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IS 'SMUGGLING' REALLY NECESSARY? THE MOST RECENT ANALYSES OF PASSIVE SENTENCES RECONSIDERED IN TERMS OF PHASEHOOD AND CYCLIC MOVEMENT¹

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ABSTRACT: This paper is, at first, a critical review of the drawbacks concerning the main proposals of verbal passives in the literature, particularly the ones assuming smuggling. Secondly, an alternative analysis of passives is offered. In this account, a special node for passives is assumed (alternative to VoiceP, ν P-passive, or ν^* P). Such a node is motivated at the interface levels, and constitutes phases. Being a phase, it allows cyclic movement of the DP (internal argument) to happen, casting doubt on the necessity of the smuggling movement in passives. Finally, some considerations pertaining to processing models, and acquisition theories are made. It is argued that the analysis in discussion may favor a more interdisciplinary view on the passive sentences.

KEYWORDS: passive sentence; smuggling; cyclic movement; phase.

1. INTRODUCTION

One of the most traditional issues in the studies of language, especially in formal linguistics, is readdressed here: the intricate case of verbal passive sentences. The topic is approached taking into account mainly two languages: Brazilian Portuguese (henceforth, BP) and English.

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The aim of this paper is two-fold. Firstly, we critically reexamine the most recent proposals in the literature for the structure at stake, particularly the smuggling approaches (Collins, 2005; Gerhke&Grillo, 2009), exposing some of their drawbacks. Secondly, we offer an alternative analysis, which seeks to avoid the crucial points being criticized here. Furthermore, the analysis to be presented is also concerned with the possibility of fostering an approximation with models of language processing (see Corrêa&Augusto, 2007; 2011; Lima Júnior&Augusto, 2012) and acquisition (see Corrêa, 2009; 2014; Lima Júnior, in preparation) under an interdisciplinary view of the passive phenomenon (Lima Júnior&Corrêa, 2015).

As for the first objective, two analyses are revised in more details: Collins (2005), and Gehrke&Grillo (2009). They both make use of a special projection for passives – VoiceP – and a special kind of movement – the smuggling one. The smuggling movement consists of the idea that the movement of the internal argument to the subject position in passives is not driven by its own. It is, nevertheless, dependent on a previous movement of the maximum projection partP to [Spec, VoiceP]; that is, the whole PartP projection -in which complement position the internal argument is- moves to the Spec of Voice. In this sense, from [Spec, VoiceP], the internal argument (to where it was smuggled inside the partP projection) moves to the subject position, free from the intervention of the external argument. We argue here that these syntactic analyses do not efficiently account for the empirical problems passives impose, and, when they seem to do so, other theoretical problems appear.

As for the analysis to be proposed, it is claimed that a special node, alternative to transitive v*P, is involved in the derivation of passive sentences. Both VoiceP and the need for the smuggling movement are then dismissed. The account presented in this paper shares with recent analyses the idea that both active and passive structures should similarly project their arguments (also see Boeckx, 1998; Collins, 2005). As observed in previous works, such a way of projecting arguments, however, ends up bringing up some intervention issues (in the sense of Rizzi, 1990; 2004; also see Chomsky, 1995) as far as verbal passives are concerned. In fact, the smuggling analyses were a way to circumvent these problems. However, as it has already been claimed, the solution offered by the smuggling approach brings about additional problems. Therefore, the alternative account is an attempt to follow a new direction in this regard.

As for the ultimate objective, we briefly discuss possible advantages of the analysis being proposed with respect to acquisition and processing concerns. Naturally, experimental results will be taken into consideration.

In sum, the paper is organized as follows: in the first section, a desirably theoretical alignment between actives and passives is discussed in relation to intervention problems. Subsequently, Collins (2005) and Gehrke & Grillo's (2009) proposals are revised as well as the critics raised against them. In the following section, we offer an alternative proposal to the structure of verbal passives. Finally, the advantages of such account are discussed bearing in mind general issues pertaining to language processing and acquisition.

2. A THEORETICAL ALIGNMENT LEADING TO INTERVENTION PROBLEMS

Boeckx (1998) constituted an influential proposal, within the minimalist approach. In very simple words, he argued for approximating passives and actives associating each particular theta-role to a specific syntactic position, [Spec, vP], [Compl, V]. It is predicted that the theta-role of the external argument in the passive is assigned in exactly the same way as the external theta-role in the active (see Figure 1). Such a proposal was also relevant to dispense with absorption of both Case and theta-role proposed in preceding works (see Jaeggli, 1986; Baker, Johnson & Roberts, 1989; Fox & Grodzinsky, 1998) in a way to account for the well-known Burzio's generalization (see Burzio, 1981; 1986). Boeckx postulates that the presence of the passive participle morpheme, which is distinct from active participles in his analysis, would disturb the assignment of accusative Case to the internal argument due to the presence of 'little pro'.

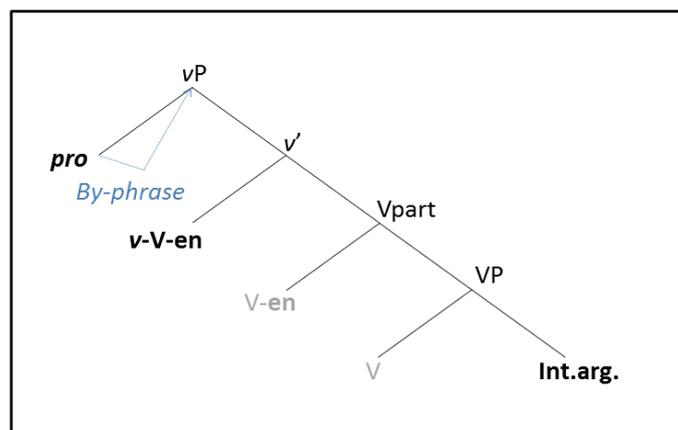


Figure 1: The argument structure in Boeckx (1998)

The silent category (pro) is inserted into [spec, vP] and is kept in a strictly local relation with the morpheme at stake (see Figure 1 above). Little pro is, thus, responsible for

preventing *v* from assigning Case to the internal argument, and, additionally, would also receive the theta-role assigned to the external argument of the verb.

Despite the benefits of postulating *pro* in the structure, a disadvantage has been observed in this analysis: the intervention effect stemming from the Relativized Minimality principle (henceforth, RM) (see Rizzi, 1990; 2004). Basically, RM states that a phrase XP endowed with a feature [+F] cannot move past another phrase YP with the same feature [+F]. In this sense, the movement of the internal argument to [spec, TP] in Boeckx's (1998) analysis would be blocked by *pro*, because the latter is closer to the probe (T) than the internal argument.

Boeckx (1998) tries to evade the intervention instantiated by *pro* stating that the features of *pro* are not (or are less) visible than the ones of the internal argument⁴. In other words, *pro* would not be a proper intervener for the movement⁵ provided that the internal argument and the implicit external argument do not bear the same bunch of features.

Lima & Rubin (2008) point out that, taking Chomsky's (1995) model into consideration, Boeckx's (1998) analysis is viable. This claimed viability must be reconsidered, however, in the sense of the *Agree model* (see Chomsky, 2000; 2001).

Lima & Rubin (2008) notice that the external argument of the verbal passive (*pro*, or the like) could induce a defective intervention effect by the same means RM presumes. The defective intervention effect occurs as long as the closest target to a probe, even when it is properly valued, intervenes between the probe and a more distant target, impeding the *Agree* operation (see Chomsky, 2001). According to Lima & Rubin (2008), *pro* is a proper intervener for the probe T because it must bear, at least, the feature [person] (contra Boeckx, 1998), otherwise *pro* would not be relevant for the *Agree Model*, causing problems for the interfaces PF/LF. Besides, it seems that Boeckx's analysis violates the maximization principle of checking relations (see Chomsky, 2000).

According to the maximization principle, if an operation between a probe and a target is available, it must be applied. In this regard, *v* should immediately assign Case to the internal argument of the verb as soon as it is merged. Lima & Rubin (2008) observe that, in Boeckx

⁴Boeckx (1998) argues for the underspecification, or no specification, of the features of *pro*. Such a claim is made due to the following characteristics of *pro*: absence of phonological features; the fact that *pro* is D-like; absence of ϕ -features.

⁵For that to be possible, Boeckx explains the movement of the object to [spec, TP] by means of a mechanism that he claims to be analogous to the Feature Specification Constraint (see Murasugi, 1994). Boeckx also had to alter the principle *Attract* (see Chomsky, 1995: 297), which he redefines in terms of prominence of the features instead of proximity as it had been originally conceived of.

(1998), *pro* cannot disturb Case-assignment of the internal argument, as proposed by Boeckx, inasmuch as Case must be assigned before *pro* is inserted into the tree.

As to account for the problem caused by *pro*, Lima & Rubin suggest that the passive morpheme *-en* should occupy [spec, *prtP*] (*prtP* being the representative category for the passive participles). In Lima & Rubin (2008), the participle is a light verb merged with VP (also see Hornstein, Martins & Nunes, 2008 for a very similar proposal). The morpheme *-en*, differently from *pro*, does not bear [person]. Therefore, it does not pose problems concerning intervention effects (or minimality issues), nor does it force any violation of the maximization principle.

We acknowledge that Lima & Rubin's (2008) proposal seems to be an insightful and a very simple way to avoid the observed intervention effect raised by *pro* in Boeckx (1998). In turn, their account falls short in terms of distinguishing eventive, resultative and stative passives (see Embick, 2004; Duarte & Oliveira, 2010)⁶. Simplifying the passive structure to the extent proposed in Lima & Rubin (2008) would draw us to the loss of a relevant syntactic difference involving the derivation of verbal passives (1) and the passives with an adjectival reading (2): the main difference being the presence of an agentive entity in (1) but not in (2), which should be related to some syntactic layer, different from the participle itself (for more details, see Lima Júnior & Augusto, 2015).

- (1) a. A porta foi queimada.
b. The door was burned. (an event of burning of a door by someone)
- (2) a. A porta estava aberta.
b. The door was open(ed). (the state of the door)

All in all, when it comes to *prtP* in Lima & Rubin's (2008) analysis, we must assume that not only is this category specific of verbal passives, but also different from the participle category in passive sentences with an adjectival reading. If we assume that the passive morpheme is somehow the external argument of passive sentences, or that the interpretation of an external argument is directly derived from the presence of this morpheme, we should assume that every passive sentence with, or without, an adjectival reading implies the

⁶This distinction seems fundamental from the point of view of an acquisition path (see Israel, Brooks & Johnson, 2000; Caprin & Guasti, 2006; Lima Júnior, 2012), and it also reverberates in terms of computational cost predicted by processing models, which has already been attested experimentally (see Lima Júnior & Corrêa, 2015).

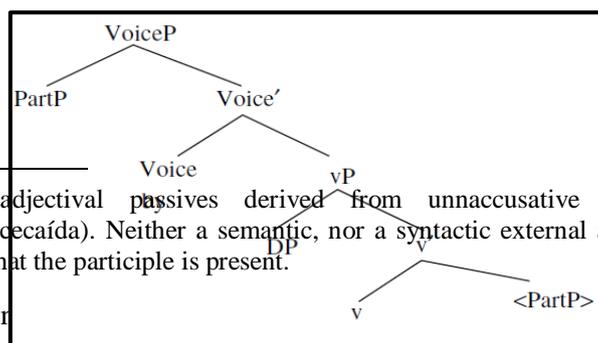
interpretation of an external argument, which cannot be true⁷. In conclusion, the assumptions made by both Lima & Rubin (2008) and Hornstein, Martins & Nunes (2008) in relation to the passive morpheme being the external argument of passive sentences would lead us to the need of proposing three different participial categories (active participles - John has broken the window; verbal passive participles - A window was broken by John; adjectival passive participle - The window remains broken;) without any clear empirical reason to do so.

At this point, we have, on one hand, Boeckx's (1998) analysis, which seems theoretically desirable for its alignment between actives and passives, although it poses serious problems when it comes to intervention effects. On the other hand, we have Lima & Rubin's (2008) effort, whose work seems to solve the problem caused by RM, whereas it seems to oversimplify the passive structure. In the next section, the smuggling approach, which does not oversimplify the passive structure and seems to circumvent RM, is examined. Other problematic issues are signaled, though.

2.1. THE SMUGGLING APPROACH

2.1.1. COLLINS'S (2005) ANALYSIS

Collins (2005) proposes a specific functional projection for passive structures: VoiceP, which is located above vP. The intuition behind the alignment between actives and passives, as in Boeckx (1998), is maintained. VoiceP is headed by a preposition 'by'. This preposition is considered to be dummy in the sense that it is composed by uninterpretable features only. This preposition is also responsible for Case-marking the DP, which is merged at [Spec, vP], as in active sentences (see Figure 2 – Collins, 2005:95, example (30) in the original). The attribution of Case to the external argument is supposed to occur in an analogous way as with the complementizer 'for' (*For John to win*) (see Collins, 2005: 103). If there is no overt PP, a null preposition will occupy the head of VoiceP, and an empty category (arbitrary PRO) will be assumed in [spec, vP], replacing DP.



⁷ Take, for instance, adjectival passives derived from unaccusative verbs (The tree remains fallen/Aárvore está/permanece caída). Neither a semantic, nor a syntactic external argument is allowed in those sentences, despite the fact that the participle is present.

Figure 2: argument structure of a passive-assuming VoiceP (Collins, 2005:95)

Additionally, Collins assumes that, contrary to Boeckx (1998), the passive participle suffix does not differ from the past participle one (or the active participle). According to Collins, the so-called difference between both types of participle would be a matter of selection and/or licensing. The auxiliary 'have', in the actives, c-selects PartP, while in the passive, partP, which is licensed by the presence of VoiceP in the numeration, is required to move to [spec, VoiceP] (see Collins, 2005:90-91). It constitutes the basic notion behind the smuggling movement: the internal argument is smuggled during the movement of partP to a closer position to the probe TP. The need for absorption of theta-roles or Case is also dismissed.

As far as the RM issue, the intervention is circumvented in Collins' analysis provided that the DP (internal argument) is supposed to be taken along with partP to [spec, VoiceP], a projection above the external argument, thus, closer than the latter to the probe TP. From this position ([Spec, VoiceP]), with no intervention of the external argument, the logical object DP is thereby moved to the subject position, as illustrated in Figure 3. Notice that Collins (2005: 90) is assuming that, in the passive, V adjoins part, but this complex does not raise to v. It will be attracted to Voice.

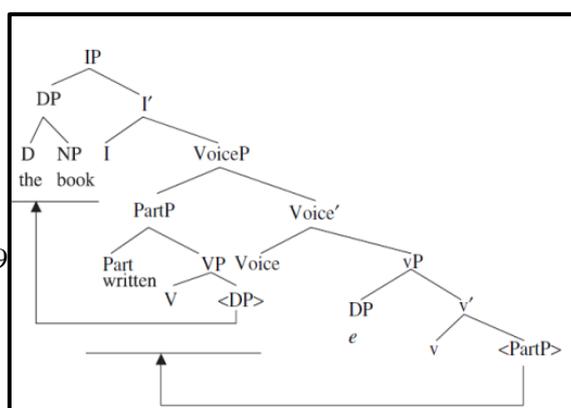


Figure 3: smuggling approach (Collins, 2005:102)

The ν P present in Collins' analysis is the same category involved in actives (ν^* P in the sense of Chomsky, 2000), although it does not value accusative Case. The proposal seems to suggest that the computational system is endowed with a look-ahead mechanism, not working strictly locally.

The drawbacks in Collins's work will be discussed in the next section.

2.1.2. THE DRAWBACKS OF THE SMUGGLING APPROACH

In this section, we will focus on some of the drawbacks in Collins' proposal, such as: the constituency of the *by*-phrase; the different heads allowed for VoiceP; the look-ahead problem; among others.

With respect to the constituency of the *by*-phrase, we highlight the fact that, in Collins (2005), the term *by*-phrase does not seem to be adequate, since the DP (external argument), which is merged at [*spec*, ν P], does not form a constituent with the preposition *by* (see Collins, 2005:107-110).

Collins makes a series of claims based on heavy NP-shift, conjoinment and coordination of coordinating structures and stylistic pied-piping to sustain his hypothesis. However, there seem to exist plenty of examples suggesting a constituency nature of the phrase at stake, as illustrated in the English and BP sentences below (3-6).

(3) By whom was John tied? [A'-Movement]

(4) Por quem o João foi amarrado?

(5) It was by Peter that John was tied. [cleft sentences]

(6) Foi pelo Pedro que o João foi amarrado.

Collins (2005) also states that VoiceP is formed by uninterpretable features only, which is undesirable from a minimalist standpoint (see Chomsky, 1995). Collins assumes that Voice is a parameter in UG. It is, therefore, inferable that 'by' or an analogous head has to be

present across the languages that admit passivization. It is curious, though, that in some languages (Latvian, for instance) the by-phrase is not allowed. Its presence would make passives ungrammatical (see Keenan & Dryer, 2007).

Another issue is that although by-phrases are commoner in eventive passives, they are not exclusive of these sentences. They can also occur in adjectival passives (see Bruening, 2014; McIntyre, 2012) and in some unexpected nominal classes (see Bruening, 2013). In BP, as illustrated in (7-10)⁸, it seems that by-phrases are not exclusive of verbal passives either. We stress in the examples the co-occurrence of *está* and *ficou*, respectively stative and resultative auxiliaries, with the by phrase *pela/pelo*+DP.

(7) A Estrada do Colono **está** fechada **pela justiça federal** desde (...)

(8) (...) faz uma pergunta exatamente para esse aluno, que provavelmente já tem fama de desatento e **está** “marcado” **pelo professor** (...)

(9) Este blogue **está** protegido **pelo José Cid**.

(10) No ano de 2012 **ficou** barrado **pelo técnico** Tite e volta atuar somente em 19 de fevereiro contra o São Caetano (...)

Likewise, as Collins (2005: 99-102) himself points out, in languages that take both a by-phrase and an exclusive passive morpheme (Japanese, Kiswahili, among others), it is hard to distinguish which element would be in the head of VoiceP: 'by' or the 'passive morpheme'? He goes no much further than saying that it is not possible to have different heads in different languages, as Voice is in UG. Collins (2005: 100) states: 'if Kiswahili *na* were to be analyzed as the head of VoiceP, there would be two VoicePs (one for the passive suffix -w and one for *na*), which is presumably not allowed by UG'. He left the question for further research, which has not yet been undertaken, as far as we know.

The proposal also raises some look-ahead issues. For example, both the auxiliaries *be* (or *ser* in BP) and *have* (or *ter* in BP) c-select for a participial phrase (or one containing a participial phrase). Although Collins assumes that there would be only one type of participle, passive and active participles seem to behave differently in his very analysis.

In the derivation of actives, v^*P (in the sense of Chomsky, 2000) will assign Case to the DP (internal argument). In the derivation of passives, on the other hand, vP (some sort of defective v^*P) must not assign Case to the DP (internal argument), since the DP must be taken

⁸ These examples were extracted from the internet after a quick research on the website google.com.

along with partP to [spec, VoiceP] for the DP to be free to move to the subject position later on. However, vP in Collins' analysis, which is the same vP of actives (v^*P), enters the derivation before VoiceP does. Therefore, it is hard to sustain that the vP of the actives (v^*P) comes to be the same vP of the passives. In an incremental derivation, v^*P could immediately assign accusative Case to the internal argument due to the cyclic logic of automatic syntactic relations assumed for the computational system (see Chomsky, 2000).

In order to avoid look-ahead, the smuggling approach should furthermore claim for a special/passive partP that is different from an active partP, and a special vP that cannot assign accusative Case, besides adding VoiceP to the analysis. These assumptions, if undertaken, cannot be seen as minimal and only can be accepted in the absence of a more economical and elegant analysis.

