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## PRESENTATION

In 2012, *Alfa* celebrated 50 years of its heroic resistance as a scientific journal in a publishing market which is not always especially favorable to this type of publication. This number, which opens the volume 59/2015, is a significant sample of the academic fullness achieved by the journal. This long line of continuity, far from showing conservatism and stagnation, ends up representing a process of disruption and innovation. If volume 58 inaugurated a new frequency from two times a year to quarterly, volume 59, which this number introduces, represents the conversion of *Alfa* to a bilingual publication issued both in Portuguese and English.

This innovation not only puts *Alfa* en route to internationalization, but also represents a significant opening of the content to a much wider audience, especially researchers from abroad who are interested in the structure of Portuguese, especially the Brazilian variety.

Considering now the content of this number, just a quick look at the texts allows us to realize that, in addition to certain thematic diversity, the different levels of linguistic analysis are almost fully covered. The ordering of the articles rests on a clearly top-down perspective of grammar, which starts with the discursive and semantic motivations, passes by the morphosyntactic units themselves to reach the lexical units and, finally, to end with phonological ones.

Another revealing aspect may be noticed in the diversity of themes. In fact, Machado's paper brings a theoretical reflection on the relation between the Freudian psychoanalytic analysis and a structuralist reading of Benveniste, which preserved himself as a Saussurean scholar, although opening a wide window to the actual discourse. The functionalist syntax, with one foot in cognitive linguistics, is present in Carrascossi's and Ferrari & Almeida' texts, while Teixeira & Menuzzi's relies on the generative theory, applying it to the analysis of the so-called "exhaustivity effects", which, by involving various kinds of inferences, suggest a new viewpoint on the semantics and pragmatic aspects of cleft sentences. The specialized lexicon from the medical domain, a branch of Terminology, is given a computational look in Orellana' contribution.

Reducing a little bit more the scope of the phenomenon, Britto Leite assumes a variationist look at rhotic phonemes in the language spoken in Campinas, while Adam & Zimmer postulate a dynamic conception of L2 acquisition, evaluating

Brazilian children's perception and production of standards of Voice Onset Time for initial plosives in English. Finally, closing this number, Neuschrack, Matzenauer *et alii* focus on the phonetic behavior of the lateral liquid, searching to formalize the asymmetry relation whereby in syllable onset, this segment shows phonetic stability, and in the coda position, some degree of variation.

As the reader can witness, this number introduces a set of impressively relevant contributions, especially in the light of the theoretical diversity of the proposals, the variety of phenomena involved and the different levels of analysis. As an editor, I express the hope that the reading of the papers here issued will trigger a debate with other proposals and with other theoretical positions, which provide the seeds for a critical and always fruitful reflection.

Roberto Gomes Camacho

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***ORIGINAL ARTICLES***



## BENVENISTE, LACAN AND STRUCTURALISM: ABOUT THE OPPOSITE MEANINGS OF PRIMITIVE WORDS

Bruno Focas Vieira MACHADO\*

- **ABSTRACT:** This article intends to make clear some given aspects of Benveniste's structuralist interpretation about freudian linguistic reasoning, mainly in his text *Opposite meanings of primitive words*. It is put Benveniste's text *Observations about the language function in freudian discovery*, proceeding a dialogue with linguistic hypothesis developed by Freud in his aforementioned text. It is pursued a link between linguistic and psychoanalytic fields, searching Freud's notion of primitive language and comparing it with Structural Linguistic assumptions supported by Benveniste. The approach is strictly theoretic, in order to enlighten the divergences between language reasoning in Freud and Benveniste. In order to achieve this aim, it is searched Freud's examination about the negation, putting in touch with Benveniste's examinations about linguist Carl Abel, a strong linguistic influence on Freud's work, mainly in his text *Opposite meanings of primitive words*. As a conclusion, it becomes possible to assert that, as being a system and a structure, language has an universal and non-historical quality, which refutes the freudian thesis concerning the existence of primitive languages.
- **KEYWORDS:** Language. Structure. Unconscious. Negation. Enunciation.

### Benveniste: brief historical data

Émile Benveniste (1902-1976) is recognized as the leading representative of Linguistics of Enunciation and the chain that became known as **theories of enunciation**. He was a Saussurean comparative linguist and a leading expert in Indo-European. Born Jewishish in Aleppo, Syria, he was dedicated to Iranian studies, the comparative grammar of European languages and to language in general. As a specialist in Indo-European, the biggest one in the twentieth century alongside Jerzy Kurylowicz, and also a comparative of numerous ancient and modern languages, Benveniste is primarily recognized and valued for having reintroduced the subject in the field of linguistics, heretofore repressed, by his enunciative approach. Dosse (1993) relies on Durcrot's words, who claims that Benveniste is the linguist to whom he owes the most, due to the fact that he demonstrated that the linguistic system, whilst being a system, should take into account the phenomena of enunciation.

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The concept of **enunciation** is undoubtedly the most important one to overcome the limits of linguistic language attempt. In this historical context, Benveniste was the first linguist to develop a linguistic theory that encompasses the dimensions of subject and speech in the thought of Saussure. For this reason, but not just for it, Dessons (2006) defines Benveniste as **an apart linguist**. Having introduced the concept of **enunciation** in the Linguistics of his time, he exercised strong influence over the fundamental concept in language studies: **discourse**. Benveniste demonstrated a very early acute perception of the notion of discourse, by explaining the failure of the concept of **talking** on the conceptual apparatus of Saussure, although the talking treads the path to the universe of discourse.

According to Dessons (2006), the notion of **discourse** opens the way to ponder the activity of language in all the human and social sciences. Indeed, the work of Benveniste sharply reverberates not only in the field of linguistic studies, by providing a historical anthropology of language that affected philosophy, sociology, psychoanalysis and literature. This spillover into other fields of human and social sciences is evidenced by Dosse's words (1993), by stressing that Benveniste left with an image of an independent researcher, not belonging to any school and taking on original points of view about language and sometimes revolutionary ones. He was known to have crossed his career without committing to specific movements, remaining loyal to his own theoretical horizon like an authentic solitary thinker. However, although his reflections have a very evident originality, it is certain that his thinking cannot be disentangled from the historical context, more specifically, Structuralism. The historical context in which his theories of the subject and enunciation were developed consisted in the heyday of structuralism, which makes him be recognized by François Dosse (1993) as **the French exception**.

Benveniste's key innovation, which leads to the recognition as the **French exception**, is explained by the fact that he articulates subject and structure, as did Lacan later in the field of psychoanalysis. The linguist proposed a conceptual break in the linguistic community of his time, by remaining faithful to the thought of Saussure and the notion of structure and, within the same saussurean project, treat the subject of enunciation. It is a paradoxical position that Benveniste shares with Lacan in spite of the necessary differences that separate both thinkers, because, strictly speaking, the structure does not bend to the subject and enunciation itself.

In the fifties, there is another text that, besides being crucial with regard to the theory of enunciation, is particularly important to Benveniste's dialogue with psychoanalysis: "Comments on the role of language in Freud's discovery", written in 1956 and published in *Problems of General Linguistics I* (BENVENISTE, 2005). In

this particular text Benveniste develops the notions of dialogue, intersubjectivity, subject and discourse; articulating their implications for psychoanalysis and for the field of language studies itself.

Still regarding the text above mentioned, it is important to stress that this is a collaboration required by Lacan himself, and published in the first volume of the journal *La Psychanalyse* in 1956. Lacan asks the intervention of Benveniste due to his interest in the subject matter, a question that contributed to bringing both thinkers together during the fifties. The purpose of Benveniste's article is to review the lacanian thesis that **the unconscious is structured like a language**. In this article, among other things, Benveniste makes remarks about Freudian text "About the antithetical meaning of primitive words", published in 1910, outlining a review on it. Freud, in this text, founded the operation of the unconscious and dream, both unaware of the principle of contradiction, establishing an analogy with some primitive Egyptian languages. He takes as its starting point the work of linguist Carl Abel, who notes in these primitive languages the existence of a single word denoting opposite meanings, and apply this principle to the operation of the dream and the unconscious, with the aim of explaining how in dreams the same representation means two diametrically opposed things.

Benveniste notes that Abel's speculations are meaningless because every language, being a system, works from this basic principle of contradiction that is not a prerogative of primitive languages. From this review, the author highlights the non-historical rhetoric of lacanian unconscious, whose structure of language is seen as a system that does not depend on a particular language enrolled in a primitive or contemporary period of history. This non-historical perspective of the unconscious and the lacanian conception of language converge with the criticism that Benveniste outlines about Abel in his text. According to Benveniste, every language is marked by anomaly, asymmetry and antithesis, which are inherent characteristics of the linguistic system. The archaic languages, approached differently from Abel and Freud perspective, are not more or less different than those spoken in the present. In Benveniste's words, to envisage a primitive stage of language, no matter how **primitive** it could be, is a pure chimera.

According Dosse's research (1993), Benveniste established the history of the development of Linguistics from a tripartite division age: the philosophical age (which corresponds to the reflection period of Greek thinkers about language); the historic age from the nineteenth century with the discovery of Sanskrit and the structuralist age of the twentieth century, in which, in his words, the positive notion of the linguistic fact is replaced by the relationship one. This third age gives access to the complex field of culture that is the symbolic phenomenon that interests both Benveniste and Lacan, more properly **the first Lacanian classicism**, a term coined by Milner (1996). In Dosse's (1993) point of view, the

domain of symbolic maintained, throughout the fifties, both thinkers in close proximity and dialogue, articulating linguistic and psychoanalytic issues from the doctrine of the subject.

### **Benveniste with Lacan: the question about the subject**

The freudian text “About antithetical meaning of primitive words” (FREUD, 2013) is a fundamental reference for those who are interested in the interface between Linguistics and Psychoanalysis. Just as Benveniste is one of the linguists most cited by Lacan, Abel is Freud’s linguist *par excellence*. As Arrivé’s search testifies (1999), Abel is not only the linguist most cited by Freud: after discovering Abel’s work, Freud cites it with great frequency, as it is a theory that allows him to situate the relationship between language and the unconscious. Therefore, there is an interesting articulation approaching Abel, the linguistic most quoted by Freud, and Benveniste, one of the linguists most cited by Lacan. Benveniste, as far as it is known, only noted Abel from Freud’s paper and his interference is the result of a request by Lacan.

The fact that Lacan requests Benveniste’s intervention precisely on the freudian text about antithetical meaning of primitive words is certainly not by chance. This becomes even more remarkable if we assume, as does Arrivé (1999), that this peculiar freudian text remains to this day an obligatory passage point for anyone who is interested in the relationship between Psychoanalysis and language.

Benveniste and Lacan formed a partial dialogue during the fifties, the period in which Lacan was intimately close to Linguistics. Lacan’s reference and deference to Benveniste and his recognition as a great linguist predate the invitation to the publication in the first issue of *La Psychanalyse*. In the lesson *De locutionis significatione*, of June 23<sup>rd</sup> 1954, that belongs to the Seminar 1 “The technical writings of Freud”, Lacan makes remarks about the Saussure’s theory of the sign and supports his comments on Benveniste’s linguistic authority. Lacan relies on Saussure and Benveniste to legitimize the relevance of terms such as **significant**, **meaning**, **discourse**, **signification** and **semantic** to the analytic situation.

Early in his presentation, Lacan talks about an interview he had with Benveniste on the question of meaning and refers to him as “the most eminent person in the French linguistic domain”. In pursuing his exposure, the analyst assigns to “a man so eminent as Mr. Benveniste” the first discovery of a double zone of meaning in language. Finally, Lacan tells his audience that such discovery of the linguist had been entrusted to him as a current forwarding of his thinking and it is something that is done in order to inspire us a thousand reflections.

It is remarkable to observe the high degree of respect and admiration that Lacan puts on Benveniste in this moment of his teaching and thinking. This is reaffirmed in the ninth footnote of “The seminar on ‘The Purloined Letter’”, from 1954, in which Lacan calls **masterful** the rectification made by Benveniste about the false philological path outlined by Freud on the antithetical meaning of certain words, whether they are primitive or not. It is known that the dialogue and the partnership between Lacan and Benveniste, and so for between Lacan and other linguists, was more intense in the fifties, the period in which the psychoanalyst relied on linguistic structuralism for his return to Freud. Later came disruptions, dislocations and disappointments.

Lacan later explains this discontent in the year of 1970 in *Radiofonia* by attacking Benveniste and his contribution to the first issue of *La Psychanalyse*. Noting that Linguistics does not have any influence on the unconscious, by leaving blank what has an effect on it, the **object a**, Lacan (2003, p.408) expressed in this way: “This lack of the linguist, I could check it out when I asked a contribution to the greatest one that existed among the French ones, to illustrate the launch of a magazine of my creation [...] – the psychoanalysis, nothing less.” Despite the evident dissatisfaction that Lacan later demonstrates to Benveniste’s contribution, as suggested by the expression **lack of the linguist**, the great Linguist of Enunciation remains recognized as **the greatest that existed between French ones**, demonstrating a probable mixture of admiration and contempt by Lacan.

Regardless of such issues, during the fifties, a rich period to the lacanian dialogue with several linguists, Benveniste actually occupies a different position, as states Arrivé:

Now, in what sense is taken the opposition between language / language / speech? Exactly in Benveniste’s terms. Why Benveniste? The reason for the choice is clear: between Saussure and Jakobson, he is the linguist who is the most continuously claimed by Lacan. (ARRIVÉ, 2001, p.114).

Thus, the dialogue with Psychoanalysis, as Dosse (1993) observes, provides Benveniste a way to enforce and recognize his positions regarding the enunciation and the emergence of the subject in language, positions rejected by the linguistic field of this time. Benveniste, in his text, not just articulates psychoanalysis with issues of language in his theoretical scope, but even establishes its importance in the clinical management, in the relationship between analyst – analyzing, and highlights the notions of **dialogue** and **intersubjectivity**. Thus, it is possible to see in the text of 1956 the presence of an enunciative theory involving language and subjects or involving word and subjectivity that, in the specific case illustrated by the analyst – analysand relationship, involves partners in a dialogic

and communicative situation.<sup>1</sup> About this dialogical situation, Benveniste (2005, p.83) even questions the specificity of the analytical language as an instance of representation of the subject (analyzing) and to / from the other (analyst)

Everything here announces the advent of a technique that makes language its field of action and the privileged instrument of its efficiency. Then arises a fundamental question: what is this “language” that acts as much as it expresses? Is it identical to the one that is employed out of the analysis? Is it the same only for both partners? (BENVENISTE, 2005, p.83).

It is noticed in this excerpt a concern to articulate, while at the same time to distinguish, the language for the analytical field and everyday language, and so far the conception of language operated by psychoanalysis and the one operated by linguistic theories. Benveniste (2005, p.93), commenting on the language of dreams, further states that “In the area that reveals this unconscious symbolic, it may be said that it is both below and above linguistic.”, explicitly articulating the unconscious with language and, more specifically, with Linguistics itself.

In “Saussure after half a century”, published in 1963, Benveniste (2005, p.44) is not shy to say that “All aspects of the language that we have as data are the result of logical operations that we practice unconsciously.” (BENVENISTE, 2005, p.44). He continues his assertion with an ironic phrase that disrupts the reader: “Let’s be aware of it.” The reader is thrown into an embarrassing paradox, being invited to become aware of the fact that all aspects of language usage are charged under the background of an unknown and unconscious knowledge. How can one become aware of something that is inherently unconscious? The textual construction of Benveniste operates in the manner of a joke. However, Benveniste’s approach between language and the unconscious, as his own texts and enunciation theory clarify, is not given by language as pure structure, but through the mediation of speech and language in use, which converge to the perspective of analytic practice.

At another point in the text, we can find Benveniste anticipating critical issues, widely developed in 1970 in his famous article **The formal apparatus of enunciation**, about the distinction between language as a system and language used by a subject in the context of the utterance:

Language is a system common to all; speech is at the same time the bearer of a message and instrument of action. In this sense, the words settings are increasingly unique, although taking place

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<sup>1</sup> Lacan refuses to situate the analytical scene in the strands of dialogue and communication, insisting on a non-subjective position of the analyst (first as the big Other, then as a face of the object a).



inside – and through – the language. There is therefore in the subject an antinomy between speech and language. (BENVENISTE, 2005, p.84).

## **Freud, Benveniste and the antithetical meaning of primitive words**

Benveniste was invited by Lacan in 1956 to give his contribution to the first issue of *La Psychanalyse*, for having demonstrated adherence to theses discussed in *Function and Field of Speech and Language in Psychoanalysis*, published in 1953, one of Lacan's texts most strongly anchored in linguistic assumptions. Benveniste's contribution to the journal in question is the text "Observations on the function of language in Freud's discovery", a critical commentary on Freud's text "On the antithetical meaning of primitive words" and also a tribute to the analytical **talking cure**. The linguist discusses the subjective dimension of language that analysis invites someone to experience and discusses the concept of healing grounded in the possibility of rewriting and reposition before someone's own story, from a biographical narrative process. Benveniste also defines what Freud called **psychic reality**, by stating that the dimension operated by psychoanalysis is not the size of empirical reality, but the size of the speech, and this comes to lend authenticity to the experience:

In fact, if it is necessary that the patient tells you everything – even if it is expressed at random and without defined purpose – it is not to recognize an empirical fact that has not been recorded nowhere except in the patient's memory: it is because empirical events have no reality to the analyst unless the – and by – 'discourse', which gives them the authenticity of the experience, regardless of their historical reality, and even (it has to be said: above all) if the discourse avoids, transposes or invents the biography that the subject assigned. (BENVENISTE, 2005, p.83).

The ethical dimension of language in use is constantly stressed by Benveniste in his writings, by staging accountability of the subject in his enunciation. Benveniste also shows interest in Freudian analysis and its intimate relations with the universe of words and subjectivity. He emphasizes that the analyst must not only pay attention to the speech, but to the speech disruptions, demonstrating his adherence to a conception of discourse not anchored on an unopened understanding. Also according to the linguist, Freud launched decisive lights on the verbal activity, as revealed in free association, being all the force of language intimately linked to the hypothesis of the unconscious. The analytical process is a phenomenon of discourse marked by a particular outlet of the word, the word that brands each subject in a strictly private manner.

This highlights a point of contact between the enunciation theory of Benveniste and lacanian elaborations prevailing at the time. Such conceptual encounter is justified by Dosse:

This encounter between Lacan's and Benveniste's thesis is not fortuitous: it is a result, in addition to the mutual interest to establish the scientificity of their thoughts, of the common desire to escape the mainland discourse of each one to its dependence on history, whether the freudian filogeneticism to one or the historical philology to another. (DOSSE, 1993, p.63).

In this text, Benveniste proposes a reflection on the relationship between Freud and the linguist Carl Abel. He thus shows interested in the reflections of Abel, but one mediated by Freud's interest: it is to question the influence that Abel had on Freud. In a footnote, added in 1911 to the third edition of *The Interpretation of Dreams*, Freud draws on the theories of Abel to justify his hypotheses about the dynamics of the unconscious, establishing a parallelism between the theses of Abel on the antithetical nature of words in some primitive languages with the way the opposing representations coexist harmoniously in the unconscious. These opposing representations are presented by a single element, in that the unconscious knows no "no", any principle of contradiction and the rates of positivity and negativity. In his words, the dreams feel free to represent any element by its opposite, making it impossible to decide at a glance whether any element which allows a contrast is present in the dream-work as positive or negative.

We can make use of an often cited freudian example, a dream where white represents both the innocence and sexual impurity. Freud concludes that, on this point, the dream behaves the same way as these primitive languages surveyed by Abel.

It is noticed that the interest in the issue of language, specifically by the linguist Abel, is something that Freud himself founded at the beginning of his theorizing and is referred to the time of the creation of Psychoanalysis. Being aware of this, Benveniste does not refrain himself from bringing The interpretation of dreams in his article and to reference the particular logic of dreams to discuss the theories of Freud. According to Milner (2008), it seemed to Freud that Abel proposed two exact parallels within a strictly lexical field: what is true in the dream about the relationship between representative materials (white color) and represented significance (innocence or impurity) is also true in the language on the relationship between phonic materials and the thing signified.

Thus, from his discovery in ancient Egyptian, the same phonic material may mean opposing realities. Freud exemplifies it with certain words that can mean

both **strong** or **weak, command** or **obey**; and with compounds as **old - young** or **away - close**. He concludes that these compounds express, in the use of language, the meaning of one of its contradictory parts, a part that would have had the same meaning in itself. Abel justifies this curious linguistic phenomenon in a way that, despite many different aspects in his thinking about language, allows us to consider him as a Saussurean *avant la lettre*. He did not fail to point out, and Freud follows his trail, that our concepts owe their existence to comparisons. In his words, everything in the world is relative and has an independent existence only insofar as it differs to their relations to other things.

Thus, the word that at first seems to mean both **strong** and **weak** means in reality the relationship and the difference between them. Here lies, in a sense, a parallel with the classical structural principle proposed by Saussure: language is a system of differences with no positivity or negativity itself. Continuing the reasoning of Abel, this strong linguistic ambiguity was resolved by speakers through use of gestures that indicate the mean pole of the word to be used in each communication context.

Milner (2008) argues that in Abel's research on ancient Egyptian, the important fact is the blurring of the order and not its opposition, because the blurring rules out the existence of **no**, as in the logic of dreams. In dream logic, as it is known, an element is represented by its opposite so that there is no way to decide at first whether this element to admit otherwise is present in the dream as positive or negative.

The logic of the opposition, in turn, forces Freud to limit his thesis about the absence of contradiction in dreams and announces the notion of **denial**, developed in his important article "*Die Verneinung*"; published in 1925 under the title "The negative" (FREUD, 2007). In this article, Freud notes that the use of **no** in the analysand discourse is an index of repression, it means that the unconscious only makes itself known in the discourse on the brand of a denial. Taking the example cited by Freud, when a patient recounting a dream about a certain character says **it's not my mother**, what you have is a **not** followed by a statement **is my mother**. The logic of the opposition relies upon the same principle of denial: it utilizes the "no" to denote something positive. What Freud finds in Abel, in turn, are situations marked by an absence of linguistic paradigm of opposition between the names and the denial itself. Abel, in short, does not question the denial. On this issue, Milner (2008) notes a paradox of Freud, who refers to Abel precisely at the time that the thesis of the absence of "no" in the dream is affirmed by itself. What Abel illustrates, in turn, is the inability to demarcate at first the meaning of a given element.

When using the support of Abel's linguistic theories, Freud creates a stalemate. If on the one hand the absence of **no** and the principle of contradiction in the

dream is affirmed and endorsed by Freud, it is also limited in several ways, because the dream operates condensations and displacements of representations that assumes the principles of contradiction and denial. If Freud states that an element of the dream can be represented by its opposite, how then can one claim that it is unaware of the principles of contradiction and denial? Likewise, if the condensation mechanism assumes two opposing representations represented in the same element, how can we delete again the principles of contradiction and negation? The argument sought in Abel by Freud is relevant and at the same time fragile and the contradiction shows up in Freud himself.

Regarding this impasse, Milner (2008) proposes a reading to solve it by postulating that *The interpretation of dreams works* as if everything in the text operates as a *Verschiebung*, a displacement as coined by Freud, in which the key is not which is highlighted as a direct argument, but its result: the undecidability<sup>2</sup>. The continuation of Milner's elaborations allows an intimate link between *The interpretation of dreams*, the structuralist paradigm and the last teaching of Lacan: stopping on the essential, Freud's thesis tells us that the dream is analyzable in increasingly minimalist terms. This minimalist hypothesis is what Milner calls the **Ones** of the dream: the desire, the thought, and the minimum elements of dreams. In the same way that language and reality are also analyzable in terms of the **Ones**: the word, the thing, the act.

The unconscious is thus a system in which one assumes the least possible properties. The Structural Linguistics, as a paradigm of reducing elements to a criterion of pure difference in a system, maintains certain minimalist theses. The minimum properties of the language system are liable to be decomposed into equally minimal elements, and the element of the system has its properties determined by the system itself. On the other hand, we find the notion of the record of **One** in the work of Lacan, from *Seminar 19 ...Or worse*. **The One** is sympathetic to notions of enjoyment and real of the language, by implying an aspect of interpretation no longer anchored in the discourse of the Other. Starting from these considerations, you can find in *The interpretation of dreams* both dialectical sides of language that are the subject of Psychoanalysis: a symbolic language that provides the basis for Lacan's structuralist approach, widely discussed in the work of interpretation and production of meaning in dreams; and the unrepresentative of language, the real, correlate to **the navel of the dream**, as Freud expressed:

Even in the most thoroughly interpreted dream, there is often a stretch that has to be left in the dark; it's because, during the work of interpretation, we realize that there is at this point a tangle of

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<sup>2</sup> Undecidability: term searched in Milner, which means an impasse in interpreting, the difficulty to decide on one of the interpretive centers.

dream-thoughts which does not unravel, moreover, adds nothing to our knowledge of the content of the dream. This is the dream's navel, the spot where it dives into the unknown. (FREUD, 1976, p.482).

**The Ones** can also mix up with the record of the symbolic, if we consider the laws of condensation and displacement that govern the dynamic of dream. What in the dream can be represented by one single element can in reality be quantitatively represent by a multitude of elements, which is characteristic of condensation. From a qualitative point of view, a representation that is essential in the dream may be unimportant in reality or conversely, what is characteristic of displacement. Finally, something that might be mixed up in the dream can be separate or even oppositional in reality, that is the antithetical meaning as coined by Abel.

According to a review by Milner (2008) that actually follows the same associative pathway proposed by Freud, the quantitative and qualitative non-coincidence among the various Ones can be conceived as the crucial point of the analysis, in which a single wish can be stated in many ways, be expressed in multiple and diverse actions. By focusing on the expression **non-coincidence**, fully developed by Authier – Revuz's work (2001), it becomes more understandable why the dream is considered a discourse and a heterogeneous discourse. The dream is an Other, an otherness subject to the dreamer himself, and a privileged place of staging the unconscious, which Freud called from an expression by Fechner, another scene (*ein anderer Schauplatz*). The record of the dream and the reality itself form a heterogeneous discursive scene marked by non-coincidence of their respective utterances. The dream-work projects, so in a single plane of representation, the various Ones and their correspondences.

Returning to Abel's research on the antithetical meaning of primitive words and the reading undertaken by Freud, it is observed that the psychoanalyst found in Abel's article elements to legitimize his theories about language in the unconscious, but in order to specify the own non-coincidence among the **Ones** and its undecidability. The non-coincidence and undecidability of the Ones can be illustrated by Abel from his hypothesis about the use of signs in spoken language in ancient Egypt. In his opinion, it was through the use of gestures that the desired meaning of the antithetical word could be spelled. The interpretation of dreams, by contrast, is not worth a foreign element to the spoken language to evidence the meanings and sense of representations. The **ones** of the dream are also mixed up in its extensive network association of condensations and displacements, but it is the work of language itself, from the interpretation process, that a meaning can be chosen, tracing the path from undecidability towards non-coincidence of the Ones. The interpretation, as in the primitive gesture language, introduces a

distinction and does not confuse undecidability; but through an element of spoken language itself and not outside of it. These are two distinct modes of explaining the non- coincidence in Abel and in Freud.

### **Benveniste against Freud: the question of the structure**

It is now proposed to avail a term of Milner (1987) in order to question **the desire of the linguist**. According to Milner (2008), there is something in Abel that shocks Benveniste. From the reading of his text, it is remarkable in Benveniste great discomfort with respect to Abel's elaborations and an effort to disqualify them. He does not shy in saying that no qualified linguist, either at Abel's writing time or subsequently, retained his text on primitive words, either in its methods or conclusions. He also affirms that Abel's data are false and that there are reasons, referring to the history of languages, to take away all the credit to Abel's etymological speculations that lured Freud.

Attacks on Abel gain very directive and personal contours when we recall the passage in which Benveniste, in a rather ironic way, expresses that if there is insensitivity to the contradiction, it is not to be found in language, but in the figure of the researcher himself. There is a strong aspect of Abel's postulations that causes serious resistance in Benveniste, which is his hypothesis about the use of gestures to explain the oppositional pole of antithetical word. Benveniste's theoretical constructs can be approximated to the lacanian axiom which states that **there is no meta-language**, which means that, for him, linguistics has nothing to learn from an instance which is foreign from language itself. For Abel, the use of gesture is to introduce differences in linguistic sign from an element which is foreign from the language. For Benveniste, being true to his Saussurean heritage, the language itself performs all the differences it has known. This principle is so essential that Saussure even states that language can be content with the opposition of something with nothing: there is a pure difference inscribed in the linguistic system itself.

If we understand that language is a minimalist system marked by oppositional relationship between its terms, it becomes clearer the understanding that primitive languages do not have a particular logic that differentiate them to the languages currently spoken. Just as contradiction and illogicality are inscribed in the very nature of the linguistic sign and cannot be particularized to a specific language inscribed in a particular historical time. We can read the lacanian axiom **the unconscious is structured like a language** in the light of the criticisms of Benveniste towards Abel. Designing the unconscious structured as a language has an important consequence: the algorithm refers to any language, without any specificity. In a later point in his teaching, in the

course of a lesson of *Seminar 19 ...or worse*, this structuralist point of view about language appears explicitly in Lacan's discourse in a passage which, though long, deserves to be transcribed:

[...] if something worthy of the title of 'linguistic science' can be sustained, something that seems to have language or speech as object, it was under the condition linguists swear to each other never ever again – because it is not done for centuries – but never, even from afar, allude to the origin of language. That was one of the slogans that gave this form of introduction that was articulated in my formulation 'the unconscious is structured like a language'. [...] It is not a matter, anyway, of speculating on any kind of origin to language. (LACAN, 2012, p.67).

Benveniste's solidarity with structuralism puts him in a close relationship with Lacan and Saussure away from Freud. Among these three thinkers, Freud was the only one who did not renounce the question of origins and referred the unconscious, at least in a period of his theory, the conformation of operating within the particularity of a "primitive language" and not the universal human language. Benveniste is direct and clear on this issue:

These confusions seem to be born, in Freud, in his constant use of "origins": origins of art, religion, society, language... Freud constantly transposes what looks like "primitive" to him in the primitive as a source, as it is exactly in the story of this world that he projects what we could call a chronology of the human psyche. (BENVENISTE, 2005, p.90).

Freud, a true passionate for the question of origins, as denounces the German prefix *Ur*, often employed in its concepts, (*Ursprache*, *Urvater*, *Urverdrängung*, *Urzene*)<sup>3</sup>, was unaware of that universal structural feature of the linguistic sign, although in his text about the primitive words, he shows great interest in these properties of language. The criticisms outlined by Benveniste endorse the lacanian theory of the unconscious structured like a language, as for both language is considered a system.

We can find in *Function and field of speech and language in psychoanalysis* some passages in which Lacan also critically adopts a position in relation to the idea of a primitive language and to a historicizing perspective of linguistic and psychic phenomena. In this text, Lacan speaks of a **historical unconscious**, but quite different from the one treated by Freud in his solidarity with Abel conceptual

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<sup>3</sup> Primitive language, primal father, primal repression, primal scene. The German prefix *Ur* refers to something that is original, primitive.

sense. Lacan brings Psychoanalysis and History together in a way that can be considered innovative by postulating that both are sciences of the particularity, which deal with purely accidental facts and factitious, whose value is reduced to the gross aspect of the trauma.

It is a conceptualization of the historical phenomenon which is quite different from the chronological conception usually learnt about it. A certain timeless character of the story, the unconscious itself, is also formulated by Lacan (1998, p.262): "The events are engendered in a primary historicizing, which means that the story is already on stage where it will be staged after it has been written in the inner self and external forum." Lacan is still very directive by saying, in the thread of his exhibition, that what in Psychoanalysis is taught the subject to recognize as his unconscious is his story. The analyst helps the individual to make up the current historicizing of the facts that already determined him in his existence a number of historical twists. If these facts have a sense of historical facts, they are as recognized or censored in a certain discursive order which is already included in the unconscious. Lacan (1998, p.294) thus reaffirms the structure of language in the unconscious symbolism, but this symbolism "[...]" has the character of a universal language that echoes in all other languages, but at the same time, as it is the language that captures the desire at the exact point where it becomes human, [...] is absolutely peculiar to the subject ." Soon after, we find in Lacan (1998, p.295) a veiled criticism on Freud, which differs from the severe criticism that he made to Benveniste: "First language, we also say, what we do not mean primitive language, since Freud [...] deciphered it completely in the dreams of our contemporaries." it is not difficult to see how Benveniste was anchored in these lacanian assertions when criticizing the theme of origins in Freud.

If, on the one hand, Lacan's interest in structuralist and post-Saussurean linguistics is evident in this period, the proper linguistics methods are not used by him. According to Milner (2008), we can conclude that Lacan is interested in the general fact that language has properties established by structuralist linguistics, but is not interested in its methods. Thus, Milner (2008) also proposes a way of interpreting the axiom the unconscious is structured like a language that seems relevant: assuming that a language has structure properties (as shown in Linguistics), the unconscious has these same properties. However, for this to be true, the processes by which these properties are established are not relevant. The linguistics that interests Lacan, which is the same one recovered by Benveniste in his article, is the one that knows the language by focusing on retaining only the minimal properties of **any** system. If language is a system, Benveniste and Lacan, both following the trail of Saussure, demonstrate the incorrectness of freudian thought by articulating the unconscious processes with a specific primitive language.



To conclude, it is important to draw attention to the fact that Lacan's decision to convene a linguist to comment the freudian text About antithetical meaning of primitive words is not accidental, since this is a text strangely muted in Lacan's own work . It is a challenge to find in his work, at least in his writings and seminars yet established, any reference to that little freudian text, which has greater recognition in the linguistic medium than in the psychoanalytic one. It was in Benveniste's hands to make remarks on this opaque text, and in this review we found, in Milner's words (2008), a benvenistean moment par excellence with respect to opposite meanings.

MACHADO, B. F. V. Benveniste, Lacan e o estruturalismo: sobre o sentido antitético das palavras primitivas. **Alfa**, São Paulo, v.59, n.1, p.11-26, 2015.

- *RESUMO: Este artigo pretende evidenciar determinados aspectos da leitura estruturalista de Benveniste sobre as fundamentações linguísticas encontradas em Freud, mais propriamente em seu texto "Sobre o sentido antitético das palavras primitivas". Coloca-se em diálogo o artigo de Benveniste intitulado "Observações sobre a função da linguagem na descoberta freudiana" com as teorizações linguísticas apresentadas por Freud em seu texto supracitado. Busca-se, assim, uma interface entre os estudos linguísticos e psicanalíticos, problematizando a noção de língua primitiva trazida por Freud e confrontando-a com pressupostos da Linguística Estrutural defendida por Benveniste. A abordagem tecida é eminentemente teórica, buscando iluminar os pontos de divergência entre a concepção de linguagem na perspectiva de Freud e de Benveniste. Para atingir esse objetivo, buscou-se o estudo sobre a negação desenvolvida por Freud em seu texto "A negativa" e colocou-a em relação com as observações de Benveniste sobre o linguista Carl Abel, forte influência linguística no pensamento freudiano desenvolvido no texto "Sobre o sentido antitético das palavras primitivas". Como conclusão, torna-se possível compreender que, se a língua é uma estrutura e um sistema, ela possui um caráter universal e a-histórico, o que contesta a tese freudiana sobre a existência de línguas primitivas.*
- **PALAVRAS-CHAVE:** Linguagem. Estrutura. Inconsciente. Negação. Enunciação.

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# THE DEVELOPMENT OF THE MODALIZED EXPRESSION *PODE SER*. A CASE OF (INTER)SUBJECTIFICATION IN PORTUGUESE

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- **ABSTRACT:** Based on a functionalist approach, this paper analyzes the modalized expression *pode ser* as a complement-taking predicate which embeds a proposition (*pode ser<sub>1</sub>*) and as an independent structure (*pode ser<sub>2</sub>*), in contemporary written and spoken Brazilian Portuguese texts. We aim to identify degrees of (inter)subjectivity, revealing a process of (inter)subjectification (TRAUGOTT, 2010 among others). The analysis carried out in this paper is supported by parameters of (inter)subjectivity of modal elements (TRAUGOTT; DASHER, 2002) and by the notion of modality as a multifunctional category, serving not only to encode the speaker's attitude regarding the modalized content, but also as a pragmatic strategy, as a regulator of communicative situation. The exam reveals *pode ser* as a strongly demanded structure in interaction, a fairly requested set and also productive and useful for interpersonal relationships. The examination of semantic, discursive and morphosyntactic properties indicates a shift from syntax (*pode ser<sub>1</sub>*) to discourse (*pode ser<sub>2</sub>*), interpreted as a development of (inter)subjectification.
- **KEYWORDS:** Modalization. *Pode ser*. (Inter)subjectification. Functionalism.

## Introduction

The modalized expression *pode ser* (may be) is largely used in interpersonal relationships. Native speakers of contemporary Portuguese commonly use *pode ser* in sentences like (1) and (2)<sup>1</sup>, among others.

- (1) *Doc – pra fora você diz do Brasil?*  
*F2 – pro exterior é **pode ser** que eu não tenha tido ainda*  
*condição financeira de ir pra fora* (NURC/ RJ D2 158)

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<sup>1</sup> The occurrences are from the corpus of this research, presented further in this paper. The abbreviations shown in parentheses identify the text where the occurrences come from. Sentence (1) is from NURC, a Corpus of the Spoken Portuguese Grammar Project, "RJ" means the city of Rio de Janeiro, "D2" is the type of sample, dialogues between two speakers, and "158" is the number of the sample. Sentence (2) is from a corpus of written language and the letters in parentheses indicate the abbreviation of the title of the book, as it was determined by the Lexicography Lab (LabLex) from UNESP (FCL – Araraquara). At the end of this paper there is a list with the titles of the cited books.

'Doc – you mean outside Brazil?

F2 – abroad **it's possible** that I haven't had enough money to travel abroad yet.'

(2) — *Você está querendo provar que Deus é justo.*

*O estrangeiro pensou um pouco.*

— **Pode ser.** (DSP)

'— You are trying to prove that God is fair.

The foreigner thought a bit.

— **May be.** '

In sentences like these, *pode ser* is a modal marker, used by the speaker<sup>2</sup> to show his epistemic stance. In both cases, it signals the speaker is uncommitted to the truth of the propositional content which is within its scope. This propositional content is, then, evaluated by the speaker as an eventuality, as a possibility. In (1), *pode ser* is a complement-taking predicate which embeds a proposition (*pode ser*<sub>1</sub>) and specifies the speaker attitude towards the embedded propositional content. In (2), *pode ser* is a syntactically, illocutionally and pragmatically independent construction (*pode ser*<sub>2</sub>), which is used as a complete attitude speech act with scope over the listener's speech act. The semantic value of *pode ser* in sentences like (2) is similar to the one from the modal adverb *talvez* (maybe).

The development of other modality constructions, such as (*eu*)*acho (que)* (I think (that)) (GALVÃO, 1999), *parece (que)* (it seems (that)) (GONÇALVES, 2003), in which the more independent constructions are newer than the complement-taking ones, suggests *pode ser*<sub>2</sub> is a stage of development of *pode ser*<sub>1</sub> in which the matrix sentence is not linked to the embedded sentence anymore, becoming an independent marker of modality which is largely used in discourse. Both types of constructions cited above are known as cases of grammaticalization; in the same way, a grammaticalization process may be identified in *pode ser*.<sup>3</sup>

Verifying the grammaticalization hypothesis of *pode ser* is an interesting research direction.<sup>4</sup> However, it is not the aim of this paper<sup>5</sup>, which investigates the (inter)subjectification paths (TRAUGOTT, 2010; TRAUGOTT; DASHER, 2002; among others) present in contexts with *pode ser* which explain the development

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<sup>2</sup> Throughout this paper, we use the term "speaker" and "listener" to refer to language users, to the verbal interaction participants, irrespective of the linguistic modality, spoken or written.

<sup>3</sup> *Pode ser* refers to both uses under investigation. In order to clarify the identification, we use *pode ser*<sub>1</sub> and *pode ser*<sub>2</sub>.

<sup>4</sup> *Pode ser* in the grammaticalization framework is considered in Carrascossi (2014).

<sup>5</sup> This paper is based on the PhD dissertation (CARRASCOSSI, 2011), supervised by Professor Maria Helena de Moura Neves at UNESP – São Paulo State University. Faculty of Sciences and Modern Languages, Araraquara, funded by CNPq (grant 141343/2008-7).

of this construction. More specifically, in this paper, we analyze the syntactic, semantic and discursive properties of the construction in both syntactic contexts considered (complement-taking predicate which embeds a proposition and independent construction), which indicate an (inter)subjectification process in *pode ser*.

This research is based on a functionalist approach without following any specific functionalist theory, in the same way as Neves (2006, 2011). According to a functionalist perspective, the forms of a language are means to an end and not an end by themselves and, then, structures should be explained by their uses. The analysis carried out here includes not only the linguistic structure, but also the communicative situation, the aim of the speech event, its participants and the discourse content.

The next section presents the methodology of this research. The second and third sections show the concept of modality considering its multifunctionality and a typology of this qualification. The following sections present the notions of (inter)subjectivity and (inter)subjectification, as proposed by Traugott, the analysis of *pode ser* and the conclusions.

## Methodology

The corpus analyzed in this research constitutes of spoken and written texts in contemporary Brazilian Portuguese. In order to build a sample which represents a wide range of Brazilian Portuguese sentences, first of all we used the database from Lexicography Lab (LabLex), available at UNESP (in the city of Araraquara). We used the so-called main corpus 2 (CP2), which contains written texts produced between 1950 and 2000 belonging to different text types (dramatic, oratory, technical and journalistic texts, adds), comprising 15,378,424 words.

After describing the data of written language, we started analyzing spoken language texts. We selected 60 samples from the NURC (Corpus of the Spoken Portuguese Grammar Project) database from five state capitals from Brazil (Porto Alegre, Rio de Janeiro, São Paulo, Recife and Salvador), belonging to three different types (formal elocution (EF), dialogues between the speaker and the interviewer (DID) and dialogues between two speakers (D2)). Spoken language texts comprise 392,510 words.

Occurrences of *pode ser*<sub>1</sub> and *pode ser*<sub>2</sub> were searched in the selected texts. In order to control variables, some programs of GOLDVARB computational suite were used, especially the ones that measure frequency and cross-tabulation of factors of analysis. In the discussion presented in this paper, the following variables were verified by means of cross-tabulation carried out by GOLDVARB: type of *pode ser*

(*pode ser*<sub>1</sub>, *pode ser*<sub>2</sub>), modal values, mood and temporal flexion of the embedded clause (only for *pode ser*<sub>1</sub>) and discourse type (same person speech, interlocution).

## Modality

Due to the complexity of the theme, the investigation of modality is always a hard task. Among so many metaphors researchers have used in order to explain how difficult it is to understand this category, the one made by Perkins (1983) is worth mentioning: researching modality is like walking in a crowded room without stepping on anyone else's feet.

First of all, defining modality is not easy, since there is no consensus on its conceptualization. Besides, in despite of the large amount of researches on the topic, the modalization which operates on discourse level is not argued accordingly and this is the theoretical difficulty for the study of *pode ser*, as we discuss below.

First considerations about modality derive from Aristotelian studies, which propose some modal notions of possibility and necessity and the idea that these concepts are interdefined using negation. In the tradition of logical analysis, modalities are characterized in terms of truth relations, regardless of speaker and, for that reason, the relations established in logic do not hold in linguistic studies. However, as observed by Neves (2006), linguistic studies are very influenced by the logical perspective and hardly ever the concepts of possibility and necessity are absent in the definition of modality.

Another way to define modality is by means of factuality (LYONS, 1977; NARROG, 2005), which is also referred to as *realis/irrealis* (PALMER, 1986) or *validity* (KIEFER, 1987). According to Narrog (2005), factuality is the only criterion which distinguishes structures that belong to the category of modality from those that do not belong. In general, modality is characterized by non-factuality, that is, it does not depend on factual status, which means that a modalized utterance is neither positively nor negatively factual. However, as noted by Palmer (1986), factual statements, like the ones which express speaker's opinion (non-factual), are subjective, representing the speaker's point of view. Therefore, restricting a modality study to non-factuality is not appropriate.

We assume, in this study, that subjectivity is a fundamental criterion to define modality. The definition based on this criterion, in general, is highly accepted and is differently expressed in scholars' definitions: "[...] the speaker's opinion or attitude towards the proposition that the sentence expresses or the situation that the proposition describes" (LYONS, 1977, p.436); "[...] the manner in which the meaning of a clause is qualified so as to reflect the speaker's judgment of the likelihood of the proposition it expresses being true" (QUIRK et al., 1985, p.219); among others.

This way to understand modality is related to the traditional idea of subdividing the utterance in two parts: *dictum* (proposition, descriptive part) and *modus* (non-proposition, modality, evaluation of the speaker towards his verbalization) (LYONS, 1977). This means that every utterance which has proposition consists of *modus* and *dictum*, and those which are not explicitly modalized have an evaluation operator in their semantic structure.

Although the notion of subjectivity is in the essence of modality, which involves the expression of something which is part of speaker's knowledge, this understanding does not imply that this category is used in certain speech situations; this is another aspect to be considered. Modality expresses speaker's participation in communication, which is carried out under some interactional pressures and with some communicative aims or some discursive effects. Especially in conversation, modality can regulate verbal interaction, and this aspect is not considered in the definitions of modality as the ones presented above. The definition of modality as speaker's attitude or opinion towards the propositional content of his utterance has a short range, after all, modality:

- a) is not only speaker's attitude/opinion towards his utterance, it can also be his attitude/opinion towards listener's utterance;
- b) is not necessarily oriented to propositional content;
- c) can be highly linked to discursive domain in some utterances, and, therefore, in these cases, its main function is not expressing speaker's position, but regulating verbal interaction.

Modality expressed by means of *pode ser<sub>2</sub>*, such as the occurrence presented in (2), above, is an example of what is said in (a), since in these cases the speaker uses the construction in order to express an epistemic position in relation to the listener's utterance (in (2), *você está querendo provar que Deus é justo (you are trying to prove that God is fair)*).

In (3), below, another occurrence of *pode ser<sub>2</sub>* is presented:

- (3) — *Você é virgem, Severina?*  
 — *Virgem nasci / Virgem me criei / Se comigo não casares / Virgem morrerei – parodiava Severina, inspirada.*  
*Flodoaldo ria, coçava-lhe a vaidade:*  
 — *Você é vida como o diabo, Severina!*  
*E ia trepando como gato no cio aquele muro escuro e sólido de resistência. Adoçava a voz.*  
 — **Pode ser** ou está difícil, coração? (CR)

‘— Are you virgin, Severina?  
 — Virgin I was born / Virgin I grew up / If you don't marry me  
 / Virgin I'll die – Severina, inspired, parodied.  
 Flodoaldo laughed, conceitedly:  
 — You are life as the devil, Severina!  
 And he was climbing up the dark and solid wall of the house  
 like a cat in rut.  
 — **It can be** or it's hard, sweetheart?’

*Pode ser<sub>2</sub>*, in (3), is oriented to a content which is not linguistically expressed, but is implied in the communicative situation, and can be recovered by the interactional context (“*você se deitar comigo*” (“you make love with me”)). Modalization, in these cases, represents a pragmatic strategy of attenuation. The speaker knows that the listener resists his intentions, and modalization is one of the resources the speaker uses in order to weaken, or even to avoid, a reaction opposite to what he wants. Thus, modality in (3) is mainly a persuasion strategy, a way to regulate verbal interaction. Consequently, both statements (b) and (c) about modality are justified.

Hoffnagel's (1997) and Miranda's (2000) considerations support the treatment of modality as regulator of the verbal interaction.

After analyzing the epistemic modality in spoken Brazilian Portuguese, Hoffnagel (1997) highlights the intersubjective status of modalization: “[...] besides expressing the speaker's attitudes towards propositions, epistemic modalizers are used, as well, to communicate speaker's attitudes towards listeners.” (HOFFNAGEL, 1997, p.150). Hoffnagel (1997) analyzes two pragmatic functions of modality. The first one consists of indicating lack of adhesion in relation to the truth of the propositions as part of a facilitation strategy of a more open discussion. The other function is to weaken the utterance strength in order to protect the speaker's and listener's faces, when the subject is sensitive.

