BRAZILIAN PORTUGUESE AND FINNISH REFERENTIAL NULL SUBJECTS[*]

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RESUMO

Este artigo trata das propriedades sintáticas dos sujeitos nulos referenciais do português do Brasil moderno e do finlandês. Na análise aqui apresentada, essas não são línguas de sujeito nulo. Os sujeitos nulos que nelas observamos são resultados de movimentos, e não pronomes nulos. Essa característica do português do Brasil e do finlandês deve ser formalmente correlacionada com o fraco sistema de concordância verbal dessas gramáticas.

ABSTRACT

This paper focuses on the syntax of referential null subjects in Modern Brazilian Portuguese and Finnish. It will be argued that these languages are not null subject grammars; that is, their referential null subjects are the residue of movement, rather than lexical pronominal null categories. This is to be formally correlated with the weak verbal agreement morphology of the two grammars under consideration.

PALAVRAS-CHAVE

Sujeitos nulos, movimento, morfologia verbal

KEY-WORDS

Null subjects, movement, verbal morphology

Introduction

This paper focuses on null subjects in two of the so-called *partial pro-drop languages*, Modern Colloquial Brazilian Portuguese (BP) and Finnish, seeking an answer to (1):

(1) What is the syntactic nature of referential null subjects in BP and Finnish?

The possibility of dropping any pronominal subject is taken to be a manifestation of the pro-drop parameter (e.g. Chomsky 1981, Rizzi 1982, Jaeggli and Safir 1989). Thus, Italian and European Portuguese, in which expletives as well as referential subjects can be null are bona fide examples of a positive setting of this parameter.

Partial pro-drop languages allow null expletives (2).[1] But, differently from full pro-drop grammars, in these grammars, 3rdPerson (3rdP) referential null subjects occur only in embedded clauses (3)(4), and behave like anaphors, requiring a sentential antecedent.

(2) a. Chove   (BP)
     rain-3Sg
  b. Sataa   (Finnish)
     rain-3Sg
     'It rains/is is raining'

(3) a. * Embarcou   no   trem   (BP)
      boarded -3Sg in.the train
  b. * Nousin   junaan   (Finnish)
     stepped-3Sg   *train-into*
     'S/he boarded the train'

(4) a. Ele$_1$ disse   que $e_{1/*2}$ embarcou   no trem   (BP)
     he   said-3Sg that   boarded-3Sg in.the train
     'He said that he boarded the train'

b. Hän$_1$ kertoi   että $e_{1/*2}$ nousin   junaan   (Finnish)
   he-Nom said-3Sg   that   *stepped-3Sg   train-into*

In short, the state of affairs is the following: in full pro-drop grammars, referential null subjects are null pronouns (*pro*), whereas, in partial pro-drop languages, they are null anaphors. This raises a concern for the pro-drop parameter. Shall we take BP and Finnish to be pro-drop grammars? If the answer is positive, then we need to understand how a fixed parameter can have different outcomes: while in Italian and European Portuguese the fixation of the pro-drop parameter opens up the availability of *pronominal* null subjects, in BP and Finnish it results in *anaphoric* null subjects. On the other hand, in analyzing the grammars under consideration as non pro-drop, one needs to account for (4), explaining the nature of the empty category observed there. Hence, question (1) is inevitable, and any theory about the pro-drop nature of BP and Finnish has to be built upon an answer for that question.

This paper answers (1) by suggesting that Modern BP and Finnish are not null subject languages. In these grammars, referential null subjects are traces rather than null pronouns.[2] It will be suggested that the availability of a trace in the subject position of a finite clause is the result of weak verbal agreement morphology.

The sections are organized as follows: section 1 introduces the loss of verbal agreement morphology in BP and Finnish. Section 2 examines the licensing of null subjects in these languages. Section 3 proposes that instances of null subjects found in matrix clauses of BP and Finnish are cases of topic deletion. Section 4 takes on 3[rd]P null subjects, presenting evidence that these subjects result from A-movement out of finite clauses. Section 5 offers a technical implementation for a movement analysis, correlating the possibility of having A-movement out of finite domains with loss of verbal agreement morphology. Section 6 summarizes the discussion.

1. Verbal Agreement Morphology and Licensing of Null Subjects

In the recorded history from 1845 to 1992, BP underwent a simplification in its verbal inflection (cf. Fig 1). A paradigm with six forms (paradigm 1) was reduced to a paradigm with four forms (paradigm 2), and then to a paradigm with only three forms (paradigm 3). From Stage 1 to Stage 2, the indirect 2ndPSg replaced the direct 2ndPSg agreement, which is phonologically identical to 3rdPSg. From Stage 2 to Stage 3, the 1stPPl was replaced by 3rdPSg. This latter change occurred since the pronoun *a gente* ('we', literally, 'the people') replaced the 1stPl pronoun *nós* 'we'. *A gente* triggers 3rdPSg agreement.

Fig. 1. *Falar Finlandês* 'to speak Finnish'   Source: Duarte (1996)

Person and Number	Paradigm 1	Paradigm 2	Paradigm 3
1stSg	Fal-o Finlandês	Fal-o Finlandês	Fal-o Finlandês
2ndSg direct	Fala-s	——————	——————
2ndSg indirect	Fala-Ø	Fala-Ø	Fala-Ø
3rdSg	Fala-Ø	Fala-Ø	Fala-Ø
1stPl	Fala-mos	Fala-mos	Fala-Ø
2ndPl direct	Fala-is	——————	——————
2ndPl indirect	Fala-m	Fala-m	Fala-m
3rdPl	Fala-m	Fala-m	Fala-m

The verbal agreement morphology of Standard Finnish (SF) seems to be quite rich when compared to that of BP. For every combination of person and number, there is a different ending on the verb, as figure 2 illustrates:

Fig. 2. *Puhu Portugalia* 'to speak Portuguese'

Person and Number	Standard Finnish
1stSg	Puhu- n Portugalia
2ndSg	Puhu-t
3rdSg	Puhu-u
1stPl	Puhu-mme
2ndPl	Puhu-tte
3rdPl	Puhu-vat

However, the richness of this paradigm becomes questionable once we consider the 3rdP in detail. As apparent in figure 2, the 1stPSg/Pl, 2ndPSg/Pl and 3rdPPl verbal inflection contains a consonant, but the 3rdPSg consists of lengthening of the last vowel of the stem. This lengthening process occurs in the present tense only. In the past and conditional tense (5), the process is neutralized and there is no overt agreement suffix for the 3rdPSg (cf. Vainikka, 1989 and Holmberg and Nikanne, 1993).[3]

(5) a. Hän puhui
    s/*he spoke-3Sg Portuguese*
    'S/he spoke Portuguese'
  b. Hän puhuisi Portugalia
    s/he speak-3Sg-Cond Portuguese
    'S/he would speak Portuguese'

Vainikka and Levi (1999), citing work done by Hakulinen (1979), present further evidence that 3rdP verbal agreement morpheme is weak in SF. All the agreement suffixes are phonologically related to the corresponding pronoun, except for the 3rdP suffixes (cf. figure 3). The 2ndPSg agreement suffix *t* is diachronically related to the pronoun *sinä*, since this pronoun is reconstructed as **tinä*.[4] But between the 3rdPSg/Pl agreement suffixes and the corresponding pronouns there is no such historical connection.

Fig. 3.				Source: Vainikka and Levy (1999)		
	1st Sg	2ndSg	3rdSg	1stPl	2ndPl	3rdPl
Agreement Suffix	-n	-t	-V	-mme	-tte	-vat
Pronoun	mina	sinä	hän	me	te	he

This leads us to consider that the verbal inflection paradigm of SF is not uniform under Jaeggli and Safir's (1989) definition of a morphologically uniform verbal inflection paradigm. It is a mixed paradigm, containing an underived inflectional form, namely the form 3rdSg.[5] Hence, under Jaeggli and Safir's theory of null subjects, SF is not pro-drop language.

Having examined Standard Finnish, we now turn to Colloquial Finnish. Similarly to BP, Colloquial Finnish (CF) has a simplified verbal inflection paradigm.[6] The 3rdPSg replaced the 3rdPPl and the 1stP-Pl was substituted by a new form that is phonologically identical to the impersonal passive morpheme (6).

Fig. 4. *Puhu Portugalia* 'to speak Portuguese'

Person and Number	Colloquial Finnish
1stsg	Puhu- n Portugalia
2ndSg	Puhu-t
3rdSg	Puhu-u
1stPl	Puhu-taan
2ndPl	Puhu-tte
3rdPl	Puhu-u

(6) Koulussa   opetetaan lapsia
    school-Ine teach-Pass children-Par
    'Children are taught at school'

In conclusion, the grammars under investigation share the property of having a weak 3rdP verbal morphology. Thus, given the fruitful literature on the correlation between rich morphology and licensing

of null subjects (cf. Taraldsen 1980, Chomsky, 1981, 1982, Rizzi, 1982, Borer 1986, 1989, Jaeggli and Safir 1989, among others), the content of the next section should be predictable: BP and Finnish are not fully-fledged pro-drop languages.

