Dummy prepositions and the licensing of null subjects in Brazilian Portuguese

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This paper discusses constructions in Brazilian Portuguese in which a null subject is adequately licensed only if the clause containing it is preceded by the dummy preposition *de*. Assuming that referential null subjects in Brazilian Portuguese are traces of A-movement (see Ferreira 2000, 2009 and Rodrigues 2002, 2004), I argue that the presence of *de* signals whether or not the embedded clause has received inherent Case and this ultimately determines whether the embedded subject is allowed to move from within its clause and whether it should undergo upward or sideward movement (see Nunes 2001, 2004).

1. Introduction[*]

In this paper I examine the role that dummy prepositions appear to play in the licensing of null subjects in (Colloquial) Brazilian Portuguese (henceforth *BP*). I will be specifically concerned with the three types of constructions exemplified below.

(1)a. Ninguém concordou com a   sugestão do   João **(de)** que
       nobody   agreed   with the suggestion of-the João of that
       o Pedro devia escrever o   relatório.
       the Pedro should write   the report
       'Nobody agreed with João's suggestion that Pedro should write the report.'

   b. Ninguém concordou com a   sugestão d[o   João]ᵢ ***(de)** que
       nobody   agreed   with the suggestion of-the João   of that
       *ec*ᵢ devia   escrever o   relatório.
              should write   the report
       'Nobody agreed with Joãoᵢ's suggestion that heᵢ should write the report.'

(2)a. [o João]$_i$ convenceu [a Maria]$_k$ que *ec*$_{i/*k}$ tinha que sair.
　　　the João convinced the Maria that had that leave
　　　'João convinced Maria that he/*she had to leave.'

　b. [o João]$_i$ convenceu [a Maria]$_k$ **de** que *ec*$_{i/k}$ tinha que sair.
　　　the João convinced the Maria **of** that had that leave
　　　'João convinced Maria that he/she had to leave.'

(3)a. É difícil (**d**)esses professores elogiarem alguém.
　　　is difficult **of**-these teachers praise.INF.3PL someone
　　　'These teachers rarely praise someone.'

　b. Esses professores são difíceis ***(de)** elogiarem alguém.
　　　these teachers are difficult **of** praise.INF.3PL someone
　　　'These teachers rarely praise someone.'

(1) shows that the dummy preposition *de* may in general optionally precede a noun complement clause, but is obligatorily required if the subject of the noun complement clause is null. In turn, (2) shows that the presence of *de* may change the interpretation of a null subject, also allowing the matrix object as its antecedent. Finally, (3) shows that whereas some impersonal predicates optionally allow *de* to precede their infinitival complements, the hyper-raising counterpart of these constructions obligatorily requires this dummy preposition.

　　The paper is organized as follows. In section 2, I briefly present the proposal that referential null subjects in BP are traces of A-movement, rather than null pronominals. In sections 3, 4, and 5 I analyze each of the constructions in (1)-(3), discussing why the presence of a dummy preposition preceding a CP in BP may interfere with the licensing of a null subject/A-trace within it. With respect to (1) and (2), I argue that the dummy preposition may signal whether or not the relevant CP is a complement and this may ultimately determine if the DP in its subject position should undergo upward or sideward movement (in the sense of Nunes (2001, 2004)). It will be shown that sideward movement provides a licit derivation for constructions such as (2), but not for constructions such as (1b). As for the contrast in (3), I argue that as a marker of inherent Case, the preposition freezes the infinitival for purposes of A-movement, thereby allowing A-movement of its subject without yielding a violation of Chomsky's (1964) A-over-A Condition. Section 6 presents some concluding remarks.

2. Referential null subjects in BP as traces of movement

Exploring Hornstein's (2001) movement analysis of obligatory control, Ferreira (2000, 2009) and Rodrigues (2002, 2004) convincingly argue that with the weakening of the verbal agreement paradigm in BP (see e.g. Duarte

1995), its finite Ts ceased to license "referential"[1] *pro* and referential null subjects came to be analyzed as traces of A-movement. Consider the BP data in (4), for instance.

(4) a. *Comprou   um carro novo.
      bought.3SG a   car   new
       'She/he bought a new car.'

   b. *Parece que comprou   um carro novo.
      seems   that bought.3SG a   car   new
      'It seems that she/he bought a new car.'

   c. [O João]$_i$ disse [que $ec_{i/*j}$ comprou   um carro novo].
      the João$_i$ said   that   bought.3SG a   car   new
      'João$_i$ said that he$_{i/*j}$ bought a new car.'

   d. *O   pai   da   Maria acha   [que está grávida].
      the father of-the Maria thinks [that is   pregnant-FEM]
      'Maria's father thinks she is pregnant.'

   e. *A Maria disse [que o   médico   acha [que está grávida]].
       the Maria said   that the doctor-MASC thinks that is pregnant-FEM
      'Maria$_i$ said that the doctor thinks she$_i$ is pregnant.'

   f. *Eu encontrei o   livro que perdi.
       I   found   the book that lost.1SG
      'I found the book that I had lost.'

(4a)-(4c) show that a referential null subject in BP requires an appropriate antecedent in the sentence;[2] (4d), that the antecedent must be in a c-

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[1] The qualification is meant to exclude null expletives, as well as null "arbitrary" third person subjects –both plural and singular (see e.g. Galves 1987, Nunes 1990, and Rodrigues 2004)–, which are still available in BP, as respectively illustrated in (i) and (ii).

(i) a. Tinha vários livros na   mesa.
       had   several books on-the table
       'There were several books on the table.'
    b. Choveu ontem.
       rained   yesterday
       'It rained yesterday.'

(ii) a. Telefonaram para você.
        called-3PL   to   you
        'Someone called you.'
     b. No   Brasil não usa   mais saia.
        in-the Brazil not wear.3SG more skirt
        'In Brazil people don't wear skirts anymore.'