Miranda (2000) is completely against the understanding of modality as a property of the utterance. According to the author, whose studies are based on a sociocognitive approach, modality should be considered as the speaker's intention or attitude towards enunciation (not towards proposition or utterance). Modality is an operator which operates on domains within the communicative scene, it “regulates the interaction” (MIRANDA, 2000, p.144), that is, it signals the face-work, regulates the actions of the participants in interaction and the force dynamics established during communication. Modality is understood as a semiosis of the face, since in interaction there is a process of face-protection and face-threatening, and modality, a linguistic category, marks this dramatic construction. In this communicative conflict, this category is an operator of exertion of force/ removal of blockage of the expression of force (TALMY, 1988).



A proper treatment of modality should consider its role in text processing, in interaction, or communicative “tension”, which occurs between interlocutors. In this study, we propose an analysis of modality considering two directions, which are different but not dichotomic:

- a) **speaker-oriented modality**: refers to what the speaker has in mind (attitudes, beliefs, judgments, used to encode experience, to specify attitude towards the validity of the modalized content in the content level.
- b) **listener-oriented modality**: indicates speaker’s communicative strategy, used to regulate verbal interaction, to influence interlocutors.

The first understanding is related to the more traditional way to consider modality, that is, its definition as the speaker’s attitude or opinion towards his utterance (LYONS, 1977; QUIRK et al., 1985, among others). In this case, modality indicates subjectivity.

The listener-oriented modality has the function highlighted by Hoffnagel (1997) and Miranda (2000), that is, regulating the communicative situation, indicating face-saving and face-protection processes (BROWN, LEVINSON, 1987). In this case, the intersubjective status of modality is emphasized.

We understand that both orientations of modality correspond to Halliday’s (1970) ideational and interpersonal functions, respectively, which do not exclude but complement each other. Sentences are built simultaneously as message as well as interaction event and “[...] there is a semantic region where the two functions, the ideational and the interpersonal, overlap, that of speaker’s commentary on the content.” (HALLIDAY, 1970, p. 349).

Both functions are like extreme points of a *continuum*, within which there are no strong boundaries between the ideational and the interpersonal domains. In other words, there is no dichotomic relation between both functions, although one of them may prevail in certain context.

In the ideational function, language is used to express content related to the speaker’s experiences, in real or mental world (HALLIDAY, 1970). Neves (1997) says that, in the ideational component, experiences from the mental world may involve reactions, cognitions, perceptions, as well as linguistic acts of speaking and understanding.

In the interpersonal function, on the other hand, language is used as a means of participating in speech situation, that is, language is related to the establishment of social roles in communication, it is a means of establishing relations between speaker and listener (HALLIDAY, 1970). The interpersonal element, “[...] in a larger context, establishes and maintains social roles, that are, after all, inherent to language.” (NEVES, 1997, p.13).

## Deontic and epistemic modalities

Although there are many typological proposals on modalities, deontic and epistemic domains, the ones important to this study, represent, in general, the basic distinction.

The deontic modality is related to behaviors and expresses values such as obligation and permission; it is characterized by the presence of a (deontic) source of authority, dynamic predicates (actions) and controller subjects. These particularities are recognized by scholars and appear differently in their studies. According to Lyons (1977), the deontic modality indicates the necessity or possibility of acts performed by morally responsible agents. Quirk et al. (1985) associate this modality to a controller subject, and Palmer (1986) relates it to an element of will.

The epistemic modality is concerned with knowledge, it refers to speaker's (un)commitment towards a certain content, involving beliefs, judgments, opinion (LYONS, 1977; QUIRK et al., 1985; PALMER, 1986; HENGEVELD, 1988, 2004). A relevant discussion for this study is related to the distinction about the subjective epistemic modality and objective epistemic modality.

Lyons (1977) subdivides the epistemic category into objective and subjective to include the alethic modality. Defined in modal logic, the alethic modality refers to the notion of existence and involves determining the truth of propositions. The objective epistemic modality, which Lyons compares to the alethic modality, expresses known or scientifically proven knowledge. The subjective epistemic modality, related to speaker's attitude towards the propositional content of his utterance, expresses the speaker's opinion. A sentence such as *Alfred may be unmarried* (LYONS, 1977, p.797), interpreted as a subjective epistemic modality, indicates the speaker is uncertain about Alfred's marital status and, then, "be unmarried" is a hypothetical fact. Considering the objective epistemic modality reading of the sentence above, it would indicate that, according to the speaker, there is a mathematically computable chance that Alfred is unmarried and, in this case, the speaker knows, not simply thinks or believes, that there is the possibility of Alfred being unmarried.

The distinction between objective and subjective modalization, in these terms, is maintained by Hengeveld (1988, 2004). The author explains that, in the objective epistemic modality, speaker evaluates the actuality of the state of affairs designated by a predication (HENGEVELD, 1988). To do so, the speaker compares the state of affairs designated by a predication and his knowledge about possible situations or about the actual world. The subjective epistemic modality is characterized in terms of the speaker's commitment to the truth of the predication content he presents to be considered; the state of affairs is a speaker's belief, who is the source of information (HENGEVELD, 1988).

Nuyts (1992, 1993, 2001) recognizes the distinction between an objective modal qualification (the one deriving from mathematically estimated results and from verifiable possibilities of a state of affairs occurrence) and a subjective one (the one deriving from subjective suppositions that a state of affairs may occur), but criticizes the distinction between objective and subjective epistemic modalities as defined by Lyons (1977) and Hengeveld (1988). According to Nuyts, the distinction is related to the different sources of information and not to different types of modality, as Lyons (1977) and Hengeveld (1988) consider. Nuyts says that every modal judgment is based on evidence and what may change is the quality of the evidence, but “[...] without evidence, no evaluation of the probability of the SoA is possible – one could then only say that one does not know.” (NUYTS, 1993, p.946).

Nuyts (1992, 1993, 2001) proposes treating the difference between objective and subjective modality in terms of subjectivity and intersubjectivity<sup>6</sup> (the author prefers this term rather than objectivity). In the subjective epistemic understanding, the speaker is the source of knowledge and, in the intersubjective understanding, the source is a larger group of people, in which the speaker may be included. This way to understand the distinction between subjective and objective epistemic modality seems to be appropriate and, therefore, supports the analysis of *pode ser* in terms of the distinctions between the objective and subjective epistemic readings.

### **Subjectification, intersubjectification and modalization**

In previous works, Traugott (1982, 1989, 1995a, 1995b) studied subjectification process as being linked to grammaticalization, differently from the author’s more recent studies (TRAUGOTT, 2010), in which, although a strictly relation between the processes is maintained, the boundaries between them are more well-defined.

Grammaticalization is understood as a process of linguistic change by means of which a word or a lexical expression becomes more grammatical or, if it is already grammatical, becomes a yet more grammatical form (HOPPER; TRAUGOTT, 1993). According to Traugott (1982, 1989, 1995a, 1995b), subjectification is linked to grammaticalization in a way that, when changes take place in grammaticalization, there is an increase in subjectivity, during interaction between speaker and listener.

Considering the three functional domains of language as proposed by Halliday e Hasan (1976) (*ideational*, which serves to denotation; *textual*, which refers to discourse organization; *interpersonal*, which is related to the speaker’s attitude),

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<sup>6</sup> Nuyts (1992, 1993, 2001) uses the terms subjectivity and intersubjectivity in a totally different sense compared to the one used by Traugott (2010; among others), whose postulates support the analysis of *pode ser*. Nuyts defines (inter)subjective in terms of the type of knowledge the speaker has for his modal qualification. According to Traugott (2010), subjectivity refers to the meaning encoding based on the speaker’s attitude and intersubjectivity is related to the meanings which capture the speaker’s attention in relation to the listener.

Traugott (1982) suggests that, at early stages of grammaticalization, the main path of change is the development of items which have a more propositional meaning to items with a textual or an expressive meaning, or both, in the following order: **(propositional) > [(textual) > (expressive)]**. The hypothesis is that change is unidirectional; for instance, the opposite direction, expressive > textual > propositional, is very unlikely in the history of any grammatical item (TRAUGOTT, 1982, 1989). Traugott (1989) proposes the following three tendencies of semantic-pragmatic changes: a) meanings situated in the external described situation > internal (evaluative/perceptual/cognitive) situation; b) meanings situated in the described external or internal situation > textual and metalinguistic situations; c) meanings tend to become increasingly situated in the speaker's subjective belief of attitude towards the proposition. In this semantic-pragmatic path of change, meanings tend to refer less to descriptions of concrete situations and more to discursive situations, less to objective situations and more to the subjective ones. In other words, meanings show increasingly the way the speaker builds the utterance towards the listener, this is the reason why it is said there is a **pragmaticalization of meaning** (TRAUGOTT, 1995b).

In spite of the interrelationship, both processes are understood as independent and the strong relationship between them, as Traugott (2010) says, is suggested since grammaticalization involves recruitment of items to mark the speaker's perspective on different factors, such as "[...] whether the situation is relativized to the speaker's beliefs (modality, mood)." (TRAUGOTT, 2010, p.40).

Traugott and Dasher (2002) propose the distinction between "subjectivity" and "intersubjectivity". According to the authors, semantic change follows predictable paths in languages, revealing meanings increasingly based on the speaker's subjective and intersubjective attitude.

Traugott (2010) says the intersubjectification process follows subjectification and, by means of both mechanisms, "[...] meanings are recruited by the speaker to encode and regulate attitudes and beliefs (subjectification) [...]", and, "[...] once subjectified, may be recruited to encode meanings centred on the addressee (intersubjectification)." (TRAUGOTT, 2010, p.35). Intersubjectification, therefore, does not occur without subjectification. Thus, Traugott (2010, p.35) suggests that the meanings of the items develop following the direction:

### **non-/less subjective > subjective > intersubjective**

Although (inter)subjectification is a historical process of change, verified over time, it is also possible to organize a synchronic cline of (inter)subjectification (TRAUGOTT, 2010), based on criteria that determine a development from less to more (inter)subjective meanings.

As a hypothesis, the processes occur in the flow of speech, in verbal interaction, by means of what Traugott and Dasher (2002) call **invited inferencing**, a metonymic process, largely accepted as an important mechanism which underlies processes of grammaticalization and (inter)subjectification. The notion of metonym is extended from concrete to pragmatic contexts of conversational and conventional inference. The contiguity involved in this case is based on the discourse world. An example is the development of **since**, analyzed by Traugott e König (1991). Originally, the preposition only established a temporal relation. In a certain moment, a causal reading was inferred from the temporal one. In some contexts, both readings are possible. With its frequent use, the causal interpretation of *since* becomes conventionalized and the connective starts to be used in contexts in which the only interpretation is the causal one.

The development from deontic to epistemic meanings, historically proved in languages such as English (TRAUGOTT, 1989; SWEETSER, 1990; BYBEE; PERKINS; PAGLIUCA, 1994; HEINE, 1995; TRAUGOTT; DASHER, 2002; among others), is understood as resulting from the processes of subjectification (TRAUGOTT, 1989; TRAUGOTT; DASHER, 2002) and grammaticalization.

Regarding subjectification of modal elements, the change deontic > epistemic is, by itself, a process of subjectification, since, in this path, the meanings become more centered on speaker's attitudes and beliefs. However, the gradual status of subjectivity should be highlighted and, therefore, Traugott (1989) refers to modality in terms of "more" or "less" subjective or, yet, "weakly" or "strongly" subjective. The author says that, when epistemic meanings arise, they are weakly subjective and, as they develop, they become more strongly subjective.

In Traugott e Dasher (2002), there is a detailed analysis of modal meanings revealing subjectification. Two factors are defined for verifying distinct degrees of subjectivity: a) type of modal force (deontic, epistemic); b) source of modal force (external to the speaker – religion, laws, social rules, etc. – or internal to the speaker). Considering deontic meanings, for instance, the modal is more subjective if the deontic force is the speaker and less subjective if there is a social, a religion or any other external force implied or specified. Epistemic meanings also reveal a scale in terms of subjectivity, being more subjective when the modal qualification is based on speaker's personal expectation or shows a speaker's confidence and less subjective when based on a wider group expectation or if they involve a more general opinion. The distinction between objective and subjective epistemic, as proposed in the previous section, is related to this scale of subjectivity.

Intersubjective meanings, according to Traugott (2010) and Traugott and Dasher (2002), refer to the speaker's attention to the reception of his utterance by the listener, more particularly refer to the notion of **hedges**, to the saving of listener's face.

Based on the aforementioned points, we aim to identify the degrees of (inter) subjectivity of *pode ser*, which can be interpreted as signals of a process of (inter) subjectification.

### The degree of (inter)subjectivity in *pode ser*

After presenting the theoretical background and the methodology of this research, this section is dedicated to the analysis of the modalized expression *pode ser*, emphasizing the shift of the construction towards the discourse component, understood as (inter)subjectification (among others: TRAUOGOTT, 2010; TRAUOGOTT; DASHER, 2002).

From the total of 357 occurrences of *pode ser* found in the corpus, 333 sentences were collected in the written sample and 24 in the spoken sample. The distribution of the 357 occurrences between the two syntactic contexts considered in this study is the following: 63% (226/357) of the uses of *pode ser* are cases of complement-taking predicate which embeds a proposition (*pode ser*<sub>1</sub>), exemplified in (4), and 37% (131/357) of the occurrences are uses of *pode ser* as independent construction (*pode ser*<sub>2</sub>), exemplified in (5) and (6).

- (4) — *Somos eternos, Talbo. As Vozes me contaram isto, no tempo em que eu podia ver seus corpos e seus rostos. Talbo conhecia o Dom de sua mulher. Mas fazia muito tempo que ela não tocava no assunto. Talvez fosse o delírio. — Mesmo assim, nenhuma vida é igual à outra. E **pode ser** que não nos encontremos nunca mais. Preciso que você saiba que te amei a minha vida inteira. Te amei antes de te conhecer. Você é parte de mim.* (BRI)

‘— We are immortal, Talbo. The voices told me that, when I could see their body and their faces. Talbo knew his wife’s gift. But there was a long time since she didn’t talk about the subject. Maybe it was the delirium. — Even so, no life is the same as another. And **may be** that we will never meet again. I need you to know that I loved you during my whole life. I loved you before I knew you. You are a part of me.’

- (5) *Inf – o::sim o cavalo ele naturalmente ele tem o::...ou o freio ou bridão...são duas coisas diferentes também...agora...o que usa normalmente aqui::no interior...é o freio...e o::o freio é...ahn consiste vamos dizer num metal...que entra na boca do cavalo...esse é o freio propriamente dito...agora...para manter*

*esse metal na boca do cavalo...existe::uma cabeçada...feita de couro...que muitas vezes é chamada em conjunto com o freio de freio...mas quando se quer distinguir...o::...aquilo que...o ferro...que entra na boca do cavalo...do restante do freio...então usa-se a palavra cabeçada...a cabeçada por sua vez tem::também algumas partes...porque tem uma que vem...logo::na frente do::...da cabeça do cavalo...que se chama::...cabeção...depois tem uma que vai mais em cima da própria cabeça do cavalo que é a testada...e além disso tem uma...um outro courinho que sai...de cima...e passa por baixo do...da cabeça...ah...próximo ao pescoço...que também tem um nome ahn::... — puxa eu não sei como é que eu posso ter esquecido esse nome... — é alguma coisa como:: ... gargantilha mas não é gargantilha hoje é... ((risos)) é o que as mulheres usam*

*Doc – **pode ser**...daí o exemplo*

*Inf – mas poderia ser mesmo...talvez até...a::a palavra fosse essa gargantilha...e que agora esteja lembrando mas estou ligando com a coisa que as mulheres estão usando né? (NURC/ SP DID 18)*

*'Inf – the::yes the horse it naturally it has the::...either the bridle or the rein...these are two different things also...now...what it's commonly used here::in the countryside...is the bridle...and the::the bridle is...ahn consists of let's say a metal...that is put inside the horse's mouth...this is the bridle itself...but...in order to maintain this metal inside the horse's mouth...there is::a headstall...made with leather...which is several times called as being part of the bridle...but when someone wants to distinguish...the::...the thing that...the part...which is inside the horse's mouth...from the other part of the bridle...then it's used the word headstall...the headstall on its turn has::also some parts...there is one which is...right::in front of::...the horse's head...there is another one which is over the horse's head itself...and besides that there is a...another piece of leather that comes... from above...and goes under the...the head...ah...next to the neck...which also has the name ahn::... – I don't know how I could forget this name...—it's something like::...necklace but it isn't necklace nowadays it is...((laughs)) it is what women use*

*Doc – it **may be**...give me the example*

*Inf – but it could be...maybe even...the::word was this necklace...and now I can remember but I am relating it to something women wear.'*

- (6) — *Tem anil?*  
 — *É botequim, limitou-se a responder o proprietário, palitando a boca.*  
 — *Então me dê uma cachaça, acrescentei como náufrago. O mulato apanhou a garrafa, estendeu-se um copo embaçado:*  
 — *Dupla?*  
 — **Pode ser.** (BH)
- ‘— Have you got indigo?  
 — It’s a pub, the owner only said that, using a stick to clean the teeth.  
 — Then give me a rum, I added as a shipwrecked person.  
 The man caught the bottle and, offering me a dull glass, he asked:  
 — Double?  
 — **May be.**’

Occurrences of *pode ser*<sub>1</sub> are always interpreted as epistemic, such as (4). On the other hand, *pode ser*<sub>2</sub> expresses both epistemic (example 5) and deontic (example 6) values. The distribution of the analyzed occurrences between both modal domains is presented in Table 1:

**Table 1** – *pode ser* in the epistemic and deontic domains

	<b>Epistemic domain</b>	<b>Deontic domain</b>	<b>Total</b>
<b>Pode ser</b> <sub>1</sub>	226 (100%)	-	226 (100%)
<b>pode ser</b> <sub>2</sub>	111 (85%)	20 (15%)	131 (100%)

**Source:** Made by the author.

The epistemic domain not only predominates in *pode ser*<sub>1</sub>, a consolidated way of epistemic evaluation, but also in *pode ser*<sub>2</sub>: only 20 (15%) occurrences are deontic, as the utterance (6).

The epistemic evaluation marked by *pode ser* is always related to lack of certainty. By using *pode ser*, the speaker evaluates the content within its scope as possible, not committing himself to the truth of what is said and, then, revealing little adhesion to the utterance. In (4), the embedded clause (*não nos encontraremos nunca mais* (*we will never meet again*)) is presented as a speaker’s judgment, who considers uncertain the propositional content. Likewise, in (5), by using *pode ser*<sub>2</sub>, the speaker accepts as possible what was said by the listener (the name of the object described may be necklace).



The evaluative, hypothetical nature of *pode ser*<sub>1</sub> requires a specific mood-temporal organization for the construction. In the great majority of the embedded clauses, the verb is in the present subjunctive, as can be seen in (4). Table 2 shows the results of the analysis of the mood-temporal flexion of the embedded clause in *pode ser*<sub>1</sub>:

**Table 2** – Tense and mood of the verb of the clause embedded in *pode ser*<sub>1</sub>

Present subjunctive	176 (80%)
Compound past perfect subjunctive	18 (8%)
Imperfect subjunctive	11 (5%)
Past perfect indicative	7 (3%)
Present indicative	4 (2%)
Future indicative	1 (less than 0.5%)
Total	216 (100%) <sup>1</sup>

**Source:** Made by the author.<sup>7</sup>

The high frequency of present subjunctive (80%) shows a mood-temporal correlation between the main and the embedded clause in which the semantic value of the matrix clause *pode ser* (eventuality, doubt, uncertainty) determines the verbal flexion of the embedded clause. Occurrences of *pode ser*<sub>1</sub> with embedded clause in the indicative mood are not frequent, whereas the ones in the subjunctive mood sum up to 93% (80% in present subjunctive, 8% in compound past perfect subjunctive, 5% in imperfect subjunctive). This is an expected behavior of embedded clauses: the semantics of the main predicate implies certain features in the embedded clause (NOONAN, 1985; GONÇALVES; SOUSA; CASSEB-GALVÃO, 2008; among others).

Different degrees of subjectivity may be identified depending on the type of knowledge on which the speaker is based in order to express his evaluation, which determines the nature of the modal force. Consider, initially, the occurrence in (7), with *pode ser*<sub>1</sub>:

- (7) *Infelizmente a tendência atual não é esta. A constante pressão do marketing da indústria farmacêutica aliada à falta de informações e conscientização sobre o problema da resistência bacteriana*

<sup>7</sup> A number of 226 occurrences of *pode ser*<sup>1</sup> were analyzed and there were cases in which the embedded clause was suspended (for example: *Estas figuras giram; se tiverem algum parafuso no centro, pode ser que...* [These pictures turn around; if there is a screw in the center, it may be that...]) or there was no overt verb (for instance: *pode ser que sim* [may be yes]), for this reason, the total considered in Table 2 is 216.

*por parte da classe médica já estão levando a um uso abusivo da gentamicina com o consequente aparecimento de patógenos a ela resistentes. Isto pode levar a uma modificação do quadro e **pode ser** que tenhamos que utilizar, em primeira escolha, os novos aminoglicosídeos. (ANT-T)*

‘Unfortunately the current tendency is not this one. The constant pressure of the marketing of pharmaceutical industry associated to the lack of information and consciousness about the problem of bacterial resistance by part of the medical class is already leading to an abusive use of gentamicin with the consequent appearing of pathogens resistant to it. This can lead to a modification of the scenery and **may be** that we have to use, as a first choice, new aminoglycosides.’

In this occurrence, *pode ser<sub>i</sub>* marks an evaluation based on data, on objective facts, and expresses possibility contextualized in logical reasoning: with the appearance of pathogens resistant to gentamicin, it is possible that there will be the necessity of using new aminoglycosides. This is the evaluation of a specialist based on scientific knowledge about the bacterial resistance. In (8), *pode ser<sub>i</sub>* shows a higher degree of subjectivity, since the speaker is based on his cultural knowledge and infers about what would be possible to happen:

- (8) *Chorar é a sua manifestação de desagrado diante de sensações que para ele são insuportáveis. A maior parte das vezes esta inquietação está relacionada com a hora da mamada e pode ser traduzida como fome. Mas **pode ser** que o bebê chore e se desespere depois de mamar. Serão cólicas, alguma sensação desagradável relacionada com seu tubo digestivo? (PFI)*

‘Crying is the manifestation of dislike of feelings which are unbearable for him. Most of the time this inquietude is related to the time of nursing and it can be understood as hunger. But it may be that the baby cries and becomes impatient after nursing. Are these colics any disgusting sensation related to his digestive tube?’

In (8), *pode ser<sub>i</sub>* does not signal that it is a particular speaker’s thought, but something he knows is possible based on his knowledge about the world, about a baby behavior, in the situation described in the utterance (*the baby cries and becomes impatient after nursing*).

In (7) and in (8), *pode ser<sub>i</sub>* expresses objective epistemic modality, in which the source of information is external to the speaker. In this kind of modalization,

the speaker evaluates the actuality status of the state of affairs based on his knowledge about the world, about possible situations. The occurrence in (8) is understood as more subjective than the one in (7), since it refers to a common knowledge, which belongs to a community of which the speaker is part, whereas (7) involves knowledge which belongs to scientific domain, totally independent from the speaker.

*Pode ser*<sub>1</sub> also expresses subjective epistemic modality, in which the source of information is the speaker himself, who transmits his particular belief, as exemplified in (9):

- (9) *Uma vez no Rio, eu estava de férias passeando no carro da Nesita, quando parou um ônibus ao meu lado. Olhei e tinha uma menina linda me olhando. Dei uma piscada pra ela e ela retribuiu com um beijinho. Então dei uma lambida nos meus lábios e ela me fez uma careta. Depois rimos, e, quando o ônibus partiu, ela mandou um tchauzinho bem íntimo. Fiquei morrendo de vontade de parar o carro, subir no ônibus pra conhecer a garota. Deve ser uma menina legal, pra corresponder assim a uma brincadeira. Mas deixa ela ir embora. **Pode ser** que uma palavra estrague tudo. Essa cena nunca mais saiu da minha cabeça, nem o rostinho bonito dela. (FAV).*

'There was a time, in Rio, I was on vacation riding Nesita's car, when a bus stopped next to me. I looked at it and there was a beautiful girl looking at me. I blinked at her and she sent me a kiss. Then I licked my lips and she made me a face. After that, we laughed, and, when the bus left, she said a very intimate goodbye to me. I wanted to stop the car, take the bus in order to meet the girl. She might be a nice girl because of the way she behaved. But, let her go away. It **may be** that a word messes everything up. This scene has never gone from my mind, neither her beautiful face.'

By using *pode ser*<sub>1</sub> in (9), the speaker expresses a conjecture, a supposition about certain situation (*uma palavra estragar tudo* (a word messes everything up)), something that he believes is possible.

*Pode ser*<sub>1</sub> thus, indicates what the speaker knows that is possible, such as in (7) and in (8) – objective epistemic modality – or what he believes is possible, like in (9) – subjective epistemic modality –, these uses of *pode ser*<sub>1</sub> reflect different degrees of speaker's subjectivity (lower degree in the first cases and higher in the last one). Either by expressing a personal opinion, or marking an evaluation based on data external to the speaker or even based on logical reasoning, *pode*

*ser*<sub>1</sub> marks speaker's uncommitment in relation to the evaluated content, and this feature is also present in *pode ser*<sub>2</sub>, as it was shown in the epistemic occurrences in (2) and in (5), presented above.

However, in *pode ser*<sub>2</sub> it is not verified the same different degrees of subjectivity which are seen in the analysis of *pode ser*<sub>1</sub>. The epistemic *pode ser*<sub>2</sub> is always the expression of the speaker's evaluation based on his own knowledge, that is, it is always the expression of a particular stance, characteristics of the subjective epistemic modality. In the interlocution, recovering something said by the listener, *pode ser*<sub>2</sub> represents accordance, agreement with the speech act performed before. That is, *pode ser*<sub>2</sub> is a highly subjective use, since it always reveals a speaker's particular belief and, at the same time, always expresses subjectivity, for representing the speaker's evaluation in relation to the listener. Less frequent cases in which *pode ser*<sub>1</sub> expresses the speaker's stance in relation to what is said by the listener (in the same way as *pode ser*<sub>2</sub>), are exemplified below:

- (10) — *Mas 'tô achando muito custoso Seu Isé chegar vivo até aqui!*  
 — *Sei lá... **pode ser** que não, mas **pode ser** também que sim.*  
 (CHA)

' — But I think it's very hard Isé arrives here alive!  
 — I don't know... it **may be** not, but it **may be** yes as well.'

- (11) *Luiz Raul – Sempre tive a impressão que você tem um profundo desprezo pela gente... Você sempre age como se fosse melhor que todos nós... Tão superior, tão grave, tão coerente...*  
*Léo – Isso não é verdade.*  
*Luiz Raul – **Pode ser** que não seja, mas é a minha impressão...*  
 (RE-D)

'Luiz Raul – I've always had the impression that you have a profound contempt for us... You always act as if you were better than all of us... So superior, so coherent...  
 Léo – This is not true.  
 Luiz Raul – **May be** not, but this is my impression...'

In (10) and (11), the speaker uses *pode ser*<sub>1</sub> in order to stand in relation to the content presented by the listener, what makes very clear the intersubjective status of these two occurrences.

There is, yet, another intersubjectivity scale these utterances highlight. In (10), *pode ser*<sub>1</sub> introduces vicarious words (*yes, no*) which refer back to the listener's speech act expressing its (non-)validity. Both modal sentences, the negative (*pode ser que não* (*may be not*)) and the positive one (*pode ser também que sim* (*may*

be yes as well)), reinforce the doubt expression (*sei lá (I don't know)*) used in the beginning of the sentence. Yet, the sentences are connected by the adversative conjunction *mas (but)*, whose meaning effect involves certain disregard for the previous excerpt (NEVES, 1984). All these elements reveal that the speaker has no precise opinion about what was presented to him (*'tô achando muito custoso Seu Isé chegar vivo até aqui! (I think it's very hard Isé arrives here alive!)*) and, because of that, the utterance is modalized in order to mark the speaker's uncommitted epistemic stance in relation to the content presented by the listener (speaker-oriented modality).

In (11), on the other hand, modalization has another function, it is listener-oriented. The speaker refers back to the listener's argument, gives it some validity (*pode ser que não seja (verdade) – May be it's not (the truth)*), and in what follows introduces the final argument (*mas é a minha impressão (but this is my impression...)*), which reinforces the stance previously assumed (*sempre tive a impressão de que você sente um profundo desprezo pela gente (I've always had the impression that you have a profound contempt for us)*). In this case, *pode ser<sub>1</sub>* represents a false admission, which takes place in the conversational world, in which the speaker pretends to agree with a divergent position in order to reduce the negative impact his assertion may have. This movement of "forward and backward" consists of a strategy of controlling divergent points of view in discourse, and involves face-saving process.

In (11), *pode ser<sub>1</sub>* is used as an attempt to avoid the listener's possibly unpleasant reactions, that is, it involves the speaker's concern about the reception of his utterance by the listener, about listener's image. For this reason, the sentence in (11) is considered more intersubjective than occurrences like the one presented in (10).

The analysis of the data of this study reveals that *pode ser<sub>2</sub>* is an important discursive mechanism for interpersonal relations. It can also be used to express the speaker's accordance with situations which imply control. In these contexts, the speaker chooses a deontic source, which can permit or not permit the accomplishment of certain actions which involve offerings, proposals, invitations etc., such as the one in (12), below. Considering that the deontic source is, in these cases, the speaker himself, *pode ser<sub>2</sub>* expresses a more subjective deontic meaning.

- (12) *W: Que tal tomarmos alguma coisa, cloutor? Uma cerveja, uma batida? Meu colega oferece!*  
*P: Eu?*  
*O: **Pode ser...** Pá animar!*  
*P: Mas Waldemar!*  
*W: Ótimo! Vamos entrar aqui mesmo. Depois o senhor procura o tal hotel. (PED-D)*

'W: What about having something to drink, doctor? A beer, a cocktail? My friend is offering us!

P: Me?

O: **May be**... To cheer up!

P: But, Waldemar!

W: Great! Let's come into here. Later on you look for a hotel.'

Although *pode ser*<sub>2</sub>, as illustrated in (12), marks the speaker's agreement in a high level, being compared to an adverb, such as "*sim*" (yes), the value of doubt, of uncertainty, is, somehow, present. By using *pode ser* in order to allow an action accomplishment, an invitation acceptance, the speaker reveals certain indifference in relation to the process; there is a lack of conviction in relation to what he wants or, yet, he accepts something unwillingly.

Uses of deontic *pode ser*<sub>2</sub> with a high degree of intersubjectivity mark speaker's concern about the reception of his utterance by the listener. These are utterances in which *pode ser*<sub>2</sub> is placed in the end of the sentence, as a question. This is a way to mitigate the previous speech act which is threatening to listener's negative face, since it is always something the speaker wants from the listener (a request, and offer, an imposition etc.). The use of *pode ser* with the attenuation and/or politeness function, in these cases, reflects that the speaker predicts the listener may have an objection or a rejection in relation to what the speaker wants:

(13) *No copo dela, a cereja nadava no Martini. Parecia ótima, também*

— *Escute, estou duro. – esclareci.*

— *Ah, não se preocupe, eu pago a minha conta – disse ela.*

— *Não é isso – disse eu – Queria que você me pagasse um Martini, **pode ser?***

*Ela chamou o garçom, passou o copo dela para mim, e encomendou outro. Depois me olhando e sorrindo do lado de lá da mesa. (LC)*

'In her glass, the cherry was swimming in the Martini. She looked great as well.

— Listen to me, I'm short of money – I said.

— Ah, don't worry, I'll pay my bill – she said.

— This is not the problem – I said – I would like you to pay me a Martini, **may it be?**

She called the waiter, gave me her glass and asked another one. After that, she looked at me and smiled from the other side of the table.'

In (13), *pode ser<sub>2</sub>* is an attenuation marker used to reduce the negative force the speaker knows may arise from his request (*Quería que você me pagasse um Martini (I would like you to pay me a Martini)*). By using the interrogative sentence *pode ser?* (*may it be?*), the speaker changes the illocutionary force of his previous speech act, making his request more polite. These uses of *pode ser<sub>2</sub>* correspond to tag questions, as considered by Fraser (1980). According to this author, tag questions are among the attenuation devices, since they attenuate the illocutionary force of the utterances which precede them, mitigating their imposing status. Dik (1989) describes this grammatical operation as illocutionary conversion, which consists of changing the basic illocution of the previous sentence into a derived illocutionary value. Modalization, in cases like the one in (13), clearly serves to protect listener's face and is, likewise, listener-oriented.

As demonstrated, both *pode ser<sub>1</sub>* and *pode ser<sub>2</sub>* express subjectivity and intersubjectivity, but the analysis suggests that *pode ser<sub>1</sub>* tends to mark subjectivity and *pode ser<sub>2</sub>* is recognized as intersubjectivity marker. In other words, *pode ser<sub>1</sub>*, in general, expresses speaker's stance towards his own propositional content (subjectivity) and *pode ser<sub>2</sub>* always expresses speaker's stance towards the listener or towards a speech act (intersubjectivity). Although both uses may assume highly pragmatic functions, such as avoiding rejection and seeking approval, *pode ser<sub>2</sub>* seems to be the most employed form in these cases.

The prototypical context in which *pode ser* is used is the interlocution situation, what is reflected in the data presented in Table 3:

**Table 3** – The distribution of *pode ser* in continuous discourse and in interlocution

	<b><i>Pode ser<sub>1</sub></i></b>	<b>Epistemic <i>pode ser<sub>2</sub></i></b>	<b>Deontic <i>pode ser<sub>2</sub></i></b>	Total
Continuous discourse	89 (39%)	24 (22%)	-	113 (32%)
Interlocution	137 (61%)	87 (78%)	20 (100%)	244 (68%)
Total	226 (100%)	111 (100%)	20 (100%)	357 (100%)

**Source:** Made by the author.

The functionality of *pode ser* is highly related to the conversational flow (the real one, in the case of spoken texts, or the simulated one, in the case of written texts), especially when it is not linked to an embedded clause (*pode ser<sub>1</sub>*) and is used as an independent construction (*pode ser<sub>2</sub>*). The interlocution situations predominate in contexts in which *pode ser<sub>1</sub>* and *pode ser<sub>2</sub>* are used with epistemic

value (61% and 78% respectively) and are the only context in which the deontic *pode ser*<sub>2</sub> is used (100%). On the other hand, the frequency of occurrence in continuous discourse is expressive in *pode ser*<sub>1</sub> (39%), low with epistemic *pode ser*<sub>2</sub> (22%) and zero with deontic *pode ser*<sub>2</sub>.

The frequency of use of *pode ser*<sub>2</sub> in continuous discourse should be carefully considered, since, even in such a context, the construction represents a speech act in response to another one, most of the time, in a simulation of what would be a dialogue. Continuous discourse is, in principle, a discourse of one only voice, however, in occurrences of *pode ser*<sub>2</sub>, the speaker talks to himself or even brings different voices to his utterance and interact with them. This is the case of occurrences in (14) and in (15):

- (14) *Não será isto, pergunto-me, um sinal do fim dos tempos, uma evidência de que o Messias está para chegar – tal como mencionado no Livro das Origens (“Quando o Mal atingir o clímax, o Messias chegará, montado em seu cavalo branco, separando com sua espada de luz os justos dos pecadores”)?*  
**Pode ser.** *De qualquer forma, porém, e considerando o que já aconteceu, o Messias está atrasado. O que não seria de admirar, com este infernal trânsito paulista. Como conseguirá ele subir até aqui? Entrará, a cavalo, no elevador?* (CEN)

‘Isn’t it? I ask myself, an evidence of the end of times, a signal that Messiah is about to come – as mentioned in Genesis (“when the evil reaches a critical point, Messiah will come, riding his white horse, separating with his light sword the honest people from the sinners”). **It may be.** Anyway, though, and considering what already happened, Messiah is late. What is already expected, considering the bad traffic in São Paulo. How will he go up here? Will he enter the elevator on horseback?’

- (15) *Fecho a cortina do box, e o vapor vai me comendo. Vou perdendo de vista o meu corpo e o resto. Um dia, na sauna, meu amigo disse que os antigos chamavam esses banhos de lacônicos.*  
**Pode ser.** *Não sei o que uma coisa tem a ver com a outra. Só sei que vou levar uns bons anos até acertar com outro chuveiro igual a este.* (EST)

‘I close the shower curtain, and the steam spreads out all over the place. I stopped seeing my body and everything. There was a day, I was in a sauna, and a friend of mine said the ancient people used to call this kind of bath laconic. **It may be.** I don’t know what one has got to do with the other. I only know that it’ll take some years until I find a shower like this one.’



In (14), the speaker considers different arguments by using a dialog with himself, that is, *pode ser<sub>2</sub>* is a speech act appreciative of another speech act, both performed by the same speaker. It is a reasoning in which the speaker makes a questioning (*Não será isto, pergunto-me, um sinal do fim dos tempos, uma evidência de que o Messias está para chegar – tal como mencionado no Livro das Origens [...]?* (*Isn't it, I ask myself, an evidence of the end of times, a signal that Messiah is about to come – as mentioned in Genesis [...]?*)) which is answered by himself with *pode ser* (*it may be*).

The most common situation in which *pode ser<sub>2</sub>* is used in continuous discourse involves reference of a speech act which is not from the speaker, but is brought to the utterance by means of indirect discourse, as it occurs in (15) (*meu amigo disse que os antigos chamavam esses banhos de lacônicos* (*a friend of mine said the ancient people used to call this kind of bath laconic*)). These are utterances very similar to dialogic situations, because there is the indirect insertion of what someone else said.

This way, *pode ser<sub>2</sub>* is considered as a construction highly related to the communicative interaction, this necessarily implies interlocution, exchange, and it is an expression which encodes intersubjectivity. Since it operates in the discourse level, its scope may be unclear, only recognizable in the interactional flow, as, for example, in occurrence in (3), previously analyzed and repeated below just for convenience, in which *pode ser<sub>2</sub>* modalizes a content that is identified in the interactional context, but is not linguistically expressed.

- (3) — *Você é virgem, Severina?*  
 — *Virgem nasci / Virgem me criei / Se comigo não casares / Virgem morrerei – parodiava Severina, inspirada.*  
*Flodoaldo ria, coçava-lhe a vaidade:*  
 — *Você é vida como o diabo, Severina!*  
*E ia trepando como gato no cio aquele muro escuro e sólido de resistência. Adoçava a voz.*  
 — **Pode ser** ou está difícil, coração? (CR)
- ' — Are you virgin, Severina?  
 — Virgin I was born / Virgin I grew up / If you don't marry me / Virgin I'll die – Severina, inspired, parodied.  
 Flodoaldo laughed, conceitedly:  
 — You are life as the devil, Severina!  
 And he was climbing up the dark and solid wall of the house like a cat in rut.  
 — **It can be** or it's hard, sweetheart?'

The analyses show, thus, different degrees in terms of (inter)subjectivity, which are interpreted as evidence that an (inter)subjective process, as defined by Traugott (2010; TRAUGOTT; DASHER, 2002; among others), takes place in contexts with *pode ser* after all, we verified an increase of (inter)subjectivity (*pode ser*<sub>1</sub> tends to the expression of subjectivity and *pode ser*<sub>2</sub> is intersubjective), which reflects in different directions of modalization (*pode ser*<sub>1</sub> expresses, more strongly, speaker-oriented modality, whereas *pode ser*<sub>2</sub> marks, more strongly, listener-oriented modality).

There is yet a change in the functionality of the expression. *Pode ser*<sub>1</sub> has its scope over the propositional content of the embedded clause, operating, thus, in the propositional level. *Pode ser*<sub>2</sub>, on the other hand, modalizes the previous utterance or a content implied in the verbal interaction, operating, then, in the discourse level, the level of speech acts. This change is considered by Traugott and Dasher (2002), according to whom the changes in the (inter)subjectivization process typically involve the development of meanings which operate in the propositional level to meanings with scope over the proposition, and from them to meanings with scope over discourse units (TRAUGOTT; DASHER, 2002, p.40). These paths are schematized in the following Figure:

**Figure 1** – Correlated paths of directionality in semantic change

truth-conditional	>		>	non-truth-conditional
content	>	content/procedural	>	procedural
s-w-proposition	>	s-o-proposition	>	s-o-discourse
nonsubjective	>	subjective	>	intersubjective

**Source:** Traugott and Dasher (2002, p.40).

In this figure, s-w: scope within; s-o: scope over.

(Inter)subjective values observed in *pode ser* correspond, in general, to the second and third columns of this schema. From a subjective value (*pode ser*<sub>1</sub>), with scope over the proposition, the item would have developed into an intersubjective value (*pode ser*<sub>2</sub>), absolutely linked to communication, with scope over discourse units.

According to Traugott and Dasher (2002), subjectification and intersubjectification processes are, hypothetically, related to the speaker-listener dyad, and derive from a mechanism of metonymic inference, a type of pragmatic inference, a conceptual association which is established in discursive context. According to what the authors call Invited Inferencing Theory of Semantic Change, the meanings

of the items become increasingly pragmatic and procedural, that is, the items are increasingly used for the organization of communication.

We understand that the conventionalization of conversational implicature (TRAUGOTT; KÖNIG, 1991; TRAUGOTT; DASHER, 2002) may be in the base of the changes in *pode ser*. Consider the following occurrences, repeated here for convenience:

- (10) — *Mas 'tou achando muito custoso Seu Isé chegar vivo até aqui!*  
— *Sei lá... **pode ser** que não, mas **pode ser** também que sim.*  
(CHA)

'— But I think it's very hard Isé arrives here alive!  
— I don't know... it **may be** not, but it **may be** yes as well.'

- (5) *Inf – [...] além disso tem uma...um outro courinho que sai... de cima...e passa por baixo do...da cabeça...ah...próximo ao pescoço...que também tem um nome ahn::... — puxa eu não sei como é que eu posso ter esquecido esse nome ... — é alguma coisa como:...gargantilha mas não é gargantilha hoje é...((risos)) é o que as mulheres usam*  
*Doc – **pode ser**...dá o exemplo [...]* (NURC/ SP DID 18)

'Inf – [...] besides that there is a...another piece of leather that comes... from above...and goes under the...the head...ah...next to the neck...which also has the name ahn::... — I don't know how I could forget this name...—it's something like:...necklace but it isn't necklace nowadays it is...(laughs) it is what women use  
Doc – it **may be**...give me the example [...]

- (12) *W: Que tal tomarmos alguma coisa, doutor? Uma cerveja, uma batida? Meu colega oferece!*  
*P: Eu?*  
*O: **Pode ser**... Pá animar!*  
*P: Mas Waldemar!*  
*W: Ótimo! Vamos entrar aqui mesmo. Depois o senhor procura o tal hotel.* (PED-D)

'W: What about having something to drink, doctor? A beer, a cocktail? My friend is offering us!  
P: Me?  
O: **May be**... To cheer up!  
P: But, Waldemar!  
W: Great! Let's come into here. Later on you look for a hotel.'

- (13) — *Escute, estou duro. – esclareci.*  
 — *Ah, não se preocupe, eu pago a minha conta – disse ela.*  
 — *Não é isso – disse eu – Quería que você me pagasse um Martini, **pode ser?***  
*Ela chamou o garçom, passou o copo dela para mim, e encomendou outro. Depois me olhando e sorrindo do lado de lá da mesa. (LC)*

'In her glass, the cherry was swimming in the Martini. She looked great as well.

— Listen to me, I'm short of money – I said.

— Ah, don't worry, I'll pay my bill – she said.

— This is not the problem – I said – I wanted to you to pay me a Martini, **may it be?**

She called the waiter, gave me her glass and asked another one. After that, she looked at me and smiled from the other side of the table.'

The hypothesis is that the change is triggered by the contexts in which *pode ser<sub>1</sub>*, an expression of epistemic modality, is used to express a speaker's admission towards the listener, such as in (10). In this case, *pode ser<sub>1</sub>*, does not introduce a propositional content, but refers back to the listener's utterance, admitting its validity and situating it in the uncertainty domain.

The value of speaker's admission towards the listener is conventionalized in epistemic *pode ser<sub>2</sub>*, which is the prototypical use in interlocution situations, such as in (5). In certain uses of *pode ser<sub>2</sub>*, it no longer implies acceptance in epistemic domain, but implies it in the deontic domain, such as the occurrence in (12).

Conventionalized as an agreement towards an action, the deontic *pode ser<sub>2</sub>* starts to be used in interrogative utterances, representing a pragmatic resource, an attenuation strategy of a speech act which may be threatening to the listener, such as in (13).

## From epistemic to deontic?

This research shows that deontic uses of *pode ser* are more recent than the epistemic ones, a finding that reveals a very interesting and unexpected path considering historic studies on the development of modal meanings.

Linguists who have dedicated their studies to look for the origins of modalized elements have proved that the development in this area occurs from the deontic domain to the epistemic one, and not the other way around (TRAUGOTT, 1989;

SWEETSER, 1990; BYBEE; PERKINS; PAGLIUCA, 1994; HEINE, 1995; TRAUOGOTT; DASHER, 2002; among others). About it, Traugott says:

[...] the history of the modal auxiliaries in English (or indeed any language) is enormously complex, and any brief discussion of it will surely involve gross oversimplification. However, several changes seem fairly solid. It is for example well known in the history of English the auxiliaries in question were once main verbs, and that the deontic meanings of the modals are older than the epistemic ones. (TRAUGOTT, 1989, p.36).

However, it seems that the communicative tension which is established between speaker and listener, in which modalized elements are used, is not highlighted in these studies. Guo (1995, p.229) observes that “[...] given their methodological limitations, historical studies have seldom investigated the role played by interpersonal discourse functions in semantic change.” and suggests that communicative functions of modals help to structure the semantic content of the item and have influence on semantic change. By analyzing the modal *néng*, from Mandarin, which corresponds to *can*, the author demonstrates that the discursive function of the modal is an essential part, inalienable from the meaning of the item and forms an important origin for the semantic change, after all, “[...] what began as a contextual meaning frequently associated with the form has become conventionalized and incorporated into the semantic content of that form [...]” (GUO, 1995, p.230), by means of a metonymic process (TRAUGOTT; KÖNIG, 1991).

Sweetser (1990) analyzes epistemic meanings as metaphorical extensions from the root meanings (which includes ability/capacity and deontic values). Change is understood as involving a concept transfer from the external sociophysical domain to the epistemic domain of reasoning and judgment. Motivations for a metaphoric process are cognitive and, in this domain, it seems logic that epistemic meanings are posterior from the root meanings. There is a reasoning underlying this transfer: for instance, when someone says it is probable (epistemic) that someone rides a bicycle, this means that there is no authority (deontic) who prevents this action and that this person is able (capacity/ability) to do so. In these cases, however, modality takes place in the level of propositions.

*Pode ser<sub>2</sub>* does not establish canonical modal relation in the level of propositions, but it operates at the level of speech acts, the one of the interpersonal relations and, in this case, there is no study attesting the deontic > epistemic path.

It is possible that the pragmatic function of *pode ser<sub>2</sub>* (as a mark of speaker’s agreement with the listener) has “saturated” its epistemic semantic content resulting in a new meaning (deontic). The idea is that, when the expression

starts being used only in verbal interaction (*pode ser*<sub>2</sub>), modal value of epistemic evaluation (*pode ser*<sub>1</sub>), which implies agreement of something in terms of knowledge, may have become usual allowing the use of *pode ser*<sub>2</sub> also for pragmatic agreement of an action or of an act (deontic value). It is beyond the scope of this study to seek historical confirmation for the epistemic > deontic path in *pode ser*, but we suggest that this is a strong hypothesis.

## Conclusions

The aim of this study was to examine, through a functionalist approach, the expression *pode ser* as a complement-taking predicate which embeds a proposition (*pode ser*<sub>1</sub>) and as an independent construction (*pode ser*<sub>2</sub>), suggesting that, in these contexts, there is a process of (inter)subjectification (TRAUGOTT, 2010). According to Traugott (2010), meanings are considered increasingly subjective, as they become more based on the speakers' beliefs and attitudes, and increasingly intersubjective the more they involve the speaker's attention towards his listener.

