Chapter 5   Subject and Topic Hyper-raising in Brazilian Portuguese:

A Case Study on Reference Sets for Economy Computations

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Abstract

Pontes (1987) has shown that Brazilian Portuguese allows for two subject-like positions, with the outer subject resembling topics. She has also shown that in absence of a standard subject, a prepositionless locative or possessor may move to the subject position and trigger verbal agreement. Brazilian Portuguese also allows hyper-raising of subjects (Ferreira 2000) and topics (Martins and Nunes 2010). The combination of these independent properties seem to yield a scenario in which agreement with noncannonical subjects is completely optional. However, a close examination of the relevant data reveals the agreement under discussion is actually sensitive to resumption, displays matrix and embedded asymmetries, and interacts with *wh*-extraction in unsuspected ways. I argue that this complex agreement paradigm finds a natural account if economy is computed in a local fashion and, in particular, if numerations are organized in terms of subarrays (Chomsky 2000).

Keywords: hyper-raising, agreement, topics, Brazilian Portuguese

5.1. Introduction

Since the seminal work by Pontes (1987), it has been standardly assumed in the literature on

Brazilian Portuguese (*BP*) that its clause structure may involve two subject-like positions,[1] as

exemplified in (1), with the outer subject standing in an aboutness relation with the remaining

of the clause, resembling topics.[2] Furthermore, as also noted by Pontes, in absence of a

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[1] For relevant discussion and references, see Pontes 1987, Kato 1989, 1998, 1999, 2000, Britto 1997, 2000, Galves 1998, 2000, Negrão 1999, and Bastos-Gee 2011.

[2] I henceforth use the term *topic* for the outer subject and *subject* for the inner subject. Accordingly, I take topics to be in [Spec,TopP] and subjects to be in [Spec,TP].

standard subject, a prepositionless locative or possessor may move to the subject position and trigger verbal agreement, as illustrated in (2) and (3).[3]

(1)   a. **Essa bolsa**, **as coisas** somem aqui dentro.   (Pontes 1987)

       this purse the things disappear here inside

       'Things disappear inside this purse.'

    b. **Aqueles carros**, **o pneu** furou.

       those cars the tire punctured

       'Those cars got a flat tire.'

(2)   a. **Cabe** muita coisa **n**essas gavetas.

       fit-3SG many thing in-these drawers

    b. [Essas gavetas]$_i$ **cabem** muita coisa t_i

       these drawers fit-3PL many thing

       'Many things can fit in these drawers.'

(3)   a. **Quebrou** o ponteiro **d**os relógios.

       broke-3SG the arm of-the watches

    b. [Os relógios]$_i$ **quebraram** o ponteiro t_i

       the watches broke-3PL the arm

       'The arms of the watches broke.'

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[3] For relevant discussion, see Lobato 2006, Lunguinho 2006, Negrão and Viotti 2008, Avelar 2009, Avelar and Galves 2011, Munhoz 2011, Munhoz and Naves 2012, and Andrade and Galves 2014.

Based on the fact that these double subjects are also allowed in embedded clauses, as shown in (4), and that BP independently allows subject hyper-raising, as illustrated in (5),[4] Martins and Nunes (2010) have argued that embedded double subject structures such as (4) may give rise to topic hyper-raising constructions such as (6), where the embedded topic moves to the matrix [Spec,TP], triggering agreement with the matrix verb.

(4)   a. Eu acho que **aqueles carros**, **o   pneu** furou.

      I   think that those   cars   the tire got-flat

      'I think that those cars have a flat tire.'

      b. O   João disse que **esses livros**, **o   autor**   é desconhecido.

      the João said   that these books the author is unknown

      'João said that the author of these books is unknown.'

(5)   Eles$_i$ **parecem** que [$_{TP}$ t_i compraram um carro novo]

      *they seem-**3PL**   that   bought-**3PL** a   car   new*

      'They seem to have bought a new car.'

(6)   a. [Aqueles carros]$_i$ **parecem** que [$_{TopP}$ t_i [$_{TP}$ o   pneu furou]]

      *those   cars   **seem-3PL** that   the tire punctured*

      'Those cars seem to have a flat tire.'

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[4] For relevant discussion on hyper-raising, see Grosu and Horvath 1984, Ura 1998, Zeller 2006, and Carstens and Diercks 2013. On hyper-raising in BP, see Ferreira 2000, 2009, Duarte 2004, Martins and Nunes 2005, 2009, 2010 and Nunes 2008a, 2010a, 2010b, 2011, 2015a.

b. [Esses livros]ᵢ **parecem** que [TopP *tᵢ* [TP o autor é desconhecido]]

*these books **seem-3PL** that* *the author is unknown*

'The author of these books seems to be unknown.'

When closely inspected, the combination of these four properties in BP – double subjects, possessor/locative raising to [Spec,TP], subject hyper-rasing, and topic hyper-raising – ends up posing very intriguing questions regarding economy computations from a minimalist perspective. First, if movement is a last resort operation (Chomksy 1995), the derivations with movement of the embedded topic in (6), for instance, should in principle be blocked by the corresponding convergent derivations in (7), where no such movement is involved.

(7) a. Parece que aqueles carros, o pneu furou.

seem-3SG that those cars the tire got-flat

'It seems that those cars have a flat tire.'

b. Parece que esses livros, o autor é desconhecido.

seem-3SG that these books the author is unknown

'It seems that the author of these books is unknown.'

Second, although matrix agreement with a topic is licit only if the topic is in the matrix clause, as shown by the contrast between (6) and (8), the presence of a topic in the matrix clause need not trigger agreement, as shown in (9).

(8) a. ***Parecem** que aqueles carros, o pneu furou.

  seem-3PL that those cars the tire punctured

  'It seems that those cars have a flat tire.'

  b. ***Parecem** que esses livros, o autor é desconhecido.

  seem-3PL that these books the author is unknown

  'It seems that the author of these books is unknown.'

(9) Essas gavetas **parece** que cabem muita coisa.

 *these drawers **seem-3SG** that fit-3PL many thing*

 'It seems that many things can fit in these drawers.'

Notice that saying that the contrast between (6) and (8) is due to lack of a Spec-head configuration between the matrix T and the topic in (8) does not help much. After all, Chomsky's (2000, 2001) operation Agree is taken to be independent from movement and movement of the embedded topic is in fact optional, as seen in (6) and (7).

  Finally, the data in (10), with all agreement combinations, show that agreement in the matrix domain is not dependent on agreement on the embedded domain. This is puzzling if agreement is also a last resort operation triggered by the need to eliminate/value [-interpretable] features (Chomsky 1995, 2000, 2001): why does subject-verb agreement in topic hyper-raising constructions seem to be optional in both the matrix and the embedded clause?

(10)   a. Essas gavetas **parecem** que **cabem** muita coisa.

         *these drawers **seem-3PL** that **fit-3PL** many thing*

    b. Essas gavetas **parecem** que **cabe** muita coisa

         *these drawers **seem-3PL** that **fit-3SG** many thing*

    c. Essas gavetas **parece** que **cabem** muita coisa.

         *these drawers **seem-3SG** that **fit-3PL** many thing*

    d. Essas gavetas **parece** que **cabe** muita coisa.

         *these drawers **seem-3SG** that **fit-3SG** many thing*

'It seems that many things can fit in these drawers.'

