Morphological expression of the concept of aspect: Data from Brazilian Portuguese

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Abstract – This article has the purpose of describing the morphological expressions of the perfective (in the past), habitual imperfective in the past and habitual and continuous imperfective aspects in the present, in Brazilian Portuguese (BP). In order to do so, a cloze and an image-sentence test were applied to 24 native BP speakers. The results of the tests indicate that, in the past, the perfective aspect is consistently expressed by the BP Perfect and the habitual imperfective aspect by the BP Imperfect. On the other hand, the habitual and continuous imperfective aspects in the present seem to be expressed by two verbal forms each: by the BP Simple Present and by the verb *estar* (to be) in the BP Simple Present followed by the main verb in the gerund form. Based on these results, a possible configuration to the aspectual node in the syntactic tree is proposed.

Keywords – Syntax. Tense. Aspect.

Introduction

One of the ways of trying to understand the mind's functioning is by means of investigating the language's functioning. Some studies of language as a mental faculty have been revealing that the native speakers of a language have an innate device that, together with the stimulus of the language which they are exposed to, is responsible for all human knowledge of language.

Although language can be expressed in countless ways, it is composed of invariable innate components, common to all the languages in the world. In order to get to know what these universal components are, some

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studies in Generative Grammar have focused on the aspects that diverge across languages. Recent Generative Linguistics studies in the Minimalist Approach suggest that what diverges among languages is the lexicon, specifically, the properties encoded in the inflectional morphology of the verbs. Due to this hypothesis, some studies in the field of Generative Grammar have investigated the functional categories related to the morphology of the verbs, as the categories of tense and aspect. Nonetheless, these two categories were not always treated in the theory separately. Up to the late 80's, all information related to the verbal morphology was thought to be encoded in only one inflectional node.

When it was proposed that the inflectional node should be split into two different nodes, tense and agreement were the two ones proposed to represent the basic information of the inflectional system. More recently, some linguistic studies have suggested the extinction of the agreement node from the syntactic tree. In this case, an alternative proposal would be its substitution for the aspectual node. Hence, the study of the category of aspect seems to gain relevance to the generative researchers.

The main goal of this work is to investigate the category of aspect and its configuration in the syntactic tree. In order to do so, the expression of the grammatical aspect – codified in the morphology of the verbs – in Brazilian Portuguese (henceforth BP) will be investigated by the analysis of the perfective and imperfective aspects. Being the habitual and continuous aspects subdivisions of the imperfective one, specifically, it will be analyzed the perfective and habitual aspects in the past on one hand, and the habitual and continuous aspects in the present on the other hand.

The initial hypothesis for this study was that four different verbal forms would be selected by the BP speakers in the expression of the four different aspectual manifestations investigated, that is, each aspect would be mostly expressed by one specific morphological form. The expectation was that the perfective aspect (in the past) would be preferentially expressed with the verb in the BP Perfect (BP *Pretérito Perfeito*), the habitual imperfective in the past with the verb in the BP Imperfect (BP *Pretérito Imperfeito*), the habitual imperfective in the present with the verb in the BP Simple Present (BP *Presente do Indicativo*), and the continuous imperfective in the present with the verb *estar* (to be) in the BP Simple Present followed by the main verb of the sentence in the gerund form[1].

Following the idea that aspect constitutes a functional category, based on the results, it will be possible to think about the configuration of the syntactic tree in terms of the insertion of the aspectual node(s). Two possibilities can be discussed: just one aspectual one is present in the syntactic tree, constituted only by the features [+perfective], or there is at least one other aspectual node, constituted by the features [+habitual].

1. The insertion of aspect in the syntactic tree

Since the 90's, Chomsky has been proposing a new approach to the study of language, which is known as the Minimalist Program. In this new approach, the language faculty is seen as a provider of instructions to the performance systems – articulatory-perceptual system, responsible for the pieces of information related to the linguistic sound, and conceptual-intentional system, responsible for the pieces of information related to the linguistic meaning.

In the Minimalist Program, Chomsky (1995) also proposed that the performance systems dictate the kinds of instructions that can be generated by the language faculty. In order to make these instructions readable by the performance systems, some computations in the linguistic system have to occur. Among these computations, the strong formal features, which are not interpretable by the conceptual-intentional system, must be checked and deleted in the overt syntax. The agreement formal feature present in the lexical items[2], for instance, was one of the properties described as not interpretable by the performance systems.

Chomsky (1995) suggested that the functional categories conceptually motivated – composed of [+interpretable] features –, such as tense, complementizer and determiner, should be maintained in the syntactic tree. On the other hand, functional categories not conceptually motivated – composed of [-interpretable] features –, such as agreement, were not relevant to the syntactic structure of the sentences and should be eliminated from the syntactic tree.

Based on this proposal, some studies in Generative Grammar tried to provide alternatives to the necessity of existing at least two inflectional nodes in the syntactic tree, presented by Pollock (1989). One possible alternative was the insertion of aspect in the place of agreement in the syntactic tree.

The proposal of a functional node that carried the aspectual information of the verb was first made by Koopman & Sportiche (1991). In a study about the position of the subject in different languages, the authors proposed a more elaborated syntactic tree, which had more functional nodes. One of them was the aspectual one, entitled ASPP.

One study that adopted the proposal of ASPP in the place of agreement was Bok-Bennema (2001)'s. The author was motivated by two ideas: firstly, by the proposal that the agreement node was not conceptually motivated, which was exposed in the Minimalist Program and, secondly, by the idea that the aspectual information present in the verbal morphology was conceptually motivated. Hence, based on Pollock (1989)'s study, Bok-Bennema (op. cit.) proposed that tense and aspect, and not tense and agreement, should be the two functional nodes present in the syntactic tree. According to the author, the aspectual node could be defined as [+perfective].

More recently, a few neurolinguistic studies have shown some pieces of evidence in favor of the existence of an aspectual node. Novaes & Braga (2005), for instance, investigated a Broca aphasic patient's deficit related to the production of verbal aspect. In their study, an agrammatic aphasic was submitted to two cloze tests[3] which elicited the production of the perfective and imperfective aspects.

