diacrítica
REVISTA DO CENTRO DE ESTUDOS HUMANÍSTICOS
Vol. 33, n.º 2, 2019, p. 216-228. DOI: doi.org/10.21814/diacritica.410

THE CAUSED-ACTION CONSTRUCTION IN BRAZILIAN PORTUGUESE (BRP) AND ITS EFFECTS ON THE COMPREHENSION AND PRODUCTION OF BRP-ENGLISH BILINGUAL SPEAKERS

A CONSTRUÇÃO DE AÇÃO-CAUSADA NO PORTUGUÊS BRASILEIRO (PB) E SEUS EFEITOS NA COMPREENSÃO E PRODUÇÃO LINGUÍSTICA DE BILINGUES DO PAR PB-INGLÊS

Clarice Fernandes dos Santos*
clariceufmg@gmail.com

Larissa Santos Ciríaco**
laciriaco@gmail.com

Ricardo Augusto Souza***
ricsouza.ufmg@gmail.com

A central assumption of construction-based theories of grammar, especially Construction Grammar, is that argument structure constructions, which are clausal patterns made of ordered sequences of syntactic slots paired with semantic content, have meaning of their own. Thereby, argument structure constructions contribute meaning which is independent of the meaning of the individual lexical items that instantiate them. Based on that, in this paper we address Brazilian Portuguese (BrP) sentences like *Eu cortei o cabelo* (literally I cut the hair, meaning that I had my hair cut) and its effects on the BrP-English bilinguals' production and comprehension in English. The objectives are: i) to describe the caused-action meaning associated with the transitive form in BrP; ii) to represent the caused-action construction in BrP, following the analysis started with Ciríaco (2014); and iii) to present part of the results of the study carried out by Santos (2019), showing experimental evidence from bilingualism. Finally, our paper shows that the caused-action meaning plays a role cross-linguistically, and that the caused-action construction is a type of construction, present in BrP and English as well.

Keywords: Caused-action construction. Indirect causative meaning. Bilingual evidence.

Um pressuposto central das teorias de gramática baseadas em construções, especialmente a Gramática de Construções, é que construções de estrutura argumental, que são padrões oracionais feitos de sequências ordenadas de informação sintática pareada a conteúdo semântico, têm significado por si só. Assim, construções de estrutura argumental contribuem significado que é independente do significado individual dos itens lexicais que os instanciam. Com base nisso, neste

* Faculdade de Letras, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. ORCID: orcid.org/0000-0001-6097-0058.
** Faculdade de Letras, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. ORCID: orcid.org/0000-0001-8009-6839.
*** Faculdade de Letras, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. ORCID: orcid.org/0000-0001-6690-3948.

trabalho nós nos voltamos a sentenças do português brasileiro (PB) como *eu cortei o cabelo* e seus efeitos na compreensão e produção linguística de bilíngues do par PB-inglês. Os objetivos são: i) descrever o significado de ação-causada associada à transitiva em PB; ii) representar a construção de ação-causada em PB, a partir da análise começada por Ciríaco (2014); e iii) apresentar parte dos resultados do estudo feito por Santos (2019), mostrando evidência experimental de bilinguismo. Por fim, nosso trabalho mostra que o significado de ação-causada atua translinguisticamente, ou seja, que a construção de ação-causada é um tipo de construção, presente em PB e em inglês.

Palavras-chave: Construção de ação causada. Sentido causativo indireto. Bilinguismo.