In this chapter I argue that the data presented here cease to be problematic once derivational economy is computed in a local fashion. More specifically, I propose that this intricate agreement paradigm does not result from optionality of operations or economy competition, but from different distributions of the lexical items in the numeration (more precisely, within the relevant subarrays of the numeration – see Chomsky 2000).

The chapter is organized as follows. In Section 5.2, I discuss relevant aspects of the derivation of subject and topic hyper-raising. In Section 5.3, I review Chomsky's motivation for proposing that a numeration should be divided in subarrays and in Section 5.4, I show how this proposal may offer a solution for the issues mentioned previously. Section 5.5 then provides some independent evidence for the analysis outlined in Section 5.4. Section 5.6 discusses Avelar and Galves's (2011) alternative account for some of the data presented earlier. Finally, Section 5.7 concludes the chapter.

5.2. Subject versus Topic Hyper-raising in BP

There are several requirements to be met in order for derivations involving subject and topic hyper-rasing to converge. The first one is that the embedded subject or topic must be accessible to the matrix T. Martins and Nunes (2010) show that Chomsky's (2001) version of the Phase Impenetrability Condition (PIC)[5] has exactly this effect. Crucially, the complement of a strong phase head must be spelled out only when another strong phase head is introduced in the derivation. Take the abstract configurations in (11a) and (11b) below, for instance, which respectively underlie subject and topic hyper-raising. Given that T is by definition not a phase head and that the light verb associated with raising verbs is defective, the only possible strong phase head in the structures in (11) is the embedded C. Thus, in absence of a higher strong phase head in the derivation, the complement of *that* in (11) need not undergo Spell-Out, making it possible for the matrix T and the embedded subject or topic to enter into an agreement relation.

(11)   a. [$_{TP}$ T [$_{vP}$ seem+v [$_{CP}$ that [$_{TP}$ DP …]]]]

          |----------------------------|

        b. [$_{TP}$ T [$_{vP}$ seem+v [$_{CP}$ that [$_{TopP}$ DP$_{topic}$ [$_{TP}$ DP …]]]]]

          |-------------------------------|

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[5] Chomsky's (2001:14) PIC:

(i)   The domain of H [the head of the strong phase HP; JN] is not accessible at ZP [the smallest

          strong phase dominating HP; JN]; only H and its edge are accessible to such operations.

Of course, in order for this agreement relation to suceed, the relevant DP must still be active for A-purposes – that is, it must have its Case unvalued. In the case of subject hyper-raising, I follow Ferreira (2000, 2009), who argues that a finite T in BP may be associated with a complete or an incomplete set of ϕ-features. More specifically, I assume Nunes's (2008a) implementation of Ferreira's proposal, according to which finite Ts in BP may be associated with person and number or just number. In the latter situation, the subject does not have its Case valued and may undergo further A-movement. Thus, the derivation of a sentence such as (5) proceeds along the lines of (12), where the embedded T is associated with number and the matrix T with person and number (see Nunes 2015a for relevant discussion):

(12) [Eles$_i$ **T$_{[P,N]}$**   parecem   que [$_{TP}$ t_i **T$_{[N]}$** compraram um carro novo]]

     they   *seem-**3PL**   that*   *bought-**3PL** a   car   new*

     'They seem to have bought a new car.'

Obvioulsy, a convergent derivation involving topic hyper-raising cannot have a defective T in the embedded clause, for otherwise the embedded subject would not have its Case valued. Thus, the fact that an embedded topic may still be active for purposes of A-movement and undergo hyper-raising, as illustrated in (6b) and repeated below in (13), is independent from the feature specification of the T head in its clause.

(13) [[Esses livros]$_i$ **T$_{[P, N]}$** parecem   que [$_{TopP}$ t_i [$_{TP}$ o   autor **T$_{[P, N]}$** é desconhecido]]]

     these   books   *seem-3PL that*   *the author   is unknown*

     'The author of these books seems to be unknown.'

Following Martins and Nunes (2010), I assume that a base-generated topic may be assigned default Case if there is no Case valueing probe available. Given that in (13) there is such a probe, namely, the matrix T, the moved topic may have its Case valued by the matrix T and no default assignment is triggered. On the other hand, if the matrix T has become inactive in virtue of agreeing with a null expletive (see Section 5.4 below), the embedded topic has no choice other than to remain *in situ* and become licensed via default Case, as illustrated in (14) (see (7b)).

(14)   [*pro_expl* T_{[P,N]} parece   que [_{TopP} [esses livros]_{dflt} [_{TP} o   autor é desconhecido]]]

                seem-3SG that   these books   the author is unknown

'It seems that the author of these books is unknown.'

Finally, subject and topic hyper-raising are also subject to locality contraints of the A-over-A type. Assuming with Chomksy (2008) that C is ultimately the host of clausal φ-features, Nunes (2008a, 2010a) argues that the CP immediately dominating the embedded subject or the embedded topic counts as a closer goal with respect to the matrix T than the embedded subject or the embedded topic. Crucially, Nunes observes that movement of the embedded topic or subject is possible just in the case that the clause containing them cannot itself undergo movement, as illustrated by the contrast between (15) and (16). (15a) shows that the embedded clause can in principle move to the matrix [Spec,TP], which then precludes movement of the embedded subject or the embedded topic (see (15b)/(15c)). Conversely, given that movement of the embedded clause in (16a) is illicit, the embedded subject or topic is free to move (see (16b)/(16c)). Nunes (2008a, 2010b) proposes that predicates that license hyper-raising such as *acabar* 'turn out' in (16) assign inherent Case to

their complement CPs, thereby making them immobile for A-purposes and removing them from the comparison set relevant for (A-over-A) locality computations.[6]

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[6] Ferreira (2000) observes that in subject hyper-raising constructions, the embedded CP is not a strong phase in virtue of being ϕ-defective (see (12)). Interestingly, even if the embedded C is ϕ-complete and, therefore, a strong phase head, as in the case of topic hyper-raising (see (13)), Chomsky's (2001) version of the PIC (see note 5) still allows movement of the embedded topic to the matrix [Spec,TP]. Crucially, there is no strong phase head between the matrix TP and the embedded CP, which would induce Spell-Out of the complement of C (see Nunes 2008a for further discussion of this point). Under this view, the unavailability of subject and topic hyper-raising in English, as illustrated in (i) here, for example, is not to be attributed to the PIC, but to independent properties. Even if *seem* in English assigns inherent Case to its CP complement, as indicated by the immobility of CP in (ii), in (ia) the embedded subject has its Case valued by the embedded T and is therefore inactive for purposes of A-movement. As for (ib), English is unlike BP in not allowing double subject constructions; hence, the structure that should be the source for (ib) is not available. On the apparently similar "copy-raising" construction in (iii), see Fujii 2007 for recent discussion and relevant references.

(i)   a. *$John_i$ seems that t_i is intelligent

         b. *$John_i$ seems that t_i he_i is intelligent

(ii)   *[That John is intelligent]$_i$ seems t_i

(iii) $John_i$ seems like he_i is intelligent.

(15) a. [CP Que [aqueles políticos] foram subornados]i nunca foi   provado t_i

　　　　that those　　politicians were bribed　　　never was proved

　　b. *[Aqueles políticos]i nunca foram provados [CP que [TP t_i foram subornados]]

　　　　those　　politicians never were proved　　that were bribed

　　c. *[Aqueles políticos]i nunca foram provados [CP que [TopP t_i [TP eles foram

　　　　those　　politicians never were proved　　　that they were

　　subornados]]]

　　bribed

　　'It was never proved that those politicians were bribed.'

