

**THE ROLE AND FORMAL STATUS OF PARTICIPLES IN VERBAL PASSIVES****O PAPEL E O ESTATUTO FORMAL DOS PARTICÍPIOS NAS PASSIVAS VERBAIS***Lydsson Agostinho Gonçalves<sup>1</sup>**Karina Carolina Vieira de Matos<sup>2</sup>**Paula Roberta Gabbai Armelin<sup>3</sup>***ABSTRACT**

This paper investigates the internal structure of verbal passives in Brazilian Portuguese and, in particular, of the participle found in this construction. Under the framework of Distributed Morphology (Halle; Marantz, 1993; Marantz, 1997), our goal is to establish a syntactic derivation capable of not only describing the morphological constitution of passives, but also explaining the participle's contribution to the structure. In the literature, most authors assume that the participle in passives is the exponent of a passive head or of a passive flavor of Voice. This does not explain its categorial mixed (verbal/adjectival) behavior or the formal need for such element in the passive structure. We propose the participle is a mixed category, in the sense of Panagiotidis (2015), resorting to the author's functional categorizer *Switch*, an element that is capable of interrupting the sequence of extended projections of a category and converting it into another one. By merging a *Switch* over the base verb's extended projection, an adjective is formed which preserves the already-built verbal properties. Regardless of the particularities in its formation, however, the participle is, in terms of category, an adjective in syntax. This derivation explains the ambiguous behavior of this form: the participle carries verbal material, but is considered an adjective for the purposes of later syntactic operations.

**KEYWORDS:** Passive. Participle. Switch. Distributed Morphology.

**RESUMO**

Este artigo investiga a estrutura interna das passivas verbais do português brasileiro e, em particular, do particípio encontrado nessa construção. Sob o quadro da Morfologia Distribuída (Halle; Marantz, 1993; Marantz, 1997), nosso objetivo é estabelecer uma derivação capaz não apenas de descrever a constituição morfológica das passivas, mas também de explicar a contribuição do particípio para a estrutura. Na literatura, a maioria dos autores assume que o particípio das passivas é o expoente de um núcleo passivo ou um sabor passivo de *Voice*. Isso, no entanto, não explica seu comportamento categorial misto (verbal/adjetival) ou a necessidade formal desse elemento na passiva. Propomos que o particípio é uma categoria mista, no sentido de Panagiotidis (2015), recorrendo ao categorizador funcional *Switch* desse autor, um elemento que é capaz de interromper a sequência de projeções estendidas de uma categoria e convertê-la em outra. Via a concatenação de um *Switch* à projeção estendida do verbo de base, é formado um adjetivo que preserva as propriedades verbais já construídas. Porém,

<sup>1</sup> Doutorando em Linguística / Programa de Pós-Graduação em Linguística / Universidade Federal de Juiz de Fora (UFJF), lydsson.goncalves@gmail.com, <https://orcid.org/0000-0003-0875-7334>.

<sup>2</sup> Doutoranda em Linguística / Programa de Pós-Graduação em Linguística / Universidade Federal de Juiz de Fora (UFJF), KVIEIRA110@gmail.com, <https://orcid.org/0000-0002-2755-5749>.

<sup>3</sup> Doutora em Linguística / Professora do Programa de Pós-Graduação em Linguística / Universidade Federal de Juiz de Fora (UFJF), paula.rg.armelin@gmail.com, <https://orcid.org/0000-0003-4751-2831>.

apesar das particularidades da sua formação, o particípio é, em termos de categoria, um adjetivo na sintaxe. Isso explica o comportamento ambíguo: o particípio carrega material verbal, mas é considerado um adjetivo para fins de operações sintáticas posteriores.

**PALAVRAS-CHAVE:** Passiva. Particípio. *Switch*. Morfologia Distribuída.

## 1. Introduction

This paper<sup>4</sup> presents an analysis and discussion of the internal structure of analytical verbal passives in Brazilian Portuguese (henceforth BP), with a particular focus on the nature of the participle. Specifically, we aim to identify the categorial status of participles and their contribution to the formation of passives. Participles are a prominent topic in literature, due to their non-homogeneous nature, which seems to be a mix of verbal and adjectival properties. As such, a better understanding of their functioning may offer us a broadened perspective on the concept of category as a whole. At the same time, passives have been at the forefront of generative linguistics, and one of the main issues when analyzing this phenomenon is exactly the fact that they include such a complex element as the participial form. Taking all of this into consideration, a more thorough investigation of the way participles and passives are built and interact is necessary.

The passive is one of the different types of voices available in languages, which also include the active and the middle voices, for example. The most common voice pattern is the active one, in which the subject is the agent of the action – that is, the verb's external argument. In the passive voice, on the other hand, the subject is the patient or theme of the action – the verb's internal argument. This pattern is described by Farrel (2005) as follows:

A clause is said to be in passive voice if it: a. is an intransitive clause of a type that functions as a systematic alternative to some more basic transitive clause type, and b. the dependent that would be the A[gent] in the basic clause type does not have any A[gent]/S[subject]/O[object] function (Farrel, 2005, p. 66).

There are at least two different types of passives found crosslinguistically: the synthetic and the analytical passive. The former is realized as a single finite verbal form with a special morphological marking (usually a clitic or an affix), while the latter is formed through a combination of a main verb in its participial form and an auxiliary verb (*ser* / 'to be' in BP). In this paper, we focus on this second type of passive and on the role that the participle plays in its structure. Examples of the analytical passive in BP are presented in (1) below:

- (1) a. O carro foi chutado (pelo João).

The car.3SING.MASC. bePAST.PERF.3SING kick.PART.SING.MASC. (by John)

‘The car was kicked (by John).’

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## b. As bolas foram chutadas (pelo João).

The balls.3PL.FEM. bePAST.PERF.3PL kick.PART.PL.FEM. (by John)

‘The balls were kicked (by John).’

The sentences in (1) allow us to identify the general properties of passives. In the most canonical cases, the internal argument of the main verb acts as the syntactic subject in passives, while the external argument becomes unnecessary, and when it is projected, it comes in the form of a prepositional phrase (often called ‘by-phrase’). Also, the syntactic subject agrees not only with the auxiliary verb, but also with the participle, but in different patterns. In BP, while the finite auxiliary verb agrees on number and person with the syntactic subject, the participle, however, shows number and gender agreement, which is the pattern of adjectives. As such, the participle is an element which is formed from a verbal base, preserving some of that base’s argument structure, but also shows a behavior more akin to adjectives in subsequent syntactic interactions.

This mixed behavior suggests participles have an unusual internal structure, which must be understood if we want to have a better grasp on their nature. In order to explore this, we resort to the Distributed Morphology framework (Halle; Marantz, 1993; Marantz, 1997; henceforth DM), DM, which unifies word and sentence formation processes, arguing that they are both conducted in syntax, under the same guiding principles. For DM, no complex element is stored, but is rather built in syntax. Crucially, this includes the definition of the grammatical category of linguistic elements, as the model adopts a category-free view of roots. Considering that participles seem to transit between two categories, a model such as DM is capable of opening valuable perspectives for analysis, as it proposes a full decomposition of the notion of category, offering the primitives (roots, categorizers and features) to deal with them.