2. Partial Null Subjects

As shown below, null expletive and generic null subjects are licensed in BP and Finnish:[7]

(7) a. Está   chovendo   (BP)
       It-3rdSg raining
    b. Sataa   (SF- Holmberg and Nikanne, 2002)
       rain-3Sg
       'It rains/it is raining'

(8) a. Aqui conserta   sapato   (BP - Kato, 1999)
       here repair-3Sg shoe
       'One repair shoes here'
    b. Pankista voi   anoa   lainaa[8]   (SF - Vainikka, 1989)
       bank-Ela can-3Sg apply loan-Par
       'One can apply for a loan from this bank'

For the time being, I will put generic null subjects aside. As I discussed in Rodrigues (2004a), these subjects are unable to bind anaphors, unable to control inside infinitival clauses and unable to be modified by subject-oriented adverbs. Thus, since these properties are usually observed when the subject position is occupied by a null pronoun, it is unclear whether the missing subject of (8) is syntactically realized or not.[9]

CF differs from SF and BP in that it has overt expletives, even though they are optionally inserted, as shown below (Cf. Holmberg and Nikanne 1994, 2002 and Holmberg 2003).[10]

(9) a. (Se) sataa
   expl rain-3Sg
   'It rains/it is raining'

   b. (Se) näyttää   tuvevan   sade
   expl look-3Sg come-lpart-acc rain-ACC
   'It looks as if it is going to rain'

Interestingly, though, none of these three grammars allows 3rdP referential null subjects in matrix clauses:

(10) a. *(ele) estava cansado   (BP)
      He was-3Sg tired

   b. *(Hän) oli   väsynyt   (SF)
      he   was-3Sg tired

   c. *(Se) oli   väsynyt   (CF)
      he   was-3Sg tired
      'He was tired'

Another interestingly property of present-day BP and Finnish is that they do not pattern with Romance null subject languages with respect to the Avoid Pronoun principle (11). While Romance pro-drop languages accept overt subject pronouns only when they are emphatic, BP and Finnish allow overt subject pronouns that do not carry any emphatic force. Hence, BP and Finnish are insensitive to the Avoid Pronoun principle.

(11) *Avoid pronoun*
   Empty categories have preference over overt pronoun
   (cf. Chomsky, 1981:65)

In fact, Modern BP and CF seem to prefer overt subject pronouns rather than null subjects.[11] Duarte (1995, 1996) presents historical facts indicating that in BP the use of referential null subjects has

decreased considerably. Until 1918, there was a preference for null subjects, but around 1937 this preference started falling, reaching less than 30% of the occurrence in 1992. Similarly, Heinonen's (1995) study of CF shows that the 1stPSg subject pronoun *minä/mä* 'I' is omitted only 12% of the time.

Related to the inapplicability of (11) is the fact that, contrary to what happens in the Romance pro-drop languages, in BP and Finnish there is no preference for a non-coreferential reading of embedded overt subject pronouns.

(12) a. O João$_1$ disse   que ele$_{1,2}$ vendeu   o carro   (BP)
        the João said-3Sg that he   sold-3Sg the car

   b. Jukka$_1$ kertoi,   että hän$_{1/2}$ oli   myynyt auton   (SF)
      Jukka-Nom said-3Sg that he-Nom had-3Sg sold   car-Acc

   c. Jukka$_1$ kertoi, et se$_{1/2}$ oli   myynyt auton   (CF)
      Jukka-Nom said-3Sg that he-Nom had-3Sg sold   car-Acc
      'João/Jukka said that he had sold the car'

The facts presented so far suggest that neither BP nor Finnish are null subject grammars. I will argue that the incapability of licensing null subjects is to be correlated to the fact that these grammars have weak verbal morphology at least for the 3rdP. But, assuming this to be the right conclusion, referential null subjects should be disallowed altogether. However, BP allows 1stP null subjects in main clauses and Finnish allows 1stP and 2ndP (13). Moreover, 3rdP referential null subjects are allowed in embedded clauses (14).

(13) a. *e* estou   sentada aqui   (BP)
       am-1stSg sitting here

   b. *e* istun   siä   (Finnish)
          sit-1Sg here
      'I am sitting here'

   c. *e* Istut   siä

    sit-2Sg here
'you are sitting here'

(14) a. João$_1$ disse   que e_1 vem   amanhã   (BP)
    the João said-3Sg that   come-3Sg tomorrow
    'João said that he will come tomorrow'
   b. Veljeni$_1$ oli   niin iloinen ettei e_1 voinut   nukkua   (SF)
    brother-1stPx be-3SgPres so happy that-not-3Sg could sleep-Inf
   c. [Mun   veli]$_1$ oli   ninn iolnen   ettei e_1 voinu nukkua (CF)
    my-Gen   brother-Nom be-3SgPres so happy that-not-3Sg could sleep-Inf
    'My brother was so happy that he couldn't sleep'

As I discuss below, these cases do not constitute real evidence that Finnish and BP still license referential null subjects. These empty subjects are traces rather than null pronouns, as we will presently discuss.

3. Matrix Null Subjects: Cases of Topic Deletion

Rodrigues (2002, 2004a) has shown that BP 1stP null subjects behave as if they were topics. They are excluded from clauses with a fronted wh-phrase (15a) or a topicalized constituent (15b), and cannot occur inside relative clauses (15c).

(15) a. 'O que *e/eu fiz
    what I did-1Sg
    'What did I do'
   b. O João, *e/eu acho   que vai ser promovido
    the João I think-1Sg that will be-Inf promoted
    'As for João, I think he is going to be promoted'
   c. Eu comprei aquele vestido [que *e/eu vi   ontem]
    I buy-1SgPast that dress   that saw-1Sg yesterday
    'I bought that dress that I saw yesterday'

This is characteristic of Modern BP. As (16) illustrates, the 19th-century BP did not present these restrictions. (These sentences were extracted from *O Judas no Sábado de Aleluia*, Martina Pena, 1844.)

(16) a. E o que *e* direi   da menina
      and what say-1SgFut of-the girl
      'And what am I going to say about the girl'

   b. Mas, olha, o meu vestido está   quase pronto, e o teu, *e* não sei quando estará
      but look the my dress is-3Sg almost done and the yours not know-1Sg when be-3SgFut
      'But, look, my dress is almost done, and yours, I don't know when it will be
       done' (Martins Pena 1844. *O Judas no Sábado de Aleluia*)

   c. Que se case,   e quanto antes,   com a noiva   [que *e* lhe dou]
      that SE marry-3Sg and as soon as possible with the fiancée that to.you give-1Sg
      'As soon as possible, get married with the fiancée that I give you'

Assuming that the 19-century BP was pro-drop language, the contrast between (15) and (16) suggests that 1stP null subjects in Modern BP are not null pronouns. In fact, these subjects behave like dropped *ich* 'I' in German, which occurs in the following situations: (a) it occupies the sentence-initial position (i. e., when it is a topic (17a)); (b) when spec of CP is not filled (17b); and (c) when it is not inside a relative clause (17c).

(17) a. (Ich) hab' *(ich) ihn schon gesehen
      'I saw him already'

   b. * Was machte
      'What did I make

   c. (*Ich) kenne das mädchen, daß gestern getroffen habe
      'I know the girl that I met yesterday'

German is not pro-drop language, thus the similarities between (17) and (15) suggest that 1stPerson null subject in Modern BP may not be *pro*. In fact, in (2002, 2004a) I argued that these subjects are

deleted topics *à la* Ross (1982) and Huang (1984). That is, they are topicalized overt pronouns that turn out to be targets for deletion. Thus, they are variables bound by zero topics, and, as such, they block A'-movement of another constituent.[12]

I will not work out the technical details of the topic-deletion operation (see Huang 1984). The main point is that modern BP 1stP null subjects are not null pronouns. They do not have the freedom of null pronouns, being disallowed in structures with either a filled spec CP or topicalized phrase. This indicates that they are deleted topics.

Matrix referential null subjects in Finnish might also be instances of topic deletion. As shown in (18a), they are not allowed in structures with a topicalized constituent (cf. Vainikka and Levi, 1999), even though topicalization occurs without difficulty when the subject is a pronoun, as in (18b).

(18) a. * Palkankorotusta e pyysin   heti
          raise-Part.   asked-1Sg immediately
        ' I asked for a raise immediately'
     b. Pariisissa mina   olen   käynyt
        Paris-Ine I-Nom have-1Sg visited
        'It is Paris that I've been to'

Finnish allows only one fronted topic per sentence (cf. Holmberg and Nikanne 2002). It follows then that in (18a), topicalization of *Palkankorotusta* 'raise' bars topicalization of the subject pronoun *mina* 'I', which, as a consequence, is not targeted by deletion.