•

1. Introduction

A central assumption of construction-based theories of grammar (Croft 2001; Fillmore, Kay & O'Connor 1988; Michaelis 2012, among others), especially Construction Grammar (Goldberg 1995, 2006), is that argument structure constructions have meaning of their own and are clausal patterns made of ordered sequences of syntactic slots paired with semantic content. Thereby, argument structure constructions contribute meaning which is independent of the meaning of the individual lexical items that instantiate them. According to Goldberg (1995), for instance, despite the fact that *sneeze* is not a conventional verb of motion, English speakers have no trouble interpreting the sentence *Lisa sneezed the napkin off the table*, because the meaning of caused motion is contributed by the construction itself. Psycholinguistic evidence that the argument structure construction contributes meaning comes from studies as that of Bencini and Goldberg (2000). These authors showed that, when asked to sort sentences on the basis of their overall meaning, subjects were as likely to rely on the verb as on the construction. Another study is that of Johnson and Goldberg (2013), whose experiments with Jabberwocky sentences (*i.e.*, sentences whose content words have been replaced by meaningless strings) showed not only that argument structure constructions have an inherent schematic meaning independently of the semantics of their main verb, but also that this knowledge is accessed quickly and implicitly in the process of sentence comprehension. To illustrate it, consider the sentence "he lorped it on the molp", given by Johnson and Goldberg (2013, table 1). Even without knowing the meaning of *lorped* or *molp*, it is possible to understand that the sentence denotes an event of caused motion. This is because the construction itself is associated with the particular meaning of caused motion.

In the light of Construction Grammar, we address sentences like *eu cortei o cabelo* in BrP (literally 'I cut the hair'), which can be ambiguous between a direct causative interpretation (meaning that I, myself, cut my hair), and an indirect causative one, meaning that I had my hair cut by someone else. We focus on the indirect causative meaning, which is much more usual between BrP speakers, and consider those sentences as instances of what we call the "caused-action construction". We also present psycholinguistic evidence of both its existence in English and its effects on the

comprehension and production of BrP-English late bilinguals. The objectives are: i) to describe the caused-action meaning associated with the transitive form in BrP; ii) to represent the caused-action construction in BrP, following the analysis started with Ciríaco (2014); and iii) to present part of the results of the study carried out by Santos (2019), showing experimental evidence from bilingualism for construction theories.

We focus on bilingualism experimentation because of its growing importance in psycholinguistic studies. Following Grosjean (2008), we understand bilingualism as the regular use of two languages for communicative purposes, balanced or not. One of the reasons for the growth of interest in L2 speakers is the recognition that bilingualism as defined here is a widespread phenomenon. Therefore, accounts of human language capacity should seek evidence derived from the constantly changing linguistic repertoires of speakers whose communicative acts may rely on constructions that are typical of more than one language. This is a point of view which is becoming ever more accepted in the study of language, because information from bilinguals' usage patterns can help us gain insights on the overall nature of linguistic organization and language processing.

This paper is structured as follows. In the next section, the BrP caused-action construction is analyzed in detail. Next, the experiments are presented. In the fourth section, we discuss the results found. The last part is dedicated to the final conclusions.

2. The caused-action construction in BrP

2.1. The caused-action meaning

In Brazilian Portuguese, the syntactic form usually recognized as that of the transitive construction, [NP_1 V NP_2], can be associated with a very particular type of causation in some very specific contexts – the *indirect-causation*.[1] For example, parallel in form to the following construction in example 1, which means I cut the cake, the construction in (2) is ambiguous between a direct causative interpretation, meaning that 'I cut my hair myself', and an *indirect causative* one, meaning that 'I had my hair cut by someone else':

(1) Eu cortei o bolo.
'I cut the cake'

(2) Eu cortei o cabelo.
'I cut the hair'

For sentences like the one in example 2, the indirect causative interpretation is much more usual than the simple causative one, on pragmatic grounds. This claim is fundamentally derived from the fact the most speakers of Brazilian Portuguese are likely to share cultural knowledge that supports the assumption that cutting one's own hair tends to be a very

[1] We understand the caused-action as an independent construction for its unique association of form and meaning (*cf.* Goldberg 1995), leaving the study of the ways it relates to the transitive construction – besides sharing the same syntactic form – for future research.

unlikely event. Therefore, we call this indirect causative interpretation the *caused-action* meaning.

One way of making the agent transparent is by combining the clause with a phrasal construction that shows the agent of the caused-action. The combination is possible to some verbal contexts, but not to all of them. While example 3 is interpreted as Amy caused the architect to remodel the house for her, example 4 cannot be interpreted as if she caused the realtor to buy the house for her; actually, he only intermediated the sale.

(3) Amy reformou a casa com o melhor arquiteto da cidade.
'Amy remodeled the house with the best architect of the city'

(4) ? Amy comprou a casa com o melhor vendedor da cidade.
'Amy bought the house with the best realtor of the city'

The caused-action meaning also establishes some other conditions, which clearly depend on shared pragmatic information:

(5) ? Clara pendurou o banner.
'Clara hanged the banner'

(6) ? Eduardo entupiu a pia.
'Eduardo clogged the sink'

The only interpretation available to the sentences in 5 and in 6 is the causative one: Clara hanged the banner herself, and Eduardo clogged the sink himself. The caused-action meaning cannot be obtained, on pragmatic grounds: it is not possible to interpret that Clara asked someone to hang the banner for her or Eduardo had a contractor clogging the sink for him.

However, the caused-action meaning cannot be generalized over classes of verbs, as shown in Ciríaco (2014), where several classes of BrP verbs were analyzed. For example, from the analysis of Ciríaco, verbs as *cortar*, 'to cut, and *entupir*, 'to clog', belong to the same semantic class, yet they behave quite differently regarding the construction, as examples 2 and 6 show. Thus, the caused-action meaning seems to be a higher level of abstraction, constituting a very productive clausal pattern in BrP. Other instances of it are the following:

(7) Clara fez luzes no cabelo.
'Clara did highlights in the hair'

(8) Minha cunhada fez clareamento nos dentes.
'My sister-in-law whitened the teeth'

(9) Lorena consertou o carro.
'Lorena fixed the car'

(10) Eduardo lavou o carro ontem.
'Eduardo washed the car yesterday'

To BrP speakers, examples 7–10, in general, mean respectively that Clara had her hair highlighted, my sister-in-law had her teeth whitened, Lorena had her car fixed, and Eduardo had his car washed yesterday. Speakers[2] would almost never (except in marked contexts) interpret these sentences as if the participants in subject position did the action described by the verb themselves.

Additionally, it is important to note that the phrase expressing the agent can make the caused-action meaning evident in one context, as in 11, but not in another, as in 12, even when the same verb is used:

(11) Eu cortei o cabelo com o melhor cabeleireiro da cidade.
'I cut the hair with the best hairdresser of the city'

(12) ?Eu cortei o bolo com a melhor boleira da cidade.
'I cut the cake with the best cake maker in the city'

2.2. The pattern

The caused-action meaning is not contributed by the semantics of the verb itself or the semantics of the lexical items that compose the sentence. For example, the verb *cortar*, 'cut', or the semantic composition of the other lexical items in sentence 2 – *eu cortei o cabelo* ('I cut my hair' meaning that I had my hair cut) – does not mean 'cause to act'. Additionally, the verb *cortar* does not mean 'make someone cut', otherwise the sentence in 1, *eu cortei o bolo* ('I cut the cake'), would not be interpreted as a direct causation and the one in 2 would not be ambiguous to start with: besides the more usual interpretation of the caused-action meaning, *eu cortei o cabelo* in a marked pragmatic context can also mean that I, myself, cut my own hair. Thus, the semantics of 'cause to act' does not come from verbs, as Ciríaco (2014) has shown, but from the clausal pattern itself.[3]

In other words, sentences like 2, 3, 7–11 show a unique pairing of form and function that exist independently of particular verbs (Goldberg 1995, 2006), and therefore are instances of the caused-action construction, that is, a clausal pattern in which a syntactic form is associated with the semantics of 'cause to act', that is, X causes a change to Y by asking Z to act on their behalf.

The 'cause to act' meaning emerges in very specific contexts, which means that contextual and pragmatic conditions are needed in order for the construction to be manifested in actual usage. As Ciríaco (2014) shows, the caused-action construction is only possible when the pragmatic context of provision of services is available, that is, provision of services is a *conventionalized scenario* (Goldberg 1995) which favors the use of the construction and, thus, a part of its semantics. In the previous examples (sentences 2, 3, and 7–11), the meaning of [X causes Y to change, by asking Z to act] is present, together with the conventionalized scenario of provision of services, in which X can ask a professional do to the action for them. The semantic context of provision of

[2] It is important to mention that the interpretation considered here refers, in general, to the intuition of BrP speakers who live in Belo Horizonte (MG).

[3] There are alternative analysis. However, as far as our knowledge of grammatical theories go, Construction Grammar approach seems to be the option that best explains the data considered in this research.

services is more than a requisite for the instantiation of the construction, it exposes a semantic constraint on direct causation, making it indirect. The information about the caused-action construction can be outlined as follows:

(13) CAUSED-ACTION Construction (e.g. *Eu cortei o cabelo*)

SYNTACTIC FORM:
[NP_1 V NP_2 (PP_3)]

SEMANTIC FUNCTION:
Meaning : X_1 CAUSE Y_2 to CHANGE with the action of Z_3
Pragmatic context or *Conventionalized scenario*: provision of services, service delivery (when is possible, in a given situation, to have a provider or contractor to do something for you).

MEANS: X asks Z to do the action.
RESULT: Y is cut.

The argument X indirectly causes the argument Y to change, and it does that by asking someone else, Z, which may or may not appear in syntax, as the brackets signal, to do it for her/him. The meaning of 'cause to act' refers to the 'means' by which the event denoted by the construction is elaborated. In the example given, I cause my hair to change by going to the salon and asking someone else to cut it. Going to the salon and asking a professional is the means by which the change is effected.

We have described the caused-action meaning and the caused-action construction in BrP, but of course that does not mean that the caused-action meaning is exclusive of BrP. Actually, the expression of such meaning is possible in many languages, including English. The difference between BrP and at least some other languages is the fact that there seems to be specialized forms for the expression of such meaning in languages other than Brazilian Portuguese. Therefore, in several language speakers may avoid the ambiguity between the direct and the indirect causative readings that is inevitable in BrP. In general, there appears to be some sort of morphosyntactic marker in the form of the construction that convey the caused-action meaning. For example, in French, one says *Je me suis fait couper les cheveux*, with the form [NP Ref Aux V NP] and in English, the canonical form is [NP Aux NP V], as in *I had my hair cut*.

3. Experimental evidence for the caused-action meaning cross-linguistically

3.1. Materials and methods

Two experiments were conducted in the study of Santos (2019) over the Internet: an interpretation task and a cloze test, both performed by bilinguals (BrP-English) and English native speakers. Fifty-one participants were recruited through a chain-referral sampling: thirty-one Brazilian Portuguese-English bilinguals and twenty English (American) monolinguals. Before the experiments, bilingual participants performed a speeded version of the Vocabulary Levels Test VLT (Nation 1990), to verify proficiency

and thus ability to proceed to the experimental tasks. As VLT informs 5 ranges of vocabulary sizes, in this study, participants were accepted with VLT 3 or more, which is equivalent to knowing the 5000 most frequent lemmas in English. This cut-off point was used for all the words in the experiments.

3.2. Experiments

3.2.1. Experiment 1: Comprehension

The main objective of Experiment 1 was to compare how bilinguals and monolinguals agree to sentences with non-caused-action meaning such as *Anna cut her hair herself* in face of the contexts given. In order to do so, experiment 1 was similar to an acceptability judgment test, but the acceptability was accessed concerning (dis)agreement to an interpretation, not a form. Every item, be it critical target items, as in 14, critical control items, in 15, or distractor items, in 16, consisted of three sentences:

(14)
a. Alice is going to be maid of honor at a wedding tonight. This morning, she did her nails.
b. Alice did her nails herself.

(15)
a. Anna gets used to things very easily. This year, she is having her house painted again.
b. Anna painted the house herself.

(16)
a. Linda is very busy this week. This morning, she is making a lot of phone calls.
b. Linda is making a phone call right now.

The first two sentences (displayed in 14a, 15a and 16a) were meant to contextualize the scenario of need for a service – one was introductory, and the other was one of the two options: a target sentence or a control sentence. Target sentences are the ones with transitive form and possible ambiguous meaning considering its direct translation to BrP – *this morning, she did her nails* shown in 14. Control sentences were the ones with the caused-action meaning associated with its canonical form in English, as *this year, she is having her house painted again* shown in 15. The third sentence (displayed in 14b, 15b and 16b) was the interpretation with which participants were told to (dis)agree, on the Likert scale that followed. Thus, after reading the context sentences in 14a, 15a and 16a, participants had to evaluate sentence in 14b, 15b and 16b on a scale of 1 to 5, where 1 stood for strongly disagree, 2 for disagree, 3 for neither agree or disagree, 4 for agree, and 5 for strongly agree. Participants were told that there was no right or wrong answer, and that they were supposed to choose what they felt was ‘natural’.

There were sixty-five experimental items, eighteen critical and forty-seven distractors. The critical items were equally divided into targets and control items, adding up to 9 items each. Distractor items had a similar structure but no analysis intent. It is also important to note that sixty-five verbs were employed, one for each experimental item,

and that all the words were controlled for frequency, being among the 5000 most frequent of the English language, according to the Contemporary Corpus of American English (Davies 2008). Control and target items were meant to be compared, as a means of checking adequate design. Because control items had the canonical caused-action form in English, they should have very low ratings for a non-caused-action interpretation, especially for English native speakers. Conversely, target items were the ones with the transitive form, which translates literally to BrP, and they were meant to inform how BrP-English bilinguals and English native speakers interpreted it accordingly to the evaluation they gave to the non-caused-action interpretation sentence (14b and 15b). The verbs of the critical items were further divided into three ranges of frequency: verbs from 1 to 1500 most frequent words were considered of high frequency, the ones from 1501 to 2500 of medium frequency and the ones ranging from 2501 to 5000 of low frequency. This frequency arrangement intended to investigate a possible effect of frequency in the interpretation assigned.

3.2.2. Experiment 2: Production (cloze task)

Experiment 2 consisted of a cloze task, in which participants were asked to complete sentences freely. Its main objective was to investigate speakers' production of the caused-action meaning in English and the influence of BrP caused-action construction in the production of BrP-English bilinguals. This task was carried out in the same online platform as that of Experiment 1, and immediately after it. There were twenty experimental items, five targets and fifteen distractors. Sentence 17 is an example of target and 18 of a distractor:

(17) Marianne is going to the salon this afternoon to _____.

(18) Early today, Barbara went to the grocery shop to _____.

The five target items had an agent subject and a contextual predicate that indicated going to a place where services can and are commonly solicited, such as *the salon* in example 17. Then, they finished with the preposition *to*, in order to elicit a verbal form. We expected that the answer for the target items would fall into one of the categories: i) the canonical form for the caused-action meaning in English, such as *to get her hair cut*; ii) the ambiguous transitive form which is used in BrP, such as to *cut her hair*; or iii) any other response. A first analysis revealed that in some of the instances, the passive construction was also used, hence it was added to the tagging and analysis. We expected, because of the reporting of the pattern by Goldberg (1995), that English native speakers would also produce the ambiguous transitive forms.

3.3. Results

3.3.1. Experiment 1: Comprehension

In order to analyze the ordinal data obtained, the ordered numbers in the scale, we built a cumulative mixed model fitted with a Laplace approximation (Christensen 2015). The

model computed ratings in function of the interaction between our conditions: control/target; high/medium/low verb frequencies; and bilingual/monolingual. This model was significant ($p < 0.01$). It provided us with sixty-six contrasts, amongst which only fifteen, the ones where only one condition varied, were taken into consideration in our analysis.