(16) a. *[CP Que [aqueles políticos] foram subornados]i acabou t_i

　　　　that those　　politicians were bribed　　　finished

　　b. [Aqueles políticos]i　　acabaram [CP que [TP t_i foram subornados]]

　　　　those　　politicians finished　　　that　　were bribed

　　c. [Aqueles políticos]i　　acabaram [CP que [TopP t_i [TP eles foram subornados]]]

　　　　those　　politicians finished　　　that　　　they were bribed

　　'It turned out that those politicians were bribed.'

　　Once the requirements discussed here are met, actual differences between subject and topic hyper-raising in BP must be due to independent properties associated with subject and topic positions. For instance, idiom chunks can undergo subject hyper-raising (see Martins and Nunes 2005), but not topic hyper-raising (see Martins and Nunes 2010), as illustrated in (17), and this receives a straightforward explanation from the fact that idioms in BP cannot

independently appear in the outer subject (topic) position (or be resumed by a pronoun), as shown in (18).[7]

(17) a. [O circo]$_i$ parece que [$_{TP}$ t_i vai pegar fogo]

  the circus seems that   goes catch fire

  'It seems that the circus will catch fire.' *or* 'It seems that there will be

  disagreements.'

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[7] Martins and Nunes (2010) also show that a hyper-raised subject may involve quantified phrases or undergo clefting, as illustrated in (i) here, contrary to what is found in topic hyper-raising constructions, as exemplified in (ii). As the authors point out, given that quantified phrases do not independently qualify as licit topics in double subject constructions and that topics are incompatible with clefting/focus, the ungrammaticality of (ii) is exactly what one would expect, even if the movement from the embedded clause is available, as seen in (i).

(i)   a. [Três quadros]$_i$ parecem que [$_{TP}$ t_i foram roubados]

    three paintings seem   that   were stolen

    'Three paintings seem to have been stolen.'

  b. Eram [esses candidatos]$_i$ que pareciam que [$_{TP}$ t_i iam ser promovidos]

    were these candidates   that seemed that   went be promoted

    'It was these candidates that it seemed were going to be promoted.'

(ii)   a. *[Três quadros]$_i$ parecem que [$_{TopP}$ t_i [$_{TP}$ eles foram roubados]]

     three paintings seem   that   they were stolen

    'Three paintings seem to have been stolen.'

  b. *Eram [esses candidatos]$_i$ que pareciam que [$_{TopP}$ t_i [$_{TP}$ eles iam ser promovidos]]

     were these candidates   that seemed that   they went be promoted

    'It was these candidates that it seemed were going to be promoted.'

b. [O circo]ᵢ parece que [_TopP_ *tᵢ* [_TP_ ele vai pegar fogo]]

   the circus seems that   it goes catch fire

   'It seems that the circus will catch fire.' **but not** 'It seems that there will be

   disagreements.'

(18) a. O João abotoou o paletó.

   the João buttoned the coat

   'João buttoned his coat.' *or* 'João died.'

   b. [O paletó], o João abotoou (ele)

   the coat   the João buttoned it

   'João buttoned his coat.' **but not** 'João died.'

We may also find the opposite pattern, with subject hyper-raising being excluded while topic hyper-raising being allowed. Nunes (2008a) notes that BP speakers who do not admit subject hyper-raising involving the first person singular pronoun allow the analogous topic hyper-raising construction, as illustrated in (19).

(19) a. %Euᵢ pareço   que [_TP_ *tᵢ* 'tou   enganado]

        I   seem-1SG that   am   mistaken

   b. Euᵢ pareço   que [_TopP_ *tᵢ* [_TP_ eu 'tou enganado]]

     I   seem-1SG that   I   am mistaken

   'I seem to be mistaken.'

Nunes (2008a) attributes this dialectal variation to low level computations in the morphological component. He proposes that when T in BP is associated just with number,

lexical redundancy rules along the lines of (20) add a person value in the morphological component. However, speakers split with respect to the availabiltiy of (20i) in their grammars. For those who have it, both subject and topic hyper-raising are allowed. In particular, (19a) will be assigned the representation in (21), where the embedded T has only a number feature and the embedded subject must move to the matrix clause in order to have its Case valued. By contrast, for speakers who do not have (20i) in their grammar, the first-person singular morphology on the embedded verb can only arise if the embedded T is specified for both person and number, but in this circumstance the subject pronoun will have its Case valued and will be unable to move to the matrix clause, as illustrated in (22). Finally, given that topic hyper-raising is not sensitive to the feature specification of the T head of its clause, as discussed previously, it is allowed for both groups of speakers. That is, for all speakers, (19b) is associated with the representation in (23) (see Nunes 2015a for further discussion):

(20)   In cases where T is only specified for number (N):

         (i) if N is valued as SG, add [P:1];

         (ii) otherwise, add [P:default].

(21)   %[Eu$_i$ T$_{[P,N]}$ pareço que [$_{TP}$ t_i **T$_{[N]}$** 'tou enganado]]
         ▲--------------OK-------------|
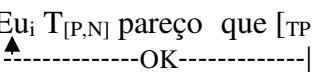
(22)   [T$_{[P,N]}$ pareço que [$_{TP}$ eu **T$_{[P, N]}$** 'tou   enganado]]
         ▲-------------*---------------|
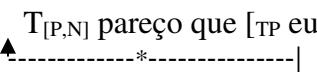
(23)   [Eu$_i$ T$_{[P,N]}$ pareço que [$_{TopP}$ t_i [$_{TP}$ eu **T$_{[P, N]}$** 'tou enganado]]]
         ▲---------------OK-------------|
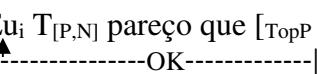
Bearing in mind the relevant simmilarities and differences between subject and topic hyper-raising, we may now examine the agreement puzzles presented in Section 5.1. But before we move on, let us first review Chomsky's (2000) proposal regarding the internal organization of numerations.

5.3. Local Economy and Subarrays

Chomksy (1995) has proposed that in order for two derivations to be compared for economy purposes, they should be both convergent, start from the same numeration, and involve the same derivational steps up to the point when a comparision is made. According to this proposal, the derivation of a sentence like (24a) below blocks the derivation of (24b), despite the fact that both converge and start from the same numeration. At the point where the embedded T satisfies the Extended Projection Principle (EPP) in the derivational step sketched in (25), it is more economical to Merge the expletive that is still in the numeration than Move *someone*; hence the pattern in (24).

(24)   a. There$_i$ seems t_i to be someone here

        b. *There seems someone$_i$ to be t_i here

(25)   N = {C$_1$, there$_1$, T$_1$, seem$_1$, to$_0$, be$_0$, someone$_0$, here$_0$}

        TP = [to$_{EPP}$ be someone here]

This reasoning has the unwanted consequence that the derivation of a sentence such as (26a) should exclude the derivation of (26b), for they converge and share the same initial

numeration, and it should be cheaper to insert the expletive to check the embedded EPP, as in (26a), than move *someone*, as in (26b).[8]

(26)   a. Someone is wondering whether there is someone here.

        b. There is someone wondering whether someone$_i$ is t_i here.

In order to rule out this unwelcome result, Chomsky (2000) argues that derivations should not be globally compared in terms of numerations but compared in a more local fashion. More specifically, Chomsky proposes that numerations must be organized in terms of subarrays determined by heads of strong phases and that the comparison set for economy computations must be evaluated with respect to subarrays.[9] From this perspective, the derivations of (24a) and (24b) do compete because there is only one subarray, as there is only one phase head, namely, the matrix C. By contrast, (26a) and (26b) each involve three different subarrays determined by the complementizers and the matrix light verb, as respectively illustrated in (27).