[2] Referential null subjects in matrix clauses are only allowed in BP as instances of topic-deletion in the sense of Ross 1982. Thus, the null subject in (iB) below is to be analyzed as a variable bound by a null topic and the presence of a *wh*-element in (iB') yields a minimality violation (see Modesto 2000, Ferreira 2000, and Rodrigues 2004).

commanding position; (4e), that the antecedent must be local; and (4f), that the antecedent cannot be outside a strong island. (4f) is especially interesting in that there is an island effect even though the embedded verb *perdi* is inflected for first person singular and could in principle identify the null subject without the help of an antecedent. If referential null subjects in BP are A-traces rather than null pronominals, as argued by Ferreira and Rodrigues (see also Martins & Nunes 2005 and Nunes 2008), the fact that they require a local c-commanding antecedent in order to be licensed follows from familiar independent requirements on movement.

In this paper I will assume the gist of Ferreira's and Rodrigues's proposal, relying on the specific technical implementation advanced by Ferreira and further refined by Nunes (2008). Assuming Chomsky´s (2000, 2001) Agree-based framework, Ferreira (2000, 2009) proposes that finite Ts in BP are ambiguous in being associated with either a complete or an incomplete set of φ-features. When the Case-assigning version of a finite T is selected (i.e. a φ-complete T), it assigns nominative to the subject, freezing it for further A-movement. If the non-Case-assigning version of a finite T is selected instead (i.e. a φ-incomplete T), the subject of its clause remains Caseless and can undergo further A-movement. From this perspective, a sentence such as (4c) is to be derived along the lines of (5), where the embedded T is φ-incomplete and the matrix T is φ-complete.

(5) [$_{TP}$ [o João]$_i$ **T$_{φ\text{-complete}}$** [$_{vP}$ t$_i$ disse   [$_{CP}$ que [$_{TP}$ t$_i$ **T$_{φ\text{-incomplete}}$** [$_{vP}$ t$_i$
     the João   said.3SG   that
   comprou   um carro novo]]]]]]
   bought.3SG a   car   new

Nunes (2008) has reinterpreted the ambiguity of T proposed by Ferreira in terms of how its person and number features are combined in the course of the computation. More specifically, Nunes proposes that finite Ts in BP may enter the numeration specified for number and person or for number only. When T is only specified for number, well-formedness conditions in the morphological component trigger the addition of the feature person in accordance to the redundancy rule informally sketched in (6) below. To put it differently, person features in BP may be dissociated features in the sense

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(i) A: *Cadê   o   João?*
     where   the João
     'Where's João?'
  B: Acabou   de sair.
     finished.3SG of leave
     'He's just left.'
  B': *O que fez   dessa   vez?
      what   did. -3SG of-this time
     'What did he do this time?'

of Embick (1997). Crucially, the paradigm of verbal agreement morphology in BP given in (7) is such that the only form that distinctively encodes person and number is the syncretic inflection for first person singular; the other two inflections involve a default value (third) for the person feature.

(6) When T is only specified for number (N):
    (i) Add [P:1], if N is valued as SG;
    (ii) otherwise, add [P:default].

(7)

Verbal agreement paradigm in (Colloquial) Brazilian Portuguese		
cantar 'to sing': indicative present		
eu (I)	*cant<u>o</u>*	<u>P:1.N:SG</u>
você (you.SG) *ele* (he) *ela* (she) *a gente* (we)	*canta*	P:default; N:default (= 3SG)
vocês (you.PL) *eles* (they.MASC) *elas* (they.FEM)	*canta<u>m</u>*	P:default; <u>N:PL</u> (= 3PL)

Thus, the three different verbal inflections available in (7) can be obtained either if T is specified for both person and number throughout the derivation, as in (8), or if T is only specified for number and the feature person is associated with T in the morphological component in accordance with (6), as shown in (9).

(8)

cantar 'to sing': indicative present	
Valuation of T in the syntactic component	Surface form of the verb
<u>P:1.N:SG</u>	*cant<u>o</u>*
P:default; N:default	*canta*
P:default; <u>N:PL</u>	*canta<u>m</u>*

(9)

cantar 'to sing': indicative present		
Valuation of T in the syntactic component	Addition of [person] in the morphological component	Surface form of the verb
N:SG	**P:1**.N:SG	*cant<u>o</u>*
N:default	**P:default**; N:default	*Canta*
N:PL	**P:default**; <u>N:PL</u>	*canta<u>m</u>*

Under this view, a more appropriate representation of the derivation of (4c) is given in (10) below, where the embedded T is specified only for number, whereas the matrix T is specified for number and person. In other words, the subject is assigned (nominative) Case by the matrix T rather than the embedded T. Common in both representations in (5) and (10) is the movement of the embedded subject to the matrix [Spec, vP] before reaching the matrix [Spec, TP], which accounts for the fact that *o João* in (4c) is interpreted as associated with the external θ-roles of both the matrix and the embedded verb (see Hornstein 2001).

(10) [TP [o João]i **T[P:default; N:default]** [vP ti disse [CP que [TP ti **T[N:default]**
       the João   said   that
    [vP ti comprou um carro novo]]]]]
        bought   a   car   new

To sum up, BP exercises an option that is generally restricted to non-finite clauses in other languages, namely, it allows raising out of a finite embedded clause when its T is not a Case assigner (i.e. when it only has a number feature as it enters the numeration).[3] In the sections that follow, all sentences with referential null subjects will be examined under the derivation in which the T head of the clause containing the null subject is only specified for number in the syntactic component.[4]

3. Finite control into noun complement clauses

In BP, dummy prepositions such as *de*, which are required before nominal complements of verbs like *gostar* 'like', are optional when preceding CP

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[3] For the purposes of the current presentation, I assume Ferreira's (2000:55) suggestion that if C selects a φ-incomplete T, it does not define a strong phase (see Nunes 2008 and Martins & Nunes forthcoming for relevant discussion). Under the assumption that successive cyclic movement to [Spec, CP] is driven by the Phase Impenetrability Condition (Chomsky 2000, 2001), A-movement from within a TP with φ-incomplete T does not need to pass through the [Spec,CP], as the CP dominating such TP is not a strong phase.