Nevertheless, there are still other serious problems derived from these look-ahead computations. As partP has to move immediately after VoiceP enters the derivation, the smuggling movement would take along the PP in (11-14), predicting the order in (11-12) to be ungrammatical, contrary to the facts in BP and English.

- (11) O brinquedo foi levado pelo João **ao Rio de Janeiro**.
- (12) The car was driven by John **to Maine**.
- (13) O brinquedo foi levado **ao Rio de Janeiro** pelo João.
- (14) The car was driven **to Maine** by John.

To account for the ordering of the PPs, an xP node (AgrP or LkP) has been suggested (see Collins, 2005: 106-107). The movement of the PP (até o Rio de Janeiro/to Maine) to [spec, xP] has to take place before smuggling occurs, though. This indicates that too many steps have to be predicted far before VoiceP is involved in the derivation.

To sum up, it has been observed that the smuggling-movement is not properly motivated. It functions as a last resort operation for reasons of Case-assignment of the internal argument. In this sense, we reaffirm that it is crucial to assume a special vP , something that has not been explicitly assumed in Collins (2005), but it is acknowledged in Lunguinho (2011: 55), who adapts Collins's analysis to account for the passives in BP.

In the next section, the semantic smuggling by Gehrke & Grillo (2009), which aims at motivating the smuggling movement, is presented.

2.2. THE SEMANTIC SMUGGLING

Gehrke&Grillo (2009) (henceforth, G&G) build on Collins' (2005) analysis assuming much of the smuggling approach. Unlike Collins, G&G (2009) dissociate the movement of the participle of a complex event structure from the movement of a DP to [Spec, TP]. According to them, this dissociation is essential because it is possible for an expletive to land in [Spec, TP] in passives (see example 15).

(15) There was a Suabian killed. [*Gehrke&Grillo, 2009: 235; (7) in the original*]

Therefore, G&G (2009) provide a semantic motivation for the smuggling-movement, which is completely independent of the promotion of the internal argument to subject position. By doing so, they avoid look-ahead computations, which seemed problematic in Collins' analysis. In short, a complex structure of events, in the spirit of the semantic model of Travis (2000; subsequent work), is at the center of the formation of passive sentences. It is argued, thus, that passivization is an operation on event structure, more precisely a secondary predication referring to a transition into a consequent (result or inchoative) state (see Gehrke e Grillo: 2009: 231).

As illustrated in Figure 4, V2 introduces the theme argument DP (internal argument). In Travis (2000), the endpoint of the event is also introduced by V2. V1 corresponds to the causing sub-event, apart from introducing the external argument DP (external argument). A consequent state is structurally represented as a lower VP shell, in which the internal argument is at its specifier (see Figure 4).

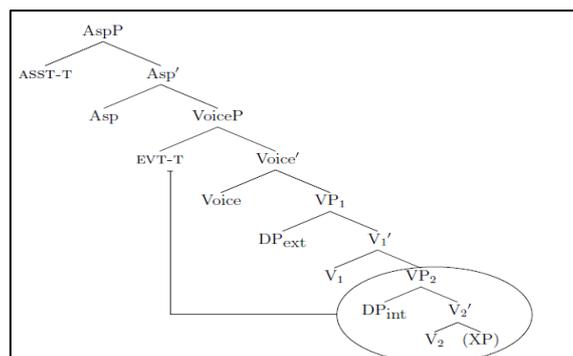


Figure 4: semantic smuggling (2009:236, number 8 in the original).

It is proposed that some kind of topicalisation singles out the consequent state and assigns a feature to it. This feature has a quantificational and/or discourse-related nature. It is this feature that will determine the movement of the lower VP to the edge of the VP phase, represented as VoiceP (see Figure 4 above). G&G assert that the main job of the feature, whatever it might be, is to single out an element of the atemporal event structure associated with the VP phase and to enrich its semantics by introducing temporality, making it available to the next phase, which is the temporal/discourse domain of the clause.

The promotion of a consequent state subevent of a complex event to a position above VP would be a fundamental ingredient of the passive in the sense of G&G (2009). They follow Dowty (1979) in assuming that verbal predicates can be decomposed into particular atomic predicates ‘cause’, ‘do’ and ‘become’ and combinations of these. G&G also take the semantic representation made in Dowty (1979) to account for the passivization phenomenon. Take, for instance, the example (16) (see Dowty (1979:93), whose semantic representation is sketched in (17).

(16) He sweeps the floor clean

(17) [[He sweeps the floor] CAUSE [BECOME [the floor is clean]]]

According to Gehrke e Grillo (2009), ‘the floor’ is subjected to two predications. Firstly, ‘the floor is being swept’ and, then, the consequent result of the action is to be clean. Both predications would be connected by the predicates ‘cause’ and ‘become’. The layer ‘become’ is thereby the one that, in thesis, is raised during the passivization process. On the other hand, verbs that have a simple structure of events, such as the ones in (18), though transitive, will not be able to be subject to passivization, provided that they do not have the operator BECOME.

(18) a. O computador pesa 20 quilos.

a'. The computer weighs 20 kilos.

b. *20 quilos são pesados pelo computador.

b'. *20 kilos are weighed by the computer.

As it can be seen, a complex structure of events involving the operator BECOME seems fundamental to sustain a smuggling approach to passives. In the next section, we will argue against this view.

2.2.1. THE DRAWBACKS OF THE SEMANTIC SMUGGLING APPROACH

We will defend in this section that the reasons found by G&G to advocate for a semantic kind of smuggling may fall short in, at least, two aspects. Firstly, there are languages in which passivization does not seem to be semantically restricted. Secondly, the operator BECOME does not play a crucial role in the process of passivization for many verbs, even in English and in Portuguese, as it will be shown.

As for the first issue, Keenan & Dryer (2007: 332) state that in some languages (Kinyarwanda, for instance) almost any object may passivize. Even verbs like the possessive ‘have’, ‘cost’ or ‘weigh’ (the same applies to ‘ter’, ‘custar’ and ‘pesar’ in Portuguese) may be passivized (see 19)⁹.

(19) Ibifungobibiri bi-fit-w-e n-^hisha^hati

buttons two they-have-pass-asp by-shirt

‘Two buttons are had by the shirt’

[Keenan & Dryer, 2007: 333, (14) in the original]

As for the second issue, many of the verbs that are passivized do not necessarily imply change of state, or a complex structure of events mediated by the semantic operator BECOME, as claimed in G&G. That is the case of the verb ‘sweep’ in (20) in contrast to the verb ‘break’ in (21).