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[8] See Hornstein, Nunes, and Grohmann 2005 for detailed presentation of this problem and potential solutions.

[9] The notions of subarray and phase are actually logically independent. Chomsky (2000) has defined subarrays in terms of phases arguably because the latter is independently required in a phase-based system. For evidence for analyzing subarrays in terms of phase heads based on adjunct islands, see Nunes and Uriagereka 2000 and Nunes 2001, 2004. For concreteness, in the following discussion I assume with Chomsky (2000) that the relevant heads of strong phases are C and "transitive" *v*.

(27)   a. N_1 = {{$\mathbf{C}_1$, is_1}, {$someone_1$, $\mathbf{\textit{v}}_1$, $wondering_1$}, {$\mathbf{whether}_1$, $there_1$, is_1,

   $someone_1$, $here_1$}}

   b. N_2 = {{$\mathbf{C}_1$, is_1, $there_1$}, {$someone_1$, $\mathbf{\textit{v}}_1$, $wondering_1$}, {$\mathbf{whether}_1$, is_1,

   $someone_1$, $here_1$}}

In the derivation that starts with N_1, the expletive *there* is present in the subarray that underlies the embedded clause and, accordingly, Merge-over-Move applies, yielding (26a). In the case of N_2, on the other hand, *someone* is the only element present in the subarray that underlies the embedded clause which can check the EPP; hence, there is no competition between Merge and Move and the sentence in (26b) is derived. Finally, once the derivations of (26a) and (26b) do not involve the same numeration, they are not in the same reference set for economy computations and the grammaticality of one is completely independent from the grammaticality of the other.

I argue next that the agreement patterns involved in the derivation of subject and topic hyper-raising constructions in BP support this local approach to derivational economy.

5.4. Subarrays and the Derivation of Subject and Topic Hyper-raising

Assuming based on Chomsky (2000) that the economy computations must be locally computated with respect to the subarrays of a numeration, let us examine the puzzles discussed in Section 5.1, starting with the data in (6) and (7), repeated here in (28) and (29), which appear to show that topic hyper-raising is optional. Recall that if movement is a last resort operation (only employed when needed), such optionality is at odds with economy computations.

(28)   a. Parece   que [_{TopP} aqueles carros [_{TP} o   pneu furou]]

       seem-3SG that   those   cars   the tire   punctured

       'It seems that those cars have a flat tire.'

     b. [Aqueles carros]$_i$ parecem   que [_{TopP} t_i [_{TP} o   pneu furou]]

       those   cars   seem-3PL that   the tire   punctured

       'Those cars seem to have a flat tire.'

(29)   a. Parece   que [_{TopP} esses livros [_{TP} o   autor é desconhecido]]

       seem-3SG that   these books   the author is unknown

       'It seems that the author of these books is unknown.'

     b. [Esses livros]$_i$ parecem   que [_{TopP} t_i [_{TP} o   autor   é desconhecido]]

       these   books   seem-3PL that   the author is unknown

       'The author of these books seems to be unknown.'

Appearances are misleading here, though. Convergent derivations of sentences such as the ones in (28a) and (29a) arguably involve a null expletive in the matrix subject position (see (14)), as opposed to the derivations of the analogous sentences in (28b) and (29b). Once the derivations of each pair of sentences do not share the same numeration, they are not comparable for economy purposes and the grammaticality of one sentence is completely irrelevant for the grammaticality of the other. In other words, these sentences are subject to the same reasoning that prevents comparison between sentences such as (30a) and (30b) in English, which contrast in that movement of *someone* takes place in one case but not the other. Like the sentences in (30), the pairs in (28) and (29) are simply based on different lexical items.

(30)   a. There is someone here.

     b. Someone is here.

Let us now examine (8), repeated here in (31). Recall that the contrast between (31), on the one hand, and (28b) and (29b), on the other, appears to be at odds with Chomsky's (2000) proposal that agreement relations may be established regardless of movement.

(31)   a. ***Parecem**   que aqueles carros, o pneu furou.

     seem-3PL that those   cars   the tire punctured

     'It seems that those cars have a flat tire.'

    b. ***Parecem**   que esses livros, o   autor é desconhecido.

     seem-3PL that these books the author is unknown

     'It seems that the author of these books is unknown.'

We must consider two scenarios depending on whether or not the derivations of the sentences in (31) contain a null expletive in the matrix subject position. If they do, they should be comparable with the derivations of (28a) and (29a); if they do not, they should be comparable with (28b) and (29b). The grammaticality of (28a) and (29a) indicates that their null expletive is of the *it*-type (see Chomsky 1995), that is, it may satisfy the EPP and is fully specified for Case and ϕ-features. That being so, the ungrammaticality of the sentences in (31) under derivations containing null expletives is due to the fact that the null expletives do not have their Case checked as the matrix T agrees with the embedded topic. On the other hand, if there is no null expletive in the matrix clauses in (31), the matrix T is free to agree with the embedded topic, in compliance with the PIC, as discussed in Section 5.2. However, in such a scenario the EPP feature of the matrix T fails to be checked and the derivation does

not converge. In other words, the derivations of the sentences in (31) crash regardless of whether or not they involve a null expletive and, therefore, do not make part of the reference set for economy computations that determine the optimality of (28) or (29). In this sense, the ungrammatility of (31) is still compatible with Chomsky's (2000, 2001) proposal that Agree is independent from Move.[10]

Let us finally consider the paradigm illustrated in (32) (see (10)) and (33), which apparently illustrates an "everything-goes" situation, as far as agreement is concerned.[11]

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[10] The ungrammaticality of (31) also falls under Nunes's (2007) version of minimality, which allows a given ϕ-probe P to agree across a projection containing ϕ-features only if the goal also checks the EPP feature of P. In this sense, (31) patterns like (i) here in English, where T fails to agree with the external argument across vP because it is the expletive and not the external argument that checks the EPP. For other examples of this pattern and further discussion, see Nunes 2007.

(i)　　　*[$_{TP}$ There [$_{T'}$ T [$_{vP}$ [a man] [kissed Mary]]]]

[11] For some BP speakers, sentences such as (32d) and (33d), with no agreement between the matrix topic and either of the verbs, may require a contrastive interpretation for the topic and/or a comma intonation. I abstract away from these additional requirements for some speakers.

(32)   a. Essas gavetas **parecem**   que   **cabem**   muita coisa

       these drawers **seem-3PL** *that* **fit-3PL** *many thing*

     b. Essas gavetas **parecem** que   **cabe**   muita coisa

       these drawers **seem-3PL** *that* **fit-3SG** *many thing*

     c. Essas gavetas **parece**   que **cabem** muita coisa

       these drawers **seem-3SG** *that* **fit-3PL** *many thing*

     d. Essas gavetas **parece**   que **cabe**   muita coisa

       these drawers **seem-3SG** *that* **fit-3SG** *many thing*

     'It seems that many things can fit in these drawers.'

(33)   a. Os carros **parecem**   que **furaram**   o pneu.

       the cars   **seem-3PL** *that* **punctured-3PL** *the tire*

     b. Os carros **parecem**   que **furou**   o pneu.

       the cars   **seem-3PL** *that* **punctured-3SG** *the tire*

     c. Os carros **parece**   que **furaram**   o pneu.

       the cars   **seem-3SG** *that* **punctured-3PL** *the tire*

     d. Os carros **parece**   que **furou**   o pneu.

       the cars   **seem-3SG** *that* **punctured-3SG** *the tire*

     'The cars seem to have a flat tire.'