[4] Recall that if the relevant T is fully specified, it will Case-mark its subject, which will then become frozen for purposes of A-movement. In turn, if the subject becomes frozen, no null subject construction of the relevant sort (see fn. 1) will be derived. In other words, if the embedded T in (10) is specified for both person and number, the movement of the embedded subject to the matrix [Spec,vP] is to be ruled out for the same reason the movement of the Case-marked object to [Spec,vP] in (i) below is blocked (see Hornstein (2001) for discussion): in both derivations, the relevant DP becomes inactive for purposes of A-movement after it has its Case-feature valued (see Chomsky 2000, 2001).

(i) a. *John saw.
      'John saw himself.'
   b. *[TP Johni [vP ti [VP saw ti]]]

complements, as illustrated in (11) below. The optionality in (11b) should be qualified, though. The version without the preposition is by far the most commonly used construction; the version with the preposition is generally associated with formal style and written language. Similar considerations apply to the noun complement clauses illustrated in (12).

(11) a. Eu gosto ***(de)** você.
   I   like   of   you
   'I like you.'
b. Eu gostaria   **(de)** que você viesse.
   I   would-like of that you   come-PAST.SUBJ
   'I would like you to come.'

(12) a. A hipótese **(de)** que a   Terra é chata não foi esquecida.
   the hypothesis **of** that the Earth is flat not was forgotten
   'The hypothesis that the Earth is flat was not forgotten.'
b. A idéia do   João **(de)** que você seja   o   candidato é
   the idea of-the João **of** that you be.SUBJ the candidate is
   bem boa.
   rather good
   'João's idea that you become the candidate is very good.'
c. O   boato **(de)** que o   Pedro seria   despedido era falso.
   the rumor **of** that the Pedro would-be fired   was false
   'The rumor that Pedro would be fired was false.'
d. Ele comentou a alegação do   João **(de)** que a Ana era
   he commented the allegation of-the João **of** that the Ana was
   inocente.
   innocent
   'He commented on João's allegation that Ana was innocent.'

What has not been noticed in the literature is that the presence of the dummy preposition is obligatorily required in constructions involving a referential null subject inside the noun complement clause, as shown in (13) below, for all registers and styles. Interestingly, if the null subject is not referential (see fn. 1), the preposition is again optional, as illustrated in (14).

(13) a. A hipótese   do   João ***(de)** que vai   ser eleito é de rir.
   the hypothesis of-the João   **of**   that goes be elected is of laugh
   'John's hypothesis that he's going to be elected is laughable.'
b. A afirmação do   João ***(de)** que fez o   trabalho é falsa.
   the affirmation of-the João   **of**   that did the job   is false
   'João's statement that he did the job is false.'

(14) a. A   afirmação **(de)** que nunca chove aqui é exagerada.
      the affirmation **of**   that never rains   here is exaggerated
      'The claim that it never rains here is an exaggeration.'

   b. A   hipótese   do   João **(de)** que não existe movimento-*wh*
      the hypothesis of-the João **of**   that not exists *wh*-movement
      nessa língua   parece estar errada.
      in-this language seems be   wrong
      'John's hypothesis that there doesn't exist *wh*-movement in this
      language seems to be wrong.'

The paradigm in (10)-(14) raises the following questions: (i) why is it that referential and non-referential null subjects behave differently as far as obligatory presence of *de* is concerned?; and (ii) why is it that null referential subjects require the presence of the dummy preposition? Let us consider each of these questions in turn.

The difference between referential and non-referential subjects should in principle be related to the nature of referential null subjects in BP, i.e. to their being traces rather than null pronominals (see discussion and references in section 2). In fact, referential null subjects inside noun complement clauses also behave as A-traces, as can be seen in (15).

(15) a. *O   boato de que *ec* renunciou era falso.
        the rumor of that   resigned   was false
      'The rumor that she/he resigned was false.'

   b. [o   João]$_i$ criticou   a   proposta d[o   amigo d[o   Pedro]$_j$]$_k$ de
      the João   criticized the proposal of-the friend of-the Pedro   of
      que *ec*$_{k/*i/*j/*w}$ devia   reclamar com o   diretor.
      that   should complain with the director
      'João$_i$ criticized [Pedro$_j$'s friend]$_k$'s proposal that he$_{k/*i/*j/*w}$
      should complain to the director.'

   c. *[o   João]$_i$ ficou chateado com os boatos que foram gerados
        the João   got   upset   with the rumors that were   caused
      pela   notícia de que *ec*$_i$ renunciou.
      by-the news   of that   resigned
      'João got upset because of the rumors that were triggered by the
      news that he resigned.'

If the referential null subjects inside the noun complement clauses in (15) are A-traces, the ungrammaticality of (15a) should be due to the lack of an antecedent for the trace. In turn, (15c) should be out because movement from within the noun complement clause to the position occupied by *o João* crosses the relative clause island. Finally, if the moving element must land in the closest c-commanding A-position, (15b) should only be licit if the null subject is interpreted as *o amigo do Pedro* 'Pedro's friend', which is indeed the case.

That movement of the subject of the noun complement clause targets a θ-position is shown by the data in (16) and (17).

(16) a. A afirmação do   João de [que a   Maria fez o   trabalho]
        the affirmation of-the João of   that the Maria did the job
        é falsa.
        is false
        'João's claim that Maria did the job was false.'
     b. *A probabilidade do   João de [que a Maria tenha   feito
         the probability   of-the João of   that the Maria has.SUBJ done
         o   trabalho] é alta.
         the job   is high
         '*João's probability that Maria did the job is high.'

(17) a. A afirmação do   João de [que fez o trabalho] é falsa.
        the affirmation of-the João of   that did the job   is false
        'João's claim that he did the job is false.'
     b. *A probabilidade do   João de [que tenha   feito o
         the probability   of-the João of   that has.SUBJ done the
         trabalho] é alta.
         job   is high
         'The probability that João did the job is high.'

