there are no other facts to back up her assumption.

Another strong reason that led Larson to propose that structure for 'promise' was to account for the fact that 'promise' is a subject control verb. As shown in (21), *convencer* is an object control verb. If the sentential complement of verbs like *convencer* are adjuncts and that explains why the subject of embedded finite clauses cannot move to the matrix object position, then one would have to say that finite sentential complements of *convencer* are adjuncts but non-finite sentential complements are not.

(21) A Dani$_1$ convenceu o   Feco$_2$ a PRO$_{*1/2}$ sair.
      the Dani convinced the Feco   to   to.leave
      'Dani convinced Feco to leave.'

The only two arguments Rodrigues gives to assume that those complements are adjuncts are the fact that they resist extraction of non-argument wh-phrases; and that the subject of the clause embedded under *convencer* can be an epithet referring back to the matrix object. As seen in (22a), it is indeed a fact that the sentence cannot be interpreted as asking when or why Dani traveled. However, that seems to be a characteristic of non-argument wh-phrases in BP (that they attach as close as possible) and not a peculiarity of the *convencer* class. In (22b), the sentence also cannot be interpreted as asking when or why Dani traveled. In spite of that, one would hardly suppose that the sentential argument of *dizer* (to say) is an adjunct.

(22) a. *?Quando/por que a Dani convenceu o Feco que *e* viajou t_{wh} ?
  when/why the Dani convinced the Feco that traveled
  'When/why did Dani convince Feco that she traveled?
  b. *?Quando/por que a Dani disse que *e* viajou t_{wh} ?
  when/why the Dani said that traveled
  'When/why did Dani say that she traveled?'

So, the only argument left that supports Rodrigues' structure for the *convencer* class verbs is that they allow an epithet in embedded subject position referring to the matrix object. In fact, sentence (23a), which is the sentence given by Rodrigues, is possible. However, the impossibility of taking the matrix subject as the antecedent of the epithet may be just a consequence of pragmatics. In (23b), where pragmatics favors the interpretation where the matrix subject is the antecedent, that interpretation is indeed possible. In any case, if (23a) was possible due to lack of c-command between the matrix object position and the embedded subject position, sentence (24a), where a pronoun in object position is coreferent with the embedded subject, should be possible, in view of the fact that (24b) is possible. But (24a) is clearly ungrammatical, which shows that there is c-command between those two positions.

(23) a. O Ira$_1$ convenceu o Diogo$_2$ que o bobão$_{*1/2/3}$ não deveria comprar o carro.
  the Ira convinced the Diogo that the silly not should to.buy the car
  'Ira convinced Diogo that the fool should not buy the car.'
  b. O Maluf$_1$ convenceu o Diogo$_2$ que o desgraçado$_{1/??2/3}$ era o melhor candidato.
  the Maluf convinced the Diogo that the bastard was the best candidate
  'Maluf convinced Diogo that the bastard was the best candidate.'

(24) a. *A Dani$_1$ convenceu ele$_2$ que o Feco$_2$ está errado.
  the Dani convinced him that the Feco is wrong
  '*Dani convinced him that Feco is wrong.'
  b. O Ira$_1$ acredita que ele$_{1/2}$ é um gênio mais fervorosamente que a mãe
  the Ira believes that he is a genius more fervently that the mother
  do Feco$_2$ (acredita).
  of.the Feco (believes)
  'Ira believes that he is a genius more fervently than Feco's mother does.'

We must then conclude that there are not any real arguments in favor of saying that the sentential complement of the *convencer* class verbs is an adjunct and that the choice of the null subject's antecedent does not accord to the MDP. As for arguments that the matrix object does in fact c-command the sentential argument, there is the fact that a quantifier in object position may bind into the embedded subject position, as shown in (25).

(25) A Dani convenceu cada homem$_1$ que sua$_1$ mulher era fiel.
  the Dani convinced each man that his wife was faithful
  'Dani convinced each man that his wife was faithful.'

2. Movement and the null subject antecedent

Another fact first discussed by Modesto (2000a, 2000b), which is very problematic for any movement analysis is that movement of the matrix object alters the interpretative possibilities of the null embedded subject. In (26a, b) and (27a, b) we see that an object that has been wh-

moved or relativized becomes a possible antecedent for the null subject. Importantly, the matrix subject ceases to be a possible antecedent.[7] In sentences where the object is topicalized, (26c) and (27c), however, both the object and matrix subject are possible antecedents.