In addition to this, Holmberg and Nikanne (2002) and Holmberg (2003) observe that 1stP and 2ndP null subjects cannot co-occur with an expletive.

(19)* Sitä uskon   vallankomousksen
      Expl believe-1stSg revolutions-Ill
      'I belive in Revolution'

This has led Holmberg (2003) to propose the very same analysis suggested by Rodrigues in (2002 and 2004a): null subjects in Finnish involve pronoun deletion. The idea here is that the expletive occurs in the topic position (spec of FP – Finite Phrase – in Holmberg and Nikanne's analysis), thus blocking deletion of the subject pronoun.

One could object to extending the topic deletion analysis to Finnish since in this language 1stP and 2ndP null subjects can co-occur with a wh-phrase in spec of CP:

(20) Missä *e* voimme   lukea   sanomalehtiä
     where   can-1Pl   read-Inf   newspapers-Par
     'Where can we read newspapers'

If (20) involves topicalization followed by deletion of the subject pronouns, we expect this process to interfere with the wh-movement. Hence, (20) should be ungrammatical. Crucially, however, Finnish does not display minimality effects in structures with both wh-movement and topicalization (Holmberg and Nikanne (2002):

(21) Kuka tämän kirjan   on   kirjoittanut
     who   this book-Acc   have-3SgPres write-PastPart
     '(What about this book:) Who has written this book'

I will not offer an analysis for this lack of minimality effects.[13] For the purpose of the present discussion, it is sufficient to observe that whatever explains (21) also explains the possibility of topicalizing (and deleting) the subject pronoun in (20). Therefore, I conclude that matrix null subjects in Finnish are also instances of deleted topics.

4. Referential 3rdP Null Subjects: Evidence for a Movement Analysis

This section provides several sources of evidence that 3rdP referential null subjects in BP and Finnish are residues of movement rather than null pronominal categories.

4.1. Anaphoric Behavior

The only difference between the sentences below is that the null subjects are provided with a proper antecedent in (22), but not in (23). Note that in (23), the empty subjects must refer back to the matrix subject. It does not take discourse referents. Thus, BP and Finnish 3rdP referential null subjects behave as anaphors.

(22) a. O João$_1$ disse   que e_1 estava   cansado   (BP)
       the João said-3Sg that   was-3Sg tired-Sg
   b. Jukka$_1$ kertoi   että e_1 oli   väsynyt   (Finnish)
      Jukka-Nom said-3Sg that   be-3Sg tired-Sg
      'João/Jukka said that he was tired'

(23) a. * pro$_{expl}$ parece   que *e* estava cansado
           seem-3Sg that   was-3Sg tired
   b. * V*aikuttaa siltä* että *e* oli väsynyt
      seem-3Sg it   that   had-3Sg   tired-Sg
       'It seems that he/she had called'

In pro-drop languages, represented here by European Portuguese and 19th-century BP, null subjects are free in reference. Thus, they can appear in matrix clauses, referring to an entity mentioned in the discourse. When they appear in embedded clauses (24), they are ambiguous in reference, being either coreferential with a DP in a higher clause or related to some person identifiable in the discourse. ((24a) is from Modesto (2000), and (24b) was extracted from *O Judas no Sábado de Aleluia*, Martins Pena (1844).)

(24) a. O Pedro$_1$ disse que *pro*$_{1/2}$ ganhou na loto   (European Portuguese)
     the Pedro said-3Sg that won-3Sg in.the lottery
     'Pedro said that (he) won the lottery'

     b. *e*$_1$ creio que *e*$_2$ teve aviso   (19th-Century BP)
     believe-1Sg that had-3Sg warning
     'I believe that he was informed'

Chomsky and Lasnik (1993) remark that a [+anaphor] empty category, i.e. NP-trace, gets its reference from an antecedent, while a [+pronoun] empty category, pro/PRO, can have reference on its own, although its reference may also be determined by an antecedent. Thus, the null subjects in (24) are [+pronoun] empty categories (pro), whereas the subjects in (22) are identified as [+anaphor] empty categories, therefore as NP-traces, according to Chomsky and Lasnik's classification.

4.2 Locality

Chomsky (1995:311) suggests that the definition of Move incorporates the property in (25), where closeness is defined, as in (26):

(25) *Minimal Link Condition* (MLC)
K attracts α only if there is no β, β closer to K then α, such that K attracts β.

(26) *Closeness*
β is closer to K than α if β c-commands α, and β is not in the same minimal domain as τ or α, where τ is the target of raising. (Chomsky 1995: 335-6)

In BP and Finnish, the antecedence relationship between a 3rdP null subject and a DP obeys the MLC, the antecedent being the closest c-commanding DP. In (27a,b), for instance, the DPs with index 1 cannot be the antecedents because they do not c-command the null

subjects. In (28a,b), the matrix subjects fail to be the antecedents because the subject of the intermediate clause is closer to the null subjects:

(27) a. [o irmão da minha esposa$_1$]$_2$ estava tão feliz que $e_{*1/2}$ não pode dormir
   the brother of.the my wife wasd-3Sg so happy that not could-3Sg sleep-Inf

   b. [Veljeni$_1$ vaimo]$_2$ oli ninn iloinen, ettei $e_{*1/2}$ voinut nukkua
   brother-Gen1st wife-Nom was-3Sg s happy   that-not-3Sg could sleep-Inf
   'My brother's wife was so happy that he couldn't sleep'

(28) a. O João$_1$ me contou que o Pedro$_2$ pensa   que $e_{*1/2}$ ganhou na loto.
   the John me told-3Sg that the Pedro think-3Sg that won-3Sg in.the lottery

   b. Jukka$_1$ sanoi että Pekka$_2$ ajattelee etta $e_{*1/2}$ oli voittanut arpajaisissa
   Jukka-Nom said-3Sg that Pekka-Nom think-3Sg that   had-3Sg won lottery-In
   'João/Jukka said that Pedro/Pekka thinks that he had won the lottery'

Again, in the pro-drop grammars, when a null subject refers to a DP in the sentence, the relation is not subject to the MLC. Witness the acceptability of (29) and (30). ((29) is European Portuguese (Modesto, 2000),[14] and (30) is 19th-century BP, extracted from *O Judas no Sábado de Aleluia*, Martins Pena, 1984.)

(29) a. [O amigo do Pedro$_2$]$_1$ disse   que *pro$_{1/2}$* ganhou na   loto
   the friend of.the Pedro said-3Sg that   won-3Sg in.the lottery
   'The friend of Pedro said that (he) won the lottery'

   b. O Pedro$_1$ disse   que o Paulo   acredita   que *pro$_1$* ganhou na loto
   the Pedro said-3sg that the Paulo believe-3Sg that   won-3Sg in.the lottey
   'Paulo said that Pedro believes that (he) won the lottery'

(30) E do senhor e queixo   me, porque e abusou   da   minha posição
   and of.the sir   complain-1Sg me because abused-3Sg of.the mine position
   'And I complain about you, sir, because you took advantage of my position'

(27) and (28) follow straightforwardly if BP and Finnish 3rdP referential null subjects are formed by movement. The antecedent of these subjects must be the closest c-commanding DP because MLC is a condition on movement. (28) is parallel to super-raising structures like (31). In (28), *o João/Jukka* cannot be the antecedent because movement to the matrix subject position would cross over the subjects of the intermediate clauses. Similarly, in (31), the subject of the intermediate clause intervenes, blocking the movement of *John* to the matrix clause.

(31)   *$John_1$ seems that it is likely t_1 to win

4.3 The resumption test

Relative clauses are strong Islands in Romance. But, as observed in Rizzi (1982), Chomsky (1981) and Jaeggli and Safir (1989), these languages have a resumption strategy that salvages subject extraction from relative clauses via insertion of a resumptive pro, as the Spanish sentence in (32) illustrates.

(32) Ese es el tipo que$_1$ María conoce   a la   mujer [con quien pro$_1$ se casó]]
this is the guy that Maria know-3Sg to the woman with whomSE married-3Sg
'That is the guy that María knows the woman who he married'

By comparing Spanish with BP, we can find additional suggestive evidence that null subjects in modern BP do not behave like null subject pronouns. In (33), the empty subject fails the resumption test. As in English, only overt pronouns can be used in a resumption strategy in BP:

(33) Esse é o rapaz que$_1$ a Maria conhece   a garota$_2$ que$_2$ ele$_1$/*e_1 beijou t_2
this is the guy that the Maria know-3Sg the girl that   he   kissed-3Sg
'This is the guy that Maria knows the girl that he kissed'

Moreover, the contrast below shows that Spanish non-resumptive null pronouns can freely occur inside relative clauses, whereas in BP, they cannot.

(34) a. Juan vió   a la chica que él/*pro* besó   anoche
      Juan saw-3Sg to the girl that he   kissed-3Sg last.night
   b. O João viu   a garota que ele/*e* beijou   na noite passada.
      the João saw-3Sg the girl that he   kissed-3Sg in.the night last
      'Juan/João saw the girl that he kissed last night'

Thus, clearly embedded null subjects in modern BP pattern like wh-traces:

(35) * Quem$_1$ que o João   viu   a garota que t_1 beijou   na noite passada
    who   that the João saw-3Sg the girl that kissed-3Sg in.the night last
    'Who is the x such that João saw the girl that x kissed last night'

The traditional view of restrictive relative clauses involves adjunction: the embedded CP is an adjunct to the maximal projection of the NP, which is taken as the nominal head of the relative clause (Cf. Safir 1986, Browning 1987 and Fabb 1990). However, following Vergnaud (1974), Kayne (1994) argues for a raising analysis of relative clauses, according to which a relative CP is a complement of D^0 and the gap inside the relative clauses is formed by movement as illustrated in (36):

(36)   [$_{DP}$ the [$_{CP}$ [$_{DP}$ picture$_2$ [$_{D'}$ which t_2]$_1$[$_{C'}$ [Bill saw t_1]]]

Due to space limitations, I will not discuss these two analyses, rather I will assume the raising analysis, suggesting that BP 3rdP referential null subjects occur inside relative clauses for locality reasons.[15]

According to the raising analysis, (37a) has the structure sketched in (37b).

(37) a. * O João₁ encontrou   a   carteira que e_1 perdeu
       the João kissed-3Sg the wallet that   lost-3Sg
       'The João found the wallet that he lost'
   b. [$_{CP}$ o João₂ encontrou [$_{DP}$ a [$_{CP}$ [$_{DP}$[carteira₁ [$_{CP}$ que t_2 [perdeu t_1]]]]]]]]

In (37b), the movement of the DP *o João* towards the matrix clause has to cross over the relativized NP. Therefore, given that movement obeys locality, (37) is ungrammatical.

Finnish, differently from BP, allows null subjects inside restrictive relative clauses.

(38) a. Sietä tulee   se tyttö, josta   puhuin
       there come-3Sg   it girl   which-Elative talked-1Sg
       'Here come the girl I was telling you about'
   b. Pekka₁   näki   tytön, jota e_1 oli   suudellut juhlissa
       Pekka-NOM saw-3sg girl-Acc which-Part have-3sg kissed-3Sg party-In
       'Pekka saw the girl that he had kissed at the party'

Interestingly, Finnish is similar to BP in blocking A'-movement out of relative clauses. This is unexpected given the analysis I am proposing for Finnish null subjects.

(39) * Kuka₁ Pekka   näki   tytön, jota t_1 oli   suudellut juhlissa
       who-Nom Pekka-Nom saw3Sg girl-Acc which-Part have-3sg kissed party-In
       'Who did Pekka see the girl that he kissed'

Importantly, however, Finnish allows topicalization to co-occur with wh-movement in both free and relative clauses.

(40) a. Kuka tämän kirjan on   kirjoittanut
       who this book-Acc have-3SgPres written
       '(What about this book) Who has written this book'

b. Iti   antaa   kirjan   [lapselle$_1$, joka   sitä$_2$ t_1 odotaa t_2]
  mother give-3Sg book-Acc   child-All   which-Acc it-Part   wait-3Sg
  'The mother is giving the book to the child who is expecting it'
  (Sulkala and Karjalainen, 1992)

Therefore, it might be that in this language, a restrictive relative clause has the structure in (41), where the NP heading the relative clause moves to spec of CP, and the subject also moves to the left periphery, arguably to a topic position (call it TopP) between TP and CP.

(41) $[_{CP}$ NP$_1$ $[_{TopP}$ NP$_2$ $[_{TP}$ t_2 V t_1]]]

If this is right, (38a) is compatible with the topic deletion operation I have proposed in section 2 for 1stP null subjects. During the derivation of this sentence, the 1stP overt pronoun *minä* moves to spec of TopP, becoming thus the target of deletion.

(42) Sietä tulee $[_{DP}$ se $[_{CP}$ tyttö$_2$ josta $[_{TopP}$ ~~minä$_1$~~ $[$ t_1… puhuin …t_2….]]]]]
   there come-3Sg   it   girl   which-Ela (I)   talked-1Sg

The fact that a null subject is allowed in (38b) would seem to suggest that in Finnish, the antecedence relationship between a null subject and a DP does not obey the MLC. However, this conclusion is unlikely to be correct because as we have seen above this relationship is independently restricted by locality, the antecedent being the closest c-commanding DP. Therefore, it must be the case that in (38b) the nominal head of the relative clause is not actually intervening between the null subject and the DP *Pekka*.

One interesting aspect of restrictive relative clauses in Finnish is that the relative pronoun and the noun that heads the relative clause are morphologically marked with different Cases. In (38b), for example, the relative pronoun is marked with the Case checked by the

embedded verb (partitive) and the nominal head realizes the Case checked by the matrix verb (accusative). In addition, the head of the relative clause might surface separated from the relative CP (Cf. Sulkala and Karjalainen 1992 and Helasvuo 1994).

(43) ja sil   oli   sitten päärynäkorit   puun   alla joihin   se
and he-Ade had-3Sg then   pear.baskets-Nom tree-gen under whichIll he-Nom
tyhjensi   ne päärynät[16]   (Helasvuo, 1994:164)
emptied-3Sg those pear-Acc
'And he had then the pear baskets under the tree into which he emptied the pears'

Thus, it is plausible that in Finnish relative clauses the nominal head moves from the relative CP to a Case position in the matrix VP shell, as sketched in (44).

(44) $[\ldots[_{vP}$ tytön$_1$ Pekka$_2$ $[_{v'}$ näki $[_{DP}$ $[_{CP}$ t_1 jota$_1$ oli   suudelut t_2 t_1 $]]]]]$
girl-Acc Pekka saw-3Sg   which-Part have-3Sg kissed-3Sg
'Pekka saw the girl that he had kissed'

The question is about the empty subject inside the relative clause. Can it be a trace of the DP *Pekka*? (44) differs from (37) in that in (44) the movement of *Pekka* towards the matrix crosses over a trace, whereas in (37) movement *o João* crosses over an NP. Thus, the conclusion seems to be that traces do not block extraction of a lower constituent. This raises an issue about the MLC. If our analysis of (44) is right, traces are not counted in defining closeness. This accords with Chomsky's (2001) idea that only the head of an A-chain (i.e., the whole chain) blocks movement under the MLC. Note that movement of *Pekka* to the matrix clause might happen before the movement *tytön*. Therefore, it is possible that *Pekka*'s movement does violate the MLC derivationally, though not representationally. This leads to the conclusion that this condition is a condition on represen-

tations, as already suggested by Chomsky (2001), among others.

4.4 Obligatory Control Properties

Hornstein (1999, 2001) proposes that obligatory control configurations (OC) are formed by movement. Thus, (45a) has the structure in (45b). The DP *John* is first merged as the external argument of the verb *win*. After that, *John* moves to the spec of the embedded infinitival TP to check the relevant EPP feature. When the matrix VP is built, the same DP moves to spec of the matrix clause, being, thus, interpreted as both the *winner* and the *hoper*. Finally, a TP is projected on the top of the structure and *John* moves to spec of TP, where it checks its Case feature.

(45) a. John hopes to win

b. $[_{TP}$ John$_1$ $[_{T'}$ $[_{VP\ t1}$ [hopes $[_{TP}$ $[t_1$ to $[_{T'}$ $[_{VP}$ t_1 win]]]]]]]]]

It is worth recapitulating Horsntein's arguments for a movement analysis for obligatory control. First, the controlled element is anaphoric, taking the closest c-commanding NP as its antecedent; second, split antecedents are not allowed, third, a *de se* reading is forced, and fourth, if the closest c-commanding NP has the format *only*-NP, then only a covariant interpretation is possible.

Interestingly, Modern BP and Finnish 3rdP referential null subjects display the OC properties listed above. First, as we already saw, BP and Finnish referential 3rdP null subjects require a sentential antecedent, which must be the closest c-commanding DP (Cf. (22)-(23) and (27)-(28)). Second, Figueiredo Silva (1996) reports a prohibition against split antecedents in modern BP (46a), and Gutman (1999) and Vainikka and Levi (1999) report the same prohibition in Finnish (46b). Note that the sentences are acceptable if the embedded subjects are overt pronouns. Hence, overt pronouns allow split antecedents, but null subjects do not:

(46) a. o João$_1$ perguntou a aesposa$_2$ se *e_{1+2}/eles$_{1+2}$ poderiam ir para a Espanha de férias.
the João asked-3Sg the wife if could-3Pl go-Inf to the Spain of vacation

    b. Pekka$_1$ kysyi   vaimoltaan$_2$, voiovatko *e_{1+2}/he$_{1+2}$ mennä Espanjaan lomalle
Pekka-Nom asked-3Sg wife-Abl-3Px can-3Pl-Q-C go-Inf Spain-Ill vacation-All
'João/Pekka asked his wife if they can go to Spain for a vacation'

3rdP null subjects behave as OC PRO also with respect to VP ellipsis. As discussed in Negrão (1999), only a sloppy reading is available for the null subjects in (47a). (47b) shows that the same interpretative restriction holds in Finnish, and (48) illustrates that overt subject pronouns allow a strict reading.

(47) a. O João disse   que *e* ganhou na loto   e o Pedro também
the João said-3Sg that won-3Sg in.the lottery and the Pedro too

    b. Jukka$_1$ sanoi että e$_1$ oli   voittanut arpajaisissa, ja niin Pekkakin
Jukka-Nom said-3sg that had-3sg won lottery-IN and so Pekka-also
'João/Jukka said that he (João/Jukka) had won the lottery and so did Pedro/Pekka' (= Pekka said that he (pedro/Pekka) had won the lottery)

(48) a. O João$_1$ disse   que ele$_1$ ganhou na loto   e o Pedro também
the João said-3Sg that he won-3Sg in.the lottery and the Pedro too

    b. Jukka$_1$ sanoi että hän$_1$ oli   voittanut arpajaisissa, ja niin Pekkakin
Jukka-Nom said-3sg that had-3sg won lottery-IN and so Pekka-also
'João/Jukka said that he (João/Jukka) had won the lottery and so did Pedro/Pekka' (= Pekka said that he (either Pedro/Pekka or João/Jukkka) had won the lottery)

With respect to *de se* interpretation, the embedded null subjects of BP behave exactly like an OC empty category.[17] For instance, in the context given in (49), the BP statement in (50) is false. For (50) to be true, it demands a *de se* belief (cf. Castañeda 1966, Salmon 1986 and Chierchia 1990). That is, *Ronald Reagan* must be aware that it is himself that he believes to be the fortieth president of the United States.

Using Cole's et al. (2001) way to put it, we say that under a *de se reading* the protagonist of the event actually ascribes, or is disposed to ascribe, to himself/herself the property denoted by the predicate containing the empty category or anaphoric element.

(49) Because of his Alzheimer's disease, Ronald Reagan does not remember who he was. One day, reading the newspaper, he reads the headline 'Reagan was the fortieth President of the United States'. After having finished reading the article, Ronald Reagan comes to know that the person called Reagan was the fortieth President of the United States.

(50) O Ronald Reagan$_1$ sabe que e_1 foi o quadragésimo presidente dos EUA
  the Ronald Reagan know-3Sg that was-3Sg the fortieth president of.the USA
  'Ronald Reagan knows that he himself was the fortieth president of the United Stated '

Although subtle, there is a contrast between (50) and (51) below. (51) is ambiguous. The pronoun *ele* 'he' might refer back to *Ronald Reagan*, forcing us to attribute a *de se* knowledge to this entity, and judge the statement as false given the context in (49). However, the pronoun might refer not to Ronald Reagan, but to Reagan, the name in the headline. Following Higginbotham (1992a), let me indicate the concept of Reagan as [½the person whom Ronald Reagan is reading about½]. If *ele* refers to Reagan, a *de se* reading does not emerge.

(51) O Ronald Reagan sabe que ele foi o quadragésimo presidente dos EUA
  the Ronal Reagan know-3Sg that he was-3Sg the fortieth president of.the USA
  'Ronald Reagan knows that he was the fortieth president of the United Stated '

We might use Chierchia's (1990) contradiction test to verify the difference between null and an overt subject pronouns. Take (52) as an example. (52a) yields a contradiction, whereas (52b) does not. In

(52a) the null subject induces a *de se* reading, which is contradicted by the content of the conjoined sentence. The contradiction disappears in (52b) because the overt subject pronoun does not force a *de se* reading.

(52) a. # O Ronald Reagan sabe   que *e* foi   o quadragésimo presidente dos EUA,
   the Ronald Reagan know-3Sg that was-3Sg the fortieth president of.the USA
   mas o Ronald Reagan não sabe   que ele mesmo   foi o quadragéssimo
   but the Ronald Reagan not know-3Sg that he himself   was the fortieth
   presidente dos EUA
   president of.the USA

   b. O Ronald Reagan sabe   que ele foi   o quadragésimo presidente dos EUA,
   the Ronald Reagan know-3Sg that he was-3Sg the fortieth president of.the EUA
   mas o Ronald Reagan não sabe   que ele mesmo foi o quadragésimo
   but the Ronald Reagan not know-3Sg that he himself was-3Sg the fortieth
   president dos EUA
   president of.the States United
   'Ronald Reagan knows that he was the fortieth president of the USA, but Ronald Reagan does not know that he himself was the fortieth president of the USA'

Traditionally, attitude report verbs are taken to express relations between agents and propositions (cf. Salmon, 1986). Hence, in the sentence above, the matrix verb *saber* 'know' expresses a knowing relation between Ronald Reagan and the proposition 'x was the fortieth president of USA'. Thus, if the embedded subject is an overt pronoun, the x in the proposition can be valued either as Ronald Reagan or as Reagan. If it is valued as Ronald Reagan, then Ronald Reagan is in a knowing relation with a proposition about himself; therefore, this entity is in a *de se* knowing relation. Conversely, if x is value as Reagan, Ronald Reagan is not in a *de se* knowing relation for he knows a proposition that is about somebody else, mainly the person whom he read about.

Having said that, the question is about null embedded subjects. Why does their presence force a *de se* reading? The movement analysis proposed here gives us an answer. In the structure of (50), the embedded sentence is [*t foi o quadragésimo presidente dos EUA*] '[*t* was the fortieth president of USA]', where *t* is a trace of *Ronald Reagan*, the subject of the matrix clause. Therefore, (50) asserts that Ronald Reagan is a knowing relation with the proposition 'Ronald Reagan was the fortieth president of the United States'. In other words, Ronald Reagan is in a knowing relation with a proposition about himself.

Consider now another property of OC: the absence of an invariant for *only*-NPs. The pronoun *he* in (53) can take as its antecedent either *John* (54a) or the antecedent is the whole DP *only John* (54b). These two co-indexations lead to two different readings: (54a) is assigned the covariant interpretation in (55a) and (54b) gets the covariant interpretation in (55b) (cf. Higginbotham, 1992b).

(53) Only John expects [that he will win]

(54) a. [Only [John]$_1$]$_2$ expects [that he$_2$ will win]
     b. [Only [John$_1$]]$_2$ expects [that he1 will win]

(55) a. Only John is an x such that x expects x will win (Covariant interpretation)
     b. Only John is an x such that x expects he, John, will win (Invariant Interpretation)

As pointed out in Negrão (1999), the BP sentences in (56) also receive different interpretations. (56a) is assigned the covariant interpretation in (57a), and (56b) is assigned the invariant interpretation in (57b):

(56) a. Só   o Maluf acha   que *e* vai   ganhar as eleições
        only the Maluf think-3Sg that   will-3Sg win-Inf the elections
     b. Só   o   Maluf acha   que ele vai   ganhar as eleições

only the Maluf think-3Sg that he will-3Sg win-Inf the elections
'Only Maluf thinks that he win the elections'

(57) a. Only Maluf is an x such that x thinks that x will win the elections
   b. Only Maluf is an x such that x thinks that he, Maluf, will win the elections

Thus, BP 3rdP null subjects cannot be co-indexed with the NP contained in the *only*-NP phrase. It must be co-indexed with the whole *only*-NP phrase, as represented in (58a). Conversely, an overt pronoun must be co-indexed with the NP contained in the *only*-NP phrase, as in (58b). These restrained co-indexations are responsible for the readings in (58): (58a) yields (57a), whereas (58b) yields (57b).

(58) a. [só [o Maluf]$_1$]$_2$ acha que $e_{*1/2}$ vai ganhar as eleições   (90a)
      only the Maluf think-3Sg that   will-3Sg win-Inf the elections
   b. [só [o Maluf]$_1$]$_2$ acha que ele$_{1/*2}$ vai ganhar as eleições (90b)
      only the Maluf think-3Sg that he   will-3Sg win-Inf the elections

As pointed out in note 11, BP grammars generally obey Montalbetti's constraint, prohibiting co-indexation between an overt pronoun and a quantifier-like expression. Therefore, if the phrase *only*-NP is a quantified NP, the impossible co-indexation in (58b) might fall within the realm of Montalbetti's constraint. This interaction can be tested. As I mentioned earlier (note 11), in some dialects of BP the quantifier expression *todo*-NP 'every-NP' allows co-indexation with an overt pronoun. Therefore, if *todo*-NP can violate Montalbetti's constraint, it can be co-indexed with an overt pronoun, triggering, thus, a covariant interpretation. This is shown by the ambiguity of (59), which, similarly to the English sentence in (53), can receive either the covariant (60a) or invariant reading (60b).

(59) [toda fã da [Carla Peres]$_1$]$_2$ acha que ela$_{1/2}$ deve agir como esposa do Xande
every fan of.the Carla Peres think-3Sg that she have-3Sg act-Inf as wife of Xande
'Every fan of Carla Peres thinks that she has to behave as Xande's wife'

(60) a. "x (x = a fan of Carla Peres) x thinks that x has to behave like Xande's wife
   b. "x (x = a fan of Carla Peres) x thinks that Carla Peres has to behave as Xande's wife

In sum, the co-indexing relations between an overt subject pronoun and the terms of an *only*-NP, BP is different from English only in that the former, but not the latter, is subject to Montalbetti's constraint.

We should now ask ourselves about the impossibility of an invariant interpretation for (56a). According to the analysis suggested here, the gap in the embedded subject position of (56a) is a trace of the matrix subject. Thus, the antecedent cannot be *o Maluf* because this DP does not c-command anything outside the containing phrase *só o Maluf*. Thus, the conclusion is that the antecedent (the movement element) in (56a) must be the whole quantifier phrase *só o Maluf*. This explains why (56a) accepts only a covariant reading.

Finnish is not subject to Montalbetti's constraint, as shown in (61).

(61) a. Kukaan$_1$ ei   luule, että hän$_1$ on   fiksu
      anybody-Nom not-3S believe that   he   is-3Sg smart
      'Nobody thinks that he is smart'

Hence, (62a) receives either an invariant or a covariant reading; *hän/se* 'he' being co-indexed either with *Jukka* or with *vain Jukka*. In (62b), as predicted by a movement analysis, only a covariant interpretation is possible: the gap in the embedded subject position must take the whole quantifier phrase *vain Jukka* as its antecedent.

(62) a. [vain [Jukka$_1$]]$_2$ ajatteli että hän(se)$_{1/2}$ oli voittanut arpajaisissa
only Jukka-Nom though-3sg that he was-3sg won lottery-In
($\sqrt{}$Covariant/$\sqrt{}$Invariant)

b. [vain [Jukka$_1$]]$_2$ ajatteli että e$_{*1/2}$ oli voittanut arpajaisissa
only Jukka-Nom though-3sg that be-PAST-3sg won lottery-In
($\sqrt{}$Covariant/ *Invariant)

' Only Jukka thinks that he had won the lottery'

Treating BP and Finnish 3rdP referential null subjects as formed by movement has the advantage of explaining the OC properties discussed above. It also explains why these null subjects are disallowed with relative clauses and why their antecedents must be the closest c-commanding DP in accordance with the MLC.[18]

The next section offers a way of implementing the analysis proposed here, correlating subject-to-subject movement with loss of verbal agreement morphology.

5. Technical Implementation
5.1. Verbal Agreement Morphology and Null Subject Pronouns

Since Taraldsen (1980) there has been the intuitive idea that the licensing of referential null subjects is somehow related to verbal agreement morphology. Recently it has been proposed that in null subject languages with rich agreement morphology, spec of TP/AgrP might not be realized by *pro* or any other material because the verbal agreement morphology carries a D feature, being, thus, able to satisfy the EPP features of these non-substantive categories. For developments of this idea, see Barbosa (1995), Alexiadou and Anagnostopoulou (1998), and Kato (1999, 2000), among others.

Alexiadou and Anagnostopoulou distinguish two types of verbal agreement systems: a weak and a strong one. In weak system, verbal agreement affixes (Agr, henceforth) are not independent

units of the computational component, entering derivations already attached to their hosts. A weak Agr, therefore, is arguably not manipulable by syntactic operations. In a strong Agr system, instances of Agr are listed in the lexicon as separate lexical items, and enter the computational component as independent syntactic units that can be used by syntactic operations. In particular, it is suggested that a strong Agr enters a derivation furnished with a D-feature, f-features and perhaps with Case feature. Hence, syntactically it is expected to function as a pronoun. The authors were concerned mainly with null expletive constructions, and their suggestion is that in grammars with a strong agreement system, a null expletive pronoun is Agr itself. The assumption is that a strong Agr might be merged directly on the head of the Agreement phrase (AGRP), satisfying, thus, the EPP feature of AGR. Hence, when the verb adjoins to AGR, AGR projects, but since its EPP feature had already being satisfied, it does not project a specifier. Though they did not explore it, Alexiadou and Anagnostopoulou raise the possibility of replacing referential *pro* by Agr, presupposing that Agr counts as a theta bearing argument in null subject grammars. Kato (1999, 2000) puts this possibility forward, suggesting that in Romance pro-drop languages, a sentence like (63a) is derived as in (63b), Agr enters the derivation as the external argument of VP and, being a maximal minimal projection, it adjoins to T^0, where it checks the EPP features of T and its own Case feature. As a result, spec of TP is not projected.

(63) a. viajó
   traveled-3sg
   'S/he traveled'
   b. $[_{TP} [_{T'} [_T \text{viaj}_2\text{-}[_{Agr} o]_1 + T][_{VP} t_1 \, t_2]]]$

As Kato observes, this analysis presupposes that DPs and overt pronouns in subject positions are instances of doubled subjects in

the sense that they double Agr, being generated at the left periphery of the clause, possibly receiving a default Case.

Assuming this analysis to be on the right track and considering the correlation between loss of referential null subjects and weak verbal agreement morphology in BP, I hypothesize that in these grammars Agr became f-defective, being unable to instantiate person & number distinctions (for discussion, see Galves 1996 and Kato 1999) and, as a consequence, was reanalyzed as part of the verb, losing its syntactic independence. However, I presuppose that BP and Finnish Agrs still have a D-feature. Hence, in these grammars, when V adjoins to T^0, carrying Agr, Agr satisfies the EPP feature of T, but, being f-defective, is unable to delete the f-features of T.[19]

The assumption that Agr is able to satisfy the EPP feature of T is motivated by the fact that null expletives are still allowed in present-day BP and in Finnish. Thus, if there is no *pro,* in (64), the EPP feature of T is satisfied by Agr.

(64) a. Parece   que vai chover   (BP)
        seem-3Sg that will rain
     b. Näyttää   tuvevan   sade   (Finnish)
        look-3Sg come-lpart-acc rain-ACC
        'It seems that it will rain'

If this is right, it follows that in a finite clause with a referential null subject, a f-complete item must be inserted in the complement domain of T, such that the q-role of the verb and the f-features of T can be checked. But, the [spec, TP] need not to be projected, since Agr is able to satisfy the EPP feature. Thus, if this is right, in the derivation of sentences like (65), the DP *o João/Jukka* needs to be first merged within the embedded clause, and then moved to the matrix clause. Moreover, this movement may not involve [spec, TP].

(65) a. O João₁ disse   que e_1 vendeu   um carro   (BP)
     the João said-3Sg that sold-3Sg a car

    b. Jukka₁   kertoi,   että e_1 oli   myynyt auton (Finnish)
     Jukka-Nom said-3Sg that   had-3Sg sold   car-Acc
     'João/Jukka said that he bought a car'

5.2 Deriving Embedded Null Subjects by Movement

If the 3ʳᵈP null subjects in (65) are the result of movement, then two questions arise: (i) How can a DP receive more than one q-role? (ii) How can a DP check more than one structural Case? The first question can be answered by assuming with Boskovic (1994), Boskovic and Takahashi (1998), Lasnik (1995), Hornstein (1999, 2001) and Rodrigues (2004b), among others, that movement into theta-positions is allowed. The second reason is more complex since it is standardly assumed that a DP checks structural Case only once.

I provide an answer to this question without overgenerating. I assume that Case-checking accords to (66):

(66) a. A structural Case feature is checked in a spec-head relation
    b. Agreement in f-features prompts movement to check Case

(66a) revamps Chomsky's (1993) proposal, according to which a DP can check its Nominative Case against a functional Category only if it had moved to the spec of that functional category, checking thus the EPP feature related to the functional head. For example, a DP checks Nominative Case against T only after having moved to spec of TP, checking the EPP feature of T. In his recent proposals (2000 and thereafter) however, Chomsky dissociates Case checking from EPP checking, and correlates Case with agreement in f-features. This correlation is expressed through the following technical mechanism: if a functional head H (a probe) has uninterpretable f-features, H probes its domain looking for a goal, an element with an identical

(identical in the choice of the features, not in their values) set of f-features. As soon as the goal is found, the operation Agree takes place, deleting the f-features of H and the Case feature of the goal. If H also has an EPP feature, the goal is pied-piped and merged with HP.

I maintain the correlation between agreement in f-features and Case checking, but I retain the 'old' idea that structural Case is check-able only in a spec-head configuration. To do so, I assume (66b): a goal can move to the specifier of a probe and check its Case feature only if they both agree in f-features. Intuitively, the idea is that Case is a feature that allows an element to move to a functional projection. What f-feature agreement does is to identify the element before al-lowing the actual movement to take place.

To give a concrete example of how this works, consider the sen-tence in (67a). The relevant step in the derivation of (67a) is repre-sented in (67b). *John* was merged with VP, checking the theta role of V. When T was inserted, T established agreement with *John*, and the f-features of T were deleted. But the Case feature of *John* was not deleted because it requires *John* to enter TP. The movement *per se* has already been authorized since T and *John* agreed in f-features. Note that the raising of *John* is also demanded by the EPP feature of T. When *John* moves to spec of TP, its Case feature and the EPP feature of T are checked, forming a convergent phrase marker (67c):

(67) a. John left
    b. $[_{TP} [T_{\phi F, EPP}][_{VP} John_{\theta, Case, \phi-F} [_{V'} left_{\theta}]]]$
    c. $[_{TP} John_{\theta, Case, \phi-F} [_{T'}[T_{\phi F, EPP}][_{VP} t [_{V'} left]]]]$

If this is on the right track, $3^{rd}P$ null subjects in BP and Finnish are derived as exemplified below. The derivation of (65a) (= (68)), starts with the numeration in (69).

(68) João$_1$ disse que e_1 comprou um carro   (BP)
     João said-3^{Sg} that bought-3Sg a car
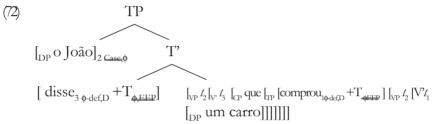   'John said the he bought a car'

(69) Num = {T$_2$, o$_1$, João$_1$, disse$_1$, que$_1$ comprou$_1$, um$_1$, carro$_1$ }

The verb *comprou* 'bought' merges with its internal argument, the DP *um carro* 'a car', which checks the θ-role of the verb. Next, the DP *o João* 'the John' is built and merged with VP. At this step of the derivation, the embedded VP (70a) is formed. After that, T is selected and the verb adjoins to T^0, carrying Agr that has a defective set of φ-features and a D-feature. Thus, Agr checks the EPP feature of T, but not the φ-features, which probe the complement domain of T, looking for a goal. The DP *o João* in spec of VP is localized and the agree operation takes place, deleting the φ-features of T (70b):

(70) a. [$_{VP}$ [$_{DP}$ o João]$_{Case,\phi}$ [$_{V'}$ comprou$_{\phi\text{-def, D}}$ [$_{DP}$ um carro]]]
     b. [$_{TP}$ [$_T$ comprou$_{1\phi\text{def,D}}$ +T$_{\phi EPP}$] [$_{VP}$ [$_{DP}$ o João]$_{Case,\phi}$ [$_{V'}$ t_1 [$_{DP}$ um carro]]]]

At this point of the derivation, the system can either move *o João* to spec of TP or continue the derivation by merging the next item in the numeration, namely the complementizer *que*. Taking greed as enlightened self-interest, the movement of *o João* to Spec TP is legitimate; though T does not have any feature requiring the movement, the Case feature of DP demands the movement. But, if the DP is moved, it becomes inactive to further computations, and the derivation will crash at the matrix level because there will be no item available to saturate the external argument position of the matrix predicate and check the f-features of T. On the other hand, if the system selects and merges the complementizer *que*, delaying the deletion of the Case feature of *o João,* the derivation converges. At the stage represented in (71), the numeration contains only a T. Thus, the system must apply Move, moving *o João* to the matrix spec of VP.

(71) $[_{VP} [_{DP}$ o João$]_{2\ Case,\ \phi} [_{V'}$ disse$_{\phi,def,\ D} [_{CP}$ que $[_{TP} [$comprou$_{1\phi def,D} +$T$_{\phi EEP}]$ $[_{VP}$ t_2 $[_{V'} t_1 [_{DP}$ um carro$]]]]]]]$

When the matrix T is inserted, the matrix verb adjoins to T, Agr checks the EPP feature of T, but fails to delete the ϕ-features of T. These agree with the copy of *o João* in the matrix Spec VP and the DP is moved to [spec, TP], where its Case feature is checked.
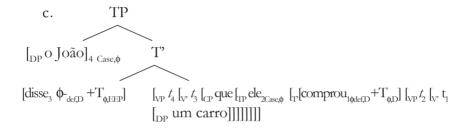
(72)

$$TP$$

$[_{DP}$ o João$]_{2\ \text{Case},\phi}$ T'

$[$ disse$_{3\ \phi\text{-def},D} +T_{\phi,EEP}]$ $[_{VP} t_2 [_{V'} t_3\ [_{CP}$ que $[_{TP} [$comprou$_{1\phi\text{-def}D} +$T$_{\phi EEP}] [_{VP} t_2 [V' t_1$ $[_{DP}$ um carro$]]]]]]]$

Consider now a case in which an overt pronoun is inserted as the subject of the embedded clause, as in (73):

(73) O João$_1$ disse   que ele$_{1/2}$ comprou um carro
     the John said-3Sg that he bought-3Sg a car
     'John said that he bought a car'

The first relevant step of the derivation of (73) is the one in (74a). The embedded clause has been constructed and the pronoun *ele* was selected from the numeration and inserted as the external argument of the embedded verb. When T enters into the derivation, the verb adjoins to T and Agr checks the EPP features of T, but not the ϕ-features. Hence, T is free to establish agreement with *ele*. As a consequence, the pronoun can move to [spec, TP] and check its Case. If the system did not apply movement 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. Therefore, the only way to ensure convergence is by moving the pronoun *ele* to the embedded spec of TP, forming the CP represented in (74b). At

the matrix level, *o João* is inserted in spec of VP, and then moving to spec of TP to check its own Case feature (74c).

(74) a. [$_{TP}$ [comprou$_{1\phi def, D}$ +T$_{\phi EPP}$] [$_{VP}$ ele$_{Case,\phi}$ [$_{V'}$ t_1 [$_{DP}$ um carro]]]]

b. [$_{CP}$ que [$_{TP}$ ele$_{2\ Case,\phi}$ [$_{T'}$ [comprou$_{1\phi def, D}$ +T$_{\phi,D}$] [$_{VP}$ t$_2$ [$_{V'}$ t$_1$ [$_{DP}$ um carro]]]]]]]

c.
$$
\begin{array}{c}
\text{TP} \\
\swarrow \qquad \searrow \\
[\text{$_{DP}$ o João}]_{4\ Case,\phi} \qquad \text{T"}
\end{array}
$$

[disse$_3$ ϕ-$_{def,D}$ +T$_{\phi,EEP}$]   [$_{VP}$ t_4 [$_{V'}$ t_3 [$_{CP}$ que [$_{TP}$ ele$_{2Case,\phi}$ [$_{T'}$[comprou$_{1\phi def,D}$+T$_{\phi,D}$] [$_{VP}$ t_2 [$_{V'}$ t$_1$ [$_{DP}$ um carro]]]]]]]]]]

In brief, the analysis proposed here accounts for the presence of null subjects in BP and Finnish by taking them to be formed via category movement. The loss of referential null subjects in these grammars is due to the fact that Agr lost its status as an independent D item, being demoted to a verbal affix, conserving its D-feature, but having undergone degradation of f-features. Movement of the external argument of an embedded VP to the subject position of an immediately higher clause is possible because, in the current stage of BP and Finnish, V moves to T, carrying Agr, which checks the EPP-feature of T.[20, 21]

6. Conclusions

In this paper, I have explained the loss of referential null subjects in Brazilian Portuguese by correlating it with the loss of verbal agreement morphology. The subject gaps allowed in finite clauses are residues of movement rather than null pronouns. Matrix null subjects are formed via movement to a topic position plus topic deletion. Embedded 3rdSg null subjects are formed via subject-to-subject movement, which is possible because the verbal

agreement morpheme retained the D-feature, though underwent f- feature degradation.

The idea of movement defended here raises some theoretical challenges: If q-roles are the result of configurations, and movement into q-positions is not allowed (Hale and Keyser 1993, Chomsky 2000), it is difficult to see how one could analyze the phenomenon depicted here. Moreover, if the Chain Condition is part of UG (Chomsky and Lasnik 1993),[22] that would present problems for the subject-to-subject movement used here. To that extent, the analysis given here is evidence against both the Chain Condition and the configurational view of q-roles.

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Notes

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1 The term partial pro-drop has been ambiguously use to characterize two types of grammars: (a) grammars like German where expletive subjects can be omitted, even though referential null subjects cannot; and (b) grammars that drop referential subjects, but only in a restricted set of configurations. In this paper, I shall employ the term partial pro-drop unambiguously in reference to grammars of type (b), which are also called *semi null subject* languages.

2 The term 'trace' should be understood as a short-hand form for 'silent copies formed by copy-and-deletion.'

3 In Finnish, there is no verbal suffix for the future tense.

4 Synchronically and diachronically Finnish follows a general /ti/ ® /si/ rule of assibilation.

5 Jaeggli and Safir (1989:30) state morphological uniformity in the following way:

(i) *Morphological Uniformity*
An inflectional paradigm P in a language L is morphologically uniform iff P has either only underived inflectional forms or only derived inflectional forms.

6 I will distinguish Colloquial from Standard Finnish whenever necessary, otherwise I will refer to both dialects as Finnish.

7 For a discussion on null expletive in BP, see Viotti (1999).

8 Finnish is a SVO language that avoids verb initial declarative sentences (cf. Vilkuna 1989 and Vainikka 1989). Thus, existential and generic constructions are acceptable as long as a locative adverb or an indefinite DP is fronted.

9 Guimarães and Rodrigues (2002) suggest that the locative adverb functions as the sentential subject of these generic sentences. This would explain the obligatory presence of this adverb and also the fact that it has to precede the verb.

10 *Sitä* is the partitive form of *se*.

11 In BP there are particular cases in which this preference either does not arise or is blocked: (a) null object pronouns are allowed in a broad range of configurations (cf.

Cyrino, 1996); (b) in accordance to Montalbetti's (1984) Overt Pronoun Constraint, configurations involving co-indexing with an A-bar antecedent block overt pronouns. In (ia), for instance, the overt pronoun *ele* 'he' must be free in reference. For a discussion of Montalbetti's constraint in BP, see Negrão (1999): It is worth mentioning, however, that a quantifier expression with the format *todo*-NP 'every NP' can bind an overt pronoun (ic).

(i) a. Quem₁/ninguém₁ acha   que ele*₁/₂ é   um gênio
         who/nobody   think-3Sg that he   is-3Sg a genius
         'Who/nobody thinks that he is a genius'

    b. Toda criança₁ acha   que ela₁/₂ é   um gênio
        every child   think-3Sg that she is-3Sg a genius
         'Every child thinks that she is a genius'

Co-indexing with an overt pronoun is also blocked in coordinated structures as (ii), though these structures arguably involve an A-antecedent (the matrix subject). See Rodrigues (2004a), where it is proposed that these are cases of coordination of VPs.

(ii) O   João₁ cantou   e ele*₁/₂ dançou
     the João sang-3Sg and he   danced-3Sg
     'João sang and he danced'

12 A topic deletion analysis can also explain the possibility of having BP referential 3rdPSg null subjects in question-answer contexts like (i) (cf. Modesto, 2000).

(i) A: O João telefonou?   B: *e* telefonou
        the João called-3Sg   called-3Sg
        'Did João call'   'He called'

13 Holmberg and Nikanne propose that in (21) wh-movement and topic-movement do not interact because they are driven by different features.

14 European Portuguese has strong preference for the readings in which the null subject is cointerpreted with the DP with index 1 (João Costa, personal communication). See Calabrese (1986) for Italian. Thus, the real difference between null subject grammars and BP and Finnish is that in the former the co-indexation shown in (29) is possible though not preferred, while in the latter it is impossible.

15 For arguments in favor of a raising analysis see Kayne (1994) and Bianchi (1999).

16 This is spoken Finnish. To avoid an overflow of irrelevant information, I cut off hesitations and repetitions.

17 It is still unclear to me whether 3rdP null subjects in Finnish forces a *de se* interpretation or not. Thus, with respect to this topic, I will discuss only BP.

18 I am omitting here other arguments offered in Rodrigues (2004a) in favor of a movement analysis of BP 3rdP referential null subjects. These are arguments are: BP 3rdP null subjects are not allowed within embedded clause headed by the connective *como* (cf. (i), which Torrego and Uriagereka (1995) analyze as an instance of paratactic dependency, that is structures in which the embedded clause remains structurally disconnected to the main spine of the tree throughout the derivation. (ii) In BP a past participle or a floating quantifier within the c-command domain of the embedded null subject must agree in gender with the antecedent of the null subject (cf. (ii). This gender agreement is not observed in full pro-drop languages.

(i)   O João$_1$ vai   ver como ele/*e$_1$ tem   razão
    the João will-3Sg see-Inf how he   has-3Sg right
    'João will see how he is right.'

(ii) a.   A vítima$_1$ disse   que e$_1$ foi   atacada/*atacado
      the victim-Fem said-3Sg that   was-3Sg attacked-Fem/attacked-Masc
      'The victim said that she was attacked'

    b.   As vítimas$_1$ falaram que e$_1$ todas$_1$/??todos$_1$ vão depor
      the victims-Fem said-3Pl that   all-Fem/all-Masc will-3P testify-Inf
      'The victims said that they will all testify at the same day'

19 On the f-features of T, see Chomsky (2000).

20 For alternative analyses, see Kato (1999), Modesto (2000) and Ferreira (2000) on BP, and Vainikka and Levy (1999) on Finnish. See also Rodrigues (2004) for a critical review of these analyses.

21 3rdP null subjects are also observed inside finite adjunct clauses. Rodrigues (2004a) accommodates this under a movement analysis by assuming sidewards movement (Nunes, 1995, 2004). Rodrigues also suggests that cases like (i) are an instance of null subjects inside adjuncts clauses. In (i), the in-situ objects fail to be the antecedents, but the fronted object is a perfect antecedent.

(i) a.   *O João convenceu   a Maria$_2$ que e$_2$ tinha de sair
      the João convinced-3Sg the Maria that   had-3Sg of leave-Inf
      'João convinced Maria that she had to leave'

b. A Maria$_2$, o João convenceu t_2 que e_2 tinha   de sair
    the Maria, the João convinced-3Sg that   had-3Sg of leave-Inf
    'As for Maria, João convinced her that she had to leave'

Modesto takes this to be evidence that *pro* in BP is a bound variable at LF, taking the closest A-bar phrase as its antecedent. Therefore in (ia), though the object is the closest potential antecedent, it cannot be the antecedent because it is not in an A-bar position. However, as Rodrigues (2004a) points out the embedded clause of (i) might be an adjunct, which is not c-commanded by the matrix object position. First, wh-extraction from inside this complement is not possible (iia); second, as shown by Ferreira (2000), the subject of the complement clause can be an epithet referring back to the matrix object (iib). If epithets are subject to Principle C, in (iib) the matrix object does not c-command the embedded subject:

(ii) a. ?? Quem o João convenceu   a Maria   que t vem hoje?
       who the João convinced-3Sg the Maria that come-3Sg today
       ' Who did João convince Maria that he is coming today?'

   b. O Ira convenceu   o Diogo$_2$ que o bobão$_2$ não deveria comprar o carro
       the Ira convinced-3Sg the Diogo that the silly not should-3Sg buy-inf the car
       'Ira convinced Diogo that the silly shouldn't buy the car'

The contrast in (i) is similar to parasitic gap (PG) constructions. in PG constructions a resumptive pronoun cannot be inserted as the PG licenser (iia) (Chomsky 1982). The same is true for the constructions in (i). As pointed out by Modesto, if a resumptive pronoun is inserted in matrix object position (iib), the DP *a Maria* cannot be the antecedent anymore (iiib):

(iii) a. El reloj de que me hablaste, que (*lo) han conseguido arregar t sin mover PG, ha quedado muy bein
       'The clock you spoke to me about, which they got to fix (it) without moving, now works very well'

   b. *A Maria$_2$, o João convenceu   ela$_2$ que e_2 tinha de sair
       the Maria the João convinced-3Sg her that had-3Sg of leave-Inf
       'As for Maria, João convinced her that she had to leave'

Besides, as in PGs (iva), the gap in (i) cannot occur within an island inside an adjunct clause (ivb):

(iv) a. * Which book did you read t [before John asked Bill [whether you review PG]]
   b. *Quem$_2$, o João convenceu t_2 [que a Maria perguntou o Paulo [se e_2 podia sair]]

who   the João convinced-3Sg that the Maria asked-3Sg the Paul if could-3Sg leave-Inf
' Who did João convince him that Maria asked Paulo if he could leave'

   If the constructions in (i) are cases of parasitic gaps, it is possible to analyze them as formed via movement, as proposed by Nunes (1995, 2004).

22 The Chain Condition states that an A-chain has its foot in a q-position and its head on a Case position. Hence, it is evident that the movement analysis I suggested here is incompatible with such a condition. The null subjects under question are taken to be formed by movement from and into q-positions.