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UNESP – Univ Estadual Paulista,
Pro-Reitoria de Pesquisa
Rua Quirino de Andrade, 215
01049-010 – São Paulo – SP
alfa@unesp.br

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PRESENTATION

Alfa begins 2017 with a very rich issue due to the range of topics covered by its articles, representing the diversity of interests and approaches that prevail in our area. Society, media, ideology, interaction, cognition, perception, verbal production, lexicography, phonology, history, writing system, themes and dimensions permeated by language and languages, are present in the following pages.

The first two articles investigate aspects of the construction of meaning based on the conception of language as a socio-historically situated activity. The text of Guimarães and Moita Lopes deals with the trajectory of a viral text, discussing its transformations and its redeterminations as part of complex processes of identity expression conveyed in face-to-face interactions and via social media. Costa, on the other hand, thinks the relation between the proposals of the Circle of Bakhtin and the Marxist thought, taking into account the role of ideology in the Bakhtinian vision of language. To discuss and illustrate the concept of ideological sign, the author analyzes the word ‘selfie’ as an “index of contemporary transformations”, demonstrating how “changes in the forms of production” correlate to changes in interactional processes and patterns of behavior. The two works are close in their dialogue, less or more direct, with the creation and circulation of language in the digital media.

In the third article, Cruz discusses the role of the articulation of verbal and gestural resources in the construction of the interactional space. Thus, the role of multimodality in the production of meaning is highlighted. The study is based on the analysis of recorded audio-visual excerpts with people with Alzheimer’s disease; the regard upon a context of interaction modified by pathology ends up allowing a rethinking of categories and processes related to language.

The next four articles represent a dive into different aspects of the Portuguese language. Berti proposes to investigate the development of perceptual-auditory acquisition of phonic contrasts in Brazilian Portuguese. The study is based on an experiment with children between 4 and 5 years old, which led to a characterization of the process’s gradualness as depending on the nature of the sounds (vowel or not, presence or absence of certain traits). Vilarinho’s work proposes the development of a “Portuguese Informatized Analogical Dictionary”, discussing its theoretical basis (the concept of analogy, Theory of Prototypes and Frames Semantics) and presenting the methodological model conceived for its implementation.

Veloso discusses the wordiness restrictions of Portuguese: what is the minimum condition (MC), from the point of view of the quantity of phonological material, to

assert that a phonetic chain is a word of the language? To answer this question, the author empirically evaluates the process of oralization of abbreviations in contemporary European Portuguese, achieving consistent and original results. In turn, Fonte brings new light on the history of unstressed vocalism in the Portuguese language. Taking on the challenges of the study of phonetical-phonological phenomena in the historical dimension, the author investigated the characterization of unstressed mid vowels raising in Portuguese during the 13th, 15th and 16th centuries. The study provides a detailed mapping of the process in the period, contrasting with current Brazilian and European varieties.

This issue concludes with another trip to the past, back to the 16th to 19th centuries, to glimpse at the history of the linguistic ideas that circulated in Europe of that period concerning, particularly, the Chinese writing system. Barreto revisits the debate that occupied the European scene, concluding that the conceptions of writing developed in the West owe to the (still inconclusive) discussions about Chinese writing.

Due to the diversity of themes and approaches, due to the originality of the studies, we are certain that the edition presented here will be a quite useful and an enjoyable reading for all.

Rosane de Andrade Berlinck

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ORIGINAL ARTICLES

TRAJECