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FOR THE DIFFUSION OF SCIENTIFIC KNOWLEDGE

One of the foundations of scientific practice is the commitment to the diffusion of the knowledge it produces. There is consensus on the value of this principle – there is no sense in generating knowledge that is not disclosed, publicized and placed in dialogue with and within the community. Through this movement we have the measure of its impact, from what it comes to add and develop in relation to the already established bases, from how it comes to challenge and renew the same bases.

This collective evaluation is a stage that only occurs because there is an intricate structure, intermediate between the scientist and his/her reader/addressee, that makes this contact viable. It brings together individuals committed to the performance of different functions – editors, referees, reviewers, translators, librarians, information technicians – who mobilize technical and academic knowledge in a collective and articulated work. Without this web, the research results would not reach their rightful (and dutiful) destination. Or they would arrive without the qualification seal that the editing structure ensures.

I want to highlight the priceless performance of the referees, whose work is at the heart of this process. In an article recently published in *Career Column*, a *Nature's* blog, Mathew Stiller-Reeve talks about how to come up with a complete and effective peer review (Stiller-Reeve, 2018). The author offers a set of practical recommendations to guide the beginners in this activity. The description expresses quite fairly the work that our peers generously have done, lending their expertise and experience to measure the quality of the proposals underlying the submitted manuscripts and the way they are expressed.

In presenting this issue 3 of volume 62, our last edition of 2018, I would like to highlight the volunteer, committed and extremely competent work of the referees that make up the Alpha team. If, as McPeck et al (2009, p. 157) assert, peer review activity has a “reciprocally altruistic nature”, our team follows exactly what the authors defined as the “golden rule” of this activity: “review for others as you would have others review for you” (McPeck et al., 2009, p.157)

The present edition maintains the comprehensive and representative character of the avant-garde thinking on linguistic studies that define the mission of *Alfa*. Eight articles compose it.

The first two are within the scope of discourse and text. Glushkova analyzes the scientific-political-business discourse, a type of discourse that is constituted from the dialogue of the scientific discourse with other spheres of activity. His comparative approach between Brazilian and Russian realities both validates the analysis model itself

based on the Bakhtinian studies and reveals similarities between distant and diverse realities. The second study, by Biar and Pinheiro, also explores the political discourse, but to investigate processes of construction of meaning present there. Taking as corpus the speeches made by Fernando Collor de Mello during the presidential campaign of 1989, the authors use the Conceptual Blending Theory to analyze the argumentative role of textual strategies such as the use of syntactic parallelisms.

The main objective of Oliveira's work is to evaluate the relevance and adequacy of the use of the Social Network Analysis method as a tool for the description of the sociolinguistic reality. It is argued that this method provides a more complete description than that obtained through the control of social macrocategories, as foreseen in the classic Sociolinguistic model. The study tests the method by its application in the speech mapping of adolescents living in a rural district of the city of Londrina-Paraná, showing the gains that it can bring to the understanding of processes of linguistic maintenance and linguistic change.

The fourth article explores a material as rich as not yet exhausted – what is considered the greatest work of Raphael Bluteau, his *Vocabulario Portuguez, e Latino*. Bluteau was one of the most important Portuguese lexicographers; his *Vocabulary* was the first of its kind constructed from a reference corpus (Murakawa, 2007). From it, Lopes and Cabral inventory and analyze the Tupi-based Amerindian Brazilianisms, from the etymological point of view and their lexical-grammatical structure; they also systematize them, based on the semantic fields in which they are inserted.

In a study that has as a background the interface between linguistics and computation, Rassi, Baptista, Vale and Mamede present a methodology for the integration of Brazilian Portuguese support verb constructions in XIP parser. The challenge of instrumentalizing the automatic processors of natural language for the correct identification and interpretation of this type of construction arises from its differentiated syntactic-semantic behavior compared to the corresponding full verb constructions. The methodological proposal results from the analysis of a robust set of data of constructions with the support verb *dar* ('to give'), based on the theoretical-methodological assumptions of Lexicon-Grammar.

Moura and Miliorini return to a cherished topic in discussions on the syntactic structure of languages – the distinction between arguments and adjuncts in the scope of verbal complementation. The purpose of the authors is to evaluate the main syntactic-semantic tests proposed in the literature to allow to establish this distinction. Focusing on constructions that mainly involve the benefactive and locative thematic roles, as they can occur with both internal arguments and adjuncts, the authors conclude by the inconsistency of most of the tests analyzed, except for the 'anaphoric resumption' test.

From syntax to phonology, articulated to the process of language acquisition. Oliveira and Berti present a study on the production of syllabic patterns of CCV and CV type in children with typical and atypical phonological development. The analysis of ten children data, by means of auditory, acoustic and sonographic measurements,

showed different characteristics in the syllables produced, indicating that children with typical development are closer to the target production for these syllabic patterns.

Closing this issue, we bring a study situated in an area that is nowadays at the frontier of the linguistic knowledge – the Linguistics of Sign Languages. Mertzani examines the diagrammatic iconicity of the Y-hand form in data from two non-cognate sign languages – American sign language and Greek sign language, identifying an association between the hand form and real-world referents.

In a world in which information seems to be very easily accessible, more and more it is necessary that we have criteria and instruments to evaluate the quality of the information that circulates. We reiterate the commitment of Alfa to continue to serve as a channel for the dissemination of serious, appropriate, ethically sound, solidly grounded and innovative research.

Profitable “readings/dialogues” to all!

Rosane de Andrade BERLINCK¹

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CONTENTS

ORIGINAL ARTICLES

- A comparative analysis of the scientific-political-business discourse in Brazil and Russia
Maria Glushkova443
- “Such eloquence, such falsehood”: repetition and recategorization in speeches delivered by Fernando Collor
Liana de Andrade Biar and Diogo Pinheiro.....467
- The speakers’ profile from the viewpoint of their social networks and their association with linguistic change
Eliane Vitorino de Moura Oliveira483
- The “Vocabulario Portuguez, and Latino” of Raphael Bluteau: a brief study of Amerindian Brazilianisms based in Tupí
Jorge Domingues Lopes and Ana Suelly Arruda Câmara Cabral.....509
- Integration of nominal predicates into a parser: an experiment with the constructions with the support verb *dar* ‘give’ in Brazilian Portuguese
Amanda Rassi, Jorge Baptista, Oto Vale and Nuno Mamede541
- Toward a comprehension of an intuition: criteria for distinguishing verbal arguments and adjuncts
Heronides Moura and Rafaela Miliolini575
- Typical and atypical phonological acquisition of CCV syllabic pattern: acoustic and articulatory data
Aline Mara de Oliveira and Larissa Cristina Berti595
- On the iconicity of the Y-handshape
Maria Mertzani617
- SUBJECTS INDEX641
- AUTHORS INDEX643
- PAPER SUBMISSION INSTRUCTIONS645

ORIGINAL ARTICLES

A COMPARATIVE ANALYSIS OF THE SCIENTIFIC-POLITICAL-BUSINESS DISCOURSE IN BRAZIL AND RUSSIA

Maria GLUSHKOVA*

- **ABSTRACT:** The purpose of this paper is to describe and analyse a relatively recent type of discourse: the scientific-political-business discourse, and to show examples of it in two countries, Brazil and Russia. The paper approaches the dialogue of contemporary scientific discourse along with other spheres of human activity – those of politics and business – by analysing topics discussed in two forums of economic development (in São Paulo and St. Petersburg). The research is based on Bakhtin’s ideas about dialogue and on the discursive and comparative analysis carried out by CLESTHIA axe sens et discours, a research group from the University of Sorbonne Nouvelle, in Paris. One of the concepts developed by this group is the *tertium comparationis* (or element of comparison), which is used in this work. The results point to the appropriation, for business discourse, of the authority conferred to science to legitimize business practices, and also to the ideological similarity – a result of globalized productive relations established in both countries.
- **KEYWORDS:** Discourse analysis. Scientific-political-business discourse. Traditional scientific discourse. Discourse comparison.

Introduction: presentation of the issue and its theoretical framework

The issue of discourse, language and culture comparison is present to a lesser or greater extent in the studies of different universities and researches centres throughout the world. Moreover, it’s becoming popular very likely under the influence of globalization, which increases the exchange between many countries in the fields of science, politics and business. In this paper, we shall discuss some French, Brazilian and Russian researches related to this topic.

In the age of economical globalization, it’s important to understand how the other cultures work. A way to achieve this understanding is to compare the discourse of different ethnolinguistic communities and to examine the operation, for example, of economic concepts such as “diversity”, “inclusion” and “cooperation” in a plurality of cultural universes. The theme of the event that we shall analyse is economy, which is considered a human science.

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The main purpose of this paper, and of our studies in general, is to create a theoretical-methodological perspective of Bakhtinian inspiration for the comparison of discourses in different languages and cultures. In this work, we shall consider the Brazilian¹ and Russian theoretical framework (Bakhtin's theories developed in some researches in Brazil and in Russia) and the French (research group *CLESTHIA*² *axe sens et discours* – Sorbonne Nouvelle, Paris 3). Following this research path, we seek to perform a comparative analysis of two events in the Brazilian and Russian ethnolinguistic communities.

The realization of this task is organized as follows: will be presented the Bakhtin's theory for a comparative analysis of discourse and, afterwards will be exposed the principles of the comparative discourse analysis formulated by the researchers of *CLESTHIA*. As a main notion of comparison, is used the concept of *tertium comparationis* developed by *CLESTHIA axe sens et discours*. Finally, will be performed a comparative analysis of the "scientifically valid moments"³ of the scientific-political-business discourse, in Portuguese and Russian, to reveal the validity and the productivity of the proposed theoretical framework. These moments or "scientifically valid" qualities are not the same as the concept of *tertium comparationis*, yet they work as comparison parameters for this research.

The presented hypothesis is that the scientific discourse in modern reality is creating new forms of dialogical relations with other spheres of human activity. In this regards, will be observed the dialogue between three of these spheres: science, business and politics. The *corpus* analysed in this paper was chosen to demonstrate the dialogue and the mutual influence of these spheres in Brazil and Russia, even though the discourses of both countries do not have a strong and direct impact on one another. Taking into consideration Bakhtin's and the Circle's ideas, we shall consider the dialogical nature of scientific communication. The scientific thought is reflected in a wide range of genres⁴: this allows us to compare situations wherein the scientific discourse genres do not appear so pure or demarcated.

In a text of the 1920s, "For a philosophy of act", Bakhtin mentions an interesting point for the present research: the author shows how the socially valid/significative⁵ does rule certain categories like aesthetics, science and ethics. Bakhtin speaks about the category of "ought to be", which he tries to define in dialogue with Rickert and Husserl.

¹ The studies of the Research Group *Diálogo*, USP, of which I am a member.

² Research Centre on Specialized and Ordinary Discourses (*Centre de recherche sur les discours ordinaires et spécialisés*).

³ Mikhail Bakhtin's expression, to be explained later.

⁴ Here, I refer to the Russian notion of "retchev'ye jánny", which was translated to English as "discursive genres" or "genres of discourse". Bakhtin speaks about this phenomenon in 1952-1953: "Obviously, each particular utterance is individual, though each language use field elaborates its own relatively steady types of utterances, which we call genres of discourse" [In Portuguese: "Evidentemente, cada enunciado particular é individual, mas cada campo de utilização da língua elabora seus tipos relativamente estáveis de enunciados, os quais denominamos gêneros do discurso"] (BAKHTIN, 2003, p.261-262). In this paper, I will follow Bakhtin's definition.

⁵ Valid or 'significant', as in Russian it is "значимое" (my translation).

According to Bakhtin (1993, p.22-23), the “ought to be” is the category “capable of grounding [...] the historical concreteness of an individual fact” and “arises only in the correlating of truth with our actual act of cognition [...]”. The author continues:

[...] there is no aesthetic ought, scientific ought and – beside them – an ethical ought; there is only that which is aesthetically, theoretically, *socially valid*, and these validities may be joined by the ought [...]. These postings gain their validity within an aesthetic, a scientific, or a sociological unity: the ought gains its validity within the unity of my once-occurrent answerable life⁶ (BAKHTIN, 1993, p.22-23).

Regarding the mutual influence between the spheres of human life, it looks like that one can consider not the direct influence of these spheres on each other, but the influence of their significant and *valid* qualities, of their *scientifically* or *socially* valid qualities. Since we are inaugurating this domain of research, the already existing theories and methodologies need to be adapted. For this study, the above-mentioned Bakhtinian theory will be adapted, considering that the valid/significant characteristics mentioned by Bakhtin are equivalent in the scientific-political-business discourse, to the communication topic and to the speakers’ status. In this paper, will be examined the mode of presentation of the topic in two similar genres of two different countries, and the study will be related to the two axes of Bakhtin’s theory: to the ideas of social horizon and social evaluations, and also to the ideas of social psychology and everyday ideology. The former will help me to analyse the material from an ideological perspective, whereas the latter will be useful to analyse the recorded and transcribed speech, which is different from the written text – created and revised, for example, by the author.

As stated in *Marxism and the Philosophy of Language: fundamental problems of the sociological method in language science* (1929):

Social psychology is first and foremost an atmosphere made up of multifarious *speech performances* that engulf and wash over all persistent forms and kinds of ideological creativity: unofficial discussions, exchanges of opinion at the theater or a concert or at various types of social gatherings, purely chance exchanges of words, one’s manner of verbal reaction to happenings in one’s life and daily existence, *one’s inner-word manner of identifying oneself and identifying one’s position in society*, and so on. Social psychology exists primarily in a wide variety of forms of the “utterance” of little *speech genres* of internal and external kinds – things left completely unstudied to the present day. All these

⁶ The idea of categories unity, or validities in human life or in a person, is developed in another work of Bakhtin (“Art and Responsibility”) and is correlated with the analytical part of this paper, where we deal with the speakers’ status.

speech performances are of course, joined with other types of semiotic manifestation and interchange – with miming, gesturing, acting out, and the like. *All these forms of speech interchange operate in extremely close connection with the conditions of the social situation in which they occur and exhibit an extraordinary sensitivity to all fluctuations in the social atmosphere.* (VOLÓCHINOV, 2017, p.107-108, emphasis added).

The proximity of the evaluative emphasis (positive or negative evaluations of certain concepts, such as “inclusion”, “internationalism”, etc.) in similar genres (for instance, the genre ‘economic forum session’), in the modern reality of two that different countries, indicates the possibility to speak about an ideological similarity within a specific theme, which will be demonstrated during the analysis.

The idea of social psychology will help me to analyse speech and the chosen parameters –the way of introducing the subject of the session (topic) and the mode of self-presentation (the speakers’ *status*) – within the Circle’s theory. According to Volóchinov (2017, p.107), social psychology reflects and shapes itself in a “universe of multiform verbal discourses”, and also in the “internal verbal manner to be aware of oneself and of one’s social position”. The latter point refers in our opinion, to the speakers’ status and their mode of self-presentation. Social psychology, in accordance with Pliekhánov and the majority of Marxists’ theorists, on which Volóchinov (2017, p.106-107) bases himself, is a

transitory link between the socio-political regime and ideology in the strict sense of the word (science, art, etc.), materializes itself in reality as a *verbal interaction*. [...] The productive relations and the socio-political regime conditioned by them determine all the possible verbal contacts between the people, all the forms and means of verbal communication between these ones: at work, in political life, in ideological creation. As for the conditions, the forms and types of discursive communication, they determine the forms as much as the topics of verbal discourses.

Further on, Volóchinov (2017, p.106-107) states:

“It is necessary to study social psychology from two angles: firstly, from the point of view of its *content*, that is, through the prism of the *topics* which are relevant to it sometimes; and in second place, from the point of view of the *forms and types of discursive communication* wherein these topics are fulfilled”⁷.

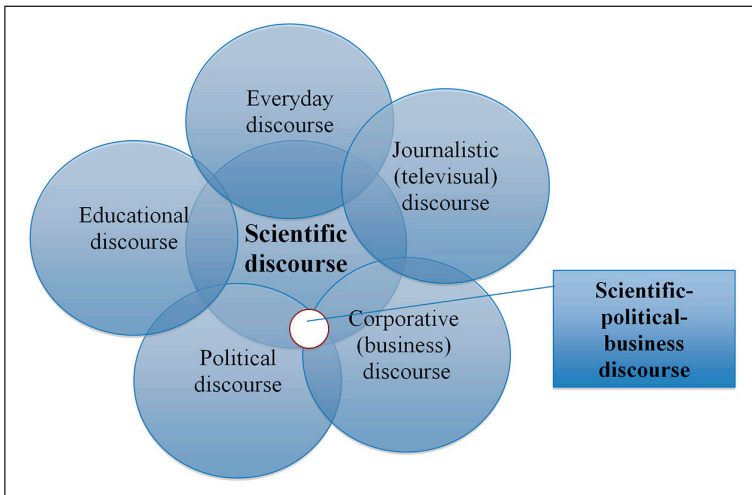
⁷ Further on, when he deals with the discursive interaction, Volóchinov brings the notion of “social psychology” closer to that of “everyday ideology”, considering that the word “ideology” is more appropriate to the sociological method than “psychology” (VOLÓCHINOV, 2017, p.201-227).

In this research, is revealed a type of discourse, that represents a new form of communication, in which circulate relevant topics to the social horizon of modern age. This new form of communication seems to signalize the recent socioeconomic changes, in which the new modes of globalized production seek to justify their business practices by the outward appearance of scientific topics and the authority of science, as will be shown further on.

The traditional scientific discourse and its relations with other spheres of human activity

In order to expose the phenomenon of intersection between the spheres, we need to elect the central discourse among them, since the focus of this research is the scientific discourse. Thus, to explain the nature of scientific-political-business discourse, we'll firstly explain how the traditional scientific discourse is understood, and then describe the studied discourse. The relations of the scientific discourse with other spheres of human activity are illustrated in the image below:

Image 1 – The relations of the scientific discourse with other spheres of human activity.



Source: Author's elaboration.

The influence between the six spheres (scientific, educational, political, corporative or business, journalistic and everyday discourses) is mutual, since they constitute themselves through the dialogue with each other, understood in the Bakhtinian sense as an “axiological-semantic relation” (GRILLO, 2013). In this paper, are observed the

interrelations between scientific, political and corporative discourses, which has been called the scientific-political-business discourse.

To analyse these inter-relations, were collected audio and video recordings of the traditional scientific discourse and of the scientific-political-business discourse in oral texts (spontaneous speeches) from 2010 to 2016. At first, the criteria for choosing the analysis material of the traditional scientific discourse (which is represented in the centre of Image 1) will be shown, since the logic of those criteria influenced on the formation of the *corpus* of the present research.

Speeches and debates in traditional scientific discourse were selected according to the following criteria:

1. The speech topic was necessarily scientific. Depending on the situation, speakers changed the topic, but in most examples they went back to the scientific topic. All speeches in this study that were influenced by the scientific sphere have respected this criterion.
2. Location: the place where the communication happened. In the case of the scientific discourse, it occurred in the official institutions, universities and research centres. The scientific discourse was planned according to the rules of those institutions. The communication was addressed to professional audiences of the respective areas and represented the institutional discourse (when the communicator speaks as a representative of a given social institution). This communicative space as we shall see, is socially oriented.
3. Status of the speaker – which is a criterion of great importance in the scientific discourse: the speakers obligatory must have academic qualifications. In the material analysed, most of the records are from professors and Doctors, but some are discussions performed by doctoral students, considered as representatives of the academic world, because with their experience in undergraduate course and master's degree, they show an interest in developing a professional field (academical), in obtaining a professional qualification in the chosen domain, and in having therefore, a right to “speak” within science.
4. The presence of an audience. The scientific discourse does not occur necessarily with the presence of an audience, for the speakers may discuss scientific topics without the listeners, although their participation influence in the formation of the discourse, in the lexical and syntactical selection, as well as in the speech formation⁸. Most of the material used in this study represents situations where an audience is present, consisting of official speeches or debates.

Some of these parameters (the speakers' status and the topic's mode of presentation) were chosen as an element of comparison between the utterances of different cultures.

⁸ On the impact on the listener during the discourse formation, cf. Bakhtin “The problem of speech genres” (2003), Volóchinov (1976 and 2017) “Discourse in life and discourse in art” and *Marxism and philosophy of language*.

We can summarize the characteristics of the immediate communication situation (VOLÓCHINOV, 2017) of the traditional scientific discourse in the following tableau:

Tableau 1 – The characteristics of the traditional scientific discourse.

	Topic	Location	Speakers' status	Presence of the audience
Traditional scientific discourse	Scientific	Universities and research centres	Academic qualifications	Yes

Source: Author's elaboration.

The traditional scientific discourse is formed, created and produced by and for scientists, it serves the scientific sphere and is intended to “the transference of scientific information to a prepared audience interested in the subject” (ROSENAL, 1991, p.149, translation mine⁹). Scientific speech uses terminologies of its respective domains of research, the speakers cite books and authors known by the target audience. This type of discourse promotes the acquisition and the preservation of scientific knowledge. According to the majority of Russian researchers, for instance Kójjina (2008) and Kotiúrova (2011), the traditional Russian scientific discourse has the following characteristics: logic, abstraction, generalization and coherence. The criteria of objectivity, tonality¹⁰ and dialogism¹¹ are also observed. However, criticizing this idealized vision of the scientific discourse, the Brazilian researcher Maria José Coracini (1991, p.192) discusses the dichotomies “objective/subjective” and “literal/metaphorical”, considering them relative and arbitrary: “what is subjective for one social group, may be objective for another, and vice-versa; in the same way that what is metaphorical for ones may be literal for others, what is true for some may not be true for others”. In this work, it is considered that the traditional scientific discourse does not necessarily have all the abovementioned characteristics, but it has the *tendency* to be objective, logical, abstract, etc. – or better to say – has the tendency to *look* objective, logical, abstract, etc., using these criteria as strategies of persuasion.

Scientific-political-business discourse

The scientific-political-business discourse is relatively young and well spread throughout the modern world. It is a sort of synthesis of the scientific, business and

⁹ “dlia pieredátchi náučnoi informátsii podgotóvliennoi i zaiťtieriesóvannoi auditórii”.

¹⁰ The term comes from the Russian functional stylistics school and refers to the “tone” of speech, i.e. if it’s more categorical (e.g. “No doubt, that’s true!”) or less categorical (e.g. “perhaps”, “it may possibly be that...”, “I find that...”).

¹¹ The text is written or spoken (oriented) considering the reader’s answer or perception.

political discourses and it is present in different forums, congresses, round tables and in other meetings where the participants are not only representatives of the academic world, but also businessmen, politicians and other public people from state and government structures. The example of it can be the formal discussion about a scientific topic, that occurs in the presence of the audience (it may be through the media), yet out of the scientific institutions.

One can find examples of the scientific-political-business discourse in many countries around the world. The economic forums are a form of communication that is becoming popular, such as the *World Economic Forum* (WEF), in Davos (Switzerland), or the meetings from the *Asia-Pacific Economic Cooperation* (APEC) and the *Africa – South America Summit* (ASA). There are other examples in Brazil, such as the *Italy-Brazil Business Meeting*, held in São Paulo on May 12, 2011, and the *Brazilian-Portuguese-Italian International Seminar*, held in the same city from the 28th until the 30th August 2014.

A comparison of the immediate communication situation in the scientific-political-business discourse with the traditional scientific discourse is exposed in the following tableau:

Tableau 2 – The comparison of the scientific-political-business discourse with the traditional scientific discourse.

	Topic	Location	Speaker’s status	Presence of the audience
Traditional scientific discourse	Scientific	Universities and research centres	Academic qualifications	Yes, scientists
Scientific-political-business discourse	It resembles the scientific one	Universities, research centres or any typical place for big events and official meetings; the space being sometimes specifically designed for the forum.	The academic qualifications are optional	Yes, the audience is varied and includes scientists and representatives of the political and business world. The radio and television broadcasts attract a wide range of listeners.

Source: Author’s elaboration.

The speech topics in these forums are mostly scientific – or we could say that the tendency is to formulate the topic to *make it look* scientific – and the speeches are official and formal in the presence of a specific audience: most listeners are specialists in the

topic's field or are interested in the subject. A characteristic of the scientific-political-business discourse, that is observed during these events, is the change of space, i.e. most of them occur out of the scientific institutions. For instance, the event *Diverse São Paulo (São Paulo Diverso)*, about which we shall speak further on, occurred in the Elis Regina Amphitheatre, in São Paulo, and the *Russian Small and Medium-Sized Enterprises Forum (SME Forum)* in the Expocenter (in St. Petersburg), which was specially built for the event.

Besides that, there are people out of the academic world who participate in the scientific-political-business discourse, those who represent companies, business world or even state and governmental institutions. The status of the participants/debaters shows that this type of discourse is constituted by the inter-relation of the scientific, political and business discourse: some topics discussed during these meetings were an analogue to the scientific ones, even though the speakers were not all academic.

In order to compare the discourses which occurred during the economic forums in São Paulo and St. Petersburg, considering two ethnolinguistic communities and cultures that distinct, the concept of *tertium comparationis*, explained below, is applied.

***Tertium comparationis* and comparative analysis**

The *tertium comparationis* is a Latin expression that means “the third part of comparison”, i.e. the common quality shared by the objects of comparison: these do not need to be identical, although they should possess at least one quality in common (traditionally referred to as *tertium comparationis*). These qualities are equivalent to the “valid moments” of Bakhtin’s theory, exposed in the beginning of this paper. The concept of *tertium comparationis* may be understood as a point of proximity of objects to be compared or on the contrary, of the differences existing between them, as in the case of two distinct cultures and ethnolinguistic¹² communities.

The notion of *tertium comparationis* is used in a significant part of the theoretical approaches which perform comparative discourse analysis, such as the researches of *CLESTHIA axe sens et discours*. This research centre is experienced in comparative linguistic, cultural and discourse analysis. In the French journal “Les Carnets du Cediscor” (VON MÜNCHOW; RAKOTONOELINA, 2006), among others), one can find comparative studies about different cultures (French and English, French and American, French and Russian, etc.) based on the comparison of two, three, four or more languages and cultures simultaneously. The problem of choice of *tertium comparationis* is explicitly or implicitly discussed in almost all the contributions to the comparison issue. In most works of this school, the *tertium comparationis* is a discursive genre:

¹² In accordance with J. C. Beacco (1992, p.17), we define ethnolinguistic community as “a communication community that coincides with a linguistic/national community”.

The discourse genre often presents itself as a *tertium comparationis* in the contrastive investigation [...] This preference for the discourse genre can be explained by the qualities of the latter. The discourse genre is defined by Mikhail Bakhtin as a relatively steady type of utterance. (RIBEIRO, 2015, p.106, translation mine)¹³

In fact, as stated by Claudel and Tréguer-Felten (VON MÜNCHOW, *Les Carnets du Cediscor*, 9, 2006, PSN, p.23-37), it belongs to an *etic* point of view (following Pike's terminology¹⁴) that a type of discourse genre may be considered provisionally "the same" in two distinct linguistic contexts and cultures. According to Cislaru (2006), a same potential of semantic reference is a possible *tertium comparationis*. This theory, however, still needs corroboration, which may be obtained by the practice of comparative discursive analysis between different languages and cultures.

It's important to underline that, in comparative discursive analysis, "comparable" doesn't mean "identical", but "what gets closer"¹⁵ (op.cit, p.7-9). As it is shown by Traverso (2006), in the *tertium comparationis* everything must be a subject of comparison, including the comparison tools themselves.

For the French researchers Patricia von Münchow and Florimond Rakotonoelina (2006, p.9-17), "the most important task in the comparative studies is the relation between description and interpretation and in particular, the establishment of reliable interpretative categories to link up the description results to cultural values"¹⁶. The present study adopts this perspective.

With respect to the comparison between the two events analysed in this paper, I choose as a *tertium comparationis* the genre "economic forum session" and two of its parameters: the communication *topic* (more precisely, the evaluative emphasis and the social evaluations in the way of introducing the topic in speech) and the speakers' *status* (plus the speaker's self-presentation), which will be described further on. Within the context of speech, it is supposed that the way of introducing the topic brings important elements to our analysis proposal, for two reasons: first, because it refers to the Russian

¹³ Original in French: «Le genre discursif se présente très souvent comme *tertium comparationis* dans les recherches contrastives [...] Cette préférence pour le genre discursif s'explique par les propriétés de ce dernier. Le genre de discours est défini, par Mikhaïl Bakhtine, comme un type relativement stable d'énoncé».

¹⁴ In 1967, Kenneth Pike proposed the dichotomy *etic/emic* in anthropology and afterwards, in linguistics as a way to approach philosophical issues about the very nature of objectivity. In anthropology, in folklor studies and in social sciences and psychology, *emic* and *etic* refer to two kinds of field-work carried on and to two points of view obtained: [1] *emic*, from the subject's perspective, and *etic*, from the observer's perspective. One should admit that, at all levels – from the choice of the discursive type to the construction of the corpus and the selection of comparison categories –, we approach phenomena that seem to correlate in all the languages and cultures studied, from the *etic's* point of view as well as from the observer's.

¹⁵ Original excerpt in French: « "comparable" ne veut pas dire "identique", mais "approchant" ».

¹⁶ Original excerpt in French: « *Le plus grand chantier des approches comparatives contemporaines reste sans doute l'articulation entre la description et l'interprétation et, en particulier, l'établissement des catégories interprétatives fiables, permettant de relier les résultats de la description à des valeurs culturelles répertoriées* ».

tradition of comparative analysis between cultures, and secondly, because it concerns Volóchinov's "social horizon" and "social evaluations".

Research corpus analysis

The way of introducing the topic was chosen as a comparison parameter between the studied discourses. The complexity of the current analysis is that we are not only comparing the scientific-political-business discourse genres in two different countries, but also introducing this new type of discourse in comparison to the traditional scientific discourse. Which means that the comparison occurs at two levels. The main idea is to introduce and to explain the scientific-political-business discourse in general as a phenomenon. In this study, it is not intended to do a profound comparison of the topic, subject, thematic content and utterances' significations, as Volóchinov suggested – which may be an idea for another paper –, but the objective is to compare a way of introducing topics of the scientific-political-business discourse in both countries and to show a tendency to proximity between the scientific topic and the scientific-political-business discourse topic. The way of introducing the topic in a lecture, session or discussion is important for the speech studies, for it is constituting a manner of verbal interaction.

In Bakhtin's theory, the topic is understood as "the meaning of the whole utterance" and it's defined not only by linguistic forms but, also by the extra verbal aspects of the situation: "the utterance topic is as concrete as the historical moment to which it belongs" (VOLÓCHINOV, 2017, p.227-228). In the material analysed, we find proximities between the topics in traditional scientific and the scientific-political-business discourses. The speech topic in the scientific-political-business discourse can be an analogue to that of the traditional science, and it's introduced in two ways: firstly, the event's written program to name a session or lecture; secondly, it can be announced by the moderator, who is presenting the speakers, to introduce the topic to the listeners and to thank the sponsors. Some examples of this second way of introducing the topic follow below:

In *São Paulo Diverso*, a material in Portuguese:

1. *Presenter 1 (journalist): hello... good afternoon, everyone... please... let's sit down ... sitting down... so... we are already back to follow the panels (of the second forum) São Paulo Diverso... An Affirmative Economic Development Forum (...)* I would like to remember that this second forum São Paulo Diverso is being broadcast in real-time by Africa News portal...the web page is www.portalafricas.com.br... and our topic in this next panel is "Entrepreneurship for the Afro-descendant Population... The Relationship between the Big Companies and the Microcredit Offer" ...;

The moderator draws the audience's attention to the beginning of the event and she introduces the topics: entrepreneurship for the afro-descendant population, the

relationship with the big companies and the microcredit offer. This way of introducing the topic is common in both countries. Afterwards, another speaker, a Itaú Bank's representative, presents herself officially and confirms her competence to speak about the subject. Here, the topic introduction, the practical experience and the speaker's status are already mixed. The speaker is introducing the communication subject through her experience:

2. *Speaker 1: (...) well... good afternoon... so... first of all, thanks for the invitation... thanks for the opportunity to share, and also to exchange a bit of experience (...)* I would like to share some thoughts – I think I will speak about the topic that everyone would expect me about the most to speak– the microcredit issue (...)
I have been responsible for the sustainability networks in the bank for 5 years already now and I assumed the operation that we call inclusive business... where the microcredit is and the program with women and other stuff are...;

To emphasize her competence in one of the event's subject, namely the microcredit offer, the speaker explains: “*I have been responsible for the sustainability networks in the bank for 5 years already and I assumed the operation that...*”. This “awareness” of her position in business has to do with social psychology sphere, according to Volóchinov. The speaker shows her experience and her opinion is accepted as an authority by the audience. Examining the development of the topics analysed during the session, we see that the primacy of practical experience over theoretical knowledge is common in that type of discourse. In the genre “economic forum session”, the data relating to speech authority are marked by an experience in business sphere, and not by a theoretical knowledge relating to studies/researches conducted meticulously, as in the traditional scientific discourse.

Later, another speaker introduces the second topic of the round table, entrepreneurship for women, and makes an institutional presentation of the speaker (a Dupont's corporate representative). This kind of presentation and self-presentation is typical in the scientific-political-business discourse in both countries:

3. *Speaker 2: (...) thanks... good afternoon, everyone... secretary Prestan... thanks for the invitation... it is a pleasure to be here with you... Dupont... an American company – regardless of its French name –more than 200 years old... and we have diversity and inclusion programs all over the world... and the best definition that I have for that is diversity...it's a mix... and inclusion is to make the mix work...*

By naming his own title as a Dupont representative, the ideas exposed in his speech may be considered as the company's official position (“and we have programs...”), not only in Brazil but “*all over the world*”. In the next sentence, the speaker indicates that the topic discussed (diversity and inclusion) is already common and developed within the company that he represents. In this sense, Dupont can be considered to be

an ideological sign¹⁷ with a certain topic, content and evaluative emphasis; some of these emphases being “diversity and inclusion”, understood as positive qualities in the business world in general. It is possible to say that, in this context, the social evaluation of the represented notions is positive.

Now the examples of the Brazilian material are to be compared with the Russian ones and we’ll examine how the topics are introduced in them, with what evaluative emphases and social evaluations, and how the speakers are presented in the *Russian Small and Medium-Sized Enterprises Forum*:

1. *Moderator* (Authorized public representative of the chair of the Russian Federation for the Protection of Small and Medium-Sized Enterprises): (...) *I would like to start our work with this... to notice that the forum of this year... our traditional forum of St. Petersburg... has a very wide international representation... it now moves along at the same pace with the Finnish platform here... and we are very grateful that this year the Latin American countries are represented at a very high level... today you can hear – and we show you the countries’ top representatives – but the most important... are the people who in their own countries are responsible for the development of small and medium-sized enterprises... for the exportations... the cooperation... and it is for us... of course... a great honour... ¹⁸ ...;*

In this example, the moderator promotes the event and presents the speakers (“today you can hear... the countries’ top representatives...”), introduces the region (Latin America) and the session topics (“development of the small and medium-sized enterprises”). The way of introducing the topic can be compared with the first example of the Brazilian material; the two examples show a simple way of introducing the topic, i.e. the speaker does not put together the introduction with other rhetoric tactics or argumentation; he only announces the topic. It is observed that the two participants in these examples are not speakers but moderators; hence, we can consider that the more neutral and official way of introducing the topic belongs to the role of moderator in both countries.

In the next example, another speaker presents herself as a Yuniástrum Bank’s official and introduces the topic in her speech: entrepreneurship for women. The same manner of presenting oneself institutionally and by one’s position in the business world was

¹⁷ An ideological sign is a material fragment (e.g. sound, word, mass, colour), a product of social interaction, which may be verbal. It “is determined by the social horizon of a period and of a social group” (VOLÓCHINOV, 2017, p.110).

¹⁸ In Russian: *Ja by khotjél natchát náchu rabótu... s togó tcho... otmjéit tcho... v etom godú na fórumie... náchjem sankt-pjetierbúrjskom fórumie traditsiólnom ótchjen vysókoie miejdunaródnioe predstavitelstvo... vot sieičhá sparaliéno idut i s finnamí ploschiádka... zdies... i my ótchjen blagodárny tcho v étom godú otchjen vysókuiu / na vysókom úrovnje predstavlieny strány latínskoi amjériki... Vy siegódnja smójietie usly’ chati my priezientúiem vysókogo úrovnja predstavíteljei stran... no tcho sámoe glávnoie... imienno tiékh ljudiej kotóryje v svoikh stránakh otvjetchájut za razvítie málogo i sriéniego priedpriiátia... za éksport... za koopierátsiiu... i dlja nas eto koniétchno bolcháia tchiést...;* Translations mine.

already observed in the material in Portuguese and therefore, it is a typical characteristic of the scientific-political-business discourse in Brazil as well as in Russia.

2. *Speaker 1 (First Vice-President of the Yuniástrum¹⁹ Bank Council): (...)* good afternoon... dear colleagues... dear friends... within the scope of the Federal Government Assistance for Small Businesses... the Yuniástrum Bank highlighted today a main orientation... this promising segment... specifically in relation to this, we signed an agreement with Opóra²⁰... in close collaboration with Opóra Rossii we created, and we now actively make new products already... products directed to the support and the development of the social entrepreneurship in general... and of the entrepreneurship for women in particular (...);

In this example, we notice the evaluative emphasis in progress (“promising segment”) and in practical experience (“we now actively make new products already”).

Another way of introducing the session topic is to start it with the signing of an agreement or a covenant between the participants (the companies’ representatives or the state and government structures). We can exemplify that with the following:

Moderato (Managing Partner of the National Agency of Financial Studies): (...) we start our session with the signing of an agreement between Opóra Rossii and Yuniástrum Bank... the signing of an agreement for the support to women’s business development... this is very important... a very important initiative... and we will actually celebrate this signing(...); r²¹

In the example above, the moderator introduced some of the communication’s participants (Opóra Rossii’s and Yuniástrum Bank’s official representatives) as well as the session topic (entrepreneurship for women). This way of introducing the communication topic is recurrent in the scientific-political-business discourse but not in the traditional scientific discourse, which may be a sign of influence from the other spheres, such as political and/or business on the scientific one.

To sum up the topics discussed during both events, we have: 1. the development of small and medium-sized enterprises, microcredit, and the relationship with big companies; 2. social entrepreneurship; 3. diversity and inclusion; 4. business development for women. The coincidence of the four topics in two discourses in different languages and countries justifies the comparison between the chosen utterances, and it points out the existence of ideological similarities, thereby bringing closer the current, globalized, mode of production which is common in Brazil as well as in Russia.

¹⁹ Yuniástrum Bank (ЮниаструмБанк) – one of the biggest Russian banks (<https://www.uniastrum.ru>).

²⁰ OpóraRossii (ОпораРоссии) – a Russian public organization for small and medium-sized enterprises (<http://opora.ru>).

²¹ In Russian: *natchnióm náchu siéssiiu s podpisániia dogovóra miéjdu Opóroi Rossii i bánkom Iuniástrum... podpisániie dogovóra o poddiérjkie razvíitia jiénskogo priédprinimátielstva... eto ótchien vájno... i my na sámom diélie sobiráiemsia otmíétit éto podpisániie...*

By comparing the utterances in both languages, we notice the following characteristics relating to the introduction and the development of the topic in the scientific-political-business discourse:

Tableau 3 – The comparison of utterances in Russian and in Portuguese.

	PORT	RUS
Institutional presentation	Occurs in both languages. It is very common in this type of discourse that one presents himself/herself under the banner of the company or business: on the part of Dupont or on the part of St. Petersburg’s forum, in the present examples.	
Internationalism, international representation	Yes, positive evaluation: “and we have diversity and inclusion programs <i>all over the world</i> ” – as a confirmation of the right to speak about the subject.	Yes, positive evaluation: “our traditional St. Petersburg’s forum has a <i>very wide international representation</i> ”.
Professional (practical) experience confers authority to speech	Yes, often: “I have been responsible for the sustainability networks in the bank for 5 years already and I assumed the operation that we call <i>inclusive business...</i> ”.	Yes, positive evaluation: “in close collaboration with Opóra Rossii we created, and we <i>now actively implement</i> new products <i>already...</i> ”.
Features of oral speech	The language simulates proximity, familiarity. The lecturer may call a journalist by her name in the diminutive – <i>Claudinha</i> . The lecturer thanks personally the secretary for his invitation and doesn’t mention the event’s organizers in general, which emphasizes the importance of personal relations in the Brazilian discourse.	The language is more official and the style more conventional and formal, with more emphasis on the words “ <i>very important</i> ”, “ <i>honour</i> ”, “ <i>high level</i> ”. These words circulate in the same sentences where we find the concepts “ <i>development</i> ” and “ <i>cooperation</i> ”, which emphasizes a positive evaluation of these concepts.

Source: Author's elaboration.

The remarks were made based not only on the examples cited in this paper, but also on the comparative analysis of the material in general. The paper format, unfortunately, does not allow to show all the examples. In the comparison results, we see that social evaluations of the economic concepts such as “diversity”, “development”, “inclusion” and “cooperation” are positive in both discourses. The specific studies about the social evaluations of these concepts, in Russia or in Brazil in general, weren’t found.

Examining the speakers’ verbal interaction and the features of oral speech, we see that the Russian speech is more formal and that the speakers use resources of a more conventional style. It seems to us that this aspect comes from the Russian scientific style, for the parameters such as “logic”, “abstraction”, “generalization” and the attempt

to appear “objective” bring closer in Russia both discourses: the scientific-political-business discourse and the traditional scientific discourse (a quality that influenced the choice of the name given to this new type of discourse – *scientific-political-business* discourse). Compared to the academic speech, we see a great emphasis on professional practice and experience (of the individual or of the company or institution), which can be considered one of the most important characteristics of the scientific-political-business discourse.

In the Brazilian material, the speakers have a less formal style, they try to simulate proximity and familiarity in personal relations and give the same emphasis to practical experience. This remark concerns not only the discourse analysed, but more generally the Brazilian verbal interaction compared to the Russian one – at least, that’s our hypothesis so far. More comparative studies between the two countries would help us to elucidate this issue.

The proximity between the discourse that we examined, and the traditional scientific discourse is also observed in the topic. The subject matters discussed during the aforementioned event are related to business and economy, even if it’s possible to find very similar subject matters in the academic field. Some topics comparable to those above-mentioned, may appear in conferences, congresses and other scientific events, as we can see below. The examples are from Brazil.

1. “The microcredit offer to small and medium-sized companies” (São Paulo Diverso)

Compare with the scientific article “Microcredit impact on small business enterprising: Bancrri/SC’s case²²” [*Impacto do microcrédito junto ao empreendedor de pequenos negócios: o caso do Bancrri/SC*], Tales Andreassi, Fundação Getúlio Vargas, Revista administração em diálogo (RAD), PUC-SP, January 2004.

2. “Entrepreneurship for women” (São Paulo Diverso + Russian Small and Medium-Sized Enterprises Forum)

Compare, for instance, with Michele Maria Silva Franco’s communication, among others, “Feminine Entrepreneurship: Women’s entrepreneur characteristics in Micro and Small Companies Management” [*Empreendedorismo Feminino: Características Empreendedoras das Mulheres na Gestão das Micro e Pequenas empresas*], presented in VIII EGEPE (Encontro de Estudos em Empreendedorismo e Gestão de Pequenas Empresas), Goiânia, 2014²³.

3. “Diversity and inclusion in business” (São Paulo Diverso)

Compare with the conference cycle “Rethinking Brazil” (*Repensar o Brasil*), that took place for the 70 years of FEAUSP. Among the topics discussed, there were: “Corporate integrity in Brazil” and “Inequality in Brazil”²⁴.

²² <http://revistas.pucsp.br>. Access in: 12 oct. 2016.

²³ <http://www.egepe.org.br>, Universidade de Passo Fundo. Access in: 12 oct. 2016.

²⁴ The material used was obtained from the faculty’s own website: <http://www.fea.usp.br>. Access in: 12 oct. 2016.

The event in question denotes an interest in the subject matter already discussed by USP – without any direct connection between these events, which shows us that the subject matter is relevant for both spheres (the scientific and business ones) in present-day Brazil (year 2016).

4. “The development of small and medium-sized companies” (São Paulo Diverso + Russian Small and Medium-Sized Enterprises Forum)

Compare with the paper “Developing small and medium-sized companies in cluster”²⁵ [*Desenvolvimento de pequenas e médias empresas em cluster*], Marcos Albertin, Márcio Soares Torres, Federal University of Ceará.

Concerning the scientific paper on the development of small and medium-sized companies, we see that the subject matter is approached in both countries, even if there is no direct link between the authors from the Federal University of Ceará and the organizers or speakers from *São Paulo Diverso* and the *Russian Small and Medium-Sized Enterprises Forum*. This subjects’ comparison list is too long; in short, we notice the proximity between the topics’ choice and formulation in the traditional scientific discourse and scientific-political-business one, which seems to reinforce our hypothesis of the similarity between the subject matters of both types of discourse and the mutual influence of the scientific sphere and the business sphere, in the second case.

Another comparison parameter of the scientific-political-business discourse is the speaker’s *status*, in which we can notice the proximity with the traditional scientific discourse again. We also notice a tendency (almost a fashion) among the government structures representatives to acquire, or to seek to obtain, an academic qualification such as a PhD or, at least, a master’s degree. In this sense, we can see an interaction between the three fields involved in the discourse formation: the academic, political and entrepreneurial spheres. In most events, the speakers represent these three spheres and have *status*, i.e. they possess the necessary academic qualification to confer reliability to their speeches. Sometimes, the speakers represent the three spheres simultaneously, by showing an evident dialogue between them. This idea merges the three spheres and agrees with Bakhtin’s remark on the unification of the different spheres of human activity, which takes place in the individual: “The three fields of human activity – science, art and life – only acquire unity in the individual who incorporates them to his own unity...” (BAKHTIN, 2013, p.22). In our material, we observe other spheres (science, business, politics and life), although the essence of the comparison remains the same.

In these events, we find two possibilities: first, they bring together participants with qualifications and status from different spheres; secondly, one and the same person can combine these spheres, thereby presenting them simultaneously (for instance, science and business, or science and politics). We can see some examples of that in the corpus of this study.

²⁵ <http://www.abepro.org.br>. Access in: 12 oct. 2016.

1. The speaker's status is from different areas, even though they treat the same subject and get together in the same session. In the *Russian Small and Medium-Sized Enterprises Forum* one can find representatives:

A. Of the academic world, like Dr. Yevgiénya Sóboleva and Dr. Andriéy Sharóv, who are PhD in Law;

B. Of the political sphere and of the state and government structures, for instance, Jessy C. Petite-Frère, Trade and Industry Minister of Haiti; Serguéy Movtchán, St. Petersburg's vice-governor, and Yevguéniy Zhikh, spokesperson of the National Committee for Promoting the Economic Cooperation with the Latin-American Countries in St. Petersburg;

C. Of the executive area, for instance, Alexánder Tarabtcév, Trade Department and Investments Operations Managing Director; PJSC "OFC Bank"; Yevguéniy Droféiev, OOO "Metalloproduktciya"'s Chief Executive Officer, among others.

2. Second occurrence (the presence of at least two or three spheres – science, politics and business – in the *status* of the same participant): when a speaker holds two posts or works for the government and for a university simultaneously, when a person from the business world possess an academic qualification, etc. In *São Paulo Diverso*, for instance, Claudia Alexandre²⁶ presents herself in the following way: "Broadcaster and TV presenter; event manager (SENAC); professor at HOTECH Faculty; she received a bachelor's degree in Social Communication-FIAM-SP; she's a specialist and a postgraduate in Religious Sciences (PUC-SP); she studies the Afro-Brazilian culture (symbols, rites and memory)". The same emphasis on academic qualification is demonstrated by another speaker, Denise Hills: "Denise Hills received a bachelor's degree in Business Administration and holds a specialization in Economy by FIPE – University of São Paulo's Economic Research Institute Foundation. She has 24 years of experience in financial market, always operating in the field of Treasury, Asset Management, Financial Planning and Wealth Management..."²⁷.

As for the *Russian Small and Medium-Sized Enterprises Forum*²⁸, the moderator of the session on the collaboration between Russia and Latin-America, Dr. Carlos E. Chanduvi-Suarez, combines two spheres in his status: business and academia. He holds a PhD in Advanced Materials as well as holds a Chief post in the Latin America and the Caribbean Office UNIDO (United Nations Industrial Development Organization). Another participant, Ricardo Bosnic Kuscevic, PROChile's²⁹ development sub-director, shows in his official³⁰ profile two spheres of dialogue: business and science. He highlights an education in three universities: France's National School of Administration

²⁶ <http://claudinhaalexandre.blogspot.ru/2014/10/sao-paulo-diverso-forum-de.html>. Access in: 12 oct. 2016.

²⁷ http://www.sustainablebrands.com/users/denise_hills#. Access in: 12 oct. 2016.

²⁸ Translations mine.

²⁹ An institution from the Ministry of Foreign Affairs of Chile in charge to "promote the exportation of Chilean consumer goods and services, and to contribute for the dissemination of foreign investment and to promote tourism". <http://www.prochile.gob.cl>. Access in: 14 oct. 2016.

³⁰ <http://www.prochile.gob.cl>. Access in: 14 oct. 2016.

(ENA), University of Heidelberg and University of Chile. The speaker Manuela Gomes de Lima is the head of the intelligence unity on business and corporate strategy of APEX Brasil³¹. She also publishes papers on economic and scientific topics related to her field of studies, among others: “International trade and Brazil’s competitiveness: a comparative study using the Constant-Market-Share’s methodology for the 2000-2011 period” (DOI 10.1590/1982-3533.2015v24n2art7) in collaboration with Marcos Lélis, professor of the Post-graduate Program in Economy of the University of Vale do Rio dos Sinos, and André Moreira Cunha, professor from Economy and International Relations Department³².

The examples that were presented show a dialogue between the three spheres (business, politics and science) regarding the speaker’s *status*, which was chosen as a comparison parameter between the two events in Brazil and in Russia.

Final considerations

The general aim of this paper was to describe a new and popular type of discourse in the modern reality. Although it’s relatively young, this scientific-political-business discourse is more and more common all over the world. Some examples of this type of discourse are found in economic forums, round tables, lectures and other official events, wherein the intersection of different spheres occurs: business (corporative), politics and science.

The second task of this study was to compare discourses from Brazil and Russia. The theoretical-methodological approach was of Bakhtinian inspiration and united studies from Brazil, France and Russia. The French side is represented by the ideas of CLESTHIA Research Group and the notion of *tertium comparationis*, elaborated by it. The study discusses the two axes of Bakhtin’s theory: ideology (by examining the notions of “social horizon” and “social evaluations”) and social psychology, i.e. everyday ideology.

The dialogical (semantic-axiological) relations between the scientific, political and business spheres, in accordance with the analysed data, can be observed in the following parameters: topic, event localisation and speaker’s status. The analysis of these parameters allows us to distinguish the traditional scientific discourse, considering the dialogical nature of scientific communication in general, from the scientific-political-business discourse. The scientific-political-business discourse refers to the scientific topic, although it takes place outside of the scientific institutions and with speakers from other spheres (usually from business or politics). The speaker’s *status* is influenced by

³¹ “The Brazilian Trade and Investment Promotion Agency (Apex-Brazil) works to promote Brazilian products and services abroad and to attract foreign investment to strategic sectors of the Brazilian economy.”. <http://www.apexbrasil.com.br>. Access in: 14 oct. 2016.

³² “Brazil in face of Chinese rise: the risks of regressive specialization”, also in collaboration with Marcos Lélis and André Cunha, besides Julimar Bichara, professor at the Autonomous University of Madrid (Spain).

the scientific sphere, for in the scientific-political-business discourse a significant part of the lecturers possesses academic qualifications, and they even represent scientific institutions sometimes. From these parameters, we examine Bakhtin's "scientifically valid" qualities, and two of them – the topic which is analogous to the scientific and to the academic qualification ones – are considered parameters to perform a comparison.

In this type of discourse, we notice the proximity of evaluative emphasis in similar genres, in the modern reality of both countries. For both, the evaluation of "progress", "practical experience", of the concepts of "diversity", "development", "inclusion" and "cooperation", "internationalism" and "professional experience" is positive. The hypothesis is that there's an "apparent" ideological similarity due to global economic relations, which are common in both countries, and which affect in turn the socio-political regime and the verbal interactions.

There are different ways to present the topic of oral communications: 1. written in the event program; 2. by the moderator of a discussion or a lecture, and 3. by signing an agreement or covenant between the participants (companies' representatives or state and government structures' representatives). The first two ways of introducing the topic are common in the two discourses compared in this study: the traditional scientific discourse and the scientific-political-business discourse. The third one is more common in the scientific-political-business discourse, and it has not been noticed in the traditional scientific discourse. The most common is to introduce the topic through the speaker's competence and practical experience; in the scientific-political-business discourse, the practical experience confers more authority to the speaker who has theoretical knowledge, although many speakers seek out academic qualifications as a way to seem like authorities in the matter.

To legitimate business practices, the scientific-political-business discourse intends to take over the reliability status that scientific arguments possess in modern world, even if that discourse is not necessarily scientific when compared to the traditional scientific discourse. The comparison of topics from scientific-political-business discourse with topics from the traditional scientific discourse allows us to confirm that the speech topic, in this type of discourse, tends to appear scientific. The topics presented in the forums are also developed by science; however, the scientific-investigative/theoretical-argumentative tone does not participate in the presentations. In fact, the topics are developed in two different ways: on a scientific level as an argumentative subject matter, and on a business level as a practice. The data relating to speech authority are marked in the genre "economic forum session" by the experience in the business sphere, and not by academic theoretical knowledge. Another factor that deserves attention is that the scientist must be unbiased and rigorous in the analysis of a vast databank, whereas the speaker not only does not present the same variety and rigour (usually treating the company's own data as well as the statistics that corroborate them), but is not unbiased neither, i.e. the evaluative emphasis is always positive for the very business practices that he represents/executes. Hence, the inference that this genre subordinates the scientific practice to the business one.

In both countries, one can see that most of presentations and self-presentations in the studied discourse are institutional, thereby representing an institution or company. In the scientific-political-business discourse, the names of the companies (they are generally big and well-known) are an ideological sign with a certain topic, content and evaluative emphasis. By comparing the modes of verbal interaction in the genre “economic forum session” in both countries, we notice that, in Brazil, the communication situations intend to simulate familiarity in treatment. In Russia, the communication situations esteem formality and distance.

At the end of this study, we can consider that event topics have a potential to be developed by science. The lecturers use their academic qualifications to legitimize their practices, possibly due to the status that science has reached in the contemporary world as the voice of “truth”. The same tendency is observed in Brazil and in Russia.

The relevant remark, for the moment, is that the influence between the three spheres analysed in this paper is mutual, yet asymmetrical; and that they establish dialogical relations in the Bakhtinian sense. For the time being, we search a methodology that allows us to compare similar discourses in different languages and ethnolinguistic communities. The subject still needs to be developed and detailed in the future, by taking examples from other languages and discourses.

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GLUSHKOVA, M. Uma análise comparativa do discurso científico-político-empresarial no Brasil e na Rússia. *Alfa*, São Paulo, v.62, n.3, p.443-465, 2018.

- *RESUMO: O objetivo desse artigo é descrever e analisar um tipo de discurso relativamente jovem: o discurso científico-político-empresarial, assim como mostrar exemplos dele em dois países, Brasil e Rússia. O artigo aborda o fenômeno do diálogo do discurso científico, na sociedade contemporânea, com outras esferas da atividade humana – a da política e a dos negócios, analisando assuntos pautados em dois fóruns de desenvolvimento econômico (em São Paulo e São Petersburgo). A pesquisa apoia-se nas ideias bakhtinianas sobre o diálogo e na análise discursiva e comparativa realizada pelo grupo CLESTHIA axe sens et discours da Université Sorbonne Nouvelle, em Paris. Um dos conceitos desenvolvidos por este grupo é o tertium comparationis (ou elemento de comparação), que é usado na análise deste trabalho. Os resultados apontam para a apropriação, por parte do discurso dos negócios, da autoridade conferida à ciência para validar práticas empresariais e, também, para a semelhança ideológica, fruto das relações produtivas globalizadas, que se estabeleceram nos dois países.*
- *PALAVRAS-CHAVE: Análise do discurso. Discurso científico-político-empresarial. Discurso científico tradicional. Comparação de discursos.*

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“SUCH ELOQUENCE, SUCH FALSEHOOD”: REPETITION AND RECATEGORY IN SPEECHES DELIVERED BY FERNANDO COLLOR

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- **ABSTRACT:** This article focuses on a specific type of repetition that turns out to be particularly frequent in the political speeches delivered by Fernando Collor de Mello during the 1989 presidential campaign in Brazil: syntactic parallelisms. By adopting a qualitative and interpretive perspective on the phenomenon, we use the framework of Conceptual Blending Theory (FAUCONNIER; TURNER, 2002) to investigate the functions of this strategy in a corpus constituted by the first three electoral programs aired by the candidate. Our analysis suggests that syntactic parallelisms play two important argumentative roles: on the one hand, they trigger a process of recategorization of conceptual/discursive entities; on the other hand, they allow the speaker to present the result of this process as backgrounded information, thus reducing the likelihood of rebuttal and making underlying ideology invisible. By using such cognitive lens to look into meaning-making processes, we show how the former president’s performances manifest certain premises of mass communication, bringing closer together the fields of politics and entertainment.
- **KEYWORDS:** Political Discourse. Syntactic Parallelism. Conceptual Blending. Mass Media. Fernando Collor.

Introduction

In addition to their role as an emblem of the redemocratization process taking place after a long-lasting military regime, the 1989 Brazilian elections displayed a distinctive interactional trait: after a thirty-year hiatus, a now widespread means of mass communication, the television, would work as agent and vehicle of a monumental

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presidential campaign. At the time, Brazilian society was experimenting with new modes of communication and political marketing in the lines of what has conventionally been termed mass communication. In this paper, we investigate a persistent meaning-making mechanism in the discursive performance of Fernando Collor de Mello, the then-dominant presidential candidate.

At first unfamiliar to most voters and supported by an inexpressive political coalition, Fernando Collor succeeded in leading the voting polls since the very first months of his campaign. He was ultimately elected after the second electoral round. Collor remained president until 1992, when, faced with the parliamentary approval of an impeachment process, he chose to resign from his position.

As sustained by Biar (2007)¹, a quantitative scrutiny of Collor's electoral programmes quickly illuminates the pronouncedly repetitive structure of all his speeches. In this study, we shall zoom in on a specific kind of syntactic repetition. As we aim to demonstrate, this kind of repetition, materialized in a series of parallelistic syntactic forms, serves two significant argumentative functions: it operates the recategorization of certain conceptual/discursive entities; and it enables the result of this process to be presented as backgrounded data. In order to develop our analysis, we will resort to the theoretical framework of Conceptual Blending Theory (FAUCONNIER; TURNER, 2002), positioned within the broader enterprise of Cognitive Linguistics.

Our analytical corpus is composed of the three first electoral programmes aired by Fernando Collor along the first semester of 1989. Such programmes, with an average duration of one hour each, were produced by the candidate's political colligation (PNR-PTR-PSC-PST). They all present Collor as their protagonist. The programmes were initially recorded onto VHS tapes at the time of the campaign; they were then turned digital in 2006 for research purposes; and later transcribed according to a set of conventions adapted from interactional studies². Our choice of data is justified by the particular impact of these three programmes upon the sudden escalation of Collor's popularity. According to polling sources³, once the programmes had been broadcast, Collor's numbers, measured in terms of voting intentions, skyrocketed from 9% to 32%, thereby consolidating the prominence levels which later made him president.

The paper is organized as follows. The next two sections briefly review the relevant literature: while the second Section focuses on discursively oriented works on argumentation and repetition, the third Section turns to cognitivist studies which draw connections between argumentation and conceptual blending. The fourth Section

¹ The data discussed in this paper were previously analyzed in Biar (2007). Here, in the light of recent understandings on the topic of Conceptual Blending Theory, we proceed to a new analysis of one of the phenomena discussed in that occasion.

² Transcription conventions: word:: (prolonged sound); word- (abrupt interruption of utterance); WORD (emphasis upon syllable or word); word.. (pause lasting less than one second); word... (pause lasting more than one second); °word° (low volume); >word< (fast-paced speech); <word> (slow-paced speech).

³ IBOPE research, published in April 1989; IBOPE research, published in May 1989; Datafolha, IBOPE and Gallup research, published in June 1989.

then presents our analysis of the syntactic parallelisms in Fernando Collor's speeches. Finally, the fifth Section offers our final remarks.

Repetition in argumentative texts

In the 1990s, a few authors investigated the phenomenal growth of Fernando Collor's candidacy in terms of the marketing strategies adopted by the candidate throughout his campaign. According to Figueiredo et al. (1997), the 1989 elections produced unprecedented levels of engagement, on the part of the Brazilian scientific community, with the study of electoral campaigns as variables in the analysis of political outcomes. In a particularly well-known journalistic work, Conti (1999) highlighted Collor's campaign's accurate use of spectacularization as a weapon in this new era of televised politics.

Indeed, a far from negligible dimension of the so-called "Collor phenomenon" is the way his campaign successfully adapted to what is commonly known as mass culture – in other words, the new meaning-making and communication instruments aligned with the logic of market economy and of the characterization of populations from "developed" countries as "consuming publics" (to that respect, see, for instance, COSTA LIMA, 1990). In that sense, a number of *mass media*, the agents of such new forms of communication, attempt to encapsulate their offers and information into simple, quick, persistent and multimodal messages which can be assimilated as entertainment. From that perspective, the "Collor era" may be regarded as an efficient reaction to the overlapping of consumerism, entertainment, and politics.

Swiftness and multimodality might readily be seen as part and parcel of the contemporary landscape of mass communication. The same, however, cannot be said of traits like simplicity and persistence, the latter a recurring feature of markedly repetitive speeches, such as Fernando Collor's. Since Aristotle's rhetoric, it has been argued that preplanned public speeches tend to re-elaborate certain characteristics typically linked to "ordinary language". Oratory borrows what could otherwise be seen as impoverishing and tiresome and turns it into a tool for clarity and misleading spontaneity. In the process, syntactic inversions, long sentences and pronominalizations give way to repetition and reformulation.

Such is also the guiding thesis of classical interactional studies such as Tannen (1989) and Johnstone (1991). Tannen contends that strategies such as the use of repetition and parallelism in public discourse recreate the fluidity, the engagement and the drama of spontaneous conversation; reiteration also softens discourse's lexical density, i.e., the amount of new information, which in turn optimizes processing. Johnstone, on the other hand, offers a culturally informed explanation of the use of syntactic parallelisms in public Arabian argumentative speeches. According to her, repetitions which reinforce an idea are related to an inherent quality of argumentative practices within strongly hierarchized societies, traditionally grounded on religious foundations. In such groups,

rhetoric is based not on quintessentially Western arguments, but on the reiteration of one idea across a series of different images and formal structures. In the textual practices analyzed by Johnstone, stating something again, and again, and again would be enough for a truth effect to be produced. Besides, she regards the use of syntactic parallelisms as a productive resource for the reconstruction of semantic categories.

Following in Johnstone's footsteps, this article aims its attention at the argumentative force of syntactic parallelisms, with a particular emphasis upon the cognitive operation which triggers the categorization of conceptual/discursive entities. Yet there are a few divergences between this work and the others we have cited: (i) in case Johnstone's thesis might suggest a difference between Arabian and Western texts, we shall discuss an analogous function in Westernized political speeches, here epitomized by Collor's figure; (ii) we shall resort, as already stated, to a theoretical framework based on the theory of mental spaces; (iii) we shall argue that the categorization produced by such an operation typically presents itself as a piece of information shared by audience members, thus engendering a feeling of consent and broadening its persuasive appeal.

Conceptual blending in argumentative texts

The discovery of the cognitive operation known as *conceptual blending*, as well as of its regulating principles (FAUCONNIER; TURNER, 1998, 2000, 2002, 2008), has been a welcome byproduct of the research efforts developed around the Theory of Mental Spaces (FAUCONNIER, 1994, 1997; DANCYGIER; SWEETSER, 2005; OAKLEY; HOUGAARD, 2008). In a word, mental spaces are transitory cognitive structures, presumably associated with working memory (FAUCONNIER, 2010), which allow for the storing and manipulation of cognitive entities activated through linguistic and non-linguistic stimuli. Hence, a sentence like "In the picture of Dilma's inauguration, Temer does not seem happy⁴" will lead to the construction of two mental spaces: a Base Space (or Reality Space), in which Dilma Rousseff and Michel Temer are represented in the state they are in today (as ousted president and president-in-office, respectively), and a Picture Space, which contains representations of Dilma and Temer as they were being photographed (that is, in the condition of newly-elected president and vice-president, respectively). Crucially, the interpretation of the sentences presupposes that the reader/listener will establish links between the two mental spaces, allowing for the introduction of the idea that the "two Dilmás" and the "two Temers" are, in a particularly sensitive way, the same person.

One of the major discoveries made during the development of the Theory of Mental Spaces, and pioneeringly discussed in Fauconnier (1997, chapter 6), was that referents

⁴ Except in the case of explicitly named references, the sentences used for exemplification purposes in this section were made up by the authors, and are of their full responsibility. In this last case, we present contemporary adaptations, based on the current Brazilian political scenario, of classical examples from the cognitivist literature.

included in distinct mental spaces could be projected onto a same mental space, and thus, imaginatively integrated into a single scenario. This cognitive operation, known as *conceptual blending*, is illustrated in a sentence such as “If Fernandinho Beira-Mar were a member of PSDB, he would be free”. As readers can discern, the sentence not only triggers the creation of two mental spaces – one related to the Red Command criminal faction, in which the representation of Fernandinho Beira-Mar is located, and another related to the PSDB political party, which features representations of many well-known Brazilian politicians. It also activates the selective projection of elements from these two spaces onto a third one, known as blend space, in which Beira-Mar is represented as a politician whose filiation to PSDB secures his freedom.

To the extent that it accounts for the construction of imaginative scenarios and counterfactual worlds, it is hardly surprising that conceptual blending has been utilized in works dealing with literary, humoristic and persuasive texts. Pinheiro and Nascimento (2010), for instance, sustain that the conceptual compression effect generated by blending adds to the argumentative effectiveness of texts from different genres. Consider the following advertisement:

Figure 1 – Advertisement making use of conceptual blending



Source: campaignsoftheworld.com.

The image depicts a peculiar episode of sexual interplay: although there seem to be only two people involved, a profusion of arms is visible. The text clears up the mystery: by sleeping with someone, you are, indirectly, interacting with that person’s previous partners. Interestingly, the image constructs such interactions *as if* they were direct: if, in the real world, each individual is only indirectly related to his/her partner’s former partners, in the fictional (blended) universe created by the image, events unfold as though firsthand, unmediated contact with such previous partners were indeed possible. Pinheiro and Nascimento (2010) suggest that the compression of

several real scenarios (a series of individual sexual relations) into a single imaginary situation (a single relation with several partners) leads to the subjective experience of *global insight* (FAUCONNIER; TURNER, 2000, 2002), which allows readers to immediately and intuitively apprehend the contents of the ad. As a result, odds of a successful adoption of the campaign's recommendation ("Get tested for HIV") are increased.

Along the same lines, Coulson and Pascual (2006) resort to the apparatus of Conceptual Blending Theory to investigate texts circulated by "pro-life" North-American activists – individuals and organizations which oppose the legalization of abortion⁵. The researchers examine passages such as the following:

(2) If you were born after 1973, about 30% of your friends and relatives are missing. Since the Supreme Court approved legal abortions 30 years ago, nearly 1 of every 3 babies was aborted. That means 43 million US children, teens, and young adults are missing. While we know how all of them disappeared, we will never know what they had to offer. Life. See what we've been missing.

As outlined by the authors, the above text is part of a commercial developed by a non-profit organization named Virtue Media. The commercial features a woman who places a milk carton on the ground; the carton, it is revealed by a close-up, shows the picture of a missing child, accompanied by details such as the child's age, height, and last known whereabouts. It is only after the exhibition of this image that the voice over enunciates the words in (2).

According to Coulson and Pascual's (2006) analysis, the ad prompts the blending of elements pertaining to two distinct mental spaces: the real world, in which a number of fetuses have been aborted across decades (since 1973); and a counterfactual world, in which such fetuses were in fact born. The blending presupposes that each of the aborted fetuses (Mental Space 1, real world) is associated with the individual it would have grown up into had the abortion never taken place (Mental Space 2, counterfactual world). Once the link has been formed, the referents are projected onto the blend space, which culminates in the creation of a fictional world inhabited by "missing people"⁶. The authors maintain that the reframing of *aborted fetuses as missing people*, carried out by means of the blending process, is what renders the ad particularly effective, insofar as its designers are able to evoke "affective responses consistent with their argumentative goals" (COULSON; PASCUAL, 2006, p.155).

In line with the two studies briefly outlined above, this work resorts to Conceptual Blending Theory in order to investigate the persuasive allure of argumentative texts. Unlike such works, however, our analysis focuses on the cases in which the blending operation sets off a recategorization, i.e., in which it inserts certain conceptual/discursive entities into unexpected categories. We address such cases in the next section.

⁵ By virtue of a Supreme Court decision, abortion has been legal in the United States since 1973.

⁶ The ad is particularly skillful at exploring the semantics of the adjective *missing* ("unseen", "gone", "lost", "absent").

Data analysis: blending and recategorization in Fernando Collor's speeches

As is the case with most argumentative speeches delivered before vast audiences, the ones given by Collor and scrutinized in this study make use of an extensive array of repetition strategies. Having said that, for the purposes of this paper, we shall foreground but one of such techniques: the use of syntactic parallelism, defined as the juxtaposition of two or more grammatically (structurally) identical textual sequences. As we conceive it, syntactic parallelism does not necessarily include the reiteration of lexical material – it is solely defined as the partial or complete repetition of the structure of a clause or sentence.

A careful analysis reveals that Collor's discourse engages two kinds of parallelism. In the first one, elements pertaining to a same semantic category are juxtaposed within a shared syntactic structure, thus evoking the mere enumeration of relatable elements. This is exemplified in bold in (1):

- (1) (...) and to hear from politicians
what they have got to offer
for instance,
a solution **to health,**
to education,
to transport,
to nutrition,
to foreign debt,
to foreign debt,
to domestic debt,
to corruption,
to impunity...

In this paper, however, as announced in the introduction, it is our wish to lay emphasis on a second kind of parallelistic structure: one in which, by means of the juxtaposition of elements which share no obvious categorial correspondence, a process of recategorization is triggered. Consider the elements in bold in example (2):

- (2) [...] as long as we lack consolidated political parties,
committed political parties ((emphasis on gesticulation)),
which do... ((emphasis on gesticulation))
which exercise... ((emphasis on gesticulation)) the speech,
which during their campaigns,
with such eloquence,
with such falsehood, ((emphasis on gesticulation))
they make use of.

We contend that this type of syntactic parallelism fulfills two functions in the speeches under analysis: (i) it promotes the recategorization of conceptual/discursive entities and, simultaneously, (ii) it presents the result of that recategorization as backgrounded data. Arguably, the two functions stand in direct opposition to each other. On one side, the modification of an entity's categorial belonging is attempted; on the other side, the new classification is presented as consensual, or, at the very least, as having been previously established. Both functions increase the argumentative force of such texts.

In example (2), the eloquence of politicians “during their campaigns” is identified as a “falsehood”. A noteworthy description, first for not being obvious: not every eloquent speech is false (or deceitful), and not every deceitful speech is eloquent. In other words: neither is the property of ELOQUENCE imperative for the definition of the FALSEHOOD category, nor is the opposite true.

Yet the above passage defies such a logic to the extent that it seems to suggest that the eloquence of any given speech is admissible as external evidence of its inveracity. The interpretation of the passage assumes that listeners and readers will now apprehend the ELOQUENCE abstract entity as constitutive of the FALSEHOOD category.

By which means, however, is such a recategorization accomplished? To answer this question, it is useful to consider Fauconnier and Turner's (2002, chapter 8) analysis of sentences such as “Paul is the father of Sally” and “Vanity is the quicksand of reason”, both taken as manifestations of the grammatical structure now known as XYZ. To Fauconnier and Turner, examples such as these activate a process of conceptual blending, which begins by setting up two mental spaces: the first (Space 1) specifies particular entities (such as PAUL and SALLY), whereas the second (Space 2) predicts general roles (such as FATHER and DAUGHTER)⁷. Once such spaces have been established, roles and entities are correspondingly mapped and then projected onto the blend space. Interestingly, although the grammatical structure predicts but three explicit nominal elements (schematically referred to as X, Y and Z; for instance, “Paul”, “father” and “Sally”), the blending process it sets in motion involves four conceptual elements – the fourth element, W, being pragmatically inferred⁸. As a result of the blending process, the existence of a specific relation between X (e.g., “Paul”) and Z (e.g., “Sally”) emerges as part of the interpretive movement.

In this work, we would like to suggest that parallelistic syntactic structures, such as the one in (2), trigger a role-value compression process, via conceptual blending, akin to the one taking place in XYZ constructions. There are, however, two crucial differences: first, the syntactic parallelism specifies the existence of a class-member, hypernymic relation between the entities involved⁹; second, the syntactic parallelism

⁷ Please note that, in the second example, “quicksand” figuratively represents the role of *hidden obstacle on the road*.

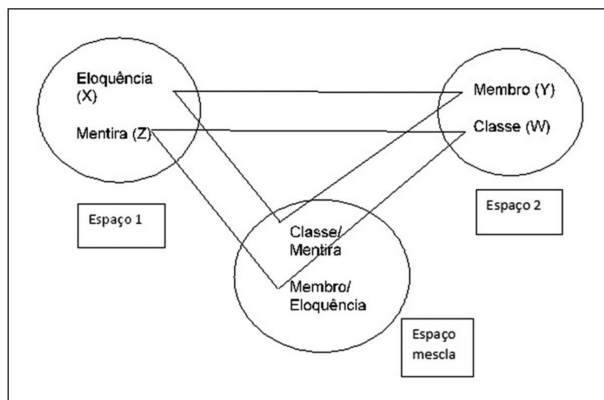
⁸ In “Paul is the father of Sally”, the W element, as already stated, is the role of DAUGHTER; in “Vanity is the quicksand of reason”, it is the role of the traveler.

⁹ As for the XYZ construction, this is certainly not mandatory (as shown in “Vanity is the quicksand of reason”), although it might sometimes happen (for instance, in a sentence like “The bee is the Einstein of insects”).

leads listeners/readers to *accommodate* the role-value compression by constructing it as a piece of pre-given information¹⁰.

Let us now turn to the highlighted excerpt in (2). At first, it is productive to stress the similarities between the processes it triggers and the ones typically associated with the XYZ construction. To accomplish that, let us consider the following representation of the blending process underlying the construction of meaning in (2):

Figure 2 – Representation of the conceptual blending of the parallelistic sequence in (2)



Source: author’s elaboration.

The above representation evinces the resemblance between the XYZ construction and the parallelistic syntactic structure. As shown in the diagram, the highlighted sequence in (2) also promotes the construction of two mental spaces, so that one of them represents particular entities (i.e., ELOQUENCE and FALSEHOOD) and the other one, general roles (i.e., CLASS and MEMBER). Additionally, the entities are once more linked to their respective roles – in other words, a correspondence is installed between elements pertaining to different mental spaces – and subsequently projected onto the blend space. Finally, the interpretation which emerges in the blend space is markedly analogous to the one usually associated with the XYZ construction. It consists of an understanding that the conceptual element X (in this case, ELOQUENCE) bears a specific relation to the conceptual element Z (in this case, FALSEHOOD).

If the “cognitive stunts” (FERRARI, 2012) underpinning meaning-making in (2) are conspicuously similar to the ones in XYZ constructions, the two linguistic forms are decidedly distinct. The most noticeable difference lies in the fact that this parallelistic structure predicts but two nominal elements, expressed by the variables

¹⁰ The notion of accommodation is used in the studies of presupposition to designate situations in which a piece of information is codified as backgrounded even though it is not a part of interlocutors’ knowledge (LAMBRECHT, 1994). The accommodation of presuppositions may be interactionally explored in different ways. We shall return to that point presently.

X and Z, whilst the XYZ construction, as its name indicates, requires the additional lexical specification of the Y element. We view that discrepancy as evidence that, in the case of parallelisms, it is the syntactic structure itself that serves as a cue to the construction of Space 2. In other words, the semantic coincidence is suggested by the formal coincidence: the listener/reader assumes¹¹ that the repetition of the formal pattern points to the construction of a mental space in which the roles CLASS and MEMBER ought to be represented. Certainly, if the contents of Space 2 are semantically, and not lexically, signaled, it follows that they are not amenable to alteration: the parallelistic syntax in focus evokes the representation of a hypernym-hyponym relation. Such is the backbone of the recategorization process activated by the construction: given the lack of any lexical representation of the Y element, the meaning arising in the blend space will always be that X *is a member of the class defined by Z*¹². We are hereby suggesting that, in example (2), the resulting interpretation is that *eloquence is a form of falsehood*¹³.

A further formal difference between the models is this: in the case of parallelistic structures, the nominal elements corresponding to X and Z do not occupy distinct syntactic positions and are not joined, directly or otherwise, by a copulative verb. This carries a crucial implication: if, in the case of the XYZ construction, the copulative verb is the linguistic cue triggering the projection between Spaces 1 and 2, in the case of the parallelistic structure the same task will fall to the reiteration of the syntactic pattern.

The fact that *the projection between Spaces 1 and 2* is not directly signaled by a lexical item, but indirectly inferred by means of the parallelistic structure, evinces another key feature of the construction: the fact that the recategorization it sets off is constructed as *presupposed*. What follows is that, from a pragmatic point of view, parallelistic sequences do not *predicate* the existence of a hypernymic relation between X and Z; they *presuppose* it.

Naturally, in an interactional situation such as the one in (2), the speaker does not need to assume his/her interlocutors to be familiar with the conceptualization of eloquence as a form of falsehood. Instead, it is that very categorial belonging that is rhetorically exploited and linguistically codified as backgrounded information. The choice affords an obvious rhetorical advantage: it shields the (new) categorization from rebuttals and counter-arguments, i.e., it prevents disputes around the meaning constructed (or rather, implied) by the parallelistic sequence. If the speaker had opted to straightforwardly predicate the existence of a necessary relation between X and Z (“the eloquence of politicians is a form of falsehood”), he would have created an interactional opening for the proposition to be negotiated – and possibly refused.

¹¹ Of course, this is not a conscious assumption, but something in the realm of implicit and procedural knowledge.

¹² In other words, the parallelistic structure does not exhibit an open slot for the instantiation of lexical items which could express different kinds of relation. This is a way in which the pattern we examine diverges from the XYZ construction analyzed by Fauconnier and Turner (2002): while the latter prompts the construction of *some kind of* construction between X and Z, the latter specifies the existence of a *member-class (hypernym-hyponym) relation* between X and Z.

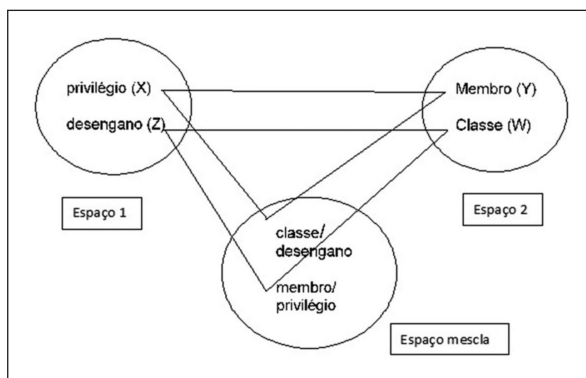
¹³ It is not our claim that this description thoroughly explains the processes and forms of knowledge mobilized for meaning-making in the highlighted passage in (2). It would also be crucial to consider our encyclopedic knowledge, according to which falsehood is a frequent, albeit not indispensable, feature of eloquent speeches.

Let us now turn to a similar example:

- (3) We must seek solidarity,
we must seek social justice,
as cornerstones of the edification of a new society,
a society in which there are fewer privileges,
a society in which there are fewer disappointments,
a society in which we can all live fraternally,
within the solidary spirit of Christianity and of the Christian Social Party.

In example (3), there are three parallel structures. In all of them, a noun phrase (“a society”) is modified by a relative clause. As we compare the first two structures, the commonalities between (3) and (2) stand out: once again, we see a parallelistic structure which can productively be taken as triggering recategorization via conceptual blending. In this case, Space 1 comprises the elements PRIVILEGES (X) and DISAPPOINTMENTS (Z), whereas Space 2 contains the referents activated by default by the parallelistic structure: MEMBER (Y) and CLASS (W). After the mapping of mental spaces and the selective projection of referents onto the blend space have been carried out, as shown in Figure 3, the resulting interpretation is that *privileges are a form of disappointment*.

Figure 3 – Representation of the first step of the conceptual blending process of the parallelistic sequence in (3)

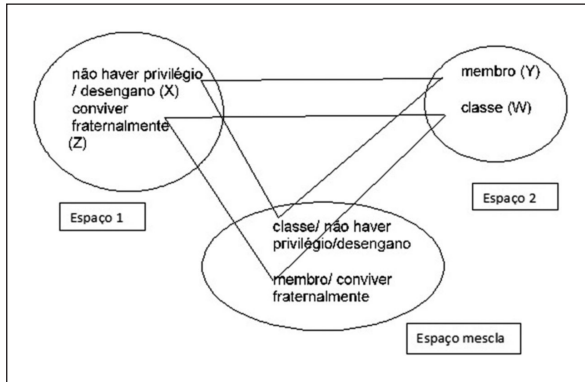


Source: author's elaboration.

Once again, it is important to note that the arranged categorization is not obvious: disappointment (disenchantment, frustration, chagrin) is not an indispensable property of the category defined as “privilege”. In truth, we could doubtless locate positive framings of PRIVILEGE in many different contexts. Here, however, the insertion of both names within the same parallelistic structure may be conducive to a negative framing, compelling readers to associate the idea of “privilege” with notions such as injustice and inequality.

Likewise, the third highlighted line in example (3) stands in parallelistic relation to the two preceding ones, as shown in Figure 4.

Figure 4 – Representation of the second stage of the conceptual blending process of the parallelistic sequence in (3)



Source: author's elaboration.

In short, Figure 4 illustrates the second stage of the process of interpreting example (3). In technical terms, the combination of figures 3 and 4 constitutes what has been referred to in the literature as a “*megablend*”: a recursive blending in which the blend space (i.e., the *output*) of a given conceptual integration serves as the *input* of a subsequent integration. In this case, the blending process outlined in Figure 4 hinges upon the already executed conceptual fusion of the concepts of PRIVILEGE and DISAPPOINTMENT. It thus follows that a society without privileges/disappointments is a society in which people live fraternally.

Before we proceed to our concluding remarks, let us examine two more examples of similar recategorization processes:

- (4) The Brazilian state, ((Collor looks at the camera, which zooms in on him)) as we all know,
is colossal,
it's irrational,
and it's inefficient.
- (5) [...] and whoever wishes to assist us
in the reconstruction of Brazil under the principles **of efficiency,**
of morality,
of austerity,
of social justice.

Once again, in these two last examples, more than two elements participate in the parallelistic structure. In (4), a copulative verb is followed, in this order, by the adjectives “colossal”, “irrational”, and “inefficient”. Conversely, in (5), a post-modifier has its post-prepositional position respectively occupied by the noun phrases “efficiency”, “morality”, “austerity”, and “social justice”.

In regard to example (4), it is important to consider that the existence of a colossal state, i.e., of an extensive collection of services, activities and companies under governmental management, is not necessarily linked to IRRATIONALITY. Here, opinions typically representative of a neoliberal view of market economy are disguised as obvious facts; they are not nearly as unquestionable, however, to those who ascribe greater importance to the state’s regulatory role. Yet, by means of the parallelistic construction, listeners and readers are encouraged to hypernymically accommodate state intervention in the economy as part of the IRRATIONALITY category. The same principle applies to INEFFICIENCY, constructed as encompassing the state’s COLOSSAL stature. The final interpretation is that being colossal is tantamount to being irrational, and being colossal/irrational is tantamount to being inefficient.

Similarly, concerning example (5)¹⁴, we could question the idea that a government’s EFFICIENCY is *naturally* linked to the adoption of austerity measures – which, in economic terms, stands for the curbing of public expenditures on education, health, social security etc. It is the parallelistic structure which launches a mental operation positioning the adoption of moral, austere and fair policies as a kind of EFFICIENCY. While the three parallel terms participate in the member/class relation we are positing, it is particularly interesting that, in (5), a specific and controversial macroeconomic policy – AUSTERITY – is wrapped up with MORALITY and SOCIAL JUSTICE. Presented as they are, as a consensus around the notion of efficiency, the proposals remain closed to negotiation and further debate.

In summary, what the examples we have discussed – as well as many others from our corpus – illustrate is that this kind of syntactic parallelism may play a vital role in argumentative texts. In the end, it accomplishes two allegedly contradictory purposes: on the one hand, it introduces certain conceptual/discursive entities into a new category (e.g., eloquence as falsehood; privilege as disappointment; efficiency as austerity; a colossal state as irrationality); on the other hand, its formal structure allows for the construction of the final recategorized products as presupposed information. Both functions supply speeches with additional argumentative power. While recategorization conceptualizes a state of affairs in a particularly favorable manner (from the speaker’s viewpoint), the presupposition structure reduces the odds of that state of affairs being challenged.

¹⁴ In a previous section, we have maintained that a crucial element for the success of this rhetorical strategy is the absence of a copulative verb linking the hypernymic and hyponymic elements in the categorization. Note that example (4), despite including two copulative verbs, does not contradict such a generalization: the verbs are internal parts of the elements being associated – they do not fulfill the role of connecting such elements. To phrase it differently, the relationship implicitly executed, in (4), by the syntactic parallelism would only be made explicit by a formulation along these lines: *to be colossal is to be irrational*.

Final remarks

The mainstream literature on repetition has emphasized a set of properties which turn it into a particularly useful persuasion resource in oral texts. As such works have shown, the distribution of discursive material among a myriad of simple utterances, as well as their very reiteration across discourse, optimize processing and increase the odds of a favorable argumentative outcome (TANNEN, 1989; JONHSTONE, 1991).

In this paper, we hope to have contributed to that field of inquiry by laying emphasis on a specific kind of repetition, which we have named syntactic parallelism. We have argued that syntactic parallelisms display two additional rhetorically valuable features: the function of recategorization, and the possibility of codifying new information as presupposed. Moreover, we have attempted to describe the unconscious cognitive processes resulting in conceptual/discursive recategorization.

From an applied perspective, we hope that a cognitively oriented analysis may have helped us accentuate the strategic materialization, in Fernando Collor's performance, of the "make it easy" motto – an emblem of the quantitative logic informing mass communication, especially in times of redemocratization and intersection between the fields of politics and entertainment. Rather than offer a mere description of syntactic parallelisms as a stylistic resource, we have sought to demonstrate how such a resource is operationalized in political argumentation, and how it helps conceal ideological perspectives, create consensual implications, and circulate single-note discourses.

BIAR, L.; PINHEIRO, D. "Com tanta eloquência, com tanta mentira": repetição e recategorização em discursos de Fernando Collor. *Alfa*, São Paulo, v.62, n.3, p.467-482, 2018.

- *RESUMO: No presente artigo, focalizamos um tipo específico de repetição saliente nos discursos políticos de campanha de Fernando Collor de Mello quando das eleições presidenciais de 1989: os paralelismos sintáticos. A partir de um olhar qualitativo e interpretativo para esse fenômeno, e apoiados pela Teoria da Mesclagem Conceptual (FAUCONNIER; TURNER, 2002), investigamos as funções dessa estratégia em um corpus constituído pelos três primeiros programas eleitorais levados ao ar pelo então candidato. Nossa análise sugere que os paralelismos sintáticos desempenham duas funções argumentativas importantes: de um lado, acionam um processo de recategorização de entidades conceptuais/discursivas; de outro, permitem apresentar o resultado desse processo como informação pressuposta, minimizando as chances de refutação e invisibilizando a perspectiva ideológica do que é dito. Essa lente cognitiva para os processos de construção de sentido nos permite mostrar os modos como a performance do ex-presidente atualiza certos lemas da comunicação de massa, aproximando os campos da política e do entretenimento.*
- *PALAVRAS-CHAVE: Discurso Político. Paralelismo Sintático. Mesclagem Conceptual. Comunicação de Massa. Fernando Collor.*

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THE SPEAKERS' PROFILE FROM THE VIEWPOINT OF THEIR SOCIAL NETWORKS AND THEIR ASSOCIATION WITH LINGUISTIC CHANGE

Eliane Vitorino de Moura OLIVEIRA¹

- **ABSTRACT:** This paper shows, through the maps of the speech of teenagers coming from a rural district in Londrina, state of Paraná, the social network analysis as an analytic method appropriate to the recognizing of their sociolinguistics reality, since it acts as an efficient way of obtaining answers, otherwise unobtainable by the standard variables (sex, age, social class, schooling). Using the Egonet, a software whose function is to quantify the personal interaction through the identification of connections and points in the egocentric networks, we show the individual maps of the informant's networks as an appropriate model for recognizing the individual linguistics references. From the Sociolinguistics view, especially in the second-wave linguistics, having as a theoretical framework Leslie Milroy (1987 [1980]), Bortoni-Ricardo (2005, 2009, 2011 [1985], 2014), Coelho et al. (2015) and others, the discussions, with emphasis on the result, certify the work with the ARS as a relevant instrument for the language studies in general and for the understanding of linguistic variation and change.
- **KEYWORDS:** Social Networks. Sociolinguistics. Variation and change.

Introduction

Ah, quando eu estou em algum lugar, assim, mais importante e com minha patroa, que ela fica pegano no meu pé, o trabalho dela, ela era professora lá, era professora da UEL, ela fica sempre me corrigindo 'fala direito, fala direito', aí, pra mim não ficá sendo chamada a atenção, daí eu fico meio que medino...² (Inf1)

Our language is our homeland, the Portuguese writer Fernando Pessoa once said. Our mark, our identity. By means of it, we set ourselves up like subjects, like persons. We interact, we empower, and, even, we are oppressive.

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² Oh, when I'm somewhere more important and with my mistress, she's always nagging me, her job, she was a teacher there, was a teacher of the UEL, she's always correcting me 'say it right, say it right', then, for me not to be being called at attention, so I'm kind of measuring ... (Inf1)

Within the social contract established in the linguistic community, each individual always uses the language in their own way. However, the interaction made real by their speech also suffers influence. “A man is known by the company he keeps.”

In the epigraph, there is an example of the speech of an eighteen-years-old teenager, a casual worker, resident in a District in the rural zone in Londrina, whose principal networks are job and family. In both networks, the most relevant interaction ties happen with individuals with higher literary literacy. Why would a girl resident in a rural district, whose job frequently requires popular literacy, show a speech different from what is expected to find in a rural zone, since it does not present the variables associated with this type of expression, like rhotacism or the change of -LH- for IOD, for example? In other words, why would her speech and that of other teenagers examined in this work, who even lives in rural areas, distance from the radical variety towards an urban speaking? Would the answer be in their social networks? What reasons would some of them have for maintaining their linguistic expression close to a rural speaking? The influence of the parents? Of the neighbors? Networks whose speeches distance from an urban speaking?

Our aim in this paper is to answer those questions. To do so, we investigated interactions on the basis of social networks in a corpus composed of the speech of two teenager's groups: one with members who live in a central zone of a district in Londrina (ZCD), considered more urban, and the other with members who live in a rural zone (ZRD) in this same district, through the recordings of their answers to a sociolinguistics questionnaire.

Our informants are twenty-four high school students in the aforementioned district, with ages between fifteen and eighteen years, being twelve girls and twelve boys. Among these, six boys and six girls live in the ZCD; six boys and six girls live in the ZRD.

The option for adolescence is due to the fact that this is the transition period between the childhood and the adult age, therefore, a phase in which speakers have a tendency to be more sensitive to their social environment, since, according to Netto (1968), they usually form groups and their group of companions starts to have great influence on their behavior, which sends us to the importance of the social networks in which they are inserted as determinants of their linguistic expression structure.

As regards the method for the composition of the corpus, after the application of questionnaires, the questions of which were intended to discover their social, economic and cultural reality, to all the classes of the secondary education of the school in which the research happened, we selected twenty-four pupils who corresponded to previously stipulated criteria, like dwelling place, age, participation in the labor market, participation in extracurricular courses, engagement in religious or social activities and access to cultural goods like cinema, theater, reading, travels, etc.

Afterwards, these twenty-four students were examined again through questions aiming to obtain the most significant possible time of their vernacular speech, following the proposal by Labov (2008 [1972]) of directed interview. At the end, each one of the twenty-four interviews was transcribe in accordance with the key of transcription

proposed by the project Vertentes of the UFBA, pointing out the incidence of the following variables: absence of verbal agreement in the 1st and 3rd persons plural; prevalence of rhotacism; prevalence of iotization, marks considered to be of a rural speaking for Amaral (1982 [1920]), corroborated by Bortoni-Ricardo (2011 [1985]).

As regards the analyses, we follow the methodology of the social networks (MILROY, 1987 [1980]), for we understand, with Battisti (2014, p.96), that “in the sociolinguistics research, the analysis of the social networks and the social practices can explain the role of the connections between people, of the highest or lowest degree of group cohesion, of peer pressure and the local identities in the variation and linguistic change.”

We present here a brief result of the investigation of daily connections lived by these teenagers, reporting their role for the maintenance of the rural variety, which hypothetically is the variety common to the first social network of the examined subjects – the family – or for the change, in favor of the prestige variety, proclaimed by the broadcasting organizations of the hegemonic culture (school, church, work, media etc.).

However, before presenting such results, we deal with the theories that guide the research and serve as a basis for the analyses and the conclusions of this work.

Social Networks

Although the local relationships are more frequent, and the knowledge between members of the same speech community is mutual, people move, join different movements, get involved in various undertakings, insert themselves into other groups and enter other societies in which the identity relations happen. In other words, there is a sensitive and tenacious bond between social relationships and linguistic variation and change.

It is possible to understand how the interactions occur and how they propagate the new or keep what is known. A sociolinguistic research, considering the examined object and the interests concerned, can observe the development of a language from three standpoints: speech communities, social networks or communities of practice. Although one may be chosen, the other standpoints are not necessarily disregarded, once each research has its own specificities. And “what links all these approaches is the focus on the language in its social context.”, as we see in Coelho et al. (2015, p.70).

The works based on the Variationist Sociolinguistics were structured by the concept of speech community proposed by Labov (2008 [1972], p.150), for whom “speech community is not defined by any marked agreement in the use of linguistic elements, so much as by participation in a set of shared norms” (LABOV, 2008 [1972], p.150).

In such a conception, it is the attitude shared by the speakers towards linguistic uses that defines a speech community, and the uniformity of the shared norms happens when the linguistic variable presents visible social marks, which means that the speakers

are, very often, conscious of the linguistic uses that they do, besides being capable of making value judgements about them.

Such an understanding raised questions related to the evaluation of the variants, in particular regarding their operationalization, since it does not seem possible to determine a number of variable linguistic forms towards which the users of a language would have a uniform attitude, something which, according to Labov, would characterize a community of speakers.

Gumperz (1972), relativizing the generalization done by Labov, conceives speech community as a community of social bonds. He approaches the conception adopted in studies the methodology of which aims to clarify the bond existing between general sociolinguistics standards and local practices. The linguist proposes a new concept for the community of speakers, based on the social interactions between individuals and the connections established in these interactions, because, living in society, the individuals frequently adopt a type of conduct that is equivalent to that of the members of their interaction groups, including linguistics behavior.

Milroy's (1987 [1980]) studies within this perspective, and her researches developed in three proletarian communities of Belfast, Ireland, introduced the study of Social Networks, besides establishing the connective elements of this methodology in the studies of Sociolinguistics.

Conceiving these questions of linguistic variation and change as a result of the interaction between speakers inserted in determined social and interactional contexts, the researcher uses the concept of Social Networks, a complementary approach that helps explaining the daily social mechanisms favorable to the linguistic maintenance or change, for it performs in a way that explains why subjects with close characteristics, as it is the case of the students investigated in this study – about the same age, schooling, social stratum and history of life, among other factors –, present outstanding differences in their oral expression.

Bortoni-Ricardo (2011, p.15) defines Social Networks as “a set of bonds of all types between the individuals in a group.” From the perspective of Severo (2007), they are a way to verify the existing mechanisms in the communities that facilitate or that difficult changes, and these mechanisms also serve to analyze the way in which the individuals use the linguistic variability resources available to them.

Severo (2007, p.5) explains that this is a notion that came from the Social Anthropology in the decades of 1960 and 1970 and brought to the studies on linguistic variation and change in order to “explain the relationship between patterns in the vernacular maintenance and patterns in linguistic change over the course of time”. Evans (2004) observes that there are two forms of looking at the social networks: from a first point of view that allows seeing them as a system of personal relations with effects on the individuals; from a second one that allows understanding them as relations used by the individuals to reach their goals. It is the first one that guides Sociolinguistics.

These networks represent the degrees of contact between individuals who associate with each other regularly, through properties like *multiplexity*, consistent with the network content, and density, related to the network structure.

In Milroy (1987 [1980], p.50), we read that “a network is said to be relatively dense if a large number of the persons to whom ego is linked are also linked to each other.” The larger the number of persons who know each other within a group, the higher the network density is, still informs Milroy (1987 [1980]), since, after they are closely related to each other in the network, the contact with the outside is minimized, as each of them has few possibilities to use his relations to contact persons and to be contacted by persons from outside of the limits of the group. In this concept, a social network in which few persons know each other mutually is a loose-knit network, which shows low-density.

Regarding the multiplexity, the author considers the characteristics of a ties within networks as significant as the networks themselves, given that, even being of the same order, some ties may be more subject to external influence than others.

Within this concept, Milroy (1987 [1980]) creates a dichotomy between multiplexity and uniplexity. A bond will be uniplex when a member of the network represents a single role regarding another member of the same network; if, for example, member A is member B’s “boss” only (regarding B as A’s employee). The degree of complexity here is low, since the social roles practiced by the same person are not diversified, due to the limited fields of social activities.

On the other hand, the bond will be multiplex if member A assumes a variety of roles, for example, being B’s boss, but at the same time, neighbor, uncle, evangelical preacher, and so on. Bortoni-Ricardo (2011 [1985]) stresses the importance of the social roles for the distinction between rural and urban speeches, given that, in rural towns, the individuals commonly play several roles in the same speech community, producing a linguistic dependence between the members of this community, while, at urban towns, the acquaintances can be different, each one having a well-marked role. The author (2011 [1985], p.94) explains: “while a high level of density in the relationships characterizes the urban setting, the village settings present a low level of this type of density.”

In her research studies in Belfast, Milroy (1987 [1980]) looks at the social networks structure as a matter of strong and weak ties. The establishment of strong ties happens through routine and continuous bonds, as the ones between relatives, neighbors, and friends, in a way that the high intimacy level secures a daily contact. Weak ties, however, result from different, not intense activities, and without extreme bonds.

These interaction spaces between the individuals are essential for understanding the change and the maintenance of linguistic standards, because they comprise mechanisms that can be tendentious not only to facilitate but also to difficult them. Being a dense or loose network incurs directly in the linguistic habits, especially in what concerns linguistic maintenance and innovation.

Once the concept of social networks and its peculiarities was established, we discuss its relevance as an analytic method.

The ARS as an analytic method

Initially used in the telecommunication and computer systems, the ARS seeks to establish an objective way of identifying connections (ties or relations) and points (nodes or actors) inside a determined system and, by that, to represent structural patterns of ties, which may present themselves as constant as well as totally unpredictable and nonlinear (FAZITO, 2002).

It is a methodology devoted to the study of the relationships between entities and objects of any nature, especially in respect of the complex problems, like linguistic maintenance and change, for example, and, therefore, liable for social studies.

According to Hanneman and Ridle (2005), the ARS is fundamentally characterized for its occupation with data that express the relations between different groups, causing a dislocation of the analytical focus. The traditional approach in humanity studies focus on the individual attributes, whereas the ARS looks at the relations established by these individuals with the other participants in a determined social context. Using the ARS as a method of analysis is favorable for the treatment of speech, because individuals are not treated as equals.

The networks can be quantified in different ways. For this study, we used the program Egonet, a free software available on the Internet, created by Christopher McCarty, University of Florida – USA, which quantifies the contacts of a person, through the identification of connections and points within the individual network, establishing the interaction structural patterns and, therefore, defining the constancy.

To obtain the maps of the informants' networks, we applied a basic questionnaire with three direct questions: "Who are the five most important persons in your life? Who are the five persons with whom you talked the most along this week? With whom would you share a secret?". After obtaining the respective names, we put them in the program in order to define who connects with whom in the network.

Each informant was invited to answer about the affinity they had with each member of their network. Exemplifying by INF1: she cited her husband, grandmother, employer, mother, and brother, respectively, as the members of her social network. Then, we questioned if her husband, first cited member, used to interact with her grandmother, employer, mother, and brother; and, subsequently, if her grandmother used to connect with her husband, employer, mother, and brother; so did we successively until all the twenty-four teenagers answered.

The result obtained allows us to characterize the networks of these informants, with regard to the density and complexity, as well as to the quality of their bonds, whether strong or weak, which is of fundamental importance for the identity speech's maintenance or change in favor of another variety that they would like to achieve, like the change from rural variety to urban variety.

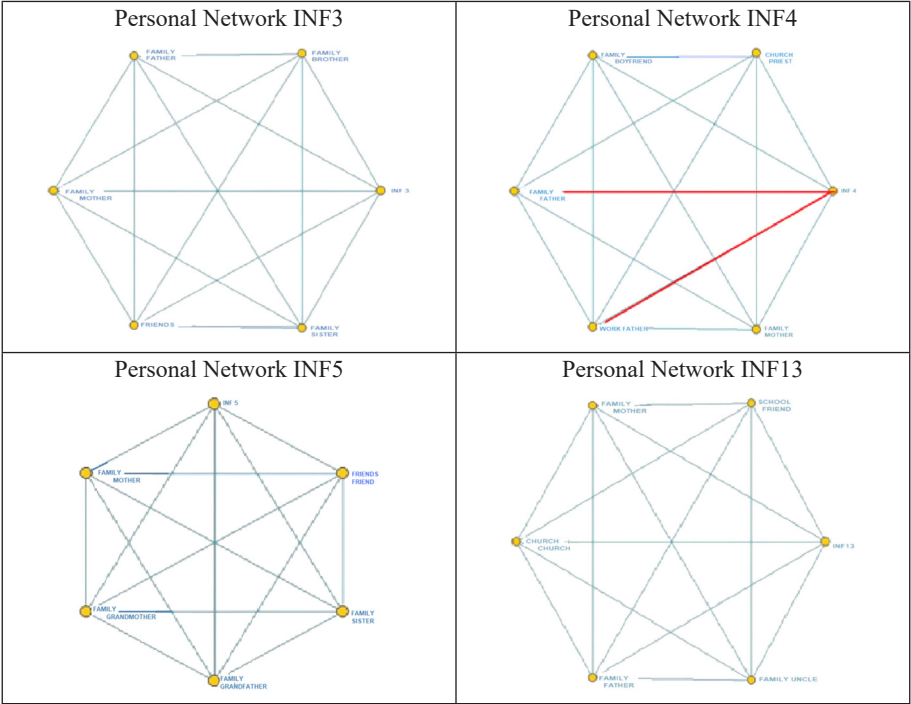
Furthermore, knowing these ties allows understanding how networks act when it comes to speakers' conscious or unconscious desire to maintain or change their speech. In this regard, Bortoni-Ricardo (2014) asserts that “in communities of close-knit networks, in which basically all the individuals interact with each other, the norm pressure is stronger. In communities of loose knit networks, the norm pressure is weaker.”

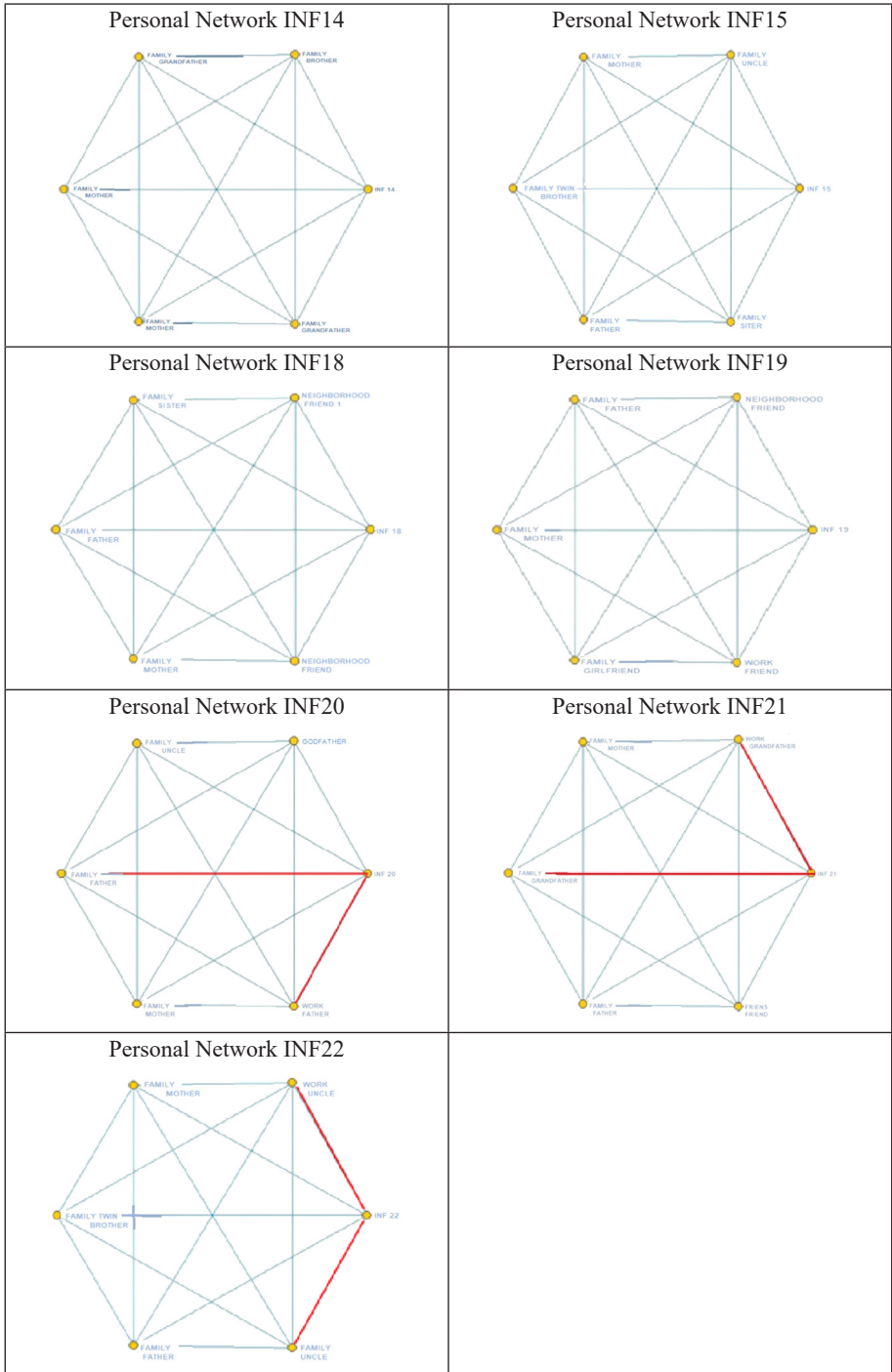
As a result, we present maps prepared by the Egonet program and some considerations on their structure:

The teenager’s networks structure

The maps bring the structure of the teenager’s social networks separated by groups. The first group present maps of closed networks, and, sequentially, a second group presents the maps of open networks. At last, a third group brings intermediate networks.

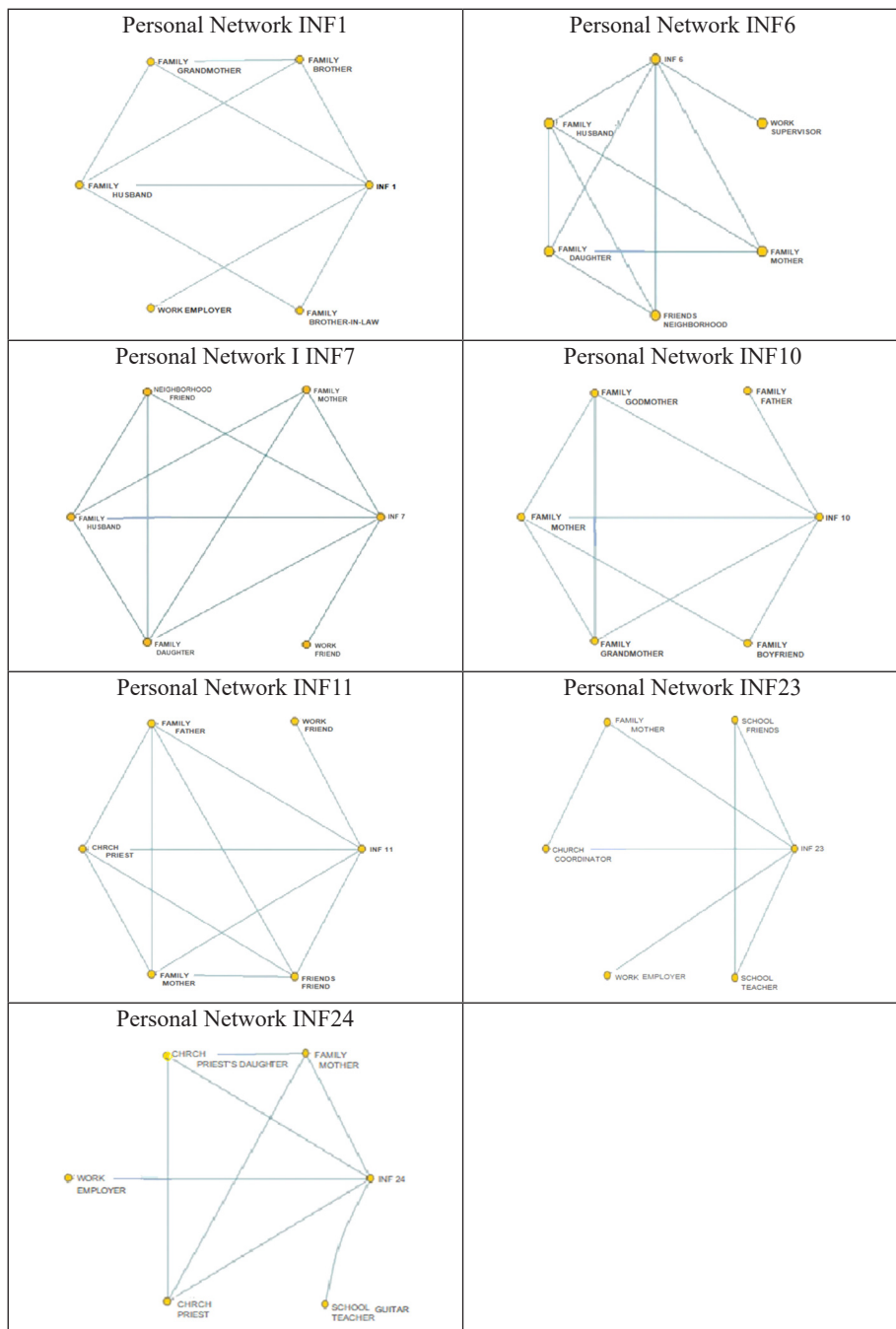
Figure 1 – Maps with closed networks.