Parameters used for analyzing the degrees of subjectivity of *pode ser* were the type of modal force (deontic, epistemic) and the nature of modal force (legal, social, religious, shared knowledge, belief, opinion etc.). Modal meanings are considered intersubjective when they are used as pragmatic strategies of politeness and attenuation, which aim to save the listener's face.

The notion of modality as a multifunctional category also underlays this research. The speaker-oriented modality essentially serves to mark his attitudinal stance. The listener-oriented modality serves as a communicative strategy, as a resource of face-saving. Both directions of modality combine in an utterance and one may prevail over the other, what reveals degrees of (inter)subjectivity.

The analyses indicate different degrees in terms of (inter)subjectivity, in which the following aspects are observed:

- *pode ser*<sub>1</sub> is always an expression of the speaker's subjectivity, indicating the speaker's attitude towards the propositional content uttered. Subjectivity may be higher or lower, depending on the evidence the speaker has for his modal qualification;
- *pode ser*<sub>1</sub> also marks the speaker's intersubjectivity, when he expresses an admission towards his listener's speech act;
- *pode ser*<sub>2</sub> is an independent structure in discourse, typical of interactional situations; epistemic stance does not hold towards the proposition performed by the speaker (as in *pode ser*<sub>1</sub>), but holds towards the listener's speech act; considering the high frequency of *pode ser*<sub>2</sub> in discourse, in some cases, the construction does not imply

knowledge anymore (epistemic domain), but implies control over actions (deontic domain);

- *pode ser<sub>2</sub>* starts representing a pragmatic strategy of attenuation, which reveals the speaker's concern about the reception of his utterance by the listener.

These different degrees indicate a (inter)subjectification process, after all, in relation to *pode ser<sub>1</sub>*, *pode ser<sub>2</sub>* is more subjective (since the modal force is the speaker himself) and also more intersubjective (since it occurs in the conversational flow, as a reaction to a previous speech act and as a pragmatic strategy).

Some changes in the level in which *pode ser* operates were also verified. The expression no longer operates in the propositional level (*pode ser<sub>1</sub>*) to operate in the speech act level (*pode ser<sub>2</sub>*). In the first case, modality tends to be speaker-oriented, whereas in the second case it tends to be listener-oriented. These changes, hypothetically, occur in the interaction between the participants of communication and involve a conventionalization of conversational inferences (TRAUGOTT; KÖNIG, 1991; TRAUGOTT; DASHER, 2002).

The analysis carried out here indicated that deontic *pode ser* is an extension of the epistemic use. We suppose that the development occurs in the speaker-listener dyad, triggered by the mechanism of invited inferencing of semantic change (TRAUGOTT; DASHER, 2002). Although this hypothesis is in the opposite direction from what the historical studies have demonstrated, it should be verified in a diachronic research, which remains to be done.

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- **RESUMO:** *Comprometido com um enfoque funcionalista, o trabalho analisa a expressão modalizadora pode ser como predicado encaixador de proposição (pode ser<sub>1</sub>) e como construção independente (pode ser<sub>2</sub>), em textos contemporâneos do português brasileiro, de fala e de escrita. Busca-se identificar graus de (inter)subjetividade reveladores de um processo de (inter)subjetivização, conforme proposta de Traugott (2010, entre outros). Sustentam a análise parâmetros de (inter)subjetividade de elementos modalizadores indicados especialmente em Traugott e Dasher (2002) e a noção de modalidade como categoria multifuncional, que não apenas codifica atitude do falante em relação ao conteúdo modalizado, mas que também atua como estratégia pragmática, como reguladora da situação comunicativa. A pesquisa revela pode ser como uma fórmula de grande aproveitamento no jogo discurso, um conjunto bastante solicitado, produtivo e útil nas relações interpessoais. O estudo de propriedades semânticas, discursivas e morfossintáticas indica deslizamento na operação da construção, da sintaxe (pode ser<sub>1</sub>) para o discurso (pode ser<sub>2</sub>), interpretado como próprio de (inter)subjetivização.*
- **PALAVRAS-CHAVE:** Modalização. Pode ser. (Inter)subjetivização. Funcionalismo.

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**calization:** Focus on theoretical and Methodological issues. v.I. Amsterdam/Philadelphia: John Benjamins Publishing Company, 1991.

### **ABBREVIATION OF THE BOOKS CITED AFTER THE OCCURRENCES**

**ANT-T** – *Antibióticos na clínica diária*. Fonseca, A.L. 2. Ed. Epume, 1984.

**BH** – *Balbino, O homem do mar...* LESSA, O. Rio de Janeiro: José Olympio, 1970.

**BRI** – *Brida*. Coelho, P. Rio de Janeiro. Rocco Ltda., 2002.

**CEN** – *Cenas da vida minúscula*. Scliar, M. Porto Alegre, L&PM, 1991.

**CHA** – *Chapadão do Bugre*. PALMÉRIO, M. Rio de Janeiro, José Olympio, 1965.

**CR** – *Cabra das Rocas*. HOMEM, H. São Paulo: Ática, 1973;

**DSP** – *O demônio e a Srta. Prym*, Coelho, P. Rio de Janeiro. Rocco Ltda., 2000

**EST** – *Estorvo*. Holanda, F.B. São Paulo, Cia. das Letras, 1991.

**FAV** – *Feliz Ano Velho*. Paiva, M.R. São Paulo, Brasiliense, 1982.

**LC** – *Lobos e cordeiros*. Lopes, E. São Paulo, Moderna, 1983.

**PED-D** – *Pedro pedreiro*. Pallottini, R. *Revista de Teatro*. Rio de Janeiro, n. 458, 1986.

**PFI** – *Pais e Filhos*. Várias edições. Rio de Janeiro, Block, 1972. // *Propagandas*, 1989.

**RE-D** – *A resistência*. Amaral, M.A.S. Rio de Janeiro, MEC/DAC/Funarte, 1978.

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## DIVERSE EXHAUSTIVENESS EFFECTS IN CLEFT SENTENCES: A DESCRIPTIVE STUDY<sup>1</sup>

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- **ABSTRACT:** In this article, we show that cleft sentences may have “exhaustiveness effects” quite different from the “identification by exclusion” – which is the effect usually discussed by the literature (ATLAS; LEVINSON, 1981; HORN, 1981; KISS, 1998; WEDGWOOD; PETHÓ; CANN; 2006; BÜRING; KRIZ, 2013). To show this, we present a detailed study of cases in which we test the contextual effects triggered by clefts found in Brazilian magazines and newspapers. Our testing tools are modifiers that the literature associates with exhaustiveness, such as *only* and *and nobody else* (ATLAS; LEVINSON, 1981; HORN, 1981), and *exactly* and *precisely* (MENUZZI; ROISENBERG, 2010a). On the basis of such tests, we conclude that “exhaustiveness effects” involve various types of inferences about the structure of the domain of the discourse referents, and may modify such a structure in many different ways. This result, we believe, puts into a new perspective many of the questions about the semantics and the pragmatics of clefts, in particular whether “exhaustiveness effects” are conventionalized pragmatic inferences (such as a presupposition, or a generalized implicature), or particularized implicatures.
- **KEYWORDS:** Cleft sentences. Exhaustiveness effects. Identification by exclusion. Contextual set of alternatives. Pragmatic inferences.

### Introduction

This article presents a descriptive study of the “exhaustiveness effects” in cleft sentences. The “exhaustiveness effects” are, among the semantic-pragmatic properties of cleft sentences, one of the most discussed in literature (HALVORSEN, 1978; ATLAS; LEVINSON, 1981; HORN, 1981; KISS, 1998; BÜRING, 2010). In general terms, the exhaustiveness effects can be characterized as the inference that a

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unique entity (or a group of entities) satisfies the predicate expressed by the cleft sentence. For example, in the cleft sentence in (1a) below, the predicate expressed by the cleft be represented by the open proposition “x encontrou João” (“x met John”); when “exhaustively interpreted”, (1a) is understood as (1b); in other words, from (1a) we can infer something like (1c):

- (1) a. *Foi a Maria que encontrou o João.*  
It was Maria that met João.  
b. *Foi a Maria, **e ninguém mais**, que encontrou o João.*  
It was Maria, **and no one else**, that met João.  
c. **Somente** *Maria (e mais ninguém) encontrou o João.*  
**Only** Maria (and no one else) met João.

As we show in sections 2 and 3, the literature on the “exhaustiveness effects”, or the “exhaustiveness inference”, of cleft sentences mainly addresses the issue of what type of inference it is: is it a semantic inference – an entailment? Or is it some kind of pragmatic inference – a presupposition, an implicature, etc.? With respect to this issue, there is no consensus in the literature. There is little disagreement, however, as regards the “general content” of the exhaustiveness inference: the literature in general assumes that it looks like what is encoded in (2b). That is, the literature in general assumes that “exhaustiveness effects” can be characterized as the “identification of a referent by means of the exclusion of other referents” – using Kiss (1998)’s terms. Although there is some debate on how precisely the “exclusion” effect must be formulated (HALVORSEN, 1978; ATLAS; LEVINSON, 1981; WEDWOOD, 2005; BURING, 2010; BURING; KRIZ, 2013), there is no doubt that the effects of cleft constructions on the clefted constituent are of “exhaustiveness” – that is, that the exclusion of alternatives is involved.<sup>2</sup>

The aim of this article is to show that the so-called “exhaustiveness effects” are more complex than suggested by the literature: they cannot be reduced to the “exclusion of alternatives contextually given”. Our arguments come from the study of a set of occurrences found in texts of Brazilian newspapers and magazines. We will try to show that the so-called “exhaustiveness effects” involve different types of inferences concerning the structure of referents in the domain of discourse; such inferences lead to different kinds of adjustments in that structure. We think this conclusion reopens a few issues about the semantics and the pragmatics of cleft sentences, in particular one, namely: how much of “exhaustiveness” should

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<sup>2</sup> There is, also, a widespread assumption that the “identification by exclusion” is an effect associated with the “focalization” of the clefted constituent – that is, the exclusion is partly due to the fact that the clefted constituent is “contrastive new information” (KISS, 1998). We will not discuss this idea here, although it is perfectly clear that the cleft constituent is not always the focus of the sentence (PRINCE, 1978; ROISENBERG; MENUZZI, 2008).

be codified as a “conventional feature” of cleft sentences (as an entailment, or as a presupposition, or, yet, as a generalized implicature, for example), and how much should be derived by contextual calculation?

### **Exhaustiveness: always “exclusion by identification”?**

For Kiss (1998) – one of the most influential works in the linguistic literature, especially in the syntactic one, on “focus” –, “exhaustiveness” is what makes the “focus” of cleft sentences differ from “normal focus”, that is, from “information focus”. That would explain why cleft sentences are not adequate in contexts that require “information focus” only, as in (2) below; but where there is “exclusion by identification”, they are adequate, as in (3):

- (2) A: *Quem Maria encontrou?*  
Who did Maria meet?  
B: *(Ela encontrou) o JOÃO.*  
(She met) JOÃO.  
B': *#Foi o JOÃO (que ela encontrou).*  
It was JOÃO (that she met).
- (3) A: *Quem Maria encontrou, o Paulo ou o João?*  
Who did Maria meet, Paulo or João?  
B: *Foi o JOÃO (que ela encontrou).*  
It was JOÃO (that she met).

Kiss characterizes the “function of an identificational focus” as follows:

- (4) An identificational focus is a subset S of the set C of contextually given elements for which the predicate phrase can potentially hold; S is identified as the exhaustive subset of this set C for which the predicate actually holds (adapted from Kiss’s (1), 1998, p.245).

In order to understand what (4) means, consider the example below:

- (5) *Yasser Arafat fez seu mais elevado e difícil gesto quando aceitou a existência de Israel [...] As negociações de paz estão há muito paralisadas, a violência predomina, os Estados Unidos de George W. Bush – única força capaz de arrancar uma solução – nada fazem; e o próprio Arafat colecionou fracassos e torpezas. Mas **foi o seu gesto de grandeza que \_\_ lhe garantiu um lugar honroso numa história que tem tantos personagens mais importantes do que ele.***<sup>3</sup>

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<sup>3</sup> The occurrences we will discuss in this article belong to a corpus of texts collected in 2004 from online versions of Brazilian newspapers and magazines. In the case of (5), the source is “*Yasser Arafat, uma era que se acaba*” (“Yasser Arafat, the end of an era”), published in *Veja*, November 10 2004.

Yasser Arafat made his most elevated and difficult gesture when he accepted the existence of Israel [...] Peace talks have long been paralysed, violence prevails, George W. Bush's United States – the only force capable of getting a solution under way – do nothing; and Arafat himself stocked failures and filthiness. But **it was his gesture of grandeur that \_\_ earned him an honorable place in a history** that has so many characters more important than himself.

In (5), the predicate of the cleft corresponds to “x garantiu a Arafat um lugar honroso na história” (“x earned Arafat an honorable place in history”). There is a set C of contextual alternatives that would satisfy this predicate: Arafat’s “most elevated and difficult gesture”, his “failures” and his “filthiness”. Of this set of candidates, the subset S exhaustively identified by the cleft sentence is Arafat’s “gesture of grandeur”: from the context, we infer that **only** this gesture (that is, his acceptance of Israel) satisfies the predicate “x earned him an honorable place in history”; this predicate does **not** apply to the other members of the set C – Arafat’s “failures” and “filthiness”. The exclusion effect can be diagnosed by adding adverbs of exclusion, like **only, exclusively**, etc., or the expression **and not his failures and filthiness**, to the cleft in (5).

Thus, adopting Kiss’s characterization of “exhaustiveness” in clefts, we can say that this notion consists of three elements: (i) a contextually given set of alternatives for which the predicate of the cleft clause potentially holds; (ii) the identification of **one** of the alternatives as the only one to satisfy the predicate contextually; and (iii) the exclusion of all the other alternatives of the set contextually given, that is, the negation of each proposition resulting from the application of the predicate to one of the relevant alternatives. In section 3, we will see that various studies on the “exhaustiveness” of clefts reiterate this characterization, even if arguing for slightly different formulations. (They differ, for example, in the way the notion covers the “exhaustiveness” of cleft constituents with plural denotation: see fn. 5 and 6 below.)

Recently, while investigating different uses of clefts, Menuzzi and Roisenberg (2010) observed that the so-called “exhaustive effects” do not always involve exclusion of **contextually given alternatives**.<sup>4</sup> In the cases discussed by Menuzzi and Roisenberg, the context does not present a set C of explicit alternatives. Let us consider the following example:

- (6) *Diz um provérbio oriental que bambu enverga mas não quebra. A trajetória de vida do atual chefe da Casa Civil [José Dirceu] pode ser considerada a encarnação desta metáfora [...] É um articulador por excelência, elogiado até pelos inimigos, com*

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<sup>4</sup> Menuzzi and Roisenberg (2010) postulate a correlation between the type of “exhaustive inference” they identify and a particular use of clefts they call “conclusive”. (According to them, the relevant inference would not be found – at least, not often – with “non-conclusive” clefts.) This particular aspect of their discussion, however, has proved unfounded; see Menuzzi and Teixeira (to appear) for discussion.



*uma visão única e completa do governo, da sociedade e da política, com os quais lida diariamente. [...] Mas **foi (exatamente) diante deste tripé – sociedade, Congresso e governo – que ele viveu seu dia de bambu.***<sup>5</sup>

“An Eastern proverb says that bamboo bends but does not break. The life history of the current chief minister [José Dirceu] can be considered as an incarnation of this metaphor [...] It is an organizer par excellence, praised even by the enemies; he has a single and comprehensive vision of government, society and politics, with which he deals daily. [...] But *it was (exactly) before this triad – society, Congress and government – that he lived his bamboo day*”.

In the context above, the issue is not to identify a referent that satisfies the predicate, and to exclude other contextually given candidates. The opening words of the text induce the reader to think of the predication “José Dirceu lived his bamboo moment in situation x”. Next, the text suggests that this situation did **not** happen “before the triad society, Congress and government”. Thus, until the point where the cleft appears, the text leaves undefined the referent that satisfies “x” in the predication; all it does concerning the identification of x, up to this point, is to create the expectation that x is **not** the triad society, Congress and government. In contrast with this expectation, and unexpectedly for the reader, the cleft sentence ends up the stretch precisely by identifying the “triad society, Congress and government” as the referent that satisfies x in “Dirceu lived his bamboo moment in situation x”.

The “emphasis”, or “contrast”, in cases such as (6) does not seem to lie in the identification of a referent by the exclusion of an explicit set of alternatives. Rather, the contrast appears to be motivated by the fact that the referent that satisfies the predication is unexpected – its identification goes against expectations created by the preceding segment. The identification of an “unexpected referent” is diagnosed by the use of adverbs like **exactly, precisely**, etc.: these seem to indicate that the relevant referent is **exactly** the one that is *not* expected. For this reason, Menuzzi and Roisenberg (2010) called this particular manifestation of exhaustiveness “identification by precisizing”. This effect differs from the “identification by exclusion” illustrated in (5): in (5) one can use the adverbs **only** and **exclusively**, but not **exactly, precisely**, etc.; in (6), the opposite happens.

On the other hand, it must be observed that, though **only** and **exclusively** are not acceptable in the context in (6), there is still some notion of “exclusion” involved in this example: the context is compatible with the expression *e ninguém mais* (“and no one else”) – the same used in (1b,c) above to make the “exhaustiveness effect” of (1a) explicit. This indicates that modifiers like **only** and **and no one else** are not fully comparable: each of them incorporates

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<sup>5</sup> Source: “*O Brasileiro do Ano: José Dirceu*” (“Brazilian of the Year: José Dirceu”), in *Isto É*, December 15 2004.

particular additional features to the general notion of “exclusion” – that is, to the notion assumed by the literature on clefts and characterized, for example, by the conditions expressed in (4) above.

If one takes only (5) and (6) into consideration, one may think that **somente** (“only”) is “anaphoric” in that it requires the presence of contextual alternatives. *E ninguém mais* (“and no one else”), on the other hand, does not seem to require such alternatives; all it seems to require is that the identified value be unique, ruling out the possibility of alternative values – even if not available in context. Whatever the precise difference, the fact is: the notion of “exclusion” expressed by *e ninguém mais* is compatible with (6) above, but the notion expressed by *somente* is not; and the context in (5) is obviously compatible with both notions – but not, we emphasize, with notion of “exclusion” expressed by *exatamente* (“exactly”), *precisamente* (“precisely”), etc. Let us assume that the notion of “identification by exclusion” as proposed by Kiss delimits one particular “exhaustiveness effect”; we must, then, acknowledge that there is at least one other “exhaustiveness effect” which cannot be characterized in the same way: the one called “identification by precisizing” by Menuzzi and Roisenberg (2010a).

Interestingly, the possibility that “exhaustiveness effects” could be various is not, as far as we can tell, explicitly discussed in the literature: as we shall see in section 3, authors who discussed the notion of “exhaustiveness” questioned its semantic-pragmatic nature, but not its general characterization as synthesized in Kiss (1998). In section 4, however, we present a descriptive study of real occurrences of clefts which shows that the “exhaustiveness effects” we find are not limited to the two described above – that is, to “identification by exclusion” and “identification by precisizing”: we also find several other “exhaustiveness effects” that are not properly described by these notions. In section 5, we will try to present an initial informal analysis of the various cases, trying to identify what is common to all instances discussed.

### **Exhaustiveness in other studies on clefts**

The literature on “exhaustiveness inferences” of clefts generally has focused on one goal: to clarify their nature as far as the typology of semantic-pragmatic inferences is concerned – that is, to determine whether it is an entailment, a presupposition or some kind of implicature. As a result, the literature has not discussed in any deeper sense what the set of potential effects covered by exhaustiveness is – indeed, as previously mentioned, there is rather a general understanding that the “exhaustiveness” of clefts can be characterized as some variant of the effect of “identification by exclusion” as described by Kiss. (But, for a qualification of this statement, we refer to fns. 5 and 6 below, again.)

## Horn (1981): “exhaustiveness” as a generalized conversational implicature

For example, Horn (1981) discusses the exhaustiveness of clefts in an attempt to better understand the various types of semantic-pragmatic inferences and their properties: he wants to determine whether an inference is simultaneously cancellable, detachable etc., and if it is so, why it is so. With respect to the exhaustiveness of clefts in particular, Horn argues against the analysis proposed by Atlas and Levinson (1981), for whom it would be an entailment; for Horn, it is rather a pragmatic inference, as proposed by Halvorsen (1978).

According to Horn (1981, p.129), Atlas & Levinson claim that a cleft such as (7a) below and its negation (7b) would have the inferences in (8), as indicated in the analysis in (9):

- (7) a. It was a pizza that Mary ate.  
b. It wasn't a pizza that Mary ate.
- (8) a. Mary ate a pizza.  
b. Mary ate something.  
c. Mary ate (exactly) one thing.
- (9) a. (7a) entails (8a), but not vice-versa.  
b. (7a) entails (8b), and its negation (7b) *presupposes* (8b).  
c. (7a) entails, but does not presuppose, (8c).

This analysis allows Atlas and Levinson to explain one of the major problems faced by Halvorsen's proposal, according to which the exhaustiveness inference expressed in (8c) is a presupposition of the cleft in (7a). If it were a presupposition of (7a), the inference should be preserved under negation (or under interrogation etc.), but this is not the case:

- (10) It wasn't a pizza that Mary ate, it was a sausage sub and spaghetti.

Treating (8c) as an entailment of (7a), Atlas and Levinson are able to explain why exhaustiveness, as expressed in (8c), is *not* preserved under negation, as (10) shows.

Horn (1981, p.130), on the other hand, observes that

[e]ven if Halvorsen's semantics cannot be maintained *in toto*,<sup>6</sup> the exhaustiveness premise associated with clefts does indeed act

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<sup>6</sup> Atlas and Levinson and Horn reject Halvorsen's specific analysis precisely on the basis of the acceptability of (10). For Halvorsen, a cleft with the form "It was  $\alpha$  that Mary ate" would not presuppose that "Mary ate only  $\alpha$ ", but rather that "Mary ate *at most n things*", where n is the cardinality of  $\alpha$ . The effects Halvorsen tries to capture

like *some* sort of implicature or pragmatic presupposition in the sense of non-controversial (material), old information or part of the ‘common ground’, rather than new, asserted, and hence potentially controversial material.

If exhaustiveness were part of the cleft’s assertion, but not of the corresponding “normal” sentence, the cleft could be used to add exhaustiveness to the normal sentence. But this is not the case, as shown in (11a) below; Horn points out the contrast with (11b), in which *only* is the element asserting exhaustiveness:

- (11) a. # I knew Mary ate a pizza, but I just discovered it wasn’t a pizza that she ate.  
 b. I knew Mary ate a pizza, but I just discovered it wasn’t *only* a pizza that she ate.

Horn concludes that the exhaustiveness of clefts must be a pragmatic inference – some kind of implicature, or a presupposition, that is not part of the “asserted content”.

Regarding these two possibilities, Horn contends – against Halvorsen – that the exhaustiveness of clefts is a generalized implicature, rather than a presupposition. One of the presumed properties of the presuppositions is that they would be *conventionally linked to the expression*; thus, they should also be “detachable”. An inference is “detachable” if it does not necessarily adhere equally to synonymous expressions. In the case of the exhaustive inference of clefts, however, Horn argues that it is “non-detachable”: we find it in various constructions, each having in common only the fact that they are all instruments for focusing a constituent:

- |         |                                      |                                 |
|---------|--------------------------------------|---------------------------------|
| (12) a. | It was a pizza that Mary ate.        | [clefts]                        |
| b.      | What Mary ate was a pizza.           | [pseudo-clefts]                 |
| c.      | The thing that Mary ate was a pizza. | [“ <i>th</i> -clefts”]          |
| d.      | A PIZZA Mary ate.                    | [“Y-movement” or “focus shift”] |
| e.      | Mary ate A PIZZA.                    | [contrastive focus]             |

Thus, Horn (1981, p.132) suggests that

[...] [the exhaustiveness inference] is instead [of a presupposition] a generalized conversational implicature, a pragmatic assumption

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this way are related to the problems posed by plurals for an adequate characterization of exhaustiveness (see fn. 6 below). But Halvorsen’s proposal is incompatible with (10): if the speaker of (10) presupposed that “Mary ate at most *one* thing” (since  $\alpha$  = “a pizza”, the cardinality of  $\alpha$  is  $n = 1$ ), he would not assert that Mary ate *two* things – “a sausage sub and a spaghetti”. The literature that addresses these problems is concerned with how plurality affects exhaustiveness, and not with challenging the idea that exhaustiveness is identification by exclusion. We will not discuss the issue of plurality effects here. (A qualification: for Halvorsen, exhaustiveness is not a “presupposition”, but a “conventional implicature” in the sense of Karttunen and Peters (1979). Horn shows, however, that such “implicatures” have the properties traditionally assigned to presuppositions.)

naturally (as opposed to conventionally) arising from focussing or exhaustive listing constructions in the absence of specific contextual trigger or block.

The “principle” that expresses the generalized pragmatic reasoning in question would be the following (adapted from Horn’s (16), p.132):

- (13) The utterance in context *C* of any sentence that entails  $F(a)$  and presupposes  $\exists xF(x)$  induces a generalized conversational implicature to the effect that  $\sim\exists x [x \neq a \ \& \ F(x)]$ , where *x* ranges over entities in a set determined by context *C*.

For our purposes here, it is important to emphasize that the “principle” postulated by Horn incorporates all aspects that characterize Kiss’s “exclusion by identification”: (i) there is a “contextually determined” set *S* of alternatives; (ii) the “open proposition” applies to only one (subset) of the elements of *S*; and (iii) it is inferred that all other elements of *S* are “excluded”, that is, that the open proposition is false when applied to them. Therefore, Horn’s characterization of the exhaustiveness effect is essentially equivalent to Kiss’s – except that, for Horn, it is a generalized conversational implicature, not an entailment, of the clefts.

### **Wedgwood, Pethő and Cann (2006): “exhaustiveness” as “presupposition of uniqueness”**

A recent work that maintains a similar characterization is Wedgwood, Pethő and Cann (2006)’s. This paper compares uses of English clefts with uses of a Hungarian construction called “the focus position”, by means of a study of occurrences in written corpora. Much of the literature that discusses the Hungarian construction claims that it encodes the same type of “focalizing effect” of English clefts; in particular, both constructions would be conventionally associated with exhaustiveness, either as an entailment (SZABOLCSI, 1981; KISS, 1998), or as a presupposition (KENESEI, 1986; SZABOLCSI, 1994).

According to Szabolcsi (1994), the exhaustiveness of the Hungarian focus position and of the English clefts would be a result of a “presupposition of uniqueness”. In her analysis, this presupposition is incorporated into the semantics of an “exhaustiveness operator” underlying the logical form of both Hungarian focus position and English clefts. Specifically, the relevant presupposition corresponds to the content to which the iota operator applies in the formula in (14) below, which expresses the denotation of the operator (semantically, a relation between individuals and propositions; (SZABOLCSI, 1994, p.181; WEDGWOOD; PETHŐ; CANN, 2006, p.16, (15))):

$$(14) \llbracket [\text{Op}_{\text{exhaust}}] \rrbracket = \lambda z \lambda P [z = \iota x [P(x) \ \& \ \forall y [P(y) \rightarrow y \subseteq x]]]$$

According to (14), the exhaustiveness operator is a relationship between individuals  $z$  and predicates  $P$  such that it gives the truth if and only if  $z$  is the unique  $x$  that satisfies the following condition:  $P$  is true of  $x$ , and for all  $y$ , if  $P$  is true of  $y$ ,  $y$  is equal or is contained in  $x$ .<sup>7</sup> With this semantics for the exhaustiveness operator, a cleft would be interpreted as in (15) below (here we ignore the syntax underlying Szabolcsi’s analysis):

$$(15) \llbracket [\text{It was John that left}] \rrbracket = 1 \text{ iff } [\text{Bill} = \iota x [\text{Left}(x) \ \& \ \forall y [\text{Left}(y) \rightarrow y \subseteq x]]]$$

According to the Szabolcsi’s analysis, “It was John that left” is true if and only if John is the (only) individual that satisfies the following condition: is an individual who left and, for every individual  $y$  such that  $y$  left,  $y$  is equal (or is contained in) John. If John is not the only individual who satisfies this condition, then the sentence “It was John that left” cannot have its truth value determined. That is, it cannot be felicitously uttered in contexts in which John does not satisfy the condition over which the iota operator scopes.<sup>8</sup> This is the effect of taking the exhaustiveness condition as a presupposition, and not as part of the cleft’s assertion. To see the difference, suppose that we replace the iota operator with an existential quantifier:

$$(16) \llbracket [\text{It was John that left}] \rrbracket = 1 \text{ iff } \exists x [\text{John} = x \ \& \ \text{Left}(x) \ \& \ \forall y [\text{Left}(y) \rightarrow y \subseteq x]]$$

Under this semantics, “It was John who left” will always have a determined truth value: it will be true if John was the only one who left; and false otherwise. That is, the cleft would have the same semantics, basically, as a sentence modified for *only*, and Horn’s arguments against exhaustiveness as an entailment would apply [see discussion of (11) above].

Wedgwood, Pethó and Cann (2006) argue *against* the analysis in (15) above for the Hungarian focus position: they demonstrate that there are many contexts in which the “presupposition of uniqueness” should be respected for the English clefts, but not for the Hungarian construction. Here is an example:

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<sup>7</sup> The condition that every  $y$  is equal to *or is contained* in  $x$  is due to the fact that the cleft constituent can denote a plural individual, as in “It were the windows that were broken”. This is a way of trying to explain the effects of the the cardinality of the cleft constituent in exhaustiveness; see fn.4 above. For references and discussion of the issues involved, see Büring (2010), Büring and Kriz (2013).

<sup>8</sup> For an introductory discussion of presuppositional NPs (or DPs) as well as references on the topic, see Heim and Kratzer (1998, p.73) and references cited there.

- (17) A meccs hőse a mindössze húszéves, hirtelen növése miatt állandó izomproblémákkal küzdő Steve Gerrard volt.

‘The hero of the game was 20-year-old Steve Gerrard, who is continuously suffering from muscle problems because of his sudden growth.’

A 16. percben [harminc méterről] vágta be a labdát Barthez  
the 16th minute-in 30 metres-from smashed VM the ball-ACC Barthez  
kapujába, igényt formálva az Év gólja címre.

goal-POSS3SG-into claim-ACC forming the year goal-POSS3SG title-for

‘In the 16th minute of the game, he kicked the ball [from 30 metres] right into Barthez’s net, thus claiming the title for the Goal of the Year.’

‘In the 16th minute of the game, # it was from 30 metres that he kicked the ball right into Barthez’s net, thus claiming the title for the Goal of the Year.’”

Observe that, in the context, it is salient that Steven Gerrard did something special, something that made him the hero of the match; but there is no evidence, before the last sentence, that what he did was kick the ball from a distance *x* directly into Barthez’s net. Hence the proposition expressed by the cleft clause is *not* presupposed. Therefore, the cleft is not used in English – as it is not in Portuguese either. (A cleft felicitous in the context would be: “It was after 16 minutes that Gerrard made his master play: ...”). Because the Hungarian focus position is an adequate construction in the context, Wedgwood, Pethő and Cann concludes that the “presupposition of uniqueness” is not a *sine qua non* condition for its use.<sup>9</sup>

Thus, Wedgwood, Pethő and Cann (2006) conclude that the Hungarian focus position is a construction that is semantically underspecified; it is compatible with a context having a “presupposition of uniqueness”, but this is not an inherent requirement of the construction. More importantly, Wedgwood, Pethő and Cann also conclude that, unlike the Hungarian focus position, **the English clefts are conventionally associated with the presupposition of uniqueness** as expressed in (14) and (15) – in their own words, the English clefts “are more inherently presuppositional”.

Note, now, that exhaustiveness as defined in (14) incorporates much of what is assumed by Kiss and Horn – even if the nature of the postulated inference is again different: as we have seen, for Wedgwood, Pethő and Cann (2006), is a presupposition, and not an entailment or a generalized conversational implicature. Consider, again, what (15) says: there should be (in the context) one and only one (possibly plural) individual *x* that satisfies the proposition “[Left(*x*) &  $\forall y$ [Left(*y*)  $\rightarrow y \subseteq x$ ]]”; if

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<sup>9</sup> In fact, in Portuguese the appropriate utterance would be a case of left-dislocation: *Aos 16 minutos de jogo, a uma distância de 30 metros, ele deu um chute direto para as redes de Barthez* (“After 16 minutes, from a distance of 30 meters, he kicked the ball directly into Barthez’s net”). See Wedgwood, Pethő and Cann (2006) and especially Wedgwood (2005) for a detailed analysis of the semantics of the Hungarian focus position.

this condition is satisfied, and if John is equal to x, then “It was John that left” is true; if the condition is not satisfied, then the sentence does not have a truth value.

According to this analysis, *there is no explicit reference to a “set of contextual alternatives”* that includes John and other individuals. If there is such a set, then what the presupposition requires is that John be the only one to satisfy the proposition “Left(x)” – that is, it is presupposed that “Left(x)” is false for all other alternatives. In this case, therefore, (14) is equivalent to Kiss and Horn’s proposals – except that it is a presupposition, and not a generalized implicature or an entailment.

On the other hand, if there is no set of contextual alternatives and only John satisfies “Left(x)”, the condition expressed in (15) is trivially satisfied – since there is nothing to be excluded in the context. But there is a difference here: unlike Kiss and Horn’s formulations, (14) applies even to contexts in which *there is no explicit set of alternatives*. Thus, the analysis based on (14)-(15) above seems, in principle, to be compatible with the effect of “identification by precisising” observed by Menuzzi and Roisenberg (2010a).

In fact, the approach based on the presupposition of uniqueness seems to indicate a way of understanding why *exatamente* “exactly” is compatible with the context in (7), but *somente* “only” is not. Assume that *somente* and *exatamente* differ in that the first presupposes a non-empty set of alternatives, and the second does not. Now, consider the following contrast:

- (18) A: *Por que os pais de Maria ficaram tão tristes com o casamento?*  
“Why were Maria’s parents so sad with her marriage?”  
B: # *Com tantos candidatos maravilhosos, **somente** o Paulo casou com ela.*  
“#With so many wonderful proponents, **only** Paulo married her.”  
*Com tantos candidatos maravilhosos, **exatamente** o Paulo casou com ela.*  
“With so many wonderful proponents, **exactly** Paulo married her.”

In Portuguese, the inadequacy of *somente* in the context above is clearly due to the following fact: the context indicates that A knows who Maria married. One could not assume that, knowing this, A would still think that Maria could have married others – that is, that there was a “set of contextual alternatives” to Paulo: after all, under the current laws, a person marries only one other person each time.

In the next section, we will present actual occurrences of clefts showing that even the analysis in (14)-(15) is not sufficient to capture all cases of “exhaustive effects” found in written Brazilian Portuguese.



## Diverse exhaustiveness effects in clefts

### What is, really, “identification by exclusion”? And “identification by precisising”?

Among the occurrences of clefts in our corpus (see fn.4 above), we find cases of exhaustiveness effects such as the ones discussed before – that is, cases of “identification by exclusion”, as in (5), and also cases of “identification by precisising”, as in (6). But it must be said that cases of “identification by exclusion” such as (6) – cases that are simultaneously compatible with exclusion of contextual alternatives and with *somente* “only” and *ninguém/nada mais* “no one/ nothing else” – are not as common as one might expect. Consider the following example:

(19) *Manoel de Oliveira acredita ter livrado seu trabalho do claustro do entretenimento: “Eu procuro tirar de meus filmes o lado espetacular para poder me concentrar no que há de mais humano.”<sup>10</sup>*

- a) *É sobre a humanidade que acredito que o cinema deva falar.”*
- b) *É sobre a humanidade, e não sobre o espetacular, que o cinema deve falar.”*
- c) *# É sobre a humanidade, e sobre nada mais, que o cinema deve falar.”*
- d) *# É somente sobre a humanidade que o cinema deve falar.”*

Manoel de Oliveira believes he has saved his work from the cloister of entertainment: “I try to take the spectacular side away from my movies and concentrate on what is most human.

- a) *It’s about humanity that I believe that cinema should speak.”*
- b) *It’s about humanity, not about the spectacular side, that the cinema should speak.”*
- c) *# It’s about humanity, and about nothing else, that the cinema should speak.”*
- d) *# It’s only about humanity that the cinema should speak.”*

Apparently, what really matters in the above context is the exclusion **only** of the contextual alternatives, as indicated by the felicity of (19b), and not the exclusion of other potential alternatives, as we see by (19c,d). Especially regarding the last two, there are alternatives that one could say are “concrete cases” of **humanity** in (19), if we take it in a metonymic sense: if it means something like “humanity and all its concerns”, the alternative would include, for example, “humanity and its dramas”, “humanity and its desires”, “humanity and its taboos” etc. It is because the speaker does not wish to exclude such alternatives in the context that modifiers like **and about anything else** and **only** are inappropriate.

Example (19) shows us a few important things. First, we need to understand how the identification of the “set of relevant alternatives” works for the so-called

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<sup>10</sup> Source: “*Vitalidade*” (“Vitality”), *Jornal do Brasil*, 3 de novembro de 2004.

“operators of exclusion”. In (19c,d), it appears that, for operators like **somente** “only” and *e nada mais* “and nothing else”, hyponyms of the asserted alternative (“humanity and its dramas” is a hyponym of “humanity and all that concerns it”) should be contextually relevant alternatives; but not for the cleft, as we see by (19a). That is, if we assume that the relevant alternatives for operators like *somente* and *e nada mais* are “determined contextually” too, approaches such as Kiss’s or Horn’s will not be sufficient: they do not offer elements to distinguish which contextual alternatives are relevant or not for the clefts.

Now, assume that the correct generalization about the above example is that, in certain contexts, “hyponyms” of the asserted alternative should not be excluded from the set of alternatives. If this is the case, Wedgwood, Pethó and Cann (2006)’s analysis, expressed by (14) above, will account for (20a). Accordingly, the asserted alternative will be exhaustive not only if it is the unique alternative (when there are no contextual alternatives that satisfy the predicate), but also if all non-excluded alternatives are “parts” of it. This is what is stated in the condition “ $\& \forall y [ P(y) \rightarrow y \subseteq x ]$ ” in (14) above.

At the same time, we should note that Wedgwood, Pethó and Cann (2006)’s proposal for clefts **cannot** be directly extended to the semantics of **somente** “only”: if the difference between clefts and **only** lies in the status of the requirement for uniqueness – in clefts it would be a presupposition, and in **somente**, part of the asserted content –, then **somente** should be acceptable in (19).<sup>11</sup>

Anyway, the conclusion we reach, with example (19), is that the cases of “identification by exclusion” by means of clefts do not behave all alike with respect to the set of excluded alternatives: in this regard, (19) is different from (5), for example.

Similarly, observe that the case of “identification by accuracy” in (6) above is not a “general type” either: again, we find occurrences that satisfy the same general character – compatibility with *exatamente*, *precisamente* etc. –, but still show differences with respect to exhaustiveness. For example, in the case of (6), we showed that there is no “identification by exclusion” properly speaking: there is no explicit set of contextual alternatives to be excluded. Moreover, the context is incompatible with *somente* “only”, *unicamente* “uniquely” etc.; but, at the same time, it is compatible with *e ninguém mais* “and no one else”. The conclusion is similar to that we reached in the discussion of (19): the identification of the set of relevant alternatives must be such that it allows us

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<sup>11</sup> A final note on (19): it is a case where the assertion made by the cleft is not precisely “new information”; the statement simply reinforces what was already implied by Oliveira’s previous statement. Therefore, it is information accessible in the context. This may explain the inappropriateness of *exatamente* “exactly”, used in contexts where there is indeterminacy about which alternatives satisfy the presupposed predication. See discussion of (6) above.

to explain the impossibility of *somente* etc., while allowing us to explain the adequacy of *e ninguém mais*.

Now, consider the example in (20) below:

(20) *Raras vezes a humanidade presenciou a multiplicação de tantas iniciativas simultâneas em favor da implantação e da consolidação de uma verdadeira cultura de paz. No Brasil, marcado por desigualdades crônicas de renda, [...] a preocupação se amplia sobretudo devido a conseqüências diretas ou indiretas dessa realidade. [...] Em outras nações, como as que acabam de definir uma trégua no Oriente Médio, as razões são igualmente desafiadoras. [...]*<sup>12</sup>  
*A incorporação da paz ao cotidiano precisa ser um compromisso de cada um, todos os dias.*

- a) *É essa disposição que permitiu o acordo de paz no Oriente Médio.*
- b) *É exatamente essa disposição que permitiu o acordo de paz no Oriente Médio.*
- c) # *É somente essa disposição que permitiu o acordo de paz no Oriente Médio.*
- d) # *É essa disposição, e nada mais, que permitiu o acordo de paz no Oriente Médio.*
- e) *Sem essa disposição, não teria havido o acordo de paz no Oriente Médio.*

Rarely humanity witnessed the multiplication of so many simultaneous initiatives in favor of the implementation and consolidation of a true culture of peace. In Brazil, marked by chronic income inequality, [...] the concern is amplified mainly due to the direct or indirect consequences of this reality. [...] In other nations, such as those who have just set a truce in the Middle East, the reasons are equally challenging. [...]

The incorporation of peace into daily life must be a commitment of each one, every day.

- a) It is this attitude that led to the peace agreement in the Middle East.
- b) It is exactly this attitude that led to the peace agreement in the Middle East.
- c) # It is only this attitude that led to the peace agreement in the Middle East.
- d) # Is this attitude, and nothing else, that led to the peace agreement in the Middle East.
- e) Without this attitude, there would have been no peace agreement in the Middle East.

Note, first, that the possibility of using *exatamente* “exactly” in the context suggests that it is a case like (6), of “identification by precisening”. Indeed, there is no explicit set of contextually relevant alternatives, which again makes (20) similar to (6). But there is an important difference: only in (20), the “identification

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<sup>12</sup> Source: “*Visão solidária*” (“A View from Solidarity”), *Zero Hora*, 9 de fevereiro de 2005.

by precisising” seems to be incompatible with all tests for “identification by exclusion” – not only with *somente*, but also with *e ninguém mais*.

Intuitively speaking, the problem in (20) seems to arise from the following: the alternatives the speaker does not want to exclude from the predication are not just hyponyms of **this attitude**; they include all other things that, along with “willingness to incorporate peace to daily life”, led to the peace agreement in the Middle East (e.g., in the case of the Palestinians, the need to address their social problems; in the case of US, the need to reassert itself as the strategic leadership in the region, etc.). Indeed, the cleft in (20) appears to play a role in the context similar to (20e): what the speaker wants to say is that **without** the willingness to incorporate peace to daily life, all other factors together would not be enough to ensure the peace agreement.

(20) is an important example for two reasons. Firstly, it suggests that when the so-called “exhaustiveness effect” is actually that of “identification by precisising”, it may be compatible with what appears to be the **inclusion** of the asserted alternative in a set of alternatives (in (20), inexplicit but inferable). That is, at least clefts expressing “identification by precisising” may not involve any exclusion at all. Here, of course, the question arises of what is precisely the contribution not only of the cleft itself, but also of operators like *exatamente*.

Secondly, if the elements that should *not* be excluded from the set of alternatives in (20) are **not** mere hyponyms of “willingness to incorporate peace into daily life”, then we are definitely facing a case that is **not** covered Wedgwood, Pethó and Cann (2006)’s analysis: the cleft sentence in (20) does not satisfy the condition “&  $\forall y [ P(y) \rightarrow y \subseteq x ]$ ” in (14).

The cases discussed in this section seem to lead to the following conclusion: the notions of “exhaustiveness” and “identification” relevant to clefts, though related to “exclusion” and “precising” as diagnosed by modifiers like *somente* and *exatamente*, cannot be reduced to any of these, nor are they a mere disjunction of both (as suggested by Menuzzi & Roisenberg 2010). Indeed, it seems that the effects of “exhaustiveness” or “identification” expressed by clefts are directly influenced by contextual factors that have not been investigated satisfactorily so far. These factors are selectively affected by modifiers such as *somente*, *exatamente*, etc. Moreover, they also seem to be directly related to the constitution of the “set of alternatives” relevant to the exclusion/identification effect contextually triggered by the cleft. The cases we will discuss in the following sections will confirm this conclusion.

## The contextual structure of referents and the set of alternatives, part 1

Consider the following case:

(21) O Quinto Império é seu 37º [filme de Manoel de Oliveira] e lhe rendeu um prêmio especial pelo conjunto da obra no último Festival de Veneza. Antes, fez dois filmes que permanecem inéditos no Brasil: O Princípio da Incerteza (2002), que talvez seja sua obra-prima, e Filme Falado (2003). Segundo Manoel, as histórias dessas fitas são impulsionadas pela curiosidade.<sup>13</sup>

— É a dúvida que me norteia. *Ela é um estímulo porque não tenho certeza de nada, só de que duvido.*

- a) # *É exatamente a dúvida que me norteia.*
- b) *É, mais exatamente, a dúvida que me norteia.*
- c) # *É a dúvida, e não a curiosidade, que me norteia.*
- d) # *É somente a dúvida que me norteia.*
- e) # *É a dúvida, e nada mais, que me norteia.*

*O Quinto Império* (“The Fifth Empire”) is his 37th [movie by Manoel de Oliveira] and earned him a special award for lifetime achievement at the last Venice Festival. Before, he made two movies that did not reach Brazilian cinemas so far: *O Princípio da Incerteza* (“The Principle of Uncertainty”, 2002), perhaps his masterpiece, and *Filme Falado* (“Talking Movie”, 2003). According to Manoel, the stories in these tapes are driven by curiosity:

— It is doubt that guides me. It is a stimulus because I’m not sure of anything, only that I have doubts.

- a) # It is exactly doubt that guides me.
- b) It is doubt, *more exactly*, that guides me.
- c) # It is doubt, not curiosity, that guides me.
- d) # It is only doubt that guides me.
- e) # It is doubt, and nothing else, that guides me.

At first, it seems that the case above is an instance of “identification by precising”: it is incompatible with operators of exclusion and compatible with something similar to *exatamente* “exactly”. The asserted alternative, *a dúvida* (lit. “the doubt”), is compared to an element in the context, *a curiosidade* (lit. “the curiosity”), and this is what seems to justify the use of the cleft. But the relationship between *a curiosidade* and *a dúvida* clearly is not a relationship between the “alternatives to each other”. Here, again, we have some kind of lexical relation between the two terms compared, in this case probably metonymy. “Curiosity” means something like “the desire to know something”, and doubt about something is obviously one of the possible reasons why we want to know more about it. That is, doubt can be a “source of curiosity”. Therefore,

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<sup>13</sup> Source: “*Vitalidade*” (“Vitality”), *Jornal do Brasil*, 3 de novembro de 2004.

the first conclusion is: when the text above establishes a contrast between doubt and curiosity, the aim is not to exclude one of “elements of comparison”, but rather to explain better why curiosity motivates the filmmaker: curiosity motivates him because it is caused by doubt.

Observe: in (21), not only the asserted term (*a dúvida*) but also the compared term (*a curiosidade*) satisfy the cleft predication (“x guides me”); and the relation of metonymy between both determines, by means of the asserted term (*a dúvida*), how the compared term (*a curiosidade*) satisfies the predicate. In these circumstances, it does not seem appropriate to say that it is a case of “identification (by precisizing) what was left undetermined” by the preceding context. (See especially the discussion of example (6) above.) Rather, what the cleft does in (21) is “to determine **more** precisely what had already been partially identified”.

Hence, the function of the cleft in (21) is to determine which element, **within the set of sources of curiosity**, guides the filmmaker. Possibly because of this, there is **no exclusion of other possible motivations “at the same level” of curiosity**. That is, there is no exclusion of alternatives that would constitute a “set of alternatives” with curiosity. Indeed, the discourse in (21) seems compatible with the idea that Oliveira’s work has many “motivations”: it may be motivated not only by curiosity – that is, by doubt –, but also by other things, for example, the desire to share his doubts; the desire to make the audience think about them, etc.

Thus, there is no exclusion in the set of alternatives to which **curiosity** belongs in (21). However, we do detect an “exhaustiveness effect” **in the domain of the sources of curiosity** – that is, in the set of alternatives to **doubt**, implicit in (21). From (21) we infer that it is doubt and not, say, a desire to know the sexual intimacy of individuals or a desire to get pleasure with what is unusual etc., which is the source of Oliveira’s curiosity. That is, the cleft is used to suggest that it is **doubt, and not some other source of curiosity**, that guides the filmmaker.

The case in (21) is important because it shows how complex the “calculus” can be of the so-called “exhaustiveness effect”. In particular, (21) reveals that **we must distinguish at least two sets of contextual alternatives** – a distinction that may not be needed in simpler cases. There is a set of “terms for comparison” in relation to which the clefted element is focused on in (21) – that is, the set of alternatives including the term that contextually justifies the focalization of the clefted element. This set appears to be constituted by curiosity and its alternatives (that is, those things that, together with the curiosity, may guide Oliveira’s work).<sup>14</sup> And there is a second set of alternatives in (21): it is the

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<sup>14</sup> Three facts support the idea that *doubt* is focussed because of its contrast relation with *curiosity*: (a) intuitively, the reader feels that *doubt* is actually “anaphorically” related to *curiosity*; (b) as we have just discussed, the use of *more exactly* is made clear by this relationship; and (c) finally, if the sentence containing *curiosity* did not

set of alternatives that includes the clefted term; this is the set whose terms we need to check whether the cleft predication is true of them, or not – that is, this is the set for which we calculate “exhaustiveness”. This set, in (21), is **evoked** by **curiosity** and its metonymic relation with **doubt**; and it is constituted by doubt and other sources of curiosity.

That is, the set of alternatives relevant to “exhaustiveness effects” can be evoked by a relation like metonymy, which seems to have something to do with the structure of the domain of referents in the discourse. But this is not surprising: in our discussion of previous examples, we had seen that both metonymy and hyponymy are relevant. No wonder hyponymy has played a central role in the characterization of exhaustiveness in some approaches (see fn. 5 and 6 above, and references cited there). But the relevance of metonymy has passed unnoticed, we think.

This is the point to note that examples like (21) indicate that we are faced with two distinct processes in interpreting clefts and operators such as **only**, **exactly**, etc. One is the identification of the set of relevant alternatives: this set is not simply “contextually given”, as the literature vaguely suggests. (The criticism applies to HORN, 1981; ROOTH, 1992 and KISS, 1998) The identification of the set of relevant alternatives seems to result from an inferential process based on a contextually articulate structure of referents, which involves relations like hyponymy, metonymy and possibly others. The examples that we discuss below will confirm this.

The second process – that seems to be more directly related to the semantics of clefts and of **only**, **exactly** etc. – is the readjustment such constructions and operators perform in the identified domain of alternatives. This is what has come to be known as the “exhaustiveness effect”. (21) confirms that, with clefts, it can be “exhaustiveness” properly speaking – that is, “identification by exclusion”. But examples like (20) above seem to raise doubts on the idea that this is the only effect; see also the discussion of (23), in the section 4.4 below.<sup>15</sup>

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have “term of comparison” to establish the relationship with the cleft constituent, the acceptability of the cleft would degrade significantly, and the use of *more exactly* becomes disconnected:

[...] According to Manoel, the stories in the tapes are driven by humanism/disgust for modern society/etc.:

- a) – #It is doubt that guides me. It is a stimulus because I am not sure about anything.
- b) – #It is doubt, more exactly, that guides me. It is a stimulus because ...

<sup>15</sup> The possibility of using a modifier like **more precisely** in (21) suggests that the cleft in this context functions as an expression of “metalinguistic negation”, notion discussed in detail by Horn (1985). In fact, **more precisely** could be replaced for **in other words** in (21) – which shows the cleft is correcting the way something has been said. Other examples discussed below have the same feeling, but we cannot explore these connections here.

## The contextual structure of referents and the set of alternatives, part 2

In this section, we discuss an example that confirms the importance of relations like hyponymy and metonymy, and also the need to distinguish the set of alternatives that “justifies focalization” and the set of alternatives relevant for the “exhaustiveness effect”. As we shall see, the case to be discussed is even more unexpected. Here it is:

(22) *Todo mundo quer uma Agência Nacional do Cinema e do Audiovisual. Só que há inúmeras lendas em torno dela. Uma é que ela é uma idéia que partiu [dos cineastas brasileiros]. [...] Nossa classe reivindicava, sim, a criação de um organismo específico para o cinema ligado à Presidência da República. [...] Quando se formou o Grupo Executivo [...] para discutir a criação desse organismo, chegou-se à conclusão de que deveria ser uma agência nacional de cinema e trabalhou-se nisso. Foi o ministro das Comunicações Pimenta da Veiga que levantou e falou: “Por que não fazer uma agência abrangente que pegue cinema e televisão, para casar logo as duas mídias?” Nós, do cinema, [...] dissemos: “Olha! É muita areia pro nosso caminhão.” Mas não adiantou.*<sup>16</sup>

- a) *Mas foi o ministro Pimenta da Veiga que levantou e falou: ...*
- b) # *(Mas) Foi o ministro Pimenta da Veiga, e não a classe dos cineastas, que falou: ...*
- c) *(Mas) Foi o ministro Pimenta da Veiga, e não um dos cineastas, que falou: ...*
- d) # *(Mas) Foi somente o ministro Pimenta da Veiga que falou: ...*
- e) *(Mas foi o Governo, e não a classe dos cineastas, que teve a idéia de criar a Ancinav.) Foi ministro Pimenta da Veiga que falou: ...*
- f) *(Mas foi somente o governo que teve a idéia de criar a Ancinav.) Foi ministro Pimenta da Veiga que falou: ...*

Everybody wants a National Agency for Cinema and Audiovisual media. But there are many myths about it. One is that it was suggested by Brazilian filmmakers. [...] It is true that our class demanded a specific body for cinema attached to the Presidency. [...] When an Executive Group was formed [...] to discuss the creation of this body, the conclusion was that it should be a national agency for cinema and people began to work on it. *It was minister Pimenta da Veiga that stood up and said: “Why not create a comprehensive agency that covers film and television, joining both media?”* We, of the cinema, [...] said: “Look! It is a lot of sand for our truck.” But to no avail.

- a) *But it was the minister Pimenta da Veiga who stood up and said: ...*
- b) # *(But) It was the minister Pimenta da Veiga, not the class of filmmakers, who said: ...*
- c) *(But) It was the minister Pimenta da Veiga, and not one of the filmmakers, who said: ...*

<sup>16</sup> Source: “*DVD dá mais lucro*” (“DVD is more profitable”), *Jornal do Brasil*, 17 de novembro de 2004.



- d) # (But) It was only the minister Pimenta da Veiga who said: ...
- e) (But it was the government, not the class of filmmakers, that had the idea of creating the agency:) It was the minister Pimenta da Veiga who stood up and said: ...
- f) (But it was only the government that had the idea of creating the agency:) It was the minister Pimenta da Veiga who stood up and said: ...

First, observe that the cleft in (22) does involve a contrast between the clefted term and some other term, which should be identifiable in the context. This is shown by the possibility of using **but**, as in (22a) (MENUZZI; ROISENBERG, 2010b). In the typical case, the term of contrast should form a set of alternatives with the focused term *minister Pimenta da Veiga*, and “identification by exclusion” would occur with reference to this set. But which is the term in (22) above that forms a set of alternatives with *minister Pimenta da Veiga*?

The most immediate candidate would be *the class of filmmakers*, which is the other salient term in the text: indeed, the filmmakers were opposed to Pimenta da Veiga’s suggestion. Despite of this, note the pragmatic unfelicity of the statement in (22b), in which *minister Pimenta da Veiga* is focused on and *the class of filmmakers* is explicitly excluded. This indicates that **the class of filmmakers** is not an appropriate term to form a set of alternatives with *minister Pimenta da Veiga*. By analogy with (21), we could say: **the class of filmmakers** can be the term that “motivates” the focalization of *minister Pimenta da Veiga*; but it is not an alternative in the set where *minister Pimenta Veiga* triggers the “exhaustiveness effect”.

(22c) shows that a relevant alternative could be **one of the filmmakers**, that is, a hyponym of **the class of filmmakers**. This makes sense: although **the class of filmmakers** is the term that motivates the focalization of *minister Pimenta da Veiga*, it just **evokes** a set of individuals who participated in the meeting where the minister stood up and spoke; and the text asserts that it was the minister, and not some other of those individuals, who suggested the idea that the agency should be created in this or that way.

However, consider what, under this interpretation, the “exhaustiveness effect” would be to justify the clefting of *minister Pimenta da Veiga*: it would identify (by exclusion) the minister as the only one – among those present at meetings between government, filmmakers etc. – to make the proposal in question. But the infelicity of (22d) at a first reading indicates that, contextually, this is not an appropriate interpretation for the text: **only** applied to *minister Pimenta da Veiga* seems to suggest that the proposal was made “only by the minister himself”; that is, the utterance would roughly mean: “But it was the minister – **personally, as an individual, and not, say, as a government official** – who stood and spoke...”.

(22e) indicates that there is another, more appropriate, reading for the text. Under this reading, the cleft “It was minister Pimenta da Veiga that...” is only an indirect way of saying that another political group, rather than the class of filmmakers – the government, for example –, wanted a “more comprehensive agency”. Crucially, the minister, in this reading, is related by hyponymy (or metonymy?) to this other group, that is, the government. In other words, one can say that the cleft “It was minister Pimenta da Veiga that...” has the role of evoking a hyperonym of the minister, the government. This also clarifies what the relevant predication really is for the purposes of “exhaustiveness effect”: “x had the idea to create the agency (as it was created).”

(22f) seems to confirm this interpretation: it shows that *the government* would be a proper contextual alternative to *the class of filmmakers*. More than that, it also shows that it would be a proper term for the “exhaustiveness effect”, that is, for the “identification by exclusion”: this is demonstrated by the acceptability of *only* in (22f). Finally, (22f) confirms that the relevant predication for exhaustiveness is “x had the idea to create the agency (as it is created)”. In fact, this was the “question under discussion” in the text, as the beginning of the text makes clear.

In short, the cleft “It was minister Pimenta Veiga that...” can be interpreted as a case of “identification by exclusion” in (22). In fact, this is the best contextual interpretation. But this effect is **indirectly** obtained by the utterance. In the relevant reading, the role of the cleft is to evoke another predication, the one presented at the beginning of the text as the “question under discussion”: “(which) x had the idea to create the agency (as it is created)”. In the same reading, the set of alternatives relevant for exhaustiveness is **not** the set that directly concerns *the minister Pimenta da Veiga* – which happens to be the clefted constituent! The implicit predication must be evaluated with reference to another set of alternatives. Explicitly, the result would be (22f) – an utterance fully coherent in the context.

We do not intend to discuss here all ramifications of the analysis just sketched for (22). But we think a few conclusions are unavoidable as long as (22) has the reading we just presented: (a) even in the basic cases of “identification by exclusion”, the so-called exhaustiveness effects may involve a complex inferential calculus based on contextual information; (b) this contextual information is related to both the structure of the domain of referents and the predication relevant for the “exhaustiveness effect”; and (c) the relevant inferential calculus may require a structure of referents and a predication that are not directly encoded by the cleft. From this perspective, it does not seem to be a case that the “identification by exclusion” performed by a cleft sentence necessarily results from the compositional semantics of the cleft itself.

## Structure within the set of alternatives

In the previous two subsections, we discussed cases where the appropriate calculus for the “exhaustiveness effect” requires a structured domain of referents. In particular, it is necessary to distinguish the set of alternatives that “motivates” focalization of the clefted term, and the set of alternatives over which exhaustiveness is defined. However, regarding the latter set, specifically, no internal structure was required so far: there is no relation between the alternatives beyond that of belonging to the same set – defined by the contextual possibility of satisfying the cleft predication (e.g., “x had the idea to create the agency (as it was created)” in (22f)). What the assertion made by the cleft does is to operate some modification in this set: typically, it excludes alternatives not asserted by the cleft; but the interaction between the cleft and the contextual structure of referents is often more complex than that – in some cases, the effect, in fact, seems to be the *inclusion* of an alternative in the relevant set [see (20)].

Anyway, in the cases previously discussed, as we said, no internal structure is required for the set of alternatives in which the “exhaustiveness effect” operates. However, consider the following, apparently simple, case of “identification by exclusion”:<sup>17</sup>

(23) *O artista que se desdobrava em engenheiro era uma figura comum na Renascença. O que era e é incomum, quase milagroso, é ter todos esses talentos na intensidade em que Da Vinci os tinha. [...] Embora tivesse uma assombrosa habilidade matemática, diz-se que Leonardo não criou algo que se pudesse chamar de “teorema de Leonardo” [...]*<sup>18</sup>

- a) *É na arte de Leonardo que se percebe mais claramente o modo como se combinam sua imaginação e seu poder de retratar o mundo. [...]*
- b) *É na arte de Leonardo, e não em sua ciência, que se percebe mais claramente o modo como se combinam sua imaginação e seu poder de retratar o mundo. [...]*
- c) *# É somente na arte de Leonardo que se percebe mais claramente o modo como se combinam sua imaginação e seu poder de retratar o mundo. [...]*
- d) *É mais claramente na arte do que na ciência de Leonardo que se percebe o modo como se combinam sua imaginação e seu poder de retratar o mundo. [...]*

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<sup>17</sup> In the text below, the cleft was adapted to show more clearly the effect that we want to discuss here. The original utterance was: *It is in Leonardo's art that his imagination and power of uncovering and portraying the world combine in a definitive way.* In this form, the modifier *a definitive way* obscures the gradual nature of the predication expressed by cleft and the corresponding ordering imposed on the set of alternatives.

<sup>18</sup> Source: “*A modernidade de Leonardo da Vinci*” (“Da Vinci's Modernity”), *Veja*, 27 de outubro de 2004.

The artist who doubled up as an engineer was a common figure in the Renaissance. What was and is unusual, almost miraculous, is to have all these talents in the intensity in which Da Vinci had them. [...] Although he had an amazing mathematical skill, it is said that Leonardo did not create something that could be called “Leonardo’s theorem” [...]

- a) It is in Leonardo’s art that one sees more clearly the way his imagination and his power to portray the world combine.
- b) It is in Leonardo’s art, and not in his science, that one sees more clearly the way his imagination and his power to portray the world combine.
- c) #It is only in Leonardo’s art that one sees more clearly the way his imagination and his power to portray the world combine.
- d) It is most clearly in Leonardo’s art, rather than in his science, that one sees the way his imagination and his power to portray the world combine.

On a first reading, the text seems simple: it would oppose Leonardo’s art to his science; and the “question under discussion” is which one best reveals how his imagination and power of description combine. At first glance, it seems that the meaning of the cleft (23a) is: it is Leonardo’s art that most reveals, etc. And, by exclusion, it is not his science that most reveals, etc. This first reading of the cleft (23a) seems even to be maintained in (23b), which seems to explicitly exclude Leonardo’s science from the alternatives that satisfy the cleft predicate.

But (23c) indicates that there is something wrong with this way of analyzing (23a) – that is, as simply containing the exclusion of “Leonardo’s science” from the set of alternatives *x* of which it is true to say that “we see more clearly in *x* the way Leonardo’s imagination and power of description combine”. The key observation is: the use of *only* in (23c) seems to imply that we cannot see clearly in Leonardo’s science the way his imagination and power of description combine. But that does not seem to be what is said in (23a) or (23b): in the last two, there is no such implication. As a matter of fact, (23a) and (23b) could be paraphrased by something like (23d) – which, crucially, does not carry the implication *only* triggers in (23c).

What (23d) suggests with respect to (23a) and (23b) is: the predication that defines the set of alternatives relevant for the “exhaustiveness effect” in (23a) and (23b) does not divide this set in alternatives that satisfy the predication and alternatives that do not. Concretely, the cleft clause in (23a) and (23b) does not divide the set of alternatives into those in which one can see clearly the way Leonardo’s imagination and power of description combine, and those in which one cannot see this clearly. Rather, it seems that the modifier *more clearly* has the effect of *ordering the set of alternatives* with respect to how much they show the combination of Leonardo’s imagination and power of description. That is:

- (i) the predication relevant to (23) seems to be “we see in x the way Leonardo’s imagination and his power to portray the world combine”; and
- (ii) the compositional effect of the modifier *more clearly* seems to be the ordering of the set of alternatives with respect to the degree in which they satisfy the predication described in (i).

Under this line of analysis, one can anticipate an explanation for the fact that (23d), but not (23c), can be used as a paraphrase for (23a,b).

Let us emphasize the consequence of this description: if it is correct, or nearly so, then we are forced to abandon the idea that “exhaustiveness effects” *necessarily* involve the identification of alternatives to which the predication applies and the inference that other alternatives are excluded. In the case of (23) – at least in the reading described above (that is, in which there is an ordering the set of alternatives with respect to the degree to which they satisfy the predicate), there is no such inference.

### Summary and Conclusions

In order to better see what the various cases discussed above suggest, we provide below a schematic representation for them. We try to indicate, in the representations, the structure of discourse referents at the time preceding the utterance of the cleft, and the structure resulting from the “exhaustiveness effect”. The schematic representations are composed as follows:

- (a) circles indicate sets of alternatives as defined by the terms considered as possible values for the predicate of cleft (or subsets thereof);
- (b) terms within these sets are the relevant alternatives;
- (c) suspension points (“...”) indicate potential or implied alternatives, that is, alternatives that not explicitly manifest in the context;
- (d) the left circle represents the structure of the relevant referents at the moment in which the cleft is uttered; and the right circle right represents the structure resulting from the “exhaustiveness effect” triggered by the cleft;
- (e) terms “scratched” in a set are the alternatives considered, but excluded contextually (either at the time that precedes or at the time that follows the cleft).

Here follow the relevant representations<sup>19</sup>:

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<sup>19</sup> All examples are made by the authors.

Example (5): Identification by exclusion



Example (6): Identification by precisising



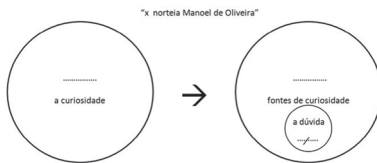
Example (19): Identification by exclusion, but not of all possible alternatives



Example (20): Identification by precisising, with no exclusion of possible alternatives



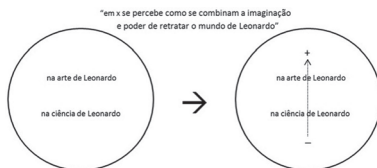
Example (21): Identification by precisising hyponym, excluding other hyponyms



Example (22): Identification by evoking hyperonym, excluding its alternative



Example (23): Identification of "best candidate" by ordering alternatives



The representations presented above refer to just a handful of examples of clefts we found in the texts of our corpus of written Portuguese. We could add other cases, still with different effects. Assuming that our description of the facts is adequate at least for one reading of the texts, the overall picture that seems to emerge is the following:

- (i) The term “exhaustiveness effects” is inappropriate to characterize the set of contextual effects triggered by clefting a term. In the examples we discussed, few are the cases in which the effect is restricted to “exhaustively delimiting” the alternatives to which the predication applies. Strictly speaking, this only seems to happen in example (6).
- (ii) Even the term “exclusion” (of the set of alternatives that satisfy the predicate) also seems inappropriate as a constant element of the “exhaustiveness effects”. Although most cases discussed do involve some type of exclusion [examples (5), (6), (19), (21) and (22)], there are at least two in which this does not seem to happen [examples (20) and (23)].
- (iii) In all cases, we do find the “identification” of at least one value for the variable in the predication expressed by the cleft. In all cases the cleft assumes that there is something that satisfies this predication, and asserts that this something includes the denotation of the clefted term. Sometimes we infer the exclusion of all other values; sometimes, of just a few values; sometimes, we infer no exclusion at all; and sometimes, even the **inclusion** of a value in the set of alternatives. That is, the “identification” performed by the cleft can have various effects.
- (iv) In all cases, the cleft is asserted in a context where not only the content of the cleft clause is presupposed (under existential quantification, at least), but also there is some expectation about the values that satisfy the corresponding predication – that is, about the set of alternatives. And in all cases the assertion of cleft changes such expectations (in different ways, cf. (iii)).
- (v) In all cases the clefted term is “anaphoric” in the sense that it has been previously introduced in the discourse, or it is inferable by means of relations like hyponymy/ hyperonymy and metonymy, as in (21) and (22).<sup>20</sup> Moreover, in general the “antecedent” of the clefted term was introduced in connection with the question of what satisfies or not the predicate of the cleft. The exception is, perhaps, example (20).

Given this picture, we can now try to provide a general characterization of the so-called “exhaustiveness effects”. As a first approximation, we would say that:

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<sup>20</sup> The observation that the clefted constituent, when focused, tends to be “anaphoric” is not new, of course; see, for example, Givón (1992, 1993) for discussion.

- (a) “exhaustiveness effects” result from operations of correction to the structure R of the discourse referents; these operations affect a set E of expectations of the discourse; and E concerns which referents in R may satisfy the predication P expressed by the cleft;
- (b) the particular operation of correction is “induced” or “implied” by the cleft’s assertion, which is the identification of one of the values x that satisfy P;
- (c) the particular correction obtained in R must be “calculated pragmatically” from the previous structure of R and from the previous expectations E.

Possibly, the above characterization is too weak. One could try to make it stronger by assuming that the cleft bears an existential presupposition, as in Horn’s proposal in (14) above. This would be compatible with the cases we discussed here; but they would still require a weakening in Horn’s assumption about “exhaustiveness”, as well as a refinement of what he meant by “set of entities determined by the context C”. (And, of course, one must also consider whether the relevant inference is a “generalized conversational implicature”, as in Horn’s proposal, or some other type of inference.) We will not try to explore these possibilities here any further. Our goal was merely to show that the so-called “exhaustiveness effects” actually involve several different types of effects on a structure of discourse referents that is articulated, organized; and that this structure interacts with various types of contextual information and expectations.

In addition to the issues already mentioned, others arise, of course: (i) What is, precisely, the semantics and the pragmatics of expressions like *only*, *and nothing else*, *exactly*, *more exactly*, etc.? (ii) What are, really, the common elements they share with clefts? (iii) Can we keep the thesis, incorporated to the Horn’s proposal, that the main property of clefts – besides the identity assertion expressed by the main clause – is a simple presupposition of existence? That is, is it possible to dispense with stronger assumptions, such as the “presupposition of uniqueness” proposed by Szabolcsi (1994) and Wedgwood, Pethő and Cann (2006)? We intend to address these and other issues in future work.

TEIXEIRA, M.; MENUZZI, S. Diferentes efeitos de exaustividade em clivadas: um estudo descritivo de casos. **Alfa**, São Paulo, v.59, n.1, p.61-90, 2015.

- **RESUMO:** *O objetivo do presente artigo é mostrar que há “efeitos de exaustividade” no uso das clivadas que diferem da “identificação por exclusão” – o efeito mais conhecido pela literatura (ATLAS; LEVINSON, 1979; HORN, 1981; KISS, 1998; WEDGWOOD; PETHŐ; CANN, 2006; BÜRING; KRIZ, 2013). Para atingir este objetivo, apresentamos um estudo descritivo detalhado de casos, por meio do qual testamos os efeitos contextuais encontrados em exemplos espontâneos de jomais e revistas da imprensa brasileira. Utilizamos na testagem modificadores associados pela literatura aos efeitos das clivadas sobre o “conjunto contextual de alternativas” – como somente e e ninguém mais (ATLAS; LEVINSON, 1979; HORN, 1981,*



entre outros) e exatamente e precisamente (MENUZZI; ROISENBERG, 2010a). Nossa conclusão é a de que os “efeitos de exaustividade” envolvem vários tipos de inferências acerca da estrutura do domínio de referentes do discurso, e podem modificar esta estrutura de diversos modos. Esse resultado coloca sob nova perspectiva algumas das questões acerca da semântica e da pragmática das clivadas; em particular, a de saber quanto dos “efeitos de exaustividade” tem algum caráter “convencional” (como pressuposições e implicaturas generalizadas), e quanto é derivado por inferência pragmática particularizada.

- PALAVRAS-CHAVE: Sentenças clivadas. Efeitos de exaustividade. Identificação por exclusão. Conjunto contextual de alternativas. Inferências pragmáticas.

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# SUBJECTIVITY AND INTERSUBJECTIVITY IN CONDITIONALS: TEMPORAL BACKSHIFTING STRATEGIES IN BRAZILIAN PORTUGUESE

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- **ABSTRACT:** This work takes a Cognitive Linguistics perspective on Brazilian Portuguese conditional constructions. Based on mental spaces theory (FAUCONNIER, 1994, 1997; FAUCONNIER; SWEETSER, 1996) and on mental spaces work on conditionals (SWEETSER, 1990; DANCYGIER, 1998, DANCYGIER; SWEETSER, 2005; GOMES, 2008), the research relied on recent contributions on subjectivity and intersubjectivity (LANGACKER, 1990; TRAUOGOTT; DASHER, 2005; VERHAGEN 2005), and its developments based on the notion of Base Communicative Space Network (BCSN) ( SANDERS; SANDERS; SWEETSER, 2009; FERRARI; SWEETSER, 2012). Drawing on written corpus data, which includes journalistic and literary texts, we focus on conditionals which may alternate between the future of the subjunctive and the present of the indicative, in the protasis, and between the present and the future of the indicative, in the apodosis. Four groups of conditionals were identified that displayed distinct relations between mood/tense selection and cognitive motivations. The main contribution of the paper is that it provides a unified framework for relating tense/mood alternations in conditionals to the speaker's subjective and/or intersubjective perspective.
- **KEYWORDS:** Cognitive Linguistics. Mental spaces. Conditionals. Tense. Subjectivity

## Introduction

One of the main goals of Cognitive Linguistics is to investigate the relationship between linguistic structure and meaning construction. In particular, research on mental spaces has demonstrated that specific grammatical forms serve as prompts for dynamic on-line constructions of meaning. With respect to [If p, q] conditionals, the **if**-clause has been characterized as setting up a hypothetical space p which is the Foundation space for the causally related Expansion space q (FAUCONNIER, 1994, 1997; DANCYGIER; SWEETSER, 2005).

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Following this line of investigation, the aim of this paper is to analyze Brazilian Portuguese [If p, q] conditionals which use the present of the indicative to indicate future events. This phenomenon, usually referred to as **temporal backshifting** in the literature (DANCYGIER, 1998; DANCYGIER; SWEETSER, 2005), is claimed here to be related to two main tense alternations: (i) present of indicative/future of subjunctive in the protasis; (ii) present of indicative/future of indicative in the apodosis. It is then argued that these alternations can be accounted for in terms of subjectivity and intersubjectivity.

The paper is organized in three main sections. Section 2 describes the theoretical background for the research, and provides a review of work on mental spaces and conditionals (FAUCONNIER, 1994, 1997; DANCYGIER; SWEETSER, 2005; FERRARI, 2000, 2001, 2012; GOMES, 2008). It also relies on recent elaborations of the mental spaces approach which provide new insights into subjectivity and intersubjectivity (SANDERS; SANDERS; SWEETSER, 2009; FERRARI; SWEETSER, 2012). Section 3 deals with methodological issues, focusing on data-gathering and the definition of objectives and hypothesis. Section 4 presents an analysis of temporal backshifting in Brazilian Portuguese conditionals which relates formal characteristics and meaning construction in terms of degrees of subjectivity and/or intersubjectivity.

## **Theoretical background**

Cognitive approaches to deixis have pointed out that deictic elements are radial categories with prototypical central members and peripheral extensions. (MARMARIDOU, 2000). With respect to verb tense, Langacker (1991) has argued that the opposition between 'present' and 'past', for example, should be more generally defined as a proximal/distal contrast in the epistemic sphere (prototypically temporal, but of other types as well). Thus, prototypical present designates that the event is temporally immediate to the speaker (e.g. **I'm hungry**), while prototypical past conveys temporal non-immediacy (e.g. **I was hungry last night**). Interestingly enough, present tense may also refer to epistemically proximal events, either past (e.g. In 2002, Brazil **wins** the World Cup) or future (e.g. The train **arrives** tomorrow).

In particular, the concept of epistemic proximity, which implicitly refers to the speaker's/hearer's reasoning processes during ongoing discourse, has been brought to explain the use of present tense to signal future events in conditionals (e.g. If it **rains**, they'll cancel the game). In what follows, the

theoretical background which constitutes the basis for the present work will be presented.

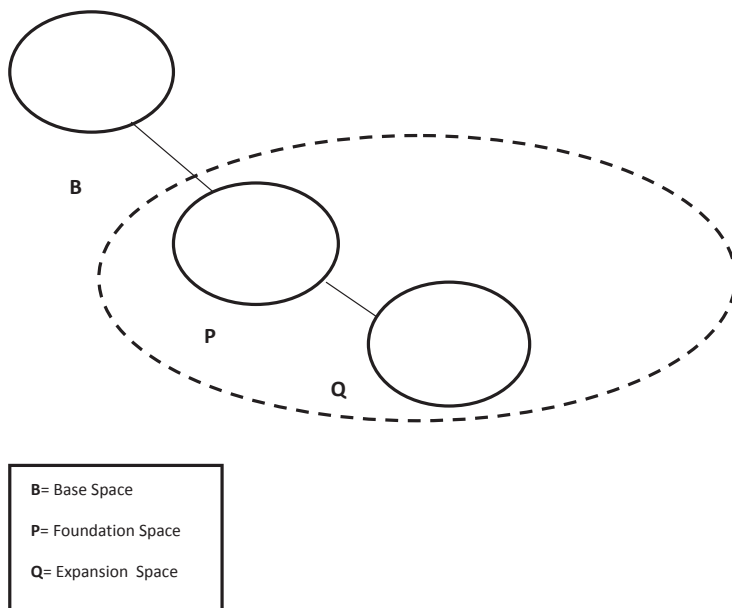
## **Mental space approach to conditionals**

Mental Spaces Theory has been built to explain meaning construction in terms of mental representations. Thus, mental spaces are described as “[...] partial structures that proliferate when we think and talk, allowing a fine-grained partitioning of our discourse and knowledge structures.” (FAUCONNIER, 1997, p.11). As pointed out by Lakoff (1987), mental spaces are structured by Idealized Cognitive Models (ICMs), i.e., frames which provide patterns for understanding cultural values and social relations.

Any space configuration includes four discourse primitives which are assigned to the discourse spaces dynamically. The BASE space is informally defined as an anchor for the configuration; the VIEWPOINT space is the one from which other spaces are currently being set up or accessed; the FOCUS space is where content is currently being added, and the EVENT space corresponds to the time of the event being considered.

If we consider conditionals of the form [If P, Q], we will note that they set up two successive spaces, a Foundation H and an Expansion J, which are normally built taking the BASE as Viewpoint (VP). So the conditional **If it rains, they will cancel the game** first sets up a space H, hypothetical with respect to the BASE; P becomes the FOCUS (F) where content is being added (“**it rains**”). Q is an expansion of P: it becomes the FOCUS’ (F’), since it inherits H’s explicit structure and acquire extra explicit structure of its own corresponding to “**they will cancel the game**”, as illustrated in the following diagram:

**Diagram 1** – Mental space representation of conditionals.



**Source:** Fauconnier (1997, p.132).

Dancygier (1998) has pointed out that, in conditionals of the type represented in Diagram 1, **if** has three functions: (a) at the cognitive level, it is a **space builder** for conditional spaces; (b) at the lexical level, it is a marker of non-assertiveness, indicating that the speaker presents the assumption as non-assertable; (c) at the constructional level, it introduces one of the clauses of a conditional construction and presents the assumptions in P and Q as connected.

At the cognitive level, another relevant parameter is the **speaker's epistemic stance** which refers to the "kind of commitment the speaker has to a proposition" (FILLMORE, 1990, p.42). Thus, while when-clauses are assumed to signal positive epistemic stance (e.g. **When I arrive home, I'll call them**), if-clauses may indicate either neutral or negative epistemic stance towards a future event. For example, the present tense **arrive** is indicative of neutral epistemic stance in **If I arrive home early, I'll call them**, while the past tense **arrived** indicates negative epistemic stance in **If I arrived home early, I would call them**.

At the constructional level, Sweetser (1990) has argued that conditionals are interpretable as joining clauses in different ways. There are cases in which the **content** of the two clauses is semantically related – that is, where the situations described are assumed to be causally related, as in **If the team wins this game,**

**it will win the Cup**. Other times the speaker's knowledge about a state of affairs is a precondition for establishing a conclusion, even though the causal relation between the content of the two clauses may be in the opposite direction; thus, the relation between protasis and apodosis is **epistemic**. For example, **If they ate all the cookies, they were really hungry** means not that eating is a condition for being hungry, but rather that knowledge of the eating is a condition for the speaker's conclusion about their level of hunger. Finally, the conditional construction relates a state of affairs and a **speech act**; e.g. **If you don't mind, could you turn off the fan?** makes a request as contingent on the addressee not minding to do what is asked.

Dancygier and Sweetser (2005) have argued that **prediction** is one of the main functions of content conditionals. In this case, meaning construction is based on alternatives. For example, the conditional **If it rains, they won't go hiking** simultaneously structures the alternative space **If it doesn't rain, they will go hiking**. On the other hand, epistemic and speech act conditionals are not, in general, predictive; although they may involve some kind of prediction, their main focus is on the conditional presentation of a conclusion or a speech act, respectively.

In this paper, tense alternation in Brazilian Portuguese conditionals will be examined. It is shown that the use of the present of the indicative is not restricted to content conditionals, but may also occur in epistemic or speech act conditionals which make reference to future events.

## **Cognitive approaches to conditionals in Brazilian Portuguese**

Recent cognitive linguistics research on Brazilian Portuguese conditionals has emphasized the correlations between formal and contextual parameters. Work by Ferrari (2000, 2001) has shown that verb form combinations, types of conjunctions (*se, caso, mesmo se, etc.*<sup>1</sup>), as well as clause types in the apodosis (e.g. declaratives, interrogatives or imperatives clauses) contribute in different ways to conditional meaning.

It has specially been noted that verb form is one of the most relevant parameters for conditional interpretation. Given that conditional protases posit a hypothesis that could be confirmed under appropriate conditions, the speaker's stance on this hypothesis is codified by verb tense (and mood), as shown in the following examples<sup>2</sup>:

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<sup>1</sup> The conjunctions 'se', 'caso' and 'mesmo se' correspond roughly to 'if', 'in case' and 'even if' in English.

<sup>2</sup> Throughout this paper, the following abbreviations will be used: FS (Future of Subjunctive); FI (Future of Indicative); PF (Periphrastic Future); P (Present of Indicative); PS (Past of Subjunctive) COND (Conditional); Pimp. (Past Imperfect of Indicative)

- (4) *Se o time ganhar (FS) o jogo amanhã, ficará (FI)/ vai ficar(PF) em 1º lugar no torneio.*  
*“If the team wins the game tomorrow, it will/it’s gonna get the first place in the competition”.*
- (5) *Se o time ganhasse (PS) o jogo amanhã, ficaria(COND)/ ficava (PImp) em 1º lugar no torneio.*  
*“If the team won the game tomorrow, it would get/got the first place in the competition”*

According to Sweetser’s classification (1990), conditionals (4) and (5) are examples of content conditionals, since there is a conditional and causal relation between the described events. Moreover, verb tense variation in the protasis signals different epistemic stances, as proposed by Fillmore (1990). Thus, the use of the future of the subjunctive (FS) in (4) indicates that the speaker takes a neutral epistemic stance towards the team winning the game; on the other hand, the past of the subjunctive in (5) signals distanced or negative epistemic stance (i.e., the speaker doesn’t believe that the team will win tomorrow).

In contexts like (4), Brazilian Portuguese also accepts the present of the indicative in the protasis. In the article “Three types of conditionals in English and Portuguese”, Gomes (2008) analyses temporal choice in Portuguese conditionals, focusing on the alternation between the present of the indicative and the future of the subjunctive in conditional protases. The alternation is illustrated by the simulation of two hypothetical conversational exchanges. In the first one, X says to Y that Maria has been studying hard, and Y may reply:

- (6) *Se ela estiver cansada, é melhor parar.*  
 If she be:FS tired, be:P better stop  
*“If she is tired, she would better stop”*

In the second one, X tells Y that Maria is tired because she has been studying hard, and Y replies:

- (7) *Se ela está cansada, é melhor parar.*  
 If she be:P tired, be:P better stop  
*“If she is tired, she would better stop.”*

Gomes (2008) explains the difference between (6) and (7) as follows. In (6), the future of the subjunctive indicates uncertainty on the speaker’s part; the speaker is not sure that Maria is tired. In (7), however, Y already knows that Maria is tired and the use of the present of the indicative reflects this knowledge. Thus, the choice between the future of the subjunctive and the present of the indicative is



motivated by the stance taken by the speaker to the proposition P. If the speaker takes the proposition as an **accepted fact**, she will choose the present of the indicative, but if she takes it as an **uncertain fact**, the future of the subjunctive is likely to be chosen.

Gomes's proposal sheds new light on the distinction between the present of the indicative and the future of the subjunctive in Portuguese conditional protases. Yet, the following questions still remain: a) what motivates the speaker to treat an event as accepted fact? b) conversely, what motivates the speaker to treat an event as uncertain fact?

In what follows, we aim at answering these questions by focusing on the speaker's cognitive construction of conditionality (and not on objective truth or falsity). Based on previous studies on apparently incongruent temporal sequences in spoken conditionals (FERRARI, 2012), we propose an analysis which articulates recent developments of mental spaces theory to the notions of subjectivity and intersubjectivity.

### **Cognitive approaches to subjectivity and intersubjectivity**

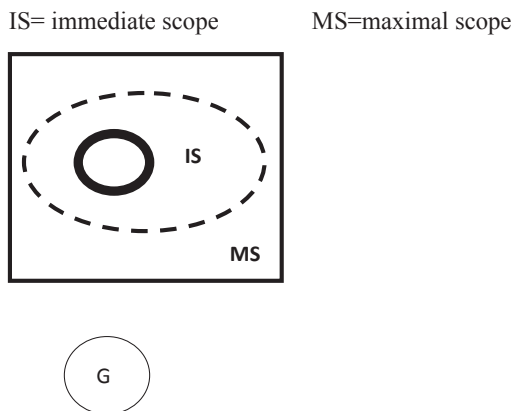
Subjectivity and intersubjectivity have been prominent concepts in research on semantic change and grammaticalization. Traugott e Dasher (2005) argue that, in the objective point of view, the speaker or the writer intends (or pretends) to describe things as they actually are. By contrast, the subjective perspective typically involves the representation of the speaker's point of view in discourse, as illustrated by overt spatial and temporal deixis, explicit markers of the speaker's attitude to the proposition, and so on. Finally, intersubjectivity has to do with interpersonal meanings which explicitly mark the speaker's attention to the addressee (e.g. overt social deixis, politeness markers and honorific titles).

Albeit the contribution of grammaticalization studies to the understanding of subjectivity and intersubjectivity, cognitive approaches have added new dimensions to these concepts. In his groundbreaking work, Langacker (1990) distinguishes between "off-stage" and "on-stage" expression of the conceptualizer's point of view, and proposes that objectivity and subjectivity are related to the asymmetry between the conceptualizer and the object which he is conceptualizing. The asymmetry is maximal when the subject of conception is totally absorbed in apprehending the onstage situation (subjectivity), or when the object of conception is well-delimited (objectivity).

In Langacker's terms, the **Ground** (speaker, hearer, location and time of the speech event) may be coded in three different ways:

- a) The **Ground** remains external to the scope of predication, as in nouns and verbs in isolation:

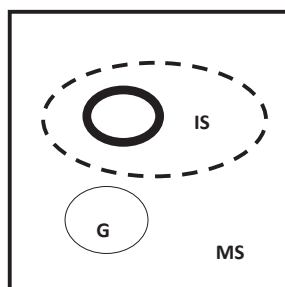
**Figure 1** – Ground external to the scope of predication



**Source:** Langacker (1990, p.10).

- b) The **Ground** is offstage, as an implicit, unprofiled reference point, as in deictic expressions like **yesterday, tomorrow, last year**:

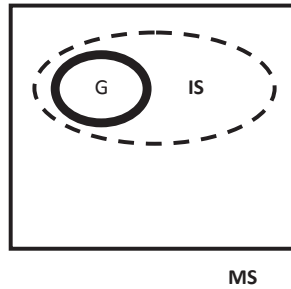
**Figure 2** – Offstage Ground



**Source:** Langacker (1990, p.10).

- c) some facet of the **Ground** is put onstage, as in expressions such as here, I, now, and so on:

**Figure 3** – Onstage Ground

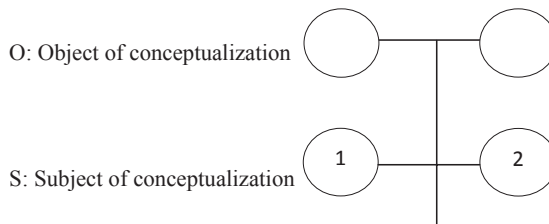


**Source:** Langacker (1990, p.10).

According to Langacker, (a) and (b) are subjectively construed, since the **Ground** remains external to the predication's maximal and immediate scope, respectively. However, (c) represents an objective construal in which the **Ground** is onstage as the focal point within the immediate scope of predication. Moreover, it is worth noting that (a), (b) and (c) should be placed along a continuum ranging from subjectivity to objectivity.

Although Langacker (1990) does not focus on intersubjectivity, his proposal has posed the foundations for further analyses of this phenomenon. For example, Verhagen (2005) has claimed that the **Ground** is not a homogeneous whole but has, in fact, a complex structure which includes, at least, two conceptualizers: the speaker and the addressee. As subjects of conceptualization, these participants engage in cognitive coordination by means of the utterance, with respect to some object of conceptualization, as illustrated in Figure 1:

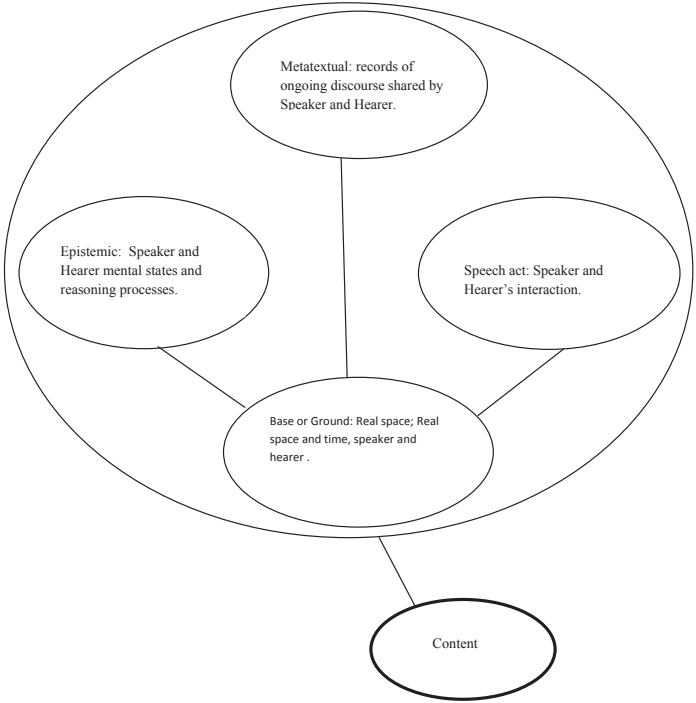
**Figure 4** – Basic elements of conceptualization



**Source:** Verhagen (2005, p.31).

Cognitive coordination is intersubjective; it occurs when the first conceptualizer invites the second to jointly observe the object of conceptualization by actualizing the common ground (which refers to the knowledge mutually shared by the conceptualizers, including models of each other and of the discourse situation). Verhagen’s initial insight was further elaborated by work on mental space structure (SANDERS; SANDERS; SWEETSER, 2009). The concept of Base Communicative Spaces Network (BCSN) was put forward to indicate the spaces which are implicitly built up by any communicative use of language. It includes at least: (i) a Ground Base Space, which contains the real speaker and hearer in their spatiotemporal setting; (ii) Epistemic Spaces (speaker’s and hearer’s mental states and reasoning processes); (iii) a Speech Act Space (speech interaction which defines the speech acts performed by speaker and hearer); (iv) a Metatextual Space, which contains the records of ongoing discourse. The BCSN can be diagrammed as follows:

**Diagram 2** – Basic Communicative Spaces Network (BCSN)



**Source:** Ferrari and Sweetser (2012, p.49).

As Ferrari and Sweetser (2012) pointed out, the Base Space is taken to be less subjective than Speech Act, Epistemic and Metatextual Spaces, which are assumed to be more implicit and, hence, more subjective. This is because the Base Space is more intersubjectively verifiable in experience than the more abstract spaces of speech interaction or mental processes.

## Methodology

The research is based on written data, including press articles from the newspaper “O Globo” and the magazine “Época” (PINHEIRO, 2010), and literary texts taken from the Portuguese Corpus (DAVIES; FERREIRA, 2006).

The investigation focused on [Se P, Q] conditional constructions which allow alternation between future forms and the present of the indicative (conveying future meaning):

### Schema 1 – Form and tense alternations

<div style="display: flex; justify-content: space-between; align-items: center;"> <span>[ SE</span> <div style="margin: 0 auto; padding: 0 10px;"> <b>P</b> </div> <span>Q</span> <span>]</span> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="text-align: left;"> <span style="font-size: 2em;">{</span> Future Subjunctive  <span style="font-size: 2em;">{</span> Present Indicative         </div> <div style="text-align: right;"> <span style="font-size: 2em;">}</span> Future Indicative  <span style="font-size: 2em;">}</span> Present Indicative         </div> </div>
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**Source:** Made by the author.

The schema reveals that the protasis may have the future of the subjunctive or the present of the indicative, while the apodosis may have the future or the present of the indicative in Brazilian Portuguese.

This paper aims at clarifying the mechanisms involved in meaning construction in these conditionals, as well as explaining the speaker’s tense choice in real usage contexts. The hypothesis is that these tense alternations are related to different strategies for indicating subjectivity and intersubjectivity.

In the next section, the analysis will be presented.

## Present and future alternations in conditionals

The analysis showed that the conditionals investigated allow four different temporal combinations. These combinations will be discussed in what follows.

## Group I: Future-Future

Group I includes conditionals which have the future of the subjunctive in the protasis and the future of the indicative/periphrastic future in the apodosis. The form-meaning pairings are the following:

**Table 1** – Future of subjunctive – Future of indicative

	<b>PROTASIS</b>	<b>APODOSIS</b>
<b>MORPHOLOGICAL FORM</b>	Future of subjunctive (FS)	Future of indicative(FI) Periphrastic future(PF)
<b>SEMANTIC CONTENT</b>	Event non-anterior to the Ground	Prediction

**Source:** Made by the author.

The following example illustrates the combination of the future of the subjunctive (FS) and the future of the indicative (FI) shown in Table 1:

- (8) Cameron quer inquérito sobre suposta relação do MI-6 com regime líbio. Se a ação *prosperar* (FS), *ficará* (FI) proibida a venda das ações do governo líbio nas duas empresas, e eventuais dividendos *terão* (FI) de ser depositados em juízo. A decisão do Brasil foi baseada em resoluções do Conselho de Segurança das Nações Unidas. (Corpus LINC)

*“Cameron wants an inquiry into the alleged relation between MI-6 and Libyan regime. If the judicial action goes forward, the selling of government shares by the two companies will be forbidden, and any dividends will have to be deposited in Court. Brazil’s decision was based on United Nations Security Council resolutions”.*

The combination of the future of the subjunctive (FS) and the periphrastic future (PF) is exemplified as follows:

- (9) A maioria dos endocrinologistas espera que a droga continue liberada no Brasil. “Se esse remédio *for* (FS) proibido, *vamos perder* (PF) um produto extremamente útil no combate à obesidade”, diz Ricardo Meirelles, presidente da Sociedade Brasileira de Endocrinologia e Metabologia.” (Corpus LINC)

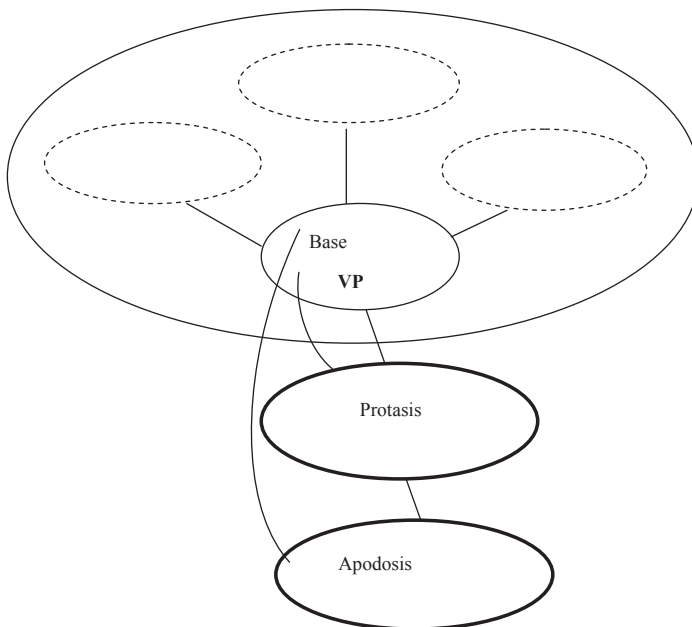
*“The majority of endocrinologists hope that the drug remains approved in Brazil. “If this medicine is forbidden, we will lose an extremely useful product in the fight against obesity”, says Ricardo Meirelles, chair of Brazilian Endocrinology and Metabolism Society”.*

(10) Além da superlotação, há os abusos de praxe, como espancamentos e humilhações. Se a denúncia feita pelo Conselho Estadual dos Direitos Humanos à ONU *for* (FS) adiante, o Brasil *poderá sofrer* (PF) sanções da Organização dos Estados Americanos (OEA). (Corpus LINC)

*“Apart from overcrowding, there are the usual abuses, such as beating and humiliation. If the denunciation made by the Human Rights State Council to the UN is acted on, Brazil may face sanctions from the Organization of American States (OAE)”*

Examples (9) and (10) have the auxiliary *ir* (roughly, to go) and the modal *poder* (roughly, may)<sup>3</sup>. Group I may be represented as follows:

**Diagram 3** – Meaning construction in Group I



**Source:** Made by the author.

Diagram 3 represents the construction of two Focus spaces relative to the Base, corresponding to the conditional protasis and apodosis, respectively. Given that the Base is one of the spaces of the Basic Communicative Spaces Network (BCSN), conditionals which conform to Group 1 show some degree of subjectivity.

<sup>3</sup> For a discussion of periphrastic future in Portuguese, see Ferrari e Alonso (2009). The main claim is that periphrases such as [ir/poder/dever +Infinitive] indicate the construal of the future event from the speaker's viewpoint. The periphrases differ, however, in the degree of certainty indicated by each auxiliary.

However, as we shall see, these conditionals are less subjective than the ones that belong to other groups.

## Group II: Present-Future

Group II differs from Group I in that it has the present of the indicative in the protasis. Form-meaning pairings are shown below:

**Table 2** – Present of indicative – Future of indicative

	<b>PROTASIS</b>	<b>APODOSIS</b>
<b>MORPHOLOGICAL FORM</b>	Present of Indicative (P)	Future of Indicative(FI) Periphrastic Future(PF)
<b>SEMANTIC CONTENT</b>	Event non-anterior to the Ground	Prediction

**Source:** Made by the author.

Similarly to the previous group, conditionals in this group involve a prediction. But in this case the present of the indicative contributes to meaning construction in a slightly different way: it points to intersubjective information, previously mentioned in discourse.

In this vein, we suggest that the notion of “accepted fact”, proposed by Gomes (2008), could be replaced by “intersubjectively accepted fact”. The latter notion reflects discourse ‘reality’, not real facts or speaker’s belief systems. Consider the following example:

- (11) Há algum tempo estou para lhe dizer isso, mas não me atrevia. Não me parece bonito que nosso Bentinho ande metido nos cantos com a filha do Tartuga, e esta é a dificuldade, porque se eles *pegam*(P) de namoro, a senhora *terá* (FI) muito que lutar para separá-los. (*Corpus do Português*)

*“I’ve been wanting to tell you this for some time, but I didn’t dare. It doesn’t seem fitting that our Bentinho be hanging around with Tartuga’s daughter, and this is where the difficulty lies, because if they start going steady, it will give you a real hard time to split them up.”*

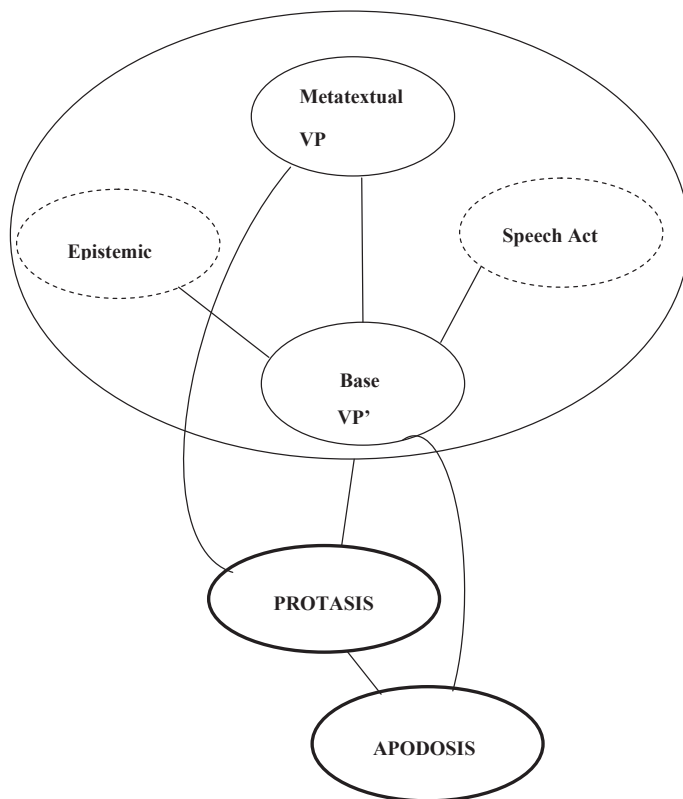
Example (11) is an excerpt of the novel *Dom Casmurro*, written by Machado de Assis. In this part of the plot, one of the characters, José Dias, is concerned about Bentinho, the main character, and Bentinho’s close friend, Capitu. José Dias warns Bentinho’s mother to be careful, because close friends can become



a couple. In (11), the present of the indicative (“**If they start going steady**”) signals that the information in the protasis has already been activated in previous discourse (i.e., **if Bentinho keeps hanging around with Capitu, they may start dating**).

Group II may be represented as follows:

**Diagram 4** – Meaning construction in Group II



**Source:** Made by the author.

Diagram 4 shows that both the Metatextual Space, which contains shared registers of ongoing interaction, and the Base Space are involved in meaning construction. Thus, conditionals in Group II are more subjective than conditionals in Group I because they activate a more implicit space in the BCSN (i.e., the Metatextual Space) for building up the Foundation Space.

### Group III: Future-Present

Group III includes conditionals with the present of the indicative in the apodosis. Form-meaning pairings are indicated in Table 3:

**Table 3** – Future of subjunctive – Present of indicative

	<b>PROTASIS</b>	<b>APODOSIS</b>
<b>MORPHOLOGICAL FORM</b>	Future of Subjunctive (FS)	Present of Indicative (P)
<b>SEMANTIC CONTENT</b>	Event non-anterior to the Ground	Conclusion

**Source:** Made by the author.

Examples (12), (13) e (14) show conditionals which have the structure presented in Table 3:

- (12) “Ex-comandante militar da Amazônia e da Força de Paz no Haiti, o general Augusto Heleno entrou de cabeça na política depois que foi reformado, em maio. Armado com o Twitter, ele atira para todos os lados. Eis um de seus petardos: “Se o Brasil um dia *for (FS)* sério, o mensalão *vira (P)* um ‘case’ para mostrar como o judiciário era lento, inepto e ‘engavetador’.” (Corpus LINC)

*“Ex-Army Commander of the Amazon and of the Haitian Peace Force, general Augusto Heleno got deep into politics after his retirement in May. Armed with the Twitter he shoots everywhere. Here is one of his fire crackers: “If one day Brazil is a serious country, the Mensalão Scandal becomes a ‘case’ to show how the judiciary was slow, inept and inoperative.”*

In (12), the reported speaker sets up a hypothetical future space (“**if one day Brazil is a serious country**”), using the future of the subjunctive. In the apodosis, however, he uses the present of the indicative to indicate a present conclusion about a future event (“**become a ‘case’**”).

- (13) “Longe, em algum lugar, a mulher se revolta, os filhos brigam, ninguém sabe o que fazer agora que a escola vai começar. Júnior José Guerra está encurralado. Se *voltar (FS)*, *morre (P)*. Ele denunciou – e está sozinho.” (Corpus do Português)

*“Far away, in some place, the woman is outraged, her sons fight, no one knows what to do now that school is going to start. Júnior José Guerra is cornered. If he comes back, he dies. He made the denouncement – and he is alone”.*

Example (13) is part of a narrative, in which the narrator formulates an alternative line of action for the character (**if he comes back**) and established a conclusion about the consequences of this action (**he dies**).

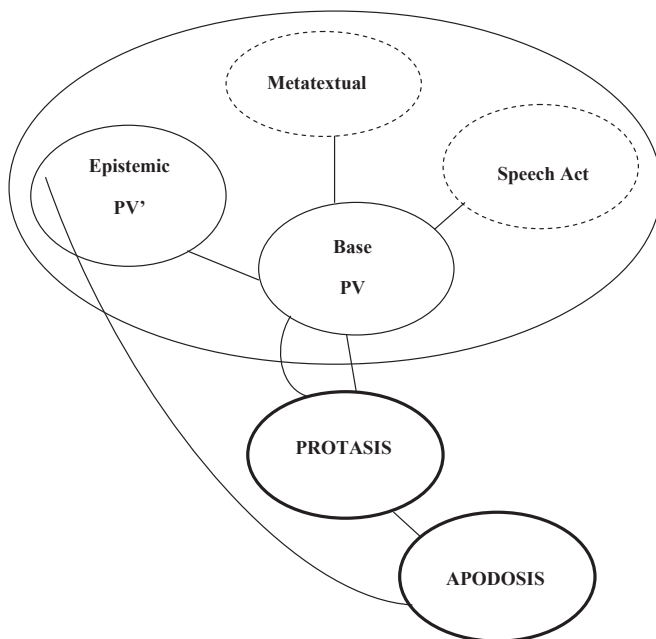
(14) “Se nenhum concorrente *fizer(FS)* oferta sobre o último lance colocado pelo sistema eletrônico, a Aneel *retoma(P)* o valor apresentado anteriormente e parte para uma nova forma de disputa, a das rodadas discriminatórias.”(*Corpus LINC*)

“*If no competitor makes a bid on the last Eletronic Bid System, Aneel takes the value previously shown, and puts up a new form of contest, with discriminatory rounds*”.

In (14), the present tense in the apodosis indicates a previous planning (“**Aneel takes the value previously shown**”) for a possible future event (“**if no competitor makes a bid**”).

In examples (12), (13) and (14), the present tense in the apodosis signals that the speaker makes a (present) conclusion about a situation which is posterior to the speech event. Thus, the apodoses have a more subjective perspective, as shown in Diagram 5:

**Diagram 5** – Meaning construction in Grupo III



**Source:** Made by the author.

Table 5 shows that meaning is constructed as follows in Group III: the protasis is constructed relative to the Base, whereas the apodosis is built up relative to the Epistemic Space.

#### Grupo IV: Present-Present

Group IV has the present of the indicative both in the protasis and in the apodosis, as shown in Table IV:

**Table 4** – Present of indicative-Present of indicative

	<b>PROTASIS</b>	<b>APODOSIS</b>
<b>MORPHOLOGICAL FORM</b>	Present of Indicative (P)	Present of Indicative (P)
<b>SEMANTIC CONTENT</b>	Event non-anterior to the Ground	Conclusion

**Source:** Made by the author.

Group IV combines the alternations observed in Groups II and III. In the protasis, the use of the present of the indicative indicates that the event is part of discourse records, and in the apodosis the use of the present of the indicative points to a (present) conclusion about a future event.

Since the present of the indicative signals that both the protasis and the apodosis implicitly refer to the speaker, conditionals in this group may be considered more subjective than the ones in groups II and III.

Conditionals in (15) and (16) illustrate the tense/mood combination presented in Table 4. In (15), the conditional construction has the present of the indicative in the protasis, indicating that the “date of the end of the Summer” is based on intersubjectively shared background knowledge; the present of the indicative in the apodosis, however, indicates that the speaker makes a (present) conclusion about a future situation:

- (15) “... a frente fria deve derrubar as temperaturas e trazer mais chuvas até sexta-feira, segundo os meteorologistas. Se o verão *se despede* (P) dos cariocas no próximo sábado, a desordem nas praias, mesmo as beneficiadas pelas operações Choque de Ordem da prefeitura, *continua* (P)”. (*Corpus LINC*)

*“The cold front can make temperatures drop and bring more rain until Friday, according to meteorologists. If Summer says good-bye to Rio next Saturday, the*

*clutter on the beaches will continue, even in those beaches protected by Shock of Order operations”*

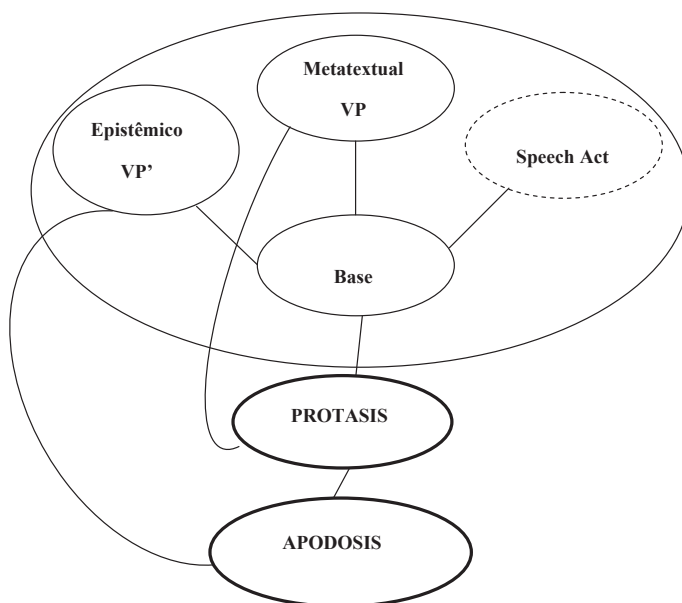
Example (16) reports the speech of a narrative character who presents himself as a fugitive; he conditionally establishes the hypothesis “if they catch me”, and then concludes “they hang me”:

(16) “Graças a Deus que já posso dizer – “não estou com os mascates”, dissera o matuto, penetrando na mata. Eu sei bem que se eles me *pegam* (P), me *penduram*(P) logo no primeiro pé de pau que encontrarem; porque antes de tudo, eu sou desertor .” (*Corpus do português*)

*“Thank God I can already say – “I’m not with the peddlers”, said the yokel, penetrating the woods. I know well that if they catch me, they immediately hang me on the first tree they find; because above all, I’m a deserter”.*

Group IV can be represented as follows:

**Diagram 6** – Meaning construction in Group IV



**Source:** Made by the author.

Diagram 6 shows that Group IV conditionals are more subjective, given that the protasis and the apodosis are related to more implicit spaces in the BCSN – respectively, the Metatextual and the Epistemic Spaces.

### **Concluding remarks**

This paper has proposed a descriptive and explanatory analysis of [If P, Q] conditionals in Brazilian Portuguese, focusing on structures which have the present of the indicative or the future of the subjunctive in the protasis, and the present or the future of the indicative in the apodosis.

The analysis has shown that different tense combinations in conditionals are associated to different degrees of subjectivity and/or intersubjectivity. On one hand, the use of the present of the indicative in the protasis (in comparison to the use of the future of the subjunctive) indicates a more intersubjective construal of the described event, since the speaker takes into account information previously mentioned in discourse. On the other hand, the use of the present of the indicative in the apodosis, instead of a future form, indicates that the speaker is drawing a conclusion (subjective perspective) regarding a future event. Finally, cases which have the present of the indicative (with future meaning) in both clauses can be characterized as the most subjective, because two implicit spaces – the Metatextual and the Epistemic Spaces – are involved in meaning construction.

Based on these results, the conditionals under investigation were organized in a continuum of subjectivity that extends from Group I (less subjective) to Group IV (more subjective), having Groups II and III as intermediary cases. At the same time, Groups II and IV indicate intersubjectivity.

The main contribution of the analysis presented here is to shed some light on the fact that tense/mood alternations are not equivalent options for expressing the same content; on the contrary, they signal specific cognitive processes of meaning construction, and its semantic-pragmatic implications. It is worth noting that such processes has not been yet fully considered in previous descriptions of conditionals in Brazilian Portuguese.

Drawing on recent developments of mental spaces theory, this work has associated tense/mood choices to different degrees of (inter)subjective perspective in the construction of conditional relations. In this vein, the model proposed here opens up new perspectives for the analysis of the relations between tense/mood and conditional meaning. Not only the tense/mood alternations discussed here may be observed in other kinds of corpora, but also other tense/mood alternations may be observed in other kinds of conditional structures, such as counterfactuals.

FERRARI, L.; ALMEIDA, P. Subjetividade e intersubjetividade em condicionais: Alternâncias entre presente e futuro no português brasileiro. **Alfa**, São Paulo, v.59, n. 1, p.91-112, 2015.

- **RESUMO:** *Este trabalho enfoca construções condicionais do português brasileiro, sob a perspectiva teórica da Linguística Cognitiva. A investigação tem como base a Teoria dos Espaços Mentais (FAUCONNIER, 1994, 1997; FAUCONNIER; SWEETSER, 1996), a partir de estudos sobre relações causais entre espaços condicionais (SWEETSER, 1990; DANCYGIER, 1998; DANCYGIER; SWEETSER, 2005), de contribuições recentes sobre subjetividade e intersubjetividade (LANGACKER, 1990; TRAUOGOTT; DASHER, 2005; VERHAGEN, 2005) e seus desdobramentos em termos da noção de Base Comunicativa (SANDERS, J.; SANDERS, T.; SWEETSER, 2009; FERRARI; SWEETSER, 2012). A partir de corpora escritos formados por textos jornalísticos e literários, a pesquisa enfoca condicionais que admitem alternância entre futuro do subjuntivo e presente do indicativo, na prótase, e entre futuro do indicativo e presente do indicativo, na apódose. As condicionais foram classificadas em quatro grupos, identificados a partir das relações entre seleções modo-temporais específicas e motivações cognitivas. A principal contribuição do trabalho consiste na utilização do modelo dos espaços mentais para propor um tratamento unificado das alternâncias modo-temporais nas condicionais investigadas, em que se evidenciam diferentes graus de sinalização da perspectiva (inter)subjetiva do falante.*
- **PALAVRAS-CHAVE:** *Linguística Cognitiva. Espaços mentais. Condicionais. Tempo verbal. Subjetividade. Intersubjetividade.*

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# PROPOSAL FOR AUTOMATIC EXTRACTION OF MEDICAL TERM CANDIDATES WITH LINGUISTIC INFORMATION PROCESSING DESCRIPTION AND EVALUATION OF RESULTS

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- **ABSTRACT:** The description of a method for automatic extraction of term candidates from the medical field by applying linguistic information is presented. Lexicography, morphological and syntactic rules were used. First, the detection was performed by applying a standard dictionary that assigned the tag 'MED' ('MEDICAL') to the words that could be considered terms. Morphological and syntactic rules were used to try to deduce the part of speech of the words that were not considered in the dictionary (WNCD). Afterwards, nominal phrases that included WNCD and MED were gathered to extract them as term candidates of the field. Smorph, Post Smorph Module (MPS) – both work in groups– and Xfst were the software used. Smorph performs the morphological analysis of character strings and MPS works on local grammar. Xfst is a finite state tool that works on character strings assigning previously stated categories to allow the automatic analysis of expressions. This method was tested on a section of the corpus of clinical cases collected by Burdiles (2012) of 217258 words. The results showed 92.58% of precision, 95.02% of recall and 93.78% of F-measure.
- **KEYWORDS:** Medical terminology. Automatic extraction. Linguistic information. Terms candidate.

## Introduction

The unprecedented development of communication technologies has enabled, mainly from the Internet, the production, access and exchange of a huge flow of information and scientific knowledge to people around the world. However, to access this great amount of data, it is necessary to have tools that can process data, with systems of storage and retrieval of information (LÓPEZ-HUERTAS; BARITÉ; TORRES, 2004). At the same time, it is also essential to develop resources to regulate and discuss the concepts of the various areas of knowledge, as well as assigning new names for new concepts, with the aim of ensuring an adequate scientific communicability. Studies on the area of computational linguistics have made several contributions to information retrieval systems (VILLAYANDRE,

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2010) allowing users to access data faster and more accurately. One of the main tasks in the development of these systems is the automatic detection of domain-specific terms. A term is a lexical unit that represents a concept in a particular subject field (SAGER 2000; MARINCOVICH, 2008). From a corpus linguistics point of view, the output of a terminology process can also be considered as a term (JACQUEMIN; BORIGAUULT, 2005). The extraction of terms representing an area usually constitutes the starting point for more complex tasks, such as making lists of entries for specialized dictionaries, creating databases or ontologies and taxonomies that organize and specify the area of knowledge, etc. The main disadvantage is the constant change of terminology, which hinders the manual update of terminology databases and implies the need for tools that can detect new terms and their variations (KRAUTHAMMER; NENADIĆ, 2004). Moreover, the extraction tasks, especially those that appeal to linguistic analysis techniques, tend to focus on specific areas of knowledge, in order to adapt to the requirements and characteristics of each one in particular.

Now, one of the fundamental areas of knowledge is medicine, not only for its social role, preserving the physical integrity of human beings, but also for the increasing production and circulation of data related to this area (articles, case reports, reports, etc.). To this end, the method developed for extracting term candidates of the medical field from linguistic information processing is described in this paper. This work is framed in the field of computer language, on one hand, and text mining tasks, on the other.

According to Cabré (2006), the complexity of automatic term detection lies in developing a processor with the same abilities of a human specialist; this point of view could be considered as extreme given that it would be impossible to create an extractor with such skills. However, it is possible that machines process the same information as a human specialist. This information is semantic, morphological and syntactic. For this purpose, the rules given for the developed method were based on the above mentioned information and tested on a section of the corpus of clinical cases collected by Burdiles (2012).

At a lexical level, detection was achieved with the use of a standard dictionary, in this case, the *Diccionario Esencial de la Lengua Española* (Essential Dictionary of the Spanish Language) (DICCIONARIO..., 2006). The dictionary was uploaded to the analysis software which assigned the tag 'MED' ('MEDICAL') to the words considered as terms; for this task, experts of the field identified those words from the RAE dictionary that belonged to the medical field. The following assumption was established for the rest of the words: the words that were not considered in the dictionary (WNCD) and can be classified as noun or adjective are, mostly, specific expressions of the medical field. Worth mentioning that, in this study, we took into account the proposition of Moreno-Sandoval (2009), which provides that,

generally, noun phrases correspond to terms. To this end, the extraction tasks were focused on those noun phrases.

Word formation and syntactic rules were used to try to deduce the part of speech of the words that were not considered in the dictionary (WNCD). Afterwards, noun phrases that included WNCD and MED gathered to extract them as term candidates of the field. Finally, the method's precision, recall and F measure were assessed.

The computer processing was done with Smorph (AÏT MOKTHAR, 1998), Post Smorph Module (MPS) (ABACCI, 1999) and Xfst (BEESLEY; KARTTUNEN, 2003). The first one performs the morphological analysis of the character string, which yields morphological and POS allocation for each occurrence according to the features given. MPS, in turn, uses the output of Smorph as its input and, from regrouping, ungrouping and correspondence rules established by the user, analyzes the headword string that results through the morphological analysis. Xfst is a finite state tool that works on character strings assigning previously stated categories to allow the automatic analysis of expressions. This requires a set of rules that interact to establish possible combinations of categories.

The paper is organized as follows: Section 2, previous works on the area, Section 3, methodology and work done, Section 4, results, and Section 5, conclusions of the research.

## **Term extraction in the medical field**

Regarding the medical field, Krauthamer and Nenadić (2004) state that the conditions for a successful term extraction include lexical variations, synonymy and homonymy. On the other hand, it is difficult to keep the terminological resources updated due to the constant change of terminology. Some terms are used for short periods of time and new terms are included to the vocabulary of the field almost every day. Furthermore, we must add the lack of strict conventions for nomenclatures. There are guidelines for some types of medical entities, but these guidelines do not set any limitation to the experts; therefore, they are in no way forced to use such guidelines when establishing a new term. Also, along with 'well-formed' terms there are *ad hoc* names, which are problematic for term identification systems. However, despite the difficulties mentioned, various systems for detection of terms have been developed for many kinds of medical institutions. These systems are based on internal features of specific classes and on external cues that might help to identify strings of words that represent concepts of the domain. Different types of features are used, such as spelling (upper case, digits, and Greek characters) and morphological cues (specific affixes and

formants) or information from syntactic analysis. In addition, different statistic measures are suggested to consider term candidates as terms.

For Spanish, the works done by López, Tercedor and Faber (2006) for Oncoterm project are worth mentioning. The project is an interdisciplinary research about terminology with the aim of developing an information system for a medical subarea, oncology, where concepts are linked to ontology. To do this, they use information from specialized dictionaries and corpus, as well as dictionaries and corpus provided by experts.

Castro et al. (2010), meanwhile, presented a proposal for detection of concepts of clinical notes, implementing a tool to identify biomedical concepts in SNOMED CT (IHTSDO, 2013). They describe the process of semantic annotation of terms in the ontology on a corpus of clinical notes. The experiments focused on comparing the automatic labeling of SNOMED CT with the manual annotation carried out by experts in the field. According to the authors, the functionalities of the tool let you obtain more semantic knowledge, affecting the establishment of new relationships that allow text mining in clinical notes.

In turn, based on SNOMED CT and other ontologies like UMLS (NLM, 2013) there have been studies of automatic recognition of semantic similarity. Among them, there can be mentioned those carried out by Sanchez, Batet and Valls (2010), and Garla and Brandt (2012). Both works are focused on analyzing automatically the relationship between concepts that share the same context.

On the other hand, using semantic information extracted from Wikipedia, Vivaldi and Rodriguez (2010) present a term extraction system tested on a medical corpus. The experiments consist of taking a document and a corresponding set of term candidates and compare the results obtained using EuroWordNet and Wikipedia. This involves exploring the second resource in order to obtain a domain coefficient equivalent to that obtained with EWN. This method has the following steps, for a given term candidate: (i) find a corresponding Wikipedia page, (ii) find all categories of Wikipedia associated with that page, and finally (iii) examine Wikipedia accessing recursively to all the links of the categories found in (ii) to enrich the domain edge. According to the authors, the results show that this resource can be used for tasks of automatic term extraction.

Finally, on the field of translation and corpus linguistics, Moreno-Sandoval and Campillo-Llanos (2013) develop a corpus of biomedical texts in Spanish, Arabic and Japanese. The texts included in this corpus are not extremely technical, but targeted at medical students, for example, manuals and medical journals for the public in general. The purpose of the authors is to develop a term search engine with that corpus for three languages and compare them.

With regards to the approaches based on linguistic knowledge can be divided in two of them, those based on dictionaries and those based on morphological and syntactic rules. Methods based on dictionaries use existing terminology resources for the purpose of locating the occurrences of words in texts. The evident limitation of these methods is that many occurrences cannot be recognized by standard dictionaries or standard databases, however, in this study, it can be seen that having lexicographical information of dictionaries provides an ideal base for term extraction tasks. Also, homonym and different spellings of one term can have a negative effect, for example, different with the use of punctuation marks (*bmp-4* / *bmp4*), different numerals (*syt4* / *sytiv*), different transcriptions of Greek letters (*iga* / *igalpha*) or different order (*integrin alpha 4* / *integrin4 alpha*) (TUASON et al., 2004).

On the other hand, methods based on rules, in turn, try to retrieve terms using the same composition patterns used to build the terms in natural language. The main issue with these methods is to develop rules describing common naming structures for certain types of terms using orthographic or lexical cues, as well as, more complex morphosyntactic features. From this perspective, we can mention the work of Segura, Martinez and Sami (2008), focused on automatic detection of generic drugs using the metathesaurus UMLS and naming rules to create generic drugs proposed by the board of United States Adopted Names (USAN) (AMA, 2013), which allows the classification of drugs in drug families. With this technique one can detect drugs not included in UMLS. The authors achieved 100% coverage and 97% accuracy using UMLS, and 99.3% precision and 99.8% coverage using a combination of lexical information given by UMLS and rules of formation of drug names proposed by USAN. Subsequently, Gálvez (2012) proposed a similar work but based solely on morphological rules, like Segura, Martinez and Sami (2008), proposed by USAN and using the finite state tool NooJ (2013). Thus, the author achieves 99.8% accuracy and 92% coverage.

The method presented here uses two approaches, i.e. information provided by dictionaries, in this case, we chose a standard dictionary, and deduction of words not included in this dictionary using morphological cues. Furthermore, information provided by syntactic context is also used. On the next point, the work done is described.

## **Machine modeling and implementation**

The elaboration of a set of semantic, morphological and syntactic rules for the detection of appropriate terms of the medical field was carried out in order to develop an automatic-detection method of term candidates of the mentioned area.

The procedure of this work is based on two fundamental aspects: (i) the assignment of the semantic tag 'med' (which stands for 'medical') to the entries of the Smorph dictionary in order to recognize, in the texts, those terms specific to the medical field that can be found in a standard dictionary, this task was applied only for unigram detection; and (ii) the deduction of part of speech of words that cannot be found in the source dictionary of Smorph through: (a) its morphological structure and (b) its syntactic context. The terms of the area that can be found on the Essential Dictionary of the Spanish Language (DICCIONARIO..., 2006) (for example: 'enfermedad', 'médico', 'cáncer', 'presión baja', among others) were compared for the first aspect. On point (a), experts of the field helped to identify entries from the RAE dictionary that belonged to the medical field. On point (b), studies on overall word formation (VARELA, 2005) and medical word formation (DURUSSEL, 2006) were considered; as well as the relationship of morphology and terminology (CABRÉ, 2006) and the analysis of shaping phrases (NUEVA..., 2010).

For the computational work, Smorph (AÏT MOKTHAR, 1998), Post Smorph Module (MPS) (ABACCI, 1999), and Xerox's Xfst (BEESLEY; KARTTUNEN, 2003) were used.

Smorph is an analyzer and text generator. On a single step, it isolates and analyzes, morphologically, the text segments to consider, shaping entries with their corresponding values. This software is a declarative tool and the data used is apart from the algorithmic machine, this means it can be adapted to the user's needs. The same software can handle any language as long as the linguistic information is changed.

Smorph declarative sources consist of five files: (i) `ascii.txt`: it contains the specific `ascii` codes, such as sentence and paragraph splitter; (ii) `rasgos.txt`: it includes labels of morphological features that are applied in the analysis of character strings with its possible values (for example, EMS: 'name', 'verb'; gender: 'masculine', 'female', among others); (iii) `term.txt`: it loads the different endings (similar to suffixes but not the same) that each headword may present in its morphological derivation (e.g.: -o -a, -os, -as); (iv) `entradas.txt`: it is the list of corresponding headwords and models of derivation (e.g.: `casar v1`); and (v) `modelos.txt`: it defines the classes according to the parameters of concatenation of strings from entries and endings (e.g.: `Model v1: root word + endings of the 1º regular conjugation + features`). One of the features of the program is that default categories can be allocated. In this case, the label 'UW' ('unknown word') is automatically allocated to those words that are not part of its dictionary. At the same time, it can also classify words in relation to its ending, which Ait Mokthar (1998) refers to as "distinguished endings", for example, all Spanish words finished with "-ción" are female nouns; for this reason, loading nouns with that ending

will not be necessary, since it will be enough to indicate that information in the term.txt file.

On the other hand, the MPS declarative sources are formed by a unique type of file: rcm.txt, which includes a list of rules that specify possible headword strings with a computerized syntax. There are three types of rules:

1. Regrouping: Determinant + Noun = Noun Phrase
2. Ungrouping: Contraction = Preposition + Determinant
3. Correspondence: Article = Determinant

Lastly, in the case of Xsft, the application is presented as an implementation of finite state machines. Its aim is to produce a morphological analysis and generation. This tool works with source files in which linguistic information is declared in a plain text editor (.txt). Some of the tools that are used by the program are the finite state tokenizers that run the segmentation of the text according to the stored morpho-syntactic information. In this case, this tool was used in order to identify medical terms that are formed by any typical medical formant, for instance: '-algia', for 'neuralgia', 'gastralgia'; 'blasto-', for 'blastocito', 'blastoma', and so on. The UW recognition process and the subsequent term candidates' extraction have the following stages:

Stage I: Morphological analysis and recognition of punctuation marks using Smorph. In this step, the label 'UW' was assigned to the unknown words.

Stage II: Modification of the term.txt file through the assignment of distinguished endings with its corresponding morphological classification. Subsequently, the corpus is run by Smorph again in order to obtain the categories that can be adjusted to those endings. Additionally, in this stage, it was possible that the UW was a proper noun or an abbreviation, depending on whether capital letters were considered or not.

Stage III: Recognition of the term candidates from morpho-syntactic structures through Xfst. The corpus was run by Xfst with the purpose of detecting those words that contain in its structure any distinctive feature of a medical term. For this reason, as an example, rules of the following kind were stated in the source file: 'necro + letter(s) = medical term' (examples: 'necropsia', 'necrosis'); 'letter(s) + cardio + letter(s) = medical term' (examples: 'microcardiopatía', 'electrocardiograma'). Those words recognized by this method were labeled 'UW' and were adjusted to the output format of Smorph.

Stage IV: Creation and implementation of syntactic rules that allow the deduction of PD categories. Here, the noun phrase (SN – 'sintagma nominal') is emphasized, (e.g.: Det + PD + Adj = SN/ART + NOM + ADJ).

Stage V: Extraction of SN that involve PD, as term candidates. The terms were simplified using the stemming technique (MANNING; RAGHAVAN; SCHÜTZE, 2009). This technique reduces words to its non-inflectional and non-derivative forms.

Stage VI: Assessment of the categorizations and the term candidates extracted under expert guidance.

The suggested method was tested on a section of the corpus of clinical cases, CCCM-2009, collected by Burdiles (2012). This corpus includes clinical cases covered in medical journals. A brief extract of the corpus is used as an example, where a set of specific terms were recognized.

**Figure 1** – Extract taken from the analyzed CCCM-2009

Enfermedad de tricocefalosis es la infección por **Trichuris trichiura**, parásito que se ubica en el intestino grueso, que con frecuencia se comporta como comensal, pero puede originar sintomatología cuando está presente en gran número, especialmente en niños con deficiencias nutritivas. (Boletín Chileno de Parasitología, v.54, n.3-4, 1999).

**Fonte:** apud Burdiles (2012).

Smorph tagged '*enfermedad*', '*infección*', '*parásito*', '*intestino*', '*comensal*', '*sintomatología*' and '*desnutrición*' with TC tag, since they were part of the source dictionary. At the same time, '*tricocefalosis*', '*Trichuris*' and '*trichuria*' were tagged with UW tag. These words were identified through the aforementioned stages.

1. The text was analyzed by Xfst, in which the file with the rules of morphological level had:

$$\text{letter} \geq 1 + \text{cefal} + \text{letter} \geq 1 = \text{'CT'} \quad (4)$$

It is important to clarify that the expression 'cefal' is part of the list of medical roots.

2. Then, it was analyzed by MPS, where the syntactic rules file, rcm.txt, included:

$$\text{Preposition} + \text{UW} + \text{UW} + \text{Punctuation Mark} = \text{Prep\_SNMED\_SigP} \quad (5)$$

$$\text{CT} + \text{preposition 'de'} + \text{CT} = \text{Trigram} \quad (6)$$

For the expressions tagged as Prep\_MEDNP\_PM ('Preposition\_Medical Noun Phrase\_Punctuation Mark'), the preposition and the punctuation mark obtained in the bigram 'Trichuris trichuria' were deleted.

The suggested method was assessed through precision and recall measures. The results will be shown in the next section.



## Evaluation

The results of the experiments were evaluated according to accuracy, coverage and f measures. The experts of the field made a reference list of 10092 terms divided as follows:

- Unigramas: 2367
- Bigrams: 5084
- Trigrams: 2641

From the 10092 term list, 9590 were correctly recognized and 769 were wrongly classified. This translates to 92.58% accuracy, 95.02% coverage and 93.78% f measure. The table below shows the results divided in unigrams, bigrams and trigrams.

**Table 1** – Results

	<b>Unigrams:</b>	<b>Bigrams:</b>	<b>Trigrams:</b>
<b>Accuracy</b>	79.65%	96.96%	99.25%
<b>Coverage</b>	97.08%	91.48%	96.02%
<b>F Measure</b>	87.50%	94.14%	97.61%

**Source:** Made by the author.

As can be seen, the best accuracy was obtained for trigrams, while the best coverage was achieved for unigrams; also, the f measure was best for trigrams.

Some issues with precision for unigrams were detected; one of the causes was that some common words had some elements in common with the terms, such as '*fotografia*'. In terms of coverage, issues were caused by medical words not being considered as such in the RAE dictionary, for example, '*diámetro*'. Also, several spelling errors by the authors affected the results.

However, from the results obtained, this can be considered as a valid method.

## Conclusions and further work

An automatic-detection method of term candidates of the medical field through the application of linguistic techniques was presented. For this purpose, we worked with rules at the semantic, morphological and syntactic level using Smorph, Post Smorph Module (MPS) and Xfst software.

The proposed method was tested in a subset of the corpus of clinical cases CCCM-2009 collected by Burdiles (2012), achieving 95.02% coverage, 92.58% accuracy and 93.78% f measure. The obtained results suggest that this method is, roughly, effective and opens up new perspectives about the automatic extraction of term candidates.

It is important to note that a standard dictionary to test the effectiveness of morphological and syntactic rules was chosen.

From the results, it was observed that approximately 50% of the terms not found in the Essential Dictionary of the Spanish Language (DICCIONARIO..., 2006) were detected by these rules.

Nevertheless, in future experiments, the work will be done with a dictionary of the field, *Diccionario de términos médicos* (2012) (Dictionary of medical terms), of the Real Academia de Medicina and the results will be compared.

The errors in term detection were mainly caused by UW with morphological structure different from the one medical terms have and were, instead, isolated or the fact that the surrounding elements were not enough to deduce its part of speech, for example a vertical list or a list in parenthesis. It is important to mention that the cases of proper nouns that, in some occasions, can be terms as is the case of "Alzheimer", implied that they cannot be rejected in the first place. Lastly, the amount of spelling and writing errors of some texts made a negative impact on the results.

The main advantage of this type of method is that its effectiveness can be demonstrated not only for a great amount of texts, but also in smaller corpus, with fewer words. This should help in automatic classification tasks of documents from the extracted terms.

This paper aims to contribute to the task of data extraction, as well as for studies of medical terminology, introducing the analysis of morphological structure of texts and studying the syntactic contexts in which such constructions appear.

Future work is organized around the following axes:

First, is to add specific lexical information of the *Diccionario de términos médicos* (2012). Second, is to try to add the statistical techniques to the proposed method. Third, analyze and develop rules for the automatic detection of word variation. Finally, fourth, consider possible techniques for automatic classification of documents from the terms extracted by this method.

KOZA ORELLANA, W. de. Propuesta de extracción automática de candidatos a término del dominio médico procesando información lingüística: descripción y evaluación de resultados. **Alfa**, São Paulo, v.59, n.1, p.113-125, 2015.

- *RESUMEN: Se presenta la descripción de un método de extracción automática de candidatos a términos del área médica a partir del procesamiento de información lingüística. Para ello, se trabajó con reglas en el nivel léxico, morfológico y sintáctico. En primer lugar, se realizó la detección aplicando un diccionario estándar, el cual asignó a las palabras consideradas términos, la etiqueta MED (MÉDICO). Luego, para las palabras que no estaban contempladas en el diccionario (PNCD), se dedujeron las categorías gramaticales apelando a reglas morfológicas y sintácticas. Posteriormente, se procedió a la conformación de sintagmas nominales que involucraban PNCD y MED, para extraerlos como candidatos a términos del dominio. Se utilizaron los softwares Smorph y Módulo Post Smorph (MPS), que trabajan en bloque, y Xfst. Smorph realiza el análisis morfológico y MPS trabaja sobre gramáticas locales. Xfst, por su parte, es una herramienta de estados finitos que opera sobre cadenas de caracteres, a las que asigna categorías previamente declaradas. El método se probó en una parte del corpus de casos clínicos compilado por Burdiles (2012), que contenía 217258 palabras, y los resultados arrojaron una precisión de 92,58%, una cobertura de 95,02% y una medida f de 93,78%.*
- *PALABRAS CLAVE: Terminología médica. Extracción automática. Información lingüística. Candidatos a término.*

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## STUDY OF THE LINGUISTIC VARIATION OF RHOTICS IN CAMPINAS NATIVE ACCENT

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- **ABSTRACT:** This article presents the results of a research study that investigated a variation in a linguistic segment of the Campinas native accent found in the city of Campinas, SP, Brazil: the /R/ in the syllabic coda position. The hypothesis that guided this research is that the rhotic in the Campinas native accent is in a more advanced state in relation to its attenuation than in speech in other towns in the interior of São Paulo state, causing it to be either vocalized or erased. This attenuation would account for the auditory impression of the study's informants, who believe they utter a variation of /R/ assessed as "intermediate" and which they view as proper to Campinas native accent. The selected corpus comprises data collected from twelve informants from the interior of the state of São Paulo. The data were recorded and analyzed acoustically and statistically. The theoretical foundation adopted was that of Fant's (1970) Acoustic Theory of Speech Production in conjunction with a sociolinguistic framework. The results show that there is linguistic variation of the rhotic and that the most frequent variety is the *caipira*/R/. These findings contradict the alleged existence of an /R/ characteristic of Campinas native accent.
- **KEY WORDS:** Linguistic variation. Rhotics. Acoustic phonetics.

### Initial Considerations

All variations of a language are well structured and form a complex linguistic system that is certainly suitable for the needs of those who use it. However, in spite of this appropriateness, linguistic studies report on the extent to which some linguistic variations are the target of evaluations, both valorative and depreciative. The impact caused by such assessments may contribute to the maintenance or disappearance of linguistic traces; thus, these issues are always current and meaningful to those who study linguistic variations and/or changes. In reference to the Paulista accent (the accent of the inhabitants of the city of São Paulo), it

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is known that the /R/<sup>1</sup> occurring in the medial and final syllabic coda positions<sup>2</sup>, called the *caipira* /R/, is largely stereotypical, a fact that has been demonstrated by studies conducted by Amaral (1982), Head (1973, 1978), Leite (2004), and Castro (2006), among others. The pronunciation of the /R/ that characterizes the speech<sup>3</sup> of the city of Campinas<sup>4</sup> (one of the most prosperous cities in the interior of São Paulo state) is defined as “intermediary” by informants from the city of Campinas interviewed in this study.

During individual interviews with residents of Campinas, informants were asked to state their opinions on a possible characterization of the Campinas native accent. They reported that:

LF, M, 26 years old<sup>5</sup>: it's a middle term between the *caipira* and the way a person from the city of Sao Paulo speaks / ((laughter)) /.../ it's intermediate (++) , not very long but not very right (+) it is not very:: I don't know / I can't explain it right a: / the way the people from Campinasspeak (+) but it is / it is something you don't say: a really strong /R/ (+) it is:: really STRONG like:: the speech of:: someone from the interior and also, they don't pronounce a very SHORT /R/ like someone from the / from the capital (+) I notice that the: / the: people from the interior of Sao Paulo state like to make the consonants longer and the people from the city of Sao Paulo like to cut them in half

Or:

SA, F, 37 years old: I think it is more from the interior (+) slightly more from the interior (+) I believe it is more influenced by the interior

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<sup>1</sup> As a function of the variability of the rhotic sounds, it is difficult to quantify exactly what the rhotic phonemes in intervocalic positions are and what the loss of contrast is between these sounds in syllabic coda positions, as pointed out by phonological studies; thus, the archiphoneme /R/ will be adopted in this text to represent this neutralization.

<sup>2</sup> According to Selkirk (1982), a syllable consists of an onset (O) and a rhyme (R); the rhyme, in turn, consists of a nucleus (Nu) and a coda (Co). Any category, except Nu, may be empty.

<sup>3</sup> For Dubois et al. (1998, p.266): “Speech is a form of language used in a specific social group or as a sign of belonging or wishing to belong to this social group. Each one of these speeches has its own specific syntactic rules and vocabulary that are unique and many others that are common with other dialects of that language or even of all of them.” In this paper, the term “Campinas native accent” is used to refer to the variation of the Brazilian Portuguese language spoken in the city of Campinas.

<sup>4</sup> The Metropolitan Region of Campinas (MRC) comprises 19 countries (the nucleus of which is the municipality of Campinas, located in the Brazilian state of São Paulo). The MRC has an area of 3,673 km<sup>2</sup> and has 2.3 million inhabitants. According to Cano and Brandão (2002, p.403), among the 12 Metropolitan Regions (MRs) listed in the study “Characterizations and Trends of Urban Networks in Brazil” (*Caracterização e tendências da rede urbana do Brasil*, IPEA, IBGE, NESUR), Campinas is the only MR whose nucleus is not also the state's capital.

<sup>5</sup> Informants' identities were kept confidential and, consequently, they are identified only by their initials, followed by their gender (M, male; F, female) and age at the time of the interview.



The city of Campinas is known as the capital of the interior of the state of São Paulo. This nomenclature can be found in articles published in the *Correio Popular*<sup>6</sup> newspaper as, for example, in its special issue celebrating the city's anniversary. The Metropolitan Region of Campinas is the only Metropolitan Region whose nucleus is not also the capital of the state. Economist Ulysses Semeghini (1991) stated that the city of Campinas functions as an "interface" (between the capital, Sao Paulo, and the interior), unlike other cities in the state of São Paulo. It has the function of anticipating, for the countryside, changes in social and urban patterns typical of industrialization and transformations that would normally appear first in the state capital.

When considering the statements of the informants concerning "intermediate" pronunciation in conjunction with the position that Campinas has in the economic, political, and social scene, it is relevant to ask (in relation to the linguistic aspect discussed here, i.e., the variation of /R/ in the syllabic coda position) if Campinas is at the forefront of other cities in the interior of São Paulo state; that is, is it in a "more advanced stage" with regard to the process of the rhotic's linguistic variation believed to have occurred, much like what has occurred in other Brazilian capital cities according to a study by Callou, Moraes & Leite (2002). The hypothesis that guided this study, therefore, is that the rhotic occupying the syllabic coda position in the Campinas native accent is in a more advanced stage when compared to other cities in the interior of São Paulo state in relation to the attenuation of this segment, and with a trend toward vocalization or weakening. This attenuation would account for the auditory impression of the informants who believe they utter a variation of the /R/ assessed as "intermediate" and which they view as characteristic of the Campinas native accent.

The Campinas informants interviewed argued that they pronounce an "intermediate" /R/. Is there any basis for this statement? The informants were sensitive enough to capture the rhotic variation and, by stating the above, could they be referring to possible variations of the /R/ in the Campinas native accent? It is also possible to formulate the hypothesis that the natives of Campinas idealize this pronunciation, similarly to what was registered by Trudgill (1974) and by Labov (1982), where informants look up to those who use this form, which then becomes prestigious.