The authors' analysis of the results showed dissociation in the production of the verbs in the perfective and in the imperfective forms. The patient had more problems with the latter. Furthermore, the authors showed that the investigated patient had problems with aspect, but he did not present the same problems with tense nor with agreement. Based on this observation and on the idea that only functional categories conceptually motivated should be present in the syntactic tree, these authors also proposed that the agreement node should be replaced by the aspect one.

Having discussed some proposals in favor of the insertion of the aspectual node in the syntactic tree, in the next section, the status of aspect in the linguistic theory and its use in BP will be briefly discussed.

2. The status of aspect in the linguistic theory and its use in Brazilian Portuguese

Before providing an explanation for aspect, tense and aspect must be defined as distinct categories. While tense is a deictic category that relates a described situation to a point in time – generally relating such situation to the present time –, aspect reveals the internal temporal constitution of the described situation (Comrie, 1976).

Although tense and aspect represent different concepts, in some languages, they can be collapsed in one single verbal morpheme. For instance, the verbs in the BP Imperfect carry in the same verbal morpheme the notions of tense and aspect, as it can be seen in sentence (1).

(1) Antigamente, Maria **andava** na praia.
In the past, Mary walked$_{\text{IMPERF}}$ on the beach.
"Maria used to walk on the beach in the past."

In the word *andava* (1), the morpheme –*va* carries the notions of past time and imperfective aspect.

Nonetheless, not all verbs encode in the same morpheme the notions of tense and aspect. One possible aspectual manifestation in language is the one that indicates that the action is in progress at the moment of the utterance. In BP, this aspectual manifestation seems to be represented by the periphrasis formed by the verb *estar* (to be) in the BP Simple Present followed by the main verb of the sentence in the gerund form. Sentence (2) exemplifies that.

(2) Maria **está escrevendo** uma carta.
Mary is writing a letter.

In sentence (2), the tense is represented in the auxiliary (*está*) that, in this case, is in the present tense, and the aspectual manifestation explained above is most clearly represented in the main verb in the gerund form (*escrevendo*).

Comrie (op. cit.) distinguishes two basic aspects in language: perfective and imperfective. The former expresses the described action as a whole and the possible internal phases that compose the described action are not emphasized. The latter, on the other hand, emphasizes the internal structure of the described action. This opposition can be

grammaticalised in some individual languages, and that is the case of BP. See, for instance, sentences (3) and (4).

(3) Maria **almoçou** cedo.
Mary had$_{PERF}$-lunch early.

(4) Maria **almoçava** cedo.
Mary had$_{IMPERF}$-lunch early.
"Mary used to have lunch early."

COMRIE (op. cit.) also proposes that, although perfective and imperfective represent the basic aspectual distinction, in some languages, the imperfective aspect is subdivided into distinct categories. The author schematically represents the most typical subdivisions of the imperfective aspect in a diagram presented in Figure 1 (COMRIE, 1976, p. 25).

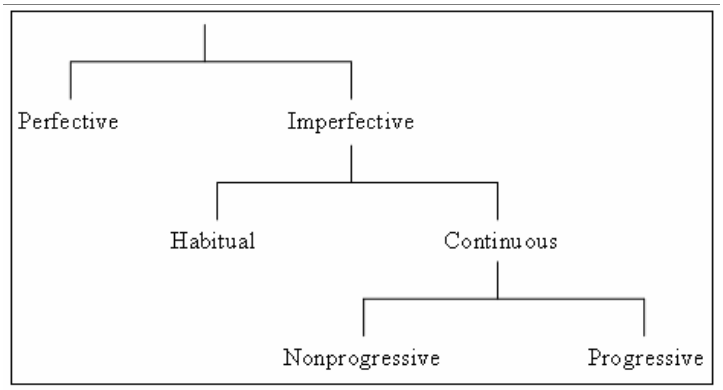

Figure 1 – COMRIE (1976)'s diagram with the subdivisions of the imperfective aspect.

Concerning habituality, COMRIE (op. cit.) shows that what characterizes a habitual action is not necessarily iterativity – the repetition of the described action – but the fact that it is characteristic of a period of time, i.e., the occurrence of that action is not an incident of a specific moment. Hence, the author argues that the decision of what a habit is and the expression of habituality are not merely linguistic facts but a conceptual decision[4].

Although Comrie's diagram does not present a subdivision of the habitual aspect into *progressive* and *nonprogressive* (see figure 1), in BP, the

progressive and nonprogressive verbal forms seem to be used to express the habitual aspect in some cases. Sentences (5) and (6) exemplify that.

(5) Maria **trabalha** em casa todo dia.
Mary works at home every day.
(*trabalha*: BP Simple Present; nonprogressive verbal form)

(6) Maria **está trabalhando** em casa todo dia.
Mary is working$_{\text{HABITUAL}}$ at home every day.
(*está trabalhando*: verb *to be* in the BP Simple Present (*está*) followed by the gerund form of the main verb (*trabalhando*); progressive verbal form)

Maybe the sentences "*Maria trabalha em casa todo dia*" (Mary works at home every day) and "*Maria está trabalhando em casa todo dia*" (Mary works at home every day) do not have exactly the same meaning. The second sentence – expressed with the progressive verbal form – seems to emphasize that the action started to happen more recently or that it is temporary, although it also constitutes a habit, as it can be seen by the use of the temporal adverb "*todo dia*" (every day).

About continuousness, COMRIE (op. cit.) states that a continuous action can be expressed by a progressive or by a nonprogressive verbal form (see figure 1). In some languages, the use of the progressive verbal form is obligatory whenever it is allowed. In other languages, however, the progressive form is optional, since the nonprogressive form does not exclude the continuous meaning. This is the case of BP, as it can be seen in sentences (7) and (8).

(7) Neste momento, Maria **está limpando** seu quarto.
At this moment, Mary is cleaning her bedroom.
(*está limpando*: verb *to be* in the BP Simple Present (*está*) followed by the gerund form of the main verb (*limpando*); progressive verbal form)

(8) Neste momento, Maria **limpa** seu quarto.
At this moment, Mary cleans$_{\text{CONTINUOUS}}$ her bedroom.'
"At this moment, Mary is cleaning her bedroom."
(*limpa*: BP Simple Present; nonprogressive verbal form)

Although the continuous aspect can be expressed in BP by a progressive and a nonprogressive verbal form, in this study, the expectation was that the progressive verbal form would be preferred by the speakers to express the continuous aspect in the present. Moreover, the expectation was that the nonprogressive verbal form would be mostly used by the speakers to express the habitual aspect in the present.