Having the participle’s mixed behavior in mind, as well as the tools offered by DM, our proposal’s starting point is the hypothesis that the participle is built through the merging of a variety of functional heads, some of a verbal and some of an adjectival nature. This is what licenses properties of both categories. Specifically, in the case of verbal passive participles, we assume they originate as verbs in syntax through the merging of a root and a *v* categorizer, which is then followed by the merging of a Voice head. After that, the verb’s extended projection (cf. Grimshaw, 1990) is interrupted by the merging of a category-changing head, a Switch (Panagiotidis; Grohmann, 2005; Panagiotidis, 2015), which allows the merging of nominal projections into the structure. This Switch head, which we will call Part for simplicity’s sake, has as its default phonological realization the *-d-* marker which is the regular participle exponent in BP.

In order to motivate and properly explore our proposal, this paper is organized as follows. After this first introductory section, in section 2 we explore some empirical properties of the participles of the passive formation. In section 3, we discuss how literature has been treating the passives and formal status of participles in this formation. In section 4, we present our proposal, offering a derivation of

the participle and of the passive structure as a whole. In section 5, we investigate some developments of the analysis, such as its consequences for an approach to synthetic passives. Finally, we end the paper with our final thoughts in section 6.

## 2. Participles and passives

As we have seen in (1), the basic constitution of the analytical passive in BP is the combination of the auxiliary verb *ser* ('to be') and the participial form of the main verb. Also, in this construction, the internal argument is promoted to the position of syntactic subject, while the external argument is excluded or demoted to a prepositional adjunct. We are now going to explore some additional properties of passives which are important to understand their nature as a whole and the role of the participle in it.

The first important point to mention is that the passive always entails an eventive and, more importantly, agentive or causative reading, even when the external argument is completely omitted. In other words, in the passive, there is always the interpretation that someone (or something) triggered or caused that event to happen. This can be seen in the data in (1): even if the by-phrase introducing agents is removed, the reading will remain that someone performed the act of kicking. This agentive reading is also seen in the compatibility of verbal passives with subject-oriented adverbials, such as *de propósito* ('on purpose'), even when the by-phrase is not projected, as we can see in (2):

- (2) a. A comida foi queimada de propósito.  
The food.3SING.FEM. be.PAST.PERF.3SING. burn.PART.SING.FEM. on purpose  
 'The food was burned on purpose.'
- b. O João foi empurrado de propósito.  
The John.3SING.MASC. be.PAST.PERF.3SING. push.PART.SING.MASC. on purpose  
 'John was pushed on purpose.'

In DM, the agentive/causative reading is usually associated with the presence of a Voice head (Kratzer, 1996), as this is the head responsible for introducing the external argument. As such, this mandatory agentive/causative reading of the passive indicates that its verbal base – that is, the verb which eventually surfaces as the participle – may include such a head. This means that there is a relatively complex structure underneath the participle, since it includes functional heads of the extended projection of the verb.

This complexity originated from the verbal base is also evidenced by the fact that both the mandatory internal argument and the optional external argument of the passive are related to the participle. In that regard, it is also worth noticing that, in order for the passive to be licensed in BP, the base verb needs to be transitive – unaccusative and unergative verbs do not license passives under normal circumstances. Also, the internal argument, which is promoted to syntactic subject, is always the direct object. If a verb is bitransitive, or if it licenses a prepositioned argument, the passive is also

not licensed<sup>5</sup>. These properties can be checked in the following data, (3):

- (3) a. Todos concordaram com o argumento. (prepositioned argument)  
 Everybody.3PL. agree.PAST.PERF.3PL. with the argument.3SING.MASC.  
 ‘Everyone agreed with the argument.’
- b. \*O argumento foi concordado por todos.  
 \*The argument.3SING.MASC be.PAST.PERF.3SING. agree.PART.SING.MASC. by everyone  
 ‘The argument was agreed with by everyone.’
- c. Os convidados dançaram muito. (unergative)  
 The guests.3PL.MASC. dance.PAST.PERF.3PL. a lot  
 ‘The guests danced a lot.’
- d. \*Foi dançado muito (pelos convidados).  
 \* be.PAST.PERF.3PL. dance.PART.PL.MASC. a lot (by.PREP the guests.3PL.MASC)  
 ‘It was danced a lot (by the guests).’
- e. Os pacotes chegaram. (unaccusative)  
 The packages.3PL.MASC. arrive.PAST.PERF.3PL.  
 ‘The packages have arrived.’
- f. \*Os pacotes foram chegados.  
 \*The packages.3PL.MASC. be.PAST.PERF.3PL. arrive.PART.PL.MASC.  
 ‘The packages were arrived.’ (adapted from Lunguinho, 2011, p. 48)

With these observations, it seems safe to assume there is a considerable amount of functional material within the participle in passives, and that the argument structure is particularly relevant. On the other hand, the participle also shows more adjectival properties, such as number and gender adjectival agreement. Additionally, finite verbs in BP carry tense and aspect markers which are not found in participles. As such, despite having a non-trivial amount of verbal properties, they do not behave the expected way for this category throughout the derivation.

While discussing tense and aspect information on the participle, it is notable that, despite this lack of morphological marking, literature often argues that they carry perfective aspect or even that they are the realization of an aspectual head (Embick, 2000, 2010; Alexiadou; Anagnostopoulou, 2008; Bruening, 2013; for example). However, passives are licensed in a variety of tense and aspect configurations, not being limited to perfective, as (4) shows:

<sup>5</sup> These properties of BP are not absolute crosslinguistically. For example, English allows different internal arguments to be promoted to syntactic subject (as in ‘John was given a book by Mary’ or ‘A book was given to John by Mary’). Other languages, such as German and Latin, also allow passives to be formed from intransitive verbs in some contexts (Embick, 2000; Abraham, 2006).

- (4) a. As ruas estão sendo pintadas pela prefeitura.  
 The streets.3PL.FEM. be.PRES.3PL. be.GER. paint.PART.PL.FEM. by the city hall.  
 ‘The streets are being painted by the city hall.’
- b. As ruas serão pintadas pela prefeitura.  
 The streets.3PL.FEM. be.FUT.3PL. paint.PART.PL.FEM. by the city hall.  
 ‘The streets will be painted by the city hall.’
- c. As ruas eram pintadas pela prefeitura.  
 The streets.3PL.FEM. be.PAST.IMP.3PL. paint.PART.PL.FEM. by the city hall.  
 ‘The streets used to be painted by the city hall.’
- d. As ruas foram pintadas pela prefeitura.  
 The streets.3PL.FEM. br.PAST.PERF.3PL. paint.PART.PL.FEM. by the city hall.  
 ‘The streets were painted by the city hall.’

Besides the compatibility with different aspect configurations, it can also be pointed out that the auxiliary overtly carries tense and aspect markers in the passive, which shows that such information is present somewhere else in the structure. At the same time, authors such as Beedham (1987) and Abraham (2006) show evidence that passives and perfective aspect seem to have something in common; for example, Beedham (1987) demonstrates that many verbs which reject passivization in English also reject the Present and Past Perfect constructions in the language. This seems to suggest the participle is not exactly the realization of a specific aspectual information, but something else which could be related to it.

Having mapped these main characteristics of passives and participles in BP, we can now proceed to a discussion on how literature has been treating passives and, more specifically, on how it approaches the formal status of the participle.

### 3. Literature review

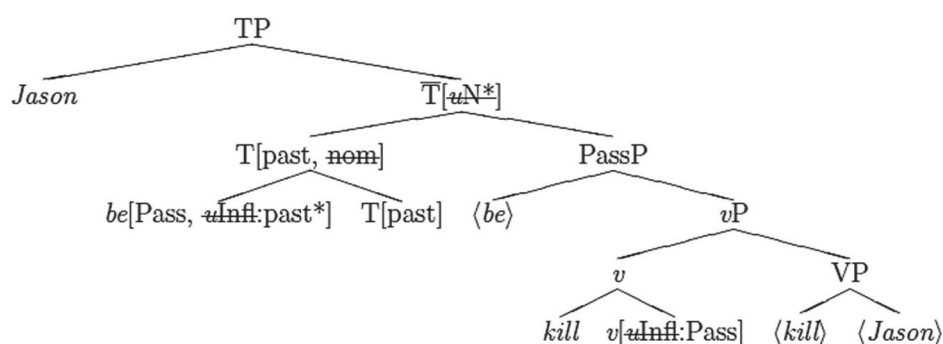
Passive formation has been an important topic for discussion in generative studies for a long time. In Chomsky (1957), for example, passives are treated as the result of a grammatical transformation applied over an active sentence. This view has been very influential, and the relationship between the passive and the active form is still a common concern for many authors. The transformational approach has been replaced for other types of analyses, since, as pointed out by Collins (2005), it could not be sustained in the later context of the Principles and Parameters (P&P) approach (Chomsky, 1981) and especially under the Minimalist Program (MP; Chomsky, 1993), because it resorts to a specific rule with the particular purpose of forming passives. In the logic of modern generative approaches, passives would have to be derived from more general properties.



This way of deriving passives, based on the wider functioning of grammar, can be seen in Adger's (2003) proposal, for example, which is developed under the tenets of the MP. The author defines passives as sentences in which the semantic subject is demoted in importance, and the semantic object assumes the position of the structural subject, in a reversal from active sentences. According to Adger (2003), this means passives are somehow related to unaccusatives, since the following characteristics can be seen in both of them: i) there is no accusative case attribution to the (semantic) object; ii) there does not seem to be a thematic subject; iii) the verb's internal argument is the one that checks nominative case in T; and iv) that same argument is raised to satisfy T's EPP feature. Taking all of that into consideration, Adger (2003) presents the following structure, (5), for verbal passives:

(5) Analytical passive (Adger, 2003)

'Jason was killed.'



(Adger, 2003, p. 189)

In his structure, the author proposes the merging of a Pass (Passive) functional head, which in English is phonologically realized as the auxiliary *be*. That head carries a categorial [Pass] feature and an unvalued verbal inflection feature (this feature is present in all auxiliaries in English, according to the author). This Pass head can only select for unaccusative vPs, and its [Pass] feature values the [uInfl] pass of such vP. The participial form, more specifically, is understood as the result of a spell-out rule involving the [Infl: Pass] feature. Adger (2003) also establishes that the [Infl] feature of the Pass feature is a strong feature, and as such, it triggers the raising of Pass to T. T's nominative feature is checked against the internal argument of the verb, and the EPP feature of T triggers the movement of that same argument to spec. T.

According to the author, the advantage of such analysis is that it only uses tools that are already part of the MP's repertoire, as it does not resort to specific rules for passives. The only extra functional head, Pass, is motivated by the morphological presence of the auxiliary, whose function is to select for an unaccusative vP – which, in turn, explains the lack of accusative case and of a thematic subject. Despite this, in our view, Adger's (2003) approach presents some issues that need more discussion.

First of all, passives and unaccusatives really have common points, but in Adger's (2003) analysis, passives are basically unaccusatives with an additional head, Pass. Nevertheless, the reason for a head like that being necessary in passives and not in unaccusatives is not explored. In other words, it is not clear what is the exact function of Pass in Adger's (2003) analysis, since its only defining properties are selecting for an unaccusative *v* and realizing as an auxiliary. As such, Pass only seems to contribute to a change in the form of the structure, since the relevant meanings were already defined in the *V* and *v* layers.

Secondly, that approximation between passives and unaccusative structures may seem counterintuitive, considering the passive's mandatory agentive reading that we discussed previously, which would be difficult to accommodate in an unaccusative structure. Combined with the fact that passives even allow the agent to be projected via a *by*-phrase, which does not occur with unaccusatives, such issues suggest that the differences between passives and unaccusatives are not so superficial.

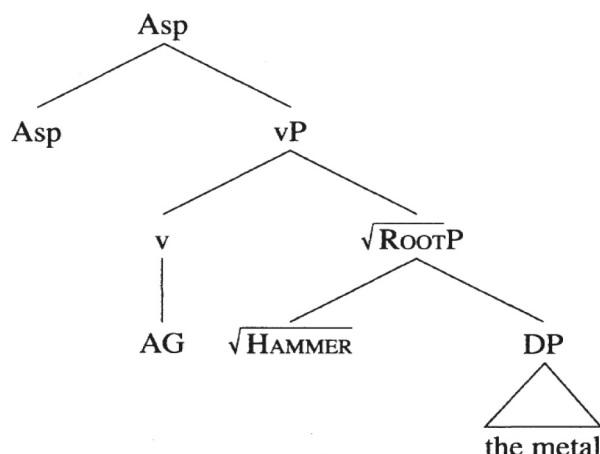
Finally, this proposal does not offer an explanation as to why passives surface with the combination of auxiliary + participle. In other words, there is not an exploration of what causes this change in the form of the verb and of what makes one of the resulting elements, the participle, to have adjectival properties. There does not seem to be much room in Adger's (2003) structure for the adjectival properties of participles to manifest, as the structure is fully composed of heads which are part of a verb's extended projection. Finding an explanation for that mixture of adjectival and verbal characteristics should be an important part of an analysis of passives, in our view.

A proposal which focuses more on the agentive aspect of the passive is developed in Embick (2004). The author's approach involves two important components: the combination of the features [AG] and [Case] and an Asp head. In a basic active sentence, the *v* head would carry an [AG] feature, which encodes agentivity, and also a [Case] feature, which is attributed to the internal argument. In passives, *v* only has the [AG] feature, but not the [Case] feature. This has two immediate consequences. First of all, [AG] ensures the eventive reading is always present in the passive, even when there is no overt agent; second, the internal argument cannot get case through *v*. Since no external argument will be projected, the internal argument enters in a relationship with *T*, contrarily to what happens in active sentences. In order to account for the participle, the author argues that an Asp head is merged over *v*, which is also different from the active, in which that head does not appear. Embick's structure for passives is illustrated in (6):



## (6) Analytical passive (Embick, 2004)

‘The metal was hammered.’



(Embick, 2004, p. 364)

Embick (2004) argues that this structure is capable of deriving several empirical effects. For example, the *v* head ensures the eventive interpretation, and the [AG] feature ensures agentivity and the compatibility of passives with agent-oriented modifiers. This is also done without the need for a specific rule for passives, which is in line with the idea of deriving linguistics phenomena through more general properties of the grammar.

Despite this, we would like to point to some relevant questions raised by Embick's (2004) proposal. First, there is not a clear explanation as to why there cannot be an external argument in this structure. Empirically, it is a fact that passives do not license an external argument (or at least not in their canonical position), but the system developed by the author does not entail that an external argument could not be projected in a structure such as (6). Also, the *Asp* head does not seem to suffice to explain the categorial behavior of participles, as it is not clear why adjectival properties should emerge from this head. Finally, in Embick (2004), participles are associated to perfective aspect, but, as we saw in (4), passives do not need to be perfective.

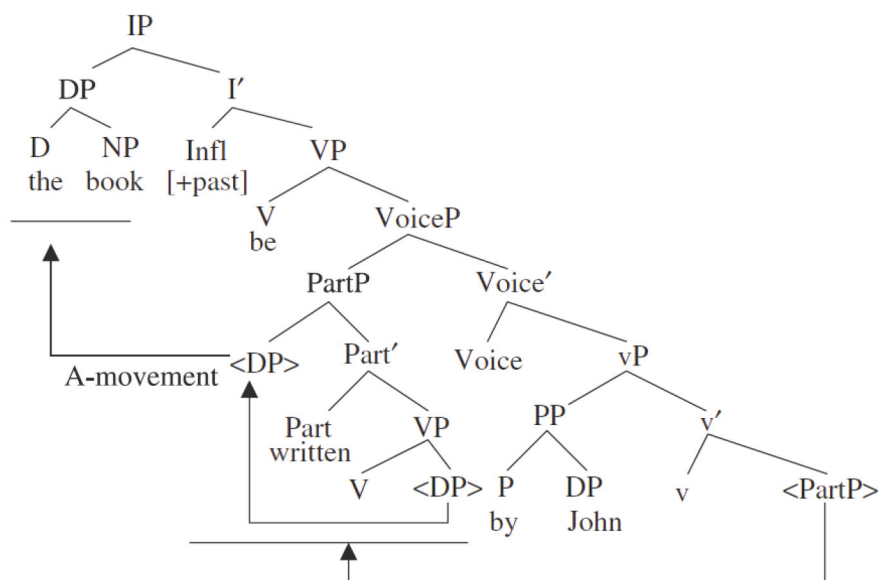
A proposal which tries to approach passives from a different angle is Collin's (2005), also developed under the scope of the MP. This author's analysis, in general terms, centers on the idea that the external argument should be generated on the same syntactic position both in active and passive structures. Collins (2005) recovers Baker's (1998) Uniformity of Theta-Assignment Hypothesis (UTAH), according to which theta roles are tied to specific syntactic positions. In other words, a DP with an agent role, for example, should always originate in the same syntactic position, regardless of whether it is an active or a passive formation. As such, the active-passive pair would present a problem for UTAH, since the agent is apparently a verbal external argument in actives, but the object of a preposition in passives.

Collins (2005) aims to show that this is not the case. He argues that the external argument in passives is merged the same way as in active sentences, in the specifier position of vP. After that, an additional projection, not found in the active, which the author calls Voice, is introduced. Voice is phonologically realized as the ‘by’ of the by-phrase, which means that, for Collins (2005), this is not actually a preposition. The author justifies the presence of the Voice head by arguing that, in passives, v cannot attribute accusative case to the internal argument, which is then handled by Voice. However, since the external argument is closer to Voice, it gets accusative. As a result, the internal argument must then enter an Agree relationship with T, which explains its nominative marking and its subsequent raising to the syntactic subject position.

About the participle form, Collins (2005) assumes it is the phonological exponent of a Part head, to which the V head is raised. This Part takes the VP projection as its complement and is taken as a complement by v. The PartP phrase later moves to Spec VoiceP, which generates the linear ordering of subject + auxiliary + participle. The author’s derivation can be seen in (7):

(7) Analytical passive (Collins, 2005)

‘The book was written by John.’



(Collins, 2005, p. 90)

Collins’s (2005) proposal is known in literature as ‘smuggling’, since the movement of PartP to spec, Voice also carries the verb’s internal argument, that is, the DP-complement of V. This movement is necessary to avoid an intervention effect (Chomsky, 2000) from the argument in the spec, v position, which, being higher in the structure, should be the one to enter a relationship with Infl. With this system, Collins (2005) manages to account for the linear ordering of the passive and explain the behavior of its arguments.

We would like to point out, however, that the analysis has some issues regarding the motivation of some of the steps in the derivation. This can be seen, for example, in the smuggling of PartP. There

does not seem to be a syntactic need for this movement to happen: in principle, there should not be any problem if the internal argument remained in its base position and did not enter a relationship with Infl, as the external argument could do so, satisfying its EPP feature and becoming the external argument just like in actives. Similarly, *v*'s inability to attribute case in this structure, which results in the Voice head doing it, is assumed by Collins (2005) without a solid theoretical basis or empirical evidence. We could also mention that the derivation of passives involves a complex system which basically amounts to a change in form, since the passive and the active are generally accepted to be synonymous.

There are also some questions regarding the empirical predictions of the proposal. The idea that the *by*-phrase is actually a Voice head with an accusative-marked complement may be argued for in English, in which there is basically no overt case marking, but it does not seem to work in other languages. For example, in German the *by*-phrase is dative marked, and in Latin it is ablative marked. Even in BP, which, like English, is very limited in overt case markers, we can see that the complement of the *by*-phrase is not an accusative with the help of the suppletive forms available for personal pronouns. For example, a first person pronoun in this position is realized as *mim*, which is a dative form, not an accusative one, which would be *me*. Since Voice in this analysis is specifically tied to accusative case, performing a function originally meant for *v*, this makes it difficult to explain the broader picture seen across languages. As a final point, Collins's (2005) analysis does not explain the participle's categorial behavior, as it seems difficult to find a reason for its adjectival properties in this structure that only contains verbal functional heads.

In general, what can be seen is that literature on passives is usually very concerned with deriving the form of the structure but does not always give so much attention to the motivations behind them. It is worth noticing that the proposals we have explored here do not offer an explanation for the adjectival properties of participles. Also, none of the proposals have explained the reason why the participle (and the auxiliary) is even necessary in passives. It seems to us that is a relevant question, since there is a significant change in form in this construction even though it retains basically the same meaning and much of the same structure of the active.

Although the literature on passives presented here is certainly not exhaustive, it represents many ideas that are still present in some way or another in many approaches. As an example, we could mention Weisser's (2012) proposal, which resorts to a [pass] feature in *v* that causes it to be realized as the participle. Another approach is developed in Bruening (2013), who implements a Pass head just like Adger (2003). In Bruening's (2013) approach, Pass – realized as the participle – selects for a Voice head without an external argument, which would explain its absence. In both cases and others not mentioned here, the observations we have made so far also apply, since the reasoning behind the proposals is very similar.

It seems to us that the status of participles has not been explored to its full capacity in the analyses of passives so far, particularly regarding its category. In all of the proposals we have seen, the participle was related only to functional heads of the verbal domain, and no attention was given to

its adjectival side. Our idea is, then, to try to first understand the formal status of participles, in order to comprehend how they contribute to passive sentences and even why a participle form is present in passives. Our efforts towards that goal are presented in the next section.

## 4. Analysis

Having established the general properties of passives and participles, as well as having reviewed how literature has been treating the matter, we can now advance towards our contribution to this debate. As previously defined, our goal is to identify the categorial status of the participle and, through that, understand how it contributes to the formation of passives.

Our proposal builds on previous work by Gonçalves and Armelin (2024), which argued that the participles of passives are formally adjectives. Despite being built non-conventionally, because they carry a verbal base, they are adjectives for all intents and purposes, and that explains many properties of passives. For example, it is because of that nature that the auxiliary is now necessary, as an adjective could not carry tense features by itself; also, this naturally explains their agreement patterns, which follows adjectives. To explore that proposal, we split this section into two parts: in 4.1, we discuss the adjectival category of participles; in 4.2, we present the analysis of passive which is made possible from that understanding.

### 4.1. Participles as adjectives

The participle's adjectival status is evidenced by the way syntactic processes, such as agreement, affects them. As we have seen, participles agree following the adjectival pattern, not the verbal one. Also, besides appearing in passives, they can additionally be used in the same contexts as adjectives, both predicatively and attributively. In these other contexts, they again follow the same patterns adjectives do. A good example is German, in which adjectives only show gender, number and case agreement markers in attributive position, not predicative. Participles follow the exact same pattern.

We must also take into account the semantics of the participle form. As it is made clear by the fact that they can be used attributively and predicatively, the basic semantics that they carry is that of a property. Unlike verbs, which denote events such as 'kick', 'kill' or 'buy', participles refer to qualities, that is, they inform that some entity has, or is in a state of having, the characteristic of kicked, killed or bought and so on. It is true that this property is related to an event, but it is a property nonetheless. This means that, both syntactically and semantically, participles behave as adjectives, and the verbal properties they do have seem to be sort of in a background.

This interpretation of the nature of the participle is not exactly new. The similarity among participles and adjectives is long recognized, not least since the term 'participle' itself has been coined. It is also because of that perception, for example, that Chomsky's (1981) feature notation for categories defines [+V, +N] for adjectives, which dialogues with the idea of participles being a kind of verbal adjective. However, despite this, it is not usual for participles, at least not the participles from passives, to be formally treated as adjectives in literature. The different analyses we have explored

previously gave the participle different statuses, from the exponents of specific functional heads to exponents of a combination of verbal heads, but none treated them simply as adjectives. However, as we have argued, treating them as functional heads of the verbal domain leaves unexplained why they behave as adjectives.

Taking the idea of participles as adjectives, something must then explain how an adjective can be formed in the middle of a verb's extended projection. The fact that the participle also has verbal properties, such as argument structure, provides an answer for that: we argue that this element starts the derivation as a verb, but has its category changed at some point. As a result, syntax will then treat it as an adjective, but the verb-like relations which had already been built will remain.

To implement this analysis, we resort to Panagiotidis and Grohmann (2005) and Panagiotidis (2015) to propose that participles are formally mixed categories. This means such elements start as part of the extended projection of one category, but change into another one during the derivation. Because of that, they will behave “internally” as one would expect from the original category, but syntax will treat them as one would expect from the category it was converted into. In the case of participles, those categories are, respectively, the verb and the adjective.

Considering that what eventually surfaces as the participle starts as part of a verbal projection, we must first define how this category – the verb – works in syntax. As in DM roots are not inherently categorized, at the most basic level, a verb is a root merged with a *v* categorizer. This first merge is already enough to define the category of verb, but not to establish all of the properties that an element needs in order to fully realize as a verb, since at this point there is no tense or aspect information in the structure, for example. We assume that each category, in order to be fully realized, needs a series of specific functional projections, which is commonly known in literature as its extended projection (Grimshaw, 1990). In the case of verbs, information such as tense and aspect, among others, can be assumed to be part of their extended projection, since they are necessary to build their finite form and are not canonically found in other categories.

The full set of functional heads which compose an extended projection is a matter of debate, but what is important for us is the heads which are involved in the relationship between the participle and the passive. Under this scope, we can establish that a verb is the result of an extended projection composed of root, *v*, Voice (when it is transitive) and *T*.

The derivation of a verb can then be summed up as follows. First, the root merges with the *v* head, which defines its verbal category. If the verb is transitive, this also opens a position for the internal argument (IA). As it is long recognized in literature, the external argument (EA) is not part of the inner layer of the verb, but rather introduced by a specific head. In our analysis, we adopt Kratzer's (1996) Voice head for that function. Thus, the next head in the sequence of projections is Voice, but only if the verb is transitive or unergative, not unaccusative<sup>6</sup>. After Voice, several other

<sup>6</sup> We argue against the idea that Voice should always be projected and, consequently, against the idea that there is an unaccusative Voice or other different ‘flavors’ to this head. Since the function of Voice is to introduce an external causer to an event, we assume that such a head is not merged in the structure of unaccusatives, which usually denote an internally-caused event. For a longer discussion on this issue, cf. Gonçalves (2021).

heads could be merged, but it is T that is relevant for us, as its specifier position corresponds to the syntactic subject of the sentence. In transitive verbs, the external argument moves to this position later on in order to satisfy T's EPP feature.

In order to merge a participle into the extended projection of the verb, we explore Panagiotidis's (2015) framework for mixed categories. For this author, the base element which defines a category – which in DM terms would be the categorizer – carries an interpretable category feature, for example, [V] in the case of a verb. The extended projection of a category is the set of functional heads which carry a non-interpretable feature of the same nature, for example, [uV]. This non-interpretable feature is checked against the interpretable feature on the base by merge and deleted, which allows the derivation to go forward. Basically, this system ensures that functional projections are not projected over the wrong category: a base with a [V] feature can only be followed by heads with [uV]; in case a head with [uN] is projected over it, its non-interpretable feature will not be checked, resulting in a crash in the derivation.

As stated before, however, participles do interrupt the sequence of verbal extended projections. According to Panagiotidis (2015), there are functional heads, the Switches, that could allow such a thing to happen. Switches are heads capable of establishing a connection between structures of different categories, more specifically combining the properties of both of them. In sum, a Switch basically changes the category of a construction at some point of the extended projection, and that is why the authors call it a “functional categorizer”: it performs a similar function to basic categorizers assumed in DM, but it merges higher into the structure, far away from the root domain.

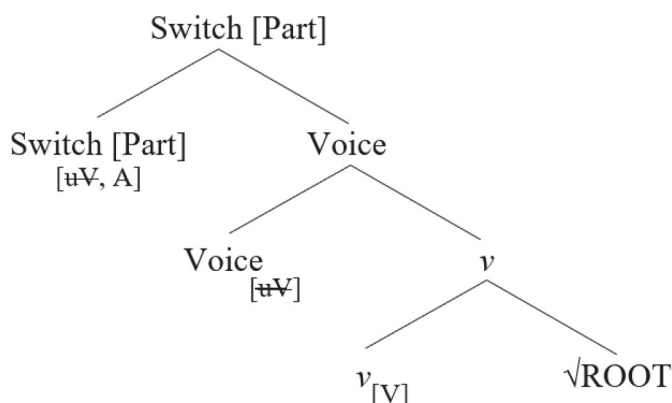
The result of the projection of a Switch is a mixed category. The bottom part of the structure will be preserved, but the resulting element will now carry a new label, which naturally has its own extended projection. The Switch, then, essentially works as a “glue” between these two sets of extended projections, allowing functional heads of one category to be merged over the heads of another. In order to be able to do so, the authors argue that the Switch carries two categorial features: an interpretable one and an uninterpretable one. The uninterpretable feature allows it to be merged into the extended projection of one specific category, but after its uninterpretable feature is checked and deleted, the additional categorial feature, which is interpretable, remains, and thus is projected with the Switch head, recategorizing the structure.

Under this approach, mixed projections are thus characterized for combining properties typically associated with two distinct grammatical categories, which seems to be the case of participles – which show verbal and adjectival properties. Being so, we propose participles arise from a Switch head carrying a [uV] and a [A] feature<sup>7</sup>. This allows it to take the verbal structure that had been built up until that point and recategorize it into something of an adjectival nature, giving it a new label. Below, in (8), we show the representation of how the participle could be built under this approach.

<sup>7</sup> Different combinations of features could be present in a Switch head. For example, Panagiotidis (2015) argues that infinitival nominalizations in Spanish are built through a Switch with the [uV, N] features. The Switch that we find in participles is, therefore, not the only possible one. For a more detailed discussion on this, cf. Panagiotidis and Grohmann (2005) and Panagiotidis (2015).



## (8) The participle as a Switch



The representation in (8) shows that the Switch head interrupts the verb's extended projection and generates an adjective-labeled element with a verbal underlying structure: the participle. The *-d-* affix found in BP participles is therefore the phonological exponent of this Switch head. From now on, for simplicity, we will refer to the specific Switch that we find in these structures as Part, since we are in effect referring to the participle.

A crucial question is the exact position into which the Switch is merged. In (8), it is possible to see that we have merged it over Voice, but without the introduction of the external argument. We argue that it is specifically in this position that such element must be positioned in passives, although this is not necessarily in the case of participles found in different constructions, as we will see later.

Considering the properties of participles and passives that we explored in section 2, it is safe to assume that Part cannot be merged into the structure, at least until the internal argument is introduced, as participles retain such element and passives are formed from transitive verbs. We argue that Voice must also be present in this structure, but not the external argument. The first reason for that is that passives can normally only be formed from transitive verbs, which means Voice is part of their extended projection; additionally, passives always carry an agentive interpretation, even when the external argument is not present. This indicates that Voice is contained inside the participle, as there would be no other element in the structure that would be capable of introducing that agentive reading. On the other hand, as the agent in a passive is not mandatory and can only be introduced by a *by*-phrase, it is most certainly not simply a Voice-introduced external argument. As such, the Part head must be projected immediately after Voice, because otherwise the external argument would be mandatory and there would be no reason for the presence of the preposition<sup>8</sup>.

<sup>8</sup> The discussion made in this section about the Switch condenses only the most important information for the implementation of this mechanism into our proposal. The full framework of Panagiotidis (2015) explores the nature of categories into more detail, as well as offering different examples of other possible mixed categories crosslinguistically. Due to the limited space available, it is not possible to explore all those details in this paper. We recommend the reading of Panagiotidis (2015) and Panagiotidis and Grohmann (2005) for the full picture about this mechanism.

The nature of the by-phrase and its complement will be explored later, as well as the motivation for the presence of Part in the structure. Before that, however, we present a complete account for the participle's formation and for the passive sentence as a whole.

## 4.2. Deriving the passive

We have established that the participle of passives is formed when a Part head is merged over a Voice head without the introduction of the external argument. We must now account for the auxiliary verb, as well as explain the more general properties of the passive, such as the promotion of the internal argument to the position of syntactic subject.

After the merging of Part, an element with a [A] feature, the next functional heads must carry a [uA] feature, which means we have effectively changed into the extended projection of an adjective. As it is not in our scope to define every functional head which is part of this set, what matters for our proposal is that the way is paved for adjectival properties to be developed in this element, such as number and gender agreement<sup>9</sup>. We can assume this participial adjective then has its extended projection developed with no further issues.

The presence of the auxiliary verb is explained by the fact that now what we have in terms of syntax is an adjective, which is not enough to build a sentence – there needs to be a finite verb. The auxiliary serves then as a way of making the construction return to the verbal domain. Contrary to what happened when the verb got converted into an adjective, this time there is not a new (functional) recategorization, that is, there is not a new Switch projected into the structure. This is clear because, if it was the case, the expected result would be something that is still part of the same word domain, but the participle and the auxiliary surface as two different words<sup>10</sup>.

We argue that what happens then is simply that the participial adjective is taken as a complement of the auxiliary verb. It is notable that the passive auxiliary in BP is *ser* ('be'), which is also the case for many other languages. This is a linking verb, whose main function is usually to establish a predicative relationship between two entities. That is why its prototypical argument is adjectives, usually associated with qualities. If participles are adjectives, it should be no surprise that they are

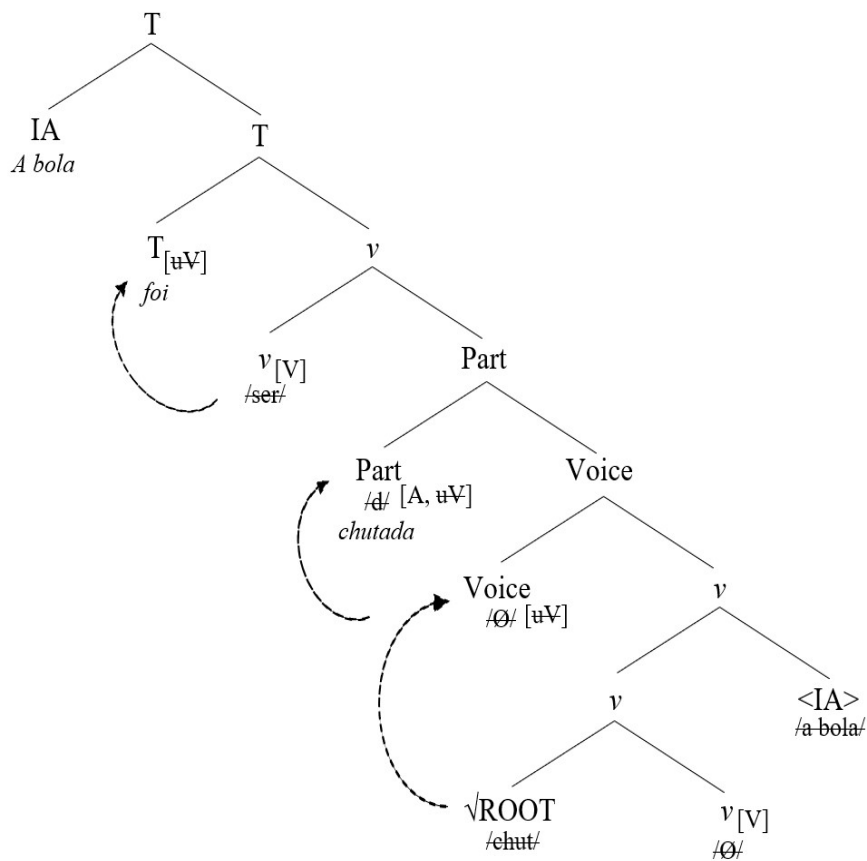
<sup>9</sup> There are several ways in which this could be mapped. Some approaches, such as nanosyntax or cartographic syntax, argue that there are specific heads related to syntactic features such as number and gender. In this case, we could say that a Num and a Gen head would be projected over Part (both of them carrying [uA] features). A simplified way of analyzing this would be to say that the Part Switch already carries number and gender features, since it, being a functional categorizer, is actually composed of a feature bundle. Since our work is compatible with different views on the matter, we will not explore this in detail. For simplicity, we will just represent the relevant features on the Part head.

<sup>10</sup> A question could be made about why it is that there is not a new Switch-based recategorization. Although we cannot offer a definitive answer for that, it must be noted that several authors, such as Bresnan (1997) and Borsley and Kornfilt (2000), identify important restrictions in the way mixed projections function, one of them being an apparent ban on alternating back and forth between categories. Panagiotidis (2015) also observes that functional recategorization seems to be much more acceptable when the pathway is from verbal to nominal than the other way around. This could also weight as a factor in the case of passives. This investigation will have to be left for future work, but regardless, from the empirical data, we can see there is not a second Switch in the structure.

compatible with such verbs. It is also worth mentioning that, even when the passive auxiliary is not ‘be’, it is always a linking verb, for example, *werden* (‘become’) in German. This indicates that what is happening at this point in the derivation is nothing more than a merge between a verb and an element which satisfies the conditions to be its complement.

The auxiliary, being the one which selects for the adjective, projects after they merge, which brings the construction back to the verbal domain. This new verb naturally has its own extended projection, which this time is not interrupted, and the result is that it realizes as a finite verb, carrying, among others, tense and aspect markers and showing number and person agreement. Having all that said, we can now show the full derivation of a passive, which can be seen in (9).

- (9) Analytical passive  
*A bola foi chutada.* (‘The ball was kicked.’)



The representation in (9) shows the steps outlined above: the initial formation of the verb, with the merging of the root and the categorizer *v*; the introduction of the internal argument (here, ‘The ball’); the projection of Voice; the entrance of the participle (Switch); and finally, the merging of the new verb (the second *v*). Additionally, it shows the head movement that happens from the root to *v*, *v* to Voice and Voice to Part and the one that happens from the second *v* to T in the formation of the auxiliary verb.

Finally, we can also see in (9) that, as there is not an external argument in this structure, the internal one cannot get accusative case (as per Burzio's generalization; cf. Burzio, 1986). At the same time, T must discharge its case, number and person features and needs to have its EPP feature fulfilled. There is no other DP in the structure to fulfill those needs except for the internal argument, so an Agree relationship (Chomsky, 2000, 2001) is established between T and the IA, resulting in the latter getting nominative case and being raised to spec. T.

Agreement between the raised IA and the participle is explained by the same mechanism. As it can be seen in (9), Part is actually higher than the IA in the hierarchical structure, so T's probe for features will find the participle form before getting to the IA. Part is not, however, a suitable element to satisfy T's features, as its phi-features are unvalued and it is also not a DP, which is what T's EPP feature requires. Because of that, T's probe will continue up until it finds the IA. When Agree between T and the IA happens, the phi-features of Part are also valued by the IA, since they are all connected by T's probe (what is called an Agree chain). With that, all features are valued in both the IA and Part, but although Part is higher on the structure, it cannot raise to spec. T, since it is an AP and not a DP, so the IA does it instead. The end result is that the IA becomes the syntactic subject and triggers Agree in number and person with the finite verb, and in number, gender and case with Part.

With this structure, it is possible to account for the morphosyntactic properties of both passives and participles and, at the same time, to capture the relationship between the latter and the category of adjectives as a whole. We also argue that this proposal also manages to establish a relationship between this type of passive and the synthetic passives found in many languages. This and other developments of the analysis, such as the nature of the by-phrase in this approach and the reason why this categorial change is needed in passives, will be explored now.

## 5. Some developments

Having shown how the derivation works in the passive, an important question we need to address is why those steps are necessary, that is, why there is a participle in passive sentences in the first place. We argue that this is related to the nature of the information conveyed by the passive construction. As we have discussed, passives are formed from transitive verbs, but they do not license an external argument. Our proposal is that what we call passives are simply the result of an attempt to form a sentence in which there is no agent or causer (an external trigger, in more general terms) from a verb that requires that element – that is, from agentive or externally caused events (or even cause unspecified events, in some cases), in Alexiadou *et al's* (2006) terms<sup>11</sup>.

<sup>11</sup> These authors argue that verbal roots are classified into four categories: agentive (verbs such as *murder* and *assassinate*), externally caused (*destroy*, *kill*), cause unspecified (*break*, *open*), and internally caused (*blossom*, *wilt*). Roots of the two first types form events which can only happen if there is some kind of external trigger (that is, they cannot happen spontaneously). This is reflected in their argument structure, as these verbs require an external argument. Because of that, if an attempt is made to form them without the external argument, steps will have to be taken to allow such a configuration, which we argue results in passives. These categories also explain why some verbs may have their external argument omitted without the need to be passivized. This happens with cause unspecified verbs, which represent events which can be triggered externally or can be spontaneous. As such, they can be built without an external argument and no passive morphosyntax (for example, *John broke the vase* x *The vase broke*). But they can still be passivized, as depending on the

When a verbal event is agentive or externally caused, it requires Voice in the extended projection, and Voice, in turn, should introduce an external argument. In order to bypass this, a possible solution is to change the categorial nature of the structure into a nominal one, since nominals do not require (at least not obligatorily) external arguments, as argued for by Panagiotidis (2015) in his analysis of Spanish infinitival nominalizations, which has a similar reasoning. When Part is merged over Voice, it essentially closes the EA position, and the derivation can proceed without it. As to why Part merges only after Voice and not before, it is just a matter of syntax not looking ahead: before Voice being introduced, there is nothing incongruent with the derivation. It is only when Voice asks for its argument that syntax realizes something out of the ordinary must be done.

This reasoning for the formation of analytical passives allows us to establish a direct relation to the synthetic passive. A common line of analysis for synthetic passives involves the idea that their marker (sometimes an affix, sometimes a clitic) is actually the external argument. Although implementation differs, that idea can be seen in a number of studies, such as Lazzarini-Cyrino (2015) and Gonçalves (2021), among others. These authors argue that the synthetic passive marker is a default argument introduced in order to satisfy a syntactic need, but without offering a semantic contribution. Particularly, Author's (2021) idea is the same argued here: the synthetic passive markers are projected when an agentive or externally-caused verb is used to form a sentence with no external causer. Syntax then introduces a semantically vacuous element just to occupy the EA position. We argue, then, that the Switch is simply another strategy available for syntax to employ in the lack of an EA<sup>12</sup>.

Another topic to be addressed is the nature of the *by*-phrase in passives. In our analysis, passives are a mechanism to license the use of agentive/externally caused verbs without an agent/external causer, so it would be counterintuitive to allow them to be projected later via *by*-phrase. We resort to Abraham (2006) to explain that. The author offers diachronic and synchronic evidence that this prepositional phrase does not actually introduce an agent, but the source of the event. As Abraham (2006) puts it, nominals are not compatible with the notion of agent, as they are not “caused” by anything; but they can have a source. The preposition itself is another evidence of that, since in other contexts this same preposition introduces source-related nominal adjuncts in many languages, such as “German *von* (for human originators), *durch* (for non-human object originators), Scandinavian *av*, French *par*, and [...] Spanish *para*” (Abraham, 2006, p. 11).

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meaning which is attributed to them in each construction, they may contextually require an argument. Finally, internally caused verbs refuse passivization. As they express events which can only happen spontaneously (that is, that cannot be directly triggered by an external element), they cannot have an external argument. Thus, they cannot be transitivized or passivized. It should be noted that each language may classify its roots differently, which means not every language will have the same verbs in the same categories.

<sup>12</sup> The reasons that determine why one strategy or the other is used are not clear, but they cannot be pursued in this paper. It must be noted that there are several possible distributions between analytical and synthetic passives crosslinguistically: in BP they coexist and can be used in basically the same contexts, but in other languages, such as Latin, there are specific uses for each of them. There are also languages in which there is only one type of passive, of which English is a clear example, having only the analytical one. This indicates there could be a variety of factors involved in the definition of the strategy to be used. We leave that investigation for future work.

Finally, an important point to be stressed is that, although we do argue for the use of participles as a mechanism to allow the derivation of agentive or externally-caused verbs in the absence of external triggers, that does not mean that every participle works like that. This could never be the case, as we find participles of all kinds of verbs, not only transitive ones, and also in other structures besides the passive. While we do stand by the analysis that the Switch is part of participles in general, in those other instances, it is not merged for the same reason. Also, it is certainly not always merged at the same position (for example, unaccusatives do not even have the Voice projection). This is not a problem in our view, as there is literature on how different participles could result from different heights on the merging of the relevant head (cf. Embick, 2004; Anagnostopoulou and Alexiadou, 2008; among others). In the case of passives, it just happens that this mechanism can be used to license an otherwise inadequate construction.

## 6. Final thoughts

This paper explored the nature of the participle of passive constructions and proposed a formal account of its identity and internal structure. By arguing that participles are instances of verbal/adjectival mixed categories, in the sense of Panagiotidis (2015), we proposed that they enter the passive derivation in order to solve a syntactic issue: the presence of a Voice head, which requires an external argument, and the absence of the external argument. By converting the structure into an adjectival one, the external argument ceases to be necessary, and the derivation can continue. An auxiliary verb then is merged in order to restart the verbal domain. Through these mechanisms, we were able to correctly derive the elements that form the passive, as well as the unique properties of the participle.

Our proposal has the advantage of explaining why the participle shows adjectival properties, which is something that previous analyses did not take into account most of the time. Also, it allows the analytical passive to emerge from the same syntactic configuration as the synthetic passive, which we assume, following Gonçalves (2021). According to the author's view, the element which marks synthetic passives, such as the *se* clitic in BP, is in fact a generic argument that is introduced only to satisfy the Voice head's selection needs when they would not be fulfilled. A synthetic version of the passive in (9), for example (*Chutou-se a bola*), would be derived under the same principles, but instead of the Switch head coming in to allow the derivation to proceed without an external argument, *se* is projected as the external argument. This element is an anaphor, which means it does not have inherent referentiality; in the position of external argument, it cannot establish a binding relation, since there is no c-commanding DP in the structure (Chomsky, 1981). The result is the reading that someone or something triggered the event depicted, but there is no specification of the identity of that external trigger<sup>13</sup>.

<sup>13</sup> This argument-based view on synthetic passives also helps to explain, as pointed out by an anonymous reviewer, the difficulty speakers have in differentiating synthetic passives and impersonals, which are also *se*-marked, in BP, as this analysis essentially attributes an impersonal reading to passives. Also, it may also explain the synthetic passive's refusal of the *by*-phrase: it could be related to the fact that there is already an external argument in their structure.



This argument proposal for synthetic passives is compatible with what was argued for in this paper: a syntactic configuration which requires an external argument must be adjusted in case such argument is not present. The main difference between the two types of passive would then be the mechanism utilized to solve this issue. While analytical passives resort to a categorial change to remove the need for the external argument, synthetic passives introduce an element which can fulfill that position without altering the previously built meaning. As such, we argue that our study brings a new contribution to the study of both passives and participles and can offer important insights to the study of those themes.

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