⁹ We argue here that these cross-linguistic differences are due to parametric differences stemming from a specific node for passives, which may/should not be VoiceP. The specific node for passives here claimed may be related, on one hand, to semantic information; that is, attributing a semantic feature (or role) [trigger] (in the sense of Cañado, 2005a) to the external argument. On the other hand, this passive node may be headed by a typical passive morpheme, for instance –w– in Kinyarwanda (see the section 3 of this paper for more information). Therefore, we postulate that these restrictions with regard to verbs like ‘have’, ‘cost’ or ‘weigh’ in languages such as English or Portuguese are not of a syntactic nature, but merely an interface phenomenon. Hence, the information that has to be in UG is that there is a functional node that is not capable of Case-marking the internal argument of the verb. However, in the acquisition process, children have to deal with information pertaining to the interface levels to set the parameter [+Voice] and represent the claimed specific node for passives as part of their linguistic knowledge (see Lima Júnior, in prep.).

- (20) He swept the house.
 (21) He broke the house.

A test of contradiction of the predicate (see 22-23) shows that only the sentence (21) results contradictory, but not sentence (20); that is, only sentence (21) allows for a real change of state (also see Beavers, 2011; Beavers & Koontz-Garboden, 2012). In sum, the semantic operator BECOME is present in sentence (21), but not in (20), although both of them admit passivization.

- (22) The house was swept, but it is dirty/full of dust.
 (23) #The house was broken, but it is one piece.

Rappaport Hovav e Levin (1998; 2010) affirm that the verbs 'sweep' and 'break' are in two different semantic classes; the first one, in the class of verbs of manner, and the second one, in the class of verbs of result. The class of verbs of manner would have a much simpler semantic representation than the one proposed by Dowty (1979). This representation is presented in (24), which does not involve the operator BECOME.

- (24) [X ACT <manner>]

Additionally, the absence of BECOME does not prevent passives to be derived consistently. There are verbs that are endowed with the BECOME operator and, contrary to the proposed by G&G, do not admit passivization. It is important to notice, in addition to it, that these verbs involve a complex structure of events.

Take, for instance, the verb 'worry' (or 'preocupar' in Portuguese), whose representation, according to Cançado, Godoy & Amaral (2013), is [[X] CAUSE [BECOME Y <worried/preocupado>]]. In spite of its complex structure of events, these verbs do not form verbal passives (see 25), only adjectival passives (see 26), (also see BELLETTI & RIZZI, 1988; GRIMSHAW, 1990).

- (25) a. *O João foi preocupado pela mãe.
 b. *John was worried by his mom.
 (26) a. O João ficou preocupado com a mãe.
 b. John was worried with his mother.

We may conclude, then, that a proposal based on the operator BECOME does not seem to satisfactorily account for the phenomenon of passivization, or for its specific distinctions in terms of eventive, or adjectival passives. This conclusion drives us to an alternative analysis to be proposed in the next section.

3. AN ALTERNATIVE ANALYSIS FOR VERBAL PASSIVE SENTENCES

The reexamination of the smuggling proposals has led us to highlight some of their main drawbacks. Despite the theoretically desirable fact that actives and passives are given a uniform account, numerous negative features have been raised here against such approaches. Working on these features is the main objective of the present alternative account, which specially aims at dispensing with the smuggling movement and any other look-ahead mechanism in the derivation of verbal passives.

Recall that the active-like derivation concerning verbal passives poses intervention problems (see section 2). The movement of the internal argument to the subject position is blocked by the external argument. The smuggling approach was an attempt to overcome this syntactic intervention based on the proposal of a specific node VoiceP above vP (see section 2.1. and 2.2.). In this regard, we have pointed out that the nature of vP was the first great difficulty the smuggling analysis had to face. An ordinary vP would require, in this sense, a look-ahead mechanism to play a role for the derivation to proceed accordingly.

Another main issue is the fact that the *by*-phrase does not amount to an independent constituent in the smuggling approach. Likewise, VoiceP, which is headed by the preposition 'by', is entirely formed by uninterpretable features, which is also undesirable concerning interface issues.

Last but not least, in the semantic kind of smuggling, a BECOME/FIENT operator is proposed (see 2.2.). It seems to not be satisfactorily teasing apart verbs, which may or may not form passive constructions.

We may conclude that the smuggling proposal as a whole ends up causing complications, which are as well problematic in the attempt to solve the issue of intervention. In the search to dispense with the smuggling approach, the challenges we have to face are: the intervention effect (or relativized minimality), the Case-marking of the internal argument DP and the theta-role assignment of the external argument DP.

Before taking these aspects into consideration, it is essential to reassure that the main characteristic to be attributed to passive, it seems to us, is the non-adjacent dependency established by the complex auxiliary + participle (also see Lima Júnior, 2012; in prep.; Lima Júnior & Corrêa, 2015). This complex constitutes the identity of passives in many languages. In other languages, a particular passive morpheme is present.

Concerning the presence of a participle form of the verb, we follow Collins (2005: 85) with respect to the fact that there is no actual reason to sustain that active participles (see 27) are different from passive participles (see 28) (also see Quirk et al., 1985; Watanabe, 1993). The aspectual nature of active and passive participles has nothing to do with the participle itself. The aspectuality is defined by the auxiliary (be/has; ser/ter) the participle is merged with.

(27) a. John has seen Peter.

b. O João tem visto o Pedro.

(28) a. Peter was seen by John.

b. Pedro foi visto pelo João.

It might be argued, though, that in Portuguese the participle morphology explicitly agrees in number and in gender with the subject-DP in passives (see 29), whereas it does not in actives (see 30).

(29) As meninas_{FEM-PL} foram_{PL} vistas_{FEM-PL} pelo João.

'The girls were seen by John'

(30) As meninas_{FEM-PL} têm_{PL} visto_{default} o João.

'The girls have seen John'

Nevertheless, the so-called active participle in French also exhibits agreement morphology with the subject-DP, at least, when cliticization of the internal argument takes place by means of movement (see 31). It suggests that explicit agreement is not intrinsic to the type of participle at stake. Likewise, the French passive also involves participles in its derivation (see 32).

(31) a. Elle a acheté une voiture.

b. Elle l'a achetée_{FEM-PL}.

(32) La maison a été achetée_{FEM-S} par Jean.

It is assumed here that the contrast seen in BP between active and passive participles (29-30) is a result of an ongoing process. It seems to be the case that such a language is losing the agreement morphology in participles, as the examples in (33-34) illustrate (see Simioni, 2010 for a wider discussion on the topic).

(33) No dia de Iemanjá, [foi jogado_{default}] [milhares de pétalas de rosa_{FEM-PL}] ao mar.

(34) Os_{pl} menino_s já foi_s levado_s tudo para a escola.

Not surprisingly, in ancient Portuguese (16th century), it used to be possible to observe agreement in active participles, as illustrated in (35)¹⁰, different from what is observed now (see 30). Matos e Silva (2002), on the analysis of the 'Letters of João III' (As cartas de João III), found a similar pattern in the agreement of such constructions of this period, as illustrated in (36-38), although they notice a tendency for a variation in this pattern since then.