I propose that rather than reflecting complete optionality of agreement in either matrix or embedded clause, the derivation of one pattern and not the other is deterministically enforced depending on the number of instances and distribution of null expletive pronouns, Top and T heads in the subarrays of the relevant numeration. The derivations of the sentences

in (32), for instance, will be associated with the (simplified) subarrays and structures depicted in (34)-(37), respectively.

(34)   a. N_1 = {{C, $T_{[P,N]}$, parece-}, {que, essas, gavetas, $T_{[N]}$, cabe-, muita, coisa}}

   b. [$_{TP}$ [essas gavetas]$_i$ **parecem** [que [$_{TP}$ t_i **cabem** muita coisa]]]

(35)   a. N_2 ={{C, $T_{[P,N]}$, parece-}, {que, Top, essas, gavetas, *pro*$_{expl}$, $T_{[P,N]}$, cabe-, muita, coisa}}

   b. [$_{TP}$ [essas gavetas]$_i$ **parecem** [que **[$_{TopP}$** t_i [$_{TP}$ *pro*$_{expl}$ **cabe** muita coisa]]]]

(36)   a. N_3= {{C, Top, *pro*$_{expl}$, $T_{[P,N]}$, parece-}, {que, essas, gavetas, $T_{[P,N]}$, cabe-, muita, coisa}}

   b. [$_{TopP}$ [essas gavetas]$_i$ [$_{TP}$ *pro*$_{expl}$ **parece** [$_{CP}$ t_i que [$_{TP}$ t_i **cabem** muita coisa t_i]]]]

(37)   a. N_4= {{C, Top, essas, gavetas, *pro*$_{expl}$, $T_{[P,N]}$, parece-}, {que, *pro*$_{expl}$, $T_{[P,N]}$, cabe-, muita, coisa}}

   b. [$_{TopP}$ [essas gavetas] [$_{TP}$ *pro*$_{expl}$ **parece** [que [$_{TP}$ *pro*$_{expl}$ **cabe** muita coisa]]]

The numerations of (34)-(37) have just two subarrays, each of which is determined by a complementizer. In principle, a derivation can randomly start with any subarray. However, under the assumption that computations are subject to Chomsky's (1995) Extension Condition , a convergent derivation for the numerations in (34)-(37) will only arise if it starts with the subarray determined by the embedded complentizer *que*. That being so, let us examine the relevant steps in the derivations of (34)-(37).

In (34), the computational activates the subarray containing *que* and builds the embedded clause. Given that the embedded T is only associated with number, the embedded subject does not have its Case valued and can move to the matrix subject position when the other subarray is activated, yielding the subject hyper-raising construction in (32a).

In (35), the subarray containing *que* has a φ-complete T head, a Top head, and a null expletive. Thus, a convergent phase will be built in such a way that the expletive triggers default third-person singular on T and *essas gavetas* is merged in (or moves to) [Spec,TopP]. Later on, when the other subarray is activated, the embedded topic agrees with the matrix T and moves to the matrix subject position, yielding the topic hyper-raising construction in (32b); crucially, there is no element in the subarray containing the matrix C that can check the EPP.

In (36), we find a φ-complete T in the subarray determined by *que*. Hence, the embedded subject (a raised locative) has its Case valued in the embedded clause and becomes inactive for A-purposes. However, it can undergo A-movement and move to [Spec,TopP] in the matrix clause. Once the expletive in the matrix subarray triggers third-person singular agreement, this gives the impression that the topic in the matrix clause failed to trigger agreement in the matrix clause despite having done so in the embedded clause (see (32c)).

Finally, in (37), each subarray has a null expletive and the subarray determined by matrix C also have a Top head. Thus, each expletive agrees with the T head of its clause, and *essas gavetas* is merged in [Spec,TopP] in the matrix clause and assigned default Case (see (32d)).

In sum, by relying on numerations structured in terms of subarrays determined by strong phase heads, as proposed by Chomsky (2000), we are able to describe the paradigm in (32) without introducing optionality of agreement in the system. Crucially, the derivations sketched in (34)-(37) do not compete with each other, for they are not based on the same

numerations. Similar considerations apply to the sentences of (33), which are associated with the (simplified) numerations and structures provided in (38)-(41), respectively.

(38)   a. N_1 = {{C, $T_{[P,N]}$, parece-}, {que, os, carros, $T_{[N]}$, fura-, muita, coisa}}

      b. [$_{TP}$ [os carros]$_i$ **parecem** [que [$_{TP}$ t_i **furaram** o pneu]]]

(39)   a. N_2 ={{C, $T_{[P,N]}$, parece-}, {que, Top, os, carros, pro_{expl}, $T_{[P,N]}$, fura-, o,

       pneu}}

      b. [$_{TP}$ [os carros]$_i$ **parecem** [que [$_{TopP}$ t_i [$_{TP}$ pro_{expl} **furou** o pneu]]]]

(40)   a. N_3= {{C, Top, pro_{expl}, $T_{[P,N]}$, parece-}, {que, os, carros, $T_{[P,N]}$, fura-, o, pneu}}

      b. [$_{TopP}$ [os carros]$_i$ [$_{TP}$ pro_{expl} **parece** [$_{CP}$ t_i que [$_{TP}$ t_i **furaram** o pneu t_i]]]]

(41)   a. N_4= {{C, Top, os, carros, pro_{expl}, $T_{[P,N]}$, parece-}}, {que, pro_{expl}, $T_{[P,N]}$, fura-,

       o, pneu}}

      b. [$_{TopP}$ [os carros] [$_{TP}$ pro_{expl} **parece** [que [$_{TP}$ pro_{expl} **furou** o pneu]]]]

In the next Section we will see that the distribution of lexical items in different subarrays along the lines proposed for (32) and (33) has interesting empirical consequences for extraction and agreement patterns involving resumption.

5.5. Independent Evidence

As mentioned earlier, the paradigm illustrated in (32) and (33) may give the impression that agreement with topic-like elements in the absence of a standard subject is completely optional in both matrix and embedded clauses. Thus one wonders if the subarray approach

proposed here is not too long a stretch just to describe wholesale optionality of agreement with topics. Next I provide independent evidence that shows that the derivation of topic and subject hyper-raising does indeed proceed along the lines presented in Section 5.4.

Consider, for instance, the agreement contrast between the sentences in (43) and (44) on the one hand and the ones in (45) and (46)[12] on the other, which are related to garden-variety unaccusative constructions in (42).[13]

(42)   a. **Quebrou**   o ponteiro **d**os   relógios.

       broke-3SG the arm   ***of**-the watches*

       'The arm of the watches broke.'

    b. **Cabe**   muita coisa **n**essas gavetas.

       *fit-3SG many thing **in**-these drawers*

       'Many things can fit in these drawers.'

(43)   a. Os relógios, **quebrou** o   ponteiro.

       the watches broke-3SG the arm

    b. Os relógios **quebraram** o   ponteiro.

       *the watches **broke-3PL**   the arm*

       'The arms of the watches broke.'

---

[12] See Galves 1998, 2001 for relevant discussion.

[13] The wording in (44b), (45b), and (47b) below may also support an irrelevant reading where the subject of *quebraram* is a third-person arbitrary *pro* in the sense of Cinque 1988.