(26) a. Quem$_2$ que a Dani$_1$ convenceu t_2 que $e_{*1/2}$ pode se eleger?   BP
        Who   that the Dani convinced   that   can self to.elect
         'Who did Dani convince that s/he can get elected?'
    b. O cara$_2$ que a Dani$_1$ convenceu t_2 que $e_{*1/2}$ pode se eleger já chegou.
        the guy that the Dani convinced   that   can self elect already arrived
        'The guy who Dani convinced that he can get elected has already arrived.'
    c. O Feco$_2$, a Dani$_1$ convenceu t_2 que $e_{1/2}$ pode se eleger.
        the Feco the Dani convinced   that   can self to.elect
        '(Speaking of) Feco, Dani convinced (her) that s/he can get elected.'

(27) a. Quem$_2$ que a Dani$_1$ avisou t_2 que $e_{*1/2}$ precisa trabalhar até mais tarde?   BP
        who   did the Dani warned   that   has   to.work until more late
        'Who did Dani warn that s/he has to work till late?'
    b. O cara$_2$ que a Dani$_1$ avisou t_2 que $e_{*1/2}$ precisa trabalhar até mais tarde já chegou.
        the guy that the Dani warned that   has   to.work   until more late already arrived
        'The guy who Dani warned that he has to work till late has already arrived.'
    c. O Feco$_2$, a Dani$_1$ avisou t_2 que $e_{1/2}$ precisa trabalhar até mais tarde.
        the Feco the Dani warned   that   has   to.work until more late
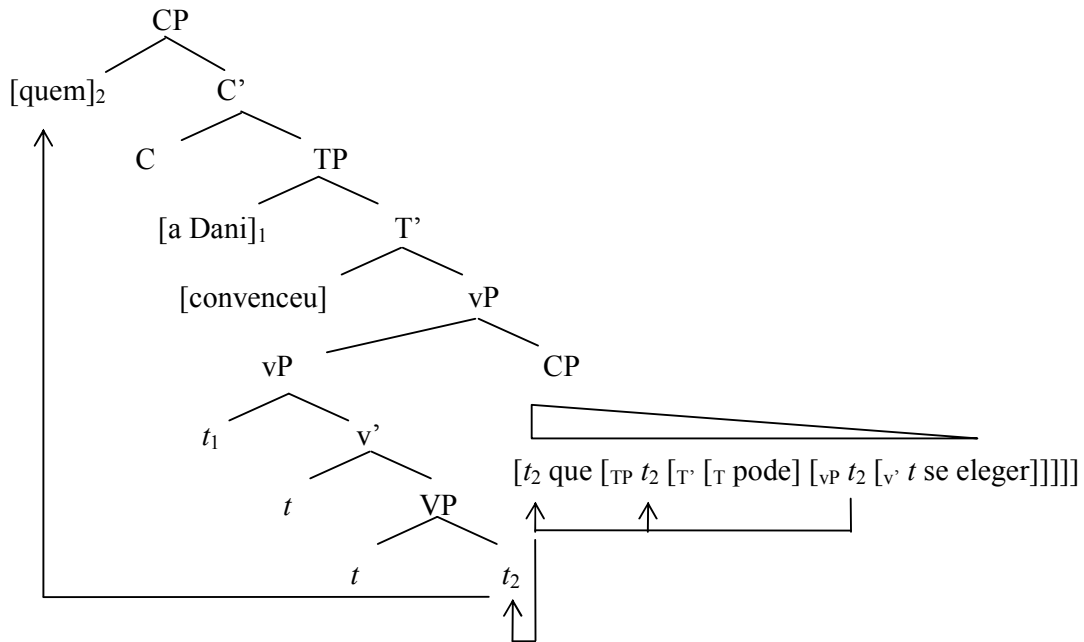   '(Speaking of) Feco, Dani warned (him) that s/he has to work till late.'

Rodrigues claims that the derivation of (26a) is analogous to the derivation of parasitic gaps in the analysis of Hornstein (2001). See (28). The wh-phrase checks Case downstairs and moves to Spec CP. A variable is then created in Spec TP for that copy has checked its Case and is bound by an operator. From Spec CP, the wh-phrase moves sidewardly to the object position of the matrix verb. Merge over move is violated here for convergence: if the wh-phrase moves through the matrix subject position, the variable downstairs gets bound, violating principle C. Remember now that in sideward movement, a DP does not need to use the edge of the phase as an escape hatch, as seen in (17). That way, it seems that movement of the wh to Spec CP in (28) is postulated only to explain the violation of Merge over move.