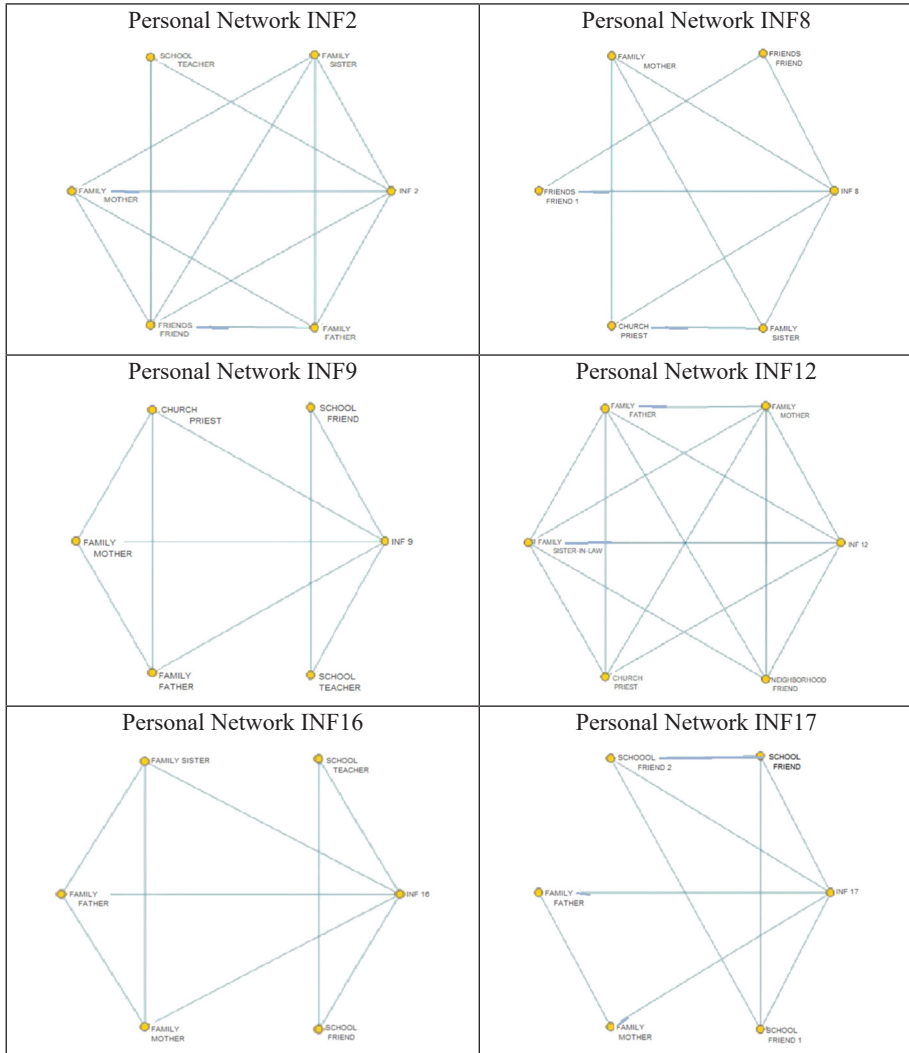
Source: Elaborated by the author.

Figure 2 – Maps with open networks.



Source: Elaborated by the author.

Figure 3 – Maps with intermediate networks.



Source: Elaborated by the author.

INF24 map is the only one presenting two ties that do not bind. In this way, his network can be characterized as loose, considering that it does not present bond redundancy and there is more than one weak, uniplex tie that opens for outside contact. This can hypothetically be the cause of the approximation to the urban variety demonstrated by an expression without rural marks analyzed in this paper, because such networks favor the adhesion to the prestige culture and, therefore, the approximation to the urban variety.

Bortoni-Ricardo (2005, p.88) justifies such a posture by reporting that

When the individual manages to ascend socially, his network becomes more heterogeneous, and, consequently, of looser knit. The process of dialectic diffusion intensifies, and the speaker tends to approach the prestigious norm, acquiring a wider range of registers [...].

The networks of INF1, INF6, INF7, INF10, INF11, and INF23 hold at least one weak tie open to the outside, besides having no connection between all of the members. Then, they may also be qualified as loose networks, which consequently may suffer greatly from a possible external interference. We associate this sort of network with a linguistic *rurban* practice, in other words, it is possible that, in a final allocation of these informants in the urbanization continuum, they are situated on rurban points, nearer the rural extreme or the urban one, but not specifically on those extremes or poles.

Networks referring to job, always relevant, can have different characteristics, which affect the informant's linguistic structure. For instance, we have INF7 and INF23. INF7, whose workplace is the very district, presenting aspects of rural variety, like rhotacism in “Tem que sê *compreto*?” [Does it have to be complete?], while INF23, who works at the biggest commercial center of Londrina, expresses quite close to the urban variety, even at the last moments of the interview, at which, relaxed, she was revealing her vernacular already, as in: “aí ela dexô um pedido que era pra *cuidarmos* do filho mais novo dela que é o que mora em Santa Catarina” [Then she left a request for us to take care of her younger son, the one who lives in Santa Catarina].

This discrepancy in the speech of informants who have the work-oriented interactions in their networks can be explained by combined factors. Still referring to INF7 and INF23, the workplace and the degree of literacy of those networks influence the speech's change or maintenance. INF7 works at a market located in the urban area of the district, sticking prices to products and replenishing shelves. Even though her bosses have higher social status, they also live in the district, and their co-workers are all from there, and her access to literacy events permeated by the prestige variety is minimal. However, INF23 works at the administration of a shopping center. All her co-workers interact using the high prestige variety, if not, a rurban variety situated right near the tip of the urbanization continuum. These factors are predominant in the salient differences between INF7 and INF23 speeches.

INF1's norm changes are motivated by her work. In her interview, she says that one of her employer, a retired university professor, forces her to speaking closer to the standard rule. In Bortoni-Ricardo (2011 [1985]), we see that it is possible to associate this fact with what Labov calls “status inconsistency”, since the informant, looking for the use of an urban speaking, is adopting the values of a group different from her own, which is her reference, and aiming for it, alternates between the rural and the urban, staying in the rurban, as seen in “Então, o que eu assisto mais é *os canais pagos*, né, eu gosto do History, eu gosto do de filmes, *todos os canal de filme*” [So, what I watch

more is the pay-per-view, I like History, I like movies, all movie channel], an expression that introduces nonstandard verbal and nominal agreement. Due to this contact with different employers, INF1's networks are loose and have uniplex ties.

INF6 has a strong connection with work, personified in the supervisor's person. His network is loose, with uniplex ties in most interactions. INF7 is also enclosed in a loose network, since some of the ties have diffusion points.

As for INF2, INF9, INF12, INF8, INF16, and INF17, although most of their ties are connected, there are still disconnected points, without cohesion bonds, as we saw in Milroy (1987 [1980]), enabling a non-categorical external intervention. This opening qualifies their networks as relatively dense and their ties as relatively strong, which may be responsible for the rurban way of speaking, because sometimes the speech is closer to the urban variety, sometimes it is closer to the rural variety.

INF2, for instance, presents this alternation in "Ué, por causa que eu acho bem bonito aquelas praia, eu sempre tive vontade de *conhecê-las*." [Well, cause I think very beautiful those beach, I've always wanted to meet them.]. The absence of formal agreement is a gradual¹ trait, according to Bortoni-Ricardo (2004), for taking place in the relaxed speech of most Brazilian speakers, but it is not socially accepted and contrasts with the pronominal placement guided by the standard in "*conhecê-las*" [to meet them].

In INF8's speaking, we have "*é ligaro né po um zero nove da polícia e falo que tinha que, é um bicho perigoso dentro da casa que ia pegá ele*" [They called the police and said they had a dangerous animal in the house that would get him]. There is the verbal agreement in the first verb in the third person singular but occurs the desnazalization. Moreover, in the second verb, the agreement with the third person singular expected does not occur. This characteristic is also a rurban trait specific to peripheral areas of large cities, where the informant lived for a period before moving into the ZRD.

On the other hand, the networks of INF3, INF4, INF5, INF13, INF14, INF15, INF18, INF19, INF20, INF21, and INF22 are dense, since all their members interact with each other. As we saw in Milroy (1987 [1980]), the influence of external factors is hampered by strong ties, some of which have multiplex traits. All points are connected. Therefore, their networks are of close-knit. INF4, for example, has a bond characteristic of dense networks, which is the multiplexity of roles: his father is also his boss. While what INF20, INF21, and INF22 have in common is a family member playing more than one role in their interactions, which is a mark of close-knit networks.

After observing the informant's networks structure, we will describe the linguistic aspects present in their interactions, adopting, with Amaral (1982 [1920])

¹ The proposed analysis of Brazilian Portuguese continuum is well established and demonstrated by its creator, Stella Maris Bortoni-Ricardo, in her 2005 work, detailed in the references for this paper, but it should be clarified that, for the author, all Brazilian speakers can be inserted into the urbanization continuum, orality and literacy and stylistic monitoring. In this article, we focus on the urbanization continuum. In the left pole of this continuum are isolated rural varieties; the right pole, urban varieties standardized; everything that cannot be allocated on neither of those poles is considered rurban.

and Bortoni-Ricardo (2011 [1985]), the variables: the absence of verbal agreement (CV) in 1st and 3rd persons singular, the iotization and the rhotacism as markers of the rural speech.

Interpreting the data

The linguistic aspects analyzed in this paper, as we have mentioned, are understood as markers of a rural variety, but are present in the speech of a large group of Brazilians, characterized as rurban speakers.

In this sense, Bortoni-Ricardo (2009, p.52) clarifies that the rurban speaking is characteristic among the migrants of rural origin, but also of “countryside communities resident in districts or semi-rural nuclei, which are subjected to urban influence [...]”, in other words, in communities like the ones analyzed in this paper.

To guide the analyses, it is worth noting that the twenty-four teenagers researched live in a rural locality, according to the concepts adopted by the IBGE (Brazilian Institute of Geography and Statistics), being half of them resident in the central part of the district and the other half living in villages and small farms in the region. They are all of the same age group and have the school as a social network and literacy agency. It is possible to consider that they are inserted into the same speech community, according to the conceptualization given by Gumperz (1972).

However, when we compared INF3 and INF24, for example, who are the same age and are in the same school year and live in ZCD, we noticed a striking difference in linguistic expression. Even INF15 and INF22, twin brothers, have differences in their language.

The configuration of their social networks of interaction can guide towards the understanding of such differences, since it can be decisive for the linguistic choices practiced by the speakers, either consciously, as a mark of identity or localism, or a non-identification with the local and group.

Thus, we have to talk about the presence or absence of the linguistic factors being analysed in this article and their relationship with the configuration of the speakers’ networks. We begin with the absence of the verbal agreement.

Nonstandard verbal agreement in the 1st and 3rd persons plural

The non-standard verbal agreement (CV) is understood by Castilho (2010) as a morphological conformity between a class, represented by the verb, and its scope, represented by the subject. Thus, it is one of the markers of the socially disadvantaged speakers, and also of residents of rural areas, being one of the most stigmatized linguistic factors. This mark was productive in the speech of the different teenagers analyzed here.

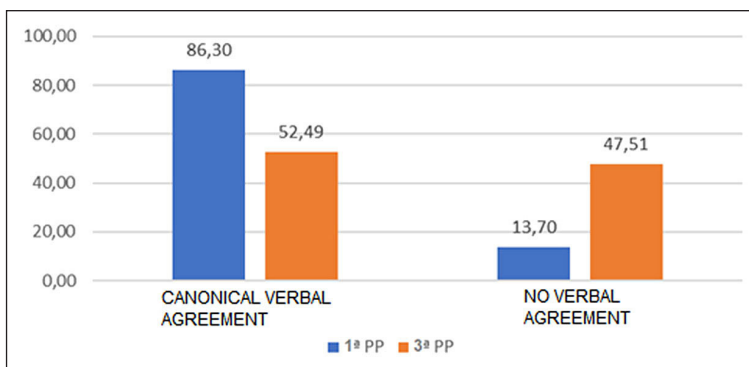
The following table details these results:

Table 1 – Verbal agreement: frequency of uses.

CONTEXT	OCCURRENCES TOTAL	CANINICAL VERBAL AGREEMENT	NO VERBAL AGREEMENT
1ª PP	73	63	10
3ª PP	301	158	143
TOTAL	374	221	153

Source: Elaborated by the author.

Graphic 1 – Verbal agreement: frequency of uses.



Source: Elaborated by the author.

Through the analysis of the table and the graphic, it is possible to realize that, in the 1st person plural context, the standard or canonical verbal agreement occurs more often. As for the 3rd person plural context, there is a higher leveling, despite the canonical verbal agreement happening more often, which breaks with the characterization of the rural variety, whose configuration, as shown by Amadeu Amaral (1982 [1920]) is formed by the non-realization of verbal agreement in the form of the normative grammar of the Portuguese language.

Thus, the structure of the speech reality of the researched teenagers, presented only by the realization or non-realization of the CV, shows a tendency for the diffusion of the speech which hypothetically represents the identity of these speakers, since, even with their incidence in the speech of all the informants analyzed, it does not occur in 100% of the contexts in which it appears.

Incidence of Iotization

Amaral (1982 [1920]) informs that the rural speaker tends to vocalize the “LH” into “I” in words like “espaiado, meió, muié, fio” [spread, better, woman, son], a fact

also verified by Bortoni-Ricardo (2011 [1985]) between Braslândia’s speakers when she reports that the palatal lateral /ʎ/ is vocalized.

Bortoni-Ricardo (2011) and Aguilera (1999) associate this phenomenon with the rural variety. Aguilera (1999, p.158) claims that this process is “a predominant trait of the rural or low-prestige variety that expands throughout the Brazilian regions as the already published atlases can document”. For Bortoni-Ricardo (2011 [1985]), the rule is productive “in the rural and rurban varieties, functioning as a typical discontinuous trait.” The author recalls that, because it is one of the most socially stigmatized traits, it enters the concept of stereotype proposed by Labov (2008 [1972]).

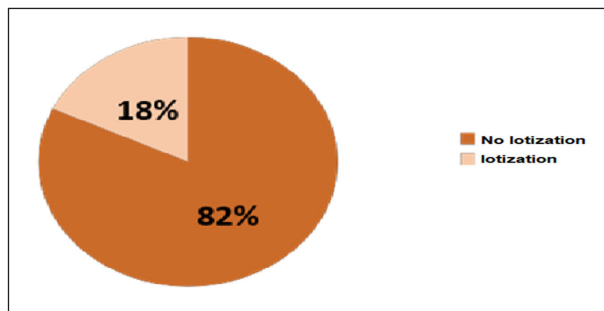
The table and the graphic below illustrate the reality of iotization among the informants of this paper:

Table 2 – Incidence of iotization.

CONTEXT	OCCURRENCES	STANDARD	IOTIZATION
“Work” and verbal forms of “To work”	137	79,56%	20,44%
“Mirror” and verbal forms of “To mirror; to reflect”	8	50,00%	50,00%
“Old” and verbal forms of “To get old”	6	83,33%	16,67%
“Son”, “Daughter”, “Godchild” and other derived forms	35	71,43%	58,57%
“Better” and verbal forms of “To improve”	39	97,43%	2,56%
Verbal forms of “To disturb”	4	100,00%	0,00%
Verbal forms of “To spraid”	2	0,00%	100,00%
“Eye” and verbal forms of “To see”, “To look”	33	51,51%	48,49%
“Advice” and verbal forms of “To advise”	2	100,00%	0,00%
“Family” and other derived forms	103	98,06%	1,97%
“Wonderful” and other derived forms	3	100,00%	0,00%
“Detail” and other derived	2	100,00%	0,00%
“Ear”	4	75,00%	25,00%
“Noise”	1	0,00%	100,00%
“Red”	1	0,00%	100,00%
“Playful”	1	100,00%	0,00%
“Knee”	1	100,00%	0,00%
TOTAL	382	82,43	17,54

Source: Elaborated by the author.

Graphic 2 – Incidence of iotization.



Source: Elaborated by the author.

By the charts, it is possible to know the contexts favorable to the iotization present in the corpus and the number of its occurrence among the researched speakers. Overall, it is possible to notice a higher direction, in relation to this linguistic phenomenon, for the diffusion of the rural speech, even if there are words whose incidence would indicate a certain resistance to iotization. However, that factor needs further studies.

The incidence of rhotacism

The rhotacism has traditionally been described as the exchange of a lateral sound by a rhotic sound, so /l/ is converted into /r/. Amaral (1982 [1920]) names the rhotacism a pronunciation vice and classifies it as one of the most productive vices in the speech of speakers who was born in São Paulo, including those who had no direct contact with the rural speech.

Despite not using the same nomenclature, Bortoni-Ricardo (2011 [1972], p.76) addresses this case by pointing to “the neutralization of /r/ and /l/”, e.g. “incurusive – inclusive” [inclusive], or the total suppression of liquids, as in “oto – outro” [other]. We analyze the phenomenon of rhotacism in two contexts: i) in complex syllables, such as PL-, CL-, BL-; II) in internal coda, in words such as “alguma, cultura, folga”, [some, culture, respite] for example.

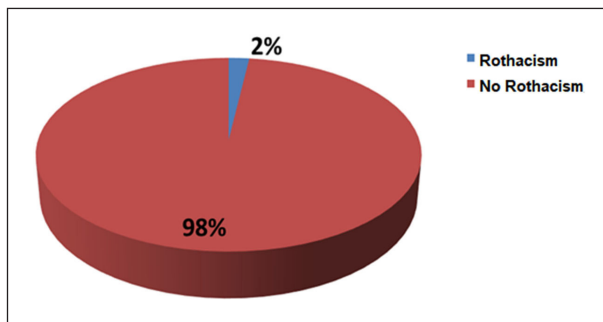
The table and graphics below show the results.

Table 3 – Incidence of rhotacism in internal coda.

CONTEXT	TOTAL	STANDARD	RHOTACISM
Something, someone	203	97%	3%
Lunch, to have lunch	4	100%	0%
Tall	2	100%	0%
Illiterate	4	100%	0%
Asphalt	3	100%	0%
Bag	2	100%	0%
Cacilda (woman's name)	1	100%	0%
Calculation	1	100%	0%
Calm	3	100%	0%
Guilty	2	100%	0%
Cultured	1	100%	0%
Cultivate	1	100%	0%
Culture	1	100%	0%
Apologies	1	100%	0%
Difficulty	1	100%	0%
School or Faculty	1	100%	0%
Lack	10	100%	0%
Film	7	100%	0%
End	1	100%	0%
Respite	2	100%	0%
Modesty	1	100%	0%
Same	1	100%	0%
Judge	3	100%	0%
Fine	1	100%	0%
Multinational	1	100%	0%
Any	11	100%	0%
Solve	3	100%	0%
Salty	1	100%	0%
Jump	1	100%	0%
Save	1	100%	0%
Wild	1	100%	0%
Single	1	100%	0%
Last	6	83%	17%
Back	19	100%	0%
TOTAL		98%	2%

Source: Elaborated by the author.

Graphic 3 – Incidence of rhotacism in internal coda.



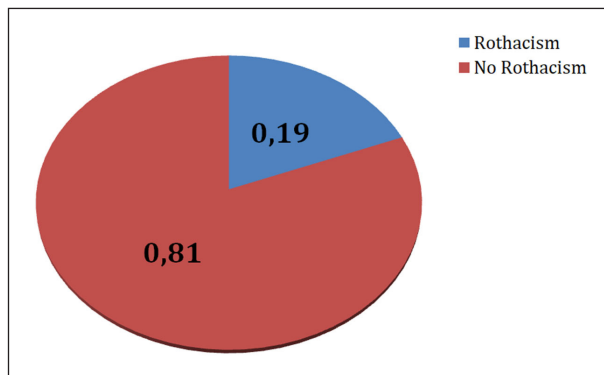
Source: Elaborated by the author.

Table 4 – Incidence of rhotacism in complex syllables.

CONTEXT	TOTAL	STANDARD	RHOTACISM
Blocks	2	100,00%	0,00%
Clear	34	88,24%	12,00%
Complete	5	100,00%	0,00%
Pair	1	100,00%	0,00%
Example	7	57,14%	42,86%
Explain	3	66,66%	33,34%
Explosion	1	100,00%	0,00%
Flower	1	100,00%	0,00%
Implicit	1	100,00%	0,00%
Implosion	1	100,00%	0,00%
Influence	2	100,00%	0,00%
English	1	100,00%	0,00%
Plant	7	66,66%	33,34%
Plural	1	100,00%	0,00%
Problem	14	78,57%	21,43%
Public	2	100,00%	0,00%
Simple, Simply	3	66,66%	0,00%
Supplementary	1	100,00%	0,00%
Key, Keyboard	2	100,00%	0,00%
TOTAL		98,33%	1,64%

Source: Elaborated by the author.

Graphic 4 – Incidence of rhotacism in complex syllables.



Source: Elaborated by the author.

The table, expressing numerically the incidences of rhotacism, and the graphics, through the expression of occurrence or not occurrence, show that such a phenomenon is not productive in the speech of the district teenagers, even if there is a greater realization in contexts of a complex syllable. Once again, through the global analysis, it is observed a tendency of their linguistic expression to an urban speaking, featuring a rurban speech.

The general observation of the data, therefore, indicates the diffusion of the rural variety, regardless of the configuration of the informant's networks. A more individualized analysis may clarify this data better.

Considerations on the data in the charts

The teenagers inserted in closed networks not only presented a substantial incidence of the analyzed marks, but also some of them did not present any of them.

For example, the speeches of INF3 and INF13 are marked by discontinuous traits, such as the absence of CV in “Elas que *faiz* você vivê mais” (INF3) [They make you live longer] e or “eles *aprende*, lá no passado, por isso que eles até *parô* de estudá” (INF13) [They learn in the past, so they don't study more]. Iotization appears all the times that the noun *trabalho* [work] or the forms of the verb *trabalhar* [to work] occur, as in: “não, minha mãe *trabaia* em casa só” [My mom works only at home] in the INF3 speech. INF13 presents, at the beginnings of almost all his answers, the discursive marker “Óia” (look), iotization of “Olha (look)”, however, iotization also occurs in other moments of his speech, as in “Vai lá e *asséste* tevezinha com a *veinha*” [Go on and watch TV with the old lady], and “*trabaia* como pedrero “ [he is a constructor]. Rhotacism also appears in the speech of both, as in “as pessoa num *recrema*, ah, às vezes *recrema* do lugar” (INF3) [People don't complain, oh, sometimes complain of

the place]; “é muito raro vê *argum* jovem sertanejo por ai né” (INF13) [It’s very rare to see some young country boy out there].

The absence of verbal agreement is typical to the informants INF18, INF19, INF20, INF21, and INF22, as it occurs in these excerpts: “Eles *começa* a conta” (INF18) [They start to count]; “as família *gostava* muito da amizade delas” (INF19) [The family likes their friendship]; “Sempre eles *tá* perto de mim” (INF20) [They are near me always]; “Meu pai e minha mãe *sabe* escrevê e lê tamém” (INF21) [My parentes know to write and to read]; “tem ali no pasto lá, nói *joga* tamém” (INF22) [There is in the pasture, we play there].

Iotization is productive in the speeches of INF18, INF20, INF21 and INF22, as in: “*Eis* tirar” (INF18) [They took] and “É, às vez *trabaio* num lugar, às vez no otro” (INF20) [Sometime I work in a place; sometimes in other place]; “que eu *trabaiava* lá, eu sempre ia” (INF21) [I worked there; I always went there]; “aham, sempre fala pra *trabaiá* assim” (INF22) [He always says to work]. The rhotacism marks the speech of INF19, as in: “O aluno tá resolveno um *pobrema*, um *pobrema* no quadro” [A student is making a problem in the blackboard], and of INF20 in: “ajudo no negócio de *prantação*, mais *trabaio* fixo eu num tenho.” [I help in a plantation, but I don’t have a fixed job]; INF20 presented these marks repeatedly.

The speech of the teenagers inserted in open networks is a little more homogeneous. Among the seven informants, only one presented all the rurality marks analyzed here.

The informants INF1, INF6, INF10, INF11, and INF23, however, present only the absence of CV mark, as in “eu assisto mais *é* os canais pagos” (INF1) [I wath the paid channels]; “elas *era*, duas amigas que *era* carne e unha” (INF6) [They were friends, they were as thick as thieves]; “essa aqui *é* treis criança jogano bola na praia” (INF10) [This picture is about children play soccer in a beach]; “São pessoas inteligente e que *aprendero* e *tá* usando o que *aprendeu*” (INF11) [They are intelligent people who have learned and are using that]; “daí eles num *entraro* num consenso” (INF23) [They didn’t reach consensus]. INF24 does not present any stigmatized marks.

In contrast, INF7 presents the rhotacism in her linguistic expression, in the first response to the questionnaire, when she was asked to write her name: “tem que *sê* completo” [It has to be complete]. Afterwards, the iotization and the absence of verbal agreement permeate the whole conversation, as in “por causo da minha *fia* né, eu tenho que dá o *exemplo*, né?” [For my daughter I have to set the example]; “Eles sempre *trabaiô* muito né e num *lê*” [They always work a lot and they didn’t read].

There is an incidence of all the discontinuous linguistic factors observed in this work in the speech of two teenagers inserted in intermediate networks.

For INF2 and INF9, the verbal agreement does not happen most of the time when it is mandatory, in the first and third persons, as seen in “Nóis tem uma mercearia lá onde que eu moro mesmo, aí *fica* os dois lá” (INF2) [We have a grocery store where we live and they stay there]; “meus pais *faiz* serviços gerais, eles *mexe* com gado assim”(INF9) [My parents are farm employees]. In their expression, the rhotacism appears in: “Pele *crara*” (INF2) [clear skin]; “Eles tinha um *probreminha*”(INF9) [They have a little

problem]. And the iotization in “na verdade, ele num ia *trabaiá*” (INF2) [Really, he doesn't go to work] or “tem tanta coisa pra puxá a *oreia* desse povo” (INF9) [There a lot of things to get people attention].

INF8, INF12, INF16 and INF17 present only passages with the discontinuous trait concerning the absence of verbal agreement as in “mais agora, as outras que não, que sabem falá certo e *fala* assim, num sei, *deveria* falá do jeito que *sabe* né?” (INF8) [Who knows how to speak right and speaks wrong should speak the way they know]; “ele é empregado, mais eles se *dá* bem” (INF12) [He is employed but they are friends]; “das coisas qui *tá* acontecendo no mundo, no Brasil” (INF16) [Things that are happening in the world, in Brazil]; “as pessoas mais chegadas, entre amigos assim, não *fala* certo, *fala* mais na gíria né qui *fala*” (INF17) [The closest people, among friends, don't speak right, speak more in slang].

These examples show a greater tendency to the rural variety diffusion in open networks. The teenagers enclosed in these networks expressed themselves, mostly without rhotacism and iotization, but they presented the absence of verbal agreement. However, one of them presents a linguistic configuration very close to the rural speech, denoting more focusing. In her case, the network configuration was not relevant.

Concerning the closed networks, there is a greater tendency towards focusing, observing that most informants bring the marks of rurality into their speech, which leads to conclude on the relevance of these networks for a relative maintenance of the rural variety. However, for four informants, that conclusion is not real.

At this point, it seems to be relevant to detail two concepts: focusing and diffusion. Le Page (1980) proposes the concept of diffusion as the result of the physical and social mobility of speakers who are in the dialect contact area. Contrarily, in communities established for a long time where there is no dialectal contact, the focusing occurs.

These concepts, intrinsically linked to the characterizations of social networks, have direct implication in linguistic uses, especially in relation to linguistic maintenance and change. The researches of Milroy (1980 [1987]) and Bortoni-Ricardo (2011 [1985]) pointed out the disposition for the maintenance and the focusing of the identity speech in communities whose networks are isolated, due to resistance to linguistic change. On the other hand, in open networks, large diffusion was featured.

This was also observed in relation to intermediate networks, whose structure established a slight tendency to diffuse. Two informants presented all the traits analyzed here and four of them only showed the absence of verbal agreement.

A remarkable fact in this analysis is the incidence of a verbal agreement that departs from the canonical standards. Twenty-three of the informants surveyed presented such a stigmatized mark, some of them more often than the others. The analyses undertaken here do not account for the answer to this matter. Nevertheless, it is necessary to delve into the subject in future studies.

Concerning the configuration of the networks, it is possible to understand their density or looseness as relevant factors for linguistic change or maintenance, more precisely for the diffusion or focusing of the rural variety. However, such a statement

is not the only factor acting in this way. The configuration of the networks is not solely responsible for this. Other factors are permeating the linguistic choices, the conscious and unconscious uses by the teenagers from the analyzed district.

We understand, with Araujo, Santos and Freitag (2014, p.102-103), that “if an individual has a strong degree of closeness with an interlocutor and a weak one with another, his linguistic behavior in the interaction with each of them is probably different as a result of the type of relationship.” Thus, this fact has to be considered, since, still according to the author “the control of this variable allows us to verify whether the different linguistic uses are due to the degree of closeness among the informants.”

Therefore, the questions proposed in this paper may be resolved by the precise definition of the center point of the networks and by clarifying the level of closeness between the members of these networks. In this analysis, following the studies on literacy proposed by Street (2014) [1970]), it is relevant to highlight the literacy events common to this network, analyzing the concerned practices, and how this influences the rural speech maintenance or change.

An unfinished conclusion

In the previous pages, after presenting the theories that have been our base, we sought to establish the configuration of our informants’ linguistic maps. In addition, through this mapping, along with examples of the incidence or the non-incidence of some linguistic factors regarded as speech marks, we tried to understand the motivations for the maintenance of this variety, which hypothetically represents the identity of all the informants, or for its change in favor of a more urban linguistic expression. In other words, we sought to understand the reasons for the focusing or diffusion of this rural variety.

In these discussions, one thing is sure: the non-existence of rural speakers and urban speakers among the teenagers of the district. Everyone can be classified as rural speakers, and they can be allocated in various points of the urbanization continuum, but none in its extremes.

Another outstanding factor which deserves further study: the absence of the standard verbal agreement by 96% of the speakers at least in two moments of the interaction in which this phenomenon occurred. Which factors could be triggering that linguistic expression? As previously mentioned, by what was suggested here, it is not possible to answer this question. Our future investigation will undoubtedly focus on obtaining those answers.

For this and other reasons, there are more “inconclusions” than “conclusions” in this final conversation. Just establishing the configuration of social networks of the teenagers who reside in a district in Londrina was not enough to understand their speech configuration, though it has been significant, since it has functioned as an orientation, and may work as a guiding basis for the discussions that may be undertaken from here.

Our discussion began with the mention of INF1 and a questioning on her speech, which happened to be different from the one expected to be found in the countryside. Looking upon her expression, we were able to notice the social networks acting on her language configuration. Her relationship with her employers, speakers that may be located in points very close to the urban extreme in the urbanization continuum, or with her brothers-in-law, both with a university degree and, therefore, considered speakers of a prestige variety, may be a response to this higher closeness to the urban speech presented by the teenagers.

Hypothetically speaking, inserting into a dense network would be the reason why INF13 maintains linguistic marks that feature a rural speaker's speech. This hypothesis is refuted by observing the linguistic expression of INF15, whose networks also have a closed structure, but who presents no incidence of iotization and rhotacism. Would identity be a reason for that? In both cases, through the interviews, it was possible to see their identity affinity with their parents: INF13 has an illiterate father; whereas INF15 has a literate father, which outstands from the other members of INF15's social networks. Thus, this is a hypothesis that needs to be tested.

INF3 resides in ZCD, but his speech is one of the closest to the rural speech. His dense network, without any outward opening, promotes the focusing of his speech, making it very close the rural variety. Once again, the ties of his network may be at the heart of this focusing: an illiterate mother, whose literacy events evolve socially devalued practices, is his most prominent reference.

INF7 is another informant who may have her expression explained by literacy practices. She is resident in ZCD, she works, and she has all the feature marks of the rural variety observed in this paper. Her open network could be favoring the diffusion, but, on the contrary, focusing occurs. This may be favored by the literacy events in which she participates within this network, since her job is in the district and her colleagues and bosses, as well as her family members and friends, are all speakers of a rural variety closer to the rural variety.

INF24 is resident in the ZCD. He is inserted in an open network, whose central tie seems to be his work, permeated by hegemonic literacy events. Probably, these factors are responsible for his linguistic expression, which were the closest to the urban speech. All his networks have ties to a more socially accepted culture.

These examples serve to emphasize the inconstancy in the responses.

As mentioned previously, it is possible, however, to see social networks literacy as a possible driving force behind linguistic change or maintenance, as it leads the speeches in favor or not of hegemonic agencies.

However, for that, it is necessary to establish, without a doubt, the core of each network ties to, knowing the reference, understand the speech structure of each of these teenagers. In view of what has been presented here, the need for further studies, such as those made by Battisti (2014) is urgent, which does not diminish all the research carried out here but put it as a starting point and a guiding basis for future researches, ours and of others who want to tread these paths. The field is fruitful. Starting it is all it takes.

OLIVEIRA, E. O perfil dos falantes pelo viés de suas redes de interação e a relação com a mudança linguística. *Alfa*, São Paulo, v.62, n.3, p.483-507, 2018.

- *RESUMO: Este trabalho mostra, por meio do mapeamento da fala de adolescentes oriundos de um distrito rural da cidade de Londrina, no Paraná, a Análise das Redes Sociais de Interação (social networks) - ARS, como um método analítico apropriado para o reconhecimento da realidade sociolinguística, uma vez que atua como um caminho eficiente para a obtenção de respostas sobre o comportamento linguístico de falantes, o que não é possível utilizando apenas as variáveis mais tradicionais (sexo, idade, classe social, escolaridade etc.). Utilizando o programa Egonet, software cuja função é quantificar os contatos pessoais, por meio da identificação de conexões e pontos dentro de redes egocêntricas, são apresentados mapas individuais das redes dos informantes, como um modelo apropriado de reconhecimento das referências linguísticas individuais. Pelo viés da Sociolinguística, no que concerne ao estudos da segunda onda, tendo como suporte teórico Milroy (1987 [1980]), Bortoni-Ricardo (2005, 2009, 2011 [1985], 2014), Coelho et al. (2015), entre outros, as discussões com enfoque nos resultados retratam a importância do trabalho com a ARS como um eficiente instrumento para os estudos da linguagem em geral, e sua relevância como um fator norteador no entendimento da manutenção e da mudança de falares como os analisados nesta pesquisa.*
- *PALAVRAS-CHAVE: Redes Sociais de Interação; Sociolinguística; Manutenção e Mudança linguística.*

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THE “VOCABULARIO PORTUGUEZ, AND LATINO” OF RAPHAEL BLUTEAU: A BRIEF STUDY OF AMERINDIAN BRAZILIANISMS BASED IN TUPÍ

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- **ABSTRACT:** This is a brief study of Amerindian Brazilianisms based in Tupí, a Brazilian indigenous language, present in Raphael Bluteau’s *Vocabulario Portuguez e Latino*, a work published in Portugal in the early eighteenth century in eight volumes with two supplements. Such Brazilianisms are classified within their respective entries and inventoried and analyzed case by case from an etymological perspective. Bluteau also took into consideration possible sources as well as lexicographic elements that make up the microstructures where such words occur, seeking to highlight their lexical-structural peculiarities. The study also presents a synthesis on the main semantic fields (among which it was possible to identify: food, animal, body, space, ethnonym, object, quality, sound, substance, title and vegetable fields) of these terms and proposes a systematization, in the form of an alphabetically ordered glossary of all inventoried data, with the respective etymology, when possible.
- **KEYWORDS:** Vocabulario Portuguez, and Latin. Bluteau. Brazilianisms. Old Tupi.

“About my Vocabulario some say, it’s too much, others, too little; some say, there are many mistakes, others say, for so vast a work, there are too few; [...]I am told of their reparations, and I thank them for the desire towards the perfection of the work; to all, except the Author, some others manifest what seemed bad to them and to these I owe nothing because their purpose is not to perfect the work but to discredit it.”

From the “Apologia of the Author of Portuguese and Latin Vocabulary” (BLUTEAU, Suppl. Part II, 1728, p.592).

Introduction

Raphael Bluteau, when commenting on the reception of his “Vocabulario Portuguez e Latino” (hereinafter *Vocabulario*), not only recognizes that his work, as it is common

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avtores portvgveses, citados pella mayor parte nesta obra” and in the “Svmmaria notica dos antigos autores latinos citados nesta obra...”³

When proposing the construction of a vocabulary based on so many sources and characterized by so many adjectives (Anatomical, Architectonic, Warlike, Botanical, Brazilian, Comic, Critical, Chemical, Dogmatic, Dialectical, Dendrological, Ecclesiastic, Etymological, Economic, Floriferous, Forensic, Fruitfull, Geographic ...), Bluteau certainly sought to compile as much information as possible from the most different domains of knowledge which had become available as a result of knowledge accumulated for centuries, but also because of the contact of Europeans with peoples of other continents, especially from the fifteenth century onwards. He therefore “considered an enormous flow of words resulting from contacts with new languages and cultures” (SILVESTRE, 2001, p.8).⁴

The Portuguese and Latin Vocabulary of Bluteau is at the same time a dictionary of the Portuguese language and an encyclopedic dictionary⁵, in which Latin is very reduced. The dictionary title comprises 55 epithets that inform us about specific domains of the lexical repertoire (anatomy, architecture, astronomy, botany, law, economics, geography, history, mathematics, medicine, music, physics, theology, zoology, etc.) (CASTELEIRO, 2006, p.121).⁶

Without a doubt, this material has an encyclopedic nature, a feature highlighted by Silvestre (2008), Nunes (2006) and Gonçalves (2006), to cite only some of the scholars or critics of this work. In addition, it has the particularity of presenting information that would be uncommon even in an encyclopaedia, something which could be illustrated with a fragment of the ‘copaiba’ entry, in which Bluteau not only dialogues with the reader, but also presents a detailed prescription for the use of this substance:

COPAIBA, Copaiba. Plant, so called of the Indians of Brazil, those of the Perù call him Chilio Marabito. It is larger than the Pomegranate trees, & have thick, & large, round, other ovate leaves. [...] *Nevertheless the brevity, to which I am bound by the vastness of this work, with zeal for the common good, will here establish the regiment, or recipe of this oil, made*

³ Catalogue alphabetic, topographic and chronological of the Portuguese authors cited by the major part in that oeuvre, and in the Brief report on the old Latin cited in that oeuvre.

⁴ According to Biderman (2003, p.56), “The corpus with which Bluteau (1712) worked totaled approximately 406 works of authors from the sixteenth to seventeenth centuries.”

⁵ For a more detailed description of the nature and encyclopedic characteristics of Vocabulary, see Gonçalves (2006, p.205-228) and Silvestre (2008, p.329-343).

⁶ Original text : “Le Vocabulario Portuguez e Latino de Bluteau est à la fois un dictionnaire de la langue portugaise et un dictionnaire encyclopédique, la place du latin y étant très réduite. Le titre du dictionnaire comprend 55 épithètes qui nous renseignent sur les domaines spécifiques du lexique répertorié (anatomie, architecture, astronomie, botanique, droit, économie, géographie, histoire, mathématiques, médecine, musique, physique, théologie, zoologie, etc.)”.

by an Arab physician, which a friend meume communicated in Lisbon, which in my opinion is only in the hands of some curious manuscript. So the recipe says. They use Copaiba oil in three ways. I take it by the mouth. 2. Apply externally as an ointment, anointing the diseased part with it ... (Vol. 2 (C), p.530-531, our emphasis)⁷

We also note the presence of locative expressions that spatially situate the origin of people, objects and situations, such as “do Peru” [from Peru] and “do Brasil” [from Brazil], the latter corresponding in this work to “Brasilico”, which has much importance in this research. This same adjective will also appear in the titles of a set of works on Brazil, such as the works of: Francisco de Brito Freire, “História da Guerra **Brasilica**, Decada I [History of the Brasilic war. Decade I], Lisboa, by João Galvão. Anno 1675. in Fol.” and “Relaçã da viagem, que fez ao Brasil a armada companhia, sendo o ditto Author General [Report on the trip made by the army company, being the refered Author general]. Lisboa, by Henrique Valente. Anno 1657”; *P. Simam de Vasconcellos, da Companhia*, “Noticias curiosas **do Brasil**. [Courious news from Brazil]. Lisboa, by João da Costa. Anno 1668”; *Pedro de Magalhaens de Gandavo*, “Historia da Provincia de Santa Cruz **do Brasil** [History of the province of Santa Cruz of Brazil]. Lisboa, by Antonio Gonçalves. Anno 1579”; *Simam Estac,o da Sylveira*, “Relaçõ das cousas do Maranhão [Report on the goods from Maranhão] . Anno 1624. in Fol.”, from which the data used inside the microstructures of Bluteau’s material were extracted.

This way, the *Vocabulario* presents itself as an important repository of information about the then Portuguese colony in America⁸; and since the two centuries of occupation had produced a reasonable amount of literature related to Brazil, as well as intense human and commercial exchange, linguistic contact and language exchange were inevitable. This *Vocabulario* is, therefore, “[...] “[...] *Xenophobic, from Xenos, Stranger, & Phoni, voice. This declares many strange voices, that trade with Brazil, India, & other overseas lands introduced, if not in the language, in the History of the Conquests of Portugal* (BLUTEAU, 1712, in the 32nd unnumbered page of “Prologo do Autor” In the section “Ao Leitor Impertinente”)⁹. In addition, “As trocas ocorrem rápida e fortemente e, em larga medida, com sucesso. Ao mesmo tempo, culturas se renovaram e se adaptaram, mas também se preservaram.” [Exchanges occur quickly and strongly, and to a large extent, successfully. At the same time, cultures have been renewed and adapted, but also preserved] (PAIVA, 2006, p.99). This contact is reflected directly in

⁷ All references without author and date refer to the *Vocabulario*. In these cases, there is information about the volume (from 1 to 8), the initial letter considering the order (from A to Z), and the page(s) where the information is found. In addition, the abbreviation Supl. is used in case the data has been extracted from one of the two supplements of the *Vocabulario*.

⁸ Certainly the Vocabulary presents information about many other countries, but, in this work, we limit ourselves to those related to Brazil.

⁹ In the Prologue of the Author, Bluteau presents considerations on the content of his work attributing it to different readers: the Benevolent, the Portuguese, the Foreigner, the Learned, the Uneducated, the Pseudo-Critic, the Miserable, and the Impertinent; it is the latter that inserts the commentary on Brazil.

the corpus of the *Vocabulário*, and it can be observed, according to Gonçalves (2006, p.213), in the lexicographic mark “terms of Brazil” or “words of Brazil”.¹⁰

Gonçalves sought to place the mark “termos do Brasil” and other lexicographic brands in broad categories, such as “Terms of certain social groups”, “Terms of common people”, “Vulgar terms” and “Diatechnical marks of professional use” (among these “Painter term”, “hunter term”, “miller term”, “farmer term”, among others), in order to identify the contribution of the *Vocabulário* to the establishment of a “Brazilian lexicon [dictionarized by Bluteau] of the early eighteenth century” (GONÇALVES, 2006, p.205). In addition, Gonçalves (2006) sought to describe in detail the composition of the vocabulary microstructure and the respective sources used to record the entries that contained the mark “term of Brazil” brand, which contributed to better characterize the use of the element under analysis. Therefore, under this mark, there is a significant number of entries in the *Vocabulário*, such as ‘beiju’, ‘cachoeira [cake made of manioc], cachoeiras [waterfalls]’, ‘cacimbas [waterholes]’, ‘carimã [manioc flour obtained from the fermentation of manioc roots]’, ‘caroata [Species of wild ananas]’, ‘garafa’, ‘mingão [porridge]’, ‘patiguã [a sort of basket]’, ‘tabôcas [arrow sticks]’. However, Gonçalves (2006) did not directly address the issue of Brazilianisms, referring, in this case, to works already published on this subject.¹¹

Therefore, considering all the different studies already carried out from the *Vocabulário* material, a perspective that can contribute to a better understanding of this material is the study of the words of indigenous origin. Therefore, we propose to carry out a survey of the Brazilianisms present in the volumes of the vocabulary in question, originated from an indigenous language of Brazil, as well as to propose an etymology to each of them in an attempt to understand to what extent they contribute to materialize the “Brasilico” character of this work.

The Brazilianisms

The term “Brazilianism”, used to refer to a Portuguese word for Brazil, or that expresses information related to that country, was defined based on the proposal by Rodrigues (1958-1959, p.1-54). which is better suited to the purposes of this linguistic-based research. For this researcher, Brazilianisms are: “[...] words typical of Portuguese spoken in Brazil, foreign to European Portuguese or entered into it, [constituted] by words of Amerindian and African origin” (Ibidem, p.1). In order to identify a Brazilianism of indigenous origin, one must consider whether “the same form and the

¹⁰ There are also words related to Brazil that are identified from categorizations, such as ‘plant of Brazil’, ‘herb of Brazil’, ‘tree of Brazil’, ‘animal of Brazil’, among others (GONÇALVES, 2013, p.213-214).

¹¹ The works cited by Gonçalves (2006, p.213) are Boléo (1943), Chaves de Melo (1981), Cunha (1987), Murakawa (2005, 2006), Pires de Oliveira (1999) and Silva Neto (1963). Most, if not all, of these references deal with Brazilianism in a very broad sense, without specifically focusing on the Amerindian base. To this list of works, we add others that deal with the same theme in different perspectives, they are: Faulstich (2004, p.1-19); Ferraz (2004, p.1-8); Krieger (2012, p.391-400) and Moreira (2016, p.421-442).

same meaning of the Brazilianism in question [is] attested in the indigenous language [or, if the] Brazilianism comes from a compound, whose components are attested in the indigenous language (Ibidem, p.3). These criteria for the identification of Brazilianisms have the advantage of allowing for the delimitation of their origin.

Therefore, a relevant question is what would be the base language of the Brazilianisms to be considered in this research. For this, we started with a preliminary survey of entries that contained direct or indirect information about Brazil, regardless of whether they were, initially, actual Brazilianisms, from indigenous languages or not. We then constituted a corpus of 292 entries, in which we roughly identified three major categories of entries, from the perspective of how information related to Brazil is presented.

The first category includes 77 entries of this group that do not present Brazilianisms, but which cite, in the form of an authentication, works related to Brazil. The words of this category refer mainly to nautical and war-related terms. As examples of data from this group we have:

ABORDADOR, Abordadôr. O que aborda [the one who approaches]. *Vid.* Abordar. Os *Abordadores* devem ser escolhidos [The Approachers must be chosen]]. Britto, **Viagem do Brasil**. 313. (Vol. 1 (A), p. 35, our emphasis in bold letters)

ANCOROTE, Ancorôte. *Vid.* Ancora [anchor]. Dar fundo sobre os *Ancorotes* [cast anchors] Britto, **Hist. Brasilica** 130. (Vol. 1 (A), p. 366, grifo nosso em negrito)

FRECHAR. Atirar com frechas [shoot with arrows]. *Sagittare (o, avi, atum)* [...] Os Bugios, quando os *Frechaõ*, talvez lançaõ a maõ a algum páo secco, & atiraõ com elle [The Bugios, when they shoot them, they may reach out to some dry stick, & shoot with him]. Vasconc. **Noticias do Brasil**. 286. (Vol. 4 (F), p. 206, our emphasis in bold letters)

RANCHO. (Termo militar, & Nautico [Military term, & Nautical].) A companhia, que huns camaradas, Soldados, ou Marinheyros, fazem entre si em algum lugar particular real, ou do navio. [The company, which comrades, Soldiers, or Sailors, make among themselves in some particular private place, or in the ship] [...] Britto, **viagem do Brasil**, pag. 139. (Vol. 7 (R), p. 103)

The second category covers 82 entries that make direct reference to Brazil, either in the use of the lexicographic brand (“Term of Brazil”, for example) or within the definition (here called descriptor). This set also does not contain Brazilianisms in the head or body of the entry, such as, for example,

CACHOEIRA. (**Termo do Brasil**) Assim como os moradores do Nilo chamãraõ Catadupas as aguas, que deste rio de altissimos montes se precipitaõ; assim **no Brasil** chamaraõ os Portuguezes *Cachoeiras* as aguas do rio de S. Francisco... [And as the inhabitants of the Nile shall call Catadupas the waters of the river, which floweth out of this high river; so in Brazil will call the Portuguese Waterfalls the waters of the river of S. Francisco...] (Vol. 2 (C), p.26, our emphasis in bold letters)

CHACINA. Chacina. Postas de carne salgada, que se guardaõ, & se cõservaõ ã pipa, tonèl, ou outros vasos. *Salsamentum*, i. Neut. [...] A vasilha, em que se guarda a chacina. [...] A chacina, **que vem do Brasil** em barris he de postas. Outra chacina se faz em Portugal de bocados meudos para chouriços. [Salted meat stalls, which were kept, and stored in a kettle, toner, or other vessels. *Salsamentum*, i. Neut. [...] The vessel, in which the slaughter is kept. [...] The slaughter, which comes from Brazil in barrels is cut into cubes. Another slaughter is made in Portugal of offal for smoked sausages.] &c... (Vol. 2 (C), p.265-266, our emphasis in bold letters)

LOUVA A DEOS. [...] Na vida do P. João de Almeida, livro 4. cap. 3. pag. 112. se dá ese mesmo nome a hũ **animal do Brasil**, do comprimento de hũ pequeno palmo, com seis pernas, & diz que com seus proprios olhos o vira nascer de huma vara delgada... [It is given the same name to the animal of Brazil, the length of a small span, with six legs, & they say that with their own eyes they have seen it born of a thin rod...] (Vol. 5 (M), p.189, our emphasis in bold letters)

The third and last category includes 126 words that, in addition to information about Brazil, use forms derived from indigenous languages, especially the Tupi. It is in this category that Brazilianisms are found, as previously defined. This category can be subdivided into two groups of entries: a) those which have word(s) of Amerindian origin only inside the entry (71 of the total); and b) words in the indigenous language (55 in this case), especially those of Tupi origin (even if already in Portuguese form), in the entry itself and sometimes inside the whole entry. To exemplify the first group, we have:

EMA. Na segunda conferencia Academica, celebrada na livraria do Conde da Ericeyra, anno de 1696. se propoz, se a Ema, era o mesmo, que o Abestruz [...] parece, que Ema he a ave, a que o Gentio do Brasil chama *Nhanduguacu*, como se vè na [In the second Academic conference, celebrated in the bookstore of the Count of Ericeyra in the year 1696, it was proposed, if Ema, was the same, that the Abestruz [...] seems, that Ema is the bird, to which the Gentile of Brazil calls *Nhanduguacu*, as you can see in the] *Histor. do Brasil de Jorge Marcgravio*, lib. 5. cap. I. pag. 190... (Vol. 3 (E), p.34-35, our emphasis in bold letters)

MARIBONDA. Especie de vespa do Brasil. Os naturaes lhe chamão **Cupueruçu**. Faz seu ninho em arvores na extremidade dos ramos. Segue, & persegue aos viandantes. No mesmo instante que assalta, pica, & logo voa. Faz a picada muita dor. [Species of wasp of Brazil. The natives call it Cupueruçu. It makes its nest in trees at the end of the branches. Follow, & pursue the passers-by. The moment he assaults, it stings, & soon flies. It causes a lot of pain.] (*Maribonda Lusitanis insectum*. Guilielm. Pison no Index. (Vol. 5 (M), p.331, our emphasis in bold letters)

ONÇA. [...] Animal. Não concordaõ os naturaes na descrição desta fera, ou porque daõ a diferentes especies de onças o mesmo nome, ou porque as onças tem suas diferenças, conforme as diferentes terras, onde se criaõ. A onça, a que o Gentio do Brasil chama **Jaguarete**... [Animal. The natives do not agree in the description of this beast, or because they give the different species of jaguars the same name, or because the jaguars have their differences, according to the different lands, where they were created. The jaguar, to which the Gentile of Brazil calls Jaguarete...] (Vol. 6 (O), p.75-77, our emphasis in bold letters)

As for the second group, we have:

AIPYI, Aîpyi. Erva do Brasil, de cujas raizes fazem os Indios Paõ, & Vinho. Ha desta erva muitas especies. **Aipyi quacû, Aipyi jarandê, &c.** O a que chamão **Aipyi Machaxera** he o melhor, mais saudavel, & mais gostoso. [[Herb of Brazil, from whose roots the Indians Bred, & Wine. There are many species of this herb. Aipyi quacû, Aipyi jarandê, & c. The one they call Aipyi Machaxera is the best, healthier, & tastier.] Vid. Vasconcel. Noticias do Brasil, pag. 246. (Vol. 1 (A), p.196, our emphasis added in bold letters)

BIARIBY. Termo do Gentio do Brasil. He o assado daqueles Barbaros. Fazem na terra huma cova, cobremlhe o fundo com folhas de arvores, & logo lanção sobre estas a carne, ou peixe, que querem cozer, ou assar; cobremna de folhas, & despois disto, fazem fogo sobre a cova, atè que se dão por satisfeitos; então a comem.[Term of the Gentile of Brazil. I It is the roast of those Barbaros. They make a pit in the earth, cover the bottom with leaves of trees, & soon they launch on these the meat, or fish, that they want to eat, or to bake; They cover it with leaves, and after this they make fire upon the pit, even if they are satisfied; so eat it] Vasconcel. Notic. do Brasil, pag. 141. (Vol. 2 (B), p. 116, our emphasis added in bold letters)

CANGOERA, Cangoëra. Palavra do Gentio do Brasil. Huns fazê seus instrumentos Musicos de ossos de finados, a q̄ chamaõ **Cangoera**. [Word of the Gentile of Brazil. Some make their instruments Musicians of bones of the deceased, what they call **Cangoera**]. Vasconc. Noticias do Brasil, 144. 145. (Vol. 2 (C), p.102, our emphasis added in bold letters)

Since our interest is to study the words used in Portuguese from Tupinambá or Old Tupí¹², present in the *Vocabulario*, the focal point of the corpus considered only the words that fit into the third category.

The microstructure of the *Vocabulario*¹³

The entries containing Brazilianisms do not have any specific features in terms of structuring distinguishing them from the other entries, which can be seen by comparing the following entries:

FAKIR. Fakir. Word from India. He is the name of those who in India publicly make penitent life. The superiors, or Principaes delles, cover their bodies with three or four layers of orange-colored cotton cloth, and on their shoulders, they carry a tiger's pelt, which is cherished under the beard ... (Volume 4 (F), p.33) [entry without Brazilianism]

IACARE, Iacaré, or Jacaré. Name that Brazil gives to Crocodiles; [...] Not only in the rivers, but also in ponds of Brazil there are crocodiles, very similar to the ones in Africa. Of the tallow, & other parts of these are in s high esteem, because they are medicine, & in place of musk serves as excellent scent. [...] When the Indians want to hunt it, they seek one among them all, that be innocent, & meek, whom they call Nheraniegma. (Vol. 4 (I), p.4-5, italics in bold) [entry with Brazilianisms]

In both data, the basic microstructure is identical, consisting of Headword, Variant Form(s), Origin, Definition/Description. Therefore, since it is not possible to identify the Brazilianism through the structure of the entry, the content analysis is the only alternative to extract them from the Vocabulary. We identify that most Brazilianisms are preceded by expressions such as “O Gentio do Brasil lhe chama...” [“The natives of Brazil call them...”] (Vol. 1 (A), p.116-117), “Chamão os Indios do Brasil ao...”

¹² According to Rodrigues (1958/1959, p.3-4): “Tupianmbá designates Old Tupi or old Língua Geral, which can be defined in space and time as: the language spoken on the coast of Brazil by various groups of Indians in the sixteenth and seventeenth centuries, stretching from as far as São Vicente, in the South, to Maranhao in the North, and which is recorded in documents of those two centuries, coming from various points of the coast”.

¹³ For a detailed description of the composition of the *Vocabulario* microstructure, see Gonçalves (2012, p.399-410, 2006, p.213-223), Silvestre (2008, p.199-270) and Nunes (2006, p.204).

[“They call, the Indians of Brazil, to the...”] (Vol. 1 (A), p.324), “Palavra do Gentio do Brasil” [“Word of the gentile of Brazil”] (Vol. 2 (C), p.102), “Na lingua do Brasil, quer dizer...”[“In the language of Brazil it means...”](Vol. 2 (C), p.136-137), “os naturaes chamaõ...” [“The natives call...”] (Vol. 3 (E), p.98), “chamaõlhe na lingua da terra...” [“They call it, in the native language...”] (Vol. 4 (I), p.4-5), “a que os Brasis chamão...” [“What the Brazilians call...”] (Vol. 5 (M), p.286), “no Brasil se chama...” [“in Brasil it is called...”] (Vol. 6 (P), p.236), “Na lingua Brasilica val o mesmo, que...” [“In the Brasilica language is worth the same as...”] (Vol. 6 (P), p.438), “falla no Gentio daquella terra...” [“speaks the Gentile of that land...”] (Vol. 7 (S), p.633). Quando o vocábulo ameríndio vem no Lema, não há, no geral, esse tipo de especificação, a não ser o da categoria/domínio a que pertence, seguido da definição do local, como, por exemplo, “Ave do Brasil” [“When the Amerindian word comes in the head word, there is in general no such type of specification, other than the category / domain to which it belongs, followed by the definition of the place, such as “Ave do Brasi”] (Vol. 1 Supl. (A), p.49), “Planta do Brasil” [“Plant of Brazil”] (Vol. 2 (C), p.41), “Termo do Brasil” [“Term of Brazil”] (Vol. 2 (C), p.157).

Of the almost 300 entries selected with information or bibliography about Brazil, 120 of them contain Brazilianism(s),¹⁴ whether in the Headword or in the Definition/Description, and of this last set of words, we were able to extract a total of 167 Brazilianisms, of which 33 occupy the position of Headword. Although this number of Brazilianisms is few, amongst the more than 43,000 entries, we cannot forget that we are dealing with lexicographic material that focused on the Portuguese language of Portugal and Latin, in the beginning of the 18th century; and that the mere fact that Bluteau had considered not only the use of terms of Brazil, but of elevating them to the position of Headword, reveals that these words had some importance in the historical-linguistic context.

It should also be pointed out that, in the entries containing Brazilianisms, there are few direct references to the sources that supported their inclusion in the *Vocabulario*, even though the author mentioned in the prologue of the first volume the works to which he used, such as Brito Freire (1657, 1675), Vasconcellos (1668), Gandavo (1576), and Sylveira (1974 [1624]), and provided a list of dictionaries that preceded it and most likely informed him. Among these works two are worthy of mention: “Diccionario Brasilico, do P. Manoel da Veiga” e “Diccionario Brasilico do P. Joseph Anchieta, da Ilha da Teneriffe, da Companhia de Jesus”.¹⁵

¹⁴ Of these sets of Brazilianisms identified in the research, the only ones to appear in the glossary, in the final part of this work, are words whose etymology was established, leaving out the words: *coapsiba*, pao gamelo [Vol. 6 (P), p.228-230 Bread]; *ganabara*, nhiteroy, Rio de Janeiro [Vol. 4 (I), p.11 Yuan]; and *tai-ibi*, wild dog [Vol. 1 Supl. (C), p.170 Cachorro].

¹⁵ Regarding this dictionary produced by Anchieta, if it really existed, it remains to this day disappeared, as Ayrosa (1937, p.54) observes: “From a vocabulary organized by the same Anchieta, one speaks constantly, without having confirmed its existence, and without indicating at least where the originals are”.

Finally, in his *Vocabulario* it should be noted that Bluteau was careful to make use of remissives to guarantee a cohesive character, not presenting duplicate information, which can be verified in the following entries:

GIBOYA. Cobra do Brasil de mōstruosa grandeza
[Snake of Brazil of monstrous grandeur]. *Vid.* Cobra de veado. (Vol. 4
(G), p.64)
IBIRAPITANGA. Arvore [Tree]. *Vid.* Pao Brasil. (Vol. 4 (I), p.19)

The construction of definitions

As for the definitions presented in the Vocabulary microstructures, Gonçalves (2006, p.214) described them in great detail:

[...] the entry and at the mark ‘term of Brazil’ follows the generic definition (e.g., plant, tree, fruit, root), supplemented by a description (descriptive definition) based on the comparison of physical characteristics or properties (color, size, shape, flavor, aroma, etc.) of those referring to others, well known in the Iberian Peninsula. The definition may include mention of the usefulness of the referents described.

This structure of definition perfectly suited the author’s intentions to present the reader, probably of Portuguese origin, information on a reality that seemed unusual to him. In addition, Bluteau undoubtedly did not refrain from citing many times the sources he consulted, as discussed above, nor did he questioned his authorship in the construction of the texts of the definitions of his *Vocabulario*, but “[...] there are cases where the Author does not point to any source” (GONÇALVES, 2006, p.224). It is precisely at this point that an issue needs to be raised: that of the authorship of some texts.

Bluteau made use of a bibliography not only to obtain information on certain subjects, but even transcribed them literally from their sources of research, not giving due credit to the authors of the texts. In the case of Brazilianisms, for example, we highlight two entries.

DEOS. He o Ente supremo, Ente por essencia, Ente, cuja essencia he ser, Ente independente, do qual todos os Entes dependem, Ente que he a fonte de todos os Entes, Ente que he principio, & fim de tudo [...] Porem nos Indios do Brasil entre as confusas ideas, que tem da Divindade, o temor lhe ensinou a compor o nome de Deos, porque chamaõ a Deos, Tupá, que quer dizer Escellencia espantosa, & desta mostraõ, que dependem; pela qual razaõ tem grande medo dos Trovoens, & relampagos, por que dizem, que são effeytos deste Tupá Superior; Por isso chamaõ ao trovaõ

Tupa çanunga, que quer dizer estrondo feyto pela Excellencia superior, & ao relampago chamaõ Tupá beraba, que quer dizer resplendor feyto pela mesma. Mas a este temor servil he incõparavelmente superior o temor filial com que chamamos ao Criador... (Vol. 3 (D), p.64-65, our emphasis is underlined).

Disse expressamente porque supposto que claramente por commum naõ reconhecem Deidade algũa; tem com tudo huns confusos vestigios de hũa Excellencia superior, a que chamaõ Tupá, que quer dizer Excellencia espantosa; & desta mostraõ que dependem; pella qual rezaõ tem grande medo dos trouoens, & relampagos, porque dizem que saõ effeitos deste Tupà superior, por isso chamaõ ao trouaõ Tupàçanunga, que quer dizer estrondo feito pella Excellencia superior; & ao relampago chamaõ Tupá beraba, que quer dizer, resplendor feito pella mesma. (VASCONCELLOS, 1668, p.176-177, our emphasis is underlined).

The entire section highlighted in Bluteau's 'Deos' entry corresponds exactly to Vasconcellos's underlined text (1668, p.176-177), with only minor changes in spelling and accentuation of words. And although this entry in the *Vocabulario* is quite long, he makes no direct reference to the work *Noticia do Brasil*. Still in this section, in the part that precedes the passage transcribed word for word, Bluteau presents an interpretation of the original information and reintroduces it in his own way while Vasconcellos mentions that the Indians of Brazil "naõ reconhecem Deidade algũa; tem com tudo huns confusos vestigios de hũa Excellencia superior" ["They do not recognize any Deity. They have with every thing confused traces of a superior Excellency"], the author of the Vocabulary affirms that "entre as confusas ideas, que tem da Divindade, o temor lhe ensinou a compor o nome de Deos ["among the confused ideas, that they have of the Divinity, the fear taught them to compose the name of God"]".

For the second example, consider the entry 'Cobra', of the Vocabulary.

COBRA. Cõbra. Animal reptil, & aquatico. Distinguese da serpente, em que nada com a cabeça fõra da agoa. *Coluber, ri. Masc. Virg. Columel. Colubra, ae. Fem.* [...] Cõbra de Coraes, ou cõbra de coral. Outra cõbra do Brasyl. Tem a pèlle branca, como néve, & malhada de negro, & vermelho. O seu veneno he mortal, mas vagaroso; o remedio delle hé a cabeça da mesma cõbra machuca, & applicada a modo de emplasto. O Gentio lhe chama Ibiboboca. *Serpens colore niveo, nigris, rubrisque maculis varius.*

[Snake. Animal reptile, & Aquatic. It distinguishes itself from the serpent, which swims with its head out of the water. *Coluber, ri. Masc. Virg. Columel. Colubra, ae. Fem.* [...] Cobra of Coraes, or coral snake. Another snake from Brazil. It has white skin, like snow, black & red, & red. His

venom is deadly but slow; his remedy is the head of the same snake, and it is applied as a plaster. The Gentile calls him *Ibiboboca*. *Serpens colore niveo, nigris, rubrisque maculis varius.*] (Vol. 2 (C), p.349-350 (our emphasis is underlined).

IBIBOBOCA Brasiliensibus, anguis pulcher, Lusitanis *Cobre de Corais* appellatur, duos pedes longus, pollicem autem crassus, calore niveo, & nigris, rubrisque maculis variegatus. Morsus illius venenatissimus, nom extemplo vitam depascitur, sed tarde se promover. (PISONIS, 1648, p.42-43, our emphasis is underlined)

Part of this entry was constructed, from what we can determine, with information extracted from the work of Pisonis (1648), which was not mentioned at any time in the entry. It can be noticed that Bluteau adhered to the almost literal transcription of the Latin part (as in the original), having used a Portuguese translation of the source text. In fact, the spelling of the Brazilianism is identical in both works.

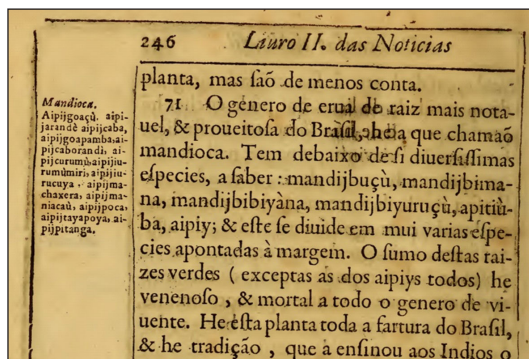
In light of these observations, we find that to construct the texts of some entries in his *Vocabulario*, Bluteau used, in large part, texts of other authors, at times transcribing them word for word and at times adapting them.

About the spelling of Brazilianisms

Bluteau did not appear to have done any on-site research in Brazil to collect linguistic material, resorting, as we have already mentioned, to several bibliographical sources that supported not only the information itself necessary to construct the definitions, descriptions and authentications of the entries in his *Vocabulario*, but also preserved, to some extent, their spelling.

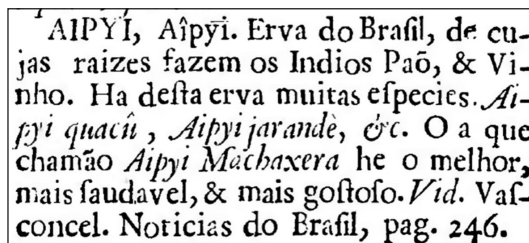
Originated in Tupinambá or Old Tupí, these words already had a written form in their primary sources, taking up, almost always, a Portuguese configuration of spelling. It was necessary to find out whether, when transplanted into *Vocabulario*, the original spelling of Amerindian words had been preserved or not. We therefore use the data in the sources and compare it with the material collected from the *Vocabulario*.

Figure 2 – Facsimile of page from the book *Noticias cvriosas, e necessarias das covsas do Brasil*, by Simam de Vasconcellos



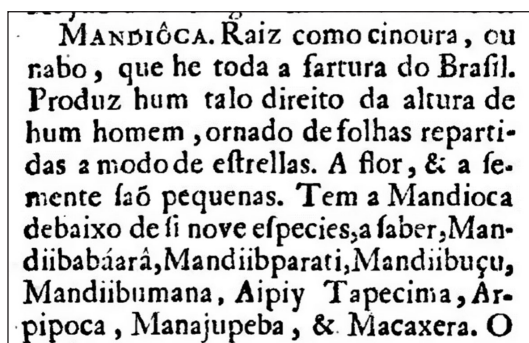
Source: Vasconcellos (1668, p.246).

Figure 3 – Facsimile of the entry AIPYI, of the *Vocabulario*



Source: Bluteau (1712, p.196).

Figure 4 – Facsimile of the entry MANDIÔCA, of the *Vocabulario*



Source: Bluteau (1716, p.286).

From this data sample, we could compare the following words:

- ‘aipyi’ (Vasconcellos) / ‘aipyi’ ‘aipyi’ (Bluteau)

These data initially demonstrate that there is no strict standardization in the use of forms. In the first entry ‘Aipyí’, there is a change of position of the high front vowel of the last syllable in relation to the Vasconcellos source text. In the second entry, there is a total coincidence between the spelling of the source text and that of Bluteau’s *Vocabulário*.

- **‘mandijbuçù’** (Vasconcellos) / **‘mandiibuçu’** (Bluteau)

In this second set of data, we observe two differences. The first refers to Bluteau’s decision to change ‘-ij-’ to ‘-ii-’; and the second, not to use the grave accent on the final vowel.

- **‘mandijbimana’** (Vasconcellos) / **‘mandiibumana’** (Bluteau)

Another change could be observed in these data; that of the change of the high front vowel ‘-bi-’ by the high back vowel ‘-bu-’.

- **‘aipijgoaçù’** (Vasconcellos) / **‘aipyi quacû’** (Bluteau)

In addition to the change from ‘-ij-’ to ‘-yi’ , mentioned above, Bluteau divides the word into two parts ‘aipyi’ and ‘quacû’, differing from that proposed by Vasconcellos. In addition, he replaces the syllable ‘-goa-’ with ‘qua-’, an alteration that constitutes an error of interpretation of the morpho-phonology of the indigenous language, since the suffix has the allomorphs -guasú (following stems ending in a vowel) and - usú (following stems ending in a consonant), but the underlying form of -guasú is /wasú/ and not /kwasú/. There is also the substitution of the accent of ‘ù’ for ‘û’. Faced with this last data and comparing it with ‘mandijbuçù’, we can raise the hypothesis of a certain inconstancy or lack of care in the transcription of the data of the sources, considering that there is no apparent context that justifies the suppression or replacement of the original grave accent.

- **‘aipijarandè’** (Vasconcellos) / **‘aipyi jarandè’** (Bluteau)
- **‘aipijmachaxera’** (Vasconcellos) / **‘aipyi machaxera’** ~ **‘aipyi macaxera’** (Bluteau)

The observations made to the previous data are sufficient to describe the changes present in the above data.

- **‘Tupàçanunga’** (Vasconcellos) / **‘Tupa çanunga’** (Bluteau)

Again Bluteau separates into two parts what in Vasconcellos is just a word. In the example ‘Tupà beraba’ (Vasconcellos), Bluteau keeps the original spelling, changing only the accent of the first word ‘Tupá beraba’.

- ‘papay’ (Marcgravi) / ‘papai’ (Bluteau)

Another change of spelling undertaken by Bluteau is in the example above, where the ‘y’ of the original word is replaced by ‘i’. This occurrence coincides with that observed in previous data.

The ‘Brasilico’ vocabulary in Bluteau’s *Vocabulario*

‘Brasilico’ is one of the 55 adjectives of Bluteau’s *Vocabulario* and, as we have seen, he justifies the use of this term because part of the entries contains information about Brazil, but also because he makes use of words derived from languages spoken in Brazil, Brazilianisms, in particular those of Tupi origin, which are being analyzed in the present study.

Thus, we have cataloged a set of 167 of these words presenting them in the form of a small glossary, in alphabetical order, with its own microstructure, containing the following elements arranged in this same order (exemplified below with the information in the entry ‘kaiatia’):

Headword: highlighted in bold capital letters, it is in the head of the entry and presents the words of Tupinambá or Tupi Antigo extracted from the *Vocabulario*; the spelling, in most cases, is Portuguese-style spelling. P. ex.: **CAIATIA**.

Etymology: placed in brackets after the Headword, presents the Tupinambá form(s) that would have originated the entry word. To identify the etymology of the Brazilianism we consulted Ruiz de Montoya (1639, 1640), Lemos Barbosa (1951), Navarro (2013), Cunha (1998), Houaiss (2009) and mainly Rodrigues (1958/1959), from which we also take advantage of the structure of presentation of the etymology, for example: [T. ka’?a ‘bush’ + ti ‘tip’ + -a ‘arg.’ = ‘sharp bush’].¹⁶ When there is more than one entry for the same word, we use v., followed by the forms of the other entries to refer to them. When necessary we use an equal sign for the expression of the final meaning of the words etymologically analyzed. Some etymologies of words referring to animal or plant species are followed by a free or literal translation, but the translation of some of them consists of their scientific name, their genus or the family to which they belong.¹⁷

Variant forms: if there are variations of the headword (form or content), the variant words, also drawn from the Vocabulary, are placed immediately after Etymology without effect. For example: caacica.

¹⁶ Abbreviations used within the *Vocabulario* are: **arg.** ‘argumentative’; **causat.** ‘causative’; **sp.** ‘species’; **fam.** ‘family’; **gen.** ‘genus’; **gen.hum.** ‘Generic-human’; **hyper.** ‘Hyperonym’; **intens.** ‘intensive’; lit. ‘literally’; **nom. ag.** ‘Nominalizer of agent’; **nom.circ.** ‘Nominalizer of circumstance’; **redupl.** ‘reduplication’; **rel.** ‘Relational’; **retr.** ‘Retrospective’; **v.** ‘to see’; **vol.** ‘volume’.

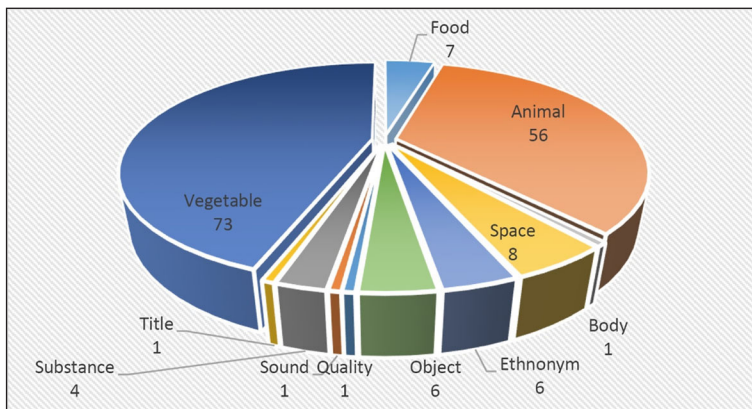
¹⁷ In order to determine this scientific terminology, we use mainly the Dictionary of the Animals of Brazil (IHERING, 1940), and the Taxonomic Catalog of Fauna do Brasil, electronic resource, available at: <<http://fauna.jbrj.gov.br/fauna/list>>.

Definition: As a definition of the Headword, a fragment also taken from the *Vocabulário* was written in Portuguese, and its original spelling was preserved, without the use of resources such as italics or bold letters, except when this resource was already present in the text-base. For example, “erva de cóbras, [...] he erva commun, & rasteira, tem as suas folhas alguma semelhança com as da ortelaã, [...] & de hum verde escuro, com raminhos”. This definition may also contain variant forms of Portuguese itself.

Source: presented in square brackets, provides the reference to one or more entries of this vocabulary from which the Headword information was extracted and is composed of the Volume number and respective input letter of the original *Vocabulário* microstructure. In addition, it cites the page(s) where the source entry, and the Headword, are located. In some cases, there is mention of the Supplement or the second edition of the *Vocabulário*. For example: [Vol. 2 (C), p.349-350 COBRA].

For a better understanding of the content of these Brazilianisms within the Brazilian vocabulary extracted from the *Vocabulário* of Bluteau, we decided to verify to which semantic fields they were associated, as can be seen in the following chart:

Chart 1 – Tupinambá data that were extracted from the *Vocabulário* classified by semantic fields



Source: Data compiled by the authors of the research.

The predominance of Tupinambá words in the Animal and Plant semantic fields is justified not only by the sources consulted, but also because these words began to circulate in Portugal due to the intense interchange between the metropolis and the colony since the 15th century.

Glossary of Amerindian Brazilianisms in Bluteau's *Vocabulario*

The repertoire presented below combines the words of Tupinambá/Old Tupí origin registered in the volumes of Bluteau's *Vocabulario*; a work that represents a milestone in the history of lexicographic studies of the Portuguese language (cf. GONÇALVES, 2006).

acariçoba [T. > *aka'ri* 'plant' + s-¹⁸ 'relational' + *-óβ* 'leaf' + *-a* 'arg.' = 'Araliaceae fam.'] erva do capitaõ, he planta nodosa, com raizes por intervallos, com que se estende pelo chaõ [Vol. 1 Supl. (E), p. 390 ERVA]

aguaraciunha-acu [T. > *awa'ra* 'plant' + *-ki'ʔij* 'pepper' + *-a'su* 'intensive' = 'Boraginaceae fam.'] fedagoso, [...] tem as folhas mais picantes, que as da ortiga. Todo o talo he cuberto de bicos, sempre verdes fedegoso [Vol. 1 Supl. (F), p. 423 FEDAGOSO]

aguaraquiya [T. > *awa'ra* 'plant' + *ki'ʔij* 'pepper' + *-a* 'arg.' = 'plant, *Solanun piterocaulon*, Solanaceae fam.'] pimenta de gallinha, planta do Brasil, herva do bicho, herva moura [Vol. 6 (P), p. 507-509 PIMENTA]

aguti [T. > *aku'ti* 'aguti', *Dasyprocta* gen., *Dasyproctidae* fam.'] cotia [Vol. 2 (C), p. 590 COTIA]

aipy tapecima [T. > *ai'pi* 'cassava, sweet manioc' + *i'ta* 'rock' + *pesim-* 'smooth' + *-a* 'arg.' = 'smooth rock sweet manioc'] especie de mandiõca [Vol. 5 (M), p. 286 MANDIÕCA]

aipy [T. > *ai'pi* 'cassave, sweet manioc'], aipy, erva do Brasil, de cujas raizes fazem os Indios Paõ aipim [Vol. 1 (A), p. 196 AIPYI / Vol. 5 (M), p. 286 MANDIÕCA]

aipy machaxera [T. > *ai'pi* 'sweet manioc' + *macaxeira* 'sweet manioc' + *-a* 'arg.'], *aipy macaxera*, erva do Brasil, de cujas raizes fazem os Indios Paõ [...] he o melhor, mais saudavel, & mais gostoso [Vol. 1 (A), p. 196 AIPYI / Vol. 5 (M), p. 286 MANDIÕCA]

aiuru [T. > *aju'ru* 'parrot'] especie de papagayo [Vol. 6 (P), p. 236 PAPAGAYO]

aiurucuruca [T. > *aju'ru* 'parrot' + *ku'ruk* 'grunt' + *-a* 'arg.' = 'grunting parrot'] especie de papagayo [Vol. 6 (P), p. 236 PAPAGAYO]

ajuru juba [T. > *aju'ru* 'parrot' + *juβ* 'yellow' + *-a* 'arg.' = 'yellow parrot'] nome dado a diferentes nações que naquella terra habitão [Brasil] [Vol. 5 (M), p. 375-376 MAZOMBO]

ananas [T. > *na'na* 'pineapple'] ananaz fruto do Brasil, he de feiçãõ de huma pinha de Portugal [Vol. 1 (A), p. 360 ANANAS]

andira [T. > *a'nir* 'angelim' + *-a* 'arg.' = 'angelim'] angelim [Vol. 1 (A), p. 374 ANGELIM]

anhima [T. > *aj'im* 'species of bird of prey, *Anhimidae* fam.' + *-a* 'arg.'] ave do Brasil, de rapina, he aquatica [Vol. 1 Supl. (A), p. 49 ANHIMA]

anhuyba-peabya [T. > *ajĩʔiβ* 'plant, cinnamon sassafras' + *-ape* 'bark' + *-aβi* 'different' = 'cinnamon sassafras, *Lauraceae* fam., lit. 'plant of different bark'] sassafras do Brasil,

¹⁸ Some constructions of the Old Tupí that consisted of phrases with nominal predicates like *gwakari s-óβ-a*, literally 'gwakari is leafy', when they were adapted to the Portuguese phonology, were lexicalized like simple nouns, having its original parts been crystallized, and no longer segmentable.

sassafráz he hum pao cheyroso, aromatico, com algũa acrimonia [Vol. 7 (S), p. 504-505 SASSAFRÂZ]

aramaca [T. > *arama'sa* 'Arinectes maculatus, Aquirídeos fam.'] cubricunha, peixe do mar, [...] [o] focinho [...] he de cor de pedra, tem de huma parte dous olhos, e da outra nenhum, vive entre as areas do mar [Vol. 1 Supl. (C), p. 276 CUBRICUNHA]

arara [T. > *a'rar* 'macaw' + *-a* 'arg.' = 'macaw'] he huma especie de Papagayo grande [Vol. 1 (A), p. 467 ARARA]

araticu [T. > *arati'ku* 'plant, Annonaceae fam.'] planta do Brasil, he arvore, muy fresca de tres especies [Vol. 1 (A), p. 467 ARATICU]

arpipoca [T. > *-ar(a)* 'ear' + *-pi(r)* 'skin' + *-pok* 'pop' + *-a* 'arg.' = 'ear of popped skin'] especie de mandiôca [Vol. 5 (M), p. 286 MANDIÔCA]

baepapina [T. > *mba?e* 'thing' + *a'pin* 'naked, shaved' + *-a* 'arg.' = 'thing with shaved head (mythical being)'] outra especie de Tritão, q̄ he da figura, & do tamanho de hum menino, peyxe do mar do Brasil [Vol. 8 (T), p. 298 TRITAÕ]

beiju [T. > *mbe'ju* 'cassava bread'] pequenos bolos alvissimos, & delicadissimos [Vol. 2 (B), p. 87 BEIJU]

biariby [T. > *mbi* 'nom.obj' + *-?ar* 'take' + *i'βi* 'earth' 'cooked in hole in ground'] he o assado daqueles Barbaros [Vol. 2 (B), p. 116 BIARIBY]

boicinininga [T. > *mboj* 'snake' + *si'ninj* 'metallic sound, repetitive and loud' + *-a* 'arg.' 'rattle snake'], *xenninga*, cóbra de cascavél [Vol. 2 (C), p. 349-350 COBRA / Vol. 1 Supl. (C), p. 205 CASCAVEL]

boiobi [T. > *mboj* 'snake' + *o'βi* 'green/blue' = 'green snake, Colubridae, fam.'] cóbra verde [Vol. 2 (C), p. 349-350 COBRA]

boitiapò [T. > *mboj* 'snake' + *ti* 'tip' + *a'po* 'root' = 'Chironius, Colubridae fam.'] cóbra de cipò [Vol. 2 (C), p. 349-350 COBRA]

caapomonga [T. > *ka'ʔa* 'bush' + *po'moj* 'slimy' + *-a* 'arg.' = 'ora-pro-nobis, onze horas'] erva do vina, he erva do Brasil carapicos, carapitos [Vol. 1 Supl. (E), p. 390 ERVA]

caiatia [T. > *ka'ʔa* 'bush' + *ti* 'tip' + *-a* 'arg.' = 'sharp bush'] *caacica*, erva de cóbras, [...] he erva commun, & rasteira, tem as suas folhas alguma semelhança com as da ortelaã, [...] & de hum verde escuro, com raminhos [Vol. 2 (C), p. 349-350 COBRA]

caju [T. > *aka'ju* 'cashew'] caijù planta do Brasil. Desde a raiz até a ultima vergôtea tem esta planta muitas utilidades [Vol. 2 (C), p. 41 CAJU]

camará [T. > *kama'ra* 'herb'] erva do Brasil, de que ha seis especies [Vol. 2 (C), p. 69 CAMARA]

cangoera [T. > *kanj* 'bone' + *-'wer* 'retrospective' + *-a* 'arg.' = 'carcass'] instrumentos musicos feito de ossos de finados [Vol. 2 (C), p. 102 CANGOERA]

capiipuba [T. > *kapi'ʔi* 'grass' + *-'pub* 'soft, ripe, rotten' + *-a* 'arg.' = 'soft grass'] pè de gallinha, herva do Brasil [Vol. 6 (P), p. 331-338 PÊ]

caragoata, v. caroata [T. > *karagwa'ta*] planta do Brasil, tem varias, & notaveis especies, huma dellas he a verdadeira erva babosa medicinal [Vol. 2 (C), p. 135 CARAGOATA]

caramuru [T. > *karamu'ru* 'lit. eel, lamprey'] homem do fogo [Vol. 2 (C), p. 136-137 CARAMURU]

carapéba [T. > *aka'ra* 'fish Chchidae' + *'peβ* 'flat' + *-a* 'arg.' = 'flat acará'] peixe do Brasil, chato, e largo [Vol. 1 Ed. 2 (C), p. 232 CARAPE'BA]

carapinimas [T. > *aka'ra* 'fish, Chchidae' + *-pi'nim* 'striped, with spots' + *-a* 'arg.' = 'acará with spots'] arvore do Brasil [Vol. 2 (C), p. 138 CARAPINIMAS]

carara pinima [T. > *sara'ra* 'species of crustaceon/crab' + *pi'nim* 'striped, with spots' + *-a* 'arg.']. marinheiro, especie de Camarão do Brasil [Vol. 5 (M), p. 333 MARINHEIRO]

çariguê, v. sariguê [T. *sari'wé* 'skunk, *Didelphis* gen.']. "A cauda do Çariguê he prestantissimo remedio para dores de rins." Vasconcel. Noticias do Brasil, pag. 288. [Vol. 6 (P), p. 716 PRESTANTE]

carimâ [T. > *kari'mã* 'rotten manioc dough] he o beijo, ou flor da farinha de pao [Vol. 1 Supl. (C), p. 201 CARIMÂ]

caroata v. caragoata [T. > *karawa'ta* 'plant, *Eryngium* sp.']. caroata, termo do Brasil, cardo silvestre [Vol. 2 (C), p. 157 CAROATA]

ceixû [T. > *sej'ju* 'pleiad'] he o nome vulgar da constellação a que os Astronomos chamão Pleyadas [Vol. 7 (S), p. 633 SETTE-ESTRELLO]

cereiba [T. > *sere'ʔiβ* 'typical tree of mangroves, *Avicennia germinans* (L.)' + *-a* 'arg.']. especie de mangue [Vol. 5 (M), p. 292 MANGUE]

cereibuna [T. > *sere'ʔiβ* ~ *siri'ʔiβ* 'typical tree of mangroves, *Avicennia germinans* (L.)', 'lit. Tree of crabs' + *-un* 'black' + *-a* 'arg.']. especie de mangue [Vol. 5 (M), p. 292 MANGUE]

cipó [T. > *isi'po* 'vine'] he o nome commum [...] a todas as ervas grandes dos matos [Vol. 2 (C), p. 320 CIPÓ]

copaiba [T. > *kopa'ʔiβ* 'plant, *Copaifera langsdorfii* Desf.' + *-a* 'arg.' = '*Copaifera langsdorfii* Desf.']. planta, assi chamada dos Indios do Brasil [Vol. 2 (C), p. 530-531 COPAIBA]

corica [T. > *ku'rik* 'ave, *Pionopsitta caica*' + *-a* 'arg.' = '*Pionopsitta caica*'] he huma casta de Papagayo, vestido de huma penna verde escura, & tem a cabeça azul, de côr de Rosmaninho [Vol. 2 (C), p. 549 Corica]

cuiriri [T. > *su'iri'ri* 'crowned humming bird'] v. pitanga guacu [Vol. 2 (B), p. 98 BEMTERE]

cupueruçu [T. > *'kap* 'generic name for wasps' + *-'wer* 'retr.' + *-u'su* 'intens.' = 'species of bee', 'lit. ex-big-wasp'] especie de vespa do Brasil [Vol. 5 (M), p. 331 MARIBONDA]

cuya [T. *kúja*, '*kuj* 'bowl' + *-a* 'arg.' = 'bowl'] vaso de barro, em que bebe o Gentio do Brasil cuiá [Vol. 2 (C), p. 648 CUYA]

embuayembo [T. *ambuʔájembó*, *ambu'ʔa* 'plant, *Polypodiaceae* fam.' + *je'mbo* 'branch, herb' = '*Polypodiaceae* fam.']. herva do Brasil [Vol. 6 (O), p. 30 OCCOEMBO]

giboya [T. *jibója*, *ji'boj* '*Boa constrictor*' + *-a* 'arg.' = '*Boa constrictor*'] *boiguacú*, *boyacú*, cóbra de veado gibóya, cóbra boy [Vol. 2 (C), p. 349-350 GIBOYA / Vol. 4 (G), p. 64 COBRA / Vol. 7 (Q), p. 75 QUOJA]

goanhambig, v. guainumbi [T. > *gwajnu'mbi* 'hummingbird'] nome geral de hum Passarinho do Brasil [Vol. 4 (G), p. 85 GOANHAMBIG]

goaracyaba [T. > *gwarasy'*ab 'species of hummingbird' + -a 'arg.' = 'species of hummingbird'] *guaracyaba*, rayo do Sol, especie de hum Passarinho do Brasil [Vol. 4 (G), p. 85 GOANHAMBIG / Vol. 6 (P), p. 494 PICAFLÔR]

guabiporacaiba [T. > *wa'βi* 'something edible, food' + '*por* 'content' + *a'ka* 'bitter' + *a'ib* 'bad' + -a 'arg.' = 'rotten bread'] pao podre [Vol. 6 (P), p. 228-230 PÂO]

guaibi coara [T. > *wai'βi* 'old' + '*kwar* 'hole' + -a 'arg.' = 'species of fish'] buraco de velha, hum peixe do Brasil [Vol. 1 Supl. (B), p. 161 BURACO]

guainumbi [T. > *wajnu'mbi* 'hummingbird'] *aratica*, *aratarataguacu*, pegafôr, ave do Brasil, picafôr [Vol. 6 (P), p. 364 PEGAFÔR / Vol. 6 (P), p. 494 PICAFLÔR]

guaparaiba [T. > *gwapare'ʔiβ* 'variety of mangrove plant' + -a 'arg.'] guaparumbo, especie de mangue [Vol. 5 (M), p. 292 MANGUE]

guaperva [T. *waperu'a* 'pig fish'] *piraaça*, peixe porco [Vol. 6 (P), p. 618 PORCO]

guaraz [T. > *wa'ra* 'bird, *Eudocimus ruber*'] passaro Bras. [Vol. 1 Ed. 2 (G), p. 673 GUARAZ]

guebucu [T. > '*wef* 'fish, *Istiophorus albicans*' + -*u'su* 'intens.' = '*Istiophorus albicans*'] bicuda, peixe do Brasil [Vol. 1 Supl. (B), p. 133 BICUDA]

guireapeacoça [T. > *wi'rape* 'chicken' + *asok* 'larvas, worms found in fruit' + -a arg' 'chicken feed'] pao de gallinha [Vol. 6 (P), p. 228-230 PÂO]

iaboticaba [T. > *jabot'ikaβ* 'fruit, *Plinia cauliflora*' + -a 'arg.' = '*Plinia cauliflora*'] arvore do Brasil. Seu fruto nace no mesmo pao da Arvore desde a rais até o ultimo das vergontas [Vol. 4 (I), p. 4 IABOTICABA]

iacarandá [T. > *jakara'nda* 'plant, *Bignoniaceae* fam.'] arvore do Brasil de duas especies, branca, & negra, jacarandá [Vol. 4 (I), p. 4 IACARANDA]

iacaré [T. > *jaka're*, *iacare*, *jacarê*, *jacaré* '*Crocodylia*' [Vol. 4 (I), p. 4-5 IACARE]

iamacaru [T. > *jamaka'ru* 'plant, *Cactaceae* fam., *Cactus* gen.'], *amacaru*, *iaracaty*, planta do Brasil, he genero de Cardo agreste [Vol. 4 (I), p. 8-9 IAMACARU]

iaracaty [T. > *ja'raka'ty*] v. *iamacaru* [Vol. 4 (I), p. 8-9 IAMACARU]

ibiboboca [T. > *ibibobóka* = *i'βi* 'earth' + '*βok* 'species of coral snake' + -a 'arg.' = '*Micrurus ibiboboca*'], cóbra de coraes, cóbra de coral [Vol. 2 (C), p. 349-350 COBRA]

ibira babaca [T. > *ibi'ra* 'wood' + -*βaβak* 'turn(over)' + -a 'arg.' = 'turned over wood'], *ibira parangana*, engenho de açúcar [Vol. 1 (A), p. 116-117 AC,UCAR]

ibira parangana [T. > *βi'ra* 'wood' + -*pa'rang* 'to slip' + -a 'arg.' = 'slippery wood'] v. *ibira babaca* [Vol. 1 (A), p. 116-117 AC,UCAR]

ibirapitanga [T. > *ibi'ra* 'wood' + -*pi'tanj* 'red' + -a 'arg.' = 'brazil-wood'], arvore, Pao Brasil, [...] tem a casca fusca, armada de pequenos espinhos, ramos, & folhas opostas humas às outras, & flores a modo de bolotas, mas ocas [Vol. 4 (I), p. 19 IBIRAPITANGA / Vol. 6 (P), p. 228-230 PÂO]

ibirarema [T. > *ibi'ra* 'wood' + '*rem* 'smelly' + -a 'arg.' = 'smelly wood'], *tipi*, pao d'alho cipó d'alho [Vol. 6 (P), p. 228-230 PÂO]

ibyara [T. > *ibiar* 'species of snake' + -a 'arg.' = 'snake, *Anfisbênia* gen.'], *boyguacu*, *bodty*, cóbra de duas cabeças [ou] cóbra céga, huma serpente do Brasil [Vol. 2 (C), p. 349-350 COBRA / Vol. 1 Supl. (C), p. 212 CEGA]

ierepemonga [T. > *jerepe'monga* 'species of aquatic snake'], *jerepemonga*, serpente marinha do Brasil, a qual muytas vezes está immovel debaixo da agoa [Vol. 4 (I), p. 39 IEREPEMONGA / Vol. 1 Ed. 2 (J), p. 743 JEREPEMONGA]

igacaba [T. > *'?i* 'water, liquid' + *-a'saß* 'crossed' + *-a* 'arg.' = 'container made of clay used for storing liquids and solid foods'] talha grande [Vol. 1 Ed. 2 (G), p. 691 IGACABA]

igara [T. > *i'(g)ar* 'canoe' + *-a* 'arg.']. canoa [Vol. 1 Supl. (I), p. 512 IGARVANA]

igbanemixama [T. > *iranami'xama* 'plant, *Eugenia brasiliensis* Lam., Myrtaceae fam.'], *igranamixana*, *igranemixama*, arvore do Brasil, que tem fruto a modo de ameixas çaragoçanas *grumixana* [Vol. 1 Supl. (I), p. 512 IGRANEMIXAMA]

igranamixama [T. > *iranami'xana*] v. *igbanemixama*

inimboja [T. > *ini'mboj* 'plant, *Muricatis siliquis*' + *-a* 'arg.' = '*Muricatis siliquis*'] silva de praya, planta do Brasil [Vol. 7 (S), p. 645 SILVA]

invira [T. > *i'mbir* 'that which has fibers' + *-a* 'arg.' = 'plant, *Daphnopsis* gen.']. erva do Brasil [Vol. 4 (I), p. 186 INVIRA]

ipeçu [T. > *ipe'kü* 'species of duck'] cortapao, passaro do Brasil [Vol. 1 Supl. (C), p. 264 CORTAPAO]

iperuquiba [T. > *ipe'ru'käß* 'fish, *Echeneis naucrates*' + *-a* 'arg.' = '*Echeneis naucrates*'], *piraquiba*, pegadôr, peixe do mar Oceano [Vol. 6 (P), p. 364 PEGADÔR / Vol. 6 (P), p. 494 PICAFLÔR]

ipupiapia [T. > *ipupia* 'genie of the waters' + *pia* 'redupl.'], *ypupiapia*, outra casta de peixe molher tritoens [Vol. 5 (M), p. 543-546 MOLHER / Vol. 8 (T), p. 298 TRITAÕ]

jacape [T. > *jasapé, sapé* 'plant, *Imperata brasiliensis* gen.'], *sape*, herva do Brasil [Vol. 2 Supl. (S), p. 197 SAPE]

jacapucaya [T. > *jasapu'kaj, sapukaj* '*Lecythis pisonis*' + *-a* 'arg.' = '*Lecythis pisonis*'] madeira durissima [Vol. 1 (A), p. 116-117 AC,UCAR]

jagua caguare [T. > *ja'(g)wasawa're* 'species of fish'] hum peixe, [...] tem a boca muito pequena, respectivamente ao corpo; negreja a cabeça, alveja a barriga, e tira a azul [Vol. 1 Supl. (J), p. 509 JAQUETA]

jaguacati guacu [T. > *ja'waka'ti* 'kingfisher, *Megaceryle torquata*' + *-gwasu* 'intens.' 'big kingfisher'] papapeixe, ave do Brasil [Vol. 6 (P), p. 237 PAPAPEIXE]

jaguara [T. > *ja'war* 'onça' + *-a* 'arg.' = 'jaguar, dog'] especie de onça [...] do tamanho de hum lobo [Vol. 6 (O), p. 75-77 ONÇA]

jaguarete [T. > *ja'war* 'jaguar' + *-e'te* 'genuine' + *-a* 'arg.' = 'jaguar'] onça, [...] especie de tygre, do tamanho de hum novillo de hum anno [Vol. 6 (O), p. 75-77 ONÇA]

jamacaru [T. > *jamaka'ru*] v. *iamacaru* [Vol. 4 (I), p. 8-9 IAMACARU]

jauarandim [T. > *jawara'ndi* 'paripabora herb, *Piper umbellatum*'] raiz Brasil officinal. [Vol. 1 Ed. 2 (J), p. 742 JAUARANDIM]

jerepemonga [T. > *je'repe'monga*] v. *ierepemonga* [Vol. 1 Ed. 2 (J), p. 743 JEREPEMONGA]

jeriçucu [T. > *je'riku'ru* '*Ipomoea altissima* M., also called baririçô, yellow potato and jalapão, as well as jeriçuçu root, jalapa, and White rhubarb'] batata de purga [Vol. 5 (M), p. 381 MECHOACAÕ]

jubé [T. > *ju'βe* 'ideophone used to call alegators'] voz com que os Índios chamam os iacarés [Vol. 4 (I), p. 4-5 IACARE]

macaxera [T. > *maka'ser* 'sweet manioc, *Manihot esculenta*' + *-a* 'arg.'] especie de mandiôca [Vol. 5 (M), p. 286 MANDIÔCA]

manajupeba [T. > *ma'ni* 'manioc' + '*juβ* 'yellow' + '*peb* 'flat' + *-a* 'arg.' = 'lit. flat yellow manioc'] especie de mandiôca [Vol. 5 (M), p. 286 MANDIÔCA]

mandiibabáará [T. > *man'di?iβ* 'open stem manioc' + *-a'βa* 'open' + *-a'ra* 'ear' = 'lit. open ear manioc'] especie de mandiôca [Vol. 5 (M), p. 286 MANDIÔCA]

mandiibparati [T. > *man'di?iβ/ma'ni?iβ* 'stem of manioc plant' + *parati* 'species of manioc' = 'lit. parati stemmed manioc'] especie de mandiôca [Vol. 5 (M), p. 286 MANDIÔCA]

mandiibuçu [T. > *man'di?iβ* 'stem of manioc plant' + *u'su* 'intensivo' = 'lit. Mandioca of big stem'] especie de mandiôca [Vol. 5 (M), p. 286 MANDIÔCA]

mandiibumana [T. > *man'di?iβ* 'stem of manioc plant' + *uman* 'big' + *-a* 'arg.' = 'lit. mandioca de caule grande'] especie de mandiôca [Vol. 5 (M), p. 286 MANDIÔCA]

mandiôca [T. > *mandi'ok / mani'ok* 'manioc' + *-a* 'arg.'] raiz como cinoura, ou nabo, que he toda a fartura do Brasil [Vol. 5 (M), p. 286 MANDIÔCA]

manipoy [T. > *manipoj* 'fruit of rosewood'] [Vol. 4 (I), p. 4 JACARANDA]

maracujá [T. > *maraku'ja* 'passion fruit, *Passiflora edulis*'] maracujá, [...] he huma fruta, que vem do Brasil [Vol. 5 (M), p. 317-318 MARACUJA / Vol. 2 Supl. (O), p. 87 ÔCULO]

maracujá guaçú [T. > *maraku'ja* 'passion fruit, *Passiflora edulis*' + *-gwa'su* 'intens.' = 'large passion fruit'] especie de maracujá [Vol. 5 (M), p. 317-318 MARACUJA]

maracujá-etê [T. > *maraku'ja* 'passion fruit, *Passiflora edulis*' + *-e'te* 'genuine' = 'true passion fruit'] especie de maracujá [Vol. 5 (M), p. 317-318 MARACUJA]

maracujá-mirí [T. > *maraku'ja* 'passion fruit, *Passiflora edulis*' + *mi'ri* 'small' = 'small passion fruit'] merí, mirí especie de maracujá [Vol. 5 (M), p. 317-318 MARACUJA / Vol. 2 Supl. (M), p. 37-38 MERÍ]

maracujá-mixíra [T. > *maraku'ja* 'passion fruit, *Passiflora edulis*' + *mi'fir* 'roast' + *-a* 'arg.' = 'roasted passion fruit'] especie de maracujá [Vol. 5 (M), p. 317-318 MARACUJA]

maracujá-perôba [T. > *maraku'ja* 'passion fruit, *Passiflora edulis*' + *pe* 'flat' + *roβ* 'bitter' + *-a* 'arg.' = 'lit. flat bitter passion fruit'] especie de maracujá [Vol. 5 (M), p. 317-318 MARACUJA]

maracujá-piruna [T. > *maraku'ja* 'passion fruit, *Passiflora edulis*' + *pir* 'skin' + *-un* 'black' + *-a* 'arg.' = 'black skinned passion fruit'] especie de maracujá [Vol. 5 (M), p. 317-318 MARACUJA]

maracujá-satâ [T. > *maraku'ja* 'passion fruit, *Passiflora edulis*' + *s-* 'relational' + *a'ta* 'fire' = 'lit. Passion fruit that has fire'] especie de maracujá [Vol. 5 (M), p. 317-318 MARACUJA]

miry [T. > *miri* 'a fruit'] he como perinhas, & tem o sabor de Sanjoaneiras de Portugal [Vol. 4 (G), p. 87 GOIABEIRA]

nhamdu [T. > *ja'ndu* ~ *jandi* 'species of pepper'] he hum arbusto, cujas folhas nascem huma, e huma, separada da outra, e da figura do coração [Vol. 1 Supl. (B), p. 130 BETRE]

nhandi [T. > *ja'ndi* ~ *ja'ndu* 'species of pepper'] pimenta dos Indios [Vol. 6 (P), p. 507-509 PIMENTA]

nhanduguacu [T. > *ja'ndu* 'ema' + *-gwa'su* 'intens.' = 'emu'] ema [Vol. 3 (E), p. 34-35 EMA]

nheraniegma [T. > *jerane'ʔin* 'innocent, tame' + *-a* 'arg.' = 'tame alligator'] jacaré inocente, & manso iacaré [Vol. 4 (I), p. 4-5 IACARE]

paca [T. > *'pak* '*Cuniculus paca*' + *-a* 'arg.' = '*Cuniculus paca*'] animal do Brasil [Vol. 6 (P), p. 169 PACA]

pacoba [T. > *paʔa'koβ* ~ *pa'koβ* 'banana' + *-a* 'arg.' = 'native banana'] *pacobete*, he huma planta do Brasil, cujas folhas chegam a ter de comprimento vinte palmos [Vol. 6 (P), p. 173 PACOBA / Vol. 6 (P), p. 561 POÇO]

pacobete [T. > *pa'koβ* 'native banana' + *-e'te* 'genuine' = 'true banana'] arvore natural do Congo, que tambem se cria no Brasil [Vol. 6 (P), p. 173 PACOIRA]

pará [T. > *pa'ra* 'river'] rio [Vol. 6 (P), p. 438 PERNAMBUCO]

paraguassu [T. *pa'ra* 'river' + *-gwa'su* 'intensive' 'big river'] grao Pará [Vol. 1 (A), p. 322-324 AMAZONA]

paranaguazu [T. *para'na* 'river, sea' + *-gwa'su* 'intensive' = 'big river'] o Rio da Prata [Vol. 6 (P), p. 670 PRATA]

pequea [T. *peki'ʔa* 'pequi tree, *Caryocaraceae* fam.'] setim, pao de hũa planta [Vol. 7 (S), p. 623 SETÍM]

piasáva [T. > *pia'saβ* 'plant, *Attalea funifer* Mart.' + *-a* 'arg.' = 'plant, *Attalea funifer* Mart.'] juncos pretos, que vem do Brasil [Vol. 6 (P), p. 493 PIASÁVA]

piraaça [T. > *pi'ra'ka pi'ra* 'fish' + *ak'a* 'horned' = 'horned fish'] v. guaperva [Vol. 6 (P), p. 618 PORCO]

pirajurumenbeca [T. > *pi'ra* 'fish' (hiper.) + *-juru* 'mouth' + *-membek* 'soft' + *-a* 'arg.' = 'fish (of) soft mouth'] bocamolle, peixe do Brasil [Vol. 1 Supl. (B), p. 144 BOCAMOLLE]

pirapuama repoti [T. > *pi'ra* 'fish' (hiper.) + *-pu'ʔam* 'lifted up' + *-a* 'arg.' + *r-* 'rel.' + *epo'ti* = 'whale feces'] ambar, [...] que val tanto, como *pasto*, que sobe à praya por vomitos [Vol. 1 (A), p. 324 AMBAR]

piraquiba [T. > *pi'ra* 'fish' + *'kyβ* 'louse' + *-a* 'arg.' = 'louse fish'] v. iperuquiba [Vol. 6 (P), p. 364 PEGADÔR]

pitanga guacu [T. > *pi'tan* 'kiskadee, *Tyrannidae* fam.' + *-gwa'su* 'intens.' = 'big kiskadee, *Tyrannidae*' fam.], *cuiriri*, *pitangua guacu*, *bemtere*, [...] passaro do Brasil [Vol. 2 (B), p. 98 BEMTERE / Vol. 1 Supl. (B), p. 125 BEMTERE]

poteingi [T. > *po'ti* 'shrimp' + *'ʔi* 'water, river' = 'river of shrimps'] Rio Grande, Rio da America Meridional, no Brasil [Vol. 7 (R), p. 339 RIO]

potigoâras [T. > *po'ti* 'shrimp' + *'ʔu* 'ingest' + *-ar* 'nom.ag' + *-a* 'arg.' = 'shrimp eaters'] potigoâres indios do Brasil, que senhoreârao principalmente a Capitania de Pernambuco, & Itamaracá [Vol. 6 (P), p. 655 POTIGOÂRAS]

puraque [T. > *pura'ke* 'electric fish, *Lectrophorus electricus*'] viola, peyxe dos mares do Brasil, he largo, pouco grosso, & cartilaginoso [Vol. 8 (T), p. 508 VIÔLA]

quity [T. > *qui'ti* 'plant, fam. *Sapindaceae*'] arvore do Brasil, os Portuguezes do Brasil chamaõ sabão ao fruto dessa árvore pao de sabão [Vol. 7 (S), p. 407 SABAÕ]

quiyà [T. > *ki'ÿj* 'pepper'+ -a 'arg.' = 'pepper'] pimenta da terra [Vol. 6 (P), p. 507-509 PIMENTA]

quoaracyaba, v. goaracyaba [T. > *gwarasy'ab* 'species of hummingbird' + -a 'arg.' = 'species of hummingbird'] *guaracigaba*, cabelo do Sol, especie de hum Passarinho do Brasil [Vol. 4 (G), p. 85 GOANHAMBIG / Vol. 6 (P), p. 494 PICAFLÔR]

sagui [T. > *sa'gwi* '*Didelphidae* fam.'] çagui, especie de bugio pequeno, que tem cauda comprida, & na cabeça huns cabelos a modo de patas [Vol. 7 (S), p. 428 SAGUI]

sapucaya [T. > *jasapu'kaj*, *sapu'kaj* 'sapucaia' + -a 'arg.' = 'plant. *Lecythidaceae* fam.'], *çapucaya*, planta do Brasil, he arvore de tronco alto, & ordinariamente muyto grosso [Vol. 7 (S), p. 494 SAPUCAYA]

sariguê v. çariguê [T. > *sari'gwe* 'skunk, *Didelphis* gen.'], *çariguê*, *çarigoè*, animal do Brasil, he do tamanho de hũ grande cachorro; cabeça de raposa, focinho agudo; dentes, & barba à maneyra de gato [Vol. 7 (S), p. 502 SARIGUÊ]

tabôcas [T. > *ta'βok* 'species of bamboo' + -a 'arg.' = 'species of bamboo'] são hũas canas bravas, mais grossas, que as de Portugal, rodeadas de puas, tão agudas, & solidas, qua as não desponta qualquer opposição [Vol. 8 (T), p. 10 TABÔCAS]

tamendua [T. > *tamandu'pa* 'species of *Myrmecophagidae* fam.'], *tamanduà*, *tomandua*, animal do Brasil, quasi do feitio de caõ, ou de raposa, mas tem o focinho muito comprido, como tambem a lingua [Vol. 8 (T), p. 34-35 TAMENDUA]

tamoata [T. > *tamoata* 'fish, *Calictiideos* fam.'] soldado, peyxe do Brasil [Vol. 7 (S), p. 700-701 SOLDADO]

tangara [T. > *tanja'ra* 'bird, *Piprìdeos* fam'. (*Chiroxiphia caudata*')] ave do Brasil, tem hum com o barrete na cabeça de laranja finissimo [Vol. 8 (T), p. 36 TANGARA]

tangaraca [T. > *tanjara'ka* 'herb, *Ciphoelis mellioefolia*'] erva do rato, ha de tres especies [Vol. 1 Supl. (E), p. 390 ERVA]

tapijere [T. > *tapi'ÿr* 'tapir, *Tapirus terrestris*' + -e'te 'true' = 'true *Tapirus terrestris*'] *tapirete*, anta [Vol. 1 (A), p. 395 ANTA]

tapuyas [T. > *tapi'ÿj* 'enemy' + -a 'arg.' = enemy'] gentios mais barbaros da America [Vol. 7 (R), p. 339 RIO]

tatu [T. > *ta'tu* 'armadillo, *Dasypodidae* fam.'] *tatupeba*, encubertado [Vol. 3 (E), p. 98 ENCUBERTADO]

temacujã unã [T. > *temacu'ja* 'especies of passion fruit' + -'un 'black' + -a 'arg.' = 'species of black passion fruit'] especie de maracujã [Vol. 5 (M), p. 317-318 MARACUJA]

tipiti [T. > *tepi'ti* 'manioc press'] certo genero de prensa [Vol. 2 (C), p. 41 CAJU]

tobã [T. > *t-* 'gen.hum.' + *o'wa* 'face' = 'human face'] rosto [Vol. 8 (T), p. 182 TOBAYARÃS]

tobayarâs [T. > *t-* ‘gen.hum.’ + *-oβa* ‘face’ + *-jar* ‘owner’ + *-a* ‘arg.’ = ‘owner of human face’, ‘brother-in-law’], *tobayaras* são os Índios principaes do Brasil, [...] são *os senhores do rosto da terra* [Vol. 8 (T), p. 182 TOBAYARÂS]

toucan [T. > *tu'kan* ‘toucan’ + *-a* ‘arg.’ = ‘toucan’] *tucana*, ave do Brasil. O tamanho do seu corpo he entre Merlo, & Pega; [...] tem o bico de alguns dous palmos de comprido [Vol. 8 (T), p. 223-224 TOUCAN]

tui [T. > *tu'ĩi* ‘parakeet’], *tuins*, species of parrot, [...] casta de Papagayos do Brasil, pequenos, & estimados [Vol. 6 (P), p. 236 PAPAGAYO / Vol. 8 (T), p. 323 TUINS]

tuiete [T. > *tu'ĩi* ‘parakeet’ + *-e'ie* ‘true’ = ‘true parakeet’] especie de papagayo [Vol. 6 (P), p. 236 PAPAGAYO]

tuipara [T. > *tu'ĩi* ‘species of parrot’ + *'par* ‘crooked’ + *-a* ‘arg.’ = ‘crooked parrot’] especie de papagayo [Vol. 6 (P), p. 236 PAPAGAYO]

tujúco [T. > *tu'juk* ‘herb’ + *-a* ‘arg.’ = ‘species of herb’] certa herva do Brasil [Vol. 8 (T), p. 323 TUJÚCO]

tupá [T. > *tu'pã* ‘lightning/thunder’] *Tupã* Excellencia espantosa Deos [Vol. 3 (D), p. 64-65 DEOS]

tupá beraba > [T. *tu'pã* ‘lightning/thunder’ + *βe'raβ* ‘shine’ + *-a* ‘arg.’, ‘shine lightning/thunder’] *resplandor feyto pela Excellencia superior rayo* [Vol. 3 (D), p. 64-65 DEOS]

tupâçaminga [T. > *tu'pa* ‘lightning/thunder’ + *si'niŋ* ‘som metálico, resound, echo, clink’ + *-a* ‘arg.’, ‘resounding thunder’], *tupa çanunga*, estrondo feyto pela Excellencia superior *trovaô* [Vol. 1 (A), p. 630-631 ATHEISTA / Vol. 3 (D), p. 64-65 DEOS]

tupygoaes [T. > *tupi'gwara* ‘those of Tupí origin’] *naçaô* do Brasil [Vol. 8 (T), p. 327 TUPYGOAES]

tupynamba [T. > *tupina'mba* ‘tupinambás (ou teniiminós, tupiniquins, potiguaras, etc., indigenous who inhabited the Brazilian coast from Rio de Janeiro to the state of Pará up to the low Tocantins river’, during the XVI e XVII centuries)'] *naçaô* do Brasil [Vol. 8 (T), p. 327 TUPYGOAES]

typyrati [T. > *ty'pyra'ti* ‘raw manioc flour’] casta de farinha do Brasil farinha crua [Vol. 2 (B), p. 87 BEIJU]

umbu [T. > *u'mbu, i'mbu* ‘plant, *Phytolacca dioica, Spondias purpurea*'] planta do Brasil, tem fruto a modo de ameyxas, & as raizes como balancias esponjosas, servem de comer, & beber aos caminhanes sequiosos [Vol. 8 (U), p. 545 UMBU]

urumbera [T. > *uru'mber* ‘species of cactus’ + *-a* ‘arg.’ = ‘species of cactus’] planta do Brasil, & especie de *Jamacarú*, ou de *Cardo agreste* [Vol. 8 (U), p. 593 URUMBERA]

viatã [T. > *u?i* ‘flour’ + *-atã* ‘hard’ = ‘hard flour’] casta de farinha do Brasil farinha torrada [Vol. 8 (T), p. 532 VITINGGA]

vieçacoatinga [T. > *u?i* ‘flour’ + *esakwa* ‘eyeball’ + *'tiŋ* ‘white’ + *-a* ‘arg.’ = ‘white eye flour’] casta de farinha do Brasil farinha seca [Vol. 8 (T), p. 532 VITINGGA]

vimoyipabã [T. > *u'i* ‘flour’ + *mo-* ‘causat.’ + *ji'p* ‘to be cooked, roasted, toasted’ + *-aβ* ‘nom.circ.’ + *-a* ‘arg.’ = ‘species of oven to toast manioc flour’] *alguidares* de barro, ou metal [Vol. 5 (M), p. 286 MANDIÔCA]

vitingga [T. > *u'i* 'manioc flour' + *tiŋ* 'white' + -a 'arg.' = 'white manioc flour'] casta de farinha do Brasil farinha fresca [Vol. 8 (T), p. 532 VITINGGA]

yapu [T. > *ja'pĩ*, *japu* 'bird, *Icteridae Psarocolius*'] passaro do Brasil [Vol. 2 Supl. (Y), p. 321 YAPU]

yara [T. > *jar* 'master, owner' + -a 'arg.' = 'master, owner'] senhores [Vol. 8 (T), p. 182 TOBAYARÁS]

yetim [T. > *jatiũ* 'insect, *Culicidae* fam., known as mosquito'] insecto, que no Brasil se gera do Ar muito subtil da America [Vol. 2 Supl. (Y), p. 321 YETIM]

zabucaes v. *jacapucaya*, *sapucaya* [T. *japu'kaj* = 'tree, *Lecythidaceae* fam.'] são arvores do Brasil, nas quaes se crião vasos tamanhos, como grandes cocos [Vol. 8 (Z), p. 625 ZABUCAES]