First, all the control items were significantly less acceptable in the caused-action interpretation, for both groups. That indicates that the experiment was adequately designed. Then, we proceeded to the comparisons of verb frequencies, for each group, BrP-English bilinguals and English native speakers, only in the target items. We wanted to check if highly frequent verbs, such as *cut* would favor the caused-action meaning interpretation more than less frequent verbs of medium and low frequencies, such as *redecorate*. The results of these comparisons were contrary to our hypothesis, but rather quite interesting.

For English native speakers, although we expected the opposite, highly frequent verbs favored the non-caused-action interpretation (that is, the direct causative interpretation) when in transitive sentences, over medium and low frequencies. That indicates that frequency plays a role in the comprehension of the construction, and that the constructions are in complementary distribution when it comes to their function – more frequent verbs will appear in a transitive form when the its function is agentive, but in a caused-action meaning ([NP Aux NP V] form and the [NP_1 V NP_2 (PP_3)] transitive form) when the pragmatic function is that of provision of services. In other words, when the caused-action interpretation is intended, the more frequent verbs are, the more the caused-action meaning seem to be associated with its canonical form in English, [NP Aux NP V]. On the other hand, when the non-caused-action interpretation is intended, the transitive form (SVO) is reserved for the non-caused-action meaning.

For BrP-English bilinguals, there was no effect of frequency whatsoever. This lack of an effect shows that bilinguals and English native speakers are differently affected by frequency, or it may even indicate that for the caused-action meaning, bilinguals are not affected by frequency at all. This could be probably due to the fact that bilinguals usually learn their L2 mostly through instruction, having little significative real language usage to base their learning process on. Hence, that could also be seen as an effect of transfer of training, for teaching methods are mainly based on outdated and fossilized grammatical exercises which do not incorporate data of real usage, as *corpus* based materials.

The comparison between bilinguals and English native speakers for each verb frequency was the most important aspect in this experiment, because it showed an influence of L1 in L2. In the high and low frequencies, there was no significant difference between English native speakers and bilinguals in the interpretation of target sentences. However, there was a significant effect in the medium range: BrP-English bilinguals rejected the non-caused-action meaning (or, the direct causative interpretation) more than English native speakers. Thus, our results shows, somehow, an influence of the BrP caused-action construction in the bilinguals comprehension in their L2, English.

3.2.2. Experiment 2: Production (close task)

To analyze the data from Experiment 2, we carried out a descriptive statistic analysis. First, we compared the percentage of use and that of no use of the construction among groups, this last one including the use of the transitive construction as well. Then, for cases in which the construction was used, we accounted for the choice of the auxiliary, have or get.

Table 1 shows BrP-English bilinguals' and English native speakers' use of the caused-action meaning, both in its canonical form in English – [NP Aux NP V] –, and in its peripheral form in the language – the transitive, [NP_1 V NP_2 (PP_3)]. Bilinguals varied in their use: in items 1, 2 and 3 they preferred the canonical structure, probably learned by instruction; but on item 4, they primarily chose the transitive, the form of their L1. In items 3 and 5, this group was more evenly divided. They seemed thus to have been influenced by the rule they learned, but not in a categorical way.

English native speakers, on the other hand, tended to opt for the [NP Aux NP V], as expected, but were not categorical either: although always less than their canonical form, they used the transitive form in three of the five items. This use is significative, especially in item 5, where their use was very close to the one of BrP-English bilinguals (35.3 for these and 37.1 for those). Our results are then, very compelling, for they attest the fact that the transitive form associated with a caused-action meaning is a possibility in English as well.

Table 1. Distribution of construction use for bilinguals and monolinguals.