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[7] Rodrigues (2004) agrees that the wh-phrase becomes the only possible antecedent in sentences like (26a). However, she says that "there might be nothing within the grammar preventing the matrix subject ... to be the antecedent" in virtue of the fact that most speakers take the subject as the most likely antecedent when confronted with the sentence in (i), where that reading is the most plausible pragmatically:
(i) Quem$_2$ que a Maria$_1$ convenceu t_2 que $e_{1/2}$ estava grávida?
     who   that the Maria convinced   that   was   pregnant
     'Who did Maria convince that she was pregnant?'
Her reasoning, however, is backwards. The fact that (26a), a pragmatically neutral sentence, is interpreted taking the wh-phrase as the only possible antecedent of the null subject shows that this is a grammatical fact that needs to be explained. The fact that pragmatics may override grammar, as seen in (i), does not show that the grammatical fact seen in (26a) is not a fact; it just shows that pragmatics may interfere with grammar, which is widely known. For instance, from examples such as "John$_1$ only loves JOHN$_1$." nobody would conclude that there is no grammatical reality in principle C of the Binding theory.

(28) The structure of (26a) according to Rodrigues (2004):

CP
[quem]₂   C'
       C   TP
      [a Dani]₁   T'
        [convenceu]   vP
              vP   CP
           t₁   v'
                t   VP   [t₂ que [TP t₂ [T' [T pode] [vP t₂ [v' t se eleger]]]]]
   t   t₂

Note also that the wh-phrase checks Case twice. Rodrigues has to resort to yet another assumption: that a Case feature becomes re-activated when a copy leaves a phase. This assumption is not only not supported by data but it is also at odds with current Minimalist spirit. Besides, one would have to assume that phrases come into the derivation with a non specified Case feature, since the wh checks Nominative in the adjunct and Accusative in the matrix clause.

The observant reader may have noticed that movement to check Case in Spec TP of the embedded clause was only licensed for convergence in (13c). In (28), however, the wh-phrase moves to Spec TP although there is a convergent derivation where Merge over move is respected departing from the same numeration. Instead of moving the wh-phrase to Spec TP, the DP *a Dani* could be inserted as the object of the matrix verb and the wh-phrase could move to matrix subject position (just as in (17) above), deriving sentence (29), as shown in (30). Note that in (17), the moved DP does not raise to Spec FP or any other position before moving to matrix subject position. Therefore, the derivation of (29) should block the derivation of (26a):

(29)   Quem₁ t_1 convenceu o Feco₂ que $e_{1/*2}$ pode se eleger ?
       who   convinced the Feco that   can   self to.elect
       'Who convinced Feco that s/he can get elected?'

(30) Supposed structure of (29) according to Rodrigues (2004):
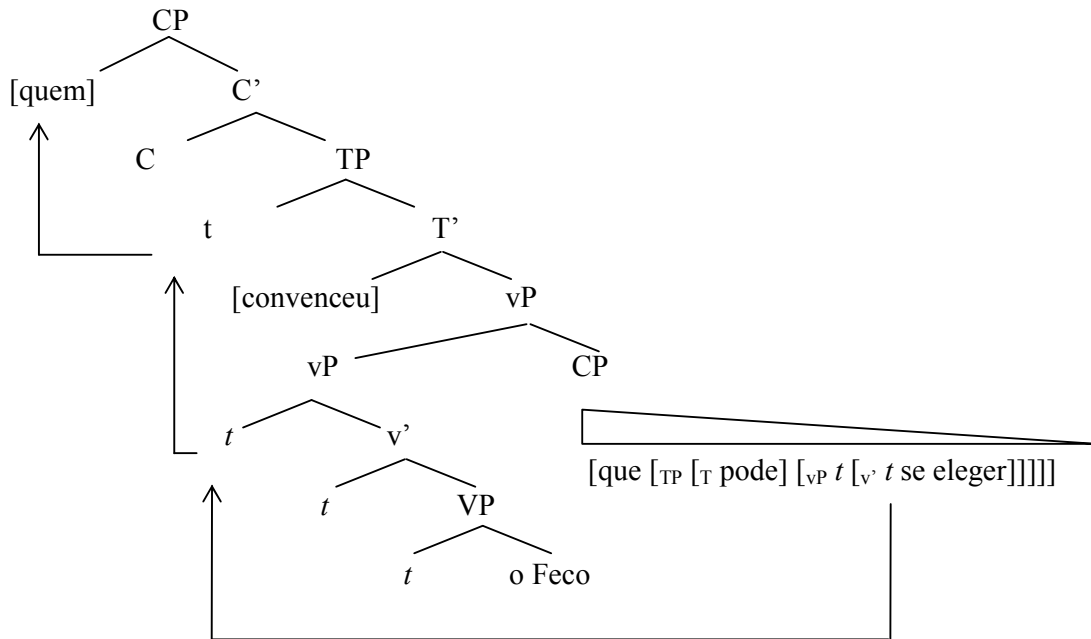
Lastly, note that there is nothing in Rodrigues' system that would prevent generating sentence (31), which is the same as (26a) but with the matrix subject interpreted as the antecedent of the null embedded subject. The derivation would proceed as shown in (32). That interpretation, however, does not exist. In other words, the movement analysis cannot explain why movement of the matrix object makes it the sole antecedent of the null embedded subject.