Based on these suppositions, an attempt was made to analyze the process of linguistic variation of the /R/ in the medial and final syllabic coda positions as they occur in Campinas, and to investigate the language attitudes presented by informants with a view toward describing the stereotypes and attitudes related to the linguistic variation in question. As a result of these main objectives: (i) auditory

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<sup>6</sup> *Correio Popular*, July 14, 2003, p. 19.

and acoustic analyses, with the purpose of verifying which variants compete in the syllabic coda position of the Campinas native accent, were conducted; and (ii) whether the analyses conducted provide any information that could support an understanding of the reports of the Campinas informants (who stated that they pronounce an “intermediate” /R/ which they distinguish from the accent of the interior of São Paulo state) was verified.

The section below first discusses issues that are relevant to the theoretical framework adopted. Next, a description and an analysis of the data are presented with the purpose of responding to questions concerning the issues that guided this study and to prove or refute the proposed hypotheses.

### **Rhotics: the *caipira* /R/ in focus**

The study of rhotics, a class of sounds of the archiphoneme /R/, has given rise to many discussions in the field of linguistic investigation<sup>7</sup>. Sociolinguistic studies demonstrate that rhotics show a high degree of polymorphism and are excellent examples of social and regional stratification. On the other hand, phonetic descriptions highlight the great variability of this class of sounds, making it difficult to group them under the same set of characteristics.

Among the possible forms of rhotics in the various speeches present in the interior of São Paulo state, we highlight the occurrence of the *caipira* /R/ variant – one of the remaining traces of the *caipira* dialect, and which can be considered the most evident characteristic of this dialect, as well as one of its most stigmatized features. Therefore, it is a constant target of comments, ridicule and denigration – mostly as a result of negative evaluations by communities beyond the speech boundaries of the *caipira* /R/.

In relation to the possible forms of the rhotics, this study will focus on the variants that compete for the syllabic coda position in the Campinas native accent.

### **The *caipira* /R/: noticeable even to the unaware**

Amaral (1982), in his work “The Caipira Dialect” (*O Dialeto Caipira*), describes the dialect of the old province of São Paulo<sup>8</sup>. According to the author, the *caipira*

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<sup>7</sup> As discussed in Leite (2004), phonological studies also give rise to discussions of the class of sounds of rhotics because there is no consensus on the quantity of rhotic phonemes. In relation to this issue, read or consult Harris (1969, 2002), Bonet and Mascaró (1996), and Abaurre and Sandalo (2003), among others.

<sup>8</sup> In the preface of “The Caipira Dialect” (*O Dialeto Caipira*), Paulo Duarte indicates that the informants in Amaral’s (1982) study came from the regions of Capivari, Piracicaba, Tietê, Itu, Sorocaba, and São Carlos.

dialect presented a distinct and unmistakable system and was spoken by the majority of the population. The influence of this way of speaking extended to the educated minority of the capital city and, since then, it has been evaluated pejoratively, to the extent of being singled out as corrupting the language, as well as considered a vice of the language.

In addition to the great number of phonetic, syntactic, and morphological characteristics, as well as the extensive vocabulary listed by Amaral (1982) that specify the *caipira* dialect when compared to the Portuguese spoken by the educated population in Brazil in early 1900s, there are also behavioral features that distinguish the *caipira* way of life<sup>9</sup>. Thus, according to the author, “[...] *caipirismo* was not limited to language, but permeated all the manifestations of daily provincial life.” (AMARAL, 1982, p.41)

Like Amaral (1982), language researchers such as Rodrigues (1974) and Head (1987), among others, point to the pronunciation of the retroflex /R/ as a characteristic of the *caipira* dialect. The authors’ studies of the *caipira* dialect describe the articulation of the /R/ typical of the dialect differently. However, as Head (1987) warns, although not all the researchers call it a retroflex /R/, in the example provided by Amaral<sup>10</sup> (1982), the word “retroflex” used to describe the typical rhotic of the *caipira* dialect appears alongside the “*caipira* /R/” as synonymous terms for characterizing the typical pronunciation of this dialect.

The retroflex feature of the typical “r” of the *caipira* dialect, as described by Amaral (1982), requires a more retracted position of the tongue for its production. It is possible to see that the posterior position of the tongue required to produce this retroflex pronunciation is not limited to the production of rhotics, but extends itself to the articulation of other segments, producing retroflex sounds<sup>11</sup> and giving

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<sup>9</sup> The genuine *caipiras* are described by Amaral (1982) as ignorant and backward small farmers. Therefore, with this denomination, Amaral (1982) attempts to characterize the speech of those inhabitants in the interior of São Paulo state who have simple, rural habits.

<sup>10</sup> This is how Amaral (1982, p.47) describes the /R/, one of the variants typical of the *caipira* dialect: “the inter- and postvocalic r (*arara, carta*) has a peculiar value: it is lingual-palatal and gutturalized. During its prolation, instead of projecting the tip of the tongue against the upper teeth, a movement that produces the Portuguese modality, the sides of the tongue are raised in the direction of the small molars of the maxillary arch and its tip is turned upwards, without touching the hard palate. There is almost no trilling vibration. For the ear, this *caipira* r sounds very similar to the postvocalic English r.” Although it is not called retroflex, the description presented, according to Head (1987), is clearly dealing with the retroflex aspect of articulation. Thus, the production of the *caipira* /r/ may occur via contact between the tip of the tongue (turned upward) and the palate or through a posterior articulation made by raising the tongue blade (dorsum), that is, gutturalized pronunciation. In relation to this description by Amaral (1982), Head (1987) adds that, despite the difference between the realization of a retroflex consonant (lingual-palatal) and a guttural consonant, it is possible to point out similarities between these articulations because “[...] both represent production processes in a posterior direction, with realizations more retracted than they would be without the turning up of the tip of the tongue or without raising the dorsum.” (Head, 1987, p.10)

<sup>11</sup> Cagliari (1981, p.43) states that we can find retroflex sounds in the accent found in the interior of the state of São Paulo and especially in the *caipira* dialect. In his words: “In the *caipira* dialect, in addition to constrictive

a retroflex voice quality to the dialect in question. In this manner, in describing the variants of phonemes in the *caipira* dialect, Amaral (1982, p.47) points to the presence of the *caipira* /R/, both in the intervocalic and postvocalic position. Therefore, even in the intervocalic position, belonging to the alveolar tap (which is what occurs in the word *arara*[arara], the author registers the occurrence of the *caipira* /R/.

It is known that many of the features of the *caipira* dialect, especially its retroflex voice quality, have been lost over time. For Amaral (1982), the development of the population and increased trade and contact of the province of São Paulo with other places, among other causes, have contributed to great changes in the *caipira* dialect. Thus, if in 1920 Amadeu Amaral had already indicated that the *caipira* dialect could only be found in small towns, what we can see today is that one of the markers that has remained representative of this dialect is the pronunciation of the *caipira* /R/<sup>12</sup>. This pronunciation is found in the interior of the state of São Paulo and is pointed to as being typical of *caipira* speech, “characteristic enough to be noticed by the most unaware”, in the words of Amaral (1982, p.41). In addition to the accent found in the interior of the state of São Paulo, the *caipira* /R/ may also be observed – although with some changes – in the speech of populations residing in other states<sup>13</sup> such as Minas Gerais, Paraná, Mato Grosso, and Goiás, as stated by Rodrigues<sup>14</sup> (1974).

### **Social assessment, linguistic insecurity, and stereotypes: triggers for linguistic variation and/or change**

Among the many unanswered questions that remain as objects of investigation in linguistic studies, we highlight the issues concerning the mechanism by which languages change, as well as the processes that lead to the great diversity of languages in today’s world (LABOV, 1974). In relation to linguistic variation and change, sociolinguistic studies have shown that, far

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sounds, it is not unusual to also find occlusive, nasal and retroflex lateral sounds.”

<sup>12</sup> Perhaps examples of the *caipira* /R/ may still be found – particularly in the lingual-palatal articulation, as described by Amaral (1982) – as well as the retroflex position that characterized the accent of the original speakers of this dialect, in the interior of São Paulo state, as part of the idiolect of older speakers. Therefore, it is not our intention to state that the retroflex variation (which today can be pointed to as representative of the accent found in the interior of the state of Sao Paulo) has the same features as the variation described by Amaral (1982).

<sup>13</sup> The fact that speakers in different regions of the country produce the *caipira* r does not mean that these speakers are representatives of the dialect in question. What can be observed is that only one of the *caipira* dialect’s features (the realization of the retroflex /r/) can still be found as a variant in some dialects.

<sup>14</sup> In relation to the origin, the geographical distribution, and the vitality of the pronunciation of the *caipira*/R/, it can be said that there is no consensus among authors. For an in-depth investigation of this topic, it is worth reviewing the works of Amaral (1982), Melo (1946), Rossi (1963), Cunha (1972), Rodrigues (1974), Head (1987), Brandão (1991, 2007), and Ferreira and Cardoso (1994), among others.

from being accidental, this process is strongly conditioned by social, stylistic, and evaluative factors, for example.

Regarding such evaluative factors, Labov (1974, p.50) points out that these are complex, as speakers react to speech as a whole and hardly ever show awareness of the speech patterns of others. Despite this difficulty, he asks: "Is there any connection between the performance patterns, the attitudes, and value judgment of speakers?"

This issue is relevant to the purposes of this study. Therefore, the conclusions reached by researchers who take these aspects into consideration will be discussed later in this paper.

### **When social evaluation and linguistic insecurity trigger variation**

The sociolinguistic literature contains a great number of studies portraying the complexity of linguistic systems of languages, and the relevance of such systems to the convenience of its users. As a result of the purposes of this study, three of these studies will be discussed later in this paper. There are three representative studies: two conducted by William Labov (published in 1963<sup>15</sup> and in 1966) and one conducted by Peter Trudgill from 1974.

On Martha's Vineyard, an isolated island in the state of Massachusetts, Labov (1972) observed that the social changes occurring in that community triggered a linguistic change: the alteration of the position of the first elements of the diphthongs /aj/ e /aw/. Thus, for example, he observed that there were two different pronunciations for the words *right* and *house*. One of the non-prestigious pronunciations typical of the island's natives – [rɔɪt], [həʊs] – is a central pronunciation, while another more recent pronunciation – [raɪt], [haʊs] – is similar to the pronunciation found in prestigious variations of American and British English (also called Received Pronunciation: RP). To Labov's surprise, analysis of the data indicated that there had been an increase in the number of occurrences of the non-prestigious pronunciation. The central pronunciation, therefore, occurred more frequently and even became exaggerated, especially in the speech data of younger informants, characterizing hypercorrection.

Labov's proposed interpretation of the change in this sound is based on understanding the social forces that affect the life of natives of Martha's Vineyard. The investigation revealed that there was a social distribution of diphthongs, in

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<sup>15</sup> The study conducted on Martha's Vineyard was initially published in 1963. In the present paper, references to the 1963 study will be made based on the version of the research published in Labov (1972).

such a way that those who wished to stay on the island adopted a more central pronunciation, conservative and non-prestigious, while those who wished to leave and had no close relationship with the islands or its history, adopted the prestigious pronunciation, that is, non-central. Therefore, in order to interpret the centralization of the above-mentioned sounds, Labov proposes the consideration of, among other factors, those issues related mainly to the islanders' social aspirations and subjective attitudes in relation to life, lack of work, and their reaction to the summer tourists. Thus, he concludes: "In summary, we can then say that the meaning of centralization, judging from the context in which it occurs, is positive orientation towards Martha's Vineyard." (LABOV, 1972, p.38).

This study shows how phonetic differences may mean much more than what is captured when only a strictly formal analysis is conducted: in this case, the examination of the structure of formants that characterize the centralization of diphthongs. Language may be a significant factor in identifying a community, in establishing bonds among the members of a group, as well as preserving and setting up boundaries for the spaces of these groups in a situation where they feel threatened by "others".

Unlike what took place on Martha's Vineyard, it is the prestigious pronunciation that is desired by New Yorkers, as shown by Labov (1982). However, the prestigious and desired form is not often the one that occurs more frequently in the speech of informants.

When Labov (1982) analyzed the stratification of English in New York City, he showed that linguistic variants are determined by patterns of social and stylistic norms. The post-vocalic /R/<sup>16</sup> at the end of a word and in the pre-consonant position (as in **beer**, **board**) is one of the five phonological variations selected. The investigation conducted by Labov (1982) demonstrated that the non-realization of the post-vocalic /R/ indicates casual and low-social-status speech; therefore, it is not the prestigious pronunciation, nor that required for formal styles, because the manner in which rhotics are pronounced is the main manifestation of the pattern of prestige prevalent in New York City.

Patterns of prestige change as a result of socio-historic events. Labov's study (1982) also provides a good example of an occurrence of a reversion in the patterns of prestige of a specific linguistic variant. According to the author, in the 18th century, the New York City English dialect was characterized by the presence of the /R/ and, in the 19th century, it became an accent without the /R/, probably due

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<sup>16</sup> The following were excluded: cases in which the /R/ at the end of a word is followed by a word that begins with a vowel, as well as the occurrences in which the rhotic is preceded by a mid-central vowel, such as in **her** and **bird**.

to the influence of London's accent<sup>17</sup>. However, since the end of World War II<sup>18</sup>, the use of the post-vocalic /R/ has increased in the speech of the upper-middle-class population as a result of the large influx of people coming to New York City, where the standard pronunciation was marked by the realization of the /R/.

The positive evaluation given to the pronunciation of /R/ caused, therefore, an increase in the use of this variant among upper-middle-class speakers, according to Labov (1982). In this case, the change occurred in the direction of the norm – the prestigious form – which, as we know, is not always the direction of change.

The examination of the subjective reactions of speakers in relation to the pronunciation or attenuation of the final and pre-consonant /R/ (**car**, **card**, etc.) shows that these reactions are more uniform than performance. Data analysis demonstrated that all social groups agreed that the pronunciation of a constrictive /R/ in words such as **car**, for example, was proper in more formal contexts. However, the great majority of New Yorkers did not pronounce the /R/, so only the upper middle-class speakers showed any degree of pronunciation of rhotics in casual speech. Findings like these have led to the following interpretation:

New Yorkers also showed a systematic tendency to report their own speech inaccurately. Most of the respondents seemed to perceive their own speech in terms of the norms at which they were aiming rather than the sound actually produced. (LABOV, 1982, p.336).

Due to such results (which were repeated in Trudgill's 1974 study), Labov (1982) proposed that the variations found in speech communities should be understood to result from variations in subjective evaluations and not as fluctuations in speakers' performances.

Trudgill (1974) conducted a study in the city of Norwich, U.K., in which one of the phonological variants investigated was the presence or absence of the glide [j] in words such as *tune*, *music*, among others, focusing on two co-existing variants in the city: /ju:/ and /u:/, with /tju:n/ being seen as more prestigious than /tu:n/. During data recording, he was able to observe which variant was more pronounced among the interviewees and, using a self-evaluation test, he verified

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<sup>17</sup> In England, the accents in which the /R/ is not pronounced are more prestigious and are seen as more "correct" than those where the rhotic is pronounced. The prestigious pronunciation is adopted by the media and is considered Standard English pronunciation, also called RP. On the other hand, the pronunciation of the post-vocalic /R/ is adopted on television and in theater for denoting rural characters with low levels of education and also for the purpose of denoting humorous characters. In some American English accents (as well as in some from Central America, England, New Zealand, Australia, and South Africa), the post-vocalic /R/ is not pronounced, either, according to Trudgill (2000).

<sup>18</sup> According to Labov (1972, p.64), before World War II, the anglophile tradition predominated in New York's schools. As a result, children were taught that pronunciation of the /R/ was provincial and, therefore, the proper pronunciation of **car**, for example, was without the /R/.

what the opinion of informants was with regard to their own pronunciation. When he compared the results of the tests with those obtained through the recordings, he noticed that there were discrepancies between the variant produced and the one the informant believed was produced. The results indicated that, among the informants that did not use the glide, 16% argued that they had pronounced this segment, while 84% stated they had not. On the other hand, among the informants who actually did pronounce the glide, 60% said they had, while 40% believed they had not. Based on these results, he concluded that 16% of those who pronounced the “discredited” form tended to over-evaluate their own pronunciation, while 40% of the interviewees who presented the more “prestigious” pronunciation, tended to under-evaluate their pronunciation. With this, Trudgill (2000, p.76) concluded that: “Speakers, that is, report themselves as using the form at which they are aiming and which has favourable connotations for them, rather than the form they actually use. (No conscious deceit is involved, it seems).”

These evaluations (which correspond not to the linguistic aspects delivered but rather to the norms to which each speaker aspires) show great linguistic insecurity. According to Labov (1972), in addition to the inaccurate perception of one’s own pronunciation, indications of linguistic insecurity are identified when there are wide fluctuations in stylistic variation and when there are hyper-sensitivity and stigmatized traces on the part of speakers. The excerpt below illustrates a situation of profound linguistic insecurity observed in New York City:

In general, New Yorkers show a strong dislike for the sound of New York City speech. Most have tried to change their speech in one way or another, and would be sincerely complimented to be told that they do not sound like New Yorkers. Nevertheless, most of the respondents have been identified by their speech as New Yorkers whenever they set foot outside of the metropolitan area. They firmly believe that outsiders do not like New York City speech, for one reason or another. Most New Yorkers show a strong belief in correctness of speech, and they strive consciously to achieve such correctness in their careful conversation. (LABOV, 1972, p.132).

Changes in the evaluation of speakers may be the cause and not the effect of change in patterns of speech. Thus, linguistic aspects evaluated positively may be evidenced, imitated, and adopted as standard forms by members of the language community, for example. It is necessary to be attentive to these issues when attempting to understand and not merely diagnose a linguistic variation.



## **Linguistic stereotypes: another phase in the evaluation of linguistic variables**

Not all linguistic variables involved in variations and/or linguistic change in a speech community are prestigious and not all of them are evaluated in the same manner. According to Labov (1974, 1972), information obtained from social evaluations of these linguistic variables may be employed to place them in one of three categories: indicators, markers, and stereotypes.

Indicators are linguistic traces that reflect a social variation (age, social group) but generally do not show stylistic variation and have little effect on the listener's judgment of the social status of the speaker. Markers are traces that show both social and stylistic variation and have a consistent effect on the conscious or subconscious judgment of the listener of the speaker's status. Stereotypes are external topics that have a social impact on the speech community. They may be socially labeled and may or may not correspond to actual linguistic behavior.

Although stereotyped linguistic traces are stigmatized, they may be very durable and persistent. Labov (1972) points out that dissemination of these traces may occur towards numerous meanings and requires a considerable period of time – and this allows for numerous social changes to occur during that period of time, which may boost or deter such dissemination. In the event there is a strong social reaction against these linguistic traces, this reaction may trigger a fast attenuation process and, consequently, cause them to disappear. On the other hand, if the group or speech community using such traces begins to be evaluated positively and, therefore, obtains social standing, a movement in the other direction may occur, and the linguistic trace that had once been stigmatized may become the target of positive evaluations and even be imitated. With regard to the propagation of these traces in the linguistic system, the author states that:

As the original change acquires greater complexity, scope, and range, it comes to acquire more systematic social value, and is restrained or corrected in formal speech (*amarker*). Eventually, it may be labeled as a *stereotype*, discussed and remarked by everyone. The future prospects of this stereotype depend upon the fortunes of the group it is associated with. If the group moves into the mainstream of society, and is given respect and prominence, then the new rule may not be corrected but incorporated into the dominant dialect at the expense of the older form. If the group is excluded from the mainstream of society, or its prestige declines, the linguistic form or rule will be stigmatized, corrected, and even extinguished. (LABOV, 1972, p.320).

Social evaluations of the *caipira* /R/ allow for the classification of the variable as belonging to the stereotype category. This is the last level in the evaluation scale proposed by Labov (1972).

The following examples present the broad stereotyping of the rhotic in the accent of speakers from the interior of the state of São Paulo.

### **Stigma and stereotypes around the *caipira* dialect, the *caipira* /R/, and the “intermediate” /R/**

The *caipira*/R/ is widely stereotyped in the Paulista dialect, as demonstrated in the studies conducted by Amaral (1982), Head (1973, 1978), Leite (2004, 2010), and Castro (2006), among others.

By 1920, Amadeu Amaral had highlighted the pejorative manner in which the *caipira* dialect was viewed and, consequently, the linguistic aspects typical of this dialect, among which the /R/ stands out and which he called “*caipira*.” The *caipira* dialect, considered distinct and unmistakable, was stigmatized and viewed as non-standard language. Because it was considered non-standard<sup>19</sup>, people were concerned with the possible diffusion of this linguistic trace, something that had to be avoided. They felt that, under its influence, the speech of even the most educated might be corrupted. Evidence of this concern can be found in Amaral’s statement (1920) below, wherein he reports that there were concerns regarding the establishment of law schools in the province of São Paulo due to the influence of the *caipira* dialect. According to Amaral:

For some time now, this is what has caused, for the people of the interior of the province of São Paulo, the fame of tainting the vernacular speech with numerous and ugly corruptions of the language. When the Imperial Senate discussed the creation of law schools in Brazil and considered São Paulo as one of the locations, there were those were against it who argued that the language of the locals would inconveniently contaminate future graduates, who would come from various regions of the country [...] (AMARAL, 1982, p.41).

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<sup>19</sup> Amaral (1982, p.41) cites author Joaquim M. de Macedo where Macedo states that Judge José Antonio Pimenta Bueno, the Marquis of São Vicente (Santos; December 4, 1803 – February 19, 1878) had “unpleasant tainted pronunciation” due to “being sloppy and poorly mannered” and not through any defect of his speech organs. This judge, a native of the interior of the province of São Paulo, was part of the first group of graduates from the Law School of São Paulo. Macedo also observed that, despite the peculiarities of his pronunciation, the judge when “speaking in Court, imposes silence and demands respect...”.

Studies conducted by Head (1973, 1978) discuss the stigmatization of the *caipira* /R/. In the first study, the author stated that the decrease in the relative frequency of occurrences of this segment was related to an increase in the degree of reflexion. Thus, in the style of monitored speech among informants of the same socio-economic class and age group, the number of realizations of rhotics was smaller, a fact that confirms the stigmatized nature of this pronunciation. In the second study, these findings were confirmed, and the following considerations were added: (i) the informants from urban areas presented a greater decrease in the frequency of the stigmatized variant when compared to rural informants; (ii) the variation in the frequency of the /R/ is greater in cities than in rural areas; and (iii) the informants from urban areas who are in higher economic classes are more sensitive in relation to the stigmatized nature of the *caipira* /R/ when compared to informants of lower classes and/or rural areas.

Leite (2004) also demonstrates the wide stigmatization and stereotyping of the /R/ of the *caipira* accent, both in data collected from inhabitants of the city of São José do Rio Preto, SP, and in television advertisements. In this study, the above-mentioned segment is always negatively labeled: **ugly**, **marked**, and **dragged**, as well as being called a **strong accent**.

In addition to these denominations given to rhotics, the data collected via surveys show a less marked pronunciation, called “intermediate.” Is this just another stereotyped belief or is there actually a variation in progress that has been noticed by informants more sensitive to linguistic issues?

The social psychology studies selected by Hewstone and Giles (1997) show that stereotypes are more easily noticed, stored in memory, and activated when compared with evidence that contradicts them. They also generate expectations, and those who perceive them want these expectations to be confirmed. This is why they state that:

People tend to see behaviour that confirms their expectancies, even when it is absent. When stereotypes set up expectations of behaviour, disconfirming evidence tends to be ignored, but confirming evidence remembered. (HEWSTONE & GILES, 1997, p.276).

These features of stereotypes compound one another: “stereotypes become self-fulfilling prophecies,” as Snyder, Tanke & Berscheid (1977)<sup>20</sup> state. According to

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<sup>20</sup> In this study, the authors demonstrated that stereotypes can become self-fulfilling prophecies. The experiment consisted of observing the behavior of a group of men who initiated a telephone conversation with various women after seeing a supposed photo of them: some photos portrayed very attractive women and others who were less attractive. The men who thought they were speaking with attractive women were more sociable, warm, and outgoing. The women, in turn, also became more sociable, lively and confident. According to the authors, stereotypes may create their own social reality, in such a way that in social interactions, the stereotype of the men who took part in the experiment was confirmed by the behavior of the stereotyped target (the

Watzlawick's definition (1994, p.97), "[...] a self-fulfilling prophecy is a supposition or prediction that, just because it was made, converts the supposed event into reality, expected or prophesied, confirming, therefore, its own 'accuracy'." Thus, this is about an initially false statement that evokes a new behavior capable of rendering the initial formulation true.

Stereotypes present self-justification and self-perpetuation dynamics that cause those who are the objects of stereotyping to behave in ways that correspond to the stereotyped image they project. These dynamics are attested in several studies conducted in the field of human sciences, especially social psychology, such as the study by Snyder, Tanke and Berscheid (1977). These studies also show that the traditional line of thought of cause and effects not obeyed<sup>21</sup> when the issue is a self-fulfilling prophecy. In relation to this issue, Watzlawick (1994) states that:

[...] an act deriving from a self-fulfilling prophecy first creates the conditions for the expected event to occur and, in this sense, creates a reality that would not have been produced without it [the act]. This act, therefore, is neither true nor false: it merely creates a situation and, with it, its own "truth". (WATZLAWICK, 1994, p.98-99).

The studies described above, as well as those cited by Watzlawick (1994) and Hewstone and Giles (1997), for example, indicate how individuals put stereotypes into action and how these stereotypes may become self-fulfilling prophecies. However, only a few prophecies self-fulfill, explains Watzlawick (1994). According to the author, only when the faith in a prophecy is such that the person believes it will occur in the "future", will it be capable of influencing the present and, therefore, of confirming itself. In the words of the author: "Absent the factor of belief – this conviction factor – the effect is also absent." (WATZLAWICK, 1994, p.101)

Considering that stereotypes have an important role in language maintenance, variation and change, and that the *caipira* /R/ is clearly stereotyped, I attempt to

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woman). Consequently, they state that a physically attractive person may behave in a friendlier and more pleasant manner, not because they have those attributes but because the behavior of others triggers and maintains behaviors considered manifestations of these features.

<sup>21</sup> Examples of the failure of the linearity of the cause-and-effect relationship are presented by Watzlawick (1994). The author says that the inversion of the temporal flow of this relationship may occur when we are dealing with self-fulfilling prophecies. The following excerpt may clarify this statement: "In March 1979, newspapers in California started to broadcast blatant news about the imminent reduction in the supply of gasoline. Californian drivers rushed to the gas station to fill up their tanks. The refuelling of 12 million tanks (approximately 75% of which were empty at that time) exhausted the enormous reserves of the product and caused the predicted shortage overnight; on the other hand, eager to fill up as many vehicles as possible (instead of keeping them nearly empty, as was common then), drivers formed long lines of cars, and the population spent hours waiting at gasoline stations: and this increased the panic. Soon afterwards, when the situation calmed down, it was verified that the supply and distribution of gasoline in the state of California had not suffered any reduction." (WATZLAWICK, 1994, p.98) The author argues that examples like this show how much a future event can determine effects in the present.

verify which variants of rhotics occur in the syllabic coda position in the accent of the people from Campinas who were interviewed, and investigate the value judgment they give to these variants. Is stigma attributed to the *caipira* /R/ a determinant capable of triggering the variation and, consequently, causing the weakening of this segment? In relation to the stereotyped image of the “intermediate” pronunciation of the Campinas native accent, will it be confirmed?

Before proceeding with data analysis, the next section provides a description of the methodology employed in this study.

## **Characterization and acoustic description of the data**

Ladefoged and Maddieson (1996) state that the similarities among the rhotics may be more of an acoustic and auditory nature than articulatory. They add that it is not the point of articulation that defines the class of rhotics because segments of different articulations, such as dorsal and coronal, for example, are grouped as rhotics. Therefore, they clarify: “The most important evidence that they belong to a single class, at least from a phonological point of view, is the fact that rhotics of one type often alternate with other rhotics.” (LADEFOGED; MADDIESON, 1996, p.216).

Rhotics and vowels are similar, according to Ladefoged and Maddieson (1996), because they present syllabic variants or because they merge (co-articulate) with contiguous vowels. The authors also present other evidence of this similarity when they point out that in Germanic languages (Danish and Swedish) the vowels followed by rhotics tend to be long as well as acquire the “colored” quality of the following rhotic, presenting, therefore, acoustic modifications. In the end, they conclude:

Thus, the rhotics form a heterogeneous group from the phonetic point of view, exhibiting a wide variety of manners and places of articulation. We find rhotics that are fricatives, trills, taps, approximants, and even ‘r-colored’ vowels, as well as articulations that combine features of several of these categories. The most common places of articulations are in the dental-alveolar area, although post-alveolar (retroflex) /r/’s are not unusual, and in some languages /r/’s have a uvular articulation. (LADEFOGED; MADDIESON, 1996, p.217).

The r-colored vowels mentioned by Ladefoged and Maddieson (1996) are observed by Ladefoged (2001) in American English. This author states that these vowels invoke a traditional trace called rhotacization, since the traces – high/low, front/back, and rounded/unrounded – are not enough to describe them. Ladefoged (2001) defines a rhotacized vowel as:

Rhotacization is an auditory quality, which, like height and backness, is most appropriately defined in acoustic terms. In a rhotacized vowel (or portion of a vowel) there is a marked lowering of the frequency of the third formant. (LADEFAGED, 2001, p. 212).

Rhotics form a class of sounds with a great number of phonetic differences and present formant frequencies<sup>22</sup> related to the points of constriction in the vocal tract. Lindau (1980a) discusses some of the phonetic differences among several Nigerian languages, addressing the classes of rhotics, implosives, and vowels. In her description of the r sounds, she states that the first and second formants appear to reflect the quality of the vowel that comes before or after this segment, while a third and fourth formant are important indicators of the point of constriction in this type of sound. In relation to this description, the author draws attention to the acoustic correlate that occurs when there is a constriction in the posterior-most or anterior-most regions of the vocal tract:

According to acoustic theory, a lowered third formant, close to the second formant, indicates a constriction fairly far back in the postalveolar-midpalatal region with strong retroflexion. This happens in Izon. As the constriction moves forward in the mouth the third formant increases. A relatively high third formant, close to the fourth formant, indicates a dental place, as happens in the Kalabari example. (LINDAU, 1980a, p.107).

Lindau's study (1980a) indicates that the lowering of  $F_3$  is characteristic only of rhotics produced in the postalveolar region presenting, therefore, strong retroflexion. On the other hand, rhotics produced in a more anterior region of the vocal tract, in relation to the mid palate area, present an elevation of  $F_3$  and not a lowering.

According to Linday (1980b), in English and Spanish it is possible to verify, acoustically, a lowering of  $F_3$  in the realization of rhotics<sup>23</sup>. However, the lowering of  $F_3$  is not a feature of rhotics in other languages. According to the author, in the realization of tap and approximant related to the pronunciation of speakers of Degema, a language originating in Nigeria, it was not the lowering of  $F_3$  that was observed, but rather an elevation, so that the third formant presented itself closer to the fourth formant.

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<sup>22</sup> Formants are peaks of acoustic energy that represent the resonance frequencies of the air in the vocal tract and are classed  $F_1$ ,  $F_2$ ,  $F_3$ , etc., starting with the lowest resonance frequency, according to Ladefoged (2001). The formantic structure is the main trace of speech sounds. All vowels and consonants have formants, and it is the pattern of formants (especially the disposition of the first two formants) that allows us to differentiate vowels or recognize repetition of a vowel and to classify it, even when it is produced by different speakers.

<sup>23</sup> Lindau (1980b) points to a lowering of  $F_3$  in the realization of trills, taps and approximants.

Through these studies, Lindau (1980b) points out that the lowering of the third formant may be obtained by retroflexion and by a constriction in the post-alveolar palatal regions. This lowering may also be produced with the tip of the tongue lowered and by a constriction of the pharynx. The studies also confirm the fact that the rounding of the lips contributes to the lowering of  $F_3$ .

In summary, Lindau's research (1980a, 1980b) indicates that it is the family or similarity relationships – more than the acoustic characteristic – that allows the classification of the class of rhotics. Thus, trills and taps are similar in regard to closure duration; apical and uvular trills are similar in relation to the fast and consecutive pattern of the trills, apical taps; and approximants present similarities in relation to the articulatory scale of closure and possibly in relation to the position of the third format; while uvular and fricative trills present a similar pattern of formants. In her words:

Thus there is no physical property that constitutes the “essence” of all rhotics. Instead, each member of the class of r-sounds resembles some other member with respect to some property, but not with respect to the same property across all r-sounds. (LINDAU, 1980b, p.118).

Similarities among rhotics are due much more to acoustic and auditory reasons than to articulatory reasons because there is a broad range of modes and points of articulation that involve these segments.

Considering the acoustic parameters described by the theoreticians mentioned above, the methodological criteria adopted and the results are described, and part of the data that forms the body of this work is discussed.

## **Methodological procedure**

The *corpus* of the study that originated this paper is composed of data collected from 12 informants that were inhabitants of the city of Campinas. Social variables considered for the selection of informants were: gender, age group, and level of education, as detailed below:

- (i) Gender: male, female;
- (ii) Age group: (1) 20 to 30 years of age, (2) 37 to 47 years of age, (3) above 54 years of age. An interval of 7 years was defined between age groups;
- (iii) Level of education: secondary education (S), or higher education (H) completed or in progress.

A summary of the characteristics of informants are presented in Table 1 below:

**Table 1** – Description of informants by the social variables selected

<b>Informant's Initials</b>	<b>Gender</b>	<b>Age Group/ Age (years)</b>	<b>Level of Education</b>
MC	F	1 / 23	S
GP	M	1 / 20	S
CL	F	2/ 47	S
JC	M	2 / 46	S
LH	F	3 / 54	S
JP	M	3 / 56	S
TG	F	1 / 20	H
OE	M	1 / 29	H
LB	F	2 / 37	H
EG	M	2 / 37	H
JB	F	3 / 56	H
AL	M	3 / 68	H

**Source:** Made by the author.

In this paper, the data of 9 of the 12 informants<sup>24</sup> are discussed. Also, only data reflecting the general pattern of configuration of the variants found will be considered. Therefore, differences due to the social variables cited above will not be explored<sup>25</sup>.

The experimental design, formed by real words and pseudo-words, was developed with the purpose of obtaining the same contexts for the CVR sequence (consonant, vowel, rhotic) in the medial /'tVR.CV/ and final /CV.'tVR/ coda positions. The words selected, shown in Table 2 below, were inserted in a vehicle-sentence ("say \_\_\_\_\_ to her") and in sentences. The words and sentences were read by each informant and repeated 3 times.

<sup>24</sup> The variations found in the data of the 12 informants were classified into two samples: sample 1 and sample 2. Sample 1 comprises the data of 9 informants, collected through the reading of the words and sentences; and sample 2 is composed of data collected through interviews with all 12 informants. In this paper, only data from sample 1 is presented. For further information about the totality of the data, see Leite (2010).

<sup>25</sup> For further information about these differences, see Leite (2010).



**Table 2** – Words and pseudo-words selected as part of the experimental design

<b>Vowels</b>	<b>Medial Coda /ˈtVR.CV/</b>	<b>Final Coda /CV.tVR/</b>	<b>Vowel in CV Syllable</b>
/a/	Tarto	Qatar <sup>26</sup>	Pato
/e/	Terto	Bater	Beco
/i/	Tirto	Tatir	Tipo
/o/	Torto	Tutor	Toco
/u/	Turta	Tutur	Tuco

**Source:** Made by the author.

Data was recorded in an acoustically treated room in the Recording Studio of the Institute of Language Studies at the University of Campinas (IEL, Unicamp). Data were captured by a microphone (AKG: model 420 PP headset) connected to a pre-amplification board (M-Audio: model MobilePre USB). This board was connected to a notebook computer (Toshiba: latest generation model SatelliteM45). For the recording, Audacity, a free, open-source, audio editor and recording program (22,050-Hz sample rate, 24-bit resolution; digitalized in pulse modulation code: PCM) was used.

The data were transcribed<sup>27</sup>, manually segmented, and analyzed with the aid of Praat software. The parameters adopted for the acoustic analysis were based on the frequency of the first three formants of the VR sequence (in three positions: IP, MP and FP<sup>28</sup>). The frequencies of the first three formants were verified based on Fast Fourier Transformation (FFT) algorithms and Linear Predictive Coding (LPC), overlapped. The values obtained via these analyses were submitted to acoustic analysis. Results of the acoustic analyses are presented below.

<sup>26</sup> Refers to the Arabian country, officially recognized as an emirate, located in the Middle East.

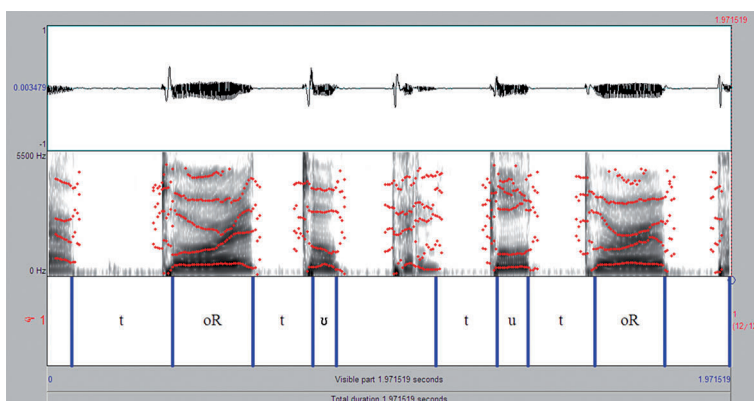
<sup>27</sup> According to Marcuschi (1986).

<sup>28</sup> The formantic frequencies of rhotics are difficult to measure. Approximant rhotics and rotacized vowels present even greater challenges because they are co-articulated with the vowels they precede. Because of this interaction, a methodological strategy, aimed at delimiting the vowel and the rhotic, was established to measure the values of the formant frequencies with the purpose of observing the major points in the VR trajectory. Thus, the trajectory was subdivided into three positions – initial position (IP), medial position (MP), and final position (FP) – from which the values of the formant frequencies were obtained. For further details, see Leite (2010).

## Results and discussion

The most frequent variant in the Campinas native accent is the *caipira* /R/. This variant is stigmatized and negatively evaluated by most of the informants interviewed. Acoustic analysis of the 540 repetitions<sup>29</sup> of the /R/ in the medial and final syllabic coda positions revealed a predominance of the *caipira* /R/ variant, both in the pronunciation of the informants from age group 1 and those from age group 3. The *caipira* /R/ presents a low F3 (whose average is 2,096 Hz in the medial coda position and 2,070 Hz in the final coda position) in the medial or the final position, even when it occurs after anterior vowels. As an example of the realization of this variation, see spectrograms 1 and 2 below<sup>30</sup>. In the first spectrogram (where the realization of two words are concatenated: *torto* and *tutor*), it is possible to verify the occurrence of the variant after posterior vowels while the second spectrogram (where there are two concatenated words: *terto* and *tutor*) shows the realization of the *caipira* /R/ after an anterior and a posterior vowel.

**Figure 1** – Informant TG's spectrogram 1 (concatenated *torto* and *tutor*).

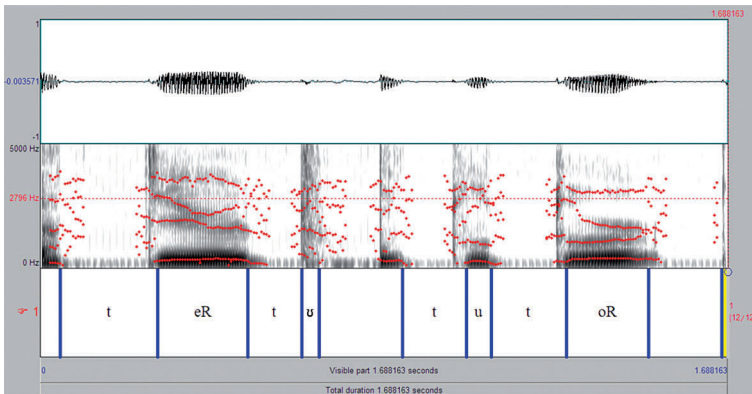


**Source:** Made by the author.

<sup>29</sup> This number corresponds to the total occurrences of /R/ in the data of nine informants. Data from three informants were discarded due to the variants found. The 60 repetitions of the /R/ for each informant (30 in the medial coda position and 30 in the final coda position) are distributed according to the five vowels selected, as detailed in Table 2.

<sup>30</sup> The spectrograms show data from three informants: TG, GP and LB, described in Table 1.

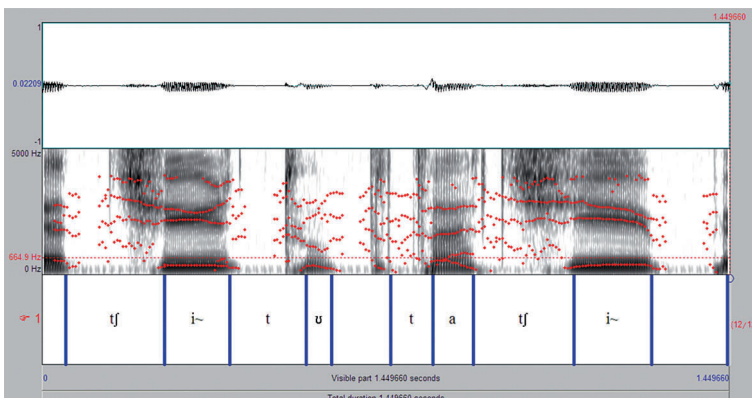
**Figure 2** – Informant GP's spectrogram 1 (concatenated *terto* and *tuto*).



**Source:** Made by the author.

In addition to the *caipira* /R/, the occurrence of a rhotacized vowel variant was observed. Among the features of rhotacized vowels listed by Ladefoged and Maddieson (1996) and Ladefoged (2001), only the first was present in the data analyzed: the low F3<sup>31</sup>. The second characteristic (corresponding to the quality of rhotacization present at the beginning of the vowel) was not observed in all of the occurrences classified in this study as rhotacized vowels because it is the quality of the vowel rather than the rhotic that prevails. Figure 3 below shows the occurrence of this variant.

**Figure 3** – Informant LB's spectrogram 1 (concatenated *tirto* and *tatir*)

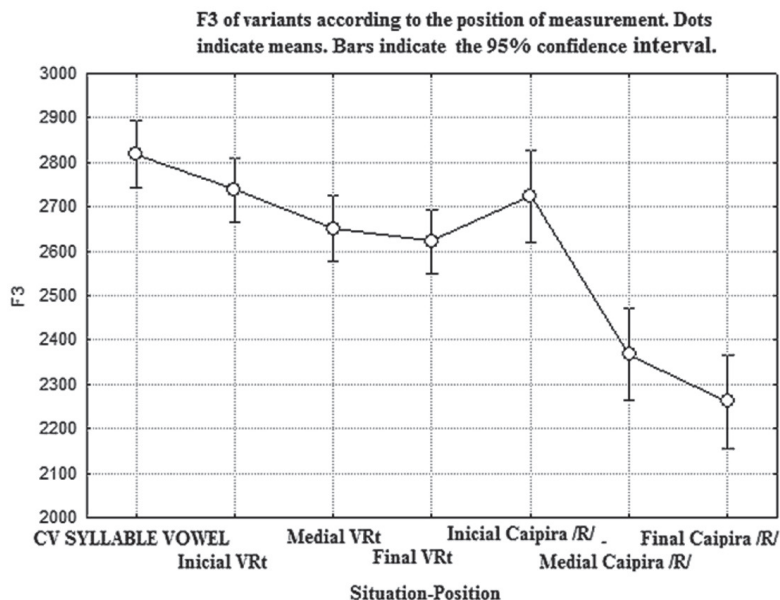


**Source:** Made by the author.

<sup>31</sup> It would be appropriate to say that the value of the F3 frequency is relatively low because it is not as low as the one observed for the *caipira* /R/ variant.

In the statistical analysis of the means of the formant frequencies of the *caipira*VRt (rhotacizedVRt) and the vowel in the CV syllable, the Kruskal–Wallis test indicated a statistically significant difference in the rank sum of F1 and F3. Because it is a trajectory, it is the final position that we are most interested in observing. The mean F1 frequency in the final positions found for VRt is located between the means found for the *caipira* /R/ and those corresponding to the vowel in the CV syllable. In relation to F3 (a formant that better characterizes the *caipira* /R/), the analysis showed statistically significant differences among the variations that were compared (which corresponded to the F3 of the *caipira* /R/, the vowel in CV syllable, and the VRt, or rhotacized vowel). The lowest mean values of the third formant frequency were those corresponding to the final position of the *caipira* /R/ variant, followed by the final position of VRt and, finally, the vowel in the CV syllable. If, auditorally, the quality of the rhotics was not noticed at the beginning of the trajectory, the results obtained with the F3 frequency means show that, starting at the initial position, the VRt frequency is lower than that found for the vowel in the CV syllable. It is also possible to verify that the VRt frequency means, in all positions, are higher than the means for the *caipira* /R/ variant. Figure 4 illustrates these results.

**Figure 4** – F3 frequency means for the initial position (IP), medial position (MP), and final position (FP) for the vowel in the CV syllable, VRt, and *caipira* /R/



**Source:** Made by the author.

The findings of this study show that there is a linguistic variation of rhotics and that the most frequent variant is the *caipira* /R/. These results contradict the alleged existence of a typical Campinas /R/.

Acoustic analysis of the data showed that it is the *caipira* /R/ that is produced by people from Campinas, even when they try to establish distinctions between the different forms of pronunciation of the rhotic. Thus, there is a contradiction between the statements made by most informants and their pronunciation of the rhotic. It may be said that this contradiction is only apparent because speakers usually refer to linguistic forms that they consider socially prestigious and not to those that are actually part of their linguistic repertoire. Informants from the city of Campinas view themselves as producing the pronunciation that they consider more prestigious. This finding confirms the second hypothesis of this study.

Despite the stereotyping of the *caipira* /R/ of the accent in the interior of the state of Sao Paulo, this pronunciation is kept active in the Campinas native accent. We must remember that stereotypes have great influence in relation to linguistic maintenance or change and that some of their main features are persistence, rigidity, and resistance to change. Therefore, stereotypes related to the *caipira* /R/ tend to continue to be active. However, we also need to remember that another stereotyped belief is found in the informants' reports – one which attributes an intermediate pronunciation to the Campinas native accent.

Stereotyped opinions also have an important role in society because they protect people from seeing reality whenever this reality is disturbing or disconcerting, according to Lippmann (2008). Thus, it may be argued that this belief in the existence of a soft, intermediate, or less marked pronunciation functions as a shield, protecting those who find shelter behind it. It is not a coincidence that this stereotype is sustained because its maintenance functions as a defense for a position that one wishes to ensure in society; in this case, for the majority of the people from Campinas, it is a way to establish the boundaries between Campinas – the capital of the interior – and other cities in the interior of São Paulo state. The issues relevant to this topic are closely related to the linguistic aspect discussed here and will be the object of future research.

## **Final remarks**

In their reports, informants stated that the Campinas /R/ is distinct from the rhotic characteristic of the accent in the interior of Sao Paulo state (i.e., the *caipira* /R/) because it is softer or “intermediate.” However, acoustic analysis of the data has shown that it is the *caipira* /R/ they produce, even when they attempt to establish a distinction between the forms of pronunciation of rhotics. Therefore, there is a contradiction between the statement found in most reports and the

informants' pronunciation of the rhotic. It may be said that this contradiction is only apparent because speakers usually refer to linguistic forms they consider socially prestigious and not to those that are actually part of their linguistic repertoire. The informants from the city of Campinas view themselves as producing the pronunciation they consider prestigious. This result confirms the second hypothesis of this study.

LEITE, Cândida Mara Britto. Estudo da variação linguística dos róticos no falar campineiro. *Alfa*, São Paulo, v.59, n.1, p.127-153, 2015.