Final considerations

The survey and systematization of the indigenous words presented in the volumes of the *Vocabulario* of Bluteau allowed to determine that the adjective 'brasilico' attributed to the Vocabulary is quite adequate for the work, since it considers not only information about Brazil, but also includes original words of indigenous Brazilian languages, such as Tupinambá/Old Tupí, with which Europeans established their first contacts in the sixteenth century, which intensified in the first two centuries of colonial occupation in the country.

The presence of Brazilianisms in a Portuguese lexicographic work of the early eighteenth-century points to the fact that a linguistic contact between Europe and America had already been established, and the linguistic influence of the colony over the metropolis could not be denied.

In spite of the timid presence of Amerindian Brazilianisms in the entries of the *Vocabulario*, they reveal to be witnesses of a new world, still being discovered and, moreso, of the priceless knowledge that the natives of the Brazilian Atlantic coast had of the fauna and the local flora and how much they had passed on to Europeans. The Tupinambá/Old Tupí vocabulary present in Bluteau's *Vocabulario* is proof of the strong influence that indigenous languages had on the formation of transplanted Portuguese and which developed in the Brazilian territory.

LOPES, J.; CABRAL, A. "Vocabulario Portuguez, e Latino" de Raphael Bluteau: análise dos brasileirismos ameríndios de base Tupí". *Alfa*, São Paulo, v.62, n.3, p.509-539, 2018.

- *RESUMO: Trata-se de um breve estudo dos brasileirismos ameríndios de base Tupí, língua indígena brasileira, presentes no Vocabulario Portuguez e Latino, de Raphael Bluteau, obra publicada em oito volumes com dois suplementos, no início do século XVIII, em Portugal. Tais brasileirismos, assim classificados no interior de seus respectivos verbetes, são inventariados e analisados caso a caso em uma perspectiva etimológica, levando em consideração, inclusive,*

as possíveis fontes que subsidiaram a feitura desse material, assim como são analisados os elementos lexicográficos que compõem as respectivas microestruturas onde ocorrem tais vocábulos, buscando evidenciar suas particularidades léxico-estruturais. O estudo apresenta, ainda, uma síntese sobre os principais campos semânticos (dentre os quais foi possível identificar os campos alimento, animal, corpo, espaço, etnônimo, objeto, qualidade, som, substância, título, vegetal) desses vocábulos e propõe uma sistematização, sob a forma de um glossário, ordenado alfabeticamente, de todos os dados inventariados, com a respectiva etimologia, quando possível.

- **PALAVRAS-CHAVE:** *Vocabulario Portuguez, e Latino. Bluteau. Brasileirismos. Tupi Antigo.*

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INTEGRATION OF NOMINAL PREDICATES INTO A PARSER: AN EXPERIMENT WITH THE CONSTRUCTIONS WITH THE SUPPORT VERB *DAR* ‘GIVE’ IN BRAZILIAN PORTUGUESE

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- **ABSTRACT:** This article describes the methodology for the integration of nominal predicates, that is, support verb constructions (*SVC*), in the XIP parser, which is used by STRING, a Portuguese processing chain. More specifically, 580 *SVC* with the support verb (*Vsup*) *dar* ‘give’ and a predicative noun (*Npred*), whose syntactic-semantic properties have been described, formalized and then integrated into the Portuguese grammar of XIP, by means of rules, in order to extract the syntactic dependency (noted *SUPPORT*) between the *Npred* and the *Vsup*. The need to automatically treat *SVC* derives from the fact that they are different from full-verb constructions, have complex syntactic structures, have specific syntactic-semantic properties, and allow several systematic, albeit lexically determined, syntactic transformations. The concept of *SVC*, as well as the lexical-syntactic approach here adopted, follows the theoretical and methodological principles of the Lexicon-Grammar theory. As a result of integrating these data into the XIP parser, the system achieved 85% precision, 87% recall, 80% accuracy and 86% F-measure on an evaluation *corpus*, specifically built for this purpose.
- **KEYWORDS:** Support verb. Predicative noun. Support verb construction. Causative verb-operator. XIP parser.

Introduction

Support verb constructions (*SVC*) are nominal predicates formed by a support verb (*Vsup*) and a predicative noun (*Npred*). In this sense, to identify an *SVC*, it is necessary to identify both verbs that can function as *Vsup* and the predicative nouns

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that are constructed with them. In this work, we adopt the notion of support verb from the transformational grammar of operators of Harris (1991) and from the Lexicon-Grammar approach (GROSS, 1975, 1981).

In addition to the concept of *SVC*, there are also different properties that can be used to identify these constructions (RANCHHOD, 1990; BAPTISTA, 2005). The main test, which represents a necessary and sufficient property of *SVC*, is the close relationship between *Npred* and (typically¹) the subject of the *SVC* (e.g. *Pelé deu um chute na bola* ‘Pelé kicked in the ball’, interdicting the construction **Pelé deu o chute do Neymar na bola* ‘Pelé gave Neymar’s kick in the ball’). This relation has the same semantic nature as the relation between the verb and its subject, in a verbal predicate (e.g. *Pelé chutou a bola* ‘Pelé kicked the ball’).

In addition to this test, there are others that can be indicative of an *SVC*, such as (a) replacing the construction with *Vsup* with a corresponding full verb (such as *dar um abraço* ‘give a hug’ = *abraçar* ‘to hug/embrace’, or such as *dar um beijo* ‘give a kiss = *beijar* ‘to kiss’; (b) the restrictions on the determiners (as in *Ana deu uma passeada no parque* ‘Ana took (lit. gave) a walk in the park’; interdicting the construction **Ana deu minha passeada no parque* ‘Ana took (lit. gave) my walk in the park’); (c) the descent of the adverb, which allows an adverb modifying a verbal construction to “descend” to adnominal modifier position as the corresponding adjective in the equivalent nominal construction (e.g. *Rui chutou fortemente a bola* ‘Rui kicked strongly the ball’ = *Rui deu um chute forte na bola* ‘Rui kicked the ball hard (lit. gave a strong kick in the ball)’); among other tests.

For a more general view of *SVC*, see, among others, Gross (1981, 1994, 1998), Giry-Schneider (1978, 1987), Meunier (1981), Vivès (1983), and Ranchhod (2005). The literature on automatic processing of *SVC* offers at least two distinct approaches to this phenomenon: (i) one of them considers *SVC* as a block whose constituents are relatively fixed, as a subtype of *multi-word expressions*, such as compound words and many idiomatic expressions (CALZOLARI et al., 2002; SAG et al., 2002; DIAB; HUTADA, 2009); (ii) and another perspective that considers *SVC* as a complex syntactic structure, which follows the same rules of the general grammar of the language, but has specific properties and admits systematic syntactic transformations. This work adopts this second approach, which recognizes and describes the networks of syntactic relations existing among the constituents of an *SVC*.

The *SVC*, because they are complex phenomena, present a series of challenges for their automatic processing, such as, for example, the fact that *SVC* are not always the result of nominalizations; the *Vsup* of the *SVC* is not always explicit in the sentence, as base *SVC* form may have undergone several types of reduction; nominal constructions do not necessarily maintain the same number of arguments, but only a subset of argument domain of their equivalent verbal constructions (while keeping the same distributional constraints); etc. As a result, syntactic parsers in general do not address this phenomenon.

¹ In standard *SVC*, this relation holds between the agentive argument in the subject slot and the *Npred*, as in *A Ana deu um beijo no Rui* ‘Ana gave a kiss to Rui’, while in converse *SVC*, like *O Rui recebeu um beijo da Ana* ‘Rui received a kiss from Ana’, the agentive argument is placed in a prepositional complement slot.

The parsers (automatic syntactic analyzers) available in Portuguese, such as PALAVRAS (BICK, 2000) and the *LX-parser* (SILVA et al., 2010), apparently do not yet have information on nominal predicates formed by *Vsup* and *Npred*.

Though there are different types of nominal predicates, in this work we will deal specifically with nominal constructions whose predicative nucleus is a noun (called *predicative noun*, *Npred*) and this noun is auxiliated by a verb (called a *support verb*, *Vsup*). In this sense, we developed a systematic linguistic analysis of *SVC*, we adopted a formalization of the data based on the proposal of the Lexicon-Grammar (GROSS, 1975, 1981), we integrated the data in an automatic processing chain of Portuguese, STRING (MAMEDE et al., 2012), and we evaluated the result of the system based on the manual annotation of a *corpus*.

The analysis, description and classification of the data were done in three different works: 1,815 nominal predicates formed by the support verb *fazer* ‘do/make’ (BARROS, 2014); 2,273 nominal predicates with the support verb *ter* ‘have’ (SANTOS, 2015); and 1,489 nominal predicates with the support verb *dar* ‘give’ (RASSI, 2015). All these data have been systematically analyzed, described and formalized in the Lexicon-Grammar (LG) matrices of the Portuguese nominal constructions.

In the LG methodology, the description of the linguistic phenomena is often presented in the form of binary matrices: the lines contain the lexical entries (in this case, the *Npred*) and the columns represent the syntactic-semantic properties of each entry. For example, each predicative noun imposes distributional constraints on the type of arguments it selects, the preposition that introduces the essential complement(s) and the determiner of the predicative noun. The matrix also encodes the standard and the converse support verbs (see below), as well as their aspectual and/or stylistic variants; it codifies the thematic or semantic roles of the arguments; the possibility of accepting or not the *Conversion*, the *Passive*, and the *Symmetry* transformations, among other properties.

Although descriptions of the nominal predicates with the support verbs *fazer* ‘do/make’, *ter* ‘have’ and *dar* ‘give’, are already available in tabular format, this work presents only the results of the integration of the nominal constructs with the support verb *dar* ‘give’ in STRING.

STRING is a Portuguese processing chain with a modular structure that performs the main basic tasks of Natural Language Processing (NLP), such as tokenization, textual segmentation, labeling part-of-speech tags (*POS-tagging*), morphosyntactic disambiguation, *chunking*, deep syntactic analysis, such as the extraction of dependencies (subject, complement, etc.), among other tasks. For several of these tasks, but mainly for parsing, STRING uses the *Xerox Incremental Parser* (XIP), which is a statistical and rule-based parser (MOKHTAR et al., 2002).

The data of the constructions with the support verb *dar* ‘give’ were integrated into the processing chain as one of the components of the Portuguese grammar, implemented in XIP. This was done in the form of lexical-syntactic dependency extraction rules in order to automatically extract the dependency we call *SUPPORT* between *Vsup* and *Npred* and between the *Npred* and its arguments.

In a previous work (RASSI et al., 2015), we described a general proposal for extracting events and dependencies associated to constructions with *Vsup* in STRING. In that work, we indicated the strategy adopted for the implementation of support verb constructions in that system. Remember that *SVC* can form standard constructions (*Ana deu um beijo no Rui* ‘Ana gave a kiss on Rui’ - SUPPORT [vsup-standard]), with an active semantic orientation, or converse constructions (*O Rui recebeu um beijo de Ana* ‘Rui received a kiss from Ana’ - SUPPORT [vsup-converse]), with a passive semantic orientation.

In this paper, we will especially describe the results of the automatic processing of *SVC* with *Vsup dar* ‘give’ in STRING, and we compare the system’s output with the manual annotation of a sample of the *corpus* PLN.Br Full (BRUCKSCHEN et al., 2008). The total sample has 2,646 sentences randomly extracted from PLN.Br Full, with verb-noun pairs candidates for *Vsup* and *Npred* status. In this work, however, we refer only to 580 phrases of this total sample, which correspond to the sentences involving the verb *dar* and its variants.

State of the art

Much of the work that describes automatic tasks related to *SVC* deals with the identification or the extraction of these constructions from *corpora*, whether based on lexical patterns (through regular expressions) or based on manual annotated *corpus* and machine learning techniques.

Grefenstette and Teufel (1995) present a method of identifying support verbs from an unlabeled *corpus*, by comparing the arguments related to verbal forms and the nominalized potential forms, that is, the argumental network is transferred from the verbal constructions to the nominal constructions potential candidates. The authors seek to find the most likely support verbs for each predicative noun but considering only the *Npred* that are nominalizations of verb forms. It is known that many *Npred* are nominalizations of verbs, such as in the pairs {*abraço, abraçar*} ‘a hug, to hug’, {*apresentação, apresentar*} ‘presentation, to present’, {*chute, chutar*} ‘a kick, to kick’, etc., but there are also *Npred*, which are called *autonomous predicative nouns*, that are not derived from verbs such as *greve* ‘strike’, *sermão* ‘sermon’, *cólica* ‘colic’, etc. Thus, the method presented by the authors does not capture these autonomous *Npred*. In that work, Grefenstette and Teufel (1995) extracted from an English *corpus* 6,704 sentences with candidates for support verbs and candidates for nominalizations, producing a list of potential support verb constructions that occur with the nominalized forms. In addition to disregarding the *Npred* autonomous, another problem of this approach consisted in considering that the nominal construction maintains the same number of arguments in their argument domain as the equivalent verbal construction, which is not always the case.

For Spanish, Páez (2014) extracted from a *corpus* 81,274 phrases with candidates of *SVC* from which the most representative are the support verbs *tener* ‘have’, *hacer* ‘do’ and *dar* ‘give’. The author also automatically extracted combinations of any noun and a set of 12 verbs, all common variants of *Vsup tener, hacer* and *dar*. She then ordered the main combinations of verb and noun by frequency and calculated the likelihood of co-occurrence of such a verb with that noun, using 3 association measures (log-likelihood, Student’s T-score and Maximum Likelihood Estimator). At the end of the task, the author listed the 15 *SVC* most recurrent in Spanish according to the association measures used and concluded that approximately 69% of the *SVC* in this list were correctly identified.

In the literature, we find other works, similar to that of Paez (2014), which start from a previous list of verbs that can work as *Vsup* or a list of nouns that can function as *Npred*. The proposal of Duran et al. (2011) differs from these approaches by starting from the syntactic patterns of combinations of grammatical categories to find the *SVC*. They used patterns such as V N PRP (*abrir mão de* ‘give up smthg.’), V PRP N (*pôr de lado*, ‘leave aside’), V DET N PRP (*virar as costas para* ‘turn one’s back to’), V DET ADV (*dar o fora* ‘run away’), V ADV (*ir atrás de* ‘go after smthg.’), V PRP ADV (*dar para trás* ‘reject/waver’), V ADJ (*dar duro* ‘work hard’)².

Using this method, Duran et al. (2011) were able to identify 773 *complex predicates*, which were then annotated manually. According to the authors, these complex predicates include (but are not limited to) *SVC*, which the authors call *light verb constructions*³. We consider, however, that the use of regular expressions with combinations of grammatical categories will not be the most appropriate approach for the unique identification of *SVC*, since *SVC*, as a rule, are formed by V (DET) N, a pattern that is syntactically identical to the structures of ordinary verbal predicates, composed of a full verb (V), followed by a direct object (N), eventually with a determiner (DET).

On the other hand, there are also works that aim to process (not only identify) these constructions, for example, Barreiro et al. (2014), which evaluated two automatic translation systems, OpenLogos (based on rules) and Google Translate (based on neural networks), in the task of translating constructions with verb support in five languages: French, German, Italian, Portuguese and Spanish. To perform the experiments and the evaluation, the authors produced a set of 100 phrases that they analyzed as *SVC*⁴ and annotated them manually. As a result of the evaluation of the two systems, the authors

² Notation: ADJ = adjective, ADV = adverb, DET = determiner, N = noun, PRP = preposition e V = verb.

³ *SVC* are often referred to in the literature as light verb constructions (SCHER, 2004; DURAN et al., 2011; TU; ROTH, 2011; BUTT; GEUDER, 2001; ISTVÁN; VINCZE; FARKAS, 2013). The two terms, *support verb* and *light verb*, are commonly interpreted as synonyms, though there are conceptual differences between this terminology. In this work, we adopt the term *support verb* (Portuguese: *verbo-suporte*) since we consider that the main function of the *Vsup* is to “support” (or carry) the inflectional features of person-number and tense (temporal features but also including modality and aspect).

⁴ In fact, and to be precise, not all the sentences selected by the authors correspond to nominal constructions with support verb, and they also include adjectival and prepositional constructions, and even sentences with operator-verbs (GROSS, 1981).

concluded that Google Translate translates *SVC* better than OpenLogos, attributing this result to its rich lexical knowledge.

In the present work, with the intention of contributing to the tasks of processing the *SVC* and aiming to fill the gap for its automatic identification, we present the methodology and the results of the integration of *SVC* with the *Vsup* *dar* ‘give’ in the STRING system, using the *parser* XIP. The results of the performance of this system were evaluated against a reference *corpus*, manually and independently annotated, which will be presented in the next section.

Construction of the reference *corpus* for *SVC*

In this section, we will briefly explain the procedures adopted for the constitution of the reference *corpus*, its annotation and the selection of a sub-sample to be processed in STRING. The entire process of construction and annotation of this *corpus* has already been dealt with in detail in previous work (RASSI et al., 2015).

The matrices of the Lexicon-Grammar (predicative nouns and the verbs *fazer* ‘do/make’, *ter* ‘have’ and *dar* ‘give’) were intersected with Unitex⁵ reference graphs in order to systematically search in the *corpus* PLN.Br for all possible combinations of each of these support verbs with each predicative noun, considering only the combinations predicted in the matrices. Through this methodology, 121,198 sentences were identified in the *corpus* presenting the candidate pairs $\{Vsup, Npred\} \{Vsup, Npred\}$, that is, sentences in which simultaneously occur a potential *Vsup* and a predicative noun.

We selected a sample of these 121,198 sentences, keeping it proportional to the number of occurrences of each pair $\{Vsup, Npred\}$. The sample consists of 2,646 sentences and corresponds to 2.18% of the total sentences. This selection retrieved at least one instance of all pairs $\{Vsup, Npred\}$ that have at least 21 occurrences. Table 1 summarizes the main information about the *corpus* and the sample selected.

Table 1 – Sample data compared to the data *corpus*.

	<i>Corpus</i>	<i>Sample</i>	%
$\{Vsup, Npred\}$ pairs (# sentences)	121,198	2,646	2.18%
# different $\{Vsup, Npred\}$ pairs	4,668	1,130	24.2%

Source: Author’s elaboration.

The sample has 1,130 different pairs of $\{Vsup, Npred\}$, which corresponds to 24.2% of the *corpus*, which is composed of 4,668 different pairs.

The annotation of the 2,646 sentences with candidate *SVC* was done manually by 5 Portuguese native speaker annotators who were also specialists in *SVC*. For this

⁵ Unitex is a software that allows for the processing of large textual *corpora*, and it is available at: <http://www-igm.univ-mlv.fr/~unitex/>

task, an already existing *corpora* annotation tool (SUÍSSAS, 2014) was adapted. The annotation consisted in labelling, for each sentence, a (conventional) code that corresponds to the type of syntactic construction indicated by the pair {*Vsup*, *Npred*} that appears in parentheses at the beginning of each phrase. The possible labels were:

SVC-STANDARD - for standard support verb constructions

Ex.: (*dar, tapa*) *Ana deu um tapa em Rui.*

‘Ana gave a **slap** on Rui’

SVC-CONVERSE - for constructs with converse support verb

Ex.: (*levar, tapa*) *Rui levou um tapa da Ana.*

‘Rui got a **slap** from Ana’

VOPC - for constructions with causative operator verb

Ex.: (*dar, medo*) *O vento sombrio deu medo na Ana.*

‘The dark wind gave **fear** in Ana’

Ex.: (*fazer, medo*) *O vento sombrio fez com que Ana tivesse medo*

‘The dark wind **made** Ana to have **fear**’

OTHER - for any other type of construction

Ex.: (*fazer, academia*) *O Rui fez (=construiu) uma academia.*

‘Rui **did** (= built) a **gym**’ [full verb]

Ex.: (*dar, tiro*) *O governo deu um tiro no próprio pé.*

‘The government has **given** a **shot** to itself in the foot’ [fixed expression]

Ex.: (*ter, controle*) *Rui tem Max sob seu controle.*

‘Rui **has** Max under his **control**’ [linking operator-verb]

At the end of the process, the annotations were tabulated into 5 columns and the *ReCal 0.1 Alpha for 3+ Coders* tool⁶ was used to calculate the agreement among the annotators. The mean agreement among the 5 scorers was 80.8%. The tool also calculates the Kappa coefficient (COHEN, 1960), which is a statistical measure that evaluates the agreement between pairs of evaluators, also called an *inter-annotator agreement* or *inter-rater agreement*. The Cohen’s Kappa average attributed to the annotation was 0.604.

From the manual annotation of the 2,646 phrases, those that had agreement equal or superior to 60%, that is, those in which 3 or more annotators assigned the same label were selected. Table 2 shows the number of sentences per degree of agreement between the annotators in the general sample.

⁶ Disponível em: <http://dfreelon.org/recal/recal3.php#result1>

Table 2 – Distribution of sentences per degree of agreement between annotators in general sample.

Concordance	Number of phrases	% of phrases
2 annotators	44	1.7%
3 annotators	326	12.3%
4 annotators	627	23.7%
5 annotators	1,574	59.5%
* sentences with error	75	2.8%
TOTAL	2,646	100%

Source: Author's elaboration.

As it turns out, the sentences labelled in the same way by all the annotators correspond to almost 60%. Adding the sentences annotated with the same label by the majority of the annotators (3 or more), the agreement corresponds to 95.5% of the total, which represents a good result.

We randomly selected, from the total sample set, all the sentences that had a co-occurrence, on one hand, of a predicative noun, and, on the other hand, of the verb *dar* 'give' or one of its standard variants (*aplicar* 'apply', *conceder* 'grant', *fazer* 'do/make') or its converse support verbs (*ter* 'have', *receber* 'receive', *levar* 'take' and *tomar* 'get/take'); simultaneously, those sentences had been annotated with the same label by at least 3 annotators. In this sense, 580 sentences (22% of the general sample) were selected to compose a sub-sample and then analyzed in STRING.

Table 3 presents the distribution of the sentences in this sub-sample, by level of agreement between the annotators.

Table 3 – Distribution of sentences' level of agreement between annotators in the sub-sample.

Concordance	Number of phrases	% of phrases
3 annotators	95	16.4%
4 annotators	137	23.6%
5 annotators	337	58.1%
*error	11	1, 9%
TOTAL	580	100%

Source: Author's elaboration.

In Table 3, we did not indicate sentences with concordance between 2 annotators because these sentences were not selected for the sub-sample. As it can be seen, the distribution of sentences by degree of agreement in the sub-sample (Table 3) is practically proportional to their distribution in the global sample (Table 2).

One can also analyze the distribution of sentences by category (or label) assigned by most annotators. Table 4 shows the distribution of sentences from the sub-sample, by category and level of agreement between the annotators.

Table 4 – Number of sentences per degree of agreement and by category.

	3 scorers	4 scorers	5 scorers	TOTAL	%
STANDARD	42	78	227	347	59.82%
CONVERSE	35	38	77	150	25.86%
OTHER	15	21	33	69	11.89%
VOPC	3	0	0	3	0.51%
* sentences with error	---	---	---	11	1.89%
TOTAL	95	137	337	580	100%

Source: Author’s elaboration.

As can be seen, the category of SUPPORT[vsup-standard] is the most consensual among annotators, corresponding to almost 60%, followed by the category SUPPORT[vsup-converse], with about 25%. The remaining cases add up to 14.29%.

Data integration in STRING

Following the strategy outlined in previous work (RASSI et al., 2015), a set of programs was built that automatically converts the information contained in the Lexicon-Grammar matrices (from constructions with the support verb *dar* ‘give’) into the dependency extraction rules that XIP parser uses to determine the syntactic relations between *Vsup* and *Npred*. Two features distinguish the dependency relation regarding Conversion: SUPPORT[vsup-standard] and SUPPORT[vsup-converse]. These rules also cover the cases with the causative verb-operator (dependency VOP-CAUSE), however, in constructions with *give*, this category practically does not occur (only 3 cases), so we will not mention it here any further. Thus, for example, based on the information of the entry *kiss*, the system generates the following rule (Fig. 1):

Figure 1 – First dependency extraction rule producing the SUPPORT[vsup-standard] dependency for *Npred* *beijo* ‘kiss’.

```

if (VDOMAIN(#1,#2[lemma:"dar"]) &
(MOD[post,relat](#3[lemma:"beijo"],#2) ||
CDIR(#2[transf-passiva:~],#3[lemma:"beijo"]) ||
SUBJ(#2[transf-passiva],#3[lemma:"beijo"]) ||
(ANTECEDENT[relat](#3[lemma:"beijo"],#4[pronrel]) & SUBJ(#2[transf-passiva],#4))) &
~SUPPORT[vsup-standard](#3,#2) )
    SUPPORT[vsup-standard=+](#3,#2)

```

Source: Author’s elaboration.

Dependency rules consist essentially of two parts: first, the conditions (if) that must be verified for a dependency to be extracted are drawn; then the dependency to be extracted is stated. In this case (Fig. 1), the rule first instantiates a variable (# 2) whose lemma is that of the support verb *dar* ‘give’ ([lemma: “dar”]); then, a set of conditions in alternative (||) are stated:

- the first condition (line 2 of Fig. 1) corresponds to the situation in which the *SVC* undergoes a relativization, which is captured by the dependency *MOD* between the support verb (in this case, its past participle) and the predicative noun *beijo* ‘kiss’ that is the antecedent of the relative pronoun (e.g. *o beijo que Rui deu na Ana* ‘the kiss that Rui gave to Ana’);
- the second condition (line 3) is triggered if the name *beijo* ‘kiss’ is in a direct complement relation (dependency *CDIR*) with the verb *dar* ‘give’, and this verb has not been marked with the feature [trans-passive], which could have been attributed previously if a passive structure had been identified (e.g. *Rui deu um beijo na Ana* ‘Rui gave a kiss to Ana’);
- the third condition (line 4) is the opposite to the previous one: it identifies a subject relation (*SUBJ*) between the predicative noun and the support verb when this one is in a passive construction (e.g. *Um beijo foi dado por Rui na Ana* ‘A kiss was given by Rui to Ana’);
- the following condition (line 5) applies when the subject of passive construction has as its antecedent a relative pronoun (#4 [pronrel]), which is then subject of the support verb employed in passive (e.g. *O beijo que foi dado por Rui na Ana...* ‘A kiss was given by Rui to Ana’);
- Finally (line 6), the rule checks if the dependency *SUPPORT*[vsup-standard] has not yet been extracted between *beijo* ‘kiss’ and *dar* ‘give’, in order to avoid repetition of the procedure.

If any of these conditions are verified, the rule is triggered and the dependency *SUPPORT*[vsup-standard] is extracted.

In addition to this rule, *STRING* also generates rules for the case of reduced passive constructions (as in *O beijo dado por Rui na Ana* ‘the kiss given by Rui to Ana’), in which *Vsup* has been deleted (Fig.2):

Figure 2 – Second dependency extraction rule producing the *SUPPORT*[vsup-standard] dependency for the *Npred beijo* ‘kiss’.

```

|pastpart#2[lemma:"dar",pass-ser=+] |
if (MOD(#3[lemma:"beijo"],#2) & ~SUPPORT[vsup-standard] (#3,#2) )
SUPPORT[vsup-standard=+] (#3,#2)

```

Source: Author’s elaboration.

This rule differs from the previous one by the context statement, marked between vertical bars (|...|), in the first line. It adds to the past participle of *dar* ‘give’ the feature of the passive construction with auxiliary verb *ser* ‘be’ [pass-ser=+]. This participle must then be modifying the predicative noun. Rule order is relevant: this rule is triggered only if the previous rule has not fired yet.

The two previous rules serve to extract the dependency SUPPORT [vsup-standard] from *SVC*. In cases where *SVC* admits Conversion, a piece of information that is encoded in the Lexicon-Grammar matrices, STRING also generates the corresponding dependency extraction rules SUPPORT [vsup-converse] (Fig. 3) to enable the system to capture sentences such as *Ana recebeu um beijo de Rui* ‘Ana received a kiss from Rui’.

Figure 3 – First and second extraction dependency rules, producing the SUPPORT [vsup-converse] dependency to *Npred beijo* ‘kiss’.

```

if (VDOMAIN(#1,#2[lemma:"receber"]) & (MOD[post,relat] (#3[lemma:"beijo"],#2) ||
CDIR(#2[transf-passiva:~],#3[lemma:"beijo"]) ||
SUBJ(#2[transf-passiva],#3[lemma:"beijo"]) ||
(ANTECEDENT[relat] (#3[lemma:"beijo"],#4[pronrel]) & SUBJ(#2[transf-passiva],#4))) &
~SUPPORT[vsup-converse] (#3,#2) )
SUPPORT[vsup-converse=+] (#3,#2)

|pastpart#2[lemma:"receber",pass-ser=+] |
if (MOD(#3[lemma:"beijo"],#2) & ~SUPPORT[vsup-converse] (#3,#2) )
SUPPORT[vsup-converse=+] (#3,#2)

```

Source: Author’s elaboration.

The difference between these two rules (Fig. 3) and those above (Fig. 1 and 2) is basically the lemma of the verb, which is *receber* ‘receive’, and consequently the dependency becomes SUPPORT [vsup-converse] instead of SUPPORT [vsup-standard]. For more information on the operation of the XIP parser dependency rules, see Mamede et al. (2012).

Evaluation

The sub-sample of the phrases (with *dar* ‘give’ and its variants) randomly selected from the set of manually annotated *SVC* was processed by the STRING system and its output was analyzed in comparison with the reference *corpus*. The results are presented in Table 5:

Table 5 – First evaluation of the system performance.⁷

TP	FP	FN	TN	Precision	Recall	Accuracy	F-Measure
350	91	114	25	79%	75%	65%	77%

Source: Author's elaboration.

The usual metrics were used to evaluate the output of the system, namely *Precision*, which measures the fraction of correctly found instances (true-positives) over the total of instances found (true-positives plus false-positives): $(TP/(TP+FP))$; *Recall*, measuring the fraction of relevant instances that were found: $(TP/(TP+FN))$; *Accuracy*, which computes both the correct found instances and the correctly missed cases: $((TP+TN)/(TP+TN+FP+FN))$; and *F-measure*, which is the harmonic mean between precision and recall: $(2PR/(P+R))$.

Of the 580 sentences analyzed, STRING correctly extracted the dependence of 350 sentences (TP), incorrectly extracted the dependence of 91 sentences (FP) and did not extract any dependence of another 139 sentences, of which 114 should have been extracted (FN) and 25 sentences that should not (TN).

In addition to these results, the system captured 47 other dependencies that had not been noted in the reference, since they involve pairs of words that were not the target of the sentence extracted from the *corpus*. For example, in the sentence: *O varejo, em contrapartida, pode dar descontos no valor cobrado à indústria por determinado espaço na loja*. ‘Retail, by contrast, can give discounts in value charged to the industry for certain space in the store’, the target pair to be labelled was $\{dar, valor\}$ ‘give, value’, but in this case there is no relation between the verb and the noun, so the annotators did not label it. On the other hand, in this same example, the verb *dar* ‘give’ is the support verb of the predicative noun *descontos* ‘discounts’, a dependency that the STRING system captured well. Since the SUPPORT [vsup-standard] dependency between *dar* and *desconto* was not in the reference (this was not the targeted pair), in a second moment of the evaluation, the reference *corpus* was completed, adding the missing dependencies that should have been taken into account.

The following section is an analysis of the main problems identified in the output of the system. After this analysis, we corrected some data in the Lexicon-Grammar and processed the *corpus* again. The results of this second evaluation will be presented later.

⁷ TP = true-positives: instances correctly found/labelled by the system; FP = false-positives, incorrectly found/labelled instances; TN = true-negatives: instances correctly missed/unlabeled; FN = false-negatives: instances incorrectly missed/unlabeled.

Error Analysis

a) false-positive

False positives (FP) correspond to the cases where (i) the system extracted the wrong dependency, as in the cases of ambiguity between `SUPPORT [vsup-standard]` and `support [vsup-converse]`; or (ii) the system extracted the `SUPPORT` dependency between a pair of words that do not hold such relation, mainly due to problems on previous syntactic processing or an incorrect morpho-syntactic disambiguation. The two cases will be analyzed in detail:

(i) ambiguity between *SVC*-standard and *SVC*-converse

Typically, the support verb *dar* ‘give’ is selected to form standard constructions (active orientation). On the other hand, the support verb *receber* ‘receive’ is often selected by the same predicative nouns to form typical converse constructions (passive orientation). There are, however, other verbs - such as *ter* ‘have’, for example, that can enter both the standard and the converse constructions.

- (1) [built example]⁸: *O Jô Soares (deu + teve) sua participação no Programa da Hebe.*
‘Jô Soares (gave + had) his participation in Hebe Program’
- (2) [built example]: *O Programa da Hebe (recebeu + teve) a participação do Jô Soares.*
‘The Hebe Show (received + had) the partaking of Jô Soares’

The first sentence is typically a standard construction, while the second phrase is typically a converse construction. Both can be formed by the verb *ter* ‘have’ and the same predicative noun *participação* ‘participation’. Therefore, the verb *ter* ‘have’ was encoded in the Lexicon-Grammar matrices both as a variant of the standard *Vsup dar* ‘give’ and also as a variant of converse *Vsup receber* ‘receive’. It was decided to systematically adopt the dependency `SUPPORT [vsup-standard]`, instead of `SUPPORT [vsup-converse]`, in cases of ambiguity of classification, in which the verb can function both as a standard and converse *Vsup*, when supporting the same *Npred*. This is done in XIP by a “cleanup” rule, which removes duplicate dependencies at the end of the processing.

⁸ Most examples presented in this paper have been retrieved from the sub-sample of the *corpus* used for the evaluation, in other words, they are real, naturally occurring texts. In some specific situations, some examples were devised by the authors to demonstrate a precise point in the argument, or to highlight certain phenomena, following the Lexicon-Grammar guidelines for example building (GROSS, 1981). All built examples are indicated as such. Some examples result from the simplification of real instances taken from the *corpus* and are also marked as such. Real examples are preceded by the target pair (*Vsup*, *Npred*).

This decision led to some misclassification, such as in the following cases, which were labelled by STRING as SUPPORT [vsup-standard], and were (correctly) marked by most or all of the annotators as SUPPORT [vsup-converse]:

(3) (**ter, participação**) *A mesa-redonda, com início às 14h, terá a participação do historiador José Murilo de Carvalho, da UFRJ (Universidade Federal do Rio de Janeiro), e dos cientistas políticos Renato Lessa e César Guimarães, ambos do IUPERJ.*

‘(have, participation) The roundtable, starting at 14h, will have the participation of historian José Murilo de Carvalho, from UFRJ (Federal University of Rio de Janeiro), and political scientists Renato Lessa and César Guimarães, both from IUPERJ.’

SUPPORT [vsup-standard] (participação,terá)

(4) (**ter, prazo**) *Martins disse ter decidido indiciar Teixeira indiferentemente do resultado da perícia técnica no caminhão, que tem prazo de 30 dias a partir do acidente para ser concluída. “Não dá para acreditar que alguém possa dirigir um caminhão desse tipo e não perceber que a caçamba está levantada”, disse.*

‘(have, deadline) Martins said he decided to indict Teixeira regardless of the result of technical expertise to the truck, which has a deadline of 30 days [counting] from the accident to be complete. “One can not believe that someone may drive a dump truck like that and not realize that the bucket is up,” he said.’

SUPPORT [vsup-standard] (prazo,tem)

(5) (**ter, voto**) *O PMDB conta com 5 integrantes, mas terá um voto a menos se Juvêncio estiver na presidência.*

‘(have, vote) The PMDB has 5 members, but will have less one vote unless Juvêncio is in the presidency.’

SUPPORT [vsup-standard] (voto,terá)

(6) (**ter, prejuízo**) *Pará deve ter prejuízo com jogo do Brasil.*

‘(have, injury) Pará might have injury with Brazilian game.’

SUPPORT [vsup-standard] (prejuízo,ter)

On the other hand, there are also cases that STRING has labelled as SUPPORT [vsup-converse], whereas the majority of the human annotators considered them as instances of SUPPORT [vsup-standard]. This is the case of constructions with *Vsup ter* ‘have’ and the following predicative nouns: *acordo* ‘agreement’, *alvará* ‘commercial license’, *apelido* ‘surname’, *apresentação* ‘presentation’, *cargo* ‘position/job’, *conhecimento* ‘knowledge’, *destino* ‘destination/destiny’, *dica* ‘hint’, *explicação* ‘explanation’, *financiamento* ‘financing’, *importância* ‘importance’, *informação* ‘information’, *início* ‘beginning’, *liberdade* ‘freedom’, *limitação* ‘limitation’, *motivo* ‘reason’, *nome* ‘name’, *nota* ‘grade’, *orientação* ‘orientation’, *ponto* ‘point’, *prioridade* ‘priority’, *privilegio* ‘privilege’, *redução* ‘reduction’, *renda* ‘income’, *sinal* ‘sign’, *título* ‘title’ and *treinamento* ‘training’.

These predicative nouns, associated with the *Vsup have* ‘ter’, can not only form standard constructions like (7), but they can also be the result of a conversion from another distinct construction with the standard support verb *dar* ‘give’ (8):

(7) [built example]: *Ana tem um vasto conhecimento sobre geografia.*
 ‘Ana has a vast knowledge of geography’

(8) [built example]: *A Ana deu conhecimento neste documento*
 ‘Ana checked (lit. gave knowledge) this document’

[Conversion] = *Este documento teve o conhecimento da Ana.*
 ‘This document was checked by (lit. had knowledge of) Ana’

As it can be seen, (7) and (8) are different standard constructions of two distinct predicative nouns: the first one refers to a human quality, someone’s intellectual ability; and the other construction has a technical sense, and it refers to the act of signing or checking a document. Because they are different constructions, the only one that is listed in the Lexicon-Grammar matrix used in this work is the construction (8), with standard *Vsup dar* ‘give’, whose conversion is done with *ter* ‘ter’. The construction illustrated in (7) is also a base sentence, but it does not select the verb *dar* ‘give’, so it should be described in another matrix, which takes into account the base nominal constructions with *Vsup ter* ‘ter’.

When both constructs are available in the matrix, we have cases of ambiguity, which causes two rules to be triggered. In such cases, the “cleaning” rule referred to above is applied.

There are also other sentences that were also marked by STRING as SUPPORT (*vsup-standard*), and that were tagged by most or all of the annotators as constructions with a causative operator-verb (*VOP-CAUSE*):

(10) (*dar, sorte*) *Colocar roupa branca e pular sete ondas dão sorte porque são rituais para atrair coisas boas e, se você acredita, funcionam.*

‘(give, luck) Putting on white clothes and jumping seven waves give luck (=attract good luck) because they are rituals to attract good things and, if you believe, they work.’

(11) (*dar, prejuízo*) *Fraude on-line dá prejuízo de R\$ 100 mi.*
 ‘(give, loss) Fraud on-line gives a loss of R\$ 100 mi.’

(12) (*dar, voto*) *Motivo: administra o orçamento para construção de casas populares, que é polpudo e dá votos.*

‘(give, vote) Reason: [he] manages the budget for the construction of commoners’ houses, which is substantial and gives votes (=brings in votes).’

Constructions like *dar sorte* ‘lit. give luck’, *dar prejuízo* ‘lit. give loss’ and *dar voto* ‘lit. give vote’ are, of course, acceptable as standard constructions in other situations, hence they have been classified as such in the Lexicon-Grammar matrix:

- (13) [built example]: *Ana deu sorte na loteria.*
‘Ana got lucky in the lottery’
- (14) [built example]: *A empresa da Ana deu prejuízo durante todo o ano.*
‘Ana’s company gave loss all year around’
- (15) [built example]: *Ana deu seu voto para o candidato da oposição.*
‘Ana gave her vote to the opposition’s candidate’

In these cases, the identification of the semantic roles of the arguments could help in the disambiguation of the dependency rules that should apply to extract the SUPPORT dependency (i.e., standard or converse *Vsup*). In (10), if the subject subclause (e.g. *Colocar roupa branca e pular sete ondas* ‘putting on white clothes and skipping seven waves’) was correctly labeled with the thematic role of **cause** for *dar sorte* ‘lit. give luck’, this would be an indication that the construction is a causative, not an *SVC*. The example (11) is ambiguous, although it has been noted by most human annotators as a causative construction. It is ambiguous because it allows for two different interpretations: (i) online fraud has suffered some loss; or (ii) online fraud has caused some loss to someone. Without further (contextual/situational) information, this ambiguity cannot be solved. In (12), the subject of *dar votos* ‘lit. give votes’ is *orçamento* ‘budget’, which means that this noun is the **cause** behind someone having votes.

Although the semantic roles had been encoded in the Lexicon-Grammar matrix, this information was not used in the SUPPORT dependency extraction process because STRING’s automatic semantic role labelling module does not yet yield sufficiently good results.

(ii) Problems of syntactic processing or morphosyntactic disambiguation

Some sentences were incorrectly tagged by STRING as SUPPORT [*vsup-standard*], due to syntax processing issues. The system was expected to recognize a dependency relation between a verb and a noun, and it recognized instead a relation between another verb and/or another noun. For example:

(16) (*dar, aula*) Ela dirige atualmente a Companhia Os Bobos da Corte, criada há dois anos, e *dá aulas* de voz e *interpretação* na Escola de Teatro da Universidade Federal da Bahia.

‘(give, class) She currently directs the *Company of the Fools of the Court*, created two years ago, and [she] **gives classes** (=teaches) voice and **interpretation** at the Theater School of the Federal University of Bahia.’

SUPPORT [vsup-standard] (aulas,dá)

SUPPORT [vsup-standard] (interpretação,dá)

(17) (*ter, vantagem*) Essa solução *teria* a *vantagem* de rapidez e *rentabilidade*, trazendo ao Tesouro receita maior e evitando disputas jurídicas inerentes ao processo de cisão de ativos.

‘(have, advantage) This solution would **have** the **advantage** of speed and **profitability**, bringing higher revenue to the Treasury and avoiding legal disputes inherent in the asset scission process.’

SUPPORT [vsup-standard] (vantagem,teria)

SUPPORT [vsup-standard] (rentabilidade,teria)

The target pairs, whose dependencies should have been extracted are {*dar, aulas*} ‘give, lesson’ and {*dar, vantagem*} ‘give, advantage’, respectively in examples (16) and (17). In addition to correctly extracting these two dependencies, the system also recognized the dependency between *dar* ‘give’ and *interpretação* ‘interpretation’ in (16) and between *dar* ‘give’ and *rentabilidade* ‘profitability’ in (17). In these cases, there is an issue with the coordination of noun phrases and the proper extraction of direct complement (CDIR) dependence. The system analyzed (16) as a coordination between *aulas* ‘classes’ and *interpretação* ‘interpretation’, and not between *voz* ‘voice’ and *interpretação* ‘interpretation’, considering incorrectly that there was a coordination between two direct complements of the verb *dar* ‘give’: ‘she gives voice lessons’ and ‘she gives interpretation’. In the same way, the processing chain analyzed (17) as a coordination between *vantagem* ‘advantage’ and *rentabilidade* ‘profitability’, and not between *rapidez* ‘speed’ and *rentabilidade* ‘profitability’, considering the coordination between two direct complements of the verb *ter* ‘have’: ‘this solution would have the advantage of speed’ and ‘this solution would have profitability’.

In other cases, the problem results from an incorrect assignment of the morphosyntactic labels of grammatical categories (part-of-speech tags, PoS) or their inadequate disambiguation. In such cases, STRING incorrectly extracted the dependency SUPPORT [vsup-standard] from sentences like this:

(18) (*dar, saída*) À noite, feito criança no mato, ele *dá* uma *saidinha* e *volta* com duas rãs e um sapo.

‘(take, walk) ‘At night, like a child in the bush, he takes (lit. gives) a little walk and returns with two frogs and a toad.’

SUPPORT [vsup-standard] (volta,dá)

In this sentence, the diminutive form of *saidinha* (derived from *sáida* ‘walk’) was not recognized by the system, reason why, although it was assigned the PoS noun, it was not possible to extract the dependency *SUPPORT*, which requires the identification of the lemma. On the other hand, the PoS disambiguation of *volta* ‘return’ was not properly made and the word was labeled as a noun, when the verb PoS tag should have been chosen. Now, since there is an additive conjunction *e* ‘and’ between *saidinha* ‘walk’ and *volta* ‘return’, and the latter was marked as a name, the system analyzed this sequence as the coordination of two nouns. In the second moment, the direct complement dependency (*CDIR*) between *dar* ‘give’ and *saidinha* ‘walk’ is percolated to the noun coordinated with the latter, which triggers the rule that extracts the *SUPPORT* dependency between *dar* ‘give’ and *volta* ‘walk’.

Other processing problems have also been considered in cases where the *SVC* is partially identical to a fixed or frozen, idiomatic, expression (idioms) and the *STRING* processing chain extracts two dependencies for the same constituents. *STRING* has a frozen expressions’ analysis module (BAPTISTA *et al.*, 2014), whose lexicon contains a few thousand idioms and it uses *FIXED* dependency extraction rules to capture the verb and the fixed elements of those idiomatic expressions. Consider next example:

(19) (*dar, volta*) *Até lá, não custa nada ter esperança de que pelo menos um grande clube carioca está dando a volta por cima e reconquistando seu lugar de honra na elite do futebol nacional.*

‘(give, turn) Until then, it does not hurt to hope that at least one great club from Rio de Janeiro is turning around (lit. **giving the turn on top**) and regaining its place of honor in the national soccer elite.’

SUPPORT [*vsup-standard*] (*volta,dando*)

FIXED (*dando,volta,cima*)

In this sentence, the expression *dar a volta por cima* ‘turn around’ was analyzed by *STRING* in two different ways, and two different dependencies were extracted for the same constituents: (i) as *SUPPORT* [*vsup-standard*], similar to the predicate *dar um passeio* ‘take a walk’; and (ii) as a fixed construction (*FIXED*), meaning ‘turn around’. It should be noted that most of the annotators have assigned the *OTHER* tag to this phrase, which may correspond to a fixed expression.

To fix these problems, a general “cleanup” rule was created, which gives preference to extracting the *FIXED* dependency and excludes the *SUPPORT* dependency. At the end of processing, only the second dependency (as a fixed or idiomatic expression) should remain, which is often the correct analysis.

Other fixed expressions were analyzed incorrectly by both the *STRING* system and most annotators, e.g.:

(20) (*dar, tiro*) *O PT está dando um tiro no próprio pé ao tentar abortar a CPI do caso Waldomiro Diniz.*

‘(give, shot) The PT is firing on (lit. giving a shot) its own foot trying to abort the CPI of the Waldomiro Diniz case.’

SUPPORT [vsup-standard] (tiro,dando)

(21) (*dar, passo*) *Lee-Huang deu um passo à frente em relação à pesquisa de Gallo, diz David Lewi, infectologista da Unifesp.*

‘(take, step) Lee-Huang stepped up on (lit. took a step ahead of) Gallo’s research, says David Lewi, an infectologist at Unifesp.’

SUPPORT [vsup-standard] (passo,deu)

In (20), the elements of the SVC (*dar* ‘give’ and *tiro* ‘shot’) form a subset of the frozen expression *dar tiro no pé* ‘fire (lit. give a shot) on own foot’. In (21), the frozen expression *dar um passo à frente* ‘take a step ahead of’ is ambiguous with the SVC *dar um passo* ‘take a step’. From the semantic point of view, both can literally mean ‘move one leg forward’, or, metaphorically, ‘move on, overcome some challenge’. The same problem occurs with other expressions, such as *dar o primeiro passo* ‘take the first step’, *dar um passo decisivo* ‘take a decisive step’, *dar passos firmes* ‘take firm steps’, etc., in which the SVC construction of the noun *passo* ‘step’ is probably at the origin of these idiomatic constructions.