The contrast in (16) is due to a violation of the θ-Criterion in (16b), as *probabilidade* 'probability' does not have a θ-role to assign to *o João*.[5] The fact that the contrast in (16) is replicated in (17) can now be interpreted in terms of the Case Filter. Recall that A-movement out of an embedded finite clause in BP is possible only if the embedded T has just a number feature. If this is the case in (17a), we are led to the conclusion that *o João* is Case-marked after it moves to the θ-position associated with *afirmação* 'affirmation'. The difference between (17a) and (17b) is now accounted for if the dummy preposition *de* is a marker of inherent Case. Once inherent Case must be associated with a θ-role (see Chomsky 1986), movement of the embedded subject allows it to comply with the Case Filter in (17a), but not in (17b), as *probabilidade* does not have a θ-role to assign to the moved

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[5]In response to a reviewer's question, it is worth pointing out that if one resorts to the θ-Criterion, this does not ensure a commitment to D-Structure, for the θ-Criterion can perfectly well apply at LF (even within the *GB* model). Moreover, the movement theory of control proposed by Hornstein (2001), which I am following here, still keeps the θ-Criterion in the sense that arguments are required to assign their θ-roles and expressions merged within the thematic domain of a given predicate must be assigned a θ-role. What is actually abandoned in Hornstein's system are the additional assumptions that a given expression cannot bear more than one θ-role and that θ-role assignment is not a licensing condition for movement.

DP (cf. (16b)). Thus, the subject of (17a) is to be represented along the lines of (18), with the preposition *de* being added to *o João* in the morphological component.[6]

(18) [a [afirmação$_k$ [$_{NP}$ [o João]$_i$ t_k de [$_{CP}$ que [t_i fez o trabalho]]]]]
  the affirmation   the João   of   that did the job

Let us now address the question of why the movement of the embedded subject depicted in (18) is only licit if the CP is also preceded by the dummy preposition *de*. Building on Stowell (1981), I would like to propose that in BP the presence or absence of *de* in these constructions respectively signals whether we are dealing with a true complement structure or an appositive of sorts. More specifically, I take *de* in these constructions in BP to be the realization of the inherent Case assigned to the embedded clause.[7] Take the data in (19) below, for example, which do not allow the presence of *de*. If the preposition encodes a noun complement configuration in virtue of realizing inherent Case, its presence in (19) yields unacceptable results as these sentences involve a predication configuration.

(19) a. A hipótese   é **(*de)** que o João tenha feito isso.
     the hypothesis is of   that the João has   done this
     'The hypothesis is that João did this.'
   b. A idéia é **(*de)** que o João seja   o candidato.
     the idea is   of that the João be.SUBJ the candidate
     'The idea is that João should be the candidate.'
   c. A alegação é **(*de)** que a Maria viaja muito.
     the allegation is   of that the Maria travels much
     'The allegation is that Maria travels too much.'

Assuming that lack of preposition in a sentence such as (20) signals that the embedded CP is an adjunct rather than a complement, there still remains the question of why *o João* cannot move from within the embedded CP.

(20) *A afirmação d[o   João]$_i$ que t_i fez o trabalho é falsa
    the affirmation of-the João that   did the job   is false
    'João's statement that he did the job is false.'

The question is pressing as Ferreira (2000, 2009) and Rodrigues (2004) have argued, following Hornstein's (2001) analysis of adjunct control, that

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[6] The linear order of (17a) indicates that after *o João* moves to the relevant θ-position associated with *afirmação*, the latter moves to a higher position. The nature of such position is orthogonal to our current discussion.
[7] See Picallo (2001, 2002) for arguments within Chomsky's (2000, 2001) Agree-based system that clauses can participate in Case and φ-agreement relations.

A-movement from the subject position of a finite adjunct clause is possible in BP if it takes place prior to the attachment of the will-be adjunct. Take, for instance, the simplified derivation of (21) given in (22)-(25).

(21) [O João]$_i$ cumprimentou [a Maria]$_j$ depois que $ec_{i/*j}$ entrou.
    the João greeted   the Maria after that   entered
    'João greeted Maria after he got in.'

(22) K = [o João T$_{N:default}$ entrou]   L = [cumprimentou a Maria]
    the João   entered   greeted   the Maria

(23) *Sideward movement*:
    K = [[o João]^i T$_{N:default}$ entrou] M = [[o João]^i cumprimentou a M.]
    z‒‒‒‒‒‒‒‒‒‒‒‒‒‒‒↑

(24) [$_{vP}$ [$_{vP}$ [o João]^i cumprimentou a Maria] [depois que
        the João greeted   the Maria after that
    [[o João]^i T$_{N:default}$ entrou]]]
      the João   entered

(25) [$_{TP}$ [o João]^i T$_{[N:default; P:default]}$ [$_{vP}$ [$_{vP}$ [o~~João~~]^i cumprimentou a Maria] [depois que [[o~~João~~]^i T$_{N:default}$ entrou]]]]

After the syntactic objects K and L in (22) are built, the computational system makes a copy of *o João* from K and merges it with L – an instance of sideward movement in the sense of Nunes (2001, 2004)–, yielding M in (23).[8] Notice that in (22) *o João* did not have its Case checked (T has only a number feature) and was therefore active for purposes of A-movement. Note also that at the derivation step depicted in (22)-(23), K is not an adjunct, but a root syntactic object; hence, movement out of K should not yield an (adjunct) island effect (see Nunes & Uriagereka 2000, Hornstein 2001, Nunes 2001, 2004, and Hornstein & Nunes 2002).[9] Further computations then yield the structure in (24) with the temporal clause adjoined to the matrix vP. *O João* then moves again (cf. (25)), landing in the matrix

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[8] The adjunct is built before the matrix vP in virtue of the bottom-up nature of the system: the domains that are going to be embedded are built before the embedding domains (see Chomsky (2000) for an implementation in terms of subarrays). For arguments that sideward movement proceeds from the adjunct to the matrix derivational workspace and not the opposite, see Nunes & Uriagereka (2000), Nunes (2001, 2004), and Hornstein & Nunes (2002).

