CHAPTER 2

Null subjects and finite control in Brazilian Portuguese

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The paper discusses the restricted distribution and interpretation of “referential” null subjects in Brazilian Portuguese (BP). It shows that referential null subjects in BP behave like obligatorily controlled PRO and argues, following Hornstein (1999, 2001), that they should be analyzed as traces (deleted copies) of A-movement. The proposal is that with the weakening of the verbal inflection in BP, finite Ts became ambiguous in bearing a complete or an incomplete set of φ-features. When the incomplete version is selected in an embedded clause, T is not able to value the Case of the DP in its Spec, which then remains active and may undergo further A-movement. If the movement lands in a θ-position, we obtain a finite control construction; if the landing site is not a θ-position, we obtain a hyper-raising construction, instead.

1. Introduction*

This paper discusses structures containing null arguments in the subject position of finite clauses in Brazilian Portuguese (BP). As I show below, BP has undergone significant diachronic changes that strongly restricted the possibility of null subjects in finite clauses, thereby becoming different from both classical pro-drop languages, like Italian and Spanish, and categorically non pro-drop ones, like English and French. My goal is to account for several peculiarities concerning the distribution and interpretation of null subjects in BP. My analysis is couched within the parsimonious guidelines of the Minimalist Program (Chomsky 1995, 2000).

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As a first approximation, we can say that BP allows expletive and indefinite null subjects, but not referential null subjects, as shown in (1).

1. 

(1) a. Está chovendo.
   is raining
   ‘It is raining.’

b. Mataram o presidente.
  killed-3m. the president
  ‘Someone killed the president.’

c. *Comprou um carro novo.
   bought a new car
   ‘S/he bought a new car.’

However, (1c) becomes acceptable if it is embedded in a clause containing an antecedent for its subject:

(2) João, disse [que ec, comprou um carro novo]
  John, said that bought a new car
  ‘John said that he bought a new car.’

I argue that instances of referential null subjects found in BP are neither empty pronouns nor empty variables bound by null operators, but rather traces, resulting from raising from the specifier position of a finite T to a higher clause (hyperraising, in Ura’s 1994 terminology). I will try to make this idea explicit and show that, once we adopt it, we can derive the peculiarities of BP null subjects.

The paper is organized as follows: in Section 2, I present the constraints related to the licensing of null subjects in BP. In Section 3, I present my analysis, pointing to the specific aspect of BP grammar that I consider the source of the behavior of null subjects. In Section 4, I show in detail how the properties listed in Section 2 can be derived. Section 5 is a brief conclusion.

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1. This paper will deal only with cases of referential null subjects. I will have nothing to say about structures like (1a) and (1b), which contain instances of expletive and indefinite null subjects. See Rodrigues (2004) for relevant discussion.

2. Rodrigues (2004) has also independently developed a minimalist analysis based on the idea that BP null subjects are residues of A-movement and discusses many of the facts I will discuss here. Although our works share several common features, technical details differ considerably. See footnote 18 below for more on this point.

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2. The data

The following subsections are devoted to describing the constraints on the distribution of null subjects in BP. I start by discussing some relevant facts about BP verbal morphology.

2.1 The Impoverishment of subject-verb agreement

The verbal paradigm of modern BP has undergone a considerable simplification in relation to the verbal paradigm of earlier stages of the language, as shown in (3):

(3) a. falo falas fala falamos falais falam (Old BP)
    b. falo fala fala fala falam falam (BP)

(3a) shows that a paradigm displaying six different forms changed into a new one containing only three. Interestingly, BP grammar has also drastically reduced the positions where a null subject can be used. Putting aside expletives and indefinite subjects (see Footnote 1), the instances of null subjects currently found in BP sentences are restricted to embedded clauses, as in (4b-c). Null subjects in matrix clauses seem to have disappeared along with the richness of verbal agreement, as attested by the ungrammaticality of (4a).

(4) a. *Comprou um carro.
   bought a car
   ‘He bought a car’.

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4. This is true for most dialects.

5. I am disregarding here the fact that “null topic constructions” in the sense of Huang (1984) are possible in BP, as in the following dialog:

   (i) A: E o João?
      and the John
      ‘What about John?’

   B: Saiu com a Maria.
      left with the Mary
      ‘He went out with Mary’.

As for deictic and anaphoric null subjects, they are not possible, even in contexts where languages like Italian or Spanish would allow them. See Rodrigues (2004) for relevant discussion.
b. Ele disse [que ele comprou um carro]
   he said that bought a car
   'He said he bought a car'.

c. Você disse [que ele comprou um carro]
   you said that bought a car
   'You said you bought a car'.

2.2 The position of the antecedent

To be inside an embedded clause is a necessary condition to legitimate a null subject in BP. However, as shown in (5), it is not a sufficient condition.

(5) a. *João disse [que a Maria acha [que ec é esperto]]
   John said that the Mary thinks that is smart-masc
   'John said that Mary thinks he is smart'.

b. *A mãe do João acha [que ec é esperto]
   the mother of John thinks that is smart-masc
   'John's mother thinks he is smart'.

c. *João disse [que a Maria acha [que ec são espertos]]
   John said that the Mary thinks that are smart-pl.
   'John said that Mary thinks that they are smart'.

The following example contrasts with (5a-c):^6

(6) João acha [que ec é esperto]
   John thinks that is smart-masc
   'John thinks that he is smart'.

The contrast between (6) and (5a) shows that the null subject must have an antecedent in an immediately higher clause. (5b) shows that the null subject must be c-commanded by this antecedent and (5c) shows the impossibility of a split antecedent. Based on these examples, we may state the following generalization:

(7) Referential null subjects in BP must be c-commanded by an antecedent located in the immediately higher clause.

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2.3 The avoid pronoun principle

In null subject languages, such as Italian and Spanish, the alternation null subject/overt subject is not completely free. There are contexts in which one of the forms is preferred or even required. To capture this asymmetry, several principles have been proposed to regulate this alternation. Perhaps the most familiar one is the Avoid Pronoun Principle (Chomsky 1981), which establishes the following:

(8) Avoid Pronoun
   Whenever an alternation null pronoun/overt pronoun is possible, the null pronoun is preferred (or required).