- **RESUMO:** *Este artigo apresenta resultados de uma pesquisa que buscou investigar a variação de um segmento linguístico do falar campineiro: o /R/ em posição de coda silábica. Como hipótese principal deste estudo, assumiu-se que o rótico produzido pelos informantes campineiros estaria em um estado mais avançado, se comparado a outras cidades do interior paulista, no que se refere ao enfraquecimento desse segmento, tendendo à vocalização ou ao apagamento. Esse enfraquecimento seria o responsável pela impressão, de oitiva, dos informantes que julgam pronunciar uma variante de /R/ avaliada como “intermediária” e indicada como característica do falar campineiro. O corpus selecionado consta de dados coletados junto a doze informantes naturais do interior paulista. Esses dados foram gravados, submetidos à análise acústica e estatística. Para análise dos dados, o referencial teórico adotado foi o da Teoria Acústica de Produção da Fala, conforme Fant (1960), somado aos pressupostos da Sociolinguística. Os resultados alcançados nesta pesquisa mostram que há variação linguística do rótico e que a variante mais frequente é o /R/ caipira. Esse resultado contraria a alegada existência de um /R/ característico do falar campineiro.*
- **PALAVRAS-CHAVE:** *Variação linguística. Róticos. Fonética acústica.*

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# PERCEPTION AND PRODUCTION OF ENGLISH VOT PATTERNS BY BRAZILIAN LEARNERS: THE ROLE OF MULTIPLE ACOUSTIC CUES IN A DST PERSPECTIVE

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- **ABSTRACT:** In this study, departing from a dynamic conception of L2 phonetic-phonological acquisition, we investigate 34 Southern Brazilian learners' perception (identification and discrimination) and production of VOT patterns of initial stops in English. We initially hypothesized that, especially among learners with a basic level of L2 proficiency, VOT was not the main acoustic cue employed in the perception of voicing distinctions. Our results show that, regardless of the learners' proficiency level (basic or advanced), VOT is not a sufficient cue for the distinction between /p/, /t/, /k/ and /b/, /d/, /g/. These results, which have an influence on the lower VOT values found in our production data, conform with a dynamic view of L2 acquisition, according to which multiple acoustic cues play a role in language acquisition, forcing learners to tune in to the most important cue(s) in the target language.
- **KEYWORDS:** VOT. Second Language Acquisition. Acoustic Cues.

## Introduction

The process of learning phonetic-phonological aspects of a second language (L2)<sup>1</sup> is complex and dynamic, for many variables, acting conjointly, are fundamental to understand this process. Regarding the perception and production of the target language sounds, multiple acoustic cues are at play in establishing the functional differences among the sounds to be acquired. In that respect, learning an L2 implies the learner's skill not only to perceive the acoustic cues which are productive in the target system, but also to use them in order to establish phonological differences in the foreign language system.

As an example to the challenges to be faced by learners, we may consider the task Brazilians undertake when learning English *Voice Onset Time* (VOT)

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<sup>1</sup> In this study, the terms 'Second Language' and 'Foreign Language' are treated as synonyms, as well as the terms 'acquisition' and 'learning'.

patterns. In English, voiceless plosives /p/, /t/, /k/ are produced with a long VOT interval, which is also called Positive VOT (aspiration). This is the main phonetic cue employed in the distinction between voiceless and voiced stops (SCHWARTZHAUPT; ALVES; FONTES, 2013). However, in a previous pilot study, Alves and Zimmer (2012) suggested that among Brazilian learners VOT duration did not seem to be a fundamental cue for the distinction between voiced and voiceless stops in English, contrary to what is observed among native speakers of that language. Brazilian Portuguese speakers seem to pay more attention to other acoustic cues, such as burst intensity and the F<sub>0</sub> value of the vowel following the stop, when establishing functional differences between voiceless and voiced plosives in English. This might also account for the fact that Brazilian learners, even in advanced levels of proficiency, are not able to produce VOT patterns similar to the ones found among natives (ALVES; SCHWARTZHAUPT; BARATZ, 2011).

In other words, following the hypotheses raised in the pilot study carried out by Alves and Zimmer (2012), it is possible that Brazilian learners do not use VOT as their main cue in distinguishing voiceless from voiced stops in the target language. This considered, it might be the case that other acoustic cues are being primarily employed in the perception and production of voice distinctions. Similar cases have been discussed in recent studies (SUNDARA, 2005; OH, 2011; KONG; BECKMAN; EDWARDS, 2012), which investigate Canadian French, Korean and Japanese, respectively. In these languages, additional cues, such as burst intensity and fundamental frequency (F<sub>0</sub>) in the following vowel, take the lead as the main acoustic correlates employed to distinguish voiceless from voiced plosive segments in perception and production.

Such findings have a direct impact on the understanding of the process of phonetic-phonological learning of a foreign language (FL). The acquisition of the two-way voicing system of English (L2) will imply that learners focus their attention on VOT, so as to learn the new pattern (aspiration) which occurs in English. The acquisition of English aspiration by learners of these L1 systems, therefore, would require a double task: before learning the L2 VOT pattern itself, learners have to “listen to” this cue, which does not play such an important role in their first language.

In terms of L2 acquisition perceptual models, the L2 re-structuring of acoustic cues can be explained by Best and Tyler's *Perceptual Assimilation Model-L2* (BEST; TYLER, 2007). According to Antoniou et al. (2011), this model is based on the theory of Gestural Phonology (BROWMAN; GOLDSTEIN, 1992, 1993, 2000). Indeed, following Goldstein and Fowler (2003), we can postulate the notion of phonological gesture as “common currency” of analysis between phonological knowledge, perception and production. In that sense, “[...] by acquiring an L2, learners are exposed to a new set of articulatory gestures, including new phasing

relations and patterns of coordination between these gestures.” (ANTONIOU et al., 2011, p.560).

Departing from the statement that “[...] if phonological atoms are public actions, then they directly cause the structure in the speech signals, which, then, provides information directly about the phonological atoms.”, (GOLDSTEIN; FOWLER, 2003, p.179), our aim in this study is to explain how the exposure to an acoustic cue which is conveyed by a distinctive gesture in the target language can cause changes in the perception and production of Brazilian learners’ interlanguage system.

Therefore, based on perception and production tests, we discuss the possible redundant feature of VOT for the distinction between voiceless and voiced stops in English. Our main goals are: (i) to assess whether Brazilian learners of English in two different levels of proficiency present distinct response rates in the perception of the VOT patterns produced by native speakers of English; (ii) to investigate whether learners in the two proficiency groups produce VOT patterns similar to those found in the target language; (iii) to discuss the role of VOT as the main acoustic cue used by Brazilian learners in the functional distinction between voiceless and voiced initial stops.

## **Method**

### **Participants**

34 participants<sup>2</sup>, learners of English residing in the Southern Brazilian city of Porto Alegre, took part in the study. After having taken the Oxford Online Placement Test<sup>3</sup>, learners were placed as elementary (24 learners whose levels ranged from A1 to A2 in the Common European Framework) and advanced (10 learners whose levels ranged from C1 to C2). All learners took perception (Identification and Discrimination) and production tests.

### **Perception tests**

The stimuli were recorded in a professional studio by six native speakers of North American English (three male and three female) who had been living in Southern Brazil for less than 6 months. These six speakers read a set of three

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<sup>2</sup> All the participants filled in a Free and Informed Consent Form in which they received information on the procedures involved in the data collection, as well as the risks and benefits of the study. Participants were also informed they could quit at any phase of the experiments.

<sup>3</sup> The Oxford Online Placement Test is a validated test, taken online from the website <[www.oxfordenglishtesting.com](http://www.oxfordenglishtesting.com)>. For further details on the test, see Purpura (2007) and Pollitt (2007).

minimal pairs (bit – pit; dick – tick; gill – kill), each pair starting with a different place of articulation, followed by a high vowel (YAVAS; WILDERMUTH, 2006). In order to guarantee the quality of the audio stimuli, each speaker was asked to record their word list three times, so that the best tokens could be chosen for the perception tests.

The stops produced by the six native speakers of English presented three different VOT patterns. Voiceless stops (pit, tick, kill) were always produced with Positive VOT, whereas /b, d, g/ (bit, dick, gill) were produced either with pre-voicing (Negative VOT) or with Zero VOT, as VOT patterns in initial /b, d, g/ are variable in English (LISKER; ABRAMSON, 1964; ABRAMSON; LISKER, 1973; DOCHERTY, 1992; SIMON, 2010).

Besides these three VOT patterns, productions of voiceless plosives were also manipulated in Praat – Version 5.2.9 (BOERSMA; WEENINK, 2013), so that we could obtain the Manipulated Zero VOT pattern: as the VOT of the plosives was reduced, the resulting manipulated consonant would have the same VOT duration as that of a voiced segment, but could maintain the other acoustic cues found in a voiceless stop in English. From the contrast between the manipulated Zero and the Natural Zero VOT patterns, we can assess whether VOT plays the role of key acoustic cue in the distinction between English voiceless and voiced stops by Brazilian learners.

Therefore, both Identification and Discrimination tests were built with these four VOT patterns: Negative VOT, Positive VOT, Non-Manipulated Zero VOT and Manipulated Zero VOT. Both tests were also built and administered in Praat. The sections that follow provide more detail on each one of the tests.

### **Identification Test**

In the identification test, the participants were presented with individual word stimuli (a member of one of the three minimal pairs described above) and were invited to click on a button indicating the initial consonant of the word they heard (/p/, /b/, /t/, /d/, /k/ or /g/). Stimuli with the four VOT patterns (Negative VOT, Natural Zero, Artificial Zero and Positive VOT) were presented in a random order. The task had a total of 48 stimuli words to be identified, and each one of the four VOT patterns was presented in 12 tokens (4 for each place of articulation).

### **Discrimination Test**

The discrimination test consisted of an AxB task. In this task, the stimuli presented to learners were made up of word triads. The participants were provided

with multiple choice questions and were asked to indicate if the initial consonant of the second word was similar to that of the first word (e.g. bit – bit – pit), to that of the third word (e.g. bit – pit – pit), or if the three words began with the same consonant (e.g. pit – pit – pit).

Three kinds of contrasts were tested in the AxB task: Negative VOT vs. Manipulated Zero VOT (12 questions – four for each place of articulation); Negative VOT vs. Positive VOT (12 questions), Manipulated Zero VOT vs. Positive VOT (12 questions). Other possible contrasts, such as Non-Manipulated Zero VOT vs. Negative VOT, as well as Non-Manipulated Zero VOT vs. Artificial Zero VOT, were not included in this experiment for delimitation purposes, since it had already been reported that learners tend to discriminate the latter, but not the former, of these two contrasting pairs (ALVES; SCHWARTZHAUPT; BARATZ, 2011). Besides the three kinds of contrasts used in the present experiment, the test also presented nine (three for each place of articulation) “catch trial” questions – that is, triads that presented the same initial consonants (e.g. pit – pit – pit), so that we could test the participants’ attention to the task.<sup>4</sup>

## Production tests

The same learners who participated in the two perception tests also took two production tests, one in English and another one in Brazilian Portuguese (BP).

## Word production test in Brazilian Portuguese

The participants were asked to read words starting with the segments /p/, /k/, /b/, /g/ and followed by a high front vowel, corresponding to the same phonetic-phonologic context used in the perception tests. Words starting with /t/ and /d/ were not included in the instrument because the alveolar stop is palatalized before [i] in the dialect spoken by the participants (KAMIANECKY, 2002). In this study, we will present the results concerning the voiceless stops /p/ and /k/.

For each one of the target consonants, there were two types (apart from eight **types** distractor words, starting with non-plosive segments) in the test. Each **type** was produced twice, which adds up to 4 **tokens** for each consonant, produced by each one of the participants. The words were presented in a Microsoft PowerPoint file (.ppt), each one in a different **slide**, on a Sony Vaio laptop, model PCG-31311X. The participants’ production was recorded with the aid of a Philips SHM 3550 headset, via *Software Audacity* (2015) – version 2.0.5.

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<sup>4</sup> Since the answers provided in the catch trials presented high accuracy levels, indicating, therefore, that participants were in fact paying attention to the task, these results are not going to be presented in this article.

## Word production test in English

In this test, which also consisted of reading words presented individually on slides of a .ppt file, the target words started with the segments /p/, /t/, /k/, /b/, /d/, /g/ and were followed by a high front vowel (ex. **pit, tip, kit**). Bearing in mind the goals of this study, we will report only the VOT values of voiceless plosives /p/, /t/, /k/.

Apart from distractors, the test comprised three *types* per consonant. Each *type* was produced twice, which adds up to six tokens per consonant for each participant. Similarly to the Brazilian Portuguese test, the participants' production was recorded with the aid of a Philips SHM 3550 headset, on a Sony Vaio laptop.

## Hypotheses

In this section, we present the hypotheses outlined for each of the tests (Identification, Discrimination and Production). All the hypotheses follow the assumption that, in a more elementary proficiency level, learners do not follow VOT as their main cue to distinguish between voiceless and voiced stops, whereas advanced learners will give that cue a priority status.

### Identification test hypotheses

**H1:** "With regard to the identification of Negative VOT (productions of English /b/, /d/, /g/) and Positive VOT (aspiration of English /p/, /t/, /k/) patterns, there will be no significant differences between the two proficiency groups."

Motivation for the hypothesis: Even if not guided by VOT, elementary level learners of English will identify Negative VOT as voiced and Positive VOT as voiceless, as they rely on additional acoustic cues, such as burst intensity, which leads them to a correct characterization of voicing in these consonants.

**H2:** "As for the identification of Non-manipulated Zero VOT, there will not be a significant difference between students in the two proficiency levels."

Motivation: Learners in a more elementary level will tend to identify these consonants as voiced stops, as they might be guided by burst intensity when identifying consonants. More advanced learners, in turn, will be guided by the L2 VOT pattern, so the short lag VOT will also lead learners to identify these consonants as voiced.

**H3:** "Concerning the identification of Manipulated Zero VOT, there will be a significant difference between students at the two proficiency levels."



Elementary learners of English will base their judgments on L1 cues which seem to be more important than VOT, since all acoustic features of this manipulated sound – apart from the reduced interval of aspiration – lead to its identification as /p/, /t/, /k/; therefore, elementary learners will identify this pattern as voiceless. Advanced learners, in turn, will identify these consonants as voiced, as they already have VOT as their main acoustic cue and will tend to follow the pattern found in English in order to distinguish voiceless from voiced consonants.

### **Discrimination test hypotheses**

**H4:** “As for the discrimination between Negative VOT vs. Positive VOT, we hypothesize that there will not be a significant difference between elementary and advanced learners of English.”

Motivation: Both groups of learners are going to discriminate between English tokens of /b/, /d/, /g/ and /p/, /t/, /k/, even if through different main acoustic cues, as only more advanced learners are expected to use the L2 VOT pattern as their main acoustic cue in voicing distinctions.

**H5:** “Regarding the discrimination between Negative vs. Manipulated Zero VOT, a significant difference between the two proficiency groups will be found.”

Motivation: Elementary level learners are expected to present high discrimination rates, as they might be guided by their L1 acoustic cues, leading them to consider Negative VOT (weak burst intensity) as voiced and Manipulated Zero VOT (strong burst intensity) as voiceless. More advanced learners, however, will be guided by the VOT cue: as both patterns are characterized by a short lag VOT, we do not expect them to be discriminated by these learners who follow the L2 pattern.

**H6:** “Regarding the discrimination between Manipulated Zero and Positive VOT, we also hypothesize that there will be a significant difference between the results found in the two groups.”

Motivation: Elementary level learners are expected to present lower discrimination levels, as they are guided by their L1 cues and disregard VOT as the main cue in their responses. More advanced learners, on the other hand, guided by the English VOT pattern as their main cue, will discriminate these two patterns, as the former presents a short lag VOT, while the latter is characterized by aspiration.

## Production test hypotheses

**H7:** “In each of the groups (considered separately), there will be a significant difference between the VOT values of /p/ and /k/ found in Brazilian Portuguese and in English.”

Motivation: although the learners are not likely to have achieved VOT patterns similar to the ones produced in English, mainly due to the fact that VOT tends not to be the main acoustic cue followed in their L1, they already make partial use of the VOT cue to signal, with a longer duration, the English plosives.

**H8:** “There will be no significant differences between the two groups in their production of long-lagged VOT of each of the English stops.”

Motivation: this hypothesis follows previous trends in the literature (ALVES; SCHWARTZHAUPT; BARATZ, 2011) which suggest that, regardless of participants' proficiency level, their VOT patterns do not reach the native ones. Although both basic and advanced learners are able to identify aspirated plosives as voiceless (as laid out in our first hypothesis), and even when they use VOT as their main cue (advanced learners), we claim that such facts do not necessarily account for significant differences in the production of VOT patterns between the two groups.

## Results and Discussion

This section is divided in three parts, which deal with the description and discussion of the identification, discrimination and production data, respectively.

### Identification

The data concerning the Identification test are presented in what follows. As we can see in Table 01, regardless of the participants' level of proficiency, the Negative VOT pattern (pre-voicing) is nearly categorically identified as voiced (99,31%,  $m=12$  – elementary level, and 96,67%,  $m=12$  – advanced level). Mann-Whitney tests showed no significant differences between the two proficiency levels in the identification of the segments as voiceless ( $U=108,00$ ;  $p=,121$ ) or voiced ( $U=112,5$ ;  $p=,487$ ). This is not surprising, as in the participants' mother language, prevoicing is already a cue for the presence of a voiced segment. Data recently collected by our research group suggest that, at least in the dialect of Brazilian Portuguese (BP) spoken in Rio Grande do Sul, prevoicing in /b/, /d/, /g/ is not categorical, and instances of production of these showing VOT Zero patterns have been found. This fact gives support to our argument that prevoicing may

not be robust enough to enable the distinction between voiced and voiceless segments in that dialect. Investigations on the identification of BP /b/, /d/, /g/ without prevoicing are fundamental for a more consistent discussion concerning the effective role played by this acoustic cue in the functional sonority distinctions in BP (ALVEZ; ZIMMER, 2012). Thus, as VOT is not the sole acoustic cue employed in the identification of these segments as voiced, additional cues, such as burst intensity, could account for our findings, as voiced segments, both in English and in Brazilian Portuguese, are produced with a weaker burst intensity (LISKER; ABRAMSON, 1964).

**Table 1** – Results of the Identification<sup>5</sup> test (12 questions for each VOT pattern).

<i>VOT patterns</i>	<i>Elementary Group</i>		<i>Advanced Group</i>	
	<i>Voiceless</i>	<i>Voiced</i>	<i>Voiceless</i>	<i>Voiced</i>
<b><i>Negative</i></b>	<b>0%</b> 0/288	<b>99,31%</b> 286/288	<b>3,33%</b> 4/120	<b>96,67%</b> 116/120
<b><i>Natural Zero</i></b>	<b>27,43%</b> 79/288	<b>69,1%</b> 199/288	25% 30/120	<b>71,67%</b> 86/120
<b><i>Manipulated Zero</i></b>	<b>57,29%</b> 165/288	<b>39,93%</b> 115/288	<b>76,67%</b> 92/120	<b>16,67%</b> 20/120
<b><i>Positive</i></b>	<b>91,67%</b> 264/288	<b>2,78%</b> 8/288	<b>98,33%</b> 118/120	<b>0%</b> 0/120

**Source:** Made by the author.

As to the identification of Positive VOT patterns (aspiration), the results also confirm what was expected: in both proficiency levels, the identification of such segments as voiceless seems to be categorical (elementary – 91,67%, m=12; advanced – 98,33%, m=12). Mann-Whitney tests did not show any significant differences between the groups in the identification of the segments as voiced (U=76,500; p=,051) or voiceless (U=100,00; p=,175). Such findings are in line with what has been observed in previous studies (ALVES; SCHWARTZHAUPT; BARATZ, 2011; ALVES; ZIMMER, 2012), which suggest that aspirated segments in English are easily identified as voiceless by learners. Based on these findings, Hypothesis 1 is confirmed: regardless of which cue is taken as the main cue, there were no significant differences between the

<sup>5</sup> In this table, we only present the rates of those answers that consisted of accurate choices concerning place of articulation (i.e., learners may hear a bilabial stop and identify it as [b] or [p], but not as [t], [d], [k] or [g]). This explains why the sum of voiceless and voiced responses does not correspond to 100% of the answers.

two proficiency levels in what regards the identification of voicing in Negative and in Positive<sup>6</sup> VOT patterns.

As to the Natural Zero VOT pattern, we found that the participants in both groups of proficiency prefer to identify it as voiced (elementary: 69,71%,  $m=8,00$ ; advanced: 71,67,  $m=10,00$ ). Mann-Whitney tests did not show significant differences between the groups in the identification of the segments as voiced ( $U=111,00$ ;  $p=,727$ ) or voiceless ( $U=103,00$ ;  $p=,510$ ). The results corroborate our hypothesis, and additional remarks must be made concerning the motivation for our initial hypothesis. As we had predicted, both groups would identify the Natural Zero VOT pattern as voiced by following distinct paths: the elementary learners would answer based on cues other than VOT (such as burst intensity), whereas advanced participants – who already follow VOT as their main cue – would use the L2 patterns to accomplish this task. In order to assess whether the responses provided by the participants were actually based on the possibilities raised above, the data regarding the Manipulated Zero pattern will be really clarifying.

The data on Table 1 show that, when faced with this artificial pattern, the learners show a higher degree of difficulty to identify the segments as voiced or voiceless. This difficulty is more obvious in the elementary level, in which 57,29% of the tokens ( $m=6,00$ ) are identified as voiceless, while 39,95% of the **tokens** ( $m=5,00$ ) are identified as voiced. The preference becomes a little clearer among advanced participants, who identify 76,67% of the tokens as voiceless ( $m=9,00$ ). According to Hypothesis 3, advanced learners would follow the VOT cue and would therefore identify such segments as voiced, unlike elementary learners, who would identify segments containing Zero Manipulated VOT as voiceless due to the fact that they were still relying on cues such as burst intensity. That did not occur; on the contrary, advanced learners present slightly higher rates of preference to identify such segments as /p/, /t/, /k/. Thus, our third hypothesis was not corroborated. In addition, our data suggest that other cues other than VOT may be playing a role in the identification of voiceless and voiced stops. It is worth mentioning that the same experiment, when carried out with native speakers of American English, showed high levels of identification of the Zero Manipulated patterns as voiceless, which confirms the tendency the native speakers show to use the absence/presence of aspiration to identify voicing, even when they listen to segments of a hybrid nature (SCHWARTZHAUPT; ALVES; FONTES, 2013).

Now we turn to the results regarding the Natural Zero pattern, for which we had not predicted a significant difference between the groups. In fact, if we had

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<sup>6</sup> In the discussion about the identification results of the next patterns, we will resume this issue to suggest that VOT is not effectively followed by either of the groups.

taken into consideration the fact that this pattern is present in the consonants /p/, /t/ and /k/ of the learners' L1 system<sup>7</sup>, we could have predicted a preference for the identification of the consonants showing the Natural Zero pattern as voiceless, but that was not observed in the data, either. The identification of that pattern as voiced serves as an argument for the possibility that the learners are being guided by cues other than VOT. Furthermore, the data concerning Manipulated Zero VOT are highly suggestive that learners do not discriminate voicing based on the presence of aspiration, which once again suggests that VOT is not the main cue employed by learners, and that neither the L1, nor the L2 VOT pattern, works as the main criterion for discrimination between English /p/, /t/, /k/ and /b/, /d/, /g/. We can also conclude that neither the consonants with Negative VOT patterns nor the ones presenting Positive VOT patterns are identified as voiced and voiceless via the VOT cue, regardless of the learners' level of proficiency.

Further evidence for the conclusion that VOT is not the main cue the two proficiency groups pay attention to can be found in the next section.

## **Discrimination**

In this section, we present the results regarding the Discrimination test, laid out on Table 02. As to the contrast Negative VOT *versus* Positive VOT, the data on Table 02 report high levels of discrimination in the elementary group (Accuracy=76,74%, m=9,00; No Discrimination=9,72%, m=.50 ) and in the advanced group (Accuracy=93,33%, m=11,50 ; No Discrimination=2,5%; m=0). Wilcoxon tests showed no significant differences between the groups (Accuracy: U=76,500, p=.087; No Discrimination: U=79,000, p=0,082). In fact, as we had predicted, the VOT negative and positive patterns were highly discriminated.

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<sup>7</sup> As we have already mentioned, at least in a smaller degree, this pattern can also be found in some productions of /b/, /d/ and /g/, in the dialect spoken in Rio Grande do Sul (gaucho dialect), which is considered as additional evidence for the fact that not even in the learners' L1 is VOT the main cue.

**Table 2** – Results of the Discrimination Test (12 questions for each VOT pattern)<sup>8</sup>

<b>VOT patterns</b>	<b>Elementary</b>		<b>Advanced</b>	
	<i>Accurate</i>	<i>No Discrimination</i>	<i>Accurate</i>	<i>No Discrimination</i>
<b>Negative x Artificial Zero</b>	<b>45,49%</b> 131/288	<b>29,51%</b> 85/288	<b>64,17%</b> 77/120	<b>25%</b> 30/120
<b>Negative x Positive</b>	<b>76,74%</b> 221/288	<b>9,72%</b> 28/288	<b>93,33%</b> 112/120	<b>2,5%</b> 3/120
<b>Artificial Zero x Positive</b>	<b>34,03%</b> 98/288	<b>45,49%</b> 131/288	<b>38,33%</b> 46/120	<b>50,83%</b> 61/120

**Source:** Made by the author.

In what regards the contrast between Negative VOT vs. Manipulated Zero VOT, we expected to find a significant difference between the groups, for we hypothesized that, as the advanced learners followed VOT as the main cue, they would not perceive the difference between those two patterns, whereas elementary learners, when guided by cues such as burst intensity, would be able to discriminate between Negative VOT (with a weak burst) and Manipulated Zero (which requires a strong burst). However, results in Table 02 seem to contradict the fifth hypothesis, although the percentages of “No discrimination” answers are lower for advanced learners than those of elementary participants.

Both groups (with an advantage to the advanced group – 64,17%, m=8,00) tend to judge the two patterns as distinct from each other. This can be taken as an additional argument for the proposal that VOT is not the main cue for the distinction between voiced and voiceless plosives.

Finally, the data concerning the contrast between Manipulated Zero VOT and Positive VOT suggest that both elementary learners (Accuracy= 34,03%, m= 4,00 ; No Discrimination= 45,49%, m= 5,00) and the advanced participants (Accuracy= 38,33%, m = 5,50; No Discrimination= 50,83%, m= 6,50) felt highly insecure in their answers. In addition, both groups showed a tendency to consider such patterns as the same. Mann-Whitney tests showed no significant statistical differences between the groups (Accuracy: U=104,500, p=,555; No

<sup>8</sup> In this table, ‘accuracy’ corresponds to the rates of correct answers provided by the participants in the AxB task (e.g., in [p]at, [p]at and [b]at, learners should say that X is the same as A, not B); ‘No Discrimination’ refers to the occurrences in which learners did not discriminate X from A or B (all equal). In this table, we do not present the rates of incorrect discrimination answers, which correspond to those instances in which participants did not consider the three members of the triad to be equal, but chose A instead of the correct option B (or vice-versa) in the AxB task.

Discrimination:  $U=105,000$ ,  $p=,569$ ). Hypothesis 6 was thus refuted, for learners of both proficiency levels tended to consider both patterns as the same.

In sum, the results in the Discrimination test are in accordance with the ones found in the Identification test, and they provide further evidence that VOT is not the main cue followed by elementary and advanced learners of English, for whom we hypothesized that, as is true of native speakers (SCHWARTZHAUPT; ALVES; FONTES, 2013), the presence/absence of aspiration would correspond to the main element to rely on when answering the tests. In the next section, we detail the implications of such results in the production data of plosive segments.

### Production tests

The results concerning the word production test in Brazilian Portuguese (BP) are presented on Table 03, where the reported values for VOT are surprisingly high for BP. Even though previous studies (GEWEHR-BORELLA; ZIMMER; ALVES, 2011; VEIGA-FRANÇA, 2011; ALVES; SCHWARTZHAUPT; BARATZ, 2011; SCHWARTZHAUPT, 2012) have already pointed out a possible ‘semi-aspiration’ in the velar plosive, the mean values of 24,33 ms ( $m = 24,00$ ) found in the elementary group, and of 33,00 ms ( $m = 33,5$ ) in the advanced group for the production of the bilabial /p/ are really surprising.

**Table 3** – Results of the word production test in BP

<b>Consonant</b>	<b>Elementary (24)</b>		<b>Advanced (10)</b>	
	<i>Tokens</i>	<i>Mean (SD)</i>	<i>Tokens</i>	<i>Mean (SD)</i>
<b>/ p /</b>	133	<b>24,13</b> (5,44)	51	<b>33,00</b> (7,18)
<b>/ k /</b>	139	<b>55,71</b> (20,09)	57	<b>51,7</b> (23,09)

**Source:** Made by the author.

When faced with such results, we cannot deny the possibility that – mainly among advanced learners – the participants’ L1 speech is being affected by the transfer of L2 VOT patterns (SANCIER; FOWLER, 1997; COHEN, 2004), so that the VOT intervals in BP displayed on Table 3 do not reflect the durations effectively produced by monolingual speakers of the gaucho dialect spoken in the South of Brazil. This possibility does not seem hard to conceive of in a dynamic perspective of language acquisition, according to which any change in one of the linguistic systems of the speaker can cause substantial changes in all the other language systems. Therefore, this can be seen as reciprocal influences not only from the L1 into the L2, but also from the L2 into the L1, or any other additional languages

spoken by the speaker, such as the L3, and so on (DE BOT; LOWIE; VERSPOOR, 2007; BECKNER et al., 2009; BLANK, 2013).

Table 4 displays the results of the word production test in English, in which higher values are found in the L2 than in the L1 for /p/ (elementary: 45,04, m=45,50; advanced: 34,4, m=31,5) and /k/ (elementary: 68,87, m=67,50; advanced: 79,8, m=82,5). Therefore, the seventh hypothesis is only partially corroborated. According to that hypothesis, there would be a significant difference between the VOT values found in the L2 – English – and in the L1 – BP – within each group. In fact, Wilcoxon tests found a significant difference in the productions in the two languages both in the elementary group ( $Z=-2,702$ ,  $p=,007$ ) and in the advanced group ( $Z=-2,193$ ,  $p=,028$ ) in the productions of /k/. This result was not fully replicated for /p/: a significant difference between the production of that consonant in the two languages was found only within the elementary group (/p/:  $Z=-4,03$ ,  $p=,000$ ), probably because the VOT values for this consonant were already high in the L1 of the advanced group.

**Table 4** – Results of the word production test in English

<b>Consonant</b>	<b>Elementary (24)</b>		<b>Advanced (10)</b>	
	<i>Tokens</i>	<i>Mean (SD)</i>	<i>Tokens</i>	<i>Mean (SD)</i>
<b>/ p /</b>	136	<b>45,04</b> (16,71)	53	<b>34,40</b> (15,25)
<b>/ t /</b>	131	<b>59,04</b> (13,56)	57	<b>58,40</b> (17,52)
<b>/ k /</b>	131	<b>68,87</b> (21,42)	60	<b>79,80</b> (14,95)

**Source:** Made by the author.

Based on the data shown above, we could enquire about the significant differences found. As VOT is not the main cue used by learners in perception, how could we explain the fact that the L2 productions present longer aspiration intervals than the ones found in the L1? In order to answer this question, we should first consider the fact that the participants do not follow VOT as their main acoustic cue, as we have discussed previously. That does not imply that the learners cannot perceive and recognize VOT as an aspect of English phonology. In other words, it is plausible that aspiration is already perceived as an allophonic detail which is necessary for “unaccented” speech production, but which is not the primary cue for the phonological distinction between voiced and voiceless segments. Following this thread of thought, we might consider that learners could, up to a certain extent, produce aspiration as a detail to make them reduce their degree of accent, but not as a necessary cue to establish phonological distinctions. Such a functional distinction would be instantiated



from the conjoint action of multiple acoustic cues, supporting a dynamic view of language acquisition.

Besides, it is also necessary to take into consideration the fact that even though the durations of L2 aspiration seem to be longer than the time intervals found in the L1 data, the L2 productions have not yet reached the native VOT values. According to Cho and Ladefoged (1999), standard VOT patterns in English are 55 ms for /p/, 70 ms for /t/ and 80 ms for /k/. Therefore, although the participants no longer produce the VOT values found in their L1, the duration of aspiration intervals produced in their L2 correspond to an intermediate value between the ones they present in their L1 and their L2. This serves as an additional argument for the fact that VOT seems to have an allophonic character, so that it does not take priority over other acoustic cues in voice distinctions in L2 English by Brazilians.

This intermediate value for VOT, already described in the Brazilian Portuguese-English literature (ALVES; SCHWARTZHAUPT; BARATZ, 2011), provided motivation for the outline of our eighth and last hypothesis, according to which there would be no significant differences between the VOT values produced by elementary and advanced students of English. When we formulated that hypothesis, we had departed not only from the aforementioned studies, but also from the dynamic approach to language acquisition that guides this study. Hence, although learners can identify and discriminate the target language sounds, the production of segments in the target language requires that learners abandon the “timing” of the L1 articulations, so that they can orchestrate their articulators according to the L2 tempo and rhythm (ZIMMER; ALVES, 2012).

Therefore, it seemed plausible that, despite the fact that proficient learners already followed VOT as a main cue, they still did not seem to have acquired the temporality of VOT in the L2, as the perception of VOT patterns would be necessary, but not sufficient, for the production of aspiration.

Mann-Whitney tests were run and did not show any significant difference between the two levels of proficiency for /p/ ( $U=74,000$ ,  $p=.082$ ), /t/ ( $U=114,500$ ,  $p=.835$ ) or /k/ ( $U=84,000$ ,  $p=.173$ ). The discussion on the perception data provided in the last section, however, enables us to conceive another explanation for the data: as VOT is not being used as main cue for the perception and discrimination of voicing, perhaps it is reflected in the production data as well. In a nutshell, the little difference found between the VOT patterns produced by participants in the two groups may not be related exclusively to the difficulty to acquire timing distinctions in the L2, but are probably due to the fact that, both in terms of perception and production, the voice distinction is being instantiated by acoustic cues other than VOT, so that perception and production are highly intertwined for the learners in the two groups.

Learners may be assuming that the production, or the partial production, of long-lagged VOT in English does not necessarily play a detrimental role in intelligibility. This can be reinforced in a context of communication among Brazilians, who share the same main acoustic cues in Portuguese, and thus could go without VOT in the distinction between /p/, /t/, /k/ e /b/, /d/, /g/ in English. A real need to employ cues such as VOT would only be felt necessary when Brazilians had to communicate with native speakers of English, who really make use of VOT to functionally distinguish voicing among such segments. Explicit instruction on how to use VOT can also contribute to elucidate the phenomenon (MOTTA; ALVES, 2013), whose effects need to be more widely investigated.

In sum, the results of the production test indicate that, in the target language, the length of VOT produced by learners from both proficiency groups are higher than those produced in their L1. However, this length is not yet as high as the ones found in the native speech. That led us to suggest that – although learners already recognize the need to produce a longer VOT to reduce accent, so that such acoustic cue acquires an “allophonic” character – Voice Onset Time is still not the main cue to voicing distinction among plosives.

## **Final considerations**

In this study, we departed from the assumption that elementary learners of English would not follow VOT as their main acoustic cue, as additional cues seem to play a more decisive role in distinguishing voicing in Brazilian Portuguese. All the working hypotheses relied on the assumption that there would be a difference between elementary and advanced learners. Hence, VOT would not be followed by elementary learners of English (L2), whereas advanced learners, on the other hand, would follow the presence/absence of aspiration to distinguish voiced from voiceless English stops both in perception and in production.

However, the findings of this study reveal that not even participants with an advanced level of English proficiency used VOT as their main cue to distinguish between /p, t, k/ and /b, d, g/. Regardless of the learners’ degree of proficiency, it seems that without formal instruction the learners will continue to use the acoustic cues which are relevant in the distinction of voicing in their L1, which was found both in the perception and in production data.

It is necessary to make clear that this study aimed to find whether VOT could be characterized as the cue which would suffice to distinguish voicing among Brazilian learners of English. As we found out that other acoustic cues were acting as relevant cues, it remains to be investigated which acoustic(s) cue(s)

is/are being primarily followed by Brazilian learners in these voice distinctions. As already mentioned, studies by Sundara (2005), Oh (2011) and Kong, Beckman e Edwards (2012) have raised the possibility that both burst intensity and F0 seem to play a decisive role in this sense. What remains to be determined, in further studies, is which of these two acoustic cues plays a more decisive role in Brazilian Portuguese and, as a likely consequence, in Brazilian Portuguese-English interlanguage. Even though we do not focus on this issue in the present article, we can say that the employment of burst intensity as the main acoustic cue by BP learners seems to be a very likely possibility. For now, it suffices to say that, similarly to what has already been found in other language systems, VOT by itself does not seem to be a sufficient cue for voicing distinctions by Brazilian learners of English.

The findings presented here can be accounted for by the gestural approach to phonology, according to which a common currency for perception and production could be the phonological gesture (GOLDSTEIN; FOWLER, 2003). A possible explanation for the fact that the simple exposure to VOT did not support the acquisition of the L2 gestures involved in aspiration is the difficulty, reported in various studies on L1 acquisition, to acquire contrasts generated from the action of less visible organs (GOLDSTEIN; FOWLER, 2003). In the case reported in this study, the distinctive role played by the larynx has not possibly been learned because the learners have proceduralized their phonological distinctions from their L1 gestural constellations and timing (duration or gestural phasing). The gestural orchestration resulting in aspiration, for Brazilian learners, may be playing a merely allophonic role, such that the action of the larynx is not playing a distinctive role in the learners' gestural score. It may be possible that – in the case of the L2 – the abstraction of the movements required to reach an L2 articulatory target is suffering the influence of the L1 gestural abstraction, which is already automated in the procedural memory. Thus, in the case of VOT, the learners may well interpret the longer duration generated by the opened constriction of the larynx as a non-distinctive feature.

The results of this study are in consonance with several others previously carried out in our research group. First, our production data suggest that the effects of the L2 over the production of the native language need to be more widely investigated. Moreover, as VOT does not take priority over other cues in the voicing distinctions among English stops, we find it necessary to highlight the beneficial roles of explicit instruction (MOTTA; ALVES, 2013) and perceptual training (ALVES, 2012) in the perception and production of English /p/, /t/, /k/ by Brazilian learners. In that direction, we can mention another contribution from the area of Interlanguage Phonetics-Phonology: to provide insight into Applied Linguistics for the teaching of Foreign Languages (ALVES, 2012). The findings we garnered in this study will certainly pave the way for a broad agenda

of investigation on the role of acoustic cues that are effectively employed by Brazilian learners in establishing functional distinctions both in the L1 and in the interlanguage systems.

ALVES, U. K.; ZIMMER, M. C. Percepção e produção dos padrões de VOT do inglês por aprendizes brasileiros: o papel de múltiplas pistas acústicas sob uma perspectiva dinâmica. **Alfa**, São Paulo, v.59, n.1, p.155-175, 2015.

- *RESUMO: Neste trabalho, a partir de uma concepção dinâmica de aquisição fonético-fonológica de L2, investigamos a percepção (identificação e discriminação) e a produção dos padrões de Voice Onset Time (VOT) das plosivas iniciais do inglês por 32 aprendizes do Sul do Brasil. Partimos da premissa de que, sobretudo entre aprendizes com nível básico de proficiência, o VOT não se mostra como pista acústica prioritária para as distinções funcionais de sonoridade. Os resultados dos testes de percepção mostram que, independentemente do nível de proficiência dos aprendizes (básico ou avançado), o VOT tomado unicamente não se faz suficiente para a distinção entre /p/, /t/, /k/ e /b/, /d/, /g/. Tais resultados, que exercem influência sobre os dados de produção, corroboram uma visão dinâmica de aquisição de L2, a partir da qual múltiplas pistas acústicas agem em conjunto nas distinções entre sons, cabendo ao aprendiz saber selecionar aquelas pistas com caráter mais primordial no sistema a ser adquirido.*
- *PALAVRAS-CHAVE: Percepção de L2. Produção de L2. Língua inglesa. VOT. Pistas Acústicas.*

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**FORMALIZATION OF THE ASYMETRY OF THE LATERAL IN  
SYLLABLE ONSET AND CODA POSITIONS IN PORTUGUESE SPOKEN  
IN THE *CAMPOS NEUTRAIS* IN THE LIGHT OF THE STOCHASTIC OT**

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- **ABSTRACT:** The focus of this study is the asymmetry of the lateral liquid in syllable onset and coda positions, since it shows phonetic stability in onset position and variation in coda position. Taking into account that the pre- and postvocalic laterals perform differently in Portuguese and in Spanish, this study aims at analyzing the Portuguese spoken in the *Campos Neutrais*, a region on the Brazil-Uruguay border, because of its contact with Spanish. Its empirical basis, which was taken from Espiga (2001), is the Portuguese spoken in the *Campos Neutrais*, since this author states that, in this region, the lateral in onset position performs as an alveolar whereas it may take five phonetic forms in coda position, i.e., alveolar, velar, labial, glide and phonetic null. The explanation and the formalization of the asymmetry of the lateral liquid have been based on the Stochastic Optimality Theory (StOT), through constraints. Having the mechanism of relational alignment as its background, this study proposes sonority distance constraints adapted from Gouskova (2004). However, differences lie in the fact that this study takes into account the relation between the onset and the nucleus, besides the one between the nucleus and the syllable coda.

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- KEY WORDS: Lateral liquid. Syllable onset and coda. Stochastic OT. Portuguese spoken in the *Campos Neutrais*.

## Introduction

The lateral liquid is one of the licensed segments to occupy syllable onset and coda positions in Portuguese. Due to the specificity of each syllable constituent, the behavior of this consonant is asymmetric, giving evidence to phonetic stability in onset position and variation in coda position. In search of the explanation and the formalization of this asymmetry, this study focus on the discussion of the pre- and postvocalic lateral in a variant of Portuguese which is in contact with Spanish, in the light of the Stochastic Optimality Theory (Stochastic OT).

The variable behavior of the postvocalic lateral liquid is a characteristic shared by three other consonants which may occupy this position in syllables in Portuguese. Studies of the lateral in syllable coda position, such as the ones carried out by Quednau (1993), Tasca (1999) and Espiga (1997, 2001), have analyzed this variation and described its linguistic and social conditioning, mainly regarding the Portuguese spoken in the south of Brazil. One of the social motivation factors that trigger different phonetic forms of the lateral is language contact, the theme chosen for this paper.

With the support of the Stochastic Optimality Theory (BOERSMA; HAYES, 2001), in order to attribute formal treatment to the phenomenon of the variation of the lateral in syllable coda position due to language contact, as well as of the asymmetry that might happen in the behavior of the segments in syllable onset and coda positions, this study focused on the Portuguese spoken in the *Campos Neutrais*<sup>1</sup> on Brazil-Uruguay border, because of its contact with Spanish. In the Spanish language, the postvocalic lateral tends to take, with significant predominance (ESPIGA, 2001), the phonetic form of an alveolar lateral (e. g., du[l]ce, arbo[l]), whereas, in Brazilian Portuguese (BP), according to Quednau (1993) and Collischonn and Quednau (2008), predominantly, it takes the voiced phonetic form [w], in variation with the velarized form [ɮ] (e. g.: a[w]ma ~ a[ɮ]ma, fina[w] ~ fina[ɮ]). According to Espiga (2001), in the BP spoken in the *Campos Neutrais*, the postvocalic lateral may take five phonetic forms: alveolar [l], velar [ɮ], labial [l<sup>w</sup>], glide [w] and phonetic null. However, in the onset position, the lateral performs as alveolar [l], both in Spanish (e. g.: [l] a.na; cons.te.[l]a.ción) and in Portuguese (e. g.: [l]a.ta; es.tre.[l]a), even in the BP spoken in the *Campos Neutrais*.

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<sup>1</sup> **Campos Neutrais** is a region which stretches from the *Banhado do Taim*, a swamp area, to *Arroio Chuí*, a narrow river, in the extreme south of Brazil. Two cities, Santa Vitória do Palmar and Chuí, are located in this area. This name was given to the region by the Portuguese and the Spanish in 1777.

The choice of a formal presentation of the phenomenon of the variation of the lateral in syllable onset and coda positions and of the asymmetry among such syllable constituents in the light of the Stochastic OT was based on the reflection upon how languages work and their representations in models of linguistic analysis which operate with constraints rather than rules. In addition, this study also aims at verifying how Stochastic OT depicts relations between input and output in the grammar of speakers of the BP variant under investigation, taking into account markedness and faithfulness constraints, considering its contact with Spanish.

Its empirical basis was taken from Jorge Espiga's doctoral dissertation (ESPIGA, 2001) whose data were treated with methodological accuracy and whose focus is the Portuguese spoken in the *Campos Neutrais*.

## **Theoretical Fundamentals**

### **The Empirical Basis of the Paper**

Even though Portuguese is spoken along the whole Brazil-Uruguay political border, it is heterogeneous Portuguese, which varies according to the border region which is taken into consideration. Since this political border scarcely coincides with the linguistic one between Portuguese and Spanish, the level of contact between both languages has also been variable; in fact, variability is one of the causes of heterogeneity.

In his study, Espiga (2001) focused on the *Campos Neutrais* region and used Phonology and Labovian Sociolinguistics as theoretical references in order to discuss aspects which are inherent to the representation of the postvocalic lateral, to its variation and to the structural conditions of this variation, besides relevant social and extralinguistic conditioning found in this phenomenon. Regarding the syllable coda position, the author describes five possibilities: the alveolar lateral [l], the glide [w], a simple velar allophone [ɫ], a labial coronal allophone [l<sup>w</sup>] and phonetic null.

The presence of [l<sup>w</sup>], as a form interposed between [ɫ] and [w], was verified in the variation; the intermediate and transitional character of this variant enables it to be included in the telescopic rule whose stages were all mapped in the region under study.

Some basic fundamentals of the Stochastic OT are described below, since it is a theoretical model which is able to account for variable phenomena.

## The Stochastic Optimality Theory

The Optimality Theory (OT), a model proposed by Alan Prince and Paul Smolensky in 1993, is a model of linguistic analysis which operates through the interaction of universal constraints. Basically, this model provides mappings from inputs (underlying representations) to outputs (surface realizations) through three components: GEN, which generates a list of candidates for outputs, based on an input; CON, which forms a set of violable constraints, ordered to decide the “best” candidate for output; and EVAL, which chooses the optimal candidate, based on the constraints. In this theoretical approach, linguistic processing is parallel, i. e., from an input, several candidates for outputs are analyzed simultaneously. The optimal candidate will be the one that obeys the top-ranked constraints; the number of violations this candidate incurs to the low-ranked constraints is not taken into consideration.

Tableau (1) provides an example:

**Tableau 1** – Quasi

<i>/input/</i>	Constraint 1	Constraint 2
☞ <i>output 1</i>		****
<i>output 2</i>	*!	

**Source:** Made by the authors.

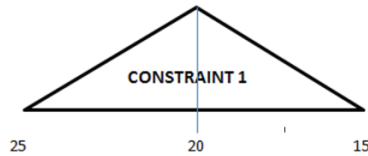
On the tableau of the previous example, the first column shows the given input and the candidates for output (outputs 1 and 2). The other columns show the constraints in a dominance hierarchy – where constraint 1 dominates (>>) constraint 2 – and the violation marks incurred by every candidate for output (\*). The exclamation mark also shows that the candidate for output 2 incurred a crucial violation; thus, there is no way for it to be optimal. The pointing finger marks the candidate for output 1, which was the optimal one, i. e., the winning candidate.

This type of relation among constraints is called strict dominance, a fundamental notion in the OT. For instance, if there is a rank Constraint 1>> Constraint 2>> Constraint 3, the candidate which violates constraint 1 is automatically eliminated.

In the proposal of the Stochastic OT (BOERSMA; HAYES, 2001), the grammar components (CON, GEN and EVAL) perform the same functions of the Classic OT. However, constraints are attributed numerical values which order these constraints in a hierarchy. Every constraint gets two numerical values or weights: the ranking value and the disharmony value. The former represents the center

point of the range, which is a scale with 10 points. For instance, if the central value of a constraint is 20, it means that the range of this constraint is from 15 to 25, according to the representation in (2), adapted from Azevedo (2011).