As it was previously presented, the initial hypothesis for this study was that four different verbal forms would be selected by the BP speakers in the expression of the four different aspectual manifestations investigated, that is, perfective and imperfective in the past and habitual and continuous in the present. In the following section, the method adopted to test this hypothesis will be discussed.

3. Method

3.1 Participants

In the development of this study, 24 subjects were selected. They were all native BP speakers, from Rio de Janeiro, and without any pathology of language. They differed in terms of sex, amount of years of education[5] and age. Among the subjects, there were 12 men and 12 women divided into 2 groups according to their amount of years of education – 12 subjects with up to 8 years of education and 12 subjects with at least 11 years of education – and into 6 groups according to their age – 4 subjects into each of these groups.

The way the subjects were selected and divided into the groups is summarized in Table 1.

Table 1 – Way in which the subjects were selected and divided into groups in this study

	20-29 years old	*30-39 years old*	*40-49 years old*	*50-59 years old*	*60-69 years old*	*Above 70 years old*
up to 8 years of	1 man	1 man	1 man	1 man	1 man	1 man
education	1 woman	1 woman	1 woman	1 woman	1 woman	1 woman
at least 11 years	1 man	1 man	1 man	1man	1 man	1 man
of education	1woman	1 woman	1 woman	1 woman	1 woman	1 woman

3.2 Stimuli

In order to analyze the investigated grammatical aspects in BP by the native speakers of this language, two tests were developed. The first of them gave origin to two different experiments. Both tests were offline: the first one was a cloze test, considered a production test, and the second one was an image-sentence test, which could not be described as a production nor as a comprehension test[6].

In both tests, the subjects were exposed to images recorded on a DVD and presented on a 14.1" screen size PC laptop. These images were based on actions developed by just one character, named *Maria*, played by two actresses – a 19-year-old woman and a 9-year-old girl. They represented *Maria* in two different stages of her life: nowadays – to elicit the perfective aspect in the past, and the continuous and habitual aspects in the present – and as a child – to elicit the imperfective aspect in the past.

In the following two sections, the design of the tests will be outlined.

3.2.1 Cloze test

In order to evaluate the production of the investigated aspects, it was developed a cloze test composed of 120 sentences in which the verbs had been omitted. The subjects should complete the sentences with the best verbal form to express the tense and aspect elicited.

The verb which should be used to complete the sentence was exclusively indicated by the action performed by the character in the video. The tense and the aspect in which the verb should be produced were indicated by means of the image presented – which could be paused after being finished by the character, be paused without being finished, or be in progress on the screen – and / or by the use of a temporal adverb or adverbial expression in the sentence.

The type of verbs and the number of the constituents in the sentences were controlled in this test. As a great number of sentential constituents could interfere in the subjects' performance, all the sentences had 5, 6 or 7 constituents, not taking into account the verb or verbal expression which should be produced by the subject. Moreover, all the verbs chosen to be performed by the character were agentive verbs. The choice for this

kind of verb is related to the fact that these verbs could be better performed by the actresses and understood by the subjects.

Besides eliciting verbs in the investigated aspects, this test also intended to elicit verbs in the infinitive form. The sentences which elicited the infinitive verbal form intended to be the fillers of the test, since these sentences were the only ones in which the omitted verb did not have the feature [+tense]. The BP infinitive form of the omitted verb was elicited by the use of 8 different verbs in the main clause, as the BP verbs *precisar* (to need) and *gostar* (to like). There were 24 fillers in the cloze test.

In order to make the video which originated this test, 24 actions developed by the adult, and 24 actions, based on the same verbs, developed by the child, were recorded. The test was composed of 120 sentences because, besides the 24 images performed by the child, each of the 24 images performed by the adult was repeated 4 times in the video[7]. Although these images were repeated, the order in which they appeared was aleatory, and the same action was never repeated in sequence in the video.

As the cloze test had a high number of images / sentences, it was divided into 2 different experiments, containing 60 sentences each and applied on different days. Each of the experiments related to the cloze test had 12 sentences related to the habitual aspect, 12 to the continuous aspect, 12 to the perfective aspect, 12 to the imperfective aspect and 12 fillers.

Although the subjects should always give the answers orally, in the first experiment, the sentences were orally presented and, in the second one, they were presented in the written form. When the sentences were orally presented, the examiner produced them with a brief pause in the place of the omitted verb, during the presentation of the image. When the sentences were presented in the written form, they were exhibited on the lower part of the screen with a blank in the place of the omitted verb, and with the image – paused or in progress – being exhibited simultaneously with the sentence.

Subjects had to complete sentences like those in (9) and (10).

(9) Quando criança, Maria _____ seus presentes com cuidado.
When child, Maria _____ her presents with care.
"When she was a child, Maria _____ her presents carefully."

Image: Maria (9-year-old girl) opening a present (action in progress during the presentation of the sentence)

Expected answer: abria ('opened$_{IMPERF}$')

(10) Maria _____ o cabelo no espelho.

Maria _____ her hair in the mirror.

"Maria _____ her hair in front of the mirror."

Image: Maria (19-year-old woman) brushing her hair (action finished and paused before the presentation of the sentence)

Expected answer: penteou ('brushed$_{PERF}$')

3.2.2 Image–sentence test

The image-sentence test was developed in order to enlarge our results and in order to answer a question raised when the first subjects were submitted to the cloze test[8]. Contrary to our expectation about the verbal form which would be mostly used when the continuous aspect was being elicited, these first subjects used the nonprogressive verbal form – the Simple Present of the verb – to express the continuous aspect and the habitual one. Although the nonprogressive verbal form in BP does not exclude the continuous meaning, our expectation was that the progressive form – verb *estar* (to be) in the BP Simple Present followed by the gerund form of the main verb – would be preferred to express the continuous aspect.

Then, two possibilities were raised: or the BP speakers were reducing the way in which the habitual and continuous aspects were expressed in the present to just one – the BP Simple Present –, or the cloze test was not eliciting the continuous aspect properly. Hence, in order to be sure that the results obtained in the first test were not due to a problem in the test, the image-sentence test was created.