(31) *Quem$_2$ que a Dani$_1$ convenceu t_2 que e_1 pode se eleger?
        who   that the Dani convinced   that   can self to.elect
        'Who did Dani convince that [s/he] can get elected?'

(32) Supposed structure of (31) according to Rodrigues (2004):

```
                        CP
                  _____|_____
              [quem]₂          C'
                ↑         _____|_____
                |        C            TP
                |    [a Dani]₁     ____|____
                |       ↑        T'
                |       |    ____|____
                |   [convenceu]      vP
                |              _____|_____
                |            vP            CP
                |        ____|____      ___|_____
                |      t₁        v'     [ que [TP [T pode] [vP t₁ [v' t se eleger]]]]]
                |       ↑    ____|____
                |_____|   t        VP
                        |         ___|___
                        |        t       t₂
                        |_____|
                        |_____
```
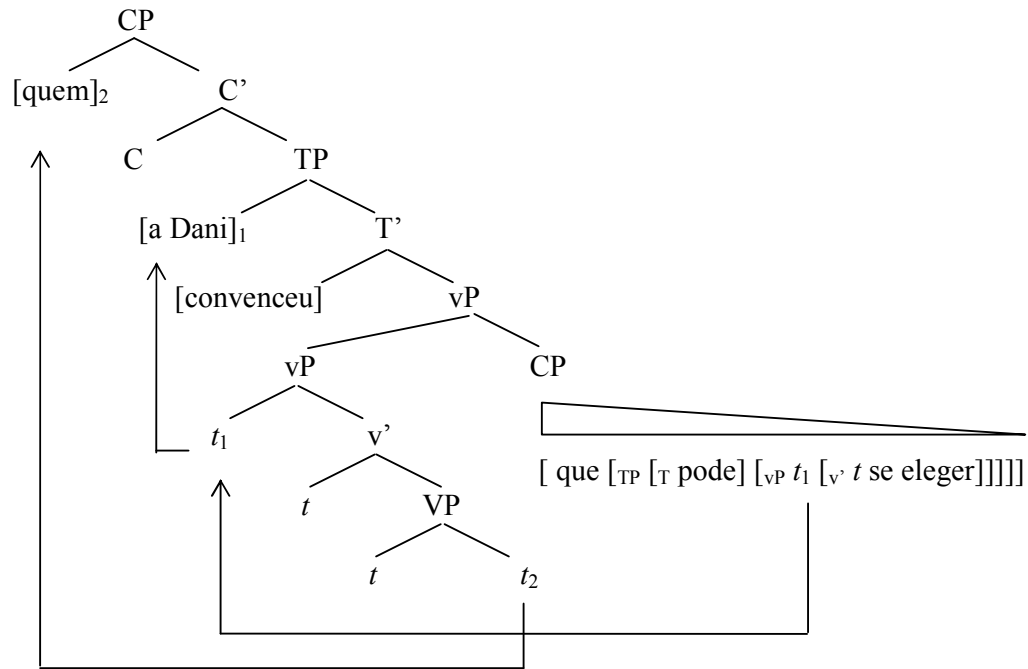
Summarizing what we have seen so far, the data in (26) shows, contrasting it with the data in (15), that there is a correlation between moving an object and taking that object as the antecedent of the null subject which is not explained by Rodrigues' analysis. I doubt any movement analysis of BP null subjects would capture that correlation in a simple manner. The greatest appeal of Hornstein's analysis of Control was its simplicity. That simplicity, however, does not carry over to movement analyses of null subjects, as I have demonstrated here.