(35) a. Depois de Crisnarao ter feitas_{FEM-PL} as pazes_{FEM-PL}(...)

b. (...) e tendo lhe tomada_{FEM-S} sua mulher_{FEM-S} (...)

(36) (...) que vos deve ter representada_{FEM} [sua provisom_{FEM}]

(37) (...) e que, tendo jaa_{assentada}_{FEM} a gente_{FEM}(...)

(38) (...) pois já tendes dadas_{FEM-PL} a Vosso Senhor as graças_{FEM-PL}(...)

Having examined these facts, we may conclude that there is no difference between active and passive participles in terms of specific projections. The first steps in the derivation of verbal passives would be, then, the same ones present in actives. Take, for example, the passive (39).

(39) The girl was seen by the man.

The verb (see) is merged with its internal argument (the girl). PartP is merged with the VP. The head V adjoins part, forming the complex V-part (seen). The complex V-part (seen) is [_{aspect}]. By that, we mean that the participle must have a feature [aspect] valued by an

¹⁰ The example in (35) can be found by means of a free research on the website: <http://www.corpusdoportugues.org/x.asp>.

auxiliary verb (have/be; ser/ter/haver) in the sense of Lunguinho (2011). Up to this stage, either an active or a passive sentence could be derived. If a transitive v^*P is merged with V-part (seen), accusative Case will be assigned to the internal argument (the girl) and hence it can be immediately spelled-out. As we have discussed before, nothing prevents v^* from assigning Case. Consequently, some kind of special vP , which does not value accusative Case, has to be proposed for passives, as in Chomsky (2004; 2008), who assumes that passive vPs are weak ‘phases’; that is, they constitute a phase in the propositional sense only.

Although it seems reasonable to assume a special kind of vP for passives, we entertain the possibility of considering this “special vP ” a strong phase. This claim may prove useful for circumventing intervention issues.

Legate (2003) (among others) presents several empirical arguments in regard to the fact that passive vPs behave exactly as transitive (or active) v^*P . According to many of the works on the issue, both categories exhibit PF-isolability and full argument structure at LF, meeting the propositionality criterion for phasehood (see Richards, 2004, Epstein, 2006). Most importantly, they both provide the same reconstruction sites, which are typical of an intermediate phase edge (see Fox 2002; Legate, 2003); they both allow for the same freedom of reordering of verb and object as other transphasal movements (see Richards 2004; 2006).

Being a phase, passive vP may thereby provide an escape hatch for the movement of the internal argument via an extra spec. In this sense, movement of the DP internal argument can take place cyclically, as in A'-movement (see Figure 5). No look-ahead computation is necessary. In sum, an alternative proposal for passives may profit from assuming a special node, which amounts to a strong phase, considering the evidences brought about by Fox (2002) and Legate (2003), although it will not assign accusative Case to the internal argument – let’s name this special node *passiveP*.

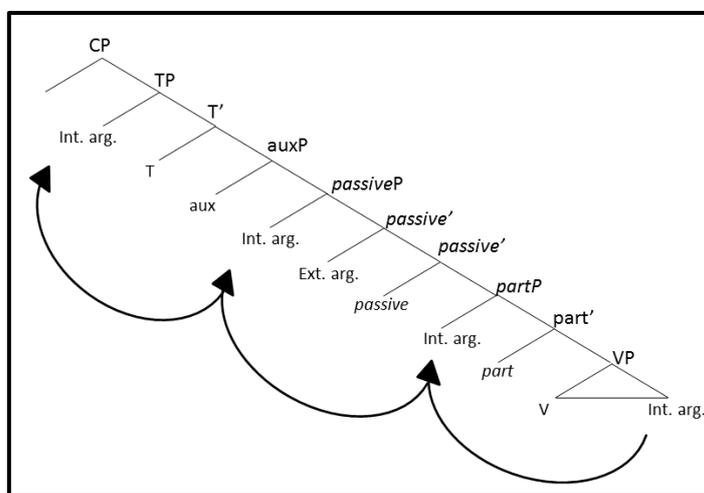


Figure 5: cyclic movement in passive sentences

It is important to semantically justify the presence of *passiveP* in the derivation of passives. As argued for in Chomsky (1995), the proposal of a functional node must be couched on some interpretable feature relevant for LF. *PassiveP* is then different from Chomsky's passive *vP*, not only for its phasal nature, but also because its presence is motivated by interface information, which makes it different from *v*P*¹¹ as well. It is important then to consider which feature would be associated to a specific passive node.

In many languages, passives are identified by a particular morphology. We postulate that this morphology is inserted in the head of *passiveP*. Although in languages such as Portuguese and English no specific morpheme seems to be attributed to passives in the grammar, it is possible to notice some kind of semantic constraint, which we associate to the presence of this functional category (*passiveP*). Take as an example the pair active-passive in (40-41).

(40) a. O João lembraseupai.
'John resembleshisfather'.

b. O paifoilembrado pelo João.
'The father was reminded by John.'

(41) a. John married Ana.
b. Ana was married by John.

In the sentences 'a' of (40-41), there is a symmetrical semantic relation between the entities 'João' and 'seupai' (40a) and 'John' and 'Ana' (41a). Notice that the sentences 'b' of (40-41) cannot semantically correspond to the sentences 'a'; that is, the interpretation of (40b), and (41b), in which 'John and his dad are alike' or 'John and Ana got married with each other', is not allowed. We claim it is so because of a semantic restriction imposed by *passiveP*.

Taking Cançado's (2002) theory of the atomic properties of theta-roles into account, it is possible to infer that in the passive sentences observed above (40-41b), a semantic/thematic feature 'trigger' is associated to the external argument. According to Cançado (2005: 33), 'trigger' is a thematic property that can be associated to other properties, in a group of

¹¹ It was highlighted in this paper that Collins' VoiceP was endowed with uninterpretable features only, which is undesirable. Additionally, it headed either the preposition *by* or a null preposition, responsible for case marking the external argument, generated in the spec of the previous doubtful projection - *vP*. It has also been pointed out that Gehrke&Grillo's smuggling proposal (2009) have associated the BECOME/FIENT operator to passives, which does not correctly tease apart verbs which may or may not form passives.

properties, called thematic roles. Thus, ‘trigger’ may be part of an ‘agent’, a ‘cause’, a ‘patient’ and even a mental process. This semantic feature must be read at the interfaces for the passive to be possible. Compare the examples in (42) to the ones in (43) (see Pinker, Lebeaux & Frost, 1987:197). By examining them, it seems clear that the absence of trigger in (43) is crucial for passives (the bar examples) to be disallowed.