Both the manual annotation and the automatic classification of these cases should be reviewed in order to maintain the consistency of the linguistic description. The frozen expressions of Brazilian Portuguese were described by Vale (2001) and many of them have already been classified in European Portuguese (BAPTISTA et al., 2004) and inserted in the lexicon of STRING (BAPTISTA; MAMEDE; MARKOV, 2014).

Another false-positive case concerns the classification of constructions with linking operator-verb as if they were constructions with support verb. The two following examples are cases of constructions with linking operator-verb:

(22) (*ter, nome*) *Em 94, vários delegados denunciados por Luz tiveram os nomes encontrados nos livros de contabilidade do jogo do bicho.*

‘(have, name) In 94, several delegates denounced by Luz had the[ir] names found in the accounting books of the illegal lottery.’

SUPPORT [vsup-standard] (nomes,tiveram)

(23) (*ter, nome*) *O participante que tiver o nome confirmado deverá se dirigir à Bovespa, rua XV de novembro, 275, centro, São Paulo, no horário marcado, munido de identidade.*

‘(have, name) The participant that has [his/her] name confirmed should address the Bovespa, November 15 Street, 275, center, São Paulo, at the time scheduled, with [his/her] identity [card].’

SUPPORT [vsup-standard] (nome,tiver)

In both cases, the *Npred nome* ‘name’ was identified as a direct complement (CDIR) of the verb *ter* ‘have’, and so the two dependency extraction rules SUPPORT [vsup-standard=+] and SUPPORT [vsup-converse=+] were triggered. Because of the rule that selects the standard dependency in ambiguous cases, the system extracts only the dependency SUPPORT [vsup-standard=+]. These cases, however, correspond to constructions with a linking operator-verb, as was noted manually by most annotators.

The linking operator-verb is a concept introduced by Gross (1981) and later studied by Ranchhod (1990), for European Portuguese, to refer to verbs that operate on base constructions, adding to them an argument which is already present in the base sentence in the complement position.

(24) [built example]: *O Rui tem # A Ana está sob o controle do Rui.*
 ‘Rui has # Ana is under the control of Rui.’

(24a) = *O Rui_i tem a Ana sob o (seu_i + *meu + *teu) controle.*
 ‘Rui has Ana under his control.’

Some cases had been classified by both humans and STRING, in the first evaluation, as SUPPORT [vsup-standard]. After a systematic review of the annotations of the reference *corpus*, however, we considered that these are other cases of linking operator-verb. In general, the problem is related to nouns such as *notícia* ‘news’, *orientação* ‘guidance’, *informação* ‘information’, *explicação* ‘explanation’, *opinião* ‘opinion’, *solução* ‘solution’, *resposta* ‘response/answer’, *exemplo* ‘example’, *definição* ‘definition’, *dica* ‘hint/tip’, *pista* ‘clue’, *sugestão* ‘suggestion’, *argumento* ‘argument’, *parecer* ‘opinion’, *etc.*, associated with *Vsup ter* ‘have’, which admits two different interpretations, one with passive sense, shown in (25), and another with an active sense, shown in (26), e.g.:

(25) [built example]: *Zé teve uma notícia ruim <quando Ana lhe contou sobre sua doença>.*
 ‘Zé had some bad news <when Ana told him about her illness>.’

(26) [built example]: *Zé tem uma notícia ruim <para dar à Ana>.*
 ‘Ze has bad news <to give Ana>.’

Verbal tenses, strictly speaking the ‘punctual’ aspect of the perfect tense in (25), and the ‘durative’ aspect of the present (or the imperfect) in (26) allow us to distinguish these two uses. The example (25) is less controversial, clearly being considered a converse *SVC*, since it has as its counterpart the standard construction:

(25a) ≡ *A Ana deu uma notícia ruim ao Zé.*
 ‘Ana gave some bad news to Zé.’

The statute of this converse construction did not raise any doubts among the annotators. On the other hand, the same pair (*ter* ‘have’, *notícia* ‘news’), in (26), seems to have a special status, since it resembles an active orientation construction (e.g. *Ana deu uma notícia ruim ao Zé* ‘Ana gave a bad news to Zé’), but the action is not fully achieved (imperfective aspect).

The basic predicate in (26) is *dar uma notícia* ‘give a [piece of] news’, since it can be reconstituted in the infinitive sub-clause introduced by *para* ‘to’ (e.g. *Zé tem uma notícia ruim para dar à Ana* ‘Ze has some bad news to give to Ana’). The verb *ter* ‘have’, in this sense, serves only to connect the subject argument (*Zé*) to the predicate *dar uma notícia* ‘give some news’. This argument (*Zé*) is not new, as it already existed in the base sentence. In these conditions, the verb *ter* ‘have’, in (26), also has the status of a linking operator-verb.

The same phenomenon can be observed in several other *Npred* associated with the verb *ter* ‘have’. Sentences (27) to (32), taken from the reference *corpus*, exemplify the problem.

(27) (*ter, notícia*) *Segundo Zeca, o Estado vizinho de Mato Grosso tem “quase uma dezena de usinas instaladas na bacia do Paraguai sem que se tenha tido notícia de um único acidente ambiental”.*

‘(have, news) According to Zeca, the neighboring state of Mato Grosso has “almost a dozen factories installed in the basin of Paraguay and one has no news of a single environmental accident.”’

SUPPORT [vsup-standard] (notícia,tenha)

(28) (*ter, informação*) *A delegada diz que é importante que os passageiros que sejam furtados ou roubados registrem a ocorrência na delegacia do aeroporto, para que a polícia tenha mais informações sobre o modo como os bandidos agem.*

‘(have, information) The delegate says that it is important that passengers who have been robbed make a record of the occurrence at the airport police station, so that the police have more information on how the criminals act.’

SUPPORT [vsup-standard] (informações,tenha)

(29) (*ter, solução*) *A disputa entre juízes e a direção da liga, que aparentemente teria uma solução rápida, deve durar algumas rodadas.*

‘(have, solution) The dispute between judges and the league’s management, which apparently would have a quick solution, should last a few rounds’

SUPPORT [vsup-standard] (solução,teria)

(30) (*ter, notícia*) *O “The Wall Street Journal” tem boas notícias para todos vocês, ratos de sofá.*

‘(have, news) “The Wall Street Journal” has good news for all of you, couch rats’

SUPPORT [vsup-standard] (notícias,tem)

(31) (*ter, informação*) *A página tem informações sobre o clube, fotos e os nomes dos membros.*

‘(have, information) The page has informations about the club, photos and the names of members’

SUPPORT [vsup-standard] (informações,tem)

(32) (*ter, solução*) *Quem ousaria dizer que tem a solução para o caso?*

‘(have, solution) Who would dare say that he has the solution to the case?’

SUPPORT [vsup-standard] (solução,tem)

For all these cases, STRING extracted the SUPPORT [vsup-standard] dependency. The first three examples (27), (28) and (29), however, are converse SVC and the last three (30), (31) and (32) should not have been extracted, since they correspond to constructs with linking operator-verb. As the reference *corpus* itself was also incorrect in these cases, it was subsequently revised and corrected.

b) False-Negative

As presented in Table 5, the SUPPORT dependency was not extracted from 114 sentences. The main reasons for the desired dependency not being identified is the distance between the support verb and the predicative noun or, else, the failure of the processing chain in some previous stage.

(33) (*dar, mostra*) *Para fortalecer essa espécie de revolução democrática que, iniciada com a decisão de desalojar um usurpador do poder Executivo, dá mostras agora de que deseja ir fundo na moralização e na republicanização do Poder Legislativo.*

‘(give, sign) In order to strengthen this kind of democratic revolution, which, having began with the decision to evict an usurper from the executive power, now gives signs that it will go deep into the moralization and republicanization of the Legislative Branch.’

The nominal predicate *dar mostras* ‘give signs’ is found in a relative-restrictive subclause, but the relative pronoun is separated from the supporting verb by a parenthetical, appositive sub-clause (a so-called participle-reduced sub-clause). Given the complexity of the sentence and the interaction of the rules of grammar, the parser analyzes *mostras* ‘signs’ as the subject (SUBJ) and not as the direct complement (CDIR) of *dar* ‘give’. For this reason, the SUPPORT dependency has not been extracted. It should be noted that, in a simpler sentence, the parser’s analysis is already adequate:

(33a) **[Simplified Example]** *A revolução democrática dá mostras de que deseja ir fundo na moralização.*

‘The democratic revolution **gives signs** that it will go deep into the moralization.’
SUPPORT [vsup-standard] (mostras,dá)

In other cases, the system did not properly extract the SUPPORT dependency, due to failure in processing some type of anaphora, a step that occurs in a previous stage of the chain, before the SUPPORT dependency extraction step, e.g.:

(34) *(dar, declaração) A declaração não tem valor legal, já que não foi dada em um depoimento formal.*

‘**(give, statement)** The **statement** has no legal value, since [it] was not **given** in a formal way.’

In this example, the *Npred declaração* ‘statement’ is the subject of a passive construction that is subordinated to the main clause. However, the subject of that sub-clause has been elided (*já que [essa declaração] não foi dada* ‘since [it=**this statement**] was not **given**’), since it already occurs as the subject of the main clause. Although STRING contains a module for the resolution of this type of anaphora (PEREIRA; ZAC, 2010), in this case the system failed to capture adequately the elliptical subject and, therefore, did not extract the SUPPORT dependency of the SVC. However, the system adequately captures the passive nominal construction in a sentence whose subject is explicit:

(34a) **[Simplified example]** *A declaração não foi dada em um depoimento formal.*

‘The **statement** was not **given** in a formal way’
SUPPORT [vsup-standard] (declaração,dada)

The 114 nominal predicates were tested individually in the processing chain using simple sentences as examples (simplified examples). For all of them, it was possible to obtain the adequate analysis, which means that the problem is not in the linguistic data formalized in the Lexicon-Grammar, but results from the complex process of the parser analysis. In some cases where the coordinate conjunction is not explicit and has been replaced by a comma, the system has not been able to extract the dependency:

(35) *(dar, amasso) Ah, Lorena, você só dá uns beijinhos nele, uns amassos e pronto.*

‘**(give, make out)** Oh, Lorraine, you just **give** a few **kisses** on him, some **make out**, and that’s it.’
SUPPORT [vsup-standard] (beijinhos,dá)

In this sentence, only the dependency between *dar* ‘give’ and *beijinhos* ‘kisses’ was extracted. The dependency between the target pair {*dar, amasso*} ‘give, make out’

was not identified by STRING. It turns out that, in this example, the word *pronto* was analyzed as an adjective and it is not in a formal context that allows to form a nominal phrase that would then be coordinated with the nouns *beijinhos* ‘kisses’ and *amassos* ‘make out’. This is the reason why the rules of coordination did not fire; therefore, the coordination between *beijinhos* and *amassos* has not been extracted either and the SUPPORT could not be made to percolate from the first to the second noun.

As it is currently implemented in STRING, coordination is treated as a strictly local phenomenon, linking nominal and/or prepositional phrases, including cases of enumeration of 3 or more elements, in which there are ellipses of intermediate conjunctions (e.g. *laranjas, bananas e maçãs* ‘oranges, bananas, and apples’). If we make explicit the coordinative conjunction between the two noun phrases of the sentence (35), *uns beijinhos* ‘some kisses’ and *uns amassos* ‘some make-out’, then the system correctly extracts the two SUPPORT dependencies:

(35a) [Simplified example] *Ah, Lorena, você só dá uns beijinhos e uns amassos nele e pronto.*

‘Ah, Lorraine, you just give a few kisses and some make out on him and that’s it.’
 SUPPORT [vsup-standard] (amassos,dá)
 SUPPORT [vsup-standard] (beijinhos,dá)

It should be noted that in other cases of coordination between predicative nouns with the same support verb, STRING correctly extracted the SUPPORT dependency, as in:

(36) (*ter, aprovação*) *Três cadernos “Guerra na América” (12/9, 13/9 e 14/9), contados à parte, tiveram a maior leitura e a maior aprovação da semana (média de 95% do ótimo/bom).*

‘(have, approval) Three notebooks “War in America” (12/9, 13/9 and 14/9), counted separately, had the highest reading and highest approval ratings of the week (average of 95% of the very good/good [ratings]).’
 SUPPORT [vsup-converse] (aprovação,tiveram)
 SUPPORT [vsup-converse] (leitura,tiveram)

(37) (*receber, confirmação*) *Até hoje e apesar do prazo fixado para este efeito em 20 de junho de 2005, este Ofício não recebeu nem resposta nem a confirmação de procedimentos feitos pelas autoridades brasileiras competentes necessários à retirada da documentação suíça.*

‘(receive, confirmation) To date, and despite the deadline set for this purpose on June 20, 2005, this Office has received no response nor confirmation of procedures performed by the competent Brazilian authorities [that were] necessary to the withdrawal of the Swiss documentation.’
 SUPPORT [vsup-converse] (confirmação,recebeu)
 SUPPORT [vsup-converse] (resposta,recebeu)

In the two examples, the direct complement dependencies (CDIR) that were extracted between *{ter, leitura}* ‘have, reading’ and *{receber, resposta}* ‘receive, answer/response’ were percolated to the other nominal groups with which these nouns are coordinated, namely *{ter, aprovação}* ‘have, approval’ and *{receber, confirmação}* ‘receive, confirmation’, respectively.

c) True-negatives

Of the 139 cases in which STRING did not extract SUPPORT dependency, there are 25 sentences for which the system, in fact, should not have extracted the dependence, since there is no syntactic relation between *Vsup* and *Npred*. The human annotators also did not consider that there was a construction with support verb in these sentences. These are, therefore, true-negative cases.

(38) (*receber, título*) *Por exemplo, no documento dizia que foi recebido a título de horas extras CR\$ 200 mil.*

‘(receive, overtime) For example, in the document it was said that CR \$ 200 thousand was **received** as **overtime**.’

(39) (*levar, ponto*) *Roteiro de um dia leva aos pontos altos de San Francisco.*

‘(lead, highlight) A one-day tour **leads** to the **highlights** of San Francisco.’

(40) (*ter, sorte*) *Sua sorte foi ter sido socorrido com rapidez.*

‘(have, luck) His **luck** was that he **has** been rescued quickly.’

(41) (*ter, aula*) *Quando estiver pronto será a sede da administração do campus e também terá salas de aula.*

‘(have, class) When it will be ready, it will be the headquarters of the campus administration and it will also **have class** rooms.’

As we said above, the extraction of sentences from the PLN.Br *corpus* was based only on the fact that the pair *Vsup Npred* was present in the sentence and it did not consider any syntactic relations. For this reason, such sentences selected for the sample are counterexamples that contribute to measuring the quality of the parsing process.

Particular Cases of True-Positives

The previous section presented the main problems found in the automatic extraction of the SUPPORT dependency in sentences taken from the *corpus*. In addition to these, it should be highlighted that in some cases the system detected a SUPPORT relation,

although they were not the target for which the sentence had been extracted from the *corpus*.

In the examples below, both the target pair and the pair extracted by STRING are shown in bold. The target pair (automatically extracted from the *corpus*, using Unitex) is inserted at the beginning of the example, in parentheses; the pair {*Vsup*, *Npred*}, not targeted but properly parsed by STRING, is underlined in the body of the example.

(42) (***dar***, ***show***) *Os ingressos custam R\$ 30,00 e darão direito a diversos **shows** de dança e música e a um jantar típico com especialidades da China, Japão, Coréia, Tailândia, Indonésia e Índia.*

‘(give, show) Tickets cost R\$ 30,00 and will entitle (lit: give right) to various dance and music **shows** and a typical dinner with specialties from China, Japan, Korea, Thailand, Indonesia and India.’

SUPPORT [vsup-standard] (direito,darão)

(43) (***dar***, ***nome***) *Segundo Vassoureiro, esse costume, que ainda persiste, deu origem ao nome “papangu”.*

‘(give, name) According to Vassoureiro, this custom, which still persists, gave rise to the name “papangu”’

SUPPORT [vsup-standard] (origem,deu)

(44) (***ter***, ***nó***) *Pollack - Os europeus têm as mesmas informações que nós temos.*

‘Pollack - Europeans **have** the same information as we do (lit. that we **have**).’

SUPPORT [vsup-converse] (informações,têm)

SUPPORT [vsup-converse] (informações,temos)

(45) (***receber***, ***comissão***) *Sua candidatura ao COI recebeu o aval da comissão executiva da entidade, que é formada por 11 pessoas, entre elas o presidente, Juan Antonio Samaranch.*

‘(receive, comission) His candidature to the IOC has received the endorsement of the executive **committee** of the organization, which is formed by 11 people, among them the president, Juan Antonio Samaranch.’

SUPPORT [vsup-converse] (aval,recebeu)

Since STRING performs both a shallow parsing (chunking) and deep syntax processing (with extraction of dependencies between constituents), the system recognizes constituents that actually have some relation and ignore those that do not.

It is also worth noting that, in (44), the chain correctly extracted two dependencies: one, in which *informações* ‘informations’ is a direct complement of *ter* ‘have’, and another, in which *informações* ‘informations’ is the antecedent of the relative pronoun, which is a direct complement of *ter* ‘have’.

By integrating the Lexicon-Grammar data into STRING and its automatic syntactic analysis, it was also possible to identify other pairs of *Vsup* and *Npred* that had not previously been considered, such as:

(46) (*ter, condição*) *Como o MEC não tem condições de fiscalizar todos os 5.506 municípios brasileiros, pretende contar com a ajuda dos Estados.*

‘(have, condition) As the MEC is not able (lit: does not **have** the **conditions**) to inspect all 5,506 Brazilian municipalities, it intends to **count on the help** of the States.’
SUPPORT [vsup-converse] (ajuda, contar com)

In addition to the target pair {*ter, condição*} ‘have, condition’ that allowed this phrase to be extracted automatically from the *corpus* using Unitex, STRING also identified the pair {*contar com, ajuda*} ‘count on, help’, for which it correctly extracted the SUPPORT [vsup-converse] dependency.

Second evaluation of the system’s performance

As mentioned above, after the error analysis, the linguistic data of the Lexicon-Grammar was corrected in the matrix and the sentences of the sub-sample were processed again. Table 6 presents and compares the results of the first and second evaluations.

Table 6 – First and second evaluations of STRING performance.

	TP	FP	FN	TN	Precision	Recall	Accuracy	F-measure
First evaluation	350	91	114	25	79%	75%	65%	77%
Second evaluation	325	56	84	115	85%	87%	80%	86%

Source: Author’s elaboration.

As it can be noticed, the system’s performance improved in the second evaluation run: Precision increased by 6%, Recall augmented 12%, Accuracy rose 15%, and, consequently, the F-measure also rose by 9%.

It is worth highlighting the significant increase in the number of true-negative from the first (TN = 25) to the second (TN = 115) evaluation run. The first evaluation considered as the golden standard the annotation of the majority or the unanimity of the annotators, without checking whether that annotation was consistent or not. By systematically reviewing annotations, we identified all cases in which the verb *ter* ‘have’ functioned as a linking operator verb and we correct that data in the reference *corpus*. Therefore, this has significantly increased the number of sentences in which STRING aptly did not extract the SUPPORT dependencies.

The improvement in the system performance is also due to the correction of Lexicon-Grammar data, as the dependencies that were being extracted as `SUPPORT [vsup-converse]` became `SUPPORT [vsup-standard]`.

In addition to correcting the reference *corpus* and the linguistic data of Lexicon-Grammar, we inserted in the dictionary used by STRING (v.g. **PB.dic**), the degree inflection/derivation information for the nouns ending in *-ada/-ida*. The dependencies of nouns such as *saidinha* ‘little exit’, *fugidinha* ‘little escape’ e *arrumadinha* ‘little tidy up’ were not being extracted because the system did not recognize these nouns in *saida* ‘exit’, *fugida* ‘escape’ e *arrumada* ‘tidy up’, respectively. By associating the adequate inflection/derivation paradigm to these nouns, STRING now correctly extracts the dependencies involving them.

In addition, a “cleaning” rule was created for the cases of frozen (idiomatic) expressions. STRING extracted at the same time the FIXED and SUPPORT dependencies for the constructions whose constituents either were frozen expressions or form an *SVC*. The rule created for the processing chain gives preference to the extraction of the FIXED dependency and excludes the SUPPORT dependency, in cases of duplicated dependencies between the same constituents.

Conclusions and future work

As a result of this work, we produced a golden standard of constructions with the support verb *dar* ‘give’ and its variants for Portuguese. This golden standard consists of a *corpus* annotated automatically with the `SUPPORT [vsup-standard]` and `SUPPORT [vsup-converse]` dependencies by STRING, and then manually revised by a team of linguists.

The results of the task indicate gains in the different parameterization of the rules. It should be noticed, however, that the experiments were done for a small set of *SVC*, involving only one elementary *Vsup* and its variants.

In the near future, we also intend to integrate into STRING the Lexicon-Grammar matrices referring to the nominal constructions with the *Vsup fazer* ‘do/make’ and *ter* ‘have’, and to evaluate, in a more comprehensive way, the performance of the system, using in full the 2,646 manually annotated sentences.

One of the specificities of Brazilian Portuguese in relation to European Portuguese is the great productivity of predicative nouns that can be created by derivation with the suffix *-ada/-ida*. Virtually all verbs of action and many verbs denoting processes can give rise to predicative nouns with the suffix *-ada/-ida* (SCHER, 2004), which select for the most part the support verb *dar* ‘give’, such as *abanar* = *dar uma abanada* ‘shake = give a shake-ada’, *enxugar* = *dar uma enxugada* ‘dry = give a dry-ada’, *enrugar* = *dar uma enrugada* ‘wrinkle = give a wrinkle-ada’, *crescer* = *dar uma crescida* ‘grow = give a grow-ida’, *sumir* = *dar uma sumida* ‘disappear = give a disappear-ida (=disappearance)’, etc. In the same way, some nouns designating objects, instruments and body-part nouns

can also be given the suffix *-ada* to form predicative nouns (BAPTISTA, 2004), such as *bater com uma cadeira = dar uma cadeirada* ‘hit (someone) with a chair = give a chair-ada’, *bater com o cinzeiro = dar uma cinzeirada* ‘hit (someone) with a ashtray = give a ashtray-ada’, *bater com o ombro = dar uma ombrada* ‘hit (someone) with the shoulder = give a shoulder-ada’, etc.). This phenomenon is quite productive in the nominal constructions with *Vsup dar* ‘give’. In this sense, it is intended, in future works, to expand the list of predicative nouns and to integrate them into the dictionaries of STRING so that more constructions can be identified in real texts.

However, these *N-ada* nouns are often ambiguous with the past participle of the corresponding verbs, which raises several processing problems, especially for the difficulty in part-of-speech (POS) disambiguation.

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RASSI, A.; BAPTISTA, J.; VALE, O.; MAMEDE, N. Integração de predicados nominais em *parser*: uma experiência com as construções com o verbo-suporte *dar* em português brasileiro. *Alfa*, São Paulo, v.62, n.3, p.541-573, 2018.

- **RESUMO:** *Este artigo descreve a metodologia para a integração de predicados nominais, do tipo construções com verbo-suporte (CVS), no analisador sintático automático XIP, que é utilizado pela cadeia de processamento do Português STRING. Trata-se, mais especificamente, de 580 CVS com o verbo dar e um nome predicativo, cujas propriedades sintático-semânticas foram descritas, formalizadas e, em seguida, integradas à gramática do XIP, por meio de regras, a fim de extrair a dependência SUPPORT entre o nome predicativo (Npred) e o verbo-suporte (Vsup). A necessidade de tratar automaticamente as CVS decorre do fato de que elas são diferentes de construções com verbo pleno, possuem estruturas sintáticas complexas, possuem propriedades sintático-semânticas específicas e admitem transformações sintáticas sistemáticas, ainda que lexicalmente determinadas. O conceito de CVS, bem como a abordagem léxico-sintática adotada, segue os princípios teóricos e metodológicos do Léxico-Gramática. Como resultado da integração desses dados ao parser XIP, o sistema atingiu precisão de 85%, abrangência de 87%, acurácia de 80% e medida-F de 86%.*
- **PALAVRAS-CHAVE:** *Verbo-suporte. Nome predicativo. Construção com verbo-suporte. Verbo-operador causativo. Parser XIP.*

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TOWARD A COMPREHENSION OF AN INTUITION: CRITERIA FOR DISTINGUISHING VERBAL ARGUMENTS AND ADJUNCTS

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- **ABSTRACT:** The distinction between verbal arguments and adjuncts is essential to ground various linguistic theories. However, although we may have reliable intuitions regarding prototypical cases, such intuitions fail in the judgment of certain verbal relations. We are, thus, in need of a reliable criterion (beyond mere intuition) that is capable of differentiating verb complementation from adjunction. Therefore, our goal is to present and to discuss some of the main tests that seek to distinguish verb arguments and adjuncts (JACKENDOFF, 1977; DOWTY, 1982; CAPPELEN; LEPORE, 2005; HAEGEMAN, 2006; KENEDY, 2013; MIOTO; FIGUEIREDO SILVA; LOPES, 2013), especially concerning the thematic roles of beneficiary and locative – because they occur both in internal argument and in adjunct positions. We are going to present the following tests: (i) term optionality, (ii) subcategorization, (iii) s-selection, (iv) entailment and (v) anaphora, and try to show what problems each one of them faces. Surprisingly, the argument–adjunct distinction does not seem to find any consistent and definitive support in any of the tests found in the literature. The last one, however, anaphora, is the only one that seems capable of capturing this distinction, although it diagnoses as transitives some verbs usually considered to be unergative (like “to travel” (*viajar*) and “to phone” (*telefonar*)).
- **KEY-WORDS:** Verbs. Argument Structure. Adjunction. Syntactic Tests. Locative. Beneficiary.

Introduction

The traditional distinction between so called *essential* and *ancillary terms* belongs to a set of distinctions which are fundamental to most linguistic theories. This dichotomy

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stems from pretty intuitive notions, dividing parts of the clause into two groups: those that are considered to be indispensable for composing the verbal scene, and those that merely modify it. However, when we attempt to apply this distinction across the board, we begin to witness the emergence of unexpected complexities.

(1) João deu o bolo para Maria.

(‘João gave the cake to Maria’)

(2) João cozinhou o bolo para Maria.

(‘João cooked the cake for Maria’)

The same constituent, *para Maria* (“to/for Maria”), works as an argument in (1) and as a modifier, or an adjunct, in (2). We know this because the verb *dar* (“to give”) selects three arguments, while *cozinhar* (“to cook”) selects only two. Both phrases receive the beneficiary theta-role – even though they’re subcategorized by different heads¹; they are, however, in different syntactic relations to the verb. But how could we reliably define this distinction?

Our intuitions are pretty clear regarding simple and prototypical cases like

(3) Ana conheceu João durante as férias.

(‘Ana met João during vacation’)

In (3), we know that *Ana* and *João* are arguments of the verb and that *durante as férias* (“during vacation”) is a temporal adjunct. However, our intuition wavers when we encounter cases like

(4) Ana viajou para a Bahia.

(‘Ana traveled to Bahia’)

Is *para a Bahia* (“to Bahia”) an essential term or a modifier? The locative theta-role does not solve the problem, since it could be attributed by the preposition and the verb alike. The question is that we need a reliable – and not merely intuitive – criterion that is capable of explaining and differentiating cases of complementation and adjunction. In order to regard the criterion as reliable, it must provide convincing results for all (or most) of the relevant cases.

This article aims to present and discuss some of the main tests that have been proposed to distinguish verbal arguments and adjuncts², especially when they involve the beneficiary and locative theta-roles – because both occur in internal argument as well as in adjunct positions.³

Surprisingly, this fundamental and amply used distinction does not seem to find consistent and definitive support in any test proposed in the literature. We will discuss

¹ More precisely, [_{pp} para Maria] is beneficiary in (1) and [_{NP} Maria] is beneficiary in (2). In (1), the verb *dar* (“to give”) is trivalent and distributes its theta-roles to each of its three arguments, [João], [o bolo] and [para Maria]; *para* (“for/to”) is here merely a functional preposition. In (2), the verb *cozinhar* (“to cook”) is bivalent and ascribes theta-roles to its arguments [João] and [o bolo], while [Maria], being part of the adjunct [para Maria] is subcategorized and thematically marked by the lexical preposition *para* (“for/to”). (Cf. MIOTO; FIGUEIREDO SILVA; LOPES, 2013).

² Throughout this paper, we will use the terms *adjunct* and *modifier* as synonymous; when we are referring specifically internal arguments, we will also use the term *complement* of the verb.

³ The differences between relative sentences that can fulfill the role of both arguments and adjuncts will not be addressed here.

here the following: (i) optionality, (ii) subcategorization, (iii) s-selection, (iv) entailment and (v) anaphoric resumption. The latter is the only one that, given certain caveats, seems to work reasonably well in distinguishing adjuncts from complements.

Even though the division between arguments and modifiers is quite intuitive, it does not appear to be so solid when we try to define it with precise theoretical criteria. Any syntactic (or syntactic-semantic) theory should deal with this distinction somehow, either by denying it, or by formalizing it within some portion of the grammar. We should emphasize here that the problem we want to face is not one regarding *notation*. That is, our objective is not to question particular formalizations of these two categories, but to discuss the unsatisfactory manner in which they have been defined in the literature.

Within most theories, we find various proposals to formalize the difference between arguments and adjuncts. Even within the X-bar theory of phrase structure, we find different suggestions. In the initial version of Jackendoff (1977), for instance, it is proposed that adjuncts (or “restrictive modifiers”, as he calls them) are attached specifically at the V’ level. Carnie (2006) suggests duplicating V’ level to host adjuncts; Haegeman (2006) chooses to duplicate the highest level of the verbal phrase, VP, in order to guarantee that the verb is not included within the verbal maximal projection. In *Simpler Syntax*, on the other hand (CULICOVER; JACKENDOFF, 2005), arguments and adjuncts are not differentiated by the phrase structure component – their only syntactic difference lies in the fact that only arguments, but not adjuncts, correspond to grammatical functions in the GF-Tier.⁴ Their main differences, however, are captured in Conceptual Structure, where modifiers are merely added as further descriptive specifications to a propositional structure that is already formed by the semantic counterparts of the verb and its arguments (JACKENDOFF, 2002).

The question, therefore, is finding a way of identifying and distinguishing these two categories. Once that is settled, one could work towards a desired proposal regarding notation, but this will not be the focus of this paper.

The tests

Optionality of the term

Assuming the intuitive notion that arguments are essential and adjuncts are optional, some propose (JACKENDOFF, 1977; KENEDY, 2013, e. g.) that removing an argument would make the sentence ungrammatical, while removing of an adjunct would be acceptable by the system without compromising the structure.⁵ This first test, as we see it, is the simplest of them all: it is simply the *removal* of the phrase to be tested. In

⁴ The Grammatical Function tier is postulated, within *Simpler Syntax*, in order to deal with phenomena traditionally explained (within Mainstream Generative Grammar) through movement operations, raising, case marking and agreement. For more details, cf. Culicover and Jackendoff (2005, chap. 6).

⁵ In case one adopts a transformational theory of grammar, the *removal of an argument* is only done in surface structure.

case the resulting sentence is ungrammatical, we have an indication that the removed constituent is an argument; if the result is acceptable, the constituent is taken to be an adjunct. See the contrasting cases below, which were taken from Kenedy (2013, p. 156):

(5) O manobrista colocou o carro na vaga.

(‘The valet placed the car on the spot’)

(5a) *O manobrista colocou o carro.

(‘The valet placed the car’)

(6) O manobrista estacionou o carro na vaga.

(‘The valet parked the car on the spot’)

(6a) O manobrista estacionou o carro.

(‘The valet parked the car’)

When we withdraw the phrase *na vaga* (“on the spot”) in (5a), the resulting sentence is ungrammatical; this allegedly proves the PP’s nature as an argument, since, in being removed, it compromises the sentence’s grammaticality. In contrast, when we do the same to the constituent in (6a), the sentence remains grammatical; this would constitute evidence for treating *na vaga* here as an adjunct, i.e. as an “ancillary term”. According to Kenedy (2013), this is due to the fact that the verb’s argument structure is determined by the lexicon, and not by the discourse; arguments would be, therefore, licensed by the verb’s lexical semantics (cf. JACKENDOFF, 1990).

However, as Jackendoff (1977) points out, this test, even though it may constitute sufficient condition for considering a phrase to be an argument, cannot be a necessary condition, since many verbs may appear with elided arguments. For example⁶:

(7) João contou uma mentira pro Pedro.

(‘João told a lie to Pedro’)

(7a) João contou uma mentira.

(‘John told a lie’)

(7b) João contou pro Pedro.

(‘John told Pedro’)

In the above sentences, we can remove either the PP *pro Pedro* (“to Pedro”), as in (7a), or the NP *uma mentira* (“a lie”), as in (7b), without jeopardizing the grammaticality of the resulting sentence. Nonetheless, both constituents are still arguments of *contar* (“to tell”), even though they are elided. According to Jackendoff, they are subcategorized by the verb, projected onto syntactic structure and subsequently deleted in the passage to the surface form.⁷ In most cases, it suffices to imagine a context to supply the elided constituent, which can normally be recovered from the discourse. Jackendoff (1977) does not offer, however, any test to differentiate an elided argument from an adjunct.

Renzi et al. (1988 apud PERINI, 2008, p.268) in analyzing cases as (8) and (9) claims that the same verb can appear in two different constructions:

⁶ The examples are adapted from Jackendoff (1977, p.58).

⁷ In his 1977 work, Jackendoff was working within the Revised Extended Standard Theory framework (cf. CHOMSKY, 1975), still assuming a transformational model of grammar.

(8) Piero está comendo a sopa.

(‘Piero is eating the soup’)

(9) O menino está comendo.

(‘The boy is eating’)

According to the authors, in (8), the verb *comer* (“to eat”) is transitive, since it subcategorizes two arguments, while in (9) it appears within an intransitive construction, containing only an external argument. Perini (2008, p.268) raises the same question we’ve been attempting to discuss here: “How can we distinguish cases in which a constituent is optional from cases in which it is obligatory, even though there exists an identical construction that does not contain it? The authors do not address this problem nor do they appear to notice it.”

This test fails because not only it does not capture argument ellipsis cases, but also because it presupposes that adjuncts are *always* optional. Some cases listed below show that the notion of optionality is not even sufficient to distinguish adjuncts from arguments. Bosque (1989 apud PERINI, 2008, p.267) presents the following examples:

(10) As igrejas dos países escandinavos são feitas de madeira.

(‘The churches of Scandinavian countries are made of wood’)

(11) ?As igrejas dos países são feitas de madeira.

(‘The churches of countries are made of wood’)

In the sentence (10), *escandinavos* (“Scandinavian”) is surely a nominal adjunct of *países* (“countries”), i.e. its only role is being a restrictor or a qualifier for the noun. Even so, when we remove this adjective, as in (11), the ensuing sentence is anomalous, to say the least.

Culicover (1997, p.159-160) also cites examples of obligatory verbal adjuncts in English:

(12) Bill worded the letter *very carefully*.

(12a) *Bill worded the letter.

(13) Mary weighs *too much*.

(13a) *Mary weighs.

In the examples (12) and (13), the verbs occur with the adjuncts *very carefully* and *too much*. However, when we attempt to remove these modifiers, the resulting sentences (12a) and (13a) are ungrammatical. There is no perfect equivalent for verb *to word* in Brazilian Portuguese (BP), but *to weight* has an equivalent counterpart in *pesar*, even though these verbs do not behave exactly alike. The removal of the adjunct *muito* (“a lot”), in (14a), affects the acceptability of the sentence:

(14) Maria pesa *muito*.

(‘Mary weighs a lot’)

(14a) ?Maria pesa.

(‘Mary weighs’)

Another example, from Grimshaw and Vikner (1993, p.146), illustrates the obligatoriness of adjuncts in passive structures with specific semantic verb types (note that in (16a) the insertion of the adjunct makes the sentence grammatical):

- (15) Guess what? John was murdered.
(16) Guess what? *Syntactic Structures was written.
(16a) Guess what? Syntactic Structures was written *for engineering students*.

This first test, therefore, is not efficient, since it does not capture a great number of cases in which the sentence remains grammatical under argument ellipsis; besides that, it wrongly presupposes that all modifiers are non-obligatory.

Subcategorization

This takes us to the second test, discussed by Dowty (1982), which involves subcategorization. According to the author, modifiers can occur freely in the sentence, combining with any kind of verb, while arguments behave in a much more constrained way. Therefore, beneficiaries such as [para Maria] (“to/for Maria”), could occur alongside unergative verbs, as in (17), transitives, as in (18) or indirect transitives, like (19):

- (17) João sorriu *para Maria*.
(‘João smiled to Maria’)
(18) João pescou o peixe *para Maria*.
(‘João caught the fish for Maria’)
(19) João compareceu à reunião *para Maria*.
(‘João attended the meeting for Maria’)

In the three sentences above, [para Maria] (“to/for Maria”) is a modifier. Nevertheless, this same phrase can also figure as an argument:

- (20) João deu o livro *para Maria*.
(‘João gave the book to Maria’)

In (17), (18) and (19), the PPs are not part of what the verbs select and they all receive their beneficiary theta-roles from the lexical prepositions which governs them. In (20), on the other hand, *para Maria* (“to/for Maria”) retains its beneficiary status, but now as an argument of the verb. This is because the particular verbal head therein subcategorizes three arguments, one being the PP in question. However, if we applied Dowty’s (1982) test, we would conclude that *para Maria* (“to/for Mary”) can occur with almost all kinds of verbs – an alleged property of modifiers.

The question remains: how can we rigorously define the relation *para Maria* (“to/for Maria”) holds with respect to the verb in each of these sentences? The answer surely involves the verb’s subcategorization properties; what we need though is a rule or a test that is capable of clearly identifying the verb’s argument structure.

Notice that the question is not purely descriptive. It is not simply a matter of classifying verbs according to the number of arguments they select and, then, defining whether a given constituent is subcategorized by given a verb or not. The problem is precisely how to define particular valences without taking them for granted by means of a rule that is capable of capturing this relationship.

Still within a descriptive dimension, one could imagine a study that involved an exhaustive analysis of data and a survey of token frequency. That is, one could verify in a given corpus what is the construction (what are the arguments or adjuncts) with which a particular verb appears more frequently and stipulate, using statistics that the more commonly co-occurrent terms are arguments and the less frequent ones are adjuncts. However, this analysis would not be adequate for our purposes, since frequency effects do not define the structure of the language for our object of study. It is quite likely, for example, that we would find a larger number of occurrences of sentences like *João comeu muito ontem* (“John ate a lot yesterday”) than of sentences like *João comeu bolo* (“John ate cake”) – even though *muito* (“a lot”) and *ontem* (“yesterday”) are adjuncts and *bolo* (“cake”) is a complement.

S-selection

Another test, quite similar to the previous one, has to do with s-selection. According to Dowty (1982) and Mito, Figueiredo Silva and Lopes (2013), verbs do not impose any semantic restrictions on their adjuncts, but only on their arguments. So we get:

(21) João correu.

(‘João ran’)

(22) João correu ontem.

(‘João ran yesterday’)

(23) João correu até as 18h.

(‘João ran until 6p.m.’)

(24) João correu ontem, até as 18h, no parque, usando roupas vermelhas.

(‘João ran yesterday, until 6p.m., in the park, wearing red clothes’)

But not:

(25) *A pedra correu.

(‘The rock ran’)

The modifier phrases *ontem* (“yesterday”), *até as 18h* (“until 6p.m.”), *no parque* (“in the park”) e *usando roupas vermelhas* (“wearing red clothes”) are semantically different from each other. This seems to indicate that the verb doesn’t s-select its adjuncts, which can signal time, place, manner etc. However, the same doesn’t happen in (25), because, since *a pedra* (“the rock”) is an argument, it must be semantically selected by the verb which, in this case, requires a [+ animate] agent.

This test seems reliable enough, until we come across the following examples:

(26) João correu no parque.

(‘João ran in the park’)

(27) João colocou o livro na estante.

(‘João put the book on the shelf’)

(28) *João correu na estante.

(‘João ran on the shelf’)

In the example (26), the unergative verb *correr* (“to run”) appear alongside the adjunct *no parque* (“in the park”) and in (27), the ditransitive *colocar* (“to put”) selects both *o livro* (“the book”) and *na estante* (“on the shelf”) as internal arguments. However, when we try to insert *na estante* (“on the shelf”) in (28), the resulting sentence is anomalous, even though this phrase is clearly a locative adjunct, in the same sense *no parque* (“in the park”) is in (26). It seems therefore that the verb can also s-select its adjuncts, thereby revealing the insufficiency of this test in distinguishing complements from adjuncts.

Notice that, even if we take the s-selection of *a estante* (“the shelf”) in (27) and (28) to be imposed by the preposition *em* (“on/in”), the question is not resolved, because *em* (“in/on”) can select all kinds of locations as complements. The problem is not, therefore, a thematic incompatibility between the preposition and the NP it subcategorizes.

Another interesting point that is revealed by these examples is that locative phrases can function both as adjuncts and as arguments, further blurring the distinction between these two categories. Besides that, just like locatives, beneficiaries too can exert both functions depending on the verbal head to which they are attached.

(29) *Maria tocou violão pra Júlia.*

(‘Maria played the guitar to Júlia’)

(30) *Maria emprestou o violão pra Júlia.*

(‘Maria lent the guitar to Júlia’)

In (29) and (30) we have, again, one identical constituent serving the roles of adjunct and argument, respectively, in different sentences.

Torres Morais and Berlinck (2006) argue that morphological criteria may be relevant in defining arguments in Portuguese, especially for the so-called indirect object. Strictly speaking, the indirect object in Portuguese is an argument that is introduced by a preposition, which functions as a dative case marker. Being so, the indirect object “refers to the set of full arguments introduced exclusively by the preposition *a* (“to/for”) and, in that case, they are in complementary distribution to the cliticized form *lhe/lhes* (“for him/for them)” (TORRES MORAIS; BERLINCK, 2006, p.100.).

This morphological criterion is only fully applicable in European Portuguese (EP) because, in BP, two changes have provoked a reorganization of dative case marking. These changes were the following: the substitution of the preposition *a* for the preposition *para* and “the loss of the morphological strategy for expressing dative complements, that is, the demise of 3rd person anaphoric datives, *lhe/lhes*” (TORRES MORAIS; BERLINCK, 2006, p.102).

The loss of morphological expressions for datives, traditionally realized by the preposition *a*, leads to a competition among various prepositions with a directional semantic value in BP: the expressions *ir na floresta* (“go to the forest”), *ir no banco* (“go to the bank”) and *ir na escola* (“go to the school”), all quite common in BP, compete, not only with the more formal *ir à floresta*, *ir ao banco*, *ir ao cinema* (TORRES MORAIS; BERLINCK, 2006, p.99), but also with the forms *ir para a floresta*, *ir para o banco* e *ir para o cinema*.

It seems, thus, that the morphological criterion, in BP, is no longer significant for the distinction between full arguments and adjuncts. Indeed, prepositional phrases with locative or directional values can be analyzed both as arguments and as adjuncts, since they are both exchangeable for adverbs (the examples below come from Bechara (2009, p.347):

(31) Seus parentes moram *no Rio*. / Seus parentes moram *aqui*.

(‘Your relatives live in Rio / Your relatives live here’)

(32) O artista já não vive *em São Paulo*. / O artista já não vive *lá*.

(‘The artist no longer lives in São Paulo / The artist no longer lives there’)

(33) Iremos *a Petrópolis*. / Iremos *ai (ali)*.

(‘We will go to Petrópolis / We will go there’)

Notice that in BP it would be quite common to say *Iremos para Petrópolis* (“We will go to Petrópolis”), which would have as an equivalent *Iremos lá* (“We will go there”). Therefore, the prepositional phrases which Bechara (2009) calls relative complements exhibit a dubious syntactic character between arguments and adjuncts.

This means that even if the dative case once had a clear morphological expression in Portuguese, in current usage a range of locative and directional prepositions mark a wide variety of semantic functions whose syntactic function is not well defined.

Entailment

The fourth test to be discussed here is the entailment test, and it was also presented by Dowty (1982). Since the arguments are essential to the event, they would be entailments of the verb⁸.

(34) Ana comeu o bolo.

(‘Ana ate the cake’)

The verb *comer* (“to eat”), in (34), entails that there is an agent, who executed the action, and an object, that, in this sentence, was affected by the verb. Hence, we would have two arguments. However, as Cappelen and Lepore (2005) and Moura (2017) observe, a verb like *comer* also entails, for instance, that the event took place somewhere and at some time:

(34a) Ana comeu o bolo *na confeitaria às 16h*.

(‘Ana ate the cake in the candy store at 4p.m.’)

The existence of a place and a time for the event which, on the aforementioned case, are expressed by the phrases *na confeitaria* (“in the candy store”) and *às 16h* (“at 4p.m.”), is also entailed by the verb, even though these constituents are sentential adjuncts. If we were to consider all entailments to be arguments, even zero-valence verbs would count as having arguments:

⁸ Technically, the test shouldn’t be formulated like this, since the relation of entailment is typically defined between full-blown propositions, not between lexical items or intermediary phrases.

(35) Chove.

(‘It rains’)

(35a) Chove *granizo hoje em Florianópolis*.

(‘It rains hail today in Florianópolis’)

According to Dowty (1982), arguments are indispensable terms for completing the verb’s meaning, while modifiers only express ancillary information. But the notion of “completeness”, although quite intuitive, is too vague. How can one check whether a verb’s meaning is complete? *Viajar* (“to travel”), for example, is often considered an unergative verb, although the place to which one travels is essential to complete the event of travelling.

Cappelen and Lepore (2005) argue that incompleteness claims and tests for grounding them, such as the entailment one, say nothing about linguistic structure. From the fact that the event of rain, as in (35a), requires an object (*granizo* / “hail”), a time (*hoje* / “today”) and a place (*Florianópolis*), nothing can be inferred about the argument structure of the verb that denotes this event in BP.

These arguments are *not* about language; they are about various nonlinguistic aspects of the world. Even if they were good arguments, nothing would follow about the sentences in question, more generally, no semantic conclusions follow from these arguments even if they were sound. (CAPPELEN; LEPORE, 2005, p.11)

Perhaps this radical split between language and the world is not desirable, but perfect isomorphism certainly cannot be taken for granted, as we can see in the inconvenient proliferation of arguments for the example (35a).

The entailment test is, therefore, not reliable, since it diagnoses clear modifiers as arguments. The reason why this test fails seems to rest on an attempt to capture a *syntactic* distinction by means of a *semantic* relation: entailment, which can only operate over semantic categories. The same applies to the notion of completeness; however vague, it certainly is not a syntactic concept. Still, this test is widely used in the literature, due to the implicit adoption of what Culicover and Jackendoff (2005, p.6) call the Principle of Interface Uniformity⁹:

Interface uniformity

The syntax–semantics interface is maximally simple, in that meaning maps transparently into syntactic structure; and it is maximally uniform, so that the same meaning always maps onto the same syntactic structure.

The treatment of semantics and syntax as uniform levels can lead to confusion with respect to the real nature of each linguistic phenomena – this seems to be the case in

⁹ See also Moura (2018) and Miliorini (2016).

the usage of the entailment test as a means to detect syntactic relations. The adoption of this principle can also prompt some empirical troubles when we analyze sentences like (36), which is mentioned by Dalrymple (2001):

(36) Maria está procurando uma solução para o problema.

(‘Maria is looking for a solution to the problem’)

Even though the verb *procurar* (“to look for”) selects an internal argument, if Mary looks for a solution, this does not mean that such a solution exists. What we have here is, as Moura (2017) claims, a non-equivalence between syntax and semantics: in (36), even though *uma solução para o problema* (“a solution to the problem”) is an argument, its existence is certainly not entailed by the verb. Thus, the entailment test also fails for examples such as these, because they display a syntactic argument which is not entailed by the verb – i.e., which cannot be defined by a semantic criterion.

We could take this result, however, as an indication that the phrases entailed by the verb are arguments of the *semantic function* it encodes (Cf. JACKENDOFF, 2007), regardless of the syntactic relation they establish with the head. However, as Cappelen and Lepore (2005) argue, adopting this idea would lead us to proliferate almost indefinitely the amount of semantic arguments, also burdening the semantic component of our theory of language.¹⁰

Anaphoric resumption

The fifth test suggested in the literature (JACKENDOFF, 1977; HAEGEMAN, 2006) is anaphoric resumption by *do so* – or, adapting to Portuguese, *fez isso*. Assuming that verbs and their internal arguments form a single constituent and that adjuncts, even though contained by the VP, are not included within it¹¹, we can use this test to ascertain whether a constituent is necessarily part of VP (like an argument) or not (like an adjunct). For the purposes of this discussion, if a constituent to be tested cannot follow the expression *fez isso*, we take it to be an argument – which was included in the VP and got “severed” in the attempt to anaphoric resumption.

(37) Pedro leu o livro na internet e João *fez isso* na biblioteca.

(‘Pedro read the book on the internet and João did so at the library’)

(38) *Pedro colocou o livro na estante e João *fez isso* na mesa.

(‘Pedro put the book on the shelf and João did so on the table’)

The sentence in (37) is possible, revealing that *fez isso* is substituting for the whole VP *leu o livro* (“read the book”), whereas *na internet* (“on the internet”) and

¹⁰ The authors propose a major reduction of the components which are part of what they call the semantic *basic set* of context dependent arguments/variables, pushing other issues into pragmatics: they defend a Semantic Minimalism coupled with a Speech Act Pluralism. This discussion, however, is not within the scope of this article. For more details about this proposal, see Cappelen and Lepore (2005).

¹¹ See Miotto, Figueiredo Silva e Lopes (2013, p.67-68) for the distinction between *containment* and *inclusion*.

na biblioteca (“at the library”) figure as adjuncts. Sentence (38), on the other hand, results anomalous, since *na mesa* (“on the table”) is an argument and, therefore, it cannot be separated from the VP.

Another possibility is to employ *isso aconteceu* (“that happened”) to recover anaphorically the VP. This version of the test is more comprehensive, since it does not impose an agentivity restriction on the external argument. Since agentivity is not relevant for what we have proposed to analyze, both versions of the test (*fez isso* and *isso aconteceu*) will provide the same diagnostic – as long as we adapt the expression to the semantic type of the particular verb we are testing.

(39) Ele dançou no quarto.

(‘He danced in the room’)

(40) Ele colocou o livro no quarto.

(‘He put the book in the room’)

(39a) Ele dançou *e isso aconteceu* no quarto.

(‘He danced and that happened in the room’)

(39b) Ele dançou no quarto *e isso aconteceu* na quarta-feira.

(‘He danced in the room and that happened on Wednesday’)

(39c) Ele dançou no quarto, na quarta-feira *e isso aconteceu* às 15h.

(‘He danced in the room, on Wednesday, and that happened at 3 p.m.’)

(39d) Ele dançou no quarto, na quarta-feira, às 15h *e isso aconteceu* secretamente.

(‘He danced in the room, on Wednesday, at 3 p.m. and that happened secretly’)

(40a) *Ele colocou o livro *e isso aconteceu* no quarto.

(‘He put the book and that happened in the room’)

In (39), the PP [no quarto] (“in the room”) can remain within the VP as well as be separated from it, as in (39a). The following sentences (39b, 39c, 39d) point to another common characteristic of adjuncts: their capacity to freely occur within sentences in an unbounded fashion (Cf. DALRYMPLE, 2001). These examples are all possible because the pronoun *isso* (“that”) is capable of retrieving both a single constituent as well as a larger part of the previous discourse. However, when we try to move [no quarto] (“in the room”) in (40a), using *isso* as a resumptive for the antecedent phrase, the result is ungrammatical because, in that case, the PP is included in the VP, i.e. it is an argument of the verbal projection. The ungrammaticality ensues, once again, due to the fact that we are trying to move a part of a VP and also because we are trying to recover a mere portion of it by means of the pronoun *isso*.

This test also works for transitive verbs with dative complements:

(41) Ana resistiu à agressão ontem.

(‘Ana resisted the aggression yesterday’)

(41a) Ana resistiu à agressão *e isso aconteceu* ontem.

(‘Ana resisted the aggression and that happened yesterday’)

(41b) *Ana resistiu *e isso aconteceu* à agressão ontem.

(‘Ana resisted and that happened (to) the aggression yesterday’)

(42) Ana confiou em João ontem.

(‘Ana trusted João yesterday’)

(42a) Ana confiou em João *e isso aconteceu* ontem.

(‘Ana trusted João and that happened yesterday’)

(42b) *Ana confiou *e isso aconteceu* em João ontem.

(‘Ana trusted and that happened (to) João yesterday’)

(43) Ana precisou de ajuda ontem.

(‘Ana needed help yesterday’)

(43a) Ana precisou de ajuda *e isso aconteceu* ontem.

(‘Ana needed help and that happened yesterday’)

(43b) *Ana precisou *e isso aconteceu* de ajuda ontem.

(‘Ana needed and that happened (to) help yesterday’)

The verbs *resistir* (“to resist”), *confiar* (“to trust”) and *precisar* (“to need”) select two arguments, and the internal one must be marked for dative case. We can retrieve anaphorically the whole VP in (41a, 42a, 43a), leaving *ontem* (“yesterday”) stranded at the end. This shows that the adverb is an adjunct – as expected. However, in (41b, 42b, 43b), when we try to displace to the end of the sentence *à agressão* (“the aggression”), *em João* and *de ajuda* (“help”), respectively, the resulting sentences are ungrammatical, because the internal structure of the VP is broken apart in the attempt to isolate the complement of the verb.

(44) Ana torceu pelo Neymar ontem.

(‘Ana cheered for Neymar yesterday’)

(44a) Ana torceu pelo Neymar *e fez isso* ontem.

(‘Ana cheered for Neymar and did so yesterday’)

(44b) Ana torceu *e fez isso* pelo Neymar ontem.

(‘Ana cheered and did so for Neymar yesterday’)

In (44b) it seems that we can only have a grammatical reading for the sentence if we consider *pelo Neymar* (“for Neymar”) to be a beneficiary (i.e. Ana cheered for somebody and she did that for Neymar’s sake). In this case, the phrase is an adjunct and the complement is subject to some kind of ellipsis. We can see this clearly by providing the verb with an independent argument:

(45) Ana torceu para o Barcelona pelo Neymar.

(‘Ana cheered for Barcelona for Neymar’)

In the above example, *pelo Neymar* (“for Neymar”) is clearly an adjunct, since *para o Barcelona* (“for Barcelona”) now occupies the complement position. The same thing happens with the verb *telefonar* (“to telephone / to phone”). In (47), it is possible to fill the argument slot with *pro médico* (“for the doctor”), leaving *pra Maria* (“for Maria”) inevitably in the adjunct position.

(46) Ana telefonou pra Maria.