3.   The relation between movement and being the antecedent of a null subject

Take the sentences in (26) and (27) again. The ambiguity of the "c" sentences seems to correlate with the possibility of base-generation. In (33), we see that a topic may be generated already in its dislocated position, while a wh-phrase or a null operator must be moved. We can then hypothesize that the "c" sentences are ambiguous exactly because the topic may be taken to be moved or base generated. If moved, it seems natural to suppose that the sentence has only the interpretation where the topic is the antecedent of the null subject, on a par with the "a" and "b" sentences of (26) and (27). However, when base generated, the matrix subject is the one that is the antecedent.

(33) a.   *Quem₁ que a Dani conhece o jornalista   que   entrevistou e_1?
            Who   that the Dani knows the journalist that interviewed
           '*Who does Dani know the journalist who interviewed?'
      b.   *O cara₁ que a Dani conhece o jornalista   que entrevistou e_1 já   chegou.
            the guy that the Dani knows the journalist that interviewed   already arrived
           '*The guy that Dani knows the journalist who interviewed has arrived.'

    c.   O Feco$_1$, a Dani conhece o jornalista   que entrevistou e_1.
        the Feco the Dani knows the journalist that interviewed
        'Feco, Dani knows the journalist who interviewed her.'

That relation between movement and antecedence is confirmed by (34) and (35) where the topic and the wh-phrase have not been moved and therefore cannot antecede the null subject:

(34)   O Feco$_2$, a Dani$_1$ convenceu ele$_2$ que $e_{1/*2}$ pode se eleger.
       the Feco the Dani convinced her that   can self to.elect
       '(Speaking of) Feco, Dani convinced him that she can get elected.'

(35)   A Dani$_1$ convenceu quem$_2$ que $e_{1/*2}$ pode se eleger?
       The Dani convinced who   that   can self to.elect
       'Who did Dani convince that s/he can get elected?'

The same correlation holds in Finnish, as shown in (36). Remember from (16) that an object is not a possible antecedent for the null subject in Finnish. When the object is wh-moved or relativized, however, it becomes a possible antecedent. Unlike in BP, movement of the matrix object gives rise to ambiguous sentences but Finnish speakers show a clear preference to take the matrix subject as the antecedent.

(36)   a.   Kenelle$_2$ Liisa$_1$ vakuutti t$_2$ että $e_{1/?2}$ voi tulla valituksi?
          to.whom Liisa assured   that   could become elected
          'Who did Liisa assure that s/he can get elected?'
    b.   Henkilö$_2$ jolle   Liisa$_1$ vakuutti t$_2$ että $e_{1/?2}$ voi tulla valituksi saapui jo.
          the person to.whom Liisa assured   that could become elected arrived already
          'The person who Liisa assured that s/he can get elected has arrived.'

4.   An alternative analysis: the topic prominence parameter

Having demonstrated that movement analyses of null subjects cannot explain the data, I will briefly discuss my own analysis, referring the reader to Modesto (in press) for a full account. Firstly, I assume that BP and Finnish are topic-prominent languages, something already argued by Holmberg and Nikanne 2002 for Finnish and Negrão and Viotti 2000 for BP, among others. I also assume that in topic-prominent languages a functional head F, for Functional, is always generated in every clause and it always carries an OCC (=EPP) feature (see Chomsky 2004), meaning that something will have to be moved to or merged in its specifier position. In other words, topic prominent languages are characterized by having a second level of predication (besides the subject-predicate level) where the element in Spec FP is predicated to the rest of the sentence. This second level of predication is usually referred to as topic-comment. All languages may in fact present topic-comment structures; what defines a language as topic prominent is the obligatoriness of such structures, caused by the OCC feature of F^0. The choice of what moves to Spec FP is free since any phrase can satisfy the OCC feature of F^0, although, as any movement, movement to Spec FP is regulated by locality constraints (the MLC of Chomsky 1995, 2000, which is subsumed by the probe/goal architecture of the Agree operation of Chomsky 2001). Therefore, for locality reasons, the subject (being the closest goal able to satisfy the probe) is usually moved to Spec FP in every clause and it will be interpreted as a "grammatical" topic. The claim is, then, that null embedded subjects are possible in topic prominent languages due to the fact that subjects

occupy a higher (A') position and so matrix subjects are able to identify null embedded subjects by binding them. The derivation of a sentence like (15a) would then be (37):