[9] Sideward movement in (23) targets [Spec,vP] rather than the object position of the main verb, due to Merge-over-Move economy computations (see Hornstein (2001) for discussion). That is, the computational system first exhausts the numeration, plugging *a Maria* in the matrix object position, and only after that is sideward movement of *o João* licensed.

[Spec,TP] and having its Case valued. (25) finally surfaces as (21) after the lower copies of *o João* are deleted.
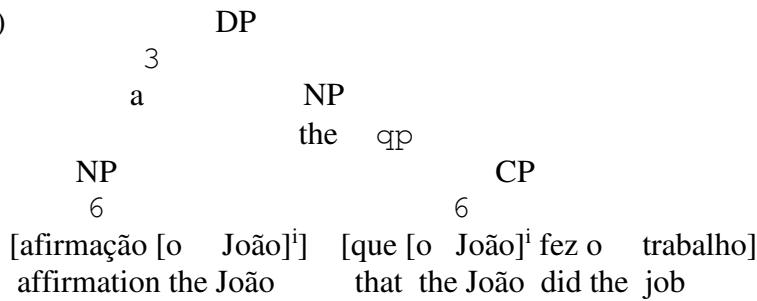
Let us now examine why a sideward movement derivation for (20) does not lead to a convergent result. Consider the steps in (26)-(28).

(26) a. K= [$_{CP}$ que [o   João] $T_{N:default}$ fez o   trabalho]
             that   the João   did the job
     b. L = [$_{NP}$ afirmação]
              affirmation

(27) *Sideward movement*:
     a. K= [$_{CP}$ que [o João]^i $T_{N:default}$ fez o trabalho]

     b. L = [$_{NP}$ afirmação [o João]^i]

(28)   DP
                    3
                  a   NP
                         the   qp
          NP   CP
          6   6
      [afirmação [o   João]^i]   [que [o   João]^i fez o   trabalho]
       affirmation the João   that the João did the job

The steps in (26)-(28) are parallel to those of (22)-(24). So, the difference must show up at later steps. Consider the copies of *o João* in (25). The higher copy c-commands each of the lower copies, forming a different chain with each of them. In (28), on the other hand, the two copies are not in a chain configuration as they do not stand in a c-command relation. Assuming that deletion of copies can only operate with chains, Chain Reduction (see Nunes 2004) can be employed in (25), but not in (28). Failure to delete one of the copies of *o João* in (28) in turn causes linearization problems as the system gets contradictory instructions: *o João* should precede and be preceded by *que*, as well as precede itself (see Nunes (2004) for discussion).[10] Note that when *de* is present, i.e. when we have a true noun

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[10] The contrast between the derivations of (20) and (21) mirrors the contrast between the derivations of the parasitic gap constructions in (ia) and (iia) below, which under Nunes's (2001, 2004) analysis involves sideward movement of *which paper* to the matrix object position, yielding the (simplified) structures in (ib) and (iib). In (ib), sideward movement of *which paper* to the matrix object position is followed by movement to the matrix [Spec,CP]. The copy in [Spec,CP] forms a different chain with each of the lower copies, allowing Chain Reduction to apply and delete the lower copies. By contrast, in (iib) the two copies of *which paper* do not form a chain and Chain Reduction is inapplicable. The derivation then crashes at PF because it cannot be linearized: *without*, for instance, should

complement structure as in (18), the upper copy of *o João* c-commands and forms a chain with the lower copy, allowing Chain Reduction to apply in the phonological component, delete the lower copy, and circumvent the potential linearization problems.

To summarize, dummy prepositions do not play a direct role in the licensing of null subjects inside noun complement structures, as appeared at first sight. Rather, they just disambiguate the potential relation the finite CP can bear with respect to the noun it relates to: a head-complement relation or an adjunction relation. When *de* is present, we have a head-complement relation and the embedded subject can successively move to the θ-position associated with the selecting noun. When *de* is absent, we have an adjunct structure and although sideward movement of the subject of the adjunct clause can satisfy Last Resort, the resulting structure cannot be linearized and the derivation crashes.

Let us now consider the consequences of this analysis for another type of construction in BP in which the interpretation of a null subject varies depending on whether or not *de* is present.

4. Dummy prepositions and adjunct control

Modesto (2000) presents sentences such as (29) below as evidence against the proposal that referential null subjects in BP are A-traces. The argument goes as follows: if null subjects in BP are to be analyzed on a par with obligatorily controlled PRO in Hornstein's (2001) system (i.e. as A-traces), the null subject of (29) should in principle behave like the object control structure in (30) and take the matrix object as its antecedent, contrary to fact.

(29) [O   João]$_i$ convenceu [a   Maria]$_k$ que *ec*$_{i/*k}$ tinha que sair.
     the João   convinced the Maria   that   had   that leave
     'João convinced Maria that he/*she had to leave.'

(30) [O   João]$_i$ convenceu [a   Maria]$_k$ a **t**$_{k/*i}$ sair.
      the João   convinced   the Maria   to   leave
     'João convinced Maria to leave.'

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precede and be preceded by *which paper* in (ib) (see Nunes (2001, 2004) for further discussion).

(i) a. Which paper did you file without reading?
     b. [[which paper]^i did [you [[file [which paper]^i] [without reading [which paper]^i]]]]

(ii) a. *Who filed which paper without reading?
     b. *[who [[filed [which paper]^i] [without reading [which paper]^i]]]

However, in order for the argument to be valid, it must be the case that (29) and (30) have exact parallel structures. In particular, the embedded clause should be a complement of *convencer* 'convince' in both cases and the matrix object should also c-command into the embedded clause in both cases. Neither of these tacit assumptions resists further scrutiny, though. As pointed out by Ferreira (2000), the matrix object does not induce a Principle C effect with respect to epithets inside the embedded CP, as illustrated in (31) below, which indicates that the matrix object does not c-command into the embedded clause. In turn, Rodrigues (2004) claims that the embedded clause is actually an adjunct clause, as it induces island effects, as illustrated in (32).