	Bilinguals		Monolinguals	
Item	[NP_1 aux NP_2 V]	[NP_1 V NP_2]	[NP_1 aux NP_2 V]	[NP_1V NP_2]
1	57.1	22.8	76.4	0
2	60	25.7	82.3	11.8
3	34.2	20	100	0
4	31.4	62.8	88.2	11.8
5	45.7	37.1	64.7	35.3

Note. Percentages. Values do not add up to 100 because there were answers that did not fall into any category, that is, did not have a caused-action meaning, such as *talk to his friend*.

4. Discussion

In Experiment 1, a statistically significant difference between BrP-English bilinguals and English native speakers was found in the medium verb frequency band: bilinguals rejected the non-caused-action meaning more than English native speakers. Experiment

2 showed that both BrP bilinguals and English native speakers produced instances of the caused-action construction – that is, caused-action meaning associated with the transitive form, [NP_1 V NP_2 (PP_3)].

According to Goldberg (2003, p. 219), one of the tenets of Construction Grammar states that "cross-linguistic generalizations are explained by appeal to general cognitive constraints together with the functions of the constructions involved". Boas and Gonzálvez-García (2014) state that the semantic pole is the primary one in the acquisition of a construction, and Wasserscheidt (2014) also shows that cross-linguistic generalizations, when they occur, are related to the semantic pole of the constructions and that generalizations over form do not play a role in processing.

In light of all of that, it is possible to say that BrP-English bilinguals hold on to the transitive form, a highly frequent form and construction in many languages, including Portuguese and English (*cf.* Langacker 2008), and to the semantics of the caused-action construction, ignoring at times the existence of a different construction form in English for the same meaning. In other words, when the scenario that is being conceptualized involves the pragmatic function of provision of services, and the caused-action meaning, BrP-English bilingual speakers choose the form which is more frequent and prototypical for that meaning in their native language, that is, the transitive form, [NP_1 V NP_2 (PP_3)].

Therefore, our results confirm the view of those authors, since they show that the cross-linguistic generalization that hold between BrP and English concerning the caused-action construction is triggered by frequency and function, that is: it can be explained by statistical learning as a general cognitive constraint, and the conventionalized scenario of provision of services together with the meaning of the BrP caused-action construction. Thus, (syntactic) form does not play a role, and the influence between languages is semantic in nature.

Also in accordance with Goldberg (2003), our results confirm the assumption of the author that there are types of constructions across languages, in the sense of a constructional generalization that emerges from the analysis of constructions in different languages, with only small differences in form and function – one example being the passive construction. Similarly, it is possible to say that the caused-action construction also seems to be a type of construction that exists at least in BrP and in English, since English native speakers also produced the caused-action meaning associated with a transitive syntactic form. In addition, as stated by Gardner-Chloros (2008, p. 56), in the accommodation of constructions among languages, "where a bilingual speaker's two languages share a common syntactic structure, the speaker will tend to use that common structure rather than any alternative ones which fulfils the same function but do not exist in both languages."

5. Conclusion

For Experiment 1, the results showed that the knowledge of the BrP caused-action construction influences the BrP-English bilingual speakers' production in English. For

Experiment 2, the results showed that the BrP caused-action construction also occurs in English. These findings indicate that:

(i) the caused-action meaning plays a role cross-linguistically
(ii) the caused-action construction is a type of construction with the [NP1 V NP2 (PP3)] transitive form in BrP; and the transitive form [NP1 V NP2 (PP3)] and the canonical form [NP Aux NP V] in English.

Our study also corroborates the importance of bilingualism studies for the comprehension of the linguistic processing and organization; and the Construction Grammar hypothesis that meaning is probably part of a higher order cognitive process (Goldberg 2003), being a central aspect to explain how bilinguals access their knowledge in sentence processing, both in comprehension and in production. As we accept that bilingualism (understood in the sense of Grosjean 2008) is not an extraordinary phenomenon, but rather a core dimension of the human capacity for language, we take the fact the a constructional approach sheds light on both monolingual and bilingual usage patterns as a strong indicator of the explanatory power of such approach.