(37)   [FP a Dani$_1$ [TP t$_1$ convenceu o Feco$_2$ [CP que [FP e_1 [TP t$_1$ pode se eleger]]]]]
           Dani   convinced Feco   that   she   can get elected

Following Holmberg (2005), I assume that null subjects are non-referential sets of φ-features, φP(hrases) in his terminology. In "rich" agreement languages, referentiality is given by verbal agreement, making φPs behave like overt pronouns. In the languages discussed here, since agreement cannot provide a reference (or identify) to the φP, the only way to interpret it will be taking it to be a variable at LF. In other words, φPs will only be possible in weak agreement languages when A'-bound. Specifically, in (37), the φP gets bound by the higher subject that has been moved to Spec FP, 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.[8] An overt pronoun could be merged in the embedded subject position as well, in BP or Finnish. In that case, coreference with the higher subject would be accidental and non-coreference would be possible. The φP, however, does not refer by itself and can only be interpreted when bound. It is, therefore, the fact that those languages are topic-prominent (and so subjects are moved to an A-bar position, i.e. Spec FP) that allows φPs in the embedded subject position. That explains why English-type languages do not show null embedded subjects of the kind described here: subjects in English-type languages remain in Spec TP and so cannot variable-bind an embedded subject.

Note that the characteristics of null subjects in Finnish and BP listed in the introduction of this chapter, exemplified in (1)-(6), are readily explained by the analysis proposed. The antecedent requirement is due to the non-referentiality of φPs; c-command and locality are requirements of the chain formation operation; split antecedents are banned since tripartite chains can not be formed; sloppy readings and covariant interpretations are due to the fact that the φPs are interpreted as variables (they get their reference by being bound).

Subject orientation, shown in (15) and (16) is also explained since objects do not (usually) occupy the Spec FP position.

The notion of "grammatical" topic, mentioned above, needs some clarification. Movement of subjects to Spec FP is driven solely by the necessity of the probe (F^0) to have some phrase in its specifier position (which is what the OCC feature means) and not by any feature or semantic property of the subject. Therefore, the moved subject in Spec FP is interpreted as a grammatical topic (as opposed to a semantic one) and need not have any semantic property of a topic. This position (Spec FP) is, then, the position of unmarked topics advocated by Martins and Nunes (2005), which allows weak pronouns and non-referential phrases. This is different from the marked topic position in the left-periphery of the sentence (Spec TopP), reserved for constituents marked with a topic feature, therefore excluding weak pronouns and non-referential phrases. We, then, explain the remark in Holmberg (in press) that "the subject may check the EPP even if it is not a referential category, for example a quantified NP, but non–subjects have to be referential and interpretable as topics to check the EPP" in Finnish.

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[8] In other words, it could be assumed that chain formation is possible here because a φP 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 φP is completely contained by its antecedent and, therefore, it is indistinguishable from it.

The fact that a matrix object becomes the only possible antecedent for the null subject when the object is moved (in BP) is explained by Minimality (cf. Rizzi 1990). If the matrix subject is moved to Spec FP and the object is moved over the grammatical topic, Minimality is violated. In (38a), (39a) and (40a) we see that, in fact, in BP, a wh-phrase, a null operator or a topic may not be moved over another topic. That means that the derivations of the sentences in (26) have to be (38c) and (39c), but not (38b) and (39b). In (40), two structures are possible since the (marked) topic may be moved to Spec TopP or be base generated in that position.[9]

(38) a. *Quem$_1$, esses livros$_2$, t$_1$ leu t$_2$?
        who   these books   read

    b. *[$_{CP}$ quem$_2$ que [$_{FP}$ a Dani$_1$ [$_{TP}$ t$_1$ convenceu t$_2$ [$_{CP}$ que [$_{FP}$ e$_1$ [$_{TP}$ t$_1$ pode se
        who   that   the Dani   convinced   that   can self
       eleger]]]]]]
       to.elect

    c. [$_{CP}$ quem$_2$ que [$_{FP}$ t$_2$ [$_{TP}$ a Dani$_1$ convenceu t$_2$ [$_{CP}$ que [$_{FP}$ e$_2$ [$_{TP}$ t$_2$ pode se
        who   that   the Dani convinced   that   can self
       eleger]]]]]]
       to.elect