This test was composed of 48 scenes and, to each scene, 3 sentences were presented as answer options, exhibited on the lower part of the screen and numbered from 1 to 3. The subject had to select the option which best matched the action developed.

All the sentences presented as answer options in the image shown had the same tense but different morphological manifestations of aspect. For instance, in the images related to the habitual aspect in the present,

all the sentences presented as answer options were in the present tense – one with the main verb in the BP Simple Present, another with the verb *estar* (to be) in the BP Simple Present followed by the gerund form of the main verb, and the other one, the filler sentence, with the verb alternating between one of these two forms.

The filler sentence was included among the answer options in all the images in order to ensure that the subject was really reading the sentences instead of guessing an alternative. This option of answer should be excluded by the subject by semantic reasons, since the verb used in the sentence did not correspond to the action developed by the character in the scene. Besides, the filler sentence appeared at random in the first, second or third position among the answer options. Moreover, the images in which the subject selected the filler sentence as his/her answer were excluded from the analysis.

In order to make the image-sentence test, 12 actions were developed by the adult and, based on the same verbs, 12 actions were developed by the child, totaling 24 different images. As a whole, this test was composed of 48 images because each of the images performed by the adult was repeated 3 times in the video to elicit the habitual and continuous aspects in the present and the perfective aspect in the past. As in the cloze test, the order in which the repeated images appeared in the video was aleatory, and the same action was never repeated in sequence.

It is important to highlight that, as in the cloze test, the type of verbs and the number of constituents in the sentences were controlled in the image-sentence test. For the same reasons exposed in the design of the cloze test, only agentive verbs were used. The number of constituents was increased in the image-sentence test in relation to the cloze one because the verbs were omitted in the sentences of the first sentence test and were present in the sentences of the second one. Then, the sentences in the second test had 6, 7 or 8 constituents, and the interval of 2 constituents between the maximum and the minimum number of constituents, adopted in the cloze test, was maintained[9].

Numbers (12) and (13) illustrate this test.

(12) 1. Maria passa sua roupa no sofá.
Maria irons her clothes on the sofa.

2. Maria calça o tênis no sofá.
   Maria puts on the sneakers on the sofa.
3. Maria está calçando o tênis no sofá.
   Maria is putting on the sneakers on the sofa.

Image: Maria (19-year-13 old woman) putting on the sneakers (action in progress during the presentation of the sentences)

Expected answer: option 3

(13) 1. Maria desenha casas na beira do mar.
   Maria draws houses on the side of the sea.
2. Maria está caminhando na beira do mar.
   Maria is walking on the side of the sea.
3. Maria está desenhando casas na beira do mar.
   Maria is drawing houses on the side of the sea.

Image: Maria (19-year-old woman) drawing a house on the side of the sea (action paused – without being finished – before the presentation of the sentence; before being paused, a small part of the action was repeated for 3 consecutive times with subtitles on the upper part of the screen, showing three different days on which that action was being performed – Sunday, Monday and Tuesday)

Expected answer: option 1

In the next section, the procedure adopted during the application of the tests will be described.

3.3 Procedure

All the subjects submitted to the tests were informed that their names would not be revealed and they agreed in taking part of this study. Ninety percent of the selected subjects were submitted to the tests in 3 consecutive days. The examiner went to the place chosen by the subject – his/her house or work place – and the tests were applied there. Each day of test usually took from 20 to 30 minutes.

Every day on which the test was applied, short before its beginning, the images of the character – as a child and as an adult – were presented to the subject, and he/she was informed that both images referred to Maria in different stages of her life – in the past and nowadays. In order

to help the individuals to understand and remember that, during the whole test, when Maria was presented as an adult, the images were in color, and when Maria was presented as a child, the images were in black and white.

Before the beginning of each experiment of the cloze test, 3 scenes / sentences were provided as examples in order to clarify how the test should be performed. The examples of the two experiments were developed based on the same verbs: *fechar* (to close), *varrer* (to sweep) and *escutar* (to listen). In the first experiment, the examples elicited verbs with the continuous aspect, with the perfective aspect and in the infinitive form. In the second experiment, the examples elicited verbs with the habitual aspect, with the imperfective aspect and in the infinitive form. In all the examples, even if the subject provided a possible answer before the examiner, the latter also completed the sentence using the expected verbal form.

Although the images of Maria were also presented before the beginning of the image-sentence test, there were not examples related to this test. Nevertheless, the examiner explained the test carefully. Each subject was informed that 3 sentences would appear in the lower part of the screen, one above the other and numbered from 1 to 3. The subject was also said that he/she should select one sentence and refer to his/her option by saying the number of the sentence. Moreover, it was clarified that there was not only one possible answer to the image and, sometimes, they could seem very similar, but it would be necessary that he/she selected just one alternative, the one which he/she judged to best fit the idea encoded in the image shown. Only after ensuring that the subjects had understood the tests, the examiner started them.

It was established a time limit to the subjects provide their answers – 12 seconds in the cloze test and 16 seconds in the image-sentence test. During the performance of both tests, when the subject provided his/her answer before the time limit, the examiner pressed a button and the next action started. During the cloze test, if the subject's answer was not provided in 12 seconds, another action automatically started and that answer was not considered. Nonetheless, in the image-sentence test, when the subject asked the examiner to repeat one scene – what happened with lots of elderly subjects and with some subjects with up to 8 years of

education –, the examiner repeated that scene, since there were 3 sentences to be read and the time provided could not have been enough to those individuals.

All the answers provided by the subjects were written by the examiner.

In some cases, the development of the test was briefly interrupted, when the subject asked the examiner to do so. If there was a pause, the test was restarted from the point where it was interrupted and the scenes already shown were not presented again.

4. Results

4.1 Cloze test

4.1.1 Habitual aspect

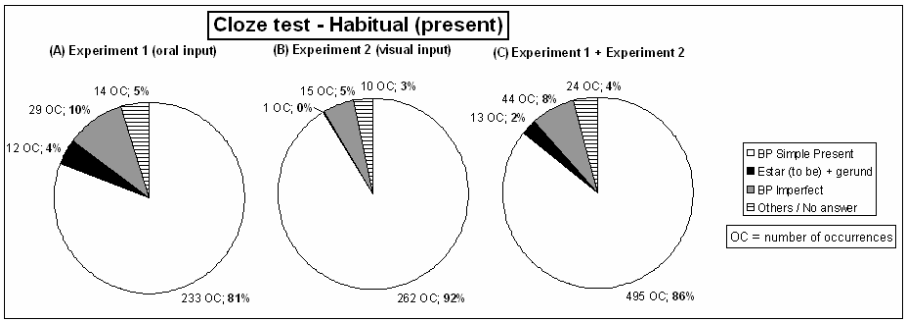

Figure 2 – Graphics with the results obtained in the cloze test in the images related to the habitual aspect. Graphic (A) presents the verbal forms used by the subjects in the first experiment, in which the sentences were orally produced by the examiner; graphic (B) presents the verbal forms used by the subjects in the second experiment, in which the sentences were presented in the written form; and graphic (C) presents the verbal forms used by the subjects in the two experiments calculated together.

The calculus of the verbal forms used by the subjects in the sentences associated to the images which elicited the habitual aspect in the present revealed the preference for the BP Simple Present, which was the expected form. However, contradicting the expectations, the second most used verbal form was the BP Imperfect, not the periphrasis formed by the verb

estar (to be) in the BP Simple Present followed by the main verb of the sentence in the gerund form. Although the verbal form with the gerund was not the expected one, it would maintain the expected tense.

The subjects used the BP Simple Present in approximately 86% of the cases, the BP Imperfect in about 8% of the cases and the verb *estar* (to be) in the BP Simple Present followed by the main verb in the gerund form in approximately 2% of the cases. In the other 4% of the sentences, other verbal forms were used or the subjects did not provide any answers (see figure 2, graphic (C)).

Comparing the chosen verbal forms related to the habitual aspect in the first and in the second experiment of the cloze test[10], it is possible to notice that the percentage uses of the different verbal forms were similar in both experiments. It suggests that the type of input – oral or visual – in the presentation of the sentences in these images did not influence the subjects in the choice for a verbal form to complete the sentence (see figure 2, graphics (A) and (B)).

4.1.2 Continuous aspect

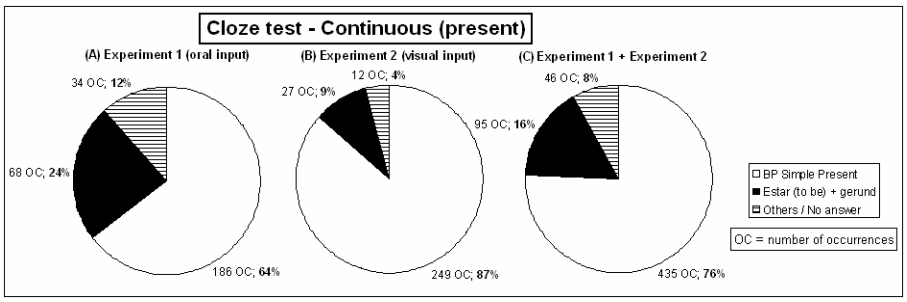

Figure 3 – Graphics with the results obtained in the cloze test in the images related to the continuous aspect. Graphic (A) presents the verbal forms used by the subjects in the first experiment, in which the sentences were orally produced by the examiner; graphic (B) presents the verbal forms used by the subjects in the second experiment, in which the sentences were presented in the written form; and graphic (C) presents the verbal forms used by the subjects in the two experiments calculated together.

The calculus of the most used verbal form to express the continuous aspect in the present contradicted the initial expectations in relation to

this aspect. The most frequent verbal form in the scenes related to the continuous aspect was the BP Simple Present, used in about 76% of the cases. The verbal form originally expected – the periphrasis formed by the verb *estar* (to be) in the BP Simple Present followed by the main verb in the gerund form – was the second most frequent form, used in only 16% of the cases (see figure 3, graphic (C)).

It is important to reinforce here that the use of the BP Simple Present – the nonprogressive form – is possible in BP to express the continuous aspect, although it was expected that the subjects would prefer the verb *estar* (to be) in the BP Simple Present followed by the main verb in the gerund form – the progressive form – to express this aspect.

Comparing the incidence of the progressive and the nonprogressive forms in the scenes which elicited the continuous aspect in the first and in the second experiment of this test, one can notice that the percentage use of the nonprogressive form was higher in the second experiment than in the first one, and the percentage use of the progressive form was higher in the first experiment than in the second one. While the BP Simple Present was used in approximately 65% of the cases in the first experiment, it was used in about 86% of the cases in the second experiment. On the other hand, while the verb *estar* (to be) in the BP Simple Present followed by the main verb in the gerund form was used in about 24% of the cases in the first experiment, it was used in approximately 9% of the cases in the second experiment (see figure 3, graphics (A) and (B)).

Based on the differences pointed out in the previous paragraph, it is possible to say that the type of input – oral or visual – influenced in the way the subjects completed the sentences. A possible analysis to this fact is to interpret it as a result of the influence of the test itself in the subjects' answers. While in the first experiment the sentence should be completed based on a pause produced by the examiner, in the second experiment the sentence appeared on the screen with a blank in the position of the omitted verb. This blank could have influenced in the production of just one verb instead of a verbal expression when the subjects were asked to complete the sentences, though they were informed that they could complete the sentences in the way they preferred and, in the examples, the examiner also produced verbal expressions.

4.1.3 Perfective aspect

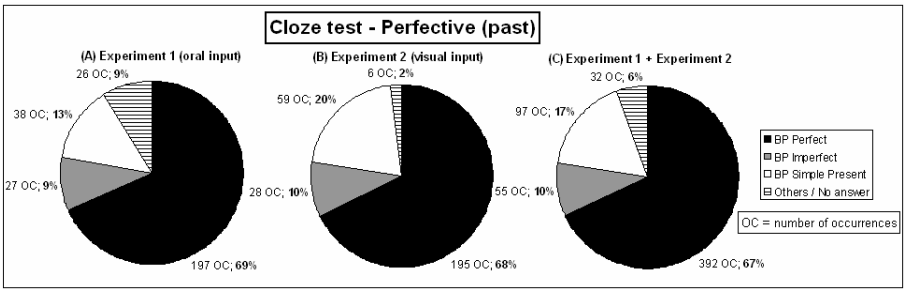

Figure 4 – Graphics with the results obtained in the cloze test in the images related to the perfective aspect. Graphic (A) presents the verbal forms used by the subjects in the first experiment, in which the sentences were orally produced by the examiner; graphic (B) presents the verbal forms used by the subjects in the second experiment, in which the sentences were presented in the written form; and graphic (C) presents the verbal forms used by the subjects in the two experiments calculated together.

In the images / sentences which elicited the perfective aspect in the past, the most used verbal form to complete the sentences was the expected one, that is, the BP Perfect, used in approximately 68% of the cases. However, the second most used verbal form, contradicting the expectations, was not the BP Imperfect, used in about 10% of the cases, but the BP Simple Present, used in about 17% of the cases, although the percentage uses of these two last verbal forms were really close to each other (see figure 4, graphic (C)).

The percentage uses of the different verbal forms were very similar in the images / sentences related to the perfective aspect of both experiments of the cloze test. Thus, the difference in relation to the type of input – oral or visual – in the presentation of the sentences was not really revealing in these cases (see figure 4, graphics (A) and (B)).

4.1.4 Imperfective aspect

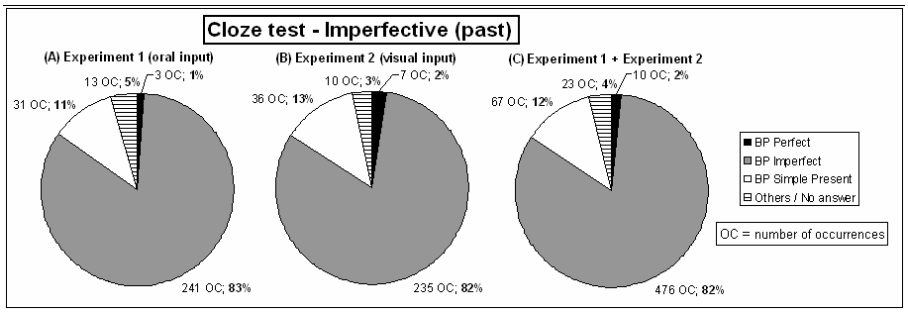

Figure 5 – Graphics with the results obtained in the cloze test in the images related to the imperfective aspect. Graphic (A) presents the verbal forms used by the subjects in the first experiment, in which the sentences were orally produced by the examiner; graphic (B) presents the verbal forms used by the subjects in the second experiment, in which the sentences were presented in the written form; and graphic (C) presents the verbal forms used by the subjects in the two experiments calculated together.

In the sentences that tested the imperfective aspect in the past, elicited by the images with the character Maria as a child, the most used verbal form was the BP Imperfect, which was the expected verbal form. This verbal form was used in approximately 83% of the cases. The second most used verbal form, present in about 12% of the cases, was the BP Simple Present. The BP Perfect was used in only approximately 2% of the cases (see figure 5, graphic (C)).

A possible analysis to the fact that the BP Simple Present was the second most used verbal form in the scenes related to imperfective aspect, instead of the BP Perfect, can be done by proposing that the present, different from the past or the future, is the most salient tense in the speakers' mind. Maybe this was the reason why the BP Simple Present was the second most used verbal form in the scenes related to the imperfective and perfective aspects. This interpretation reveals that the subject hesitated in completing the sentence and chose a verbal form with a different tense from the one which was expected. If the subject had preferred to maintain the expected tense, the BP Perfect would be the second most used verbal form in the scenes related to the imperfective aspect, and the BP Imperfect would be the second most used verbal form in the scenes related to the perfective aspect.

As the percentage uses of the verbal forms in the scenes which elicited the imperfective aspect were very similar in both experiments of the cloze test, it is not possible to state that the type of input – oral or visual – influenced in the way the subjects completed the sentences in these cases (see figure 5, graphics (A) and (B)).

4.2 Image-sentence test

4.2.1 Habitual aspect

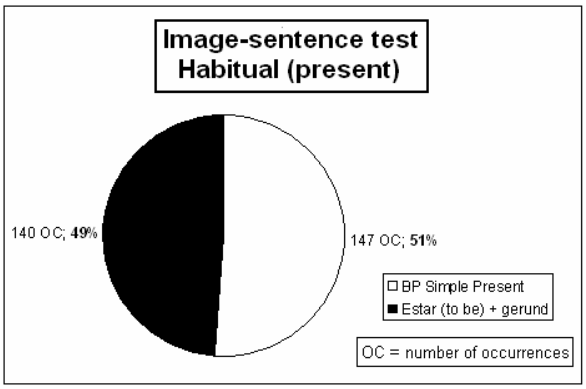

Figure 6 – Graphic with the results obtained in the image-sentence test in the images related to the habitual aspect.

The calculus of the results obtained by the subjects in the images which elicited the habitual aspect in the present contradicted the initial expectations and what had been observed in the cloze test. This calculus revealed that the subjects equally selected the alternatives with the verb in the BP Simple Present and with the verb *estar* (to be) in the BP Simple Present followed by the main verb in the gerund form. In approximately 51% of these images, the subjects selected the sentences with the verb in the BP Simple Present, and in approximately 49% of theses images, they selected the sentence with the main verb in the gerund form (see figure 6).

It is important to reinforce here that, although Comrie (1976) does not present the habitual aspect subdivided into progressive and nonprogressive, this subdivision seems also to be possible in BP[11]. However, the expectation was that the nonprogressive form would be mostly used to express the habitual aspect in the present and this

expectation was only confirmed in the cloze test. Thus, it is necessary to explain why the BP Simple Present was only consistently used in the images related to the habitual aspect of the first test. Two possible analyses can de done in this case.

The first analysis is that, in the first test, the habitual aspect was not being properly elicited by the images and was not correctly understood by the subjects. If that was the case, the individuals used the BP Simple Present in those images possibly because there was a kind of hesitation in completing the sentences and maybe because the present is the most salient tense in the speakers' mind. This first interpretation is in accordance with what had been previously proposed, in the images related to the imperfective aspect in the cloze test, about the use of the BP Simple Present in case of doubt by the subjects.

The second possible analysis is that the structure of the first test, especially in the second experiment, in which the sentences were exhibited on the screen with a blank in the place of the verb, was not favorable to the use of a verbal expression, as the verb *estar* (to be) in the BP Simple Present followed by the main verb in the gerund form. This second interpretation is in accordance with what had been proposed about the use of the nonprogressive form, instead of the progressive one, in the images related to the continuous aspect in the cloze test.

Hence, the interpretations presented in the two previous paragraphs can account for the high incidence of the BP Simple Present in the images related to the habitual aspect in the cloze test without being discarded the possibility that the habitual aspect can be expressed by a nonprogressive and a progressive verbal form – as suggested by the image-sentence test.

4.2.2 Continuous aspect

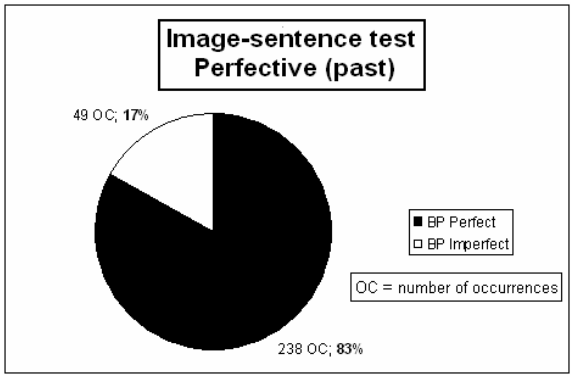

Figure 7 – Graphic with the results obtained in the image-sentence test in the images related to the continuous aspect.

By the analysis of the images which elicited the continuous aspect in the present, it was noticed that the results obtained in the image-sentence test were not the same ones previously observed in the cloze test. While, in the first test, the subjects used the BP Simple Present – the nonprogressive form – in most of the scenes related to the continuous aspect, in the second test, the subjects selected the sentences with the verb *estar* (to be) followed by the gerund form – the progressive form – in most of the images related to this aspect. In this test, the selection of the sentences with the verb in the BP Simple Present corresponded to approximately 26% of the cases, and the selection of the sentences with the main verb in the gerund form corresponded to approximately 74% of the cases (see Figure 7).

The results obtained in the image-sentence test corresponded to the initial expectations of this study, but differed from those obtained in the cloze test. The main use of the progressive form in the image-sentence test and of the nonprogressive form in the cloze test was interpreted as an indicator that these two verbal forms are used interchangeably to express the continuous aspect.

4.2.3 Perfective aspect

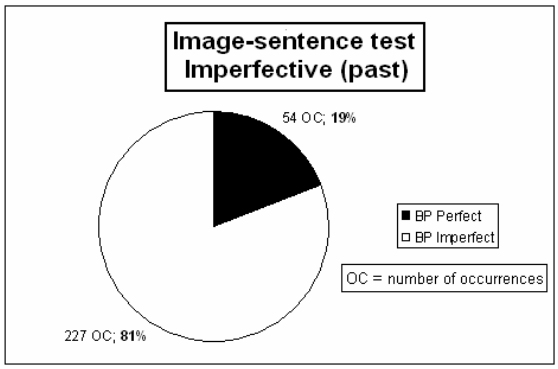

Figure 8 – Graphic with the results obtained in the image-sentence test in the images related to the perfective aspect.

In the images which elicited the perfective aspect in the past, the sentences with the verb in the BP Perfect were selected in about 83% of the cases, while the sentences with the verb in the BP Imperfect were selected in approximately 17% of the cases (see figure 8). This result is in accordance with the initial expectations about the preferred verbal form to express this aspect and with what had been observed in the scenes related to the perfective aspect in the cloze test.

4.2.4 Imperfective aspect

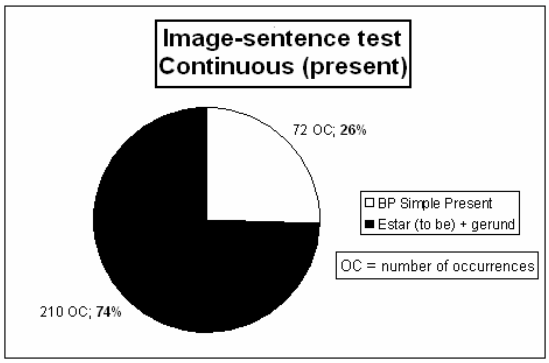

Figure 9 – Graphic with the results obtained in the image-sentence test in the images related to the imperfective aspect.

In the scenes related to the imperfective aspect in the past, the sentences with the verb in the BP Imperfect were selected in approximately 81% of the cases, while the sentences with the verb in the BP Perfect were selected in about 19% of the cases (see figure 9). Thus, the result obtained in these images is equivalent to the initial expectations about the verbal form which would be mostly used to express this aspect and confirms what had been described in the scenes related to the imperfective aspect in the cloze test.

5. Discussion

The results of the tests developed to this study revealed which verbal forms are generally used to express the perfective and habitual imperfective aspects in the past and the habitual imperfective and continuous imperfective aspects in the present by BP speakers. The results showed that the perfective and imperfective aspects in the past were consistently expressed by just one verbal form each: the perfective aspect by the BP Perfect, and the imperfective aspect by the BP Imperfect. However, the results indicated that the habitual and continuous aspects in the present were expressed by two verbal forms each: either by the BP Simple Present or by the verb *estar* (to be) in the BP Simple Present followed by the main verb in the gerund form. Hence, the obtained results permitted the refutation of the original hypothesis of this study – four different verbal forms would be selected to express the four different aspectual manifestations investigated.

The use in BP of a progressive and a nonprogressive verbal form to express the continuous aspect is consistent with Comrie (op. cit.)'s proposal that some languages use both forms to express the continuous meaning. The use of these two verbal forms in BP to express the habitual meaning may provide a piece of evidence that this aspect could also be subdivided into progressive and nonprogressive, although Comrie (op. cit.) does not subdivide it.

Perhaps, it would be possible to propose that the habitual aspect, when expressed by a nonprogressive form, codifies one specific aspectual meaning, and when expressed by a progressive form, codifies another aspectual meaning[12]. However, it is not clear if the same would be true to

the continuous aspect, that is, if the continuous aspect being expressed by the progressive form codifies a different meaning from the one codified by this aspect being expressed by a nonprogressive form.

If we assume Bok-Bennema (2001) and Novaes & Braga (2005)'s proposal about the existence of an aspectual node and adopt Comrie (1976)'s idea that the perfective and imperfective aspects are the basic ones in language, the aspectual node could be defined as [+perfective], as suggested by Bok-Bennema (op. cit.), and only the trace related to perfectivity would be checked in this node. If the specified trace in the verb were [+perfective], the verbal aspect would be defined as perfective; if the specified trace in the verb were [-perfective], the verbal aspect would be defined as imperfective.

The proposal related to the configuration of the aspectual node in the syntactic tree as [+perfective] provides a double advantage to the Generative Theory. First, the syntactic tree would be coherent with the possibility that different traces are hosted by different functional nodes, an idea that has been assumed since Pollock (1989)'s study. Second, the binary structure of the aspectual node would be in line with the notion of elegance necessary to the theories.

As previously exposed in this study, the proposal of an aspectual node in the syntactic tree is in accordance with the idea, expressed in the most recent version of the Generative Theory, the Minimalist Program, that all the syntactic nodes should be conceptually motivated. Nonetheless, not only the aspectual meanings expressed by the perfective and imperfective aspects represent concepts which are linguistically expressed, but also the notion of habituality, a concept that goes beyond a piece of linguistic information, as suggested by Comrie (op. cit.).

Hence, if the aspectual node is responsible for checking only the trace related to perfectivity, it is not clear how other aspectual meanings conceptually motivated are checked in the syntactic tree. In the Minimalist Program, it was proposed that the functional categories should be conceptually motivated, but it is not largely discussed if all the conceptually motivated categories should be included in the syntactic tree.

The study of the comprehension of the category of aspect by subjects with pathology of language could clarify some questions raised here. For instance, it is possible that the patients provide a piece of evidence in favor of

Comrie (op. cit.)'s proposal that the habitual and continuous aspects are subdivisions of the imperfective one. For instance, if the patients have problems with the habitual and continuous aspects, and do not have problems with the perfective aspect, it will be presented a piece of evidence that the habitual and continuous aspects are really closely related to the imperfective aspect, and maybe the formers are really subdivisions of the latter.

Furthermore, this investigation could also help to elucidate how many aspectual nodes should be present in the syntactic tree. For instance, if the patients have problems either with the perfective aspect or with the habitual and continuous aspects at the same time, the idea of the existence of just one aspectual node, responsible for checking the trace related to perfectivity, will be reinforced. However, if the patients have problems only with the comprehension of the habitual or continuous aspects, the idea of the inclusion of more aspectual nodes, responsible for checking the traces related to habituality and continuousness, will gain relevance.

This step of the research – testing individuals with pathology of language – is already in turn. Specifically, patients with dementia of the Alzheimer's type are being submitted to tests in order to help to clarify some of the questions raised in this discussion.

Notes

[1] Henceforth, the habitual imperfective aspect in the past will be referred by "imperfective", the habitual imperfective in the present by "habitual", and the continuous imperfective in the present by "continuous".

[2] The agreement formal feature of the lexical items that is mentioned in this article refers to the agreement between the subject and the verb.

[3] The cloze test was composed of a sentence with a blank in the place of the omitted verb. The same test structure was used in the development of this study and it will be described in the section 4.2.1.

[4] This seems to be a relevant question since the insertion of aspect as a syntactic node is partially justified by the conceptual value of aspect. Despite the fact that Comrie (1976) is not concerned about the syntactic structure of the sentences, by treating habituality as a concept being expressed linguistically, the author indirectly presents an argument in favor of the inclusion of aspect in the syntactic tree.

[5] Only literate subjects were selected to take part in the tests because, in one of them, the subjects were asked to read the sentences by themselves.

[6] Traditionally, comprehension tests involve only one sentence and two or more pictures, which are presented to a subject, who should pick out the picture which best repre-

sents the sentence offered. The test developed here, on the other hand, involved only one image and three sentences, what made it impossible to be classified as a traditional comprehension test. Moreover, as the verbal forms used in the sentences could not be freely produced by the subjects, this second test could not be classified as a production test either.

[7] Each of the repeated adult's images intended to elicit the continuous and the habitual aspects in the present, the perfective aspect in the past and the infinite form of the verb. On the other hand, the child's images were not repeated because they intended to elicit only the imperfective aspect in the past.

[8] These first subjects were excluded from the analysis and other subjects were selected and submitted to the two tests after the image-sentence test was developed.

[9] Among the 3 sentences presented as answer options in the scene, the possible variation between the maximum and the minimum number of constituents was decreased from 2 to 1 constituent. For instance, if an alternative had 6 constituents, the others should have the same number of constituents or, in the maximum, 7, but never 8 constituents. In the same way, if an alternative had 8 constituents, the others should have 7, but never 6 constituents.

[10] As it was presented previously, in the first experiment, there was an oral input, since the sentences were orally produced to the subjects, and, in the second experiment, there was a visual input, since the sentences were presented in the written form to the subjects.

[11] See examples (5) and (6), in section 2.

[12] See examples (5) and (6), in section 2.

Expressão morfológica do conceito de aspecto: Dados do português do Brasil

Resumo – Este artigo tem como objetivo descrever as expressões morfológicas dos aspectos perfectivo (no passado), imperfectivo habitual no passado e imperfectivo habitual e contínuo no presente, em português do Brasil (PB). Para tanto, foram aplicados a 24 falantes nativos do PB um teste de preenchimento de lacuna e um de relacionamento imagem-sentença. Os resultados indicam que, no passado, o perfectivo é consistentemente expresso pelo Pretérito Perfeito e o imperfectivo habitual pelo Pretérito Imperfeito. Por outro lado, tanto o imperfectivo habitual quanto o contínuo no presente parecem ser expressos por duas formas verbais cada: pelo Presente do Indicativo e pelo verbo "estar" no Presente do Indicativo seguido do verbo principal no gerúndio. Com base nesses resultados, propõe-se uma possível configuração para o nódulo aspectual na árvore sintática.

Palavras-chave – Sintaxe. Tempo. Aspecto.

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