- (42) a. John owns three bicycles.
 b. Many people misunderstand the argument.
 c. Dr. Caron weighed the patient.
- a'. Three bicycles are owned by John.
 b'. The argument is misunderstood by many people.
 c'. The patient was weighed by Dr. Caron.
- (43) a. John has three bicycles.
 b. The argument escapes many people.
 c. Tiny weighs 210 pounds.
 d. The coming decade will see many changes.
 e. This bottle contains a deadly poison.
 f. Tom resembles Gene.
- a'. *Three bicycles are had by John.
 b'. *Many people are escaped by the argument.
 c'. *210 pounds are weighed by Tiny.
 d'. *Many changes will be seen by the coming decade.
 e'. *A deadly poison is contained by this bottle.
 f'. *Gene is resembled by Tom.

It is important to highlight that for syntactic matters only the passive sentences in (43a'-'f') are unproblematic. These passives only crash for semantic reasons. We argue that the functional category *passiveP* inserts the external argument into the tree (instead of *v*P* doing it) associating a semantic feature [trigger] to the argument at stake. For interface matters, the external argument is semantically highly predictable because of the trigger property instantiated by *passive*, independently of the presence of the by-phrase. Another issue is thus identifying the nature of the implicit external argument in [spec, *passiveP*].

We believe that assuming an empty category as the external argument in passives, a la Boeckx (1998), is desirable. Nonetheless, it is not clear which exact empty category (EC)

(anaphors, variables, controlled or arbitrary PRO, and/or pronominals) should be assumed. This has been a matter of debate in the literature.

According to Jaeggli (1986) anaphors should be eliminated as a possibility due to the A-principle. Controlled PRO has also been dismissed by the claim that it is not allowed in governed positions. According to Boeckx (1998:195), controlled PRO is the anaphoric form of pro. Variables, at last, must be bound and there would be nothing internal to the sentence to bind them. Fujita (1994) concludes that the EC might be pro/PRO, assuming that an element is present and leaving the issue open. Collins opts for arbitrary PRO, while Boeckx (1998) assumes that only pro can be the EC in passives.

Boeckx (1998: 198) defends that arbitrary PRO, which is the category proposed by both Jaeggli (1986) and Collins (2005), cannot be the EC in passives since arbitrary PRO can bind the first person plural (see 44), whereas the passive EC would not be able to do so.

(44) *Love letters were written to ourselves_iPRO_i.

[adapted from Boeckx (1998:198), example 139 in the original]

Likewise, Lunguinho (2011:61) defends that the empty category is pro (contra Collins, 2005). He assumes that there would be some kind of parallelism between the sentences in (45) and the sentences in (46).

(45) a. As pessoas foram empurradas na festa.

b. A melodia era ouvida a quilômetros de distância.

c. A vítima foi levada ao hospital.

(46) a. Empurraram as pessoas na festa.

b. Ouviam a música a quilômetros de distância.

c. Levaram a vítima ao hospital.

[adapted from Lunguinho (2011:60/61), examples 43 and 44 in the original]

Yet, it is not clear whether Boeckx and Lunguinho are indeed correct, insofar as in Portuguese the binding of the first person plural may occur (see 47). The sentence in (48) should be good if there would be the parallelism claimed by Lunguinho (2011) between this sentence (48) and the sentence (47), which does not seem to be the case. The sentence in (49) would be the parallel version of (47), reinforcing the argument that the EC can bind first

person plural. Furthermore, examples in English like the one in (50) were also found on the internet.

- (47) Cartas de amor foram escritas para nós mesmos_iPRO_i.
- (48) *Escreveram cartas de amor para nós mesmos.
- (49) Nós escrevemos cartas de amor para nós mesmos.
- (50) An image was given to ourselves to look at as a basis to work from¹².

These arguments seem to corroborate the possibility of admitting an arbitrary PRO as the external argument selected by *passiveP*. We believe that an existential variable bound by a discourse operator, somewhere at the split CP would also be an option. For the time being, we will put this possibility aside and merely point out that arbitrary PRO¹³ would not pose major problems for the analysis being presented.

As far, we have considered that *vP* is not suitable for passives and have entertained the possibility of considering an equally strong projection – *passiveP*. This endows the derivation with an escape hatch for the cyclic movement of the internal argument. As far as the external argument is concerned, PRO has been cautiously examined.

Reconsidering the steps in the derivation of the passive in (39) (The girl was seen), we have that *passiveP* is merged with the complex PartP-VP (seen). V-part adjoins passive, forming a complex V-part-passive. A PRO is inserted into the tree at [spec, *passiveP*]. As previously argued, the head passive cannot assign Case to the DP internal argument (the girl).

It may be argued that the movement of the internal argument may be motivated by means of a feature associated to external systems (an EPP feature or the like). There is no need, nevertheless, to assume that the movement of the internal argument occurs as for the DP to have its Case assigned, and/or as a last resort, provided that Case assignment can be a long distance operation (Chomsky, 1995).

According to Rothstein (1983), it is an external system requirement that events be expressed in a subject-predicate format. Rizzi (2006: 99) argues that the subject position is endowed with special discourse properties (quasi-topicality, and the like) in the sense of Chomsky (2002). These requirements would be, thus, relevant to motivate the movement of the DP (internal argument), which will eventually occupy the subject syntactic position.

¹² This sample was extracted from this website: <http://www.correx-printing.co.uk/blog.html>

¹³ As the implicit argument required by *passive* is necessarily endowed with a semantic property [trigger] it could bear inherent Case.