Finally, it is important to note that this work is the beginning of a series of experimental analyses with the caused-action construction. Future investigation should address the frequency of specific verbs on it, through corpora consultation. Additionally, different types of experiments must be carried out, especially the ones with online methodology, to be triangulated with the offline techniques used in the present work. Moreover, as we have tested the acceptance of sentences with non-caused-action interpretation, another comprehension task should test the acceptance of a caused-action interpretation for the context of provision of services. We believe that further studies with this construction type will be very enlightening about the processing of constructions cross-linguistically.

References

Bencini, G. & Goldberg, E. (2000). The contribution of argument structure constructions to sentence meaning. *Journal of Memory and Language*, *43* (4), 640–651. https://doi.org/10.1006/jmla.2000.2757

Boas, H. C. & Gonzálvez-García, F. (2014). Applying constructional concepts to Romance languages. In H. C. Boas & F. Gonzálvez-García (Eds.), *Romance perspectives on construction grammar*. [Constructional approaches to language series, 15] (pp. 1–35). Amsterdam: John Benjamins. https://doi.org/10.1075/cal.15.01boa

Ciríaco, L. S. (2014). A construção transitiva de sujeito agente-beneficiário no português brasileiro. *Caligrama: Revista de Estudos Românicos*, *19* (2), 83–98. https://doi.org/10.17851/2238-3824.19.2.83-98

Croft, W. (2001). *Radical construction grammar: Syntactic theory in typological perspective*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198299554.001.0001

Christensen, R. H. B. (2015). Ordinal: Regression models for ordinal data. *R package version 2015*, 6–28. Retrieved from https://cran.r-project.org/package=ordinal

Davies, M. (2008). *The corpus of contemporary American English (COCA): 400+ million words, 1990-present*. Available online at https://www.english-corpora.org/coca/

Fillmore, C., Kay, P. & O'Connor, M. (1988). Regularity and idiomaticity in grammatical constructions: The case of let alone. *Language*, *64* (3), 501–538.

https://doi.org/10.2307/414531

Gardner-Chloros, P. (2008). Bilingual speech data: Criteria for classification. In L. Wei & M. G. Moyer (Ed.), *The Blackwell guide to research methods in bilingualism and multilingualism* (pp. 53–72). Malden: Blackwell Publishing.

Goldberg, A. E. (1995). *Constructions: A construction grammar approach to argument structure*. Chicago, IL: University of Chicago Press.

Goldberg, A. E. (2003). Constructions: a new theoretical approach to language. *Trends in Cognitive Sciences, 7* (5), 219–224. https://doi.org/10.1016/S1364-6613(03)00080-9

Goldberg, A. E. (2006). *Constructions at work: the nature of generalization in language*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199268511.001.0001

Grosjean, F. (2008). *Studying bilinguals*. Oxford: Oxford University Press.

Johnson, M. A. & Goldberg, A. E. (2013). Evidence for automatic accessing of constructional meaning: Jabberwocky sentences prime associated verbs. *Language and Cognitive Processes*, *28* (10), 1439–1452. https://doi.org/10.1080/01690965.2012.717632

Langacker, R. & Langacker, R. W. (2008). *Cognitive grammar: A basic introduction*. Oxford: Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195331967.001.0001

Michaelis, L. (2012). Making the case for construction grammar. In H. C. Boas & I. A. Sag (Eds.), *Sign-based construction grammar* (pp. 31–69). Stanford, CA: CSLI Publications.

Nation, I. S. P. (1990). *Teaching and learning vocabulary*. New York: Heinle ELT.

Santos, C. F. (2019). *Processing of the English causative-have construction by monolinguals and Brazilian Portuguese-English bilinguals* (Master's thesis, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil). Retrieved from http://hdl.handle.net/1843/LETR-BAPPSX

Wasserscheidt, P. (2014). Constructions do not cross languages: On cross-linguistic generalizations of constructions. *Constructions and frames*, *6* (2), 305–337. https://doi.org/10.1075/cf.6.2.07was

[received on June 1, 2019 and accepted for publication on November 4, 2019]