**Figure 1** – Example of range of values to a constraint



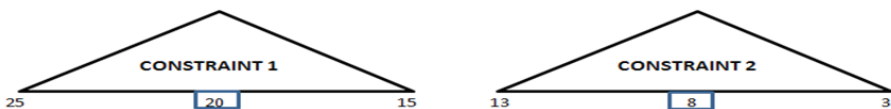
**Source:** Made by the authors.

Thus, the central value of the constraint does not change (in the example above, it is always 20), but the value of the selection point, when linguistic production is carried out, might be any value within the range (it might be 15, 16, 17... 25).

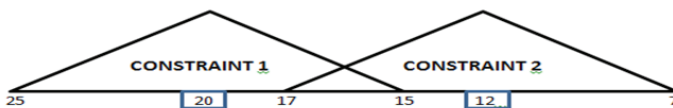
An important issue of Stochastic OT is related to the fact that it comes along a learning theory and is associated with an algorithm called *Gradual Learning Algorithm* (GLA). Grammar is considered stochastic because, whenever a group of candidates is evaluated, noise is temporarily added to the ranking value of every constraint, so that grammar can yield variable outputs in case the central value of some constraint is close to the one of another constraint. Representations, adapted from Azevedo (2011), are shown as examples in (3).

**Figure 2** – Example of ranking between constraint

Example a.:



Example b.:



**Source:** Made by the authors.

In example (3a), it may be observed that the difference between central values 20 (constraint 1) and 8 (constraint 2) is higher than 10 ( $20 - 8 = 12$ ). It means that, regardless of the value of the selection point attributed to constraints 1 and

2 by the simulation, they always keep the same hierarchy, i. e., Constraint 1 >> Constraint 2. Example (3b) shows that the proximity between the central values of the constraints, i. e., 20 (constraint 1) and 12 (constraint 2), enables them to invert their positions in the hierarchy if the selection point of constraint 2 is higher than the value of constraint 1.

The algorithm is responsible for guiding the learner's linguistic system through a constraint demotion, as proposed by Tesar and Smolensky (1998). However, the difference is that the GLA demotes and promotes constraints (BOERSMA; HAYES, 2001). This proposal accounts for the variation yielded by learners: according to Alves (2009), in the light of the fundamentals of this algorithm, learners get an input-output mapping, one at a time; what determines optimal output is the current state of the grammar.

The GLA is sensitive to the learner's errors, i. e., it is error-driven (BOERSMA; HAYES, 2001). Thus, it changes the values of the constraints when the output of its grammar has a different pattern from the one found in the environment language (error). It is through values attributed to constraints that the GLA represents variable or categorical outputs. Central values whose distance from each other is higher than 10 points represent the categorical result, since different moments of linguistic production do not cause overlapping in the range of these constraints (see (3a)). However, when the central values of the constraints are separated by less than 10 points, there could be range overlapping, a fact that could change the ordering of the constraints and, as a result, the optimal candidate, thus, characterizing variation in the outputs (see (3b)).

A very important remark must be made regarding result interpretation when dealing with probability: the central value never changes but the selection point does; this variation is likely to occur when values are closer to the central value, i. e., if the value range of a constraint varies from 0 to 10 (central value = 5), the values of the selection point are likely to be close to 5, rather than closer to the limits of the value range (0 or 10). This concept enables the algorithm not only to show variable candidates (e. g.: [saw] or [sal]), but also to capture the difference of probability in which they may show up<sup>2</sup>.

Therefore, since this study takes into account the phenomenon of variation, it carries out an analysis based on the presuppositions of the Stochastic OT, connected to the GLA, proposed by Boersma and Hayes (2001), which is able to deal with the variable outputs found in the data on Portuguese spoken in the *Campos Neutrais*.

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<sup>2</sup> In order to carry out these ideas more precisely, the value ranges of the constraints have been explained as a probabilistic distribution (BOERSMA, 1997, 1998; HAYES; MACEACHERN, 1998) – normal distribution (the Gauss curve).

## Methodology

### Data of the Analysis

In this study, empirical data taken from Espiga's (2001) doctoral dissertation were analyzed, as previously mentioned in Section 1. They come from the BDS Pampa Project – *Banco de Dados Sociolinguísticos da Campanha Sul-Rio-Grandense*, a database which belongs to the Post-graduate Program in Languages at UCPEL, a higher education institution in the south of Brazil.

The sample collected by Espiga (2001) comprised 2,963 data on the lateral in the coda position, which were submitted to the VARBRUL<sup>3</sup> system. Five variants of the postvocalic /l/ were analyzed. The author shows the distribution of the variants mapped in the scope of the variation; it shows all stages of the telescopic rule in the region, as depicted in Table 1 (ESPIGA, 2001, p.109):

**Table 1** – Distribution of the variants of the postvocalic lateral in the *Campos Neutrais* region

	[l]	[ɫ]	[lʷ]	[w]	∅	Total
N	1297	701	903	41	21	2963
%	44	24	30	1	1	100

**Source:** Espiga (2001, p.109).

Percentages are the values used for the final analysis in the Stochastic OT model. Such values in Table 1, which were described in its last line (%), were produced by programs IVARB, TVARB and MVARB. The number of occurrences for every variant can be found in the line above the percentage, i. e., line N. The last column (total) depicts the sum of the occurrences of all variants (2,963), resulting in 100% frequency.

Even though Table 1 only shows the data on the variants in coda position, this study does not deal only with the lateral in this syllable position; it aims at differentiating the behavior of the lateral liquid in coda position from the one observed in syllable onset position. In onset position, the lateral liquid keeps its phonetic form as alveolar, both in Spanish (“**l**ejos”) and in BP (“**l**ei”); consequently, it is also kept in the BP spoken in the *Campos Neutrais*.

<sup>3</sup> The VARBRUL system was proposed by Cedergren and Sankoff (1974).

Therefore, this study aims at formalizing the asymmetry between onset and coda, considering the behavior of the lateral liquid in the variant of BP spoken in the *Campos Neutrais*.

## The Formalization of the Constraints

The proposition of constraints was based on the search for carrying out the best analysis for every phonetic form that can represent the postvocalic lateral in the syllable margins by exploring constraints committed to universal grammar, i. e., constraints found in the grammar of any language, but differentiated by their ranking. Therefore, the harmony scale with points along it, dorsal > labial > coronal (PRINCE; SMOLENSKY, 2004), seemed to be adequate to establish the differences of points of articulation between lateral liquids [l, ʎ, l<sup>w</sup>], which are the focus of the analysis. Since this study shows the behavior of the lateral in syllable coda and onset positions, the harmony scale with points is used so that the asymmetry between the limits of the syllables can be respected.

According to the Sonority Cycle (CLEMENTS, 1995), sonority is maximally increased in the relation onset towards the syllable nucleus whereas it decreases slightly from the nucleus to the coda. It means that there is clear interlinguistic preference for syllables that start with less sonorous segments in the onset – in the case of the laterals, the alveolar segment would be the most harmonic [l], by comparison with the other possibilities [ʎ, l<sup>w</sup>, w] – whereas the preference is for lower differences in sonority in the relation nucleus-coda. In this case, the most harmonic segment would be the glide [w], then, the labial [l<sup>w</sup>], the dorsal [ʎ] and, finally, the coronal [l].

Therefore, in this study, differences in the point of articulation among the variants found in the dialect spoken in the *Campos Neutrais*, are given by the constraints \*lateral{dorsal}, \*lateral{dorsal, labial} and \*lateral{dorsal, labial, coronal}. The representation of the markedness suggests that there is a stringency<sup>4</sup> relation among the constraints; it makes the dominance among points of articulation dorsal >> labial >> coronal emerge in the analysis as subsets of violation, in which more marked structures lead to the demotion of the other constraints in the hierarchy.

Based on the reflection on the asymmetries among all different possibilities in syllable onset and coda, it was also necessary to establish and define sonority

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<sup>4</sup> The stringency relation expresses the markedness relation which exists among the members of a scale, whose formalization is based on the order in which every member is acquired. Therefore, the subsets can show that the most harmonic forms are acquired first. (A detailed discussion of the stringency relation can be found in Alves, 2008; McCarthy, 2002; and Prince, 1997 a, 1997b).



distances, not only between the onset and the nucleus but also between the nucleus and the coda, with the help of a sonority scale. Bonet and Mascaró's scale (1996) was adapted and then used for characterizing the existing asymmetries between the syllable coda and onset, as well as establishing the most harmonic segments, according to a given syllable position.

Constraints of sonority distance were based on Gouskova's (2004) relational alignment mechanism which tries to establish a relation of sonority distance between the coda and the onset of the next syllable or between complex onsets and codas, with a sonority scale. In this study, however, the aim is to depict the most harmonic distances between the onset and the nucleus, as well as between the nucleus and the coda. Thus, in Bonet and Mascaró's (1996) scale:

(4)



and, in the sonority scale which was adapted to consider the variants of the alveolar lateral [l] ~ [ɭ e lʷ], the following representation arises (5):

(5)



Thus, the variants of the laterals found in the region of the *Campos Neutrais* can be accounted for, as shown by Espiga's (2001) data.

Based on the same values of sonority previously established, the distance between the onset and the nucleus, as well as between the nucleus and the coda, was differentiated by positive and negative values<sup>5</sup>. Since the data refer to a border region between Portuguese and Spanish, it may be stated that the nucleus will always be vocalic (ALARCOS LLORACH, 1994; HARRIS, 1983; BISOL, 2005; CÂMARA JÚNIOR, 1975), getting 7 in the scale. As a result, the relation of distance between the onset and the nucleus and between the nucleus and the coda of the syllable under study was established as follows:

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<sup>5</sup> Positive and negative values have been chosen by the authors of this text to show that, from the onset to the nucleus, there is a difference between a lower value and a higher value (e.g.: alveolar[onset] – vowel[nucleus] = 3 – 7 = -4), a fact that makes the result become negative. From the nucleus to the coda, this difference results from a lower value subtracted from a higher one; thus, the result is always positive (e.g.: vowel[nucleus] – alveolar[coda] = 7 – 3 = + 4).

(6)

Sonority distance from the onset to the nucleus (e.g.: **la.ta**)

Lateral alveolar [l] (value = 3) – vowel (value = 7) = Distance = -4

Lateral dorsal [ɭ] (value = 4) – vowel (value = 7) = Distance = -3

Lateral labial [lʷ] (value = 5) – vowel (value = 7) = Distance = -2

Sonority distance from the nucleus to the coda (e.g.: a.ni.**mal**)

Vowel (value = 7) – lateral alveolar [l] (value = 3) = Distance +4

Vowel (value = 7) – lateral dorsal [ɭ] (value = 4) = Distance +3

Vowel (value = 7) – lateral labial [lʷ] (value = 5) = Distance +2

Since this study deals with sonority distances among the nucleus and the syllable onset and coda positions, this constraint was chosen to be represented as “Dist<sub>ONC</sub><sup>6</sup>”, unlike the constraints Dist found in Gouskova (2004). Likewise the treatment given to point constraints (\*lateral{ dorsal, labial, coronal}), constraints DIST<sub>ONC</sub> also carry a stringency relation; in the analysis, less marked structures emerge first.

The representations followed for faithfulness constraints in this study are among the three basic constraints of faithfulness listed by McCarthy and Prince (1995, 1999): MAX – deletion is prohibited; and IDENT<sub>lateral</sub> – change of values typical of laterals is prohibited. The first constraint made structures with deletion be excluded from the possibility of winning the dispute for optimal candidate, since they represent a possible, but scarce, structural variety in the *Campos Neutrais*. It means that, in the organization of constraints, this constraint must always look for the top-ranked positions. The same must occur with the constraint IDENT<sub>lateral</sub>, which violates those structures that are not suitable in the presence of lateral liquids, both in coda and in onset. Thus, it shows up on the top of the ranking, since it violates what is less frequent in the situations studied in the *Campos Neutrais*, such as coda [a.ni.maø or a.ni.maw].

The behavior of the onset in Brazilian Portuguese and Spanish is the same: however, regarding coda, Spanish has a more marked characteristic by comparison with BP, in relation to the presence of the lateral. The data collection carried out in the *Campos Neutrais* – a Brazilian region that shares borders with native Spanish speakers –, highlighted the prevalent presence of the marked (alveolar [l]) in coda due to language contact (see Table 1). This unexpected situation prevents

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<sup>6</sup> ONC = Onset/Nucleus/Coda.

It is important to point out that distances among onset dorsal lateral \*[ɭa.ta], labial lateral \*[lʷa.ta] and glide \*[wa.ta], with the nucleus, do not occur in the region of the *Campos Neutrais*, as shown in Table 1; therefore, these distances were removed from the analyses shown in the tableaux – since they would be playing a redundant role – so that the constraint that involves the distance *onset* alveolar lateral and nucleus [la.ta] can be shown.

the stringency relation from capturing it, a fact that triggered the proposition of a conjoined constraint which relates the constraints of the point of articulation with the sonority distance ( $*DIST_{ONC(2)} \& *lateral\{d,l,c\}$ ), so that the behavior of the lateral in coda in BP and Spanish can be differentiated.

Therefore, the constraints which are responsible for the representation of the data are the following<sup>7</sup>:

(7)

IDENT<sub>lateral</sub>  
 MAX  
 $*lateral_{(dorsal)}$   $*lateral_{(dorsal, labial)}$   $*lateral_{(dorsal, labial, coronal)}$   
 $*DIST_{ONC(-4)}$   $*DIST_{ONC(4)}$   $*DIST_{ONC(3,4)}$   $*DIST_{ONC(2,3,4)}$   $*DIST_{ONC(1,2,3,4)}$   
 $*DIST_{ONC(2)} \& *lateral\{d,l,c\}$

## Description and Analysis of Results

The data analysis aims at accounting for the asymmetry which can be found in the behavior of the lateral liquid, in the syllable onset and coda positions, in the variant of BP spoken in the *Campos Neutrais*, in the light of the Stochastic OT.

Regarding the lateral in the syllable coda position, based on Espiga's research (2001), the stages of the telescopic rule in the BP spoken in the *Campos Neutrais* were mapped. In BP, the lateral in postvocalic position usually behaves as a semivowel [saw] whereas in Spanish, in the same syllable position, the alveolar [sal] emerges.

Taking into account the primitive stage of the rule – the variant alveolar [l] –, two other variants were mapped, i. e., the velar [ɫ] and the labial [l<sup>w</sup>], as intermediate stages in the vocalization process, a fact that characterizes the origin of the process of linguistic change in the evaluation of the transition stage between the alveolar and the voiced forms. Table 1 (the distribution of variants found in the region of the *Campos Neutrais*) shows that the alveolar lateral [l] predominates with 44%, followed by variants [l<sup>w</sup>] and [ɫ], with 30% and 24%, respectively.

On the tableaux yielded by the PRAAT software (below), the hierarchy of the constraints of every possibility for optimal candidate is shown. The tableaux are presented in the order of frequency in which every structure occurs, from the most frequent [l] to the least frequent [w] and [ø]. Tableaux 1(a) and 1(b) show both syllable positions under study: the onset position (1a) and the coda position (1b).

<sup>7</sup> Acronyms for constraints on the tableaux depicted in chapter 3 had to be adapted to the space provided by the PRAAT software.

(a) *Tableaux 1(a) and 1(b) – Distribution of variants in the region of the Campos Neutrais [l]*

1(a)

/lama/	IDENT (lat)	*lateral {dors, lab}	*DIST ONC(4)	MAX	*DIST ONC(3,4)	*DIST ONC(1,2,3,4)	*lateral {dors}	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*DIST ONC(2,3,4)	*lateral {dor, lab, cor}	*DIST ONC(-4)
l <sup>h</sup> ama										*	*
wama	*!										
l <sup>w</sup> ama		*!								*	
l <sup>h</sup> ama		*!					*			*	
ama	*!			*							

1(b)

/alma/	IDENT (lat)	*lateral {dors, lab}	*DIST ONC(4)	MAX	*DIST ONC(3,4)	*DIST ONC(1,2,3,4)	*lateral {dors}	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*DIST ONC(2,3,4)	*lateral {dor, lab, cor}	*DIST ONC(-4)
l <sup>h</sup> alma			*		*	*			*	*	
awma	*!					*					
al <sup>w</sup> ma		*!				*		*	*	*	
a <sup>h</sup> ma		*!			*	*	*		*	*	
ama	*!			*							

Tableaux 1(a) and 1(b) show that the most frequent optimal candidate in the *Campos Neutrais*, i. e., the candidate with the alveolar lateral [l], both in the coda (44%) and onset (100%) positions. The tableaux confirm the hint about the fact that faithfulness constraints (MAX and IDENT<sub>lateral</sub>) would be top-ranked in the organization of the hierarchy. Since the most frequent result refers to the presence of the alveolar [l], the constraints that violated different structures should be higher ranked so that they would not win the dispute for the optimal candidate.

On the contrary, the constraint DIST<sub>ONC(-4)</sub>, which reflects the distance between the alveolar lateral [l] and the vocalic nucleus in onset – such as [la.ta] – was always found at the end of the hierarchy in the *Campos Neutrais*, since this form showed up in 100% of the data on the lateral in onset. This statement was confirmed by the central value of the constraint (88,983), which is the lowest one, by comparison with the others. It means that, regardless the optimal candidate for the coda, the alveolar form is always the optimal candidate for the onset. Therefore, this is a register of the asymmetry between syllable onset and coda. It also shows that the values offered by the analysis through StOT can provide different information

about the phenomenon of variation. In order to let the alveolar lateral in coda [a<sub>l</sub>.ta] emerge, the top-ranked constraints IDENT<sub>lateral</sub> and \*lateral<sub>{dorsal, labial}</sub> were decisive.

Taking into account the objective of working on constraints in stringency, it is important to mention the organization of the constraints in the ranking. Considering the relation of the stringency subsets, the least marked constraints must be closer to the bottom of the ranking. For instance, the constraint \*lateral<sub>{dorsal, labial, coronal}</sub> is always below \*lateral<sub>{dorsal}</sub> \*lateral<sub>{dorsal, labial}</sub> in the hierarchy.

Since a variable phenomenon and the emergence of a telescopic rule are being demonstrated, it is worth mentioning the ranking value of the constraints, whose distance is below 10 points. Even though the constraint \*lateral<sub>{dorsal, labial}</sub> shown on the tableaux as \*lat<sub>{d,l}</sub>, is top-ranked (central value = 102,066), together with the constraint IDENT<sub>lateral</sub> (central value = 106,601), their central values show that, in another simulation, they may invert their positions with other constraints and let another candidate for optimal output emerge (see simulations below).

(b) *Tableaux 2(a) and 2(b) – Distribution of variants in the region of the Campos Neutrais – choice of output with the variant [ʎ] in coda*

2(a)

/lama/	IDENT (lat)	MAX	*DIST ONC(4)	*DIST ONC(1,2,3,4)	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*lateral {dors, lab}	*DIST ONC(2,3,4)	*lateral {dors}	*DIST ONC(3,4)	*lateral {dor, lab, cor}	*DIST ONC(-4)
ɸlama										*	*
wama	*!										
l <sup>w</sup> ama						*!				*	
ʎama						*!		*		*	
ama	*!	*									

2(b)

/alma/	IDENT (lat)	Max	*DIST ONC(4)	*DIST ONC(1,2,3,4)	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*lateral {dors, lab}	*DIST ONC(2,3,4)	*lateral {dors}	*DIST ONC(3,4)	*lateral {dor, lab, cor}	*DIST ONC(-4)
alma			*!	*			*		*	*	
awma	*!			*							
al <sup>w</sup> ma				*	*!	*	*			*	
ɸalma				*		*	*	*	*	*	
ama	*!	*									

On tableaux 2(a) and 2(b), which show the other possible optimal form in coda, the dorsal lateral [ɹ - aɹ.ma], in 24% of the data, faithfulness constraints keep on the top of the ranking. This hierarchy, in which faithfulness >> markedness, has been fundamental to demonstrate that those forms that carry the lateral consonant, both in coda and onset positions, are optimal.

It is interesting to observe that, in its initial stage, this study used initial weight equal to 100 in all constraints. Taking into account that, after the simulation, constraints had values close to 100, rather than very high values, it may be stated that the algorithm converged towards the final stage. High values represent that, in the search for the target grammar, the algorithm had to promote the constraints several times without reaching the final stage.

Since the data on the *Campos Neutrais* has revealed that the physical proximity between both countries affects the informants' languages, and that it is Spanish which emerges more, concerning the lateral in coda (alveolar lateral), it would be expected that, after the production of 44% alveolar in coda, the dorsal (24%) should show up more often than the labial (30%). It would be the expected ordering if the markedness level related to the point of articulation of the segments is taken into consideration. To this effect, the data showed a break in the decrescent rate of the level of markedness; this fact represents a problem in the formalization of constraints in relation to the stringency. To solve this situation, the conjoined constraint  $*DIST_{ONC(2)} \& *lateral\{d,l,c\}$  was fundamental, i. e., it did not enable the labial (less marked) to emerge before the dorsal lateral.

The constraint  $DIST_{ONC(4)}$ , in this simulation, is important to represent the output [ɹ] in coda position. It is the ranking of this constraint, right after the faithfulness constraints  $IDENT_{lateral}$  and MAX, that makes the alveolar be declassified, providing space so that the dorsal form [ɹ] can become a candidate for optimal output. As previewed by the first simulation, the constraint that refers to the alveolar lateral in onset [l] –  $*DIST_{ONC(-4)}$  – keeps at the end of the hierarchy, so that forms, such as [l̥o.do], i. e., with the alveolar form in onset, can emerge in all simulations.

(c) *Tableaux 3(a) and 3(b) – Distribution of variants in the region of the Campos Neutrais – choice of output with the variant [lʷ] in coda*

3(a)

/lama/	IDENT (lat)	MAX	*DIST ONC(4)	*lateral {dors, lab}	*DIST ONC(1,2,3,4)	*DIST ONC(3,4)	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*DIST ONC(2,3,4)	*lateral {dors}	*lateral {dor, lab, cor}	*DIST ONC(-4)
ɸlama										*	*
wama	*!										
l <sup>w</sup> ama				*!						*	
ɬama				*!					*	*	
Ama	*!	*									

3(b)

/alma/	IDENT (lat)	MAX	*DIST ONC(4)	*lateral {dors, lab}	*DIST ONC(1,2,3,4)	*DIST ONC(3,4)	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*DIST ONC(2,3,4)	*lateral {dors}	*lateral {dor, lab, cor}	*DIST ONC(-4)
alma			*!		*	*		*		*	
awma	*!				*						
ɸal <sup>w</sup> ma				*	*		*	*		*	
aɬma				*	*	*!		*	*	*	
ama	*!	*									

The labial lateral [lʷ], inserted in the telescopic rule between the dorsal lateral and the glide in the syllable coda position, attributes more plainness to the rule, since it imposes simplicity to the derivation between a velar form and a voiced one ɪ > w. However, based on the data, the labial form [lʷ] is observed to be more frequent than the dorsal [ɬ] one, even in a region where the influence of Spanish has been strong. Therefore, the conjoined constraint that this study proposed to prohibit the manifestation of the labial had to fall in the ranking, in relation to the previous simulation, so that [aɬ<sup>w</sup>.ta] could be obtained as an answer.

Therefore, in this simulation, the constraint IDENT<sub>lateral</sub> is top-ranked; it eliminates codas, such as the lateral, from the competition for optimal candidate. \*DIST<sub>ONC(4)</sub> is also top-ranked to eliminate the alveolar lateral [l]. \*DIST<sub>ONC(3,4)</sub> decides the dispute and eliminates the dorsal lateral [ɬ], enabling the emergence of the labial lateral.

In agreement with the other simulations, the constraint \*DIST<sub>ONC(-4)</sub> is ranked low and the constraints IDENT<sub>lateral</sub> and \*lateral{d,l} keep structured so that they can eliminate any optimal candidate which is different from the alveolar lateral in onset and enable candidates such as [li.vro] in onset and [pa<sup>l̥</sup>.co] in coda to win the dispute.

(d) *Tableaux 4(a) and 4(b) – Distribution of variants in the region of the Campos Neutrais – choice of output with the variant [w] in coda*

4(a)

/lama/	*DIST <sub>ONC(1,2,3,4)</sub>	IDENT <sub>(lat)</sub>	*DIST <sub>ONC(4)</sub>	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*lateral <sub>{dors, lab}</sub>	MAX	*DIST <sub>ONC(3,4)</sub>	*DIST <sub>ONC(2,3,4)</sub>	*lateral <sub>{dors}</sub>	*lateral <sub>{dor, lab, cor}</sub>	*DIST <sub>ONC(-4)</sub>
ɸlama										*	*
wama		*!									
l <sup>w</sup> ama					*!					*	
ɬama					*!				*	*	
ama		*!				*					

4(b)

/alma/	*DIST <sub>ONC(1,2,3,4)</sub>	IDENT <sub>(lat)</sub>	*DIST <sub>ONC(4)</sub>	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*lateral <sub>{dors, lab}</sub>	MAX	*DIST <sub>ONC(3,4)</sub>	*DIST <sub>ONC(2,3,4)</sub>	*lateral <sub>{dors}</sub>	*lateral <sub>{dor, lab, cor}</sub>	*DIST <sub>ONC(-4)</sub>
alma	*!		*				*	*	*	*	
awma	*!	*									
al <sup>w</sup> ma	*!			*	*			*	*	*	
aɬma	*!				*		*	*	*	*	
ɸama		*				*					

(e) *Tableaux 5(a) and 5(b) – Distribution of variants in the region of the Campos Neutrais – choice of output with phonetic null in coda*

5(a)



/lama/	*DIST <sub>ONC(4)</sub>	*lateral <sub>{dors, lab}</sub>	IDENT <sub>(lat)</sub>	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*DIST <sub>ONC(3,4)</sub>	MAX	*DIST <sub>ONC(2,3,4)</sub>	*DIST <sub>ONC(1,2,3,4)</sub>	*lateral <sub>{dor, lab, cor}</sub>	*lateral <sub>{dors}</sub>	*DIST <sub>ONC(-4)</sub>
lama									*		*
wama			*!								
l <sup>w</sup> ama		*!							*		
ɬama		*!							*	*	
ama			*!			*					

5(b)

/alma/	*DIST <sub>ONC(4)</sub>	*lateral <sub>{dors, lab}</sub>	IDENT <sub>(lat)</sub>	*DIST <sub>ONC(2)</sub> & *lateral{d,l,c}	*DIST <sub>ONC(3,4)</sub>	MAX	*DIST <sub>ONC(2,3,4)</sub>	*DIST <sub>ONC(1,2,3,4)</sub>	*lateral <sub>{dor, lab, cor}</sub>	*lateral <sub>{dors}</sub>	*DIST <sub>ONC(-4)</sub>
alma	*!				*		*	*	*		
ɤawma			*					*			
al <sup>w</sup> ma		*!		*			*	*	*		
aɬma		*!			*		*	*	*	*	
ama			*			*!					

Despite the dominance relations the constraints keep among them, it is their ranking values that lead to the conclusion that there has been variation in the final result. It can be observed in all simulations, from tableaux 1 to 5, that the central values of the constraints got so near – differences were below 10 points – that a constraint that was close to the bottom of the ranking could, sometime, dominate the hierarchy. This situation has been used to show the variable results which happened in the region of the *Campos Neutrais* in the case of words with laterals in coda (al<sub>1</sub>ma, a.ni.mal).

However, according to Boersma and Hayes (2001), even though the selection point may get any value within the range, it is more likely to take weights closer to the central value. It explains why the possibility of variation between the constraint IDENT<sub>lateral</sub> (central value equal to 106,601) and a constraint similar to the conjoined one (\*DIST<sub>ONC(2)</sub> & \*lateral{d,l,c}), whose central value is 98,237, is lower than a constraint such as DIST<sub>ONC(4)</sub>, whose central value is equal to 102,350<sup>8</sup>.

<sup>8</sup> The ranking value of the constraints does not change. What makes the constraints alter their position in the hierarchy is the value of the selection point (disharmony), which should change at every simulation (every moment of linguistic production).

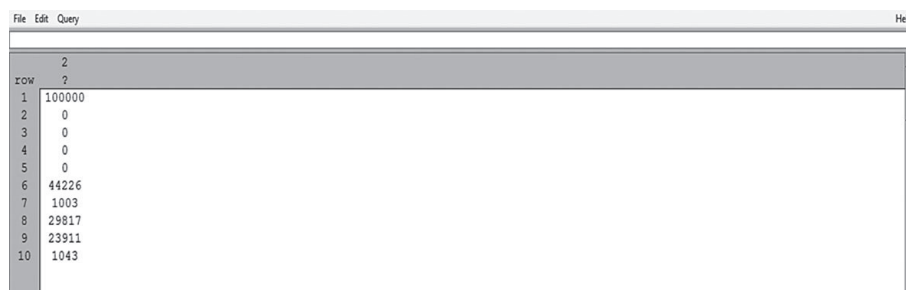
It explains why variable, but less frequent results, such as data on deletion (1%) and vocalization (1%) of coda in the place of the lateral, should emerge as optimal ones, but with lower probability.

When the hierarchy of the constraints resulting from the simulations under study (tableaux 1 to 5) is compared, it may be observed that faithfulness constraints  $\text{MAX e IDENT}_{\text{lateral}}$  kept a high position in all simulations in which the optimal output was a lateral consonant in onset and coda [l, ɭ or lʷ], unlike what can be observed on *tableaux* 4 and 5, which refer to candidates for deletion and vocalization of the lateral in coda. Hence, faithfulness constraints, mainly the  $\text{IDENT}_{\text{lateral}}$ , are important for the choice of the optimal candidate.

In order to get the form with deletion, faithfulness constraints  $\text{MAX}$  and  $\text{IDENT}_{\text{lateral}}$  had to fall in the ranking and constraint  $\text{*DIST}_{\text{ONC}(1, 2, 3, 4)}$  had to go up, so that the structures with the lateral in coda or vowel could be immediately eliminated. In order to let the form with the vocalization of the lateral in coda (tableau 5b) win, the constraint  $\text{MAX}$  was decisive, with the help of the  $\text{*DIST}_{\text{ONC}(4)}$  – which prohibits the alveolar lateral – and the  $\text{*lateral}_{\text{(dorsal, labial)}}$  – which prohibits the emergence of the dorsal and labial lateral.

Figure 3 (below) represents the probability distribution of outputs; it was carried out by using the command “*to output distributions*” in the PRAAT software to doublecheck whether the grammar under study is yielding the expected percentage rates.

**Figure 3** – Output distributions of the variants in the region of the *Campos Neutrais*



**Source:** Made by the authors.

According to Boersma and Hayes (2001), this study can submit all candidates to 100,000 evaluations to prove that the grammar under study is yielding the expected percentages. Results in Table 1 show that the values calculated by the algorithm confirm the rate of 100% for the production of the alveolar lateral in onset, expected in all simulations, as well as the other percentages for the structures

[l, ɭ, l<sup>w</sup> and w], expected in coda. Such evidence highlights the accuracy of the values calculated by the algorithm.

## Final Remarks

Regarding the objective of giving formal treatment to the phenomenon of the variation of the lateral in syllable coda position in the *Campos Neutrais* region, with the support of the Stochastic Optimality Theory, it is worth reinforcing that equal treatment is given to the lateral in syllable onset position in Portuguese and in Spanish. However, there are significant differences when the coda position is involved. Taking into account that *Campos Neutrais* is a border region between both languages under study and that there is evidence of language contact in the data, the result of the analysis was relevant. The constraints that were proposed to represent the speakers' grammar were fundamental and able to explain and formalize both the asymmetry between onset and coda, as well as the forms of output in the coda position.

The proposed constraints were fundamental to determine some optimal candidate. The following relations among constraints were relevant to choose different outputs for the postvocalic lateral:

- a) output with Alveolar [l] –  $\text{Ident}_{\text{lateral}} \gg *lateral_{\text{(dorsal, labial)}}$   
(Faithfulness >> Markedness);
- b) output with Dorsal [ɭ] –  $\text{Ident}_{\text{lateral}} \gg *Dist_{\text{ONC(4)}} \gg *DIST_{\text{ONC(2)}} \& *lateral_{\text{(d,l,c)}}$   
(Faithfulness >> Markedness);
- c) output with Labial [l<sup>w</sup>] –  $\text{Ident}_{\text{lateral}} \gg *Dist_{\text{ONC(4)}} \gg *Dist_{\text{ONC(3,4)}}$   
(Faithfulness >> Markedness);
- d) voiced output [w] –  $*Dist_{\text{ONC(4)}} \gg *lateral_{\text{(dorsal, labial)}} \gg \text{Ident}_{\text{lateral}} \gg \text{MAX}$   
(Markedness >> Faithfulness);
- e) output will Phonetic Null [∅] –  $*DIST_{\text{ONC(1,2,3,4)}} \gg \text{Ident}_{\text{lateral}}$   
(Markedness >> Faithfulness).

Hierarchies (a, b, c), which represent the presence of the lateral in coda, show that the Faithfulness constraint  $\text{Ident}_{\text{lateral}}$  must be on the top of the ranking so that the other possible forms – [w] and phonetic null – can be excluded from the dispute. On the other hand, in order to keep voiced forms and the ones with deletion,  $\text{Ident}_{\text{lateral}}$  had to fall in the hierarchy and let the markedness constraints dominate it (d, e). With outputs in (a, b, c), the Portuguese spoken in the *Campos Neutrais* shows the influence Spanish exerts on it, since, in the other variants of

the language, the voiced phonetic form predominates for the postvocalic lateral. It should be highlighted that all constraints which had their positions altered in the hierarchy, so that outputs in variation could be chosen as optimal, had central values whose difference was below 10, a fact that confirms the appropriateness of the analysis carried out in this study.

The schematization of the results clearly shows the differences in the organization of constraints in Spanish (Faithfulness >> Markedness), which mostly has the alveolar lateral in coda (more marked form) by comparison with Portuguese (Markedness >> Faithfulness), which mostly has the voiced form (less marked). As a result, the strong influence of Spanish on the BP spoken in the *Campos Neutrais* can be observed in the light of the Stochastic OT.

To represent the fact that alveolar, dorsal and labial laterals are in variation and that they are much more frequent than the other forms, the GLA provided rather high central values to the faithfulness constraints ( $\text{Ident}_{\text{lateral}} = 106.601$  and  $\text{MAX} = 100.518$ ), but separated by less than 10 points from the markedness constraints (e. g.,  $\text{lateral}_{\{\text{dorsal, labial}\}} = 102.066$ ), so that, in most simulations (or moments of linguistic production), they could keep high ranking, thus, enabling laterals to emerge in coda.

The generalization power of the theoretical model applied to the analysis carried out in this study was essential not only to capture the variable character of the data collected in the *Campos Neutrais*, but also to distinguish the frequency in which every form shows up. Finally, the same constraints enabled the formalization of the asymmetry among the lateral in onset – which shows the alveolar lateral [l] in 100% of the cases – the variable character of the lateral in coda and the rate in which every form shows up in the syllable coda. Hence, this study highlights the importance of choosing the Stochastic Optimality Theory to formalize the analysis.

NEUSCHRANK, A. et al. A formalização da assimetria da lateral em onset e em coda de sílaba no português dos Campos Neutrais pela OT Estocástica. *Alfa*, São Paulo, v.59, n.1, p.177-199, 2015.

- *RESUMO: O foco de análise do presente estudo é a assimetria que a líquida lateral apresenta nas posições de onset e de coda de sílaba, uma vez que mostra estabilidade fonética no onset e variação na posição de coda. Como o funcionamento da lateral pré e posvocálica apresenta diferenças no português e no espanhol, este estudo elegeu, como objeto de análise, o português dos Campos Neutrais, na fronteira Brasil-Uruguai, por seu contato com o espanhol. A base empírica é o português dos Campos Neutrais, emprestada de Espiga (2001), já que, segundo o autor, nessa região a lateral em posição de onset se manifesta como alveolar, enquanto pode assumir cinco formas fonéticas na posição de coda: alveolar, velarizada, labializada, vocalizada e zero fonético. A explicitação e a formalização da assimetria da líquida lateral são propostas com base na Teoria da Otimidade Estocástica, por meio de restrições. Com base no mecanismo de alinhamento relacional, o presente estudo propõe restrições de distância de sonoridade*

*inspiradas em Gouskova (2004), dela diferenciando-se por ter a particularidade de considerar a relação entre o onset e o núcleo e entre o núcleo e a coda de sílaba.*

- **PALAVRAS-CHAVE:** Líquida lateral. Onset e coda silábicos. OT Estocástica. Português dos Campos Neutrais.

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## PAPER SUBMISSION INSTRUCTIONS

### *Alfa: Revista de Linguística*

#### 1. Editorial policy

**ALFA – Revista de Linguística** – the linguistics journal of the São Paulo State University (UNESP), sponsored by the Research Provost, publishes papers authored by professors, researchers, and PhD students in co-authorship with professors and researchers from national and international institutions of learning, teaching and research. Maximum number of co-authors should be 3. Regular issues are organized in a “continuous flow” system, and special issues are edited according to the organizers’ convenience. The journal publishes papers, book reviews, interviews and translations with a substantial contribution to any of the various branches of Linguistics.

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.

All submissions are read by two anonymous referees. Authors’ identities are not revealed to the referees. Should the judgment of the two referees be inconsistent, a third referee will be called in. Once the refereeing process is concluded, the review copies are sent to the author, or to the first author of co-authored papers, with the appropriate instructions.

Papers can be written in one of the following languages: **Portuguese, English, French, Spanish, or Italian**. In papers written in **Portuguese**, *TÍTULO, RESUMO*, and *PALAVRAS-CHAVE* should come before the body of the paper, and their English versions, *TITLE, ABSTRACT*, and *KEY-WORDS*, after it. In papers written in any of **the other languages**, the corresponding elements that come before the body of the paper should be written in the same language the paper was written; the corresponding elements that come after the body of the paper should be written in **Portuguese** for papers written in **English** and in **English** for papers written in **French, Spanish, or Italian**.

All articles are published in a bilingual format, with English necessarily as the second language version. Authors who submit for approval an article originally in English must, in case it is accepted, provide its version in Portu-

guese, following the same guidelines indicated for the English language. Only articles with accepted versions in Portuguese (or another chosen language) and English will be published. If both versions are not accepted, the article will not be published.

The journal editor reserves the right to return a manuscript if it departs from the style requirements. When applicable, a personal letter will be sent to the author, asking for improvements and adaptations.

Authors are responsible for the data and concepts expressed in the paper as well as for the correctness of the references and bibliography.

## 2. Online submissions

To submit a paper, authors must be registered on the journal's website. To register, create a login name and a password by clicking **Acesso** (Access) on the journal's website. After logging in, fill in the profile by clicking **Editar Perfil** (Profile Editing) and start the submission process by clicking **Autor** (Author) and then **CLIQUE AQUI PARA INICIAR O PROCESSO DE SUBMISSÃO** (Click here to start the submission process). Follow the **five-step submission process** below:

Step 1. Confirm the agreement to the Journal Policies (**Condições de submissão**) and the Copyright Terms (**Declaração de Direito Autoral**) by checking the appropriate boxes. Select either **Artigo** (Paper) or **Resenha** (Review paper). Save the form and go to step 2.

Step 2. Enter metadata: first name, last name, e-mail, bio statement, and paper title are obligatory. Save the form and go to step 3.

Step 3. Upload the paper file. Go to step 4.

Step 4. If necessary, upload supplementary files such as appendixes and annexes with research tools, data and tables, which should conform to the ethical standards of assessment, sources of information usually unavailable to readers, and pictures or tables that cannot be inserted into the text itself. Go to step 5.

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After confirming the submission, authors will receive a confirmation e-mail from the journal editor. After submission, authors can follow the process up, from submission and acceptance, through assessment and final version preparation, to on-line publication.

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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. 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, set in bold CAPITALS at the top of the first page and in single-space lines.

**Author's name:** The name of each author follows the title and should be given in full with the surname in CAPITALS and aligned to the right margin, on the third line below the title, with a footnote marked by an asterisk referring to metadata in the following order: acronym and full name of the institution to which author(s) is(are) affiliated, city, state, country, zip code, e-mail.

**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,

**Keywords.** Each keyword (seven, at most) is followed by a period. They should be preceded by the word KEYWORDS in CAPITALS, and appear two lines below the abstract. The Editorial Board suggests that the keywords should match general concepts of the paper subject domain.

**Body of the paper.** The body of the paper should be one-and-a-half-spaced throughout. It begins on the third line below the keywords.

**Subsection titles.** The subsection titles should be typeset in **bold** and aligned to the left margin. They should not be numbered. There should be two one-and-a-half-spaced blank lines before and one one-and-a-half-spaced blank line after each subsection title.

**Acknowledgements.** Acknowledgements should conform to the subsection title layout, and should be preceded by the word "**Acknowledgements**" set in **bold**.

**Title in English.** For papers written in Portuguese, French, Spanish and Italian, the title in English (with no capitals and no bold) should be placed two blank single-spaced lines after the paper text body.

**The abstract in English.** For papers written in Portuguese, French, Spanish and Italian, the abstract in English should be typeset in *italics*, be preceded by the word *ABSTRACT*, typeset in *italics* and in CAPITALS, with no indentation for the first line, be single-spaced, and be placed three blank single-spaced lines after the title in English.

**The keywords in English.** For papers written in Portuguese, French, Spanish, and Italian, the keywords in English should be typeset in *italics*, be preceded by the word *ABSTRACT*, typeset in *italics* and in CAPITALS, and be placed three blank single-spaced lines after the abstract in English.

NOTE: For papers written in English, the title, abstract, and keywords referred to in 7, 8 and 9 above, respectively, should be written in Portuguese.

**References.** The subtitle **References** should be set in **bold**, with no indentation for the first line, and placed two blank single-spaced lines after the keywords. The reference list should be single-spaced and ordered alphabetically and chronologically (see 3.3.1 below), placed three blank single-spaced lines after the keywords in English. **12. Bibliography.** The bibliography list, if essential, should come after the reference list. The word “**Bibliography**” should be set in **bold**, with no indentation for the first line, and placed three blank single-spaced lines after the reference list, aligned to the left. It will include all works not mentioned in the paper or in its footnotes.

### 3.3. Further instructions

**3.3.1 Reference guidelines** Both reference and bibliography lists should be ordered alphabetically by the last name of the first author. A single space should separate one reference item from the other. The names of the translators must be specified.

Examples:

#### Books

AUTHIER-REVUZ, J. **Palavras incertas:** as não coincidências do dizer. Tradução de Cláudia Pfeiffer et al. Campinas: Editora da UNICAMP, 1998.

CORACINI, M. J.; BERTOLDO, E. S. (Org). **O desejo da teoria e a contingência da prática.** Campinas: Mercado das Letras, 2003.

LUCHESE, D. **Sistema, mudança e linguagem.** Um percurso na história da linguística moderna. São Paulo: Parábola Editorial, 2004.

#### Book chapters

PECHEUX, M. Ler o arquivo hoje. In: Orlandi, E. P. (Org.). **Gestos de leitura: da história no discurso.** Tradução de Maria das Graças Lopes Morin do Amaral. Campinas: Ed. da UNICAMP, 1994.

#### Thesis and dissertations

BITENCOURT, C. M. F. **Pátria, civilização e trabalho:** o ensino nas escolas paulista (1917-1939). 1988. 256 f. Dissertação (Mestrado em História) – Faculdade de Filosofia, Letras e Ciências



Humanas, Universidade de São Paulo, São Paulo, 1998

### **Papers in journals**

SCLiar-CABRAL, L.; RODRIGUES, B. B. Discrepâncias entre a pontuação e as pausas. **Cadernos de Estudos Linguísticos**, Campinas, n.26, p. 63-77, 1994.

### **Online papers**

SOUZA, F. C. Formação de bibliotecários para uma sociedade livre. **Revista de Biblioteconomia e Ciência da Informação**, Florianópolis, n.11, p. 1-13, jun. 2001. Disponível em: <...> Acesso em: 30 jun. 2001.

### **Newspaper articles**

BURKE, P. Misturando os idiomas. **Folha de S. Paulo**, São Paulo, 13 abr. 2003. Mais!, p.3.

EDITORA plagiou traduções de clássicos. **Folha de S. Paulo**, São Paulo, 4 nov. 2007. Ilustrada, p. 6.

### **Online publications**

UNIVERSIDADE ESTADUAL PAULISTA. Coordenadoria Geral de Bibliotecas. Grupo de Trabalho Normalização Documentária da UNESP. Normalização Documentária para a produção científica da UNESP: normas para apresentação de referências. São Paulo, 2003. Disponível em: <...>. Acesso em: 15 jul. 2004.

### **Paper in edited volumes, conference proceedings, and working papers**

MARIN, A. J. Educação continuada. In: CONGRESSO ESTADUAL PAULISTA SOBRE FORMAÇÃO DE EDUCADORES, 1., 1990. **Anais...** São Paulo: UNESP, 1990. p. 114-118.

### **Films:**

**Macunaíma**. Direção (roteiro e adaptação) de Joaquim Pedro de Andrade. Filmes do Serro/Grupo Filmes/Condor Filmes. Brasil: 1969. Rio de Janeiro: Videofilmes, 1969. Versão restaurada digitalmente, 2004. [DVD]. (105 minutos), colorido.

### **Paintings, photographs, illustrations, drawings:**

ALMEIDA JÚNIOR. **Caipira picando fumo**. 1893. Óleo sobre tela. São Paulo, Pinacoteca do Estado de São Paulo.

### **Music CDs (as a unit or tracks)**

CALAZANS, T. **Teca Calazans canta Villa Lobos** [CD]. Rio de Janeiro: Kuarup Discos, 1999.

CALAZANS, T. Modinha. In: CALAZANS, T. **Teca Calazans canta Villa Lobos** [CD]. Rio de Janeiro: Kuarup Discos, 1999.

### **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.

### **3.3.3. Italics, bold, underlining and quotation marks**

**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:** In the body of the text, quotation marks should be used for quotations from texts, but never for titles, songs, chapter or parts of books. 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).

### **3.3.4. Footnotes**

Footnotes should be kept to a minimum and placed at the bottom of the page. The superscript numerals used to refer to a footnote come after any punctuation sign (comma, semicolon, period, question mark, etc.).

### **3.3.5. Figures**

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 illustrations and tables should be presented on the bottom, left-aligned. The numbering is consecutive, in Arabic numerals; if you need to specify the data source, it must be placed below the table or the table and the text aligned to the left. Tables should be built with the open side borders and no lines separating columns.

### **3.3.7. Appendixes and Annexes**

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.

### **3.3.8. Review format**

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.

Page format is as follows: paper size: A4 (21.0x 29.7 cm); left and top margins 3.0 cm, right and lower 2.0 cm; minimum length of 4 and maximum of 8 pages, including bibliographic references and annexes and/or appendixes; indentation: 1.25 cm to mark the beginning of the paragraph; spacing: 1.5.

### **3.3.9. Translation format**

Translated articles are subjected to a peer review process, to decide on the opportunity and the convenience of their publication. They should follow the article format, where applicable. In the second line below the name of the author of the translated text,

right-aligned, the name(s) of the translator(s) should appear in the following format: “Translated by [name(s) of the translator(s)]”, with an asterisk referring to a footnote with the following information: full name and acronym of the institution to which the translator(s) belong; city; state; country; zip code; email. The translated text must be accompanied with a written authorization of the publisher responsible for the original publication.

### 3.3.10. Interview format

Interviews are subjected to a peer review process, which decides on the opportunity and the convenience of its publication. The format of the interview is the same required for articles, but the title should contain, besides the general theme, the expression “Interview with [interviewee name]”, without emphasis, with an asterisk referring to a footnote containing a brief review of the biography of the interviewee, which clearly demonstrates her/his scientific relevance. The author(s) of the interview should follow, according to the rules established for articles.

### 3.3.11. English version

The author(s) of paper accepted for publication in Portuguese, French,

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In case there are citations of works with an English-language edition, this edition should be used both in the text and in the references. In case there is no English edition, the quoted text should be translated into English, and the text in the original language of the edition used must be included in a footnote.

If the text contains figures scanned from advertisements in newspapers, magazines or similar media, in Portuguese or another language, the English version of the text must be included in a footnote.

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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