(31) O   João convenceu [a   Maria]$_i$ que [a   idiota]$_i$ devia   assaltar
     the João convinced   the Maria   that the idiot   should   rob
     um banco.
     a   bank
     'João convinced Maria$_i$ that [the idiot]$_i$ should rob a bank.'

(32) a. ??Quem$_i$ o   João convenceu a   Maria [que t_i vem   amanhã]?
        who   the J.   convinced the M.   that   comes tomorrow
        'Who did João convince Maria [will come tomorrow]?'
     b. ??O que$_i$ o   João convenceu a   Maria [que o   Pedro precisa
        what   the João convinced the Maria   that the Pedro needs
        comprar t_i]?
        buy
        'What did João convince Maria that Pedro needs to buy?'
     c. *Como$_i$ o   João convenceu a   Maria [que o   Pedro tinha
        how   the João convinced the Maria   that the Pedro had
        que se   vestir para a   festa t_i]?
        that REFL dress for   the party
        'How$_i$ did João convince Mary [that Pedro had to dress for the
        party t_i]?'

In face of data like (31) and (32), Rodrigues proposes that sentences such as (29) should be derived along the lines of what was proposed for sentences such as (21). In other words, (29) is a case of adjunct control into a finite clause, which is derived via sideward movement, as sketched in (33)-(36).

(33) K = [o   João T$_{N:default}$ tinha que sair]   L = [convenceu a   Maria]
         the João   had   that leave   convinced the Maria

(34) *Sideward movement*:

K = [[o J.]^i T$_{N:default}$ tinha que sair]   M = [[o J.]^i convenceu a M.]
　　z − − − − − − − − − − − − − − − − − − −↑

(35) [$_{vP}$ [$_{vP}$ [o　João]^i convenceu a　Maria] [que [[o　　João]^i T$_{N:default}$
　　　　the João　convinced the Maria　that　the João
　tinha que　sair]]]
　had　that leave

(36) [$_{TP}$ [o João]^i T$_{[N:default; P:default]}$ [$_{vP}$ [$_{vP}$ [o João]^i convenceu a Maria]
　　[que [[o João]^i T$_{N:default}$ tinha que sair]]]]

What I would like to bring to this discussion is the observation that if the embedded clause of sentences such as (29) is preceded by the dummy preposition *de*, we get a new pattern: extraction out of the embedded clause now becomes acceptable, as shown in (37), and an embedded null subject can take either the matrix subject or the matrix object as its antecedent, as shown in (38).

(37) a. Quem$_i$ o João convenceu a　Maria **de** [que t_i vem　amanhã]?
　　who　the J. convinced the M.　**of** that　comes tomorrow
　　'Who did João convince Maria will come tomorrow?'
　b. O que$_i$ o　João convenceu a　Maria **de** [que o　Pedro precisa
　　what　the João　convinced the Maria **of**　that the Pedro needs
　　comprar t_i]?
　　buy
　　'What did João convince Maria that Pedro needs to buy?'
　c. Como$_i$ o　João convenceu a　Maria **de** [que o　Pedro tinha
　　how　the João convinced the Maria **of**　that the Pedro had
　　que se　vestir para a　festa t_i]?
　　that REFL dress for　the party
　　'How$_i$ did João convince Mary [that Pedro had to dress for the party t_i]?'

(38) [O　João]$_i$ convenceu [a　Maria]$_k$ **de** que *ec$_{i/k}$* tinha que sair.
　　the João　convinced the Maria　**of** that　had　that leave
　　'João convinced Maria that he/she had to leave.'

The ambiguity found in (38) is arguably what underlies the contrasts in (39) and (40).

(39) a. [O　João]$_i$ convenceu [a　Maria]$_k$ que　tinha que **se$_{i/*k}$** vestir

the João   convinced   the Maria   that   had   that REFL dress
bem para a   reunião.
well for   the meeting
'João convinced Maria that he/*she had to dress well for the
meeting.'

   b. [O   João]$_i$ convenceu [a   Maria]$_k$ **de** que tinha que **se**$_{i/k}$ vestir
     the João   convinced   the Maria   **of** that had   that REFL dress
bem para a   reunião.
well for   the meeting
'João convinced Maria that he/she had to dress well for the
meeting.'

(40) a. *[O   João]$_i$ convenceu [a   Maria]$_k$ que tinha que apresentá-**lo**$_i$
     the João   convinced   the Maria   that   had   that introduce-him
pra   Ana.
to-the Ana
'*João$_i$ convinced Maria that he$_i$ had to introduce him$_i$ to Ana.'

   b. [O   João]$_i$ convenceu [a   Maria] **de** que tinha que
     the João   convinced   the Maria   **of** that had   that
apresentá-**lo**$_i$ pra   Ana.
introduce-him to-the Ana
'João$_i$ convinced Maria that she had to introduce him$_i$ to Ana.'

Given that the null subject must be controlled by the matrix subject in the
version without *de*, the reflexive in (39a) must corefer with the matrix
subject and not the matrix object. By the same token, (40a) is out because
the pronoun is locally bound by the null subject. Conversely, once the null
subject may be controlled by the matrix subject or the matrix object in the
version with *de* (cf. (38)), the reflexive in (39b) is ambiguous and the
pronoun in (40b) can be coreferential with the matrix subject, thanks to the
possibility of object control.

    However, this general pattern raises a problem. If *de* always signals that
the embedded CP is a complement in these constructions, subject control in
the version with *de* becomes unexpected. Given a Larsonian VP-shell
structure for ditransitives, movement of the embedded subject to the matrix
[Spec,vP] should cross the intervening object and yield a minimality effect,
as illustrated in (41).

(41) [$_{vP}$ [o João]$_i$ [$_{v'}$ convenceu$_k$+v [$_{VP}$ [a Maria] t$_k$ **de** [$_{CP}$ que t$_i$ ...]]]
     ↑−−−−−−−−−−−−*−−−−−−−−−−−−m

    This unexpected pattern is arguably spurious, relating to the fact that the
sociolinguistic prestige ascribed to *de* (see section 3) often leads to instances
of hypercorrection. Consider the data in (42) below, for example. Although
the verb *pensar* 'to think' does not subcategorize for *de* in BP, as shown in

(42a), it is not uncommon to find cases of hypercorrection with insertion of *de* in formal speech, as illustrated in (42b), where # stands for hypercorrection.

(42) a. Eu não pensei (***de**) nada.
   I   not thought **of** nothing
   'I didn't think anything.'
   b. Eu penso (**#de**) que é necessário investir mais em educação.
   I   think   **of** that is necessary invest more in education
   'I think that it is necessary to invest more in education.'

Although one frequently finds prescriptivist condemnations of hypercorrections of the sort illustrated in (42b), the presence of the preposition in constructions such as (38) is taken to be prescriptively correct, given the availability of structures such as (43), where the preposition is obligatory.

(43) Eu nunca consigo convencer a   Maria ***(de)** alguma coisa.
   I never get   convince the Maria **of** some   thing
   'I never manage to convince Maria of something.'

Based on the superficial "stylistic" availability of *de*-insertion in (42b), I would like to propose that the unexpected subject control reading in (38)/(39b)/(40b) arises from an adjunct structure to which "stylistic" *de* was added. We can see that the *de* that appears in these constructions is spurious by examining whether the binding relations allowed in (38)/(39b)/(40) are kept the same when there is *wh*-movement from the embedded clause. Given that *wh*-movement can only take place when the embedded CP is a complement, the prediction is that subject control, which is licensed when the embedded CP is an adjunct, should no longer be available in the presence of *wh*-movement from within the embedded clause.

Take the sentence in (44) below, for instance, which contrasts with (39b) in only allowing the object control reading for the embedded null subject. According to the proposal above, the two readings available in (39b) are due to a structural ambiguity. When the embedded CP is a complement (and *de* is a marker of inherent Case), only the object control reading is possible. Conversely, when the embedded CP is an adjunct (and *de* is a "stylistic" marker), only the subject control reading is allowed. As predicted, once an adjunct is extracted out of the embedded clause in (44) and the complement structure is enforced, the anaphor must take the matrix object as its antecedent.

(44) Como$_w$ [o   João]$_i$ convenceu [a   Maria]$_k$ **de [**que tinha que **se**$_{k/*i}$
   how   the João convinced the Maria **of** that had   that REFL

vestir para a   reunião t_w]?
dress for   the meeting
'How$_w$ did João convince Maria [that she/*he had to dress for the
meeting t_w]?'

Similar considerations apply to the contrast between (45a) and (45b)
below. Speakers vary in their judgments for (45a) under the reading in
which *a Maria* and *a idiota* are coreferential. According to the proposal
above, this fluctuation in judgments is due to the potential ambiguity of the
embedded CP. If CP is interpreted as a complement (with *de* as a marker of
inherent Case), the matrix object c-commands into the embedded clause and
coreference with the epithet should induce a Principle C effect. In turn, if
CP is interpreted as an adjunct (with the "stylistic" use of *de*), coreference
should be allowed as the object would not c-command the epithet. Once the
interpretation of CP as a complement is forced by *wh*-extraction, as in (45b),
judgments now become more streamlined and coreference is not allowed, as
predicted.

(45) a. %O   João convenceu [a Maria]$_i$ **de** [que [a   idiota]$_i$ devia
         the João convinced the Maria **of** that the idiot   should
         se   vestir formalmente para a   festa].
         REFL dress formally   for   the party
         'João convinced Maria$_i$ that [the idiot]$_i$ should dress for the
         party formally.'
    b. *Como$_k$ o João   convenceu [a   Maria]$_i$ **de** [que [a   idiota]$_i$
         how   the João convinced   the Maria **of** that the idiot
         devia se   vestir para a   festa t_k]?
         should REFL dress for   the party
         '*How$_k$ did João convince Maria$_i$ [that [the idiot]$_i$ should dress
         for the party t_k]?'

To sum up, if we use *wh*-extraction to control for the potential noise due
to the "stylistic" use of *de* in constructions with verbs like *convencer*
'convince', we again find that *de* disambiguates the potential complement or
adjunct interpretation of a CP. When *de* is present, we have a complement
structure and movement of the embedded subject proceeds upwards; hence
the moved subject must land in the matrix object position ([Spec,VP]) in
compliance with minimality requirements. In turn, if *de* is not present, we
have an adjunct structure, and the embedded subject can only reach the
matrix domain if it undergoes sideward movement, landing in [Spec,vP]
(see fn. 9). *Wh*-movement out of the embedded clause is therefore licit when
de is present, but induces an island effect when *de* is not present.

5. Dummy prepositions and the A-over-A Condition

Impersonal constructions constitute another domain where prepositions interact with the licensing of null subjects in BP. As originally noted by Galves (1987), sentences such as (46) in BP are ambiguous in that the DP that appears in the matrix clause may be interpreted as the external or the internal argument of the embedded verb:

(46) O João é difícil de elogiar.
the João is difficult of praise-INF
Tough-interpretation: 'It is hard to praise João.'
Raising interpretation: 'João rarely praises someone.'

Here I will focus on the raising interpretation. Evidence that the matrix DP in (46) is a subject is the fact that it triggers verbal agreement, as shown in (47) below. Moreover, the fact that these constructions may involve idiom chunks, as illustrated in (48) and (49), indicate that the matrix DPs have raised out of the embedded clause.[11] Finally, (50) shows that raising is possible even if the embedded clause has an inflected infinitival. Actually, that raising out of inflected infinitivals is allowed in BP should be no surprise by now, given that raising out of finite clauses is also possible, as seen in previous sections. In other words, Nunes's (2008) proposal that finite Ts in BP may bear only a number feature in the syntactic component can also be extended to the T head of inflected infinitivals.

(47) a. Eu sou fácil de elogiar alguém.
I am easy of praise someone
'I easily praise people.'
b. Esses professores são difíceis de elogiar os alunos.
these teachers are difficult of praise the students
'These teachers rarely praise the students.'