Thus, in languages like Spanish or Italian, the overt pronoun will be used in a sentence corresponding to (9) only if it receives stress, indicating emphasis or contrast, a function obviously incompatible with the null pronoun.

(9) João disse que ele comprou um carro novo.
   John said that he bought a new car.

However, BP allows (9) in neutral situations, giving us the impression that principle (8) does not apply (Duarte 1995). To the extent that this description is correct, we should look for an explanation for this state of affairs.

2.4 Montalbetti's effects

Another principle that regulates the alternations between null pronoun/lexical pronoun is the Overt Pronoun Constraint, proposed by Montalbetti (1984):^7

(10) Overt Pronoun Constraint
   An overt pronoun cannot be locally bound by a variable, if a null pronoun is possible in the same position.

The relevant data exemplifying how this principle applies are illustrated by the Spanish sentences below:

(11) a. *[Todo chico] dijo que Maria piensa que él es inteligente.
   every boy said that Mary thinks that he is intelligent.

7. (10) is in fact an adaptation of the Montalbetti's original proposal (which was stated within InLinking Theory) in terms of Binding Theory. See Lasnik & Uraijeroka (1988) for a succinct but very clear discussion about Montalbetti’s proposal and the possibility of adapting it in terms of Binding Theory.
b. [Todo chico], toda dijo que Maria piensa que proi es inteligente.
   every boy said that Mary thinks that he is intelligent
   'Every boy said that Mary thinks that he is intelligent'.

(12) a. [Todo chico], toda dijo que proi piensa que él es inteligente.
   every boy said that thinks that he is intelligent
   'Every boy said that Mary thinks that he is intelligent'.

b. [Todo chico], toda dijo que proi piensa que proi es inteligente.
   every boy said that thinks that he is intelligent
   'Every boy said that Mary thinks that he is intelligent'.

The closest binder for the pronoun él in (11a) is ti, a variable left by movement of the quantificational phrase todo chico at LF. According to (10), (11a) is ill-formed because the overt pronoun could be replaced by a null pronoun, as shown in (11b). (12a) admits an overt pronoun because it is not locally bound by a variable, but by the null pronoun of the intermediate clause. Therefore, the principle is inapplicable and both (12a) and (12b) are grammatical.

Consider now similar cases in BP:

(13) a. [Nenhum menino], toda disse que a Maria acha que ele, é
   no boy said that the Mary thinks that he is
   inteligente.
   'No boy said that Mary thinks that he is intelligent'.

b. *[Nenhum menino], toda disse que a Maria acha que ec, é
   no boy said that the Mary thinks that he is
   inteligente.
   'No boy said that Mary thinks that he is intelligent'.

Comparing (13a-b) with (11a-b), we can see that judgments in BP and Spanish are just the opposite: (13a), which corresponds to (11a), is good although the overt pronoun is locally bound by a variable, and (13b), which corresponds to (11b), is unacceptable despite the fact that it employs a null subject in the corresponding position. Once again, BP data seem to disregard a principle empirically supported by similar data from other null subject languages, a fact that demands explanation.

2.5 Only DPs and VP-ellipsis

BP null subjects give rise to two other interpretive restrictions, which are worth noting. The first one has to do with different readings obtained using overt and null categories in examples like (14).

(14) a. Só o João acha que ele vai ganhar a corrida.
   only the John thinks that he will win the race
   'Only John thinks that he will win the race'.

b. Só o João acha que vai ganhar a corrida.
   only the John thinks that will win the race
   'Only John thinks that he will win the race'.

(14a) is ambiguous. Under one reading, it means that João is the only person who believes in João's victory, and it would be false in a situation in which other people also believe that João will win the race. Under the other reading, it means that João is the only person who believes in his/her own victory, and it would be false in a situation in which another person is also self-confident. It is also important to note that only (14a) admits a reading in which the subject of the embedded clause is related to an entity presented in the discourse situation, like Peter, for example; As for (14b), it is not ambiguous and can only mean that João is the only person who believes in his/her own victory.

The second context to be presented here also reveals an asymmetry between overt and null subjects, this time in VP-ellipsis structures:

(15) a. João acha que ele vai ganhar a corrida e Maria também.
   John thinks that he will win the race and Mary too
   'John, thinks that he, will win the race and Mary too'.

b. João acha que vai ganhar a corrida e a Maria também.
   John thinks that will win the race and the Mary too
   'John, thinks that he, will win the race and Mary too'.

(15a) is ambiguous, admitting the strict and sloppy readings paraphrased in (16a-b), respectively. By contrast, (15b) is unambiguous, admitting just the sloppy reading.

(16) a. John, thinks that he, will win the race and Mary thinks that he, will the race.

b. John, thinks that he, will win the race and Mary, thinks that she, will win the race.

8. As far as I know, these facts were first noted by Moreira da Silva (1983) and Chao (1983). For recent discussions, see Negrão & Viotti (2000) and Modesto (2000).
2.6 Hyperraising

A distinctive property of BP is that it allows raising from the subject position of a finite clause to the subject position of an immediately higher clause (hyperraising in Ura’s 1994 terminology):

(17) João parece que comprou um carro novo.
John seems that bought a car new
‘John seems to have bought a new car.’

Under standard analysis, João in (17) could not have been directly inserted in the matrix clause, since it would violate the θ-Criterion. One could argue that João is a topic, related to the subject position of the embedded clause, and followed by a null expletive in the subject position of the matrix clause. This, however, does not seem to be correct. We can replace João by a weak pronominal form (18a) or a bare quantifier (18b), and the sentences are still well formed. Since these elements cannot be topicalized, as shown in (19a-b), we are left with the conclusion that hyperraising is possible in BP.

(18) a. Cê parece que está doente.
you weak seem that is sick
‘You seem to be sick.’

b. Alguém parece que está doente.
someone seem that is sick
‘Someone seems to be sick.’

(19) a. *Cê, João me disse que vai ser aprovada.
you weak John me told that will be approved-fem
‘You, John told me that you will be approved.’

b. *Alguém, João me disse que era estrangeiras.
someone John said that the girls that met were foreigners
‘John said that the girls he met were foreigners.’