(39) a. *O cara$_1$ que, esses livros$_2$, t$_1$ leu t$_2$ já chegou.
        the guy that, these books, read has arrived

    b. *[o cara$_2$ [$_{CP}$ Op$_2$ que [$_{FP}$ a Dani$_1$ [$_{TP}$ t$_1$ convenceu t$_2$ [$_{CP}$ que [$_{FP}$ e$_1$ [$_{TP}$ t$_1$ pode
        the guy   that   the Dani   convinced   that   can
       se eleger]]]]]]]...
       self to.elect

    c. [o cara$_2$ [$_{CP}$ Op$_2$ que [$_{FP}$ t$_2$ [$_{TP}$ a Dani$_1$ convenceu t$_2$ [$_{CP}$ que [$_{FP}$ e$_2$ [$_{TP}$ t$_2$ pode se
        the guy   that   the Dani convinced   that   can self
       eleger]]]]]]]
       to.elect

(40) a. *A Dani$_1$, esses livros$_2$, t$_1$ já leu t$_2$.
        Dani, these books, already read
       Cf. A Dani$_1$, esses livros$_2$, ele$_1$ já leu t$_2$.

    b. *[$_{TopP}$ o Feco$_2$ [$_{FP}$ a Dani$_1$ [$_{TP}$ t$_1$ convenceu t$_2$ [$_{CP}$ que [$_{FP}$ e$_2$ [$_{TP}$ t$_2$ pode se
        the Feco   the Dani   convinced   that   can self
       eleger]]]]]]
       to.elect

    c. [$_{TopP}$ o Feco$_2$ [$_{FP}$ t$_2$ [$_{TP}$ a Dani$_1$ convenceu t$_2$ [$_{CP}$ que [$_{FP}$ e$_2$ [$_{TP}$ t$_2$ pode se
        the Feco   the Dani convinced   that   can self
       eleger]]]]]]
       to.elect

    d. [$_{TopP}$ o Feco$_2$ [$_{FP}$ a Dani$_1$ [$_{TP}$ t$_1$ convenceu e$_2$ [$_{CP}$ que [$_{FP}$ e$_1$ [$_{TP}$ t$_1$ pode se
        the Feco   the Dani   convinced   that   can self
       eleger]]]]]]
       to.elect

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[9] Note that I assume with Chomsky (2001) that all evaluation w.r.t. locality of movement is done at the phase level. Therefore, an object may move to Spec FP on its way to a higher position since any other locality-abiding derivation would violate Minimality, which is a condition on movement itself.

As seen in (41a) and (42a), Finnish, on the other hand, does not show Minimality effects: a wh-phrase or a null operator may be moved over a topic without challenging the grammaticality of the sentence. Therefore, due to the absence of Minimality effects, locality is always respected in Finnish and the subject always moves to Spec FP:

(41) a. Kuka tämän kirjan on kirjoittanut?
          who   this book   has written
      b. [$_{CP}$ Kenelle$_2$ [$_{FP}$ Liisa$_1$ vakuutti [$_{TP}$ t$_1$ t$_v$ t$_2$ [$_{CP}$ että [$_{FP}$ e$_1$ [$_{TP}$ t$_1$ voi   tulla
             to.whom   Liisa assured   that   could become
          valituksi]]]]]]
          elected

(42) a. henkilö joka tämän kirjan on kirjoittanut saapui jo.
          the person who this book has written arrived already
      b. [henkilö$_2$ [$_{CP}$ jolle$_2$ [$_{FP}$ Liisa$_1$ vakuutti [$_{TP}$ t$_1$ t$_v$ t$_2$ [$_{CP}$ että [$_{FP}$ e$_1$ [$_{TP}$ t$_1$ voi tulla
           person   to.whom Liisa assured   that   could become
          valituksi]]]]]]
          elected