(‘Ana telephoned for Maria’)

(46a) Ana telefonou *e fez isso* pra Maria.

(‘Ana telephoned and did so for Maria’)

(47) Ana telefonou pro médico pra Maria.

(‘Ana telephoned for the doctor for Maria’)¹²

Examples (44) and (46) are both ambiguous: the most prominent reading for both is the one that takes *pelo Neymar* (“for Neymar”) and *pra Maria* (“for Maria”) as complements with a patient (or theme) theta-role¹³. However, when we fill the internal argument slot with another phrase, the only possible interpretation left for these PPs is beneficiary. Trying to maintain the patient reading after placing the phrase at the end, as we did in previous examples, makes the sentence odd. That is, *Ana telefonou e fez isso pra Maria* (“Ana telephoned and did so for Maria”) e *Ana torceu e fez isso pelo Neymar* (“Ana cheered and did so for Neymar”) are ungrammatical under patient readings for the PPs, because in these cases the patient would need to occupy an argument position. Both sentences are only possible under a beneficiary reading.

We can observe the same behavior with the verb *vender* (“to sell”):

(48) Ana vendeu o carro pra Maria.

(‘Ana sold the car to Maria’)

(48a) Ana vendeu o carro e fez isso pra Maria.

(‘Ana sold the car and *did so* for Maria’)

(49) Ana vendeu o carro pro João pra Maria.

(‘Ana sold the car to João for Maria’)

Here, once again, the sentence (48a) is only possible under a beneficiary reading (even if this interpretation is not so accessible). This becomes clear once we fill the argument slot with *pro João* (“to João”) in (49). In line with Raposo’s (1992) proposal, the verb *vender* (“to sell”) is, thus, diagnosed as trivalent verb, although some may consider it to be merely bivalent.

(50) Ana viajou pra Bahia ontem.

(‘Ana travelled to Bahia yesterday’)

(50a) Ana viajou pra Bahia e fez isso ontem.

(‘Ana travelled to Bahia and *did so* yesterday’)

(50b) *Ana viajou e fez isso pra Bahia ontem.

(‘Ana travelled and *did so* to Bahia yesterday’)

The verb *viajar* (“to travel”), in contrast to *torcer* (“to cheer”), *telefonar* (“to telephone / to phone”) and *vender* (“to sell”), isn’t ambiguous: sentence (50b) is not possible, because the phrase *pra Bahia* (“to Bahia”) can only have locative reading, never a beneficiary one. Since it can’t be placed at the end, *pra Bahia* (“to Bahia”) counts as a genuine argument for *viajar* (“to travel”). This is an interesting result, since it reinforces our previous analysis: verbs like *torcer* (“to cheer”) and *telefonar* (“to telephone / to phone”) figure as transitives, selecting two arguments. This becomes

¹² This doesn’t quite work for English, because the analogous verb, to phone, doesn’t require a preposition. So, we would have *Ana phoned Mary* or even *Ana called Mary*. In Portuguese, however, the constituent following the verb *telefonar* must be a PP.

¹³ The debate involving the difference between patients and themes will not be addressed here. We will use “patient” as a generic label to indicate both roles that usually called patients as well as the ones usually called themes.

particularly clear when we apply this test and try to place the relevant constituent at the end, retrieving anaphorically what should be the VP, rendering the resulting sentence ungrammatical.

So, this last test seems to be the only one we discussed here which is capable of differentiating verbal complements and adjuncts – for simple prepositional phrases. Nevertheless, it diagnoses verbs like *viajar* (“to travel”) and *telefonar* (“to phone”) as transitives, whereas a large part of the literature (BURZIO, 1986; LEVIN; RAPPAPORT HOVAV, 1995) take them to be unergatives. Moreover, it also identifies *vender* (“to sell”) as trivalent, despite there being no consensus in the literature regarding this verb’s argument structure. In future research, it will be necessary to look into the wider discussion around unergatives (including proposals that question their existence, like the VP-shells proposal in Larson (1988) and Hale and Keyser (1993)¹⁴) and to investigate specific instances of verbs traditionally placed in that category, comparing these results to the ones obtained through the anaphoric resumption test.

Final remarks

We discussed here five of the main tests which are commonly employed to distinguish complements and modifiers in the verbal domain. All of them are problematic: the optionality test does not work because, besides presupposing that modifiers are always optional, it can’t handle complement ellipsis; the subcategorization test errs in considering that only adjuncts can occur unrestrictedly with any verb class; the entailment test presents false results – often diagnosing adjuncts as arguments and arguments as adjuncts -, because it muddles linguistic levels in the analysis insofar as it presupposes isomorphism between syntax and semantics; the s-selection test is not reliable, since adjuncts also appear to suffer semantic restrictions imposed by the verbal head; the anaphoric resumption test, at last, is the soundest of them all, and it seems to work, even though it predicts as transitives some verbs which are classically held to be unergatives.

The tests presented here only attempt to provide a way of detecting the difference between simple PPs, which subcategorize NPs. To verify the status of *sentences* that may exert the syntactic roles of adjuncts or complements, there are more suitable tests, involving A’ movement and island effects, which we haven’t covered here. Another issue that we left open is the possibility of a unification of tests to verify unrestrainedly the argument/adjunct status for all kinds of phrases (simple or sentential).

Given all of the confusing and sometimes conflicting results the tests provide, a possible alternative would be to consider all of them to be valid, concluding that there is no difference between adjuncts and arguments – both would be equally “essential”

¹⁴ Cf. also Roberge (2002). This author proposes a Transitivity Requirement (TR) that, in analogy to the Extended Projection Principle (EPP), obliges internal arguments to be projected in the syntax for all VPs, regardless of the verb’s semantic type. However, while EPP is a requirement on the functional domain, TR is required on the thematic domain.

for composing the verbal scene (this seems to be the case in Frame theory (FILLMORE, 1982)). However, aside going against a very intuitive dichotomy, adopting this would lead us to abandon a distinction on which many solid linguistic principles and analyses are grounded.

If we consider all the test results presented here to be sound, we would be compelled to integrate, little by little, some modifiers into the set of arguments, until we get to the point where each verb selects an indefinite number of arguments. Following the criteria suggested by the tests, we would exponentially increase the amount of arguments a verb can have – or *ought to have* in order for the sentence to communicate a full proposition. Hence, that would lead to a problem similar to the one Cappelen and Lepore (2005) discuss, which we mentioned above: semantics (or, even more gravely, syntax) becomes overloaded, because it would need to comprise all of the information necessary to attain a complete sense. Each verb would have to occur with, besides something like an agent and a patient, a locative phrase, a temporal phrase, a manner phrase and so on, perhaps indefinitely.

Moreover, if we claimed that there is no difference between adjuncts and arguments – or that there is no proper way to distinguish them – we could not handle the ambiguity of cases such as (44) and (46) above (*Ana torceu pelo Neymar* (“Ana cheered for Neymar”) e *Ana telefonou pra Maria* (“Ana telephoned to Maria”)).

We believe, therefore, that the distinction between arguments and adjuncts is essential for understanding how the structures of language work as a whole. Even if, apparently, we do not yet possess extremely reliable tests for seizing the distinction, the search for more and more reliable diagnostics is crucial and should be one of the priorities in linguistic theory.

MOURA, H.; MILIORINI, R. Para compreender uma intuição: critérios para distinguir argumentos de adjuntos verbais. *Alfa*, São Paulo, v.62, n.3, p.575-593, 2018.

- *RESUMO: A distinção entre argumentos e adjuntos verbais é fundamental para alicerçar diferentes teorias linguísticas. Entretanto, ainda que nossa intuição seja segura para analisar os casos mais prototípicos, ela falha no julgamento de algumas relações verbais. Precisamos, pois, de um critério seguro (e não apenas intuitivo) que seja capaz de diferenciar todos os casos de complementação dos de adjunção verbal. Portanto, o objetivo deste trabalho é apresentar e discutir alguns dos principais testes que buscam diferenciar argumentos de adjuntos verbais (JACKENDOFF, 1977; DOWTY, 1982; CAPPELEN; LEPORE, 2005; HAEGEMAN, 2006; KENEDY, 2013; MIOTO; FIGUEIREDO SILVA; LOPES, 2013), especialmente quando temos os papéis temáticos de benefactivo e de locativo – pois são papéis que ocorrem tanto na posição de argumento interno quanto na de adjunto. Vamos apresentar os seguintes testes: (i) opcionalidade do termo, (ii) subcategorização, (iii) s-seleção, (iv) acarretamento e (v) retomada anafórica, e tentar mostrar quais são os problemas que cada um deles enfrenta. Surpreendentemente, a distinção argumento-adjunto parece não encontrar suporte consistente*

e definitivo em nenhum teste proposto pela literatura. O último deles, entretanto, a retomada anafórica, é o único que parece capturar essa distinção, embora diagnostique como transitivos alguns verbos classicamente considerados inergativos (como viajar e telefonar).

- *PALAVRAS-CHAVE: Verbos. Estrutura argumental. Adjunção. Testes Sintáticos. Locativo. Benefactivo.*

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TYPICAL AND ATYPICAL PHONOLOGICAL ACQUISITION OF CCV SYLLABIC PATTERN: ACOUSTIC AND ARTICULATORY DATA

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- **ABSTRACT:** The main purpose of this study is to characterize the production of words with the target-syllables CCV and CV types in children with typical and atypical phonological development. The hypotheses were: H1 - the production of target words with CV and CCV syllable of the typical children would present different ultrasound and acoustic measurements; H2 - ultrasound and acoustic measurements could differentiate the clinical condition of the children; H3 - children with atypical production could present differences in ultrasound and acoustic measurements between the CCV targets (being the rhotic in the position of C2) and CV (CCV aurally judged as CV). Ten children recorded words with the target-syllables CCV and CV. Subsequently, perceptive, acoustic, and ultrasound analysis were performed (ratios between tip and blade of the tongue (TT/BT), tip and dorsum of the tongue (TT/DT) and blade and dorsum of the tongue), being analyzed by repeated measures ANOVA. The H1 was corroborated by the ratios between TT/BT, TT/DT and BT/DT, indicating that typical children produce higher elevation of tip and blade of tongue on the CCV target-syllable when compared to the CV target-syllable. The H2 and H3 were partially confirmed by the ratio between TT/DT and BT/DT and between TT/DT and BT/DT, respectively. The results suggest that children with typical development seem to be in the direction of the target production, since, in CCV patterns, a higher elevation of TT and duration occurs when compared to the CV syllable. For atypical children, the ratios between TT/DT show that they have a tip of tongue elevation of 18.23% in the CCV target syllables, while in the CV target syllable it is 13.58%, suggesting the presence of TT elevation to produce the tap sound with reduced magnitude and non-overlapping gestures of the CCV target, as well as undifferentiated gestures.
- **KEYWORDS:** Articulatory Analysis. Language Acquisition. Acoustic Phonetics. Brazilian Portuguese.

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Introduction

The current version of Gestural Phonology¹ proposes a specific intergestural coordination pattern for each type of syllabic pattern, modeled from coupled oscillators (NAM; GOLDSTEIN; SALTZMAN, 2003; GOLDSTEIN et al., 2007a). In this model, each gesture would be associated to the planning of a non-linear oscillator². Using metaphorically the example of the pendulums of a clock to explain this effect, it is observed that a pendulum does not work alone. In contrast, it is always connected to another pendulum. This means, in gestural terms, that one gesture is always “joined” to another gesture. When the pendulums move simultaneously in the same direction, they are said to coordinate in phase or in synchrony; when they move in opposite directions, they are said to coordinate in antiphase (ALBANO, 2012).

Thus, Gestural Phonology establishes a type of organization between gestures, depending on the type of syllabic pattern (consonant vowel - CV, vowel consonant - VC, and consonant, consonant and vowel - CCV), prescribing phasing relationships between the gestures involved and a specific type of organization for each type of syllable. There are three patterns of intergeneric coordination involving the syllabic structure, namely: the coordination of the CV target syllable, the coordination of the VC target syllable and the coordination involving the CCV target syllable (NAM; GOLDSTEIN; SALTZMAN, 2003).

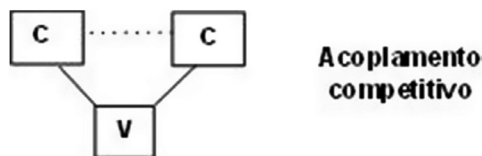
In the CV target syllable, the constrictions that configure the vocal tract in the consonant and vowel production begin from synchronic or phase mode. For example, in producing the syllable /ba/, the gestures involved in the consonant and vowel productions begin concurrently, that is, lip closure for /b/ and pharyngeal narrowing for the production of /a/ at the same time, establishing a phase relation between these two gestures involved. In the VC target syllable, the gestures involved in the production of V and C present a phasing relation in antiphase. This is because the activation of the C gesture is activated after the activation of the V gesture (NAM; GOLDSTEIN; SALTZMAN, 2003; GOLDSTEIN et al., 2007a).

In the production of target syllables with complex onset of the CCV-type, it is assumed that both types of coordination are expected to be present: both in-phase coordination and antiphase coordination (NAM; GOLDSTEIN; SALTZMAN, 2003; GOLDSTEIN et al., 2007a). The mode in which the gestures are coordinated in the target syllables of the CCV type can be illustrated in Figure 1, below.

¹ Gestural Phonology, initially proposed by Browman and Goldstein (1986, 1989, 1990, 1992, 2000), lists as primitive unity of speech production the called articulatory gesture, which is endowed simultaneously with physical and symbolic nature.

² The classic example is the pendular movement of the clocks.

Figure 1 – Gestural organization for complex onsets. Continuous lines represent in-phase, while dotted lines refer to the antiphase.



Source: Adapted from Marin and Pouplier (2010).

Figure 1 illustrates how intergestural coordination occurs in the production of the CCV target syllable: while the consonants establish an antiphase relation between each other (dotted lines), both consonants (C1 and C2) have a phasis relation with the vowel (continuous line) (MARIN; POUPLIER, 2010). The antiphase relation is due to the competitive coupling of the consonant gestures, which cannot happen simultaneously, in order to rescue the distinctiveness between gestures (BROWMAN; GOLDSTEIN, 2000).

From the above, it can be inferred that the production of vowel consonant syllables involves a more stable coordination pattern between C and V articulatory gestures, whereas the production of consonant, consonant and vowel (CCV) syllables involve a more complex and less stable gestural coordination pattern.

From the point of view of syllabic acquisition, the coupling between the articulatory gestures involving the production of CV target syllable results in a more stable coordination pattern in the sense that the C and V gestures are produced in-phase or synchronously. This means that the consonantal gesture initiates the trajectory at the same time as the vowel gesture, which makes coordination more stable and easier to acquire, compared to the more complex syllabic patterns (coda (VC)) and complex onset (CCV)) (GOLDSTEIN et al., 2007a). In the case of complex target syllables (CCV), as it is seen, there is competition between C1 and C2 consonants, caused by the strong coupling between CV, making the learning of this coordination between CCs difficult (NAM et al., 2009).

These universal suppositions about intergestural coordination within the syllable corroborate the premise that there is a preference for the CV syllabic pattern in the majority of languages, with the evidence that, during phonological acquisition, the CV structure is typically acquired prior to the structures of VC (NAM et al., 2009) and CCV types (LAMPRECHT et al., 2004), which may also be justified by the stability between the involved gestures in the production of the CV syllable. According to Gestural Phonology, simplifications of the target syllable CCV to CV could be associated with the overlapping of the adjacent gestures and/or the reduction of the magnitude of gestures related to C2 production (BROWMAN; GOLDSTEIN, 1992, 2001).

To study this phenomenon of cluster simplification, Ardestani (2013) analyzed words in rhyme position from Persian through acoustic data and ultrasound data from

the speech of ten adults. The researcher investigated the production of habitual speech that occurs in the clusters involving the coronal [t] preceded by obstruents or nasals (CC) /ræbt/ → [ræb], /zæbt/ → [zæb], /væqt / → [væχ]. For this, the articulatory measure used (the distance between the tongue and palate trajectory) allowed to measure the magnitude of the gesture of /t/, which aurally seemed to be excluded, but was still present, sometimes with reduced magnitude of the articulatory gesture, corroborating the prediction of the Gestural Phonology (BROWMAN; GOLDSTEIN, 1992, 2001) concerning the syllable simplification which target is CCV to CV (described above). The author also found different degrees of reduction of the /t/ gesture: complete, partial and zero. The study showed that, in this phonological phenomenon from Persian, both the gestural overlapping and the [t] gesture with reduced magnitude are present. Ardestani's study (2013) corroborates two principles of Gestural Phonology: the use of gestural units as primitive of a phonological model, with the incorporation of the dynamic properties of these units; and its coordination process.

Similarly, the processes of clusters simplification occur in typical and atypical phonological acquisition. In this way, since the CCV target pattern requires a greater degree of articulatory and phonological complexity - compared to other syllabic types, being CV or VC - some children do not get to acquire the CCV pattern at the expected age (between 5³ and 7⁴ years of age), reducing the CCV target to the CV target syllable, occurring the so-called "clusters simplification".

The use of articulatory analysis instruments allows a more detailed analysis of speech production, allowing the incorporation of phonetic detail in the speech analysis (ALBANO, 2001), as in the study previously cited (ARDESTANI, 2013). Among the articulatory analyses available for analysing speech production (Magnetic Resonance Imaging (MRI), X-rays, Micro-X-ray and Magnetic Resonance) (STONE, 2005; RIDOUANE, 2006), the ultrasound analyses of the tongue movement are highly recommended to investigate speech "errors", since the image of the tongue contour provides information for the direct visualization of the articulators, specifically the tongue, involved during the phonic productions. In addition, it is a non-invasive, safe, fast and inexpensive technique.

Due to the lack of articulatory studies involving the simplification of the CCV to CV target during the phonological acquisition process, the purpose of the present study is to characterize the production of target words with CCV versus CV syllabic patterns in children with typical and atypical phonological development. For this purpose, the following hypotheses should be confirmed:

H1: The production of target words with CV and CCV syllabic patterns in typical children would present different ultrasound and acoustic measures (duration). Since these children effectively produce the contrast between CV and CCV, it is expected that the articulatory and acoustic measures will differentiate the production of the target

³ Lamprecht et al. (2004).

⁴ Wertzner (2000).

words containing these syllabic structures. H2: Ultrasound measures (ratio between tip and blade of the tongue, between tip and dorsum of tongue and between blade and dorsum of tongue) and acoustic (duration) of target words with CV and CCV syllabic structures could differentiate the clinical condition of the children, demonstrating or revealing differences in gestural coordinates.

H3: Children with atypical production could present differences in ultrasound and acoustic measures (duration) in the comparison of the production of the target words with the CCV and CV syllables, although CCV was aurally judged as CV. According to Gestural Phonology, it is possible to record the presence of articulatory gestures of reduced magnitude even in productions judged aurally as simplified. Therefore, it is expected to find some difference in the articulatory and/or acoustic measures between the CCV and CV targets in the production of children with atypical phonological development.

Method

Participants

Ten children, speakers of Brazilian Portuguese (BP), residents in the city of Marília (São Paulo), being five children with typical phonological development (TC) and five with atypical phonological development (PD) (presenting reduction of clusters according to the auditory-perceptual judgment). For both groups of children, the exclusion criteria were: absence of intellectual and neurological alterations; absence of anatomic-morphological alterations that compromise the speech production process (such as lip-palate cleft); and absence of otologic/auditory alterations. Chart 1 presents the characterization of the ten children participating in this research.

Chart 1 – Characterization of the children who participated in the research.

Children’s Clinical Condition	Subject	Gender	Age Group
Typical	E.C.F.S.	Female	5 years and 4 months
Typical	K.C.F.S.	Female	6 years and 8 months
Typical	L.	Female	5 years and 6 months
Typical	L.F.O.V.	Male	6 years and 3 months
Typical	M.O.C.	Female	6 years and 2 months
Atypical	B.F.	Female	6 years and 0 months
Atypical	E.M.P.D.	Male	6 years and 9 meses
Atypical	G.D.O.	Male	6 years and 7 months
Atypical	N.G.F.S.	Male	5 years and 5 months
Atypical	M.F.	Female	5 years and 0 months

Source: author’s elaboration.

The study was approved by the Research Ethics Committee of the Faculty of Philosophy and Sciences – UNESP/Marília (Faculdade de Filosofia e Ciências – UNESP/Marília), under protocol n°. 0974/2014.

Material and corpus

The subjects were individually recorded in a single session of approximately 30 minutes in the Acoustic Analysis Laboratory – AAL (Laboratório de Análise Acústica – LAAc) of UNESP at the Marília campus (São Paulo, Brazil).

The recordings were performed using a portable ultrasound device (model DP 6600) located in a booth acoustically treated with the following equipment: unidirectional microphone, micro-convex transducer coupled to a computer and a head stabilizer (SCOBIE; WRENCH; VAN DER LINDEN, 2008). Data capture was performed using the Articulate Assistant Advanced (AAA) software (ARTICULATE INSTRUMENTS, 2014), which hosts the ultrasound device and allows the analysis of ultrasound and acoustic signals obtained from speech recording in real time (RIDOUANE, 2006).

The children recorded a corpus with nine pairs of words containing the CCV and CV target syllables: broa/boa [ˈbroa/ˈboa], prato/pato [ˈprato/ˈpato], prego/pego [ˈprego/ˈpego], prensa/peça [ˈprensa/ˈpeça], bruxa/bucha [ˈbruxa/ˈbucha], frita/fita [ˈfrita/ˈfita], grato/gato [ˈgrato/ˈgato], troca/toca [ˈtrɔka/ˈtɔka], (MIRANDA; SILVA, 2011). We decided to catalogue the corpus proposed by Miranda e Silva (2011), since the pair of words catalogued obeyed the high lexical frequency in Brazilian Portuguese.

It should be emphasized that in Brazilian Portuguese the second consonant of the clusters can be filled by the lateral liquid (/l/) or the non-lateral liquid (rhotics) (/r/). There is a consensus in the literature (RIBAS, 2004; MEZZOMO et al., 2013) that the lateral liquids are acquired before the non-lateral liquids, and these are stabilized in the child's phonological system by the age of five years. For these reasons, in this study, we decided to define a methodological design and to deepen the study of clusters acquisition composed by the rhotic liquid called tap.

The target words were represented by pictures and presented in the AAA software. Initially, all pictures were presented in order to certify the understanding of the target word. For each word, the subjects were requested to perform three repetitions, totaling 540 stimuli (3 repetitions x 5 TCs x 5 ACs x 9 words with CCV + 9 words with CV). The stimuli were randomly arranged in the attempt to avoid responses patterns at judging.

Data analysis

Perceptive analysis

The speech productions recorded by the AAA software were submitted to perceptive judgment by expert judges residing in the same dialectal region as the participants.

Three speech-language pathologists with experience in phonetic transcription performed the perceptive judgment of the data. The speech samples provided to the judges were recorded words containing the minimum pairs (CV x CCV) produced by children with atypical phonological development.

Each judge received a total of 540 words (18 words - CV and CCV x 3 replicates x 10 subjects) arranged in an Excel spreadsheet with the sound files attached in the spreadsheet itself. Upon hearing the sound stimulus, the judge was asked to respond between CCV, CV or the other option (in that case, it would be necessary to transcribe the sound perceived by the judge). The agreement of at least 2 (66%) judges was considered for each evaluated stimulus.

Duration analysis

The sound files were edited and recorded in the AAA software and then exported and analyzed by PRAAT software (BOERSMA; WEENINK, 2014). The acoustic parameters adopted in the analysis were the absolute duration of the CCV and CV syllables and the relative duration of the syllabic pairs analyzed.

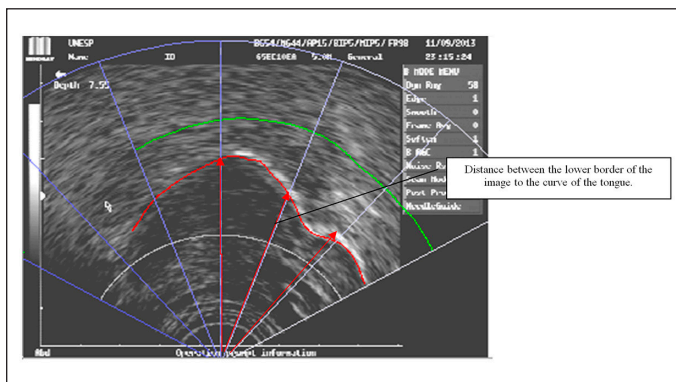
In the PRAAT software, inspection, labeling and segmentation of the audio files were performed. The segmentation was performed from the following criteria: /p/, /t/, /g/: the duration measure of the stretch between the burst acoustic record of the stops consonant until the end of the subsequent vowel, that corresponds to the final formants, was extracted; /b/: the beginning of segmentation for this sound also started in the burst and the end was delimited by the vowel formants; e /f/: the beginning of the segmentation for this sound also started in the fricative noise and the end was delimited by the vowel formants.

Articulatory analysis

For the ultrasound analysis, initially, a visual inspection of the recordings was performed in order to discard the ultrasound files with problems in the image quality. Then, the tongue contour was drawn semi-automatically through resources provided by the AAA.

The articulatory measures extracted were: distances of the tongue to the limit of the ultrasound image and area between the tip and the dorsum of the tongue. The measures of tongue distance up to the limit of the ultrasound image were: (i) between the tip of the tongue to the lower limit of the ultrasound image; (ii) between the blade of the tongue and the lower limit of the ultrasound image; (iii) between the dorsum of the tongue to the lower limit of the ultrasound image, being that the fixed reference point adopted for the measures was the lower limit of the ultrasound image, since this point is always the same in all subjects, regardless of size of the vocal tract, as can be seen in Figure 2:

Figure 2 – The arrows indicate the distance measurement by AAA, from right to left; the fans correspond to the tip of the tongue, blade of the tongue and dorsum of the tongue.



Source: author's elaboration

For each distance measured, a relative measure was developed, aiming to normalize the different sizes of the children's vocal tract. For this, three ratios considering the relation between the tip of the tongue and blade of the tongue were calculated; between the tip of the tongue and dorsum of the tongue; and the blade and the dorsum of the tongue. Thus, to obtain the measure of the ratio, the distance of the tip of the tongue was divided by the distance of blade of the tongue, and that result of the ratio (R_r) is multiplied by 100 and then subtracted from 100 ($\text{Ratio} = R_r * 100 - 100$). The other measures (tip of the tongue/dorsum of the tongue and blade of the tongue/dorsum of the tongue) were also submitted to this mathematical calculation. The equation described previously intends to transform the gross value (in distance) to a normalized value (a relation between two distances). Thus, the ratio consists of dividing one distance by the other (tip of the tongue and dorsum of the tongue, for example), indicating the relation between the first and the second measure; then, by multiplying the result of the ratio by 100, the decimal number in percent is modified. Finally, subtracting the value of 100 sets a positive or negative value depending on the denominator, whether it is higher or lower⁵ than the numerator. For example, the positive ratio value between tip and the blade of the tongue means that the tip of the tongue is in a higher position when compared to the blade, while the negative value of the relation means that the tip of the tongue is lower than the blade.

⁵ If the distance from tip of the tongue to the lower limit of the ultrasound is 40.70 mm and the dorsum of the tongue is measured by 41.84 mm, the ratio of the two values mentioned is 0.97. Then, by multiplying by 100, the value becomes a percentage, but it does not mean that the ratio is 97%. Therefore, it is necessary to subtract from 100 to obtain the value related to the relation between the two measures, resulting -2.71. In this case, the dorsum of the tongue is higher than the tip of the tongue.

The temporal parameter selected for the extraction of the distances corresponds to seven frames⁶ before the burst and three after burst. With this time period selected, the articulatory measures were extracted from the maximum point of constriction of the tongue.

Statistical analysis

The software used in the statistical analysis was SPSS (version 22.0). For the descriptive statistics, mean values, standard deviation and coefficient of variation of duration and articulatory measures were extracted.

In relation to the quantitative analysis of acoustic and articulatory data, Two-Factor Analysis of Variance (ANOVA) for repeated measurements was performed. For the acoustic and articulatory measures, the syllabic patterns (CCV and CV) were used as an inter-subject variable; and as an intra-subject variable, the clinical condition (typical and atypical) of the children.

Results

Perceptive analysis

The children with typical phonological development produced 135 target words whose onset is formed by CCV and 135 target words whose onset is formed by CV. The judgments made by the judges confirmed the typical production of this group, since 135 (100%) of the CCV target structure productions were evaluated as CCV, while 135 (100%) of the CV target productions were evaluated as CV.

Analogously, the children presenting atypical phonological development produced 270 target words. However, of the 135 (100%) productions whose target structure is composed of CCV, 135 (100%) were judged as CV; and 135 (100%) of the target structure productions composed of CV were also evaluated as CV.

Duration analysis

We measured, from each subject, the absolute duration (in milliseconds) and the relative duration from the phonics production of the CCV and CV target syllables from the three selected repetitions. The measurements were submitted to descriptive statistics (mean, standard deviation and coefficient of variation) and the ANOVA test statistic to Repeated Measures. In Table 1, the values of the means and standard deviation of both groups are arranged.

⁶ Refers to each of the images that compose the ultrasound video.

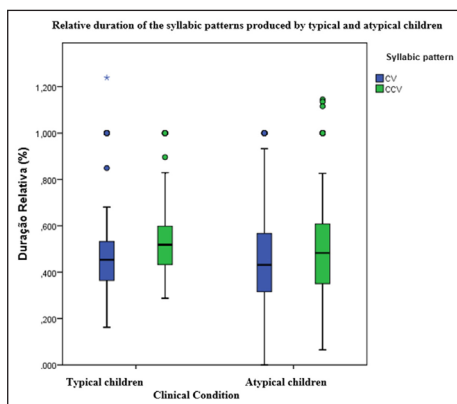
Table 1 – Descriptive statistics (mean and standard deviation) of the absolute and relative duration of the syllabic patterns of each group of children.

	Typical Children			Atypical Children		
	Absolute duration (ms)	Relative duration (%)	Standard deviation	Absolute duration (ms)	Relative duration (%)	Standard deviation
CCV Target	317	0,54	95	249	0,49	82
CV Target	265	0,50	95	227	0,46	62

Source: author's elaboration

For the relative duration, the repeated measures ANOVA demonstrated a significant difference in the main effect of the syllabic pattern ($F=8.85$, $df=1.6$, $p<0.00$) and in the clinical condition ($F=6.61$, $df=1.6$, $p<0.01$). The interaction between the syllabic pattern and the clinical condition showed no significant difference ($F=0.15$, $df=1.6$, $p=0.7$). The post hoc test demonstrated that the CCV target syllables are higher than CV in both clinical conditions, which can be evidenced in Figure 3:

Figure 3 – Box plot of relative duration of the syllabic patterns (CV in blue and CCV in green) produced by typical and atypical children. The x-axis represents the clinical condition of the subjects and the relative duration values (%) are found in the y-axis.



Source: author's elaboration

Articulatory analysis

Results related to the ultrasound analysis of the measures involving the ratio between the tip and blade of the tongue, the tip and dorsum of the tongue, as well as the blade and dorsum of the tongue are shown in Table 2.

Table 2 – Descriptive statistics (mean and standard deviation) of ultrasound measurements of the syllabic patterns of each group of children.

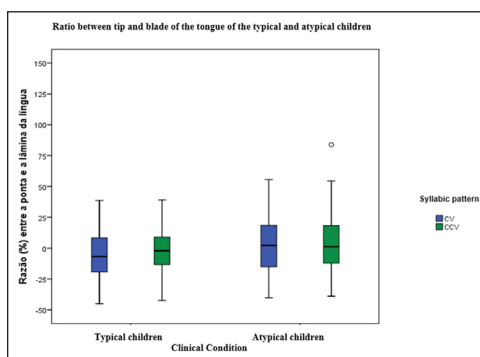
Corpus	Typical Children						Atypical Children					
	Tip/Blade of the tongue		Tip/Dorsum of the tongue		Blade/Dorsum of the tongue		Tip/Blade of the tongue		Tip/Dorsum of the tongue		Blade/Dorsum of the tongue	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
CCV Target	-2	16,86	18,23	21,16	20,94	9,38	4,38	20,97	35,02	26,91	30,07	12,46
CV Target	-5,56	19,27	13,58	24,89	19,9	11,03	3,17	20,07	33,4	25,89	29,97	12,35

Source: author's elaboration

The positive value of the ratio between the tip and blade of the tongue means that the tip of the tongue is in a higher position compared to the blade (as is the case of the rhotic production in CCV and CV targets in the atypical child), while the negative value of the ratio means that the tip of the tongue is in an inferior position to the blade of the tongue (as is the case of the typical child).

For the ratio between the tip and blade of the tongue, repeated measures ANOVA showed a significant difference in the main effect of the syllabic pattern ($F=4.75$, $df=1.7$, $p<0.03$), but there was no difference for the effect of the clinical condition ($F=3.63$, $df=1.7$, $p<0.06$). The interaction between the syllabic pattern and the clinical condition showed no significant difference ($F=0.61$, $df=1.7$, $p=0.43$). The descriptive values (Table 2) and boxplot (Figure 4) show that the ratio between the tip and the blade of the tongue is higher in the syllable whose target is the CCV structure if compared to what occurs in the target syllable with a CV structure ($p < 0.05$).

Figure 4 – Box plot of the ratio between tip and blade of the tongue of the typical and atypical children in two syllabic patterns (CV in blue and CCV in green). The x-axis represents the clinical condition of the subjects and the y-axis are found the values (in percentage) of the ratio between the tip and the blade of the tongue.

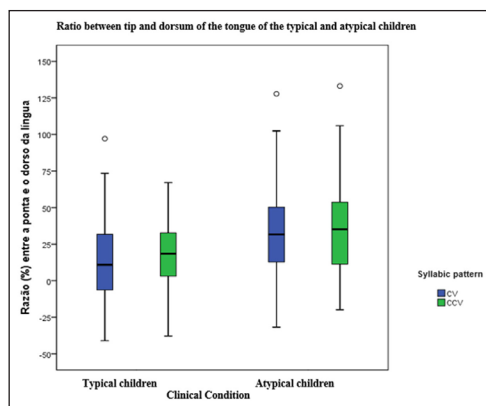


Source: author's elaboration

For the ratio between the tip and dorsum of the tongue, the repeated measures ANOVA showed effect to the syllable pattern ($F=9.81$, $df=1.7$, $p=0.00$) and for the clinical condition ($F=13.99$, $df=1.7$, $p=0.00$). The interaction between the syllabic pattern and clinical condition showed no significant difference ($F=1.07$, $df=1.7$, $p=0.30$). Through an inspection of the descriptive values (Table 2) and the boxplot (Figure 5), it is possible to verify that the CCV target structure presents a greater ratio between the tip and dorsum of the tongue when compared to the CV, that is, children, regardless of the clinical condition, present a higher elevation of the dorsum during the production of the CCV target.

In addition, when comparing the clinical condition of the children, it was possible to identify that the TT/DT ratio is lower in typical children compared to the values obtained for atypical children, that is, atypical children present a higher elevation of dorsum when compared to children with expected phonological development, as can be seen in Figure 5.

Figure 5 – Box plot of the ratio between tip and dorsum of the tongue of the typical and atypical children in two syllabic patterns (CV in blue and CCV in green). The x-axis represents the clinical condition of the subjects and in the y-axis are found the values (in percentage) of the ratio between the tip and the dorsum of the tongue.

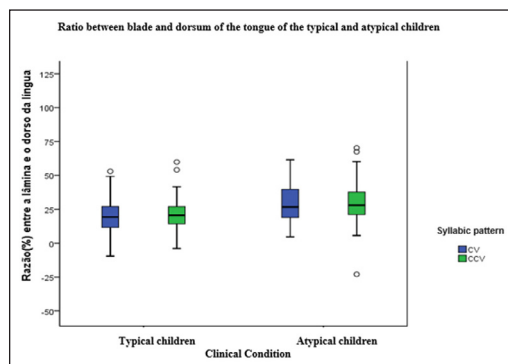


Source: author's elaboration

The repeated measures ANOVA showed a significant effect for the syllable pattern ($F=4.54$, $df=1.7$, $p=0.03$) for the clinical condition ($F=35.6$, $df=1.7$, $p=0.00$) and for the measure of the ratio between the blade and the dorsum of the tongue; the interaction between the syllabic pattern and clinical condition showed no significant difference ($F=0.61$, $df=1.7$, $p=0.43$). When analyzing the descriptive values and boxplot (Figure 6) comparing the clinical condition of the children, it was possible to identify that the BT/DT ratio is lower in typical children compared to the values obtained for atypical children, that is, atypical children present a higher elevation of the dorsum with respect

to the blade of the tongue when compared to the children with typical phonological development.

Figure 6 – Box plot of the ratio between blade and dorsum of the tongue of the typical and atypical children in two syllabic patterns (CV in blue and CCV in green). The x-axis represents the clinical condition of the subjects and the y-axis are found the values (in percentage) of the ratio between the blade and dorsum of the tongue.



Source: author's elaboration

Discussion

As previously explained in the introduction of the present paper, the purpose of this study was to characterize the production of target words with CCV versus CV syllabic patterns in children with typical and atypical phonological development. The first hypothesis (H1) - that children with typical production would present different ultrasound and acoustic measures in the comparison of the target production with the CCV and CV syllables - was confirmed integrally by all measures: ratio between TT/BT, TT/DT and BT/DT, in addition to the measure of relative duration.

The fact that the mean value of the ratio between TT/BT relative to the CCV target (-2.00%) has been higher than the mean value for the CV target (-5.56%) means that there was a higher elevation of blade of the tongue during the clusters production as a target. Likewise, for TT/DT, the mean values of the ratios in the CCV syllable were 18.23% and 13.58% for CV. Finally, for the BT/DT ratio, the mean values of the ratios in the CCV target syllable were 20.94% and for the CV target syllable were 19.9%.

Thus, the joint analysis of the ratios between TT/BT, TT/DT and BT/DT during the production of CCV targets in typical children indicates evidence that there is blade and tip of the tongue elevation simultaneously during the production of CCV.

In relation to the duration measure, the CCV target syllables also presented higher measures (54%) to the mean values of the CV ratios (50%) for the group of typical children and for the group of atypical children (49% and 46%), suggesting differentiation in terms of the syllabic pattern for both groups of children.

The object of study reported here is associated with CCV target structure, where tap is at the C2 position. Therefore, we appealed to the acoustic-articulatory characterizations already described in the literature, even though they describe tap in the CV target structure. Albano (2001), Silva (2003) and Silva, Clemente and Nishida (2006) describe that, in Brazilian Portuguese (BP), the rhotics, as in the case of rhotic liquid, have a double gestural specification in different acoustic-articulatory regions. Studies involving the phonic production of adults point to the presence of the bigestuality composed of two simultaneous oral gestures: one related to the coronal region and the other related to the dorso-pharyngeal region.

A study involving ultrasound and dynamic analysis of the liquid production in the Malayalam language (a language spoken in the state of Kerala in southern India) has also identified, specifically for the rhotic, a progress of the root of the tongue along with an independent tongue elevation toward the palate, resulting in two simultaneous gestures during the production of /r/ (SCOBBIIE; PUNNOOSE; KHATTAB, 2013).

Berti (2010) analyzed, by means of ultrasound images of the tongue, the production of the liquids /r/ and /l/ inserted in the CV target syllable of BP produced by an adult and identified the presence of two simultaneous articulatory gestures: a gesture of the tip of the tongue and a gesture of the body of the tongue. The presence of two gestures may thus present greater difficulty in coordinating tongue movements. Another Brazilian study (BARBERENA; KESKE-SOARES; BERTI, 2014) also used ultrasound data to investigate /r/ and /l/ segments in the speech of adult speakers of BP and found that both /r/ and /l/ present two simultaneous gestures: tip and body of the tongue, confirming the acoustic descriptions of Silva (2003) and the ultrasound findings of Berti (2010). In addition, the authors showed that the vowel context of /i/ favors a higher degree of constriction to the tip of the tongue when compared to the other vowel contexts.

Children with typical development seem to be in the direction of the target production, that is, looking for the phonic production similar to the adult, since during the production of CCV targets, there is a higher elevation of the tip of the tongue when compared to the CV syllable. The ratio between the tip and the dorsum of the tongue show that they show elevation of the tip of the tongue in 18.23% in the CCV target syllables, while in the CV syllable it is 13.58%.

The hypothesis (H2) postulates that the ultrasound measures could differentiate children's clinical condition. Of the four articulatory measures analyzed, two were able to differentiate the children's clinical condition: the measures of the ratio between TT/DT and BT/DT. For all measures, atypical children's productions presented higher values compared to the typical children's productions (see Table 1), indicating a greater use of the tongue in the syllable productions analyzed for atypical children.

The study of Gick et al. (2007), which analyzed phonological substitution processes involving English liquids in syllabic patterns with CV target, concluded that, in order to acquire /r/ or /l/, it is necessary to coordinate refined dissociated movements of the tongue (tip and body of the tongue), in addition to being simultaneous. Due to the

multiple constrictions of the tongue, associated with anatomical limitations in children (large tongue and a small pharyngeal cavity), liquids tend to be acquired later.

Although children had similar anatomical structures in terms of the tract size, regardless of the clinical condition, it was possible to verify differences in the gesture coordination of /t/ among the groups of children. The explanatory hypothesis for the difference in the production of typical and atypical children may be associated with the presence of undifferentiated gestures (GIBBON, 1999a, 1999b) in the speech production of atypical children. The GIs manifest when the tongue comes in contact simultaneously with the anterior and posterior region of the palate or when the entire surface of the tongue comes into contact with the palate, and there is a lack of distinction between the gestures of the tip of the tongue and body of the tongue and the lateral margins of the tongue against the palate (GIBBON, 1999a).

In speech production of children with expected development, the tip of the tongue and body of the tongue are almost independent articulators, being able to produce well defined patterns against the palate. However, when they present the GIs, children are unable to differentiate gestures between the tip and the anterior body of the tongue. The GIs can be interpreted as indications of motor speech restriction present due to delays or deviations in the control of these regions of the tongue (GIBBON, 1999b).

Possibly, the children with atypical productions for the CCV syllables have GIs, keeping the tongue closer to the palate, which explains the greater ratio between TT/DT and BT/DT compared to the values presented by typical children, as the results of this study pointed out.

In a study involving electropalatography, Goozée et al. (2007) identified with undifferentiated gestures an excessive movement of body of the tongue during the production of the consonant /t/. In this study, the atypical children do not seem to coordinate the gesture of tip and body of the tongue during CCV production, which can be interpreted as a greater use of tongue as a result of GIs. The authors believe that such excessive movement of the body of the tongue may take place from poor, immature or deviant motor control to the lever system and/or the compensation mechanism to neutralize the fine motor control disorders of the tip of the tongue. The results of this research, especially the measure of the ratio between TT/DT, corroborate the finding of Goozée et al. (2007).

The hypothesis (H3) maintains that children with atypical production could present differences in ultrasound measures in the comparison of the production of target CCV and CV syllables, although CCV has been aurally judged as CV. According to Gestural Phonology, it is possible to record the presence of articulatory gestures of reduced magnitude or overlapping, even in productions aurally judged as simplified. Then, it was expected to find some difference in the articulatory and acoustic measures between the CCV and CV targets in the production of children with atypical phonological development.

As the measure of relative duration differentiated the syllabic pattern (CCV versus CV target), regardless of the subjects' clinical condition, it is verified that, in the group

of studied children, both typical and atypical, there is no gestural overlapping, since the longer duration for the CCV target is maintained.

Among the three ultrasound measurements used, two were able to differentiate the syllabic pattern and the clinical condition of the children. The measures of ratios between TT/DT and BT/DT differentiated the CCV and CV target syllables performed by the two groups of children. Specifically, in the group of children with atypical phonological development, the mean value of the TT/DT ratio for the CCV target was higher than the mean value obtained for the CV target, suggesting that atypical children raise the tip of the tongue; however, due to the reduced magnitude of the gesture, the ear does not detect the rhotic, which, consequently, confirms the presence of hidden contrasts in the speech of atypical children.

Although the literature has not reported Brazilian ultrasound studies that compare the CCV targets with CV targets in children with typical and atypical phonological development, it is possible to rely on previous research (MIRANDA; SILVA, 2011; MEZZOMO; MOTA; GIACCHINI, 2008), which analyzed the production of CCV and CV by means of acoustic data and identified the presence of compensatory stretching strategies of the vowel (EAC) to differentiate CCV from CV. In the attempt to establish phonological contrasts in the language, children with atypical phonological development make use of repair strategies in order to adapt the production to the target system. In this case, the use of vowel stretching in CCV syllables indicates the categorization of CCV and CV syllabic patterns differently from that expected by the speech community.

The presence of EAC is interpreted by the authors as a reparative strategy for those children who still do not produce the complex onset adequately, but have a previous phonological knowledge in respect of the syllabic structure (MEZZOMO; MOTA; GIACCHINI, 2008; MIRANDA; SILVA, 2011; GIACCHINI; MOTA; MEZZOMO, 2011). This means that these children have phonological knowledge of the CCV structure, but cannot produce it solely for motor reasons (MEZZOMO; MOTA; GIACCHINI, 2008).

It is believed that the motor difficulties described by Mezzomo, Mota and Giacchini (2008) and corroborated in this research may be due to undifferentiated gestures present in the tongue of the deviant children, as previously explained.

The acoustic data of this study corroborate the previously mentioned studies, since the relative duration was able to differentiate the CCV target syllables from the CV target syllables, although it was not able to segregate the clinical condition of the studied children. The explanation of the Gestural Phonology for the differentiation of the syllabic patterns, from the temporal point of view, occurs in the gesture coordination present in these syllables.

As previously mentioned, the gestures coordination is due to the phasing relation between the gestures present within the syllable, in this case, in CV and CCV. For the CV syllable, the consonant and vowel gestures are coordinated in phase, that is, the C and V gestures are activated simultaneously. In the case of syllables of the CCV type, two types of gestural coordination are present: in phase and in antiphase. The

gestures related to the consonants establish an antiphase relation between them, while both consonants are in phase with the vowel. The antiphase relation between CCV consonants is necessary in order to achieve the distinctiveness between consonantal gestures (BROWMAN; GOLDSTEIN, 2000; MARIN; POUPLIER, 2010). In temporal terms, the CCV target syllable presented longer duration than CV, since in the first case, activation and coordination of three/four simultaneous gestures (depending on C1)⁷ are necessary, which would take more time, that is, regardless of the clinical condition, children seek to achieve the contrast between CCV and CV.

Thus, the results, taken together, partially confirm the hypotheses assumed, since the ultrasound measurements analyzed differentiated the CV and CCV syllabic production in typical and atypical children (TT/BT, TT/DT and BT/DT). In addition, some of the ultrasound measurements (ratios between TT/DT and BT/DT) differentiated the clinical condition of the subjects (typical children from atypical ones). The acoustic measure (relative duration) was able to differentiate the syllabic pattern (CCV from CV), independently of the clinical condition of the children.

The atypical children seem to still be “in the middle of the way” reaching the target production; apparently, they are at an even more immature stage in terms of motor maturation whether compared to typical children. In relation to the structure of the vocal apparatus, the children have a voluminous tongue and a small pharyngeal cavity, which would make it difficult for the simultaneous multiple constrictions of the tongue, necessary for the production of /r/, which may be manifested as the second consonant of the CCV sequence. However, the children classified as atypical would have motor restrictions that prevent the gestures of the tip and the body of the tongue from dissociating and occurring simultaneously.

Conclusions

This study characterized the production of target words with syllabic patterns of CCV versus CV types in children with typical and atypical phonological development. For this purpose, the instrument to measure the gestures involved in syllabic patterns was ultrasonography, which is able to simultaneously and synchronously capture speech sound and images of the tongue contour.

Of the ultrasound measures used, the distances involving the ratios between TT/BT, TT/DT, and BT/DT were sensitive to differentiate the production of CCV and CV in typical and atypical children's productions. The clinical condition of the children was differentiated by the measures of the ratios (TT/DT and BT/DT), and the CCV and CV syllables produced by atypical children, even if CCV has been judged as CV, in perceptive analysis, they were differentiated by the ratios between TT/DT and BT/DT.

⁷ In the case of the phoneme /b/, for example, three gestures are activated: lips, velum for the closure of the oronasal cavity and laryngeal to perform the vocal fold vibration.

The articulatory results suggest the presence of tip of the tongue elevation to produce the rhotic (which is positioned in the C2 of the CCV target structure) with reduced magnitude, and the acoustic findings suggest the non-overlapping of the gestures in the production of CCV. Additionally, in the group of atypical children, the results reveal the presence of undissociated gestures in the production of target words with CCV syllabic structure.

The results show that atypical children produce the CCV and CV target syllables differently from the group of typical children, which can be elucidated by the presence of undissociated gestures in the production of the CCV target. The atypical children seem to present GIs, because the ultrasound measures indicate that this group has restrictions in differentiating the tip of tongue gestures and the anterior body of the tongue. The GIs may be associated with motor speech restrictions, present as a result of delays or deviations in the control of these regions of the tongue in the group of children with difficulties in the production of target words with the CCV structure.

We intend, in the future, to investigate the presence of undissociated gestures in other segments of the BP, as already identified in other languages. If present, it will be investigated to what extent the motor and/or symbolic aspect is influencing in the uncoordinated patterns of the language. Therefore, the use of ultrasonography will become indispensable for the study of the infantile speech production. This will aid in the understanding of how atypical children perceive phonological contrasts, especially in relation to syllabic patterns.

Acknowledgement

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OLIVEIRA, A.; BERTI, L. Aquisição fonológica típica e atípica do padrão silábico CCV: dados acústicos e articulatórios. *Alfa*, São Paulo, v.62, n.3, p.595-616.

- *RESUMO: O objetivo principal deste estudo é caracterizar a produção de palavras com as sílabas-alvo do tipo CCV e CV em crianças com desenvolvimento fonológico típico e atípico. As hipóteses foram: H1 - a produção de palavras-alvo com sílaba CV e CCV das crianças típicas apresentariam diferentes medidas ultrassonográficas e acústica; H2 - as medidas ultrassonográficas e acústica poderiam diferenciar a condição clínica das crianças; H3 - as*

crianças com produção atípica poderiam apresentar diferenças nas medidas ultrassonográficas e acústica entre os alvos CCV (sendo o tepe na posição de C2) e CV (CCV julgadas auditivamente como CV). Dez crianças gravaram palavras com as sílabas-alvo CCV e CV. Em seguida, foram feitas análise de oitiva, análise acústica e ultrassonográficas (razões entre ponta e lâmina da língua (PL/LL), ponta e dorso da língua (PL/DL), e a lâmina e dorso da língua (LL/DL)), sendo analisadas pela ANOVA de medidas repetidas. A H1 foi corroborada pelas razões entre PL/LL, PL/DL e LL/DL, indicando que as crianças típicas produzem maior elevação de ponta e lâmina de língua na sílaba-alvo CCV se comparado à sílaba-alvo CV. As H2 e H3 foram parcialmente confirmadas pelas razões entre PL/DL e LL/DL e entre PL/DL e LL/DL, respectivamente. Os resultados sugerem que as crianças com desenvolvimento típico parecem estar em direção da produção-alvo, já que, em CCV, ocorre maior elevação da PL e de duração se comparado à sílaba CV. Para as crianças atípicas, as razões entre a PL/DL mostram que têm elevação de ponta de língua em 18,23% nas sílabas-alvo CCV, enquanto na sílaba-alvo CV é de 13,58%, sugerindo a presença de elevação da PL para produzir o tepe com magnitude reduzida e a não sobreposição dos gestos do alvo CCV, bem como gestos indiferenciados.

- **PALAVRAS-CHAVE:** *Análise Articulatória. Aquisição da linguagem. Fonética acústica. Português brasileiro.*

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ON THE ICONICITY OF THE Y-HANDSHAPE

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- **ABSTRACT:** As part of a two-year research project, the study examines the diagrammatic iconicity of the Y-handshape of two non-cognate sign languages; the American Sign Language and Greek Sign Language. In a sample of sixty-four signs, and through a close reading approach, it demonstrates the association of the specific handshape with real-world referents that have simultaneously a round and angular form (e.g. cylinder, cone), or only an angular/linear shape. It also shows its historic association with the ancient traditional sign *mano cornuta*, addressing its metonymy in meanings relating to quantity, earth, life, loss, light and cavity.
- **KEYWORDS:** Y-handshape. *mano cornuta*. iconicity. American Sign Language. Greek Sign Language.

Introduction

The study is part of a two-year post-doctoral project (February 2014 - March 2016) on the symbolism of closed phonology of natural languages (spoken and signed), which was conducted in the Federal University of Pelotas (UFPEL), Pelotas - RS, Brasil. In particular, it examined the Y-handshape as a closed phoneme of signed languages (SLs), next to A-handshape and its allophones (e.g. the S-handshape, Å-handshape), on the basis of *diagrammatic iconicity*, according to which forms (e.g. phonemes) are *diagrams* or *icons* that “represent the relations of the parts of one thing by analogous relations in their own parts” (WAUGH, 1994, p.56), thus resembling and/or imitating objects in respect to similarity of relations among their parts. Hence, in SLs and spoken languages there is iconicity in their lexicon, and key to its understanding is to compare their structured correspondences (EMMOREY, 2014).

A connection between form, meaning and real-world referents is possible through symbolism when content-free units convey meaning in certain linguistic contexts (AURACHER et al., 2011; PERNISS; THOMPSON; VIGLIOCCO, 2010). Therefore, each object can have an inherently correct name known from the object itself, from its denotata (PERNISS; THOMPSON; VIGLIOCCO, 2010). The study adopts the typology of symbolism by Hinton, Nichols and Ohala (1994, p.4) as the direct linkage between form and meaning, where certain phonemes and suprasegmentals “are chosen to consistently represent visual, tactile, or proprioceptive properties of objects, such

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as size or shape.” This relationship is more transparent in SLs, as they make use of iconicity to a much greater extent than spoken languages (TAUB, 2001). Their visual-manual modality provide “richer resources for creating structural similarities between phonological form and meaning,” since their visual three-dimensional modality “allows for iconic expression of a wide range of basic conceptual structures, such as object and human actions, movements, locations, and shapes” (EMMOREY, 2014, p.1574).

The investigation of such analogy is based on the fact that visual objects are characterised by boundaries or contours that delimit their geometric properties in visual space (e.g. size, shape, location) (BREITMEYER; TAPIA, 2011), and their coding derives from combinations “of a modest number of categorized primitives based on simple perceptual contrasts” (BIEDERMAN, 1987, p.145), which may permit canonical configurations. It was then hypothesised that the Y-handshape is culturally selected to resemble the contours found in natural scenes, especially those of round real-world referents.

The Study

Although the Y-handshape is a *marked* handshape (in terms of its proportional frequency; it does not occur frequently) in most SLs (cf. VANDER KOOIJ; CRASBORN, 2016) as in American Sign Language (ASL) and Greek Sign Language (GSL), this paper aims to show some convergent mapping in certain context and for similar and/or the same referents. For the purposes of this examination, the following dictionaries were used: (i) the *Online Dictionary of Concepts in GSL* by the Educational Policy Institute (2013), and the *Dictionary of Sign Language* by Magganaris (1998); and (ii) the *American Sign Language Handshape Dictionary* by Tennant and Gluszak Brown (1998), from which 64 signs involving the Y-handshape (in the dominant and non-dominant hands) were extracted (see Appendix), following the order of appearance in the dictionaries.