(44)   a. Essas gavetas, **cabe** muita coisa.

        *these drawers **fit-3SG** many thing*

        b. Essas gavetas **cabem** muita coisa.

        *these drawers **fit-3PL** many thing*

        'Many things can fit in these drawers.'

(45)   a. [os relógios]$_i$, **quebrou** o ponteiro deles$_i$

        *the watches **broke-SG** the arm of-them*

        b. *[os relógios]$_i$ **quebraram** o ponteiro deles$_i$

        *the watches **broke-PL** the arm of-them*

        'The arms of the watches broke.'

(46)   a. [Essas gavetas]$_i$, **cabe** muita coisa nelas$_i$

        *these drawers **fit-3SG** many thing in-them*

        b. *[Essas gavetas]$_i$ **cabem** muita coisa nelas$_i$

        *these drawers **fit-3PL** many thing in-them*

        'Many things can fit in these drawers.'

If topics could always trigger verbal agreement in absence of a standard subject, sentences such (45b) and (46b) should be grammatical, contrary to fact. And the paradigm is actually even more complex. If structures similar to (43)-(46) are embedded under raising predicates, as shown in (47) and (48), agreement with the matrix T seems to be optional if the topic

appears in the matrix clause (see (47a)/(48a)), but agreement with the matrix T does not rescue the illicit agreement in the embedded clause (see (47b)/(48b)).

(47)   a. Esses relógios **parece/parecem**   que **quebrou**   o   ponteiro deles

these watches **seem-3SG/seem-3PL** that **broke-3SG** the arm   of-them

b. *Esses relógios **parece/parecem**   que **quebraram** o   ponteiro deles

these watches **seem-3SG/seem-3PL** that **broke -3PL** the arm   of-them

'It seems that the arms of the watches broke.'

(48)   a. Essas gavetas **parece/parecem**   que **cabe**   muita coisa nelas

these drawers **seem-3SG/seem-3PL** that **fit-3SG** many thing in-them

b. *Essas gavetas **parece/parecem**   que **cabem** muita coisa nelas

these drawers **seem-3SG/seem-3PL** that **fit-3PL** many thing in-them

'It seems that many things can fit in these drawers.'

The puzzling contrast between matrix and embedded agreement seen here refutes an analysis in terms of wholesale optionality but finds a straighforward account under our approach sketched in Section 5.4. Let us consider the relevant details of these derivations, starting with monoclausal structures such as (42)-(46). Under the standard assumption that a probe must c-command its goal, it must be the case that in the derivation of (43b) and (44b), the DPs that agree with T must be c-commanded by T in some step of the derivation. Given their meaning as possessor and locative, respectively, it is arguably the case that the relevant steps are as sketched in (49):

(49)   a. [T [$_{VP}$ quebra- [$_{DP}$ o ponteiro [$_{DP}$ os relógios]]]

          |--|

       b. [T [$_{VP}$ [muita coisa] [$_{V'}$ cabe- [$_{DP}$ essas gavetas]]]

          |--|

The first thing to notice is that the possessor in (49a) and the locative in (49b) may be realized *in situ* if preceded by a preposition, *de* in the case of the possessor and *em* in the case of the locative (see (42)). These prepositions can be analyzed as realizations of inherent Case (see Chomsky 1986) assigned by the possessed noun and the verb *caber*. Furthermore, the lack of these prepositions in constructions such as (43b) and (44b) indicates that the inherent Case assigned by these predicates is optional.[14] If it is assigned, the relevant DPs have their Case licensed *in situ* (cf. (42)). If not, the relevant DPs are then free to undergo agreement with T and move to [Spec,TP], yielding constructions such as (43b) and (44b).

One question that arises is why the larger DP in (49a) or the DP in [Spec,VP] in (49b) does not block movement of the lower DP. Here I follow Nunes's (2015b) analysis, according to which the lack of minimality violations in these cases replicates what we find with subject hyper-raising in BP (see (16)) and raising across an experiencer in English, as respectively illustrated in (50). Nunes (2008a) has argued that the matrix verb in (50a) assigns inherent Case to its complement CP, thereby rendering it inert for purposes of A-movement (cf. (16a)) and A-over-A minimality and allowing the embedded subject to undergo A-movement from within it. Similarly, the verb *seems* in (50b) assigns inherent Case to the experiencer, which then does not count as a proper intervener for A-movement of *Mary* across it.

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[14] For relevant discussion, see Nunes 2008b.

(50)   a. [Aqueles políticos]ᵢ acabaram [CP que [TP *tᵢ* foram subornados]]

       those   politicians finished   that   were   bribed

       'It turned out that those politicians were bribed.'

    b. Maryᵢ seems to him [*tᵢ* to be nice]

As Nunes (2015b) observes, the postverbal DPs in (43b) and (44b) cannot surface as accusative clitics (in the formal registers of BP that still allow these clitics), as shown in (51), which indicates that they do not receive (structural) accusative. Furthermore, these DPs display idiosyncrasies generally associated with inherent Case, such as incompatibility with *wh*-movement, for instance, as illustrated in (52) in contrast with (53). Thus if the verb *quebrar* may indeed assign inherent Case to its complement in (49a) and *caber* to its Spec in (49b), these elements should behave like the embedded CP in (50a) and the experiencer in (50b) in not counting as proper interveners for movement of the lower DP to [Spec,TP].

(51)   a. *Os relógios **o** quebraram

       *the watches **it** broke-3PL*

      'It (some part of the watches) broke.'

    b. *Essas gavetas **a** cabem

       *these drawers **it** fit-3PL*

      'It fits in these drawers.'

(52)   a. *O que os relógios quebraram?

       what   the watches broke-PL

      'What part of the watches broke?'

b. *O que essas gavetas cabem?

what these drawers fit-3PL

'What fits in these drawers?'

(53)   a. O que quebrou?

what broke-3SG

'What broke?'

b. O que cabe nessas gavetas?

what fit-3SG in-these drawers

'What fits in these drawers?'

Returning now to (45) and (46), if the possessor and the locative positions are filled with pronouns, the related DPs *os relógios* and *essas gavetas* can only be licensed if merged in [Spec,TopP]. That being so, T cannot probe and agree with either of these expressions because it does not c-command them. This in turn explains why the topic cannot trigger verbal agreement in the embedded clause despite the fact that it can agree with the matrix T (see (47a) and (48a)): by sitting in the embedded [Spec,TopP], the topic is in the probe domain of the matrix T but not in the probe domain of the embedded T. Thus, in the convergent derivations of the monoclausal sentences in (45a) and (46a), a null expletive checks the EPP and triggers agreement with T and the DPs in [Spec,TopP] are licensed with default Case.

Finally, the apparent optionality of agreement in the matrix clauses in (47a) and (48a) can be accounted for in terms of different subarrays. The nonagreeing and agreeing versions of (47a), for instance, can be derived from the (simplified) numerations and structures in (54) and (55), respectively. More specifically, the derivation of either possibility depends on the

number of null expletives available, as well as the distribution of the Top head and the lexical items *esses* and *relógios* between the two subarrays. If there are two instances of the null expletive and the other lexical items are part of the first subarray (see (54a)), the derivation proceeds along the lines of (54b), with a null expletive checking EPP and triggering agreement on the matrix T and the DP *esses relógios* receiving default Case in [Spec,TopP]. If, on the other hand, the numeration contains only a single instance of the null expletive and the other relevant lexical items are part of the second subarray (see (55a)), the derivation proceeds along the lines of (55b), where the matrix T agrees with the embedded topic and attracts it to its specifier.