Examples like the ones above suggest that null subjects are disallowed inside a strong island if their antecedents are outside the island. However, in adjunct clauses (which are also strong islands) null subjects are allowed, as can be seen in (21).

(20) a. ??João, não gostou dos livros que [ ec, leu na escola]
    John, not liked of-the books that read in-the school
    ‘John didn’t like the books that he read in the school.’

b. ??João, disse que [as meninas [que ec, encontrou ]] eram
    John said that the girls that met were
    ‘John visited Mary when he left his job.’

In this case, a null subject is possible and must be coreferent to the matrix subject.

Let us now consider the case of weak wh-islands. Such cases reveal an interesting contrast: if the wh-phrase is an adjunct, then the null subject is allowed in the embedded clause, as shown by the examples in (22). On the other hand, if the wh-phrase comes from an argument position, then the use of a null subject makes the sentences degraded, as shown in (23).

(22) a. João, não sabe [ quando ec, leu esse livro]
    John, doesn’t know when read this book
    ‘John, doesn’t know when he read this book.’

b. João, não sabe [ onde ec, comprou esse livro]
    John, doesn’t know where bought this book
    ‘John, doesn’t know where he bought this book.’

11. The contrasts may be subtle in some cases, but they systematically point to the same direction: it is possible to find a speaker who labels the sentences in (22) as good, and those in (23) as bad, but there are no speakers who consider the sentences in (23) better than those in (22) (Thanks to Jairo Nunes for helping me clarify this point).

12. Examples with a dislocated PP (= 23b) tend to be better than examples with a DP (= 23a). I will come back to this asymmetry in Section 4.6 below.
c. João, não sabe [que livro ele leu esta semana]  
   John not knows which book he read last week
   'John doesn’t know which book he read last week.'

(23) a. ??João, não sabe [que livro ele leu na semana passada]  
   John not knows which book he read last week
   'John doesn’t know which book he read last week.'

b. João, disse [que esses livros ele emprestou]  
   John, said that these books he lent
   'John said that these books he lent last week.'

A similar contrast can be noted when a topicalized element appears at the left periphery of the embedded clause. Again, non-arguments allow null subjects but arguments do not:

(24) João, disse [que amanhã ele vai viajar pra Europa]  
   John, said that tomorrow he will travel to Europe
   'John said that tomorrow he will travel to Europe.'

(25) João, disse [que esses livros ele emprestou]  
   John, said that these books he lent
   'John said that these books he lent last week.'

Finally, another island where it is possible to find null subjects in BP is the Complex-NP island, as in (26) below.13

(26) O presidente, negou [que rumores de que ele recebeu dinheiro de empresários]  
   the president denied the rumors that he received money from businessmen
   'The president denied the rumors that he got money from businessmen.'

I will return to all the above examples in Section 4, where I try to derive their properties using the analysis I develop in Section 3.

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13. The possibility of null subjects inside complex-NP was noted by Modesto (2000). Example (26) was borrowed from his work.

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3. The analysis

Since Chomsky (1982), it has been assumed that the empty category occupying the subject position of finite clauses in several languages correspond to an empty pronoun (pro). The fact that not all languages of the world manifest the existence of pro has immediately raised the question about what the basis of such partition is. The idea of postulating a binary parameter (+ pro-drop) specifically created to account for this distinction did not seem attractive, since it considered the existence of null subjects an isolated phenomenon, predicting the possibility of coexistence of null subjects and any other set of properties in the same grammar. The problem is that the study of null subject languages has detected a cluster of properties that approximate those languages from each other and at the same time differentiate them from other languages (absence of that-trace effects and subject-verb inversion, for example). It would be interesting to associate these properties to a single, more abstract parameter, from which all of them (or at least a substantial part of them) would follow.14

The standard assumption is that pro must be identified by means of a verbal morphology rich enough to recover the formal features of pro’s referent.15 In GB, the concept of rich morphology was encoded in the functional head AGR, and languages could have a rich or a poor AGR. The cluster of properties associated to the pro-drop languages could then be derived from properties of AGR (rich but not poor AGR licenses pro; rich but not poor AGR can be a proper governor, and so on.)

A good source of data to verify the validity of this approach comes from diachronic studies. For example, we expect to find languages that have undergone an impoverishment in their verbal agreement morphology to also exhibit reduction in its ability to license null subjects.16 This is just what happened with BP. As

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14. For arguments favoring an unified analysis of these properties, see Rizzi (1982); Brandi & Cordini (1989) and Kenstowicz (1989). Kato (1999) presents an attempt to deduce the possibility of free inversion from the possibility of null subjects.

15. For different stages of this idea, see Taraldsen (1978), Chomsky (1981, 1982), and Rizzi (1986) among others.

16. The possibility of null subjects, however, is not necessarily linked to the inflectional richness of the language (see Jaegli & Safir 1989 for a discussion). Chinese, for example, allows for null subjects but does not manifest any agreement mark in its verbal forms (see Huang 1989). Also interesting is the case of Icelandic evolution. According to Sigurðsson (1993), the inflectional paradigm of Modern Icelandic is not poor/richer in comparison with Old Icelandic. However, the contexts in which null subjects are tolerated have altered during the period between these stages of the language. These facts indicate the existence of other forms of legitimating of null subjects other than richness of AGR. But in the case of BP it must be stressed that the diachronic facts point to a strong correlation between inflectional richness and legitimating of null subjects (see Duarte 1995).
pointed out in Section 2.1, modern BP has undergone a considerable simplification in its verbal paradigm if compared to earlier stages of the language (see Duarte 1995 for the details). Six different verbal forms have given place to only three, and the distinction between second person and third person forms has disappeared. Interestingly, BP has also drastically reduced the contexts in which a null subject is possible. In this regard, BP evolution seems to be partially different from what is attested in French. French has also undergone an impoverishment in its agreement system, but has completely lost the possibility of having a null subject in finite clauses (cf. Adams 1987, and Roberts 1993 for different views on the history of French). Bringing pro to the scene, one could argue that French has lost its resources to legitimate this empty category, behaving just like the theory predicts, but that BP seems to have a kind of anaphoric pro.

In this section, I would like to suggest a different interpretation for the changes observed in BP. The idea is that, as far as the legitimation of referential pro is concerned, the history of BP and French are similar in that both languages have lost the possibility of using pro due to an impoverishment of their agreement systems. However, these languages have divergently evolved in another aspect, to which I shall return soon.

As for the theoretical background concerning agreement, I follow Chomsky (2000) and assume that the functional head T(ense) has a set of φ-features that can enter into a checking relation with the set of φ-features of a DP, and that the result of this relation is the deletion of the Case feature of the latter (T heads themselves have no Case feature). However, only a complete set of φ-features is capable of eliminating the Case feature of a DP, making this DP inactive to the computational system, as far as A-movement is concerned.

A second assumption that will play a central role in my analysis concerns the nature of thematic relations and their role in the course of a derivation. Chomsky (1995, 2000) claims that thematic roles are not formal features and that their assignment does not involve any checking procedure. Inspired by work on “scrambling” in Japanese by Bošković & Takahashi (1998) and work on obligatory control in English by Hornstein (1999, 2001), I will instead assume that θ-roles are formal features and that movement into thematic positions is in conformity with the Last Resort Condition, which limits applications of Move to cases involving feature checking. Hornstein (1999, 2001), for example, proposes for a sentence like (27a) a derivation involving movement of the subject out of the embedded clause, as represented in (27b).

(27) a. John tried to win.
   b. [TP John, T [IP John tried to win]]

In this derivation, the subject John enters into two thematic relations: one in its base position within the embedded vP and another one with the matrix v. It is this second relation that triggers movement of John to the specifier position of matrix v. As I will show in greater detail below, my analysis of the derivation of sentences containing null subjects in embedded finite clauses in BP bears a close resemblance to the analysis Hornstein (1999, 2001) proposes for control structures in English.

Back to BP, the interpretation I propose for the facts we have observed is that finite T in this language has not only lost its capacity to legitimate pro, but also had its set of φ-features reanalyzed as an incomplete set. Having been reanalyzed this way, finite T began to behave like nonfinite T, that is, it attracts an element to its Spec, but is unable to eliminate the Case feature of the moved element. The same did not happen in French, where finite T, tough unable to legitimate pro, is still analyzed as complete set of φ-features.

With this in mind, consider the derivation of a sentence like (28).

(28) João disse que comprou um carro.

John said that he bought a car

I begin with the stage in which the embedded vP has already been formed by successive applications of Merge. At this point, João occupies the specifier position of v, where it enters into a thematic relation, receiving a θ-role:

(29) [IP João comprou um carro]

John bought a car

Next, T merges with vP. T has an EPP feature and an incomplete set of φ-features, both illegible. João has an illegible Case feature and is attracted to T, leaving a copy in its original position. The set of φ-features of T and João establish a checking relation and the φ-features of the former are eliminated. Since the set of φ-features of T is incomplete, the Case feature of João is not eliminated and it is still active to the computational system:

(30) [TP João T φ-inc [IP João comprou um carro]]

John bought a car

The derivation goes on and, after successive applications of Merge, the structure headed by the light verb of the matrix clause is formed:

(31) [CP disse [IP que [TP João T φ-inc [IP João comprou um carro]]]

said that John bought a car

Now we have reached a crucial point of the derivation. The matrix light verb has a thematic feature that needs to be checked. João is an argument capable of
performing this role. It then raises to Spec of v, forming (32) below. Note that this operation is possible because a) João has a Case feature unchecked and is therefore active; b) a thematic relation is involved, respecting the Last Resort Condition; c) there is no violation of the Minimal Link Condition, that is, there is no intervening element which could also enter into a thematic relation with v, and (d) by assumption, there is no other element in the numeration that could also enter into a thematic relation with v.

(32) \[
\text{[TP João disse [CP que [TP João \text{φ-inc} [\text{φ-at} João comprou um carro ]]]]}
\]

John said that John bought a car

Next, matrix T, which has a complete set of φ-features, is merged with TP and, in virtue of having an EPP feature, attracts João to its Spec. The φ-features of T are eliminated and (33) is formed.

(33) \[
\text{[TP João T-\text{comp}[\text{φ-at} João disse [CP que [\text{TP João T-\text{inc} [\text{φ-at} João VP]]]]]}
\]

John John said that John John bought a car

Then, the rest of the matrix clause (CP) is formed and, after deletion of copies and linearization of the structure in the phonological component (see Nunes 1999, 2004), we finally have a sequence like (28).

Our proposal then is that the derivation of a sentence like (28) in BP does not differ in its essence from the derivation Hornstein (1999, 2001) proposes for control structures involving infinitival embedded clause, which also exist in BP:

(34) João tentou comprar um carro.

John tried to buy a car

‘John tried to buy a car.’

According to the proposal presented here, both finite and nonfinite T in BP may have an incomplete set of φ-features, being unable to render the element raised to its Spec inactive. Then, in both cases, the subject of the embedded clause can be raised to the matrix clause where it receives a second θ-role. However, consider the following contrast:

(35) a. A Maria disse que o João comprou um carro.

the Mary said that John bought a car

‘Mary said that John bought a new car.’

b. *A Maria tentou o João comprar um carro.

the Mary tried the John buy a car

This contrast reveals two points. First, infinitival T of control structures is always φ-incomplete. This is crucial in explaining why sentences such as (35b) are ungrammatical: there is no way of eliminating the Case feature of the embedded subject. Second, having an incomplete set of φ-features should be an option, but not a requirement, for finite T. Otherwise, in sentences such as (35a), the subject of the embedded clause would never have its Case feature eliminated, since both finite and nonfinite T would be unable to perform this task, causing the corresponding derivations to crash. The upshot is that BP should have both φ-complete and φ-incomplete finite Ts.

With respect to this optionality, my suggestion is the following: Universal Grammar presumably assigns to finite T the property of bearing a complete set of φ-features, or to use another jargon, the property of assigning nominative Case. This is the unmarked option, and a child acquiring his or her language does not need positive evidence to learn it. I propose that what happened with BP is that it gained an extra option, namely, the reanalysis of finite T as an incomplete set of φ-features, or, in the other jargon, the optionality of assigning nominative Case by T.

With this in mind, let us reconsider the derivation of (28), repeated here for convenience as (36).

(36) João disse que comprou um carro.

John said that bought a car

‘John said that he bought a car.’

If the numeration underlying this derivation contains two instances of finite T with an incomplete set of φ-features (henceforth I will call it just incomplete T), then the derivation will not converge, since the Case feature of João will not be eliminated. If two instances of complete T are chosen, the derivation will not converge again, this time due to the impossibility of raising João to the matrix clause, since it will be frozen in the Spec of embedded T and the formal features of the matrix T, as well as the θ-features of the matrix v, will not be eliminated, causing the derivation to crash. The only option leading to convergence is a numeration containing one instance of a complete finite T and one instance of an incomplete finite T. If the complete finite T is inserted in the embedded clause, we will not obtain any progress: once again, the matrix T will not have its illegible features eliminated, because John will be frozen in the embedded clause. On the other hand, if the incomplete T is inserted in the embedded clause, it will allow raising of the embedded subject to the matrix clause. The subject will first move to Spec of v, checking the θ-feature of v. Then, a checking relation will be established between its φ-features and the φ-features of matrix (complete) T. As a result, all illegible features are eliminated.

17. I am assuming with Hornstein (1999, 2001) that nonfinite T, even in the case of obligatory control structures, does not check (null) Case.
4. Explaining the data

We saw in the last section that argumental null subjects appearing in BP embedded clauses correspond to a copy left by an element that had moved to a higher clause. We also saw that BP grammar does not license an argumental pro and that a sentence like (36) can only have a structure like (37).19

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18. Rodrigues (2004) also proposes an analysis for sentences like (36) based on movement into a thematic position. However, her explanation for why the subject of a finite clause may still be active for the computational system after agreeing with T differs from mine and is based on the following general assumptions: first, entering into an agreement relation with a functional head does not suffice for checking the Case feature of a DP. Instead, to have its Case feature deleted, a DP should move and enter into a Spec-Head configuration with the relevant head (T in our case). Second, there is overt V–T movement in BP and this is enough to check the EPP-feature of T. Thus, what characterizes BP in her view is not the fact that finite Ts can be either φ-complete or φ-incomplete, as I am proposing here, but rather the fact that a subject DP may stay in its base position within VP with its Case feature unchecked. Of course, this will lead to convergence only if later on in the derivation the subject DP moves out of its theta domain and enters a Spec-Head relation with a higher functional head. In the case of (36), the subject moves first to Spec of FP, a left-peripheral projection hosted between TP and CP and whose specifier is the spell-out position of BP preverbal subjects, according to Rodrigues). At this point, the subject will move from within the embedded clause to the specifier of matrix v, and then to the specifier of matrix F, where its Case feature gets deleted:

(i) Derivation of the embedded clause:

\[
[CP \text{ que } [TP \text{ João }] F [TP \text{ um carro } ] \text{ comprou } [TP \text{ João }] \text{ comprou a carro } ]]]
\]

(ii) Derivation of the matrix clause:

\[
[TP \text{ João } F [TP \text{ said } ] CP \text{ que } [TP \text{ comprou um carro } ]]]
\]

A methodological drawback of this analysis is that it requires that the checking/deletion of certain features only occur under Spec-Head configurations. This is unnecessary in my implementation, which follows more closely the minimalist design of Chomsky (1995, 2000). On the empirical side both analyses seem to make the same predictions, due to the fact that they both rely on cross-clausal movement to account for the distribution of null subjects in BP.

19. For the sake of readability, I will represent copies as indexed traces.

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2nd proofs
The problem with this structure is that it results from an illegal derivation. Raising \textit{João} from Spec of the most embedded T to Spec of matrix v violates the Minimal Link Condition, since \textit{Maria} was closer to matrix v than \textit{João} was.\footnote{Following Chomsky (2000), I assume that a checked feature, although inert to the computational system, induces intervention effects.} That is why (38a) is ill formed. Note that if we change the masculine form of \textit{esperto} to the feminine form \textit{esperta}, the sentence becomes good. But this is not surprising. We now have a licit derivation, resulting from (41b), where \textit{Maria} is inserted in the most embedded clause.

(41) a. \textit{João disse que Maria acha que é esperta.}
\begin{center}
\textit{John said that Mary thinks that is smart-fem}
\end{center}

b. \[(TP)\{T \_φ-comp \_φ-inc\} disse que \{TP \_φ-comp \_φ-inc\} acha que \{TP \_φ-inc\} \textit{Mary thinks that}
\begin{center}
\textit{smart-fem}
\end{center}\]

Now, consider (38b). Here too, the masculine form of the adjective indicates that the subject of the embedded clause must be specified as masculine. \textit{João} is the only candidate. Assume that finite T in the embedded clause is an incomplete T and that Move has been applied, resulting in the structure below:

(42) \[(TP)\{A mãe do \textit{João} \_φ-inc acha \_φ-inc \_φ-comp é bonito\}]
\begin{center}
\textit{the mother of John thinks that is handsome}
\end{center}\]

However, this structure is also the product of an illegal derivation. The copy of \textit{João} in Spec of embedded T is not c-commanded by the copy in the matrix clause. In other words, this is an instance of movement that violates the C-command Condition.\footnote{But see Section 4.6 below for further discussion.}

(38c) indicates the impossibility of a split antecedent for the null subject. In the face of the hypothesis defended here, this has an obvious explanation: two elements could not have been moved from the same position. So, the subject of the embedded clause in (38c) cannot be \textit{João} and \textit{Maria}, since we would be forced to admit that both elements have been moved from the Spec of the embedded T and this is not possible. But this is the only option that could save the derivation from crashing due to feature mismatch. Therefore, (38c) is ill formed.

Finally, (38d) also receives a straightforward explanation. The absence of a DP that could check the verb’s external \(θ\)-role and eliminate the illegible features of T makes unavailable the construction of a convergent derivation that would result in (38d). The possibility of a DP inserted in Spec of v, raised to Spec of T and then deleted in the phonological component is simply out of question since this would violate the Principle of Recoverability of Deletion, whatever the ultimate deduction of this principle may be.