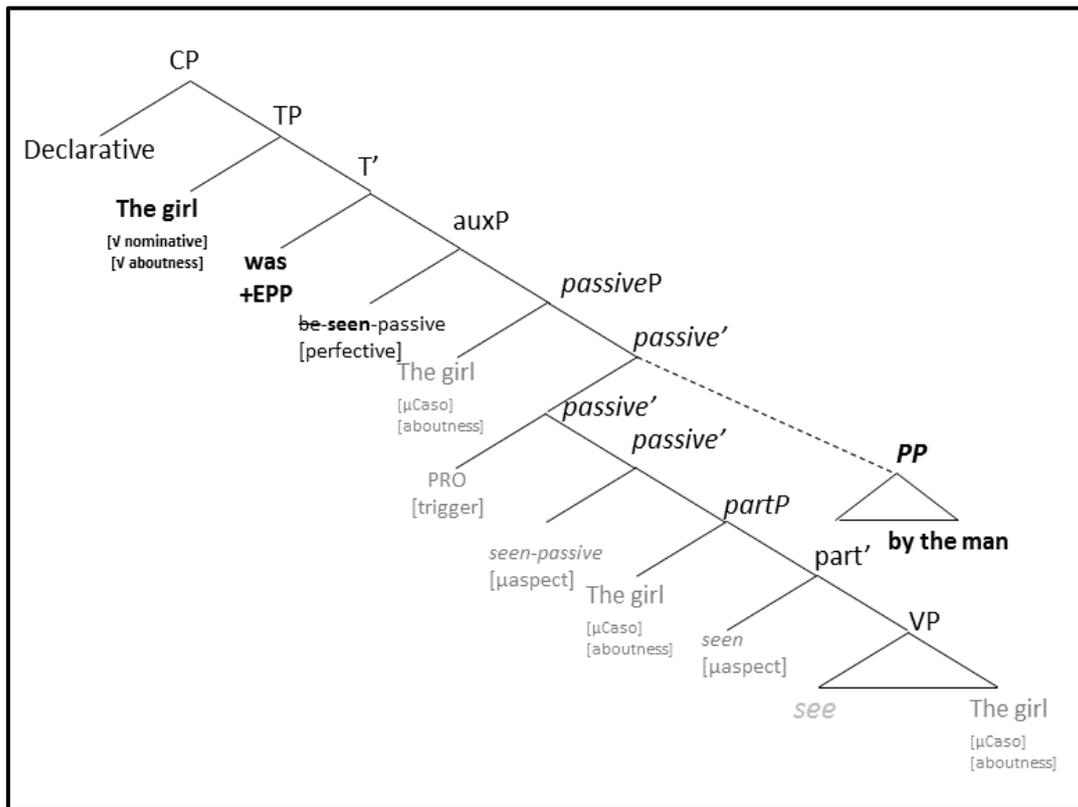


Figure 7: long passives

By stating that by-phrases are adjuncts, the order of stranded prepositions/clitics and remnant movement that were used to justify the smuggling movement are no longer an issue as it used to be for Collins's (2005) proposal¹⁴.

In sum, the main drawbacks found in the examination of the smuggling proposals led us to cogitate a special kind of vP projection for passives; to consider an implicit external argument, projected by the passive and to assume that the by-phrase is an adjunct associated to this implicit argument. The special projection representative of verbal passives (*passiveP*) was carefully examined taking into consideration evidence for its strong phasehood nature, argued for in the literature (LEGATE, 2003; RICHARDS, 2004; 2006). This very characteristic facilitates the necessary movement of the internal argument over the external one, dispensing with smuggling movement for passives.

¹⁴ We postulate that the natural position of by-phrases is at the end of the sentence, as in a. below, although it may be focused, generating the ordering in b.:

- a. The present was given to Maria by John.
- b. The present was given by John to Maria.

4. FINAL COMMENTS: A BRIEF DISCUSSION CONCERNING ACQUISITION AND PROCESSING MODELS

As anticipated, the motivation for reconsidering the analysis of passive sentences was couched on finding simpler solutions for the issue of minimality effects in a coherent way with the objectives pursued in the Minimalist Program (Chomsky, 1995; subsequent work). At the same time, we have pursued an analysis that would facilitate the dialogue with acquisition models, and integration with real time computational models, as the MINC (Corrêa & Augusto, 2007).

With regard to acquisition issues, we signal that, whichever the analysis to be proposed is, it must clarify what kind of interface information children may rely on in order to have a structure represented (see Corrêa, 2009; Lima Júnior, in prep.). We have clearly stated that *passiveP* is a particular functional category motivated by interface issues. For languages such as English and Portuguese, children may rely, on one hand, on the complex aux+part which is available at the phonetic interface to bootstrap passives; on the other hand, children may rely on the semantic constraint raised by *passiveP* to represent this functional category in the linguistic knowledge. Once 'by' is not an exclusive preposition of verbal passives, it was hard to predict, based on Collins' (2005) analysis, what children would have to acquire when one states they are acquiring passives.

Concerning the computational issues, we acknowledged, as pointed out by Lima Júnior & Augusto (2012; 2014) and Lima Júnior & Corrêa (2015), that the active-like derivation of passive sentences favors the integration between formal analyses of passives and processing theories on the investigation of the apparently costly nature of passive sentences, provided that it allows a direct contrast between them. Yet, besides all the problems that the analyses reviewed pose from a theoretical and empirical standpoint, the smuggling approach seems to predict operations that assume steps which are not completely visible at the interfaces and disputable in terms of its actual implementation in real time computations.

We would like to add that, although many experimental results suggest that passive sentences are costly (Ferreira, 2003; Gleitmann et al., 2007; Grillo, 2008; Lima Júnior & Corrêa, 2015), this cost does not seem to be related to intervention effects, as previously stated by Grillo (2008) and by Snyder & Hyams (2015). Psycholinguistic results show a difference contrasting A-movement, like in passives, and WH-movement, like in interrogatives and relatives, in terms of the reactivation of antecedents (Osterhout & Swinney, 1993; Nicol & Swinney, 1989; Nicol, Fodor & Swinney, 1994; see Augusto, 2008 for a

discussion). This may also signal a difference in terms of the strength of intervention issues. Moreover, as Lima Júnior & Corrêa (2015) observed, the cost pertaining to passives seems to be related to the computation of a long distance dependency (auxiliary+participle), which leads to a more costly operation of movement, far before the external argument is processed.

Lima Júnior & Corrêa also observe that by-phrases are interpreted faster than other adjuncts, differently from what is expected by Grillo (2008) and Snyder & Hyams (2015). Lima Júnior & Corrêa attribute these results to the fact that the theta-role is immediately discharged on the implicit argument (PRO), so that the by-phrase may be anticipated and quickly integrated (also see Liversedge et al., 1998). These results are easily accommodated by the analysis presented here.

This paper is then a careful review of the drawbacks the smuggling analyses raise, considering then the main features a passive analysis should provide. The search for this kind of analysis has led us to the proposal sketched here. Obviously, some important caveats have yet to be addressed, which is intended to be taken upon in the near future.

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RESUMO: Este artigo é, em primeira instância, uma revisão crítica das desvantagens e problemas relativos às propostas acerca das passivas verbais na literatura, particularmente aquelas que assumem movimento por smuggling. Oferece-se também uma análise alternativa para as passivas. Nela, um nó funcional especial para as passivas é assumido (alternativo a VoiceP, vP-passive, ou v*P). Este nó é motivado nos níveis de interface e constitui fase. Em sendo fase, o nó funcional permite que o movimento do DP (argumento interno) ocorra de forma cíclica, colocando em xeque a necessidade de smuggling nas passivas. Finalmente, faz-se algumas considerações em relação a modelos de processamento e teorias de aquisição. Argumenta-se que a proposta em discussão pode favorecer uma maior interdisciplinaridade no estudo das passivas.

Palavras-chave: passivas; smuggling; movimento cíclico; fase.