(54)   a. N_1 = {{C, Top, esses, relógios, *pro*$_{expl}$, T, parece-}}, {que, *pro*$_{expl}$, T, quebra-,

      o, ponteiro, eles}}

    b. [$_{TopP}$ [esses relógios] [$_{TP}$ *pro*$_{expl}$ **parece** [que [$_{TP}$ *pro*$_{expl}$ quebrou o ponteiro

      deles]]]]

(55)   a. N_2 = {{C, T, parece-}}, {que, Top, esses, relógios, *pro*$_{expl}$, T, quebra-, o,

      ponteiro, eles}}

    b. [$_{TP}$ [esses relógios]$_i$ **parecem** [$_{CP}$ t_i que [$_{TopP}$ t_i [$_{TP}$ *pro*$_{expl}$ quebrou o ponteiro

      deles]]]]

The same reasoning applies, *mutatis mutandis*, to the derivation of the non-agreeing and agreeing versions of (48a), which should be associated with the (simplified) numerations and structures of (56) and (57), respectively.

(56) a. N_1 = {{C, Top, essas, gavetas, pro_{expl}, T, parece-}}, {que, pro_{expl}, T, cabe-,

muita, coisa, elas}}

b. [$_{TopP}$ [essas gavetas] [$_{TP}$ pro_{expl} **parece** [que [$_{TP}$ pro_{expl} cabe muita coisa nelas

]]]]

(57) a. N_2 = {{C, T, parece-}}, {que, Top, essas, gavetas, pro_{expl}, T, cabe-, muita,

coisa, elas}}

b. [$_{TP}$ [essas gavetas]$_i$ **parecem** [$_{CP}$ t_i que [$_{TopP}$ t_i [$_{TP}$ pro_{expl} cabe muita coisa

nelas]]]]

An interesting piece of evidence in support of the analysis of the agreeing version of (47a) and (48a) in terms of (55) and (57), where the matrix subject is a hyper-raised topic that does not agree with the embedded T, comes from Ferreira (2000). As a starting point, Ferreira discusses null object licensing in BP, based on the dada in (58).

(58) a. [Esse livro]$_i$ decepcionou as pessoas que tentaram ler ec_i

this book   disappointed the people who tried   read

'This book disappointed the people who tried to read it.'

b. *[Esse artista]$_i$ decepcionou as pessoas que tentaram cumprimentar ec_i

this artist disappointed the people who tried   greet

'This artist disappointed the people who tried to greet him.'

c. [Esse aluno]$_i$, eu ainda não consegui encontrar um professor que elogiasse ec_i

this student, I still   not managed find   a   teacher that praised

'(As for) this student, I haven't found any teacher that praises him.'

The contrast between (58a) and (58b) shows that null objects in BP may be A-bound by [-hum] DPs, but not by [+hum] DPs (see also Bianchi and Figueiredo Silva 1994). In turn, the contrast between (58b) and (58c) shows that this [+hum]-restriction is inert in the case of A'-binding. Bearing this in mind, let us now consider the grammatical sentence in (59) (adapted from Ferreira 2000), where a null object is A-bound by [+hum] DP in the matrix subject position.

(59)   [Esses professores]$_i$ são fáceis da gente encontrar alguém que critique ec_i

       these teachers   are easy of-we   find   somebody that criticizes

       'It is easy to find people who criticize these teachers.'

As Ferreira argues, the unexpected grammaticality of (59) can be explained if the matrix subject is actually generated as a topic in the embedded clause before undergoing raising to the matrix subject position.[15] As shown in the representation sketched in (60), the null object is actually locally A'-bound by the trace of the topic position, which explains why it patterns like (58c).

(60)   [Esses professores]$_i$ são fáceis [$_{TopP}$ t_i da gente encontrar alguém que critique ec_i]

Support for the subarray-based analysis proposed here is also provided by extraction facts such as those illustrated in (61) and (62), which show that extraction from the embedded clause is permitted just in the case where we have agreement in both matrix and embedded clauses.

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[15] For relevant discussion on hyper-raising out of inflected infinitivals in BP, see Galves 1987 and Nunes 2008a, 2009, 2010b.

(61)   a. Quando os relógios **parecem**   que **quebraram** o ponteiro?

       when the watches   seem-3PL that broke-3PL the arm

    b. *Quando os relógios **parece**   que **quebraram**   o ponteiro?

       when the watches   seem-3SG that broke-3PL the arm

    c. *Quando os relógios **parecem**   que **quebrou**   o ponteiro?

       when the watches   seem-3PL that broke-3SG the arm

    d. *Quando os relógios **parece**   que **quebrou**   o ponteiro?

       when the watches   seem-3SG that broke-3SG the arm

       'When does it seem that the watches broke their arms?'

(62)   a. Onde os carros **parecem**   que **furaram** o pneu?

       where the cars   seem-3PL that punctured-3PL the tire

    b. *Onde os carros **parece**   que **furaram**   o pneu?

       where the cars   seem-3SG that punctured-3PL the tire

    c. *Onde os carros **parecem** que **furou**   o   pneu?

       where the cars   seem-3PL that punctured-3SG the tire

    d. *Onde os carros **parece** que **furou**   o pneu?

       where the cars seem-3SG that punctured-3SG the tire

       'Where does it seem that the cars got a flat tire?'

      This paradigm receives a straightforward account if numerations are structured in terms of subarrays. Take (61), for instance. Given that in (61a) and (61b) the possessor agrees with the embedded verb, it must be in the probe domain of the embedded T (see (49a)). If the embedded T is only associated with number, the possessor triggers agreement on T, but does

not have its Case valued. It may then move to the specifier of a ϕ-complete T, yielding a subject hyper-rasing construction, and movement of the embedded adjunct finds no A'-intervener on its way to the matrix [Spec,TP], as represented in (63) (see (61a)). By contrast, if the embedded T is ϕ-complete, the possessor has its Case valued in the embedded clause and can only reach the matrix [Spec,TopP] via A'-movement, and its trace in the embedded [Spec,CP] blocks the movement of the embedded adjunct, as represented in (64) (see (61b)).

(63)   [CP quando_k [TP [os relógios]_i T_{[P,N]} [VP parecem [CP t_k que [TP t_i T_{[N]} [VP [VP quebraram o ponteiro t_i] t_k]]]]]]

(64)   *[CP quando_k [TopP [os relógios]_i [pro_{expl} T_{[P,N]} [VP parece [CP $\boldsymbol{t_i}$ que [TP t_i T_{[P,N]} [VP [VP quebraram o ponteiro t_i] t_k]]]]]]]]

In turn, the lack of agreement between the possessor and the embedded T in (61c) and (61d) indicates the subarray that underlies the embedded clause has a null expletive that triggers agreement with the embedded T. That being so, the prepositionless possessor may be licensed in the embedded or the matrix clause, depending on which subarray contains a Top head. If the subarray associated with the embedded clause contains an embedded Top head, the possessor may be merged in or move to [Spec,Top] and still be active to undergo A-movement to the matrix [Spec,TP] and trigger verbal agreement in the matrix clause; however, the trace of the possessor in [Spec,TopP] should block movement of the adjunct to the embedded [Spec,CP], as shown in (65) (cf. (61c)). On the other hand, if it is the matrix subarray that contains a Top head, it is the possessor in [Spec,TopP] that blocks movement of the embedded adjunct, as shown in (66) (cf. (61d)).