The collected signs were also cross-checked with the following dictionaries: for GSL, with the *Dictionary of Sign Language* by Logiadis and Logiadi (1985), and the *System of Greek Signs* by Triantafyllides (1990); and for ASL, with the *American Sign Language Dictionary* by Costello (2008), and the *A Historical and Etymological Dictionary of American Sign Language* by Shaw and Delaporte (2015). Furthermore, the online dictionary *Spreadthesign* (2012) was used, allowing the lexical items of the two SLs to be compared globally.

Data are reported qualitatively, based on a *close reading approach* (KANEKO; SUTTON-SPENCE, 2012) that involved the *three-stage analogue-building model* (TAUB, 2004, p.44) for demonstrating the relationship between the Y-handshape, its meaning and referents. In doing so, three stages were followed: the *image selection* of a mental image that is associated with the original concept/referent; the *schematisation* of essential features of the image; and the *encoding* of the resulting schema; that is, the

Y-handshape itself. Data also involved descriptive statistics due to the small sample of the study.

Table 1 – ASL meanings and their frequency.

ASL MEANINGS	TOTAL
Quantity, measure, similarity, time	10
Land, country, place, present	5
Head, mental activity, edge	4
Cavity, volume	4
Loss, bad, negative	4
Life, animals	3
Light, colors	2
Motion	2
Other: liquids; happiness	2
TOTAL:	36

Source: author’s elaboration.

Results

As Tables 1 and 2 display, the Y-handshape in ASL (n = 36) and GSL (n = 28) is used in almost the same semantic domains, although its frequency is differentiated in each SL. In ASL, the handshape more frequently refers to meanings of ‘quantity, measurement and time’ (e.g. MEASURE, YESTERDAY, OBESE), and ‘land, location, reference and presence’ (e.g. COUNTRY, NEW YORK, PRESENTLY), whereas in GSL, it appears more frequently in meanings of ‘motion’ (e.g. PLAY, GO-FOR-A-WALK, TO-KNIT) ‘quantity, measurement and time’ (e.g. ETERNITY, THURSDAY), and ‘life/animals’ (e.g. COW, ANIMALS, MAMMAL). The comparison reveals common domains although the articulation of the majority of signs differs.

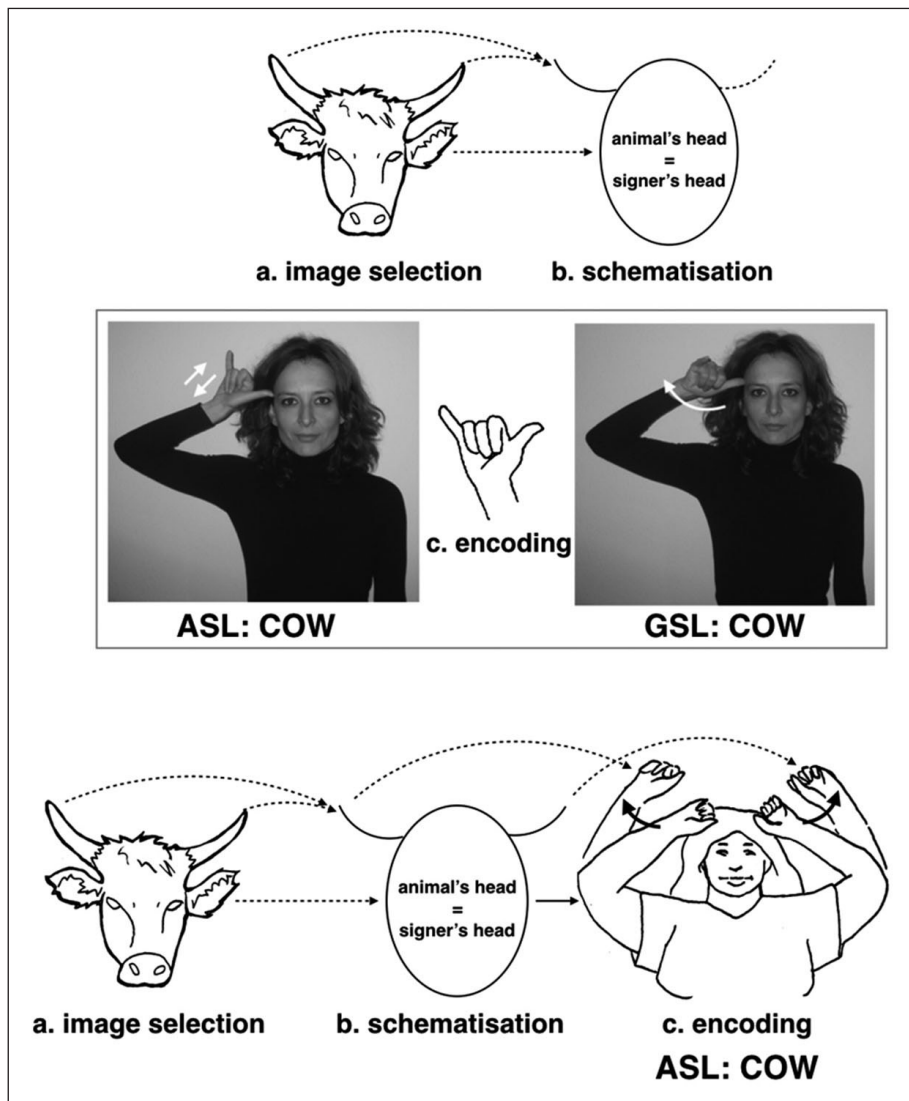
Table 2 – GSL meanings and their frequency.

GSL MEANINGS	TOTAL
Motion	5
Quantity, measure, time	5
Life, animals	4
Land, place, presence	3
Loss, bad, negative	3
Community	3
Other: cavity, happiness, head	3
Light, colors	2
TOTAL:	28

Source: author’s elaboration.

The exception is the sign COW as it is the same in both SLs, although its execution slightly differs in the movement of the handshape (Fig. 1). Overall, the Y-handshape appears to express animals, especially mammals (e.g. in ASL, BULL, HIPPOPOTAMUS, RHINOCEROS), a result that also indicates a preference of both ASL and GSL towards closed phonology for the representation of animals and living organisms. In this case, the Y-handshape corresponds to i.e., the open mouth of the animal (the hippopotamus), to the horn of rhinoceros, and/or to the horns of a cow or bull (Fig. 2), in other words, to referents whose contours visually form a roundish schema, and/or carry roundness such as the conical horns of the animals. In GSL, the signs ANIMALS and MAMMAL are performed by this specific handshape, perhaps due to metonymy referring to cattle. In ASL, the horns are also performed by the S-handshape (COSTELLO, 2008, p.234), an allophone of the A-handshape, which also imitates the roundness of its referent. Both hands on a closed O-handshape imitate the holding of the horns, move upward while forming a small arc, and end into the S-handshape (see Fig. 1).

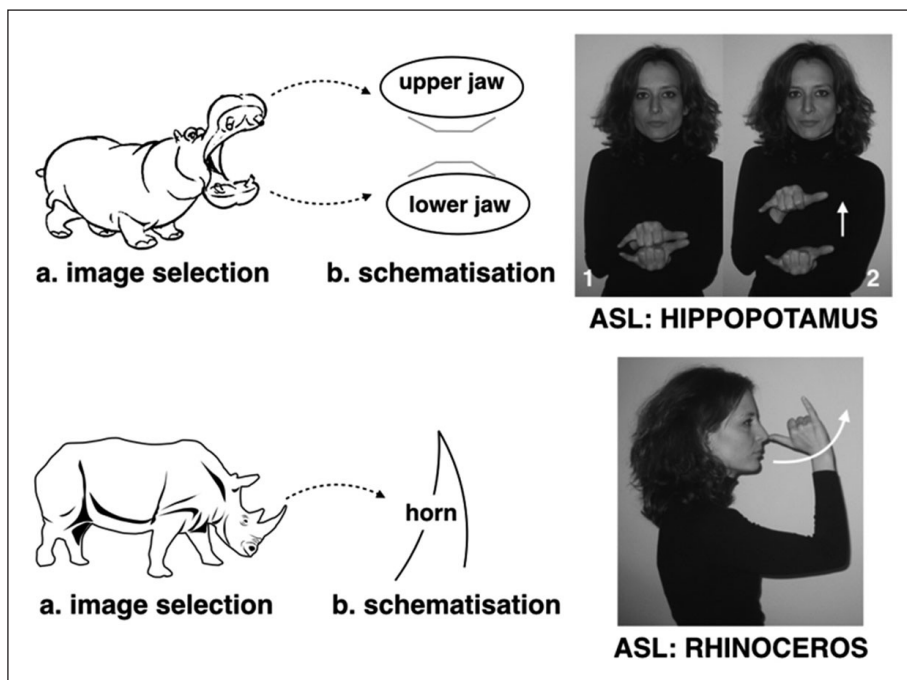
Figure 1 – The analogue building model for the sign cow.¹



Source: author's elaboration.

¹ In both SLs, the sign cow is also two-handed, usually though is executed as one-handed. In GSL, it is also a compound by the signs HORN (articulated with the Y-handshape) and MILK (articulated with the S-handshape), describing the head of the animal and its milking.

Figure 2 – The analogue building model for the ASL HIPPOPOTAMUS and RHINOCEROS²



Source: author's elaboration.

Based on the three-stage analogue-building model, the Y-handshape in the 'land, location, reference and presence' domain, demonstrates its association with 'animal/life' symbolism. For example, in the signs SPAIN³ (in GSL) and THE-NETHERLANDS⁴ (in ASL), it represents the head of a cow/bull, thus referring to the bull fighting in Spain, and the cattle for dairy farming in the Netherlands. In GSL, the sign ATHENS is recorded to be expressed by both the Y- handshape (LOGIADIS; LOGIADI, 1985) and/or A-handshape (Fig. 3), a finding that attests their alternate function. In this case, their closed phonology represents the place, the city (Athens) in the middle of the B-handshape,⁵ denoting collectivity (e.g. the city as a group of people), and thus an entity. Their pointing at the centre of the B-handshape indicates the country's epicentre as a capital city.

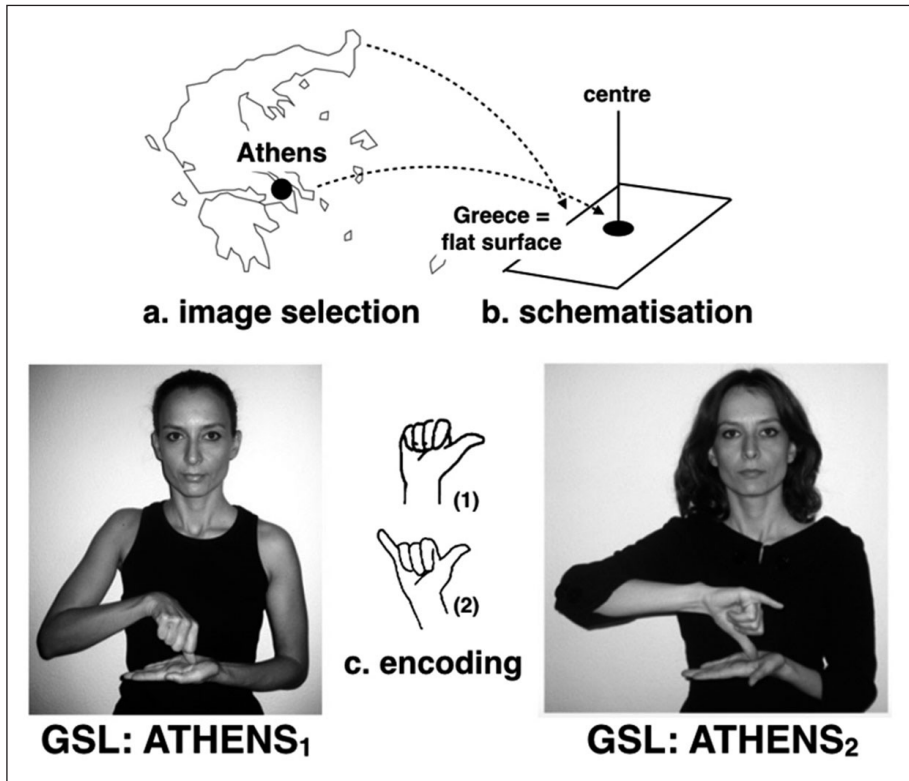
² In HIPPOPOTAMUS, the fingers of the Y-handshape match the animal's protruding teeth.

³ This is an old sign recorded by Triantafyllides (1990, p.104). Currently, the sign has changed and is articulated with the A-handshape.

⁴ Another version of this sign refers to the traditional hat of its people.

⁵ Both handshapes denote 'land/place' but the difference is on the primacy of the hand. The B-handshape has a secondary, explanatory role in relation to the Y-handshape of the main hand. It is subordinate, serving as the *locus* where the main referent (Athens) is located.

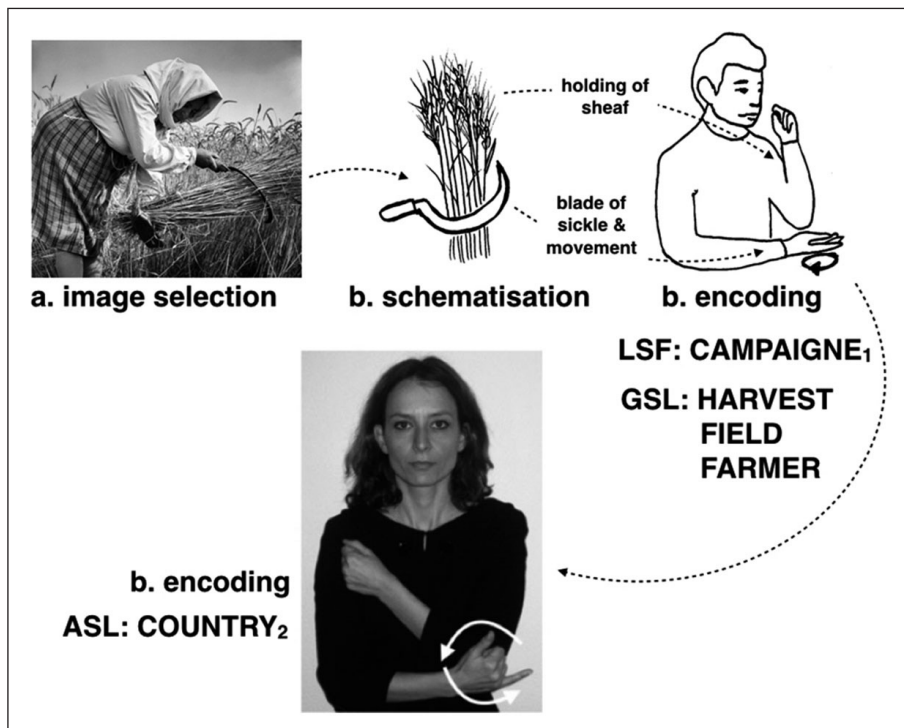
Figure 3 – The analogue building model for the GSL ATHENS.



Source: author's elaboration.

In ASL, the sign COUNTRY (or LAND) refers to a state or nation or its territory, and to rural areas, as opposed to cities and towns (COSTELLO, 2008). In fact, its etymology is based on the French sign CAMPAIGNE (countryside), which imitates the action of harvesting, the cutting of wheat with a sickle (see Fig. 4). This ASL sign (COUNTRY) with the Y-handshape is the second, alternate version of the one with the B-handshape, which also comes from its corresponding French (cf. SHAW; DELAPORTE, 2015), imitating the blade surface of the sickle. The fact that the domain 'earth/land' is expressed by a closed handshape (as the Y-handshape is), corroborates current sound symbolism research that shows closed phonemes (middle-to-back) to connect to meanings of land, largeness, and/or magnitude (MIALL, 2001; NOBILE, 2011).

Figure 4 – The etymology of the ASL COUNTRY⁶



Source: author's elaboration.

The domain 'community' appears only in GSL, in which the Y-handshape denotes family relations such as *COUSIN* and *RELATIVES*. This is another indication of the mapping of closed phonology to meanings of groups and social relationship (see above for *ATHENS*), which, to a certain extent, associate with the domain 'life' as they refer to *man* overall (and thus, to an entity). For GSL, the closer the family relation, the closer the phonology of the sign. For example, first degree family relations (e.g. *MOTHER*, *FATHER*) are performed by the A-handshape (on the head), phonologically a closer handshape than the Y-handshape, which expresses second and/or third degree relative (Fig. 5).

⁶ The sign originates from the French *CAMPAIGNE* (countryside), which is exactly the same in GSL for *HARVEST*, *FIELD*, and *FARMER*.

Figure 5 – Examples of the Y-handshape in the community domain⁷

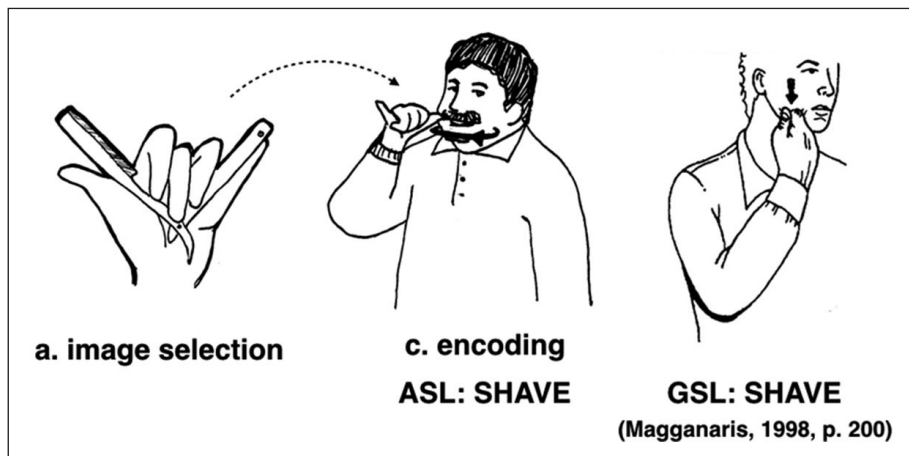


Source: author's elaboration.

Phonological correspondence also occurs in the domain ‘cavity-volume’ for the signs AIRPLANE and TELEPHONE, in which the closed part of the handshape imitates the body volume of the specific referents, and its extended fingers, the wings of the plane craft and/or the telephone handset. In ASL, the H-handshape also alternates with the Y-handshape for the articulation of AIRPLANE. In this domain, the Y-handshape also imitates the handling of the referent (e.g. in ASL, IRON and SHAVE), thus partially mapping to its roundness, considering i.e., the round shape of the handle of an iron and/or the cylindrical shape of the aircraft (cf. BIEDERMANN, 1987, p.132). Although there is some variety in the signing of ASL IRON, in GSL it is signed with the Â-handshape, showing this exact handling. For the sign SHAVE, both handshapes appear, depending on the form of the razor, although the movement differs (Fig. 6). This handshape alternation also demonstrates the strong analogy of the Y-handshape to the form of the referent.

⁷ The closeness of the handshape indicates a centripetal direction toward the user, and on the head (e.g. holding the spoon for feeding for the sign MOTHER). The Y-handshape, is phonologically more open than the A-handshape, denoting a direction away from self, and faction.

Figure 6 – The signs SHAVE in ASL and GSL⁸



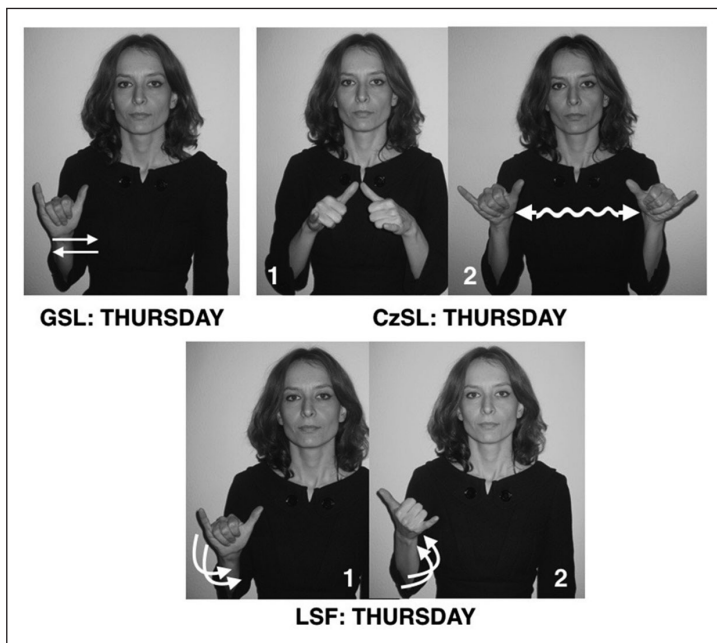
Source: author's elaboration.

In the domain ‘quantity, measurement and time’ the Y-handshape appears firstly in time concepts. For example, the sign YET/STILL (it conveys the concept of continuity in the future; cf. COSTELLO, 2008; SHAW; DELAPORTE, 2015) appears in both SLs regardless its different articulation. In addition, the sign YESTERDAY in ASL appears with both the A-handshape and Y-handshape, whereas in GSL, with the A-handshape only. In other cases, as in GSL for THURSDAY, the Y-handshape is supported to represent an ancient form of the number five (TRIAANTAFYLLIDES, 1991, p.101), which is found in other European SLs (e.g. Romanian, Czech, French; cf. SPREADTHESIGN, 2012) (Fig. 7), and in the Hawaiian traditional *shaka* sign that stands for number five as well. The most likely explanation for such correspondence was the ancient widespread worship of Venus⁹ (as a morning and an evening star, corresponding to the sun and moon), whose five-pointed star symbol stood for the number five. Therefore, the handshape, the well-known *mano cornuta*, represented her as the cow goddess (cf. MERTZANI, 2017). Interestingly, the ASL THURSDAY (and TUESDAY) is performed with the T-handshape (also a closed handshape) (COSTELLO, 2008), which in antiquity was known as *mano fico* (> Latin, *fica*: vulva), the handshape of Venus too.

⁸ In GSL, the A-handshape is used when the sign refers to the shaving machine. When the signing refers to the razor of the image, the Y-handshape is used.

⁹ Archaeological hand artifacts show that the thumb and the small finger, parts of the Y-handshape, were devoted to Venus, the sun and moon, and involved horned depictions such as a female head with horns (ELWORTHY, 1900).

Figure 7 – The Y-handshape in the sign THURSDAY



Source: author's elaboration.

In GSL, the summer months JUNE and JULY are recorded to be signed by the Y-handshape (LOGIADIS; LOGIADI, 1985, p.72), although their initialised forms are currently preferred. Moreover, Triantafyllides (1990, p.95) documented June with the Å-handshape, suggesting its origin on the school competition¹⁰ at the end of the school year. Following this interpretation, the handshapes seem to mean two opposing entities, most probably, considering the older recording of the Y-handshape, two horned animals, as it occurs in the ASL sign ANTAGONISTIC (see below). This notion of entity can be claimed for the sign ETERNITY, as if one moves front to the future. Under the 'measure' meanings (in ASL, MEASURE, RULER, SIZE), the Y-handshape relates again to standard units, as in GSL to number five, and/or to instruments marking the units (e.g. the ruler).

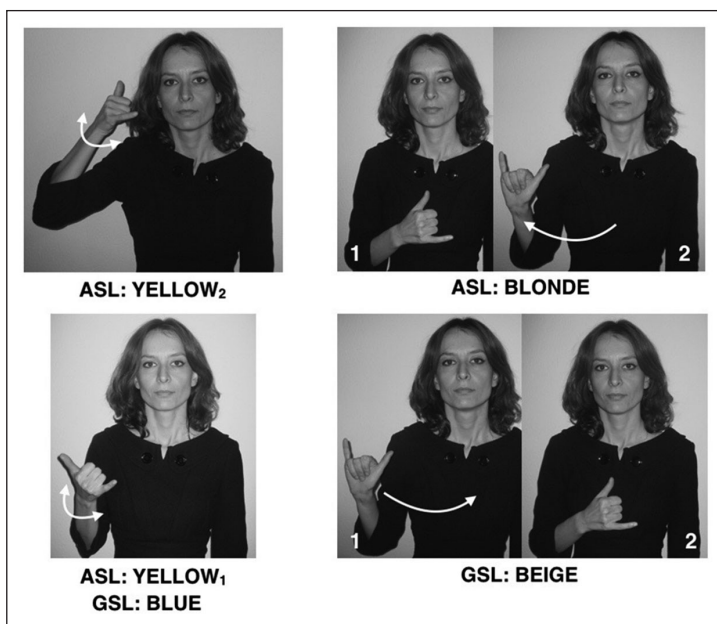
In the domain 'motion,' the Y-handshape associates with meanings like 'taking a walk' and 'play' (e.g. WALK, PLAY). In these, the Y-handshape represents the whole entity acting (a human, an animal, etc.), as is found in other SLs (FRISBERG, 1979; HERLOFSKY, 2007; TANG; YANG, 2007; TANG, 2003). Iconicity is stronger when the representation involves machinery/instruments (cf. PADDEN; MEIR; HWANG, et al., 2014), as in ASL DRAFTING/ENGINEERING and TO-KNIT, where handling is also involved (e.g. the handling of knitting needles, or screwing). With regards to the sign

¹⁰ In Italian Sign Language, June also denotes competition, performed by closed handshapes; either by A-handshape or X-handshape (SPREADTHESIGN, 2012).

PLAY in ASL, Shaw and Delaporte (2015, p.203) link its etymology to the French sign JOUER (play) by representing the two Js (as initialised handshapes). The sign though is performed almost in the same way in other SLs (e.g. Brazilian, Turkish, Indian; cf. SPREADTHESIGN, 2012), which are not related to French Sign Language (LSF), like GSL, within a great geographical distance.

Less frequently, the semantic examination of GSL and ASL demonstrated that the Y-handshape denotes concepts of ‘light’ in terms of the spectrum of light. Hence, the handshape refers to bright colours such as YELLOW and BLONDE in ASL, and BLUE and BEIGE in GSL (Fig. 8). The result of this comparison corroborates psycholinguistic research that associates closed phonology (e.g. the round vowels /o/ and /u/) for the same colours (MARKS, 1982; TAMBOVTSEV, 1988). In ASL, the sign YELLOW is also used as the second handshape for the sign GOLD, which, in turn, is used for the sign CALIFORNIA, due to the connection of the state with gold extraction (COSTELLO, 2008; SHAW; DELAPORTE, 2008). In this sign, the Y-handshape etymologically refers to the initialization of the French <J> from the word *jaune* (yellow) (SHAW; DELAPORTE, 2008), which, subsequently, leads to the word *iaune* and thus to Io or Venus (cf. MERTZANI, 2017), whose symbol was the cow as aforementioned.

Figure 8 – The Y-handshape in the domain light and colours

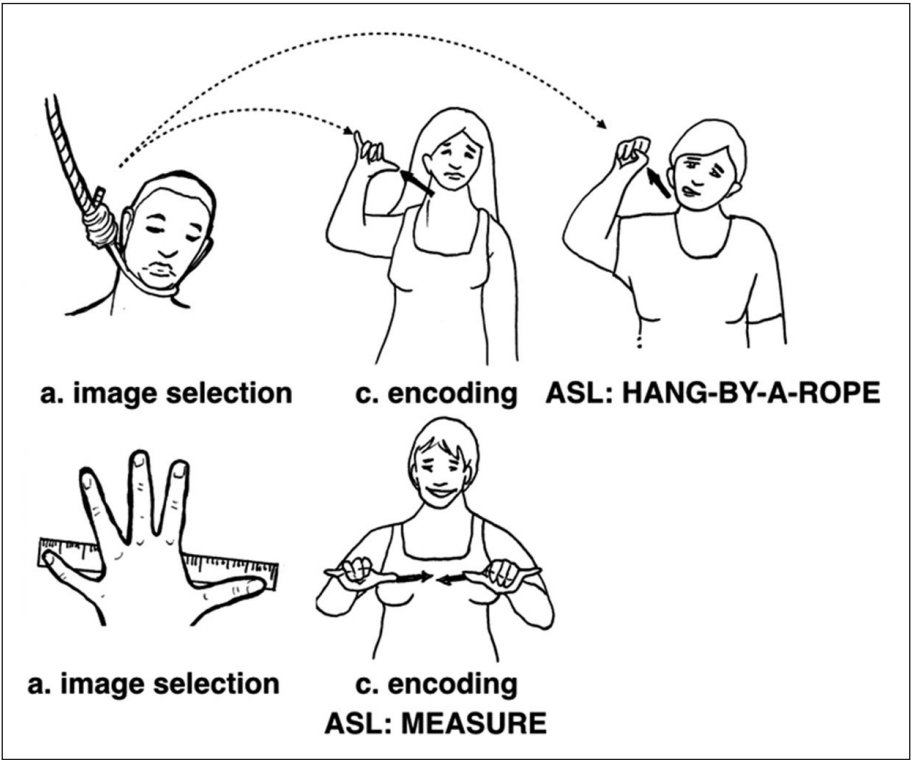


Source: author’s elaboration.

In the ‘loss/hurt’ domain, the Y-handshape refers to the handling of objects such as in ASL, the sign HANG-BY-A-ROPE, which is executed by both the A-handshape and

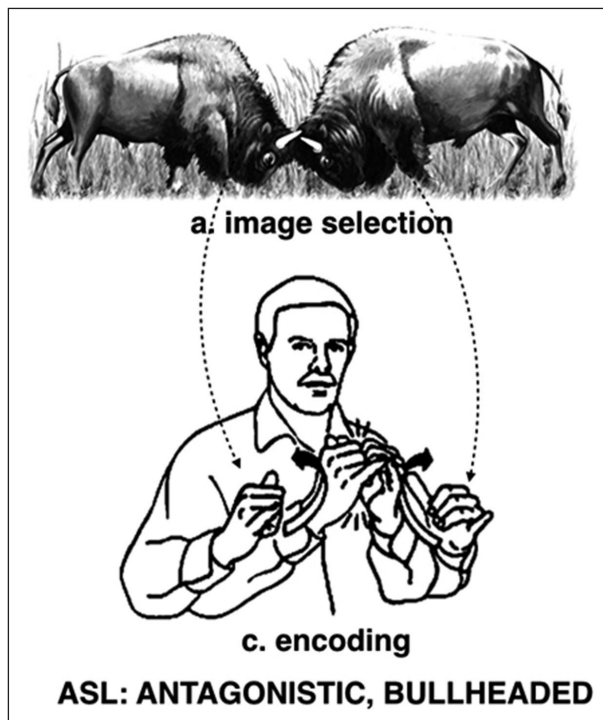
Y-handshape. In this case, the extension of fingers corresponds to the linearity of the referent (e.g. the rope), as it occurs in the ‘quantity, measurement and time’ domain for MEASURE, SIZE and RULER in ASL (cf. COSTELLO, 2008; SHAW; DELAPORTE, 2015) (Fig. 9). Another mimetic representation is the sign ANTAGONISTIC (cf. CONTRARY, BULLHEADED, CANTANKEROUS), whose Y-handshape represents two opposing horned animals meeting head-on (COSTELLO, 2008), hence corresponding to ‘life/animal’ and ‘head/edge’ domains (Fig. 10).

Figure 9 – Examples of Y-handshape use in the domains ‘loss/hurt’ and ‘quantity, measurement and time’



Source: author’s elaboration.

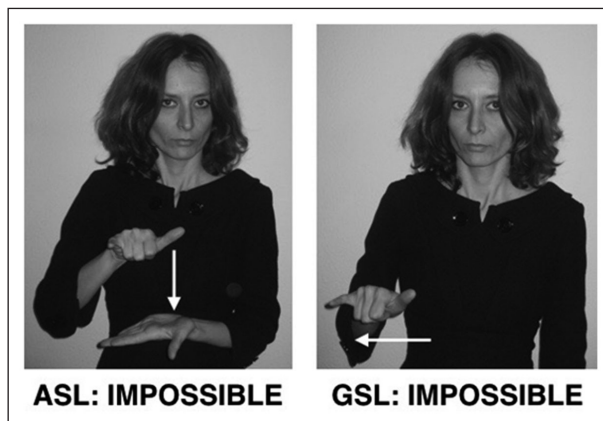
Figure 10 – The Y-handshape in the ASL **ANTAGONISTIC** and its synonyms



Source: Costello (2008, p.111).

In ASL, **IMPOSSIBLE** is etymologically connected to its French cognate sign (SHAW; DELAPORTE, 2015), in which the Y-handshape seems to represent the head, hence corresponding to the ‘head/edge,’ and by extension, to the ‘life/animal’ domains. The sign under the same concept exists in GSL (e.g. in GSL, **IMPOSSIBLE**, **NEVER**), although the execution is different (Fig. 11). Interestingly, the etymology of **WRONG** in ASL (cf. **ACCIDENTALLY**, **AMISS**, **BY-MISTAKE**; COSTELLO, 2008), also shows its connection to the French sign **TROMPER** (deceive), which was based on *mano cornuta*. Moreover, under this same domain of ‘loss/hurt,’ this connection with *mano cornuta* is shown for the ASL sign **SILLY** (SHAW; DELAPORTE, 2015), as well as for the signs **IRONY** and **SARCASTIC** (COSTELLO, 2008), which are performed by both the Y-handshape and H-handshape.

Figure 11 – The Y-handshape in the sign IMPOSSIBLE



Source: author's elaboration.

Although it is met once in ASL and GSL in the domain 'happiness,' the articulation of the sign ENTERTAINMENT agrees with the sign WALK (cf. motion domain) and its given etymology through the sign PLAY. Additionally, the ASL sign COMICAL/HUMOROUS is etymologically explained by the *mano cornuta*, thus justifying its closed phonology to the 'head/edge' and/or 'animal/life' domains.

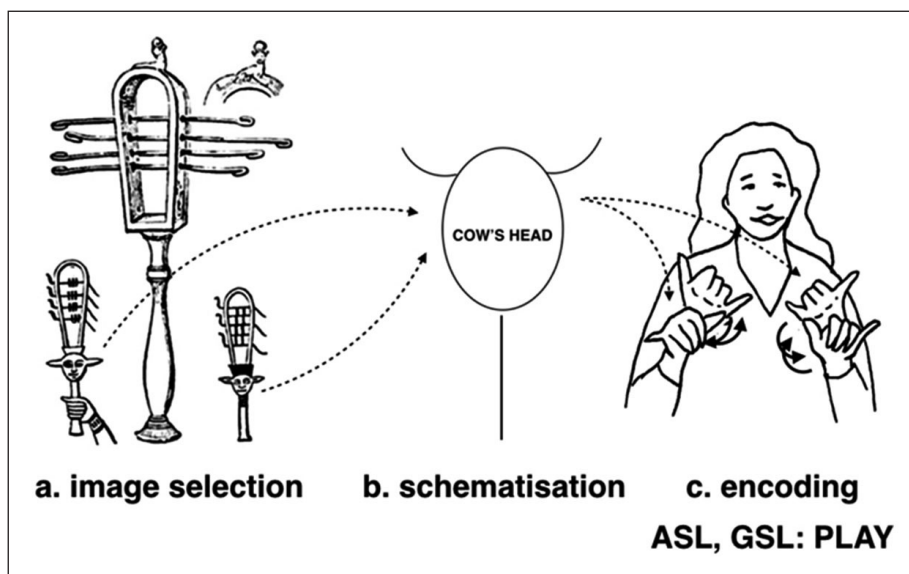
The meaning 'liquids' was found in ASL only, as in the sign DRUNK, in which the Y-handshape represents the physical action of drinking from a bottle. Similar depictions are documented in ASL for the signs LOTION and PERFUME (COSTELLO, 2008), whereas in GSL, the Å-handshape is preferred (e.g. OIL, TO-DRINK) imitating the round shape of bottles, cups, and vases (cf. also BAKER; COKELY, 1980).

Discussion and conclusion

Although the frequency of the Y-handshape is rare, its comparison in ASL and GSL demonstrated phonological convergence almost under the same semantic domains. In fact, this correspondence seems to be due to the metonymic function of the Y-handshape under the main meaning of a cow. Following the etymology of ASL on LSF, the sign COW is met in the 'earth/land' domain (e.g. SPAIN, NETHERLANDS, CALIFORNIA); in the 'light' domain (GOLD, YELLOW, BLOND); in the 'loss/hurt' domain (e.g. ANTAGONISTIC, IMPOSSIBLE, SILLY, WRONG); and in the domains 'happiness' (COMICAL, HUMOROUS) and 'motion' (ENTERTAINMENT). Likewise, GSL used this sign in the meanings of 'animal/life,' 'quantity/measure' (e.g. THURSDAY), and in the domains 'light' (BLUE, BEIGE) and 'motion' (PLAY). Under all these meanings, the COW is linked to the ancient handshape of *mano cornuta*, which was sacred to Venus and Mother Goddess overall. This explanation also confirms the French connection and the etymologies of Y-handshape on the letter <J> (cf. SHAW; DELAPORTE, 2015).

For example, the etymology of PLAY from *jouer* (> Latin *iocārī* > *iocus* > AG: ἡ ἰωγή: a shout of joy or pain) leads to cow Io (cf. also *íō*: exclamation of joy or sorrow), to *mano cornuta*, and her *sistrum*, which this study suggests to be represented by the signs WALK (cf. also *ĩω*, to go), and PLAY (and ENTERTAINMENT). Similarly, for the etymology of the French *jaune-iaune* for the signs YELLOW, GOLD and CALIFORNIA. In these cases, the Y-handshape represents both the cow (its head), and the handling and rotation of the instrument (the *sistrum*). In fact, the *sistrum*'s handle used to represent the cow face of the goddess (Fig. 12). Moreover, her sacred colours were the ones of this study (e.g. blue¹¹ and white) (GUBERNATIS, 1872), which are also denoted in the *aloha*¹² meanings (e.g. to shine, white light; cf. ANDREWS, 1922) with which the Hawaiian *shaka* associates. In other cultures, such as in Australian aborigines (Walmajarri people), the Y-handshape in the sign KUNGA means woman, which also agrees with the meanings under discussion. Again, the connection of the woman with this sign is explained by the ancient representation of the pubic triangle (the uterus and fallopian tubes) as the cow's head (MERTZANI, 2017).

Figure 12 – The association of PLAY with sistrum



Source: author's elaboration.

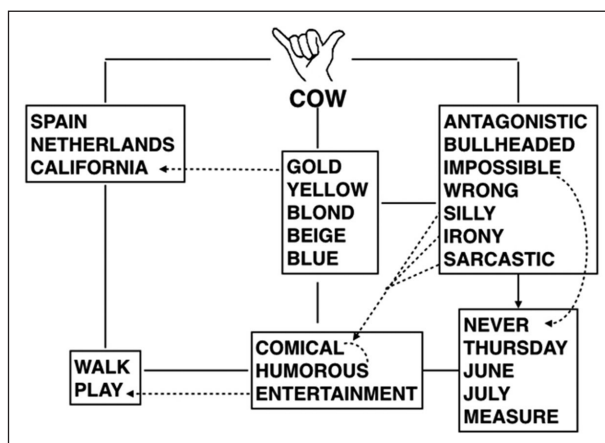
Overall, the Y-handshape maps to the forms of its referents. In most cases, it corresponds to the semicircle and/or the U shape of i.e., the sickle moon, the horns,

¹¹ In Spanish Sign Language, the blue colour is articulated with both the Y-handshape and H-handshape.

¹² The etymology of *aloha* (and its derivatives, *alohi*, *alohikea*, etc.) involves the words: *alo*, the face; *ha*, the blue colour; and *hi*, the flowing of water, the sea (ANDREWS, 1922, p.52).

the jaws, and the pipe; in other words, to referents that carry simultaneously roundness and angularity/linearity, or only angularity/linearity (Fig. 13). Concerning the latter, the extended fingers of the Y-handshape correspond to the linear form of i.e., the rope, the ruler, and the razor, a result that reminds of Gibson (1929) arguing about the representation of angularity and/or linearity through roundness but not the other way around. That is, a round form cannot be represented by linear/angular shapes. In this case, the closeness of the Y-handshape is analogous to the closeness of the circle, which, in the lexemes under study, corresponds to i.e., the volume of an obese person, the cylindrical body of the plane, and the handling of the items (the phone, iron, bottle, etc.). This relationship is clearer in signs articulated by both the Y-handshape and the A-handshape (or its allophones), as the second is a complete close handshape, and hence analogous to the circle.

Figure 13 – Signs produced by the Y-handshape as *mano cornuta*



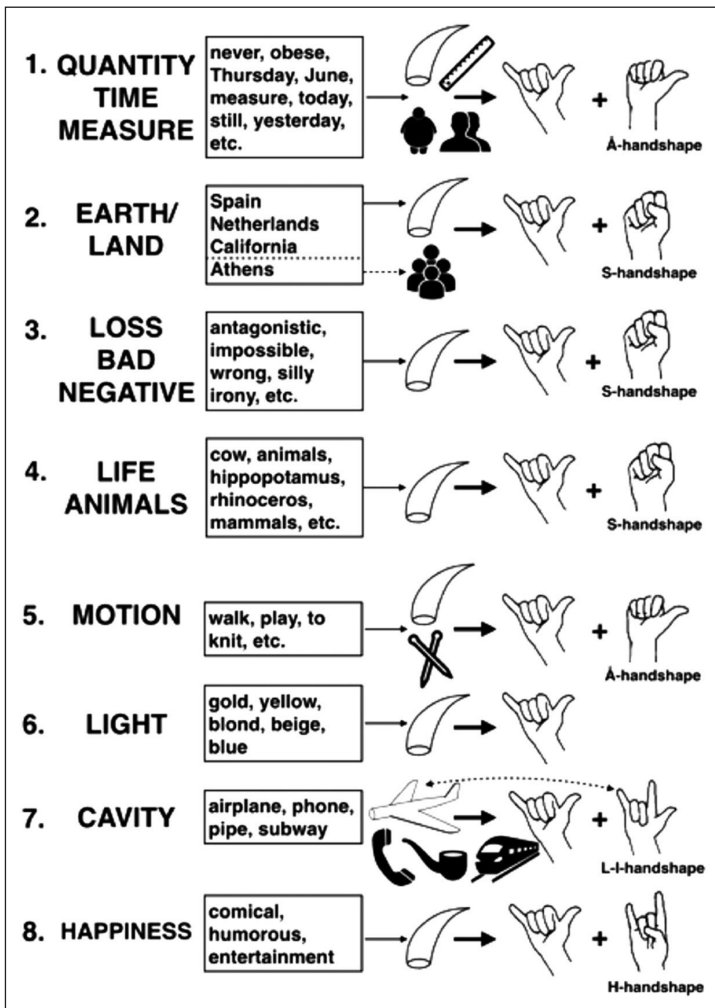
Source: author's elaboration.

There are also few occasions in which the Y-handshape alternates with the H-handshape that also connects to *mano cornuta*. Due to these associations, the study addresses the need to set up a comparative frame in which linguistics, archaeology and/or anthropology can provide pertinent evidence for better understanding such cross-cultural convergence within a historic continuum. Such analysis, especially where the Y-handshape is considered to represent the letters of spoken languages (e.g. <J>), suggests a careful examination of the etymology of the lexicalised signs, consulting historical and comparative linguistics. The *mano cornuta* is an illustrative example, since it shares a historic and cultural past with modern cognate and non-cognate SLs.

Based on abundant archaeological iconography and artifacts, the specific handshape (as a Y-handshape and H-handshape) is recorded not only in Europe and Mediterranean, but also in North, Central and South America, and Asia (China, India, etc.) throughout

history. Additionally, deaf people used indigenous sign languages in North America before their contact with LSF (MCKEE; KENNEDY, 2000; STOKOE, 2001), while, based on ancient Greek sources (e.g. Plato), deaf people of the era should have been familiar with the context and use of *mano cornuta*. As a result, throughout the process of diachronic conventionalisation (DEMEY; VAN HERREWEGHE; VERMEERBERGEN, 2008), part of its iconic qualities remained intact, and as their lexicon developed, structural analogies were created (mainly because of lexical polysemy) according to context factors, due to which it lost its original iconicity. Fig. 14 displays such connections in ASL and GSL, based on the results of this study for the Y-handshape.

Figure 14 – Summary of the Y-handshape in the semantic domains



Source: author's elaboration.

The study was limited to examine the concept categories under which the Y-handshape signs of the two SLs were classified. Thus, the aim was not on revealing – on a sign-to-sign comparison (as in the methodology of lexicostatistics) – identical and/or similar signs, mainly because the small sample did not permit such research conduct. However, its close reading methodology allowed the deep understanding of the semantic connections, determining possible historical relations of the signs, and significant analogies in the vocabulary of the two SLs.

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MERTZANI, M. A iconicidade da forma de mão Y. *Alfa*, São Paulo, v.62, n.3, p.617-639, 2018.

- *RESUMO: Como parte de um projeto de pesquisa de dois anos, o estudo examina a iconicidade diagramática da forma de mão Y de duas línguas de sinais não-cognatas; a língua de sinais americana e a língua de sinais grega. Em uma amostra de sessenta e quatro sinais, e através de uma metodologia de leitura próxima, o estudo demonstra a associação da forma de mão específica com referentes do mundo real que têm simultaneamente forma redonda e angular (por exemplo, cilíndrica, cônica), ou apenas forma angular/linear. Também apoia a sua associação histórica com o antigo signo mano cornuta, abordando sua metonímia em significados relativos à quantidade, terra, vida, perda, luz e cavidade.*
- *PALAVRAS-CHAVE: forma de mão Y. mano cornuta. iconicidade. língua de sinais americana. língua de sinais grega.*

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Appendix

ASL SIGNS	GSL SIGNS
OH-I-SEE	COW
YELLOW	IMPOSSIBLE
STAY, REMAIN, STILL	AIRPLANE
ME-TOO, IN-COMMON, SAME, SIMILAR	NEPHEW
COW, BULL	TAKE-A-WALK
DRUNK	ENTERTAINMENT
BLOND	ANIMALS
TELEPHONE	BLUE
HOLLAND, DUTCH, THE-NETHERLANDS	COUSIN
SILLY, ABSURD, FOLLY, FOOLISH, RIDICULOUS	PLAY, TO-PLAY
HANG-BY-A-ROPE	THURSDAY
SHAVE	PIPE
ERROR, WRONG	NEVER
YESTERDAY	TO-LAND (airplane)
THAT-ONE, THAT	RELATIVES
IMPOSSIBLE	TOILET, WC
HIPPOPOTAMUS	STILL, YET
IRON-CLOTHES	ETERNITY, CONTINUOUSLY
MEASURE	TO-KNIT
NEW-YORK	BULL
RHINOCEROS	SPAIN
SUBWAY	JUNE
WHY	SLOW
PLAY	WALK (to-take-a-walk)
NOW, PRESENTLY	ATHENS
CONTRARY, ANTAGONISTIC, BULLHEADED, CANTANKEROUS	MAMMALS
MEASURE, RULER, SIZE	PREY
STILL, YET	BEIGE
UNIFORM, UNIVERSAL	
humorous, comical	
drafting, engineering	
fat, obese	
country	
big-word	
swear, curse	
today	

SUBJECT INDEX

- Acoustic Phonetics*, p. 595
- Adjunction*, p. 575
- American Sign Language*, p. 617
- Argument Structure*, p. 575
- Articulatory Analysis*, p. 595
- Beneficiary*, p. 575
- Bluteau*, p. 509
- Brazilian Portuguese*, p. 595
- Brazilianisms*, p. 509
- Causative verb-operator*, p. 541
- Conceptual Blending*, p. 467
- Discourse analysis*, p. 443
- Discourse comparison*, p. 443
- Fernando Collor*, p. 467
- Greek Sign Language*, p. 617
- Iconicity*, p. 617
- Language Acquisition*, p. 595
- Locative*, p. 575
- Mano cornuta*, p. 617
- Mass Media*, p. 467
- Old Tupi*, p. 509
- Political Discourse*, p. 467
- Predicative noun*, p. 541
- Scientific-political-business discourse*, p. 443
- Social Networks*, p. 483

Sociolinguistics, p. 483
Support verb, p. 541
Support verb construction, p. 541
Syntactic Tests, p. 575
Syntactic Parallelism, p. 467
Traditional scientific discourse, p. 443
Variation and change, p. 483
Verbs, p. 575
Vocabulario Portuguez, and Latin, p. 509
XIP parser, p. 541
Y-handshape, p. 617

AUTHOR INDEX

BAPTISTA, J., p. 541
BERLINCK, R. de A., p. 435
BERTI, L. C., p. 595
BIAR, L. de A., p. 467
CABRAL, A. S. A. C., p. 509
GLUSHKOVA, M., p. 443
LOPES, J. D., p. 509
MAMEDE, N., p. 541
MERTZANI, M., p. 617
MILIORINI, R., p. 575
MOURA, H., p. 575
OLIVEIRA, E. V. de M., p. 483
OLIVEIRA, A. M. de, p. 595
PINHEIRO, D., p. 467
RASSI, A., p. 541
VALE, O., p. 541

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Contributions in the form of articles should be original and unpublished and cannot be simultaneously submitted for publication in other journal. Only reviews of books published in Brazil in the last 2 years and abroad in the last 4 years should be submitted for publication in the journal. Translations should be preferably of scientific articles and book chapters published within twelve months of submission; interviews should be conducted with researchers with academic prestige acknowledged in Brazil and abroad.

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3. Preparation of manuscripts

3.1. Presentation

Authors should ensure that their electronic copy is compatible with *PC/MSWord*, and use *Times New Roman*, 12-point size. The page size should be set to A4 (21cm x 29.7cm), and the text body should be one-and-a-half spaced throughout. Leave 3 cm from the top of the page and on the left margin, and 2.0 cm from the bottom of the page and on the right margin. Articles should have a minimum of 15 pages and not exceed **30 pages**, including bibliography, appendixes, and annexes. The text must meet the rules of Portuguese new orthographic agreement, which became mandatory in Brazil from January 2016. Two versions of the paper must be submitted: one containing the name and academic affiliation of

author(s), and one in which all references to the author(s), including citations and bibliographical references are erased.

3.2. Paper format

The format below should be followed:

Title. The title should be centered and set in **bold** CAPITALS at the top of the first page. Runover* titles should be single-spaced.

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Abstract. The abstract, which must summarize the contents of the paper (goals, theoretical framework, results, and conclusion), should conform to the following: it should appear on the third line under the name(s) of the author(s), contain at least 150 and at most 200 words, be single-spaced, and, with no indentation for the first line, be preceded by the word **ABSTRACT** in CAPITALS in the same language of the paper,

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throughout. It begins on the third line below the keywords.

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CORACINI, M. J.; BERTOLDO, E. S. (Org.). **O desejo da teoria e a contingência da prática.** Campinas: Mercado das Letras, 2003.

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Book chapters

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ALMEIDA JÚNIOR. **Caipira picando fumo**. 1893. Óleo sobre tela. 17 cm X 23,5 cm. Pintura pertencente ao acervo da Pinacoteca do Estado de São Paulo.

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3.3.2. In-text references and quotations

For references in the text, the surname of the author should be in CAPITALS, enclosed in parentheses; a comma should be placed between the author's last name and year, e.g. (BARBOSA, 1980). If the name of the author is part of the text, only the year is enclosed in parentheses: "Morais (1955) argues..."

Page numbers follow the year and are preceded by "p."; note a comma and a space between year and "p.", and between "p." and the number, e.g. (MUNFORD, 1949, p. 513).

References of the same author with the same year should be distinguished by using lower case letters in alphabetical order, e.g. (PESIDE, 1927a), and (PESIDE, 1927b). For references with one author and up to two co-authors, semi-colons are used to separate the surnames, e.g. (OLIVEIRA; MATEUS; SILVA, 1943); for references with more than two co-authors, the expression "et al." substitutes for the surnames of the co-authors, e.g. (GILLE et al., 1960).

Quotations longer than three text lines should be set in 11-point font size, and set out as a separate paragraph (or paragraphs) on a new line. The paragraph (or paragraphs) should be 4.0 cm from the left margin throughout, without any quotation marks. Quotations shorter than three text lines should be included in double quotation marks in the running text. Quotations from texts in foreign languages must be translated into Portuguese. Published translations should be used whenever possible. The original text should appear in a footnote.

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Italics: Use italics for foreign words, book titles in the body of the text, or for emphasis.

Bold: Use bold only in the title of the article and in the text headings and subheadings.

Underlining: Avoid using underlining.

Quotation marks: can be used to highlight parts of the major works, such as titles of poems, articles, chapters. The major works should be highlighted in italics, as the statement above; quotation marks must be used in the body of the text for quotations of excerpts of works. Example: A linguística é uma disciplina que "[...] se baseia na observação dos factos e se abstém de propor qualquer escolha entre tais factos, em nome de certos princípios estéticos e morais" (MARTINET, 1972, p.3).

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Figures comprise drawings, graphs, charts, maps, diagrams, formulas, models, photographs, x-rays. The identifying caption should be inserted above the figures, centered, preceded by the designation word designative (Chart, Map, Figure etc); if there is more than one, figures must be numbered consecutively in Arabic numerals using the same font and size of the body of the text. Indication of the source and other information necessary for its understanding should appear below the figure. Figures should be submitted as separate files, saved in the program in which they were generated. Maps, photographs and radiographs should also be submitted as separate files, high-resolution (300 dpi). Author(s) are responsible for image copyrights.

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Tables should be used to present statistical information, and text frames should be used to summarize and organize textual information. The title is inserted above the table, centered, beginning with **Table 1** in bold, followed by a hyphen and the title without emphasis, in the same font and size of the body text; the title of figures should be presented above the figure,

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When absolutely necessary to the text comprehension, and within the limit of 30 pages, Annexes and / or appendixes, following the subsection style, should be included in the end of the paper, after the references or bibliography.

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The review should contain, at the beginning, the complete reference to the book being reviewed, including number of pages, in Times New Roman, 14 point size, single spaced, no title, no summary, no keywords. The name(s) of the review author(s), in 12 point size, must appear on the third line below the reference of the book reviewed, preceded by "reviewed by [name(s) of author(s)]". Names must be followed by an asterisk referring to a footnote containing the following information: full name and acronym of the institution to which the review author(s) belong; city; state; country; zip code; email. The text of the review should begin on the third line below the name(s) of the author(s) in Times New Roman, 12 point size 12 and spacing 1.5.

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When the text contains examples the understanding of which involves the need to clarify morphosyntactic features, a literal version of them in gloss should be included, followed by the common English translation in single quotation marks. Example:

- (1) isso signific-a um aument-o de vencimento-s (D2-SP-360)
this mean-IND.PRS.3.SG a.M raise-NMLZ of salary-PL
'this means a raise in salary.'

Conventions for the glosses: *The Leipzig Glossing Rules: conventions for interlinear morpheme-by-morpheme glosses*, edited by the Department of Linguistics of the Max Planck Institute for Evolutionary Anthropology (Bernard Comrie, Martin Haspelmath) and the Department of Linguistics at the University of Leipzig (Balthasar Bickel); available in <http://www.eva.mpg.de/lingua/resources/glossing-rules.php>.

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