(48) a. Tá fácil do caldo entornar.
is easy of-the broth boil-over
b. O caldo tá fácil de entornar.
the broth is easy of boil-over
'It's likely that things will go wrong.'

(49) a. Tá bem fácil da vaca ir pro brejo.
is very easy of-the cow go to-the swamp

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[11] The fact that idiom chunks are allowed in constructions such as (48b) and (49b) also provides a compelling argument against a *pro*-based approach to null subjects in BP, for idiom chunks cannot be subsumed or doubled by pronouns. For further arguments against a *pro*-based analysis, see Ferreira (2000, 2009), Rodrigues (2004), Martins & Nunes (2005), and Nunes (2008).

b. A   vaca tá bem fácil de ir pro   brejo.
   the cow is very easy of go to-the swamp
   'It's very likely that things will go wrong.'

(50) Esses professores são difíceis de **elogiarem** alguém.
    these teachers   are difficult of **praise.3PL** someone
    'These teachers rarely praise someone.'

Relevant for our current discussion are the correlations involving the dummy preposition *de* and the availability of these raising constructions (see Nunes 2008). First, this type of raising is only allowed with predicates that permit the dummy preposition *de*. As shown in (51) and (52) below, for instance, predicates such as *fácil* 'easy' and *difícil* 'difficult', which optionally require *de*, allow raising of the embedded subject; by contrast, predicates such as *provável* 'probable' and *lamentável* 'regrettable', which do not license *de*, do not allow raising either.

(51) a. É fácil/difícil   (**d**)esses professores elogiarem os alunos.
       is easy/difficult **of**-these teachers   praise.3PL the students
       'It's easy/hard for these teachers to praise the students.'
    b. Esses professores são fáceis/difíceis de elogiarem os alunos.
       these teachers   are easy/difficult of praise.3PL the students
       'These teachers often/rarely praise the students.'

(52) a. É bem provável/lamentável (***d**)os professores terem
       is very probable/regrettable **of**-the teachers   have.3PL
       elogiado o   diretor.
       praised   the director
    b. *Os professores são bem prováveis/lamentáveis de terem
        the teachers   are very probable/regrettable   of have.3PL
        elogiado o   diretor.
        praised   the director
       'It is very likely/regrettable that the teachers praised the director.'

Second, raising can take place only if the preposition is present, as shown in (53).

(53) a. É difícil   (**d**)esses professores elogiarem alguém.
       is difficult **of**-these teachers   praise.3PL someone
       'These teachers rarely praise someone.'

    b. Esses professores são difíceis ***(de)** elogiarem alguém.
       these teachers   are difficult **of** praise.3PL someone

'These teachers rarely praise someone.'

Finally, although the infinitival clause can move to the subject position or stay *in situ*, as shown in (54), once it is preceded by *de* it can no longer move, as shown in (55).

(54) a. É difícil   esses professores elogiarem alguém.
          is difficult these teachers   praise.3PL someone
     b. Esses professores elogiarem alguém   é difícil.
          these teachers   praise.3PL someone is difficult
          'These teachers rarely praise someone.'

(55) a. É difícil   **d**esses professores elogiarem alguém.
          is difficult **of**-these teachers   praise.3PL someone
     b. ***D**esses professores elogiarem alguém   é difícil.
          of-these teachers   praise.3PL someone is difficult
        'These teachers rarely praise someone.'

Nunes (2008) argues that the paradigm in (51)-(55) can be accounted for if *de* is a marker of inherent Case. Under this view, the fact that only some predicates are able to take a *de*-infinitival (cf. (51a) *vs.* (52a)) reduces to lexical idiosyncrasies generally involved in inherent Case assignment. In turn, if the infinitival receives inherent Case, it should become inactive for purposes of A-movement; hence, a *de*-infinitival cannot move to the matrix subject position (cf. (55a) *vs.* (55b)). Finally, given that both the infinitival clause and the embedded subject can potentially raise to the matrix subject position (cf. (54b) and (53b)), potential movement of the infinitival clause should always block movement of the embedded subject, as they instantiate an A-over-A configuration. In order for the subject to be allowed to move without violating Chomsky's (1964) A-over-A Condition, the infinitival must be discarded from the competition. This happens when the infinitival receives inherent Case (cf. (55)).

We now have an explanation for why movement of the embedded subject requires the presence of *de* (cf. (53b)): by rendering the infinitival clause immobile, *de* ends up freeing the embedded subject. Actual subject movement will then depend on whether the infinitival T head bears only number or number and person features.

To sum up, in this section we examined another type of construction in BP that at first sight suggests that its null subject must be licensed by the dummy preposition *de*. Upon close inspection, we found that these impersonal constructions replicate what we had already seen in previous sections, with the only difference that the movement of the embedded subject this time targets a non-thematic position. More specifically, there is no direct interaction between the dummy preposition and the null subject. The preposition is just a realization of inherent Case assigned to the

infinitival clause by the subcategorizing head. However, a by-product of such interaction is that the infinitival clause becomes immobile, allowing the embedded subject to move. The raising constructions discussed in this section thus provide additional evidence for the two proposals explored in previous sections: (i) that referential null subjects in BP are A-traces and (ii) the preposition *de* that precedes clauses is a marker of inherent Case.

6. Concluding remarks

The proposal that referential null subjects in BP are traces of A-movement (see Ferreira 2000, 2009, Rodrigues 2002, 2004, Martins & Nunes 2005, Nunes 2008) provides substantial support to the general approach advocated by Hornstein (2001), according to which construal phenomena should be captured in terms of movement. This paper has provided further evidence to this approach as it showed that the basic proposal can be extended to finite control into noun complement clauses in BP (section 3) and sharpened an alternative analysis of recalcitrant data involving apparent object control configurations (section 4). Finally, it provided a new type of argument for a movement approach to referential null subjects in BP (section 6): as movement of embedded clauses and movement of their subjects may compete with respect to economy considerations minimizing the span of the operation, referential null subjects in BP were shown to be regulated by the A-over-A Condition.

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