A confirmation of the analysis presented here comes from intervention effects in both languages. Consider (43). Although Finnish does not present Minimality effects with wh-phrases and null operators, one topic does intervene over another topic. Therefore, when the phrase "assignment" occupies the Spec TopP position in (43b), a topic chain cannot be formed between the embedded subject and the matrix topic, either because the marked embedded topic was moved through Spec FP or because, being base-generated, it prevents application of the chain formation operation since another A'-element intervenes between the two unmarked topics, and the sentence gets a generic interpretation only:[10]

(43) a. Oppilas$_1$ tietää ettei e$_1$ pysty ratkaisemaan tehtävää.
          student   knows that.not can   solve   assignment
          'The student knows that he cannot solve the assignment.'
      b. Oppilas$_1$ tietää ettei   tehtävää e$_{*1}$ pysty ratkaisemaan.
          student   knows that.not assignment can   solve
          'The student knows that the assignment cannot be solved.'

The sentences in (44a, b) show that exactly the same intervention effect happens in BP. A marked topic in the embedded clause, moved through Spec FP to Spec TopP or base generated in the latter position, prevents a chain from being formed between the two subjects, which makes (44b) necessarily interpreted as generic.

Sentence (44c) shows that not every phrase intervenes between the two subjects though, only referential expressions do, which is straightforwardly explained by my analysis: not being referential, the adverbial phrase *todo dia* (every day) does not qualify as a possible occupant of Spec TopP, so it must be a clausal adjunct. Being an adjunct, it does not intervene between the two unmarked topics and the coreferent reading is possible.

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[10] According to Holmberg (2005), the generic reading arises when a ϕP is not bound and, therefore, cannot be interpreted referentially; or when it is bound by an abstract generic operator.

Sentence (44d), however, is the most interesting case. If the locative *na praia* is taken to qualify the matrix event, it can be merged already in the higher Spec TopP and the sentence can be interpreted as saying that Feco told me that he sells hot dogs (for a living, when we were at the beach), since the matrix subject is moved to Spec FP. 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 Spec FP would cause a Minimality effect, so it has to be moved to matrix Spec FP before moving to Spec TopP. In that case, the matrix subject has to remain in Spec TP and no topic chain can be formed, since the two phrases in Spec FP do not share the same features and reference, so the embedded clause has the generic reading only. 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 to the matrix subject. That this very surprising state of affairs is accounted for and explained by the analysis presented here provides strong support to it.

(44) a. O Feco₁ me   falou que *e*₁ vende cachorro quente na   praia.
          the Feco to.me said that   sells dog   hot   on.the beach
          'Feco told me that he sells hot dogs on the beach.'
     b. O Feco₁ me   falou que na   praia *e*∗₁ vende cachorro quente.
          the Feco to.me said that on.the beach   sells dog   hot
          'Feco told me that hot dogs are sold at the beach.'
     c. O Feco₁ me   falou que todo dia *e*₁ pega o   metrô.
          the Feco to.me said that every day takes the subway
          'Feco told me that he takes the subway every day.'
     d. Na   praia, o Feco₁ me   falou que *e*∗₁ vende cachorro quente.
          on.the beach, the Feco to.me said that   sells dog   hot
          'Feco told me that hot dogs are sold at the beach.' or
          'Feco told me at the beach that he sells hot dogs.'

5.   Conclusion

In this work, I have shown that, although null subjects of finite embedded clauses in BP and Finnish have properties which resemble those of controlled subjects (they must have a close (local) c-commanding antecedent, etc.), they should not be analyzed as such. Taking those subjects to be controlled, or derived by movement (which boils down to the same thing in the present context), cannot explain several facts in those languages. For instance, it would never explain why matrix objects cannot usually be interpreted as the antecedent of a null subject. It would have nothing to say about the fact that moving an object to the CP domain makes it possible for the object to be interpreted as the antecedent. In order to explain those facts, movement analyses would have to resort to *ad hoc* stipulations and unfounded assumptions, as did Rodrigues (2004). The analysis presented in section 4, accounts for those facts in a straightforward manner.

Data presented here does not bear directly on Control nor whether Control should be analyzed on a par with Raising. But a parallel can be made. An analysis of Control involving movement seems to be very simple and elegant, but it leaves much data unaccounted for (especially with respect to non-obligatory Control) and it makes wrong predictions (with respect to implicit controllers, for instance). Trying to account for that data or remedy such predictions would probably turn the simple analysis into one as complicated and inelegant as its predecessors.

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