(65) *[CP quando$_k$ [TP [os relógios]$_i$ T$_{[P,N]}$ [VP parecem [CP t_k que [TopP $\textbf{\textit{t}}_i$ [TP pro_{expl} T$_{[P,N]}$

[VP [VP quebrou o ponteiro t_i/pro_i] t_k]]]]]]

(66) *[CP quando$_k$ [TopP **os relógios**$_i$ [pro_{expl} T$_{[P,N]}$ [VP parece [CP t_k que [TP pro_{expl}

T$_{[P,N]}$ [VP [VP quebraram o ponteiro t_i] t_k]]]]]]]]

In sum, the extraction contrasts in (60) and (61) further corroborate the view that it is
not the case that agreement with topics is generally optional in BP but that different
numerations and derivations underlie the agreeing and non-agreeing possibilities.

5.6. Some notes on Avelar and Galves's alternative approach

Based on Chomsky's (2008) proposal that the ϕ-features on T are actually inherited from C,
Avelar and Galves (2011) make an interesting proposal to account for the differences
between Brazilian and European Portuguese (EP) regarding their agreement systems.
According to the authors, in EP the EPP-feature on T is ϕ-dependent and therefore [Spec,TP]
is only projected after T inherits ϕ-features from C. By contrast, in BP the EPP feature is ϕ-
independent, which forces [Spec,TP] to be projected before C is merged. According to the
authors, from this difference between BP and EP it follows that [Spec,TP] in BP can host
elements other than standard subjects and should be treated as an A'-position in virtue of
being ϕ-independent.

Although ingenious, this proposal fails to capture contrasts between subject and topic
hyper-raising that are arguably related to the A'-status of topics, as opposed to A-status of
subjects. For instance, take the fact that idiom chunks cannot occupy A'-positions in BP, as
shown in (67) (see (18)). If [Spec,TP] in BP were an A'-position, as proposed by Avelar and
Galves (2011), idiom chunks should be blocked in both subject and topic constructions.

However, this prediction is not borne out. As seen in Section 5.2, idiom chunks can undergo subject hyper-raising (see (68a)) but not topic hyper-raising (see (68b)).

(67)   a. O   circo   vai   pegar fogo.

    the circus goes catch fire

    'The circus will catch fire.' *or* 'There will be disagreements.'

    b. O   circo, o   João disse que (ele) vai   pegar fogo.

    the circus the João said   that it   goes catch fire

    'João said that the circus will catch fire.' ***but not*** 'João said that there will be disagreements.'

(68)   a. [O circo]$_i$ parece que [$_{TP}$ t_i vai pegar fogo]

    the circus seems that   goes catch fire

    'It seems that the circus will catch fire.' *or* 'It seems that there will be disagreements.'

    b. [O circo]$_i$ parece que [$_{TopP}$ t_i [$_{TP}$ ele vai   pegar fogo]]

    the circus seems that   it   goes catch fire

    'It seems that the circus will catch fire.' ***but not*** 'It seems that there will be disagreements.'

Similar problems are presented by contrasts like (69) and (70) (see Martins and Nunes 2010 for discussion). (69) shows that a hyper-raised subject may induce a Principle C effect with respect to an epithet, but a base-generated topic does not. In turn, (70) shows that an adjunct can cross a hyper-raised subject but not a hyper-raised topic.

(69) a. *[Esses senadores]$_i$ parecem que [$_{TopP}$ t$_i$ [$_{TP}$ [os idiotas]$_i$ vão ser reeleitos]

       these senators   seems that the idiots   go be re-elected

     b. [Esses senadores]$_i$, *pro$_{expl}$* parece que [os idiotas]$_i$ vão ser reeleitos.

       these senators   seems that the idiots   go be re-elected

       'As for these senators, it seems that the idiots are going to be re-elected.'

(70) a. Como$_k$ [as meninas]$_i$ pareciam que [$_{TP}$ t$_i$ iam se   vestir t$_k$]?

       how   the girls   seemed that   were SELF dress

     b. *Como$_k$ [as meninas]$_i$ pareciam que [$_{TopP}$ t$_i$ [$_{TP}$ elas iam se   vestir t$_k$]?

        how   the girls   seemed that   they were SELF dress

       'How did it seem that the girls were going to dress themselves?'

The contrasts in (69) and (70) receive a straightforward explanation if [Spec,TP] is an A-position (thus relevant for Binding Theory purposes but irrelevant for computations of A'-minimality), but remain quite mysterious if [Spec,TP] is an A'-position.[16]

      The proposal also faces problems with respect to Case issues. Discussing the Case and agreement properties of sentences such as (71), Avelar and Galves (2011) speculate that a Case parameter distinguishes languages whose DPs always have a Case to be valued from languages whose DPs may or may not have such a feature. For them, BP is a language of the second type, and sentences such as (71) can be ruled in if the internal argument enters the derivation without a Case to be valued, thus allowing T to agree with the possessor.

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[16] As the reader can easily check, all the additional contrasts discussed in Section 5.5 that crucially rely on the standard assumption that [Spec,TP] is an A-position (see (45)-(48), (58)-(59), and (61)-(62)) also remain unaccounted for under Avelar and Galves's (2011) proposal that [Spec,TP] in BP is an A'-position in virtue of its EPP being ϕ-independent.

(71)   Os carros furaram   o   pneu.

    the cars   punctured-3PL the tire

    'the cars got a flat tire.'

Although this proposal may account for sentences such as (71), where apparently there is no source of Case valuation for the internal argument, it massively overgenerates in other domains. Sentences such as those in (72), for instance, are incorrectly ruled in under derivations where the subject of the infinitival exercises its option of entering the derivation without a Case feature to be valued. Similar considerations apply to the sentences in (73), where the verbs require a preposition (*de* 'of' and *em* 'in', respectively) to Case-license their complements.

(72)   a. *A   Maria queria [CP C [TP **os meninos** resolver o   problema]]

        the Maria wanted   the boys   solve   the problem

        'Maria wanted the boys to solve the problem.'

    b. *Parece [TP **os meninos** gostar de matemática]

        seems   the boys   like   of math

        'It seems that the boys like math.'

(73)   a. *A   Maria gosta **o   Pedro**.

        the Maria likes the Pedro

        'Maria likes Pedro.'

b. *A   Maria confia **o   Pedro**.

   the Maria trusts the Pedro

   'Maria trusts Pedro.'

In sum, despite its merits in attempting to derive the agreement differences between EP and BP in terms of deeper properties of the computational system, Avelar and Galves`s (2011) proposal proves to be empirically inadequate.

5.7. Conclusion

In this paper I examined an interesting agreement paradigm in BP which at first sight seems to indicate that topic agreement is completely optional in BP when a true subject is not present. Upon close inspection, we saw that the agreement under discussion is not at all unrestricted. For instance, it may be sensitive to resumption (see (45) and (46)), display matrix and embedded asymmetries (see (47) and (48)), and interact with *wh*-extraction in unsuspected ways (see (61) and (62)). The overall conclusion is that parallel constructions where there appears to be optionality of agreement and/or movement actually involve different derivations based on different numerations (interpreted in terms of subarrays), which are therefore not in the same comparison set for economy computations. These results are consistent with minimalist expectations in that agreement and movement are still taken to be last resort operations. In particular, this analysis lends further empirical support to Chomsky's (2000) proposal that numerations should be organized in terms of the subarrays that will build phases.

Author's note

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