We have then succeeded in deriving the generalization that referential null subjects in BP must be locally c-commanded by their antecedents. We have just seen that this follows from the fact that null subjects in this language are copies resulting from movement, and that this operation is constrained by the Minimal Link Condition, the C-Command Condition, and the Last Resort Condition. It is these restrictions that are actually responsible for the validity of (39).

A potential counterexample to the obligatoriness of a local antecedent to null subjects in BP is (43).\footnote{Examples of this sort are discussed in Modesto (2000).}

(43) Paulo convenceu Pedro [ que eu tinha que ir embora]
\begin{center}
\textit{Paul convinced Peter that had to go away}
\end{center}

‘Paul convinced Peter that he had to leave.’

In (43), the embedded null subject must have \textit{Paulo} as its antecedent. According to what we have seen, this should not be possible, since the matrix object seems to intervene between the null subject and the matrix subject. However, this configuration obtains only to the extent that the matrix object c-commands the embedded clause. This would be the case if the embedded clause is the complement of the matrix verb and the direct object occupies its specifier.

However, as noted by Rodrigues (2004), there are reasons to suspect that the embedded clause in (43) is not a complement, but an adjunct. Her argument is based on the impossibility of extracting adjuncts from such an embedded clause:

(44) ??Quando você convenceu \textit{Maria} [ que tinha consertado \textit{o carro t}]?
\begin{center}
\textit{When did you convince Mary that you had fixed the car?}
\end{center}\]

Now contrast (44) and (45).

(45) Quando você disse [ que tinha consertado \textit{o carro t}]?
\begin{center}
\textit{When you said that had fixed the car}
\end{center}

‘When did you say that you had fixed the car?’

The impossibility of (44) with the relevant interpretation led Rodrigues to assume that the embedded clause in this example is an adjunct to the matrix VP, hence a barrier for extraction. As for (45), the verb \textit{dizer} actually takes a complement, giving rise to the contrast observed above. If the embedded clause in (44) is really a...
VP-adjunct, then the matrix object does not c-command the embedded subject, and does not block raising to the matrix subject position. Then, (43) is not a counterexample to my analysis. Additional evidence that the matrix direct object does not c-command the embedded subject in examples like (44) is (46).

(46) João convenceu Maria [ de que [ a idiota] deveria assaltar um banco]
John convinced Mary of that the idiot should rob a bank

In (46), the embedded subject is an epithet. Since this element can take the matrix object as its antecedent, the latter does not c-command the former; otherwise the sentence should be ill formed, due to a Principle C violation.

4.2 The avoid pronoun principle
Another feature of BP pointed out in Section 2 concerns the alternation between null and overt subjects. Consider the pair of sentences below, both well formed in BP:

(47) a. João disse que comprou um carro.
John said that bought a car

In null subject languages such as Italian or Spanish, the use of an overt subject in sentences corresponding to (47b) implies emphasis or contrast, whereas sentences corresponding to (47a) are associated with a neutral reading.

Curiously, it appears that Chomsky's Avoid Pronoun Principle does not apply in BP, since both (47a) and (47b) are appropriate to convey the neutral reading. In particular, (47b) does not imply any kind of emphasis or contrast. However, we are forced to conclude that the principle does not apply in BP only if we admit that a null pronoun occupies the subject position of finite clauses in this language.

Moreover, the postulation of a principle that only applies in some languages but not in others, or the possibility that some languages "lose" a certain principle seems rather unnatural, not to say contradictory, in the face of the very definition of what a principle is. It would be much more interesting to approach the question from another angle and conclude that the apparent violation of a certain principle in some language is linked to the fact that the characteristics of that language are such that the structural description necessary for the application of the principle is never attained. This line of reasoning is perfectly compatible with the analysis of null subjects in BP developed in this paper. The proposal made here that there are no instances of subject pro in BP renders applications of the Avoid Pronoun Principle vacuous and leaves us with the illusion that it does not apply. So, (47b) is perfect in BP not because BP lost the principle in question but because sentence (48) below has the structure (49b) and not (49a).

(48) João disse que comprou um carro.
John said that bought a car

b. João, disse que ele, comprou um carro.
John said that he bought a car.

In this respect, BP does not differ from a language like English, in which the equivalent of (50) is possible because pro is not legitimated and the Avoid Pronoun Principle applies, but vacuously.

(50) João disse que ele comprou um carro.
John said that he bought a car.
The difference between English and BP with respect to sentences like (48) is that the strategy of hyperraising is not available in English, since its finite T always has a complete set of φ-features.

4.3 Montalbetti’s principle

Let us now explain the anomalous behavior of BP with respect to Montalbetti’s Overt Pronoun Constraint (Montalbetti 1984). The relevant data is presented below:

(51) a. [Nenhum menino], t_i disse que a Maria acha que ele, é inteligente.
   ‘No boy said that Mary thinks that he is intelligent’.

   b. *[Nenhum menino], t_i disse que a Maria acha que ec, é inteligente.
   ‘No boy said that Mary thinks that he is intelligent’.

Differently from what happens in Spanish (see Section 2.4), sentences such as (51a) are well formed in BP. The pronoun ele is locally bound by the variable in the matrix clause, an apparent violation of the Overt Pronoun Constraint. But this is true only if there is a possibility of using a null pronoun in the same position. According to my analysis, this is not possible, because argumental subject pros are never licensed in BP. Turning to (51b), we note that BP diverges from Spanish again. The ungrammaticality of this sentence shows that the empty category in the subject position of the most embedded clause cannot be locally bound by the variable in the subject position of matrix clause. My analysis correctly predicts this impossibility, since the only derivation in conformity with the desired interpretation is the one during which the quantificational phrase is inserted in the most embedded clause and then raised to the matrix clause. However, this movement violates the Minimal Link Condition, because Maria in the intermediate clause intervenes between the elements involved in the movement operation.

It is interesting to note that the ungrammaticality of (51b) runs against a proposal by Negrão & Müller (1996) that BP still allows for subject pro when this category functions as a bound variable. (51b) above and (52b) below show that even functioning as a bound variable, an empty category in subject position still obeys the generalization (53). As expected, (52a) is well formed.

(52) a. [ A mãe de [nenhum menino], ] acha que ele, é burro
   ‘The mother of no boy thinks that he is stupid’.

   b. *[ A mãe de [nenhum menino], ] acha que é burro
   ‘No boy’s mother thinks he is stupid’.

(53) Null subjects in BP must be c-commanded by an antecedent located in the immediately higher clause.

(53) was the starting point for my proposal that the null subjects of embedded clauses in BP are copies left by a moved element. So, it is not necessary to admit a special pro in the cases where it has a quantificational antecedent, since it would force us to adopt a stipulation similar to (53), in order to account for the ill-formedness of (51b) and (52b), which contrasts with the wellformedness of (54).

(54) [Nenhum menino], acha que [ ec, é burro]
   ‘No boy thinks that he is stupid’.

If my analysis is right, such a stipulation is unnecessary. As opposed to (51b) and (52b), (54) is well formed because it is possible to move an element from the position indicated by ec, to the position actually occupied by the quantifier phrase in the sentences.

Summing up, we can conclude that the apparent violation of certain principles in BP that regulate the alternation between null and overt pronouns is indeed apparent. The existence of those principles is supported by data from other languages and BP examples do not authorize the conclusion that they are lost or non-existent in this language. Once one assumes that there is no referential subject pro in BP, which I argued for here, the structural descriptions of those principles are never satisfied (as far as subject positions are concerned) and the principles apply vacuously.

4.4 VP-ellipsis and only DPs

Another issue related to asymmetries between null and overt subjects in BP that we saw in Section 2 has to do with interpretive restrictions involving cases of VP-ellipsis and clauses with subjects of the form [only DP]. I begin by reconsidering VP-ellipsis:

(55) a. João, acha que ele, vai ganhar a corrida e Maria também.
   ‘John thinks that he will win the race and Mary too’.

   b. *João, acha que [only DP] vai ganhar a corrida e Maria também.

If we now consider clauses with subjects of the form [only DP], the ungrammaticality of (55b) is not surprising, since the pronoun pro cannot be locally bound by the variable in the matrix clause. However, as we noted in Section 2, the same clause is well formed in English.

Summing up, we can conclude that the apparent violation of certain principles in BP that regulate the alternation between null and overt pronouns is indeed apparent. The existence of those principles is supported by data from other languages and BP examples do not authorize the conclusion that they are lost or non-existent in this language. Once one assumes that there is no referential subject pro in BP, which I argued for here, the structural descriptions of those principles are never satisfied (as far as subject positions are concerned) and the principles apply vacuously.
b. João acha que vai ganhar a corrida e Maria também.  
*John thinks that he will win the race and Mary too.*

What is interesting to note is that while (55a) is ambiguous, admitting both strict and sloppy readings, (55b) admits only the sloppy reading. I will assume here an analysis for ellipsis along the lines of Fiengo & May (1994), which involves a copy of the elided constituent. I will also admit that dependencies created by movement (annotated by β-indices in Fiengo and May’s analysis) must be preserved during the process of copying. Then, the asymmetry above can be explained once we admit that (55b) is derived by movement, exactly what my analysis does: the null subject of the embedded clause is a copy that has the subject of the matrix clause as its antecedent. This will lead us to the conclusion that (55b) should be read as (56).

(56) John thinks that he/John will win and Mary thinks that she/Mary will win.

Using lambda notation, what I am assuming is that dependencies created by movement correspond to predicates of the form \( \lambda x. x \ldots \ldots x \), so that (55b) could be represented as follows:

(57) (John) \( [\lambda x. x \text{ thinks that } x \text{ will win}] \) and (Mary) \( [\lambda x. x \text{ thinks that } x \text{ will win}] \)

In the case of (55a), there is no movement relating the subject positions of the embedded and matrix clauses. The subject of the embedded clause is an overt pronoun with the matrix clause as its antecedent. In this case, according to Fiengo & May (1994), the ambiguity emerges from the fact that coreference here may be purely accidental (use of α indices, according to the authors) or might have been created by a kind of dependency similar to that observed in (55b), where the pronoun must have an antecedent in its own sentence (use of β indices). We thus obtain the sloppy and strict readings respectively.

Let us now return to the cases involving [only DP] subjects:

(58) a. Só João acha que ele vai ganhar a corrida.  
*Only John thinks that he will win the race.*

b. Só João acha que vai ganhar a corrida.  
*Only John thinks that he will win the race.*

(58a) is ambiguous and means either that the only person that believes in João’s victory is João, or that the only person that believes in his/her own victory is João. On the other hand, (58b) means can only mean that the only person that believes in his/her own victory is João. Again, the explanation for this contrast may be anchored in the fact that only in (58b) the subjects of matrix and embedded clauses are related to each other by movement. In this case, (58a) can be associated with either one of the representations in (59), while (58b) is always associated with the predicate (59b). In both cases, in order for the sentences to be true, the respective predicates must apply only to João.

(59) a. \( [\lambda x. x \text{ thinks that } \text{John will win the race}] \)  
    b. \( [\lambda x. x \text{ thinks that } x \text{ will win the race}] \)

Given the asymmetry between the derivations of sentences (55a-b) and the derivations of sentences (58a-b), an explanation along the lines of Fiengo and May becomes possible.

4.5 Hyperraising

I reexamine now the well-formedness of BP sentences like (60) below. Similar cases were discussed by Ura (1994) for other languages as involving hyperraising. Given the analysis presented here for (61), these cases appear as no surprise.

(60) João parece que comprou um carro.  
*John seems that he bought a car.*

(61) João disse que comprou um carro.  
*John said that he bought a car.*

The derivation of (60) is identical to that of (61), except for the fact that (60) involves no movement into thematic positions, since the verb *parecer* ‘to seem’ does not attribute a thematic role to its subject. Like the derivation of (61), which we have already discussed in detail, the derivation of (60) converges only if the finite T in the embedded clause is incomplete and the finite T in the matrix clause is complete. Both derivations are sketched below:

(62) \[ TP \text{ João } [T' \text{ φ-comp } \text{ parece } [CP \text{ que } [TP \text{ t_1 } [T' \text{ φ-inc } \text{ comprou um carro } ] ] ] ] ] \]

(63) \[ TP \text{ João } [T' \text{ φ-comp } \text{ disse } [CP \text{ que } [TP \text{ t_1 } [T' \text{ φ-inc } \text{ comprou um carro } ] ] ] ] ] \]

The choice of a complete finite T for the embedded clause is possible only if a null expletive is inserted in the subject position of the matrix clause, yielding (64).
4.6 Null subjects and islands

If all the results above are on the right track, that is, if the restrictions on the distribution and interpretation of null subjects in BP follow from restrictions imposed on movement operations performed by the computational system, then we predict that these subjects could not appear in configurations where the system blocks the application of these operations. A situation that immediately comes to mind is the following generalization: If a language allows hyperraising, then it also allows "null subject".

For Ura, among the sentences below, only (ib) is derived via hyperraising, (ia) involves prn:

(i) a. João disse que comprou um carro.
   John said that he bought a car.

b. João parece que comprou um carro.
   'It seems that John bought a car.'

In my analysis, however, both cases involve hyperraising and the coexistence of these sentences is not surprising. Recall that I am assuming that for a language to allow hyperraising, it is necessary that finite Ts may contain an incomplete set of θ-features. The possibility of a finite T with this characteristic is sufficient to license the derivation of a sentence like (ib). For hyperraising to be possible in cases like (ia), we must assume that the language admits movement into thematic positions. But this is not a parameter, subject to variation across languages. On the contrary, I am assuming that movement into thematic positions is possible because θ-roles are formal features, which makes this kind of movement compatible with the Last Resort Condition. So, if the only relevant difference between the derivations of (ia) and (ib) is an instance of movement into thematic positions, we are led to the conclusion that if a language allows (ib), it also allows (ia), since the permission to move to a thematic position comes for free from Universal Grammar.

This conclusion is very close to Ura’s generalization. In fact, the analysis presented here predicts that if a language allows hyperraising (what, for Ura, means licensing of sentences like (ib)), then it also allows "null subject" with the characteristics of BP null subjects. Unfortunately, Ura does not discuss the languages presented in his work in enough detail so that the predictions could be adequately tested. I leave this testing for further research.

26. Rodrigues (2004: 119) tries to dismiss the analysis presented here on the grounds that it cannot be tested. As the attentive reader will have noticed, it is clear that evidence pointing to a divorce between null subjects of the type attested in BP and the availability of hyperraising would be enough to falsify or at least serve as preliminary counter-evidence to the theory I am proposing here.

27. The possibility of null subjects inside complex-NPs was noted by Modesto (2000). Example (66) was borrowed from his work.
28. But I admit that contrasts are not so sharp as one might expect.
Indeed, I made crucial use of this condition to explain the ill-formedness of sentences like (73), in which we find copies that do not c-command each other.

(73) *A mãe do João acha que ec é esperto.
the mother of John thinks that is smart
'Jonh's mother thinks that he is smart'.

A line of reasoning which seems promising is based on the copy theory of movement advocated by Nunes (1995, 2001, 2004), which admits some instances of sideward movement. For Nunes, movement is not an operation of the computational system, but rather the result of the interaction of the following operations: Copy, Merge, Form Chain, and Chain Reduction (operation responsible for the deletion of copies in the phonological component). Nunes assumes that the presence of more than one copy in the phonological component does not allow the linearization of the structure containing them, canceling the derivation. Since the process of deletion of copies is only permitted in the interior of a chain (via Chain Reduction) and formation of chains requires c-command, we expect that the system does not tolerate instances of sideward movement. This is true, Nunes argues, except in the cases where a configuration like (74) obtains.

(74) \[ \Sigma \]
\[ \alpha^1 \]
\[ (\ldots) \]
\[ [\ldots \alpha^2 \ldots] \]
\[ [\ldots \alpha^1 \ldots] \]

In (74), there was an instance of sideward movement from the position marked as \( \alpha^1 \) to the position marked as \( \alpha^2 \) followed by movement to a position (marked as \( \alpha^3 \)) that c-commands \( \alpha^1 \) and \( \alpha^2 \). So, it is possible to form two chains, both being headed by the same element. Next, Chain Reduction applies twice, eliminating the copies in the tail of these chains, and the structure can be linearized (see Nunes 1995, 1999 for details).

Back to our examples, note that in (71), but not in (73), a configuration like (74) obtains. This would be the reason for the observed contrast: although both sentences were formed by a derivation with "sideward movement", only (71) resulted in a configuration that permits the linearization of the corresponding structure.\(^{31}\)

Another contrast that would receive an adequate treatment, once we assume the proposal developed in this paper and the theory argued for by Nunes, is the following:

(75) a. *João conheceu Maria depois que ficou rica.
John knew Mary after that became rich-fem
'John met Mary for the first time after she became rich'.

b. João conheceu Maria depois que ela ficou rica.
John knew Mary after that she became rich-fem
'John met Mary for the first time after she became rich'.

(75a) is derived using the sideward movement of Maria from the subject position of the adjunct clause to the subject position of the matrix clause. Differently of what happened with (71), this derivation does not lead to a configuration like (74), blocking the linearization of the structure in the phonological component. Examples with an overt pronoun are of course free from this kind of problem. Hence, the well-formedness of (75b).

If this analysis for null subjects in adjuncts is on the right track, it is possible to conclude that all instances of referential null subjects observed in BP are copies created in the course of a derivation, which are subsequently deleted in the phonological component.

5. Conclusion

In this paper, I proposed an analysis for referential null subject constructions in BP, in which I claim that the empty category occupying the subject position of certain clauses in BP are traces (deleted copies) left by the (hyper)raising of the phrase that originally filled this position. I pursued an implementation coherent with the parsimonious theoretical requirements imposed by the Minimalist Program, making crucial use of two hypotheses: a) finite T in modern BP can be instantiated by an incomplete set of \( \varphi \)-features, and b) thematic roles are formal features, which legitimates movement into \( \theta \)-positions. To the extent that this analysis is able to derive the various peculiarities of BP null subjects, it provides further evidence for the idea that thematic roles should be considered formal features by the computational system, as advocated by Bošković (1994), Bošković & Takahashi (1998), Lasnik (1995), and Hornstein (1999, 2001), among others.

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\(^{31}\) This is the analysis that Hornstein (2001) assumes for obligatory control in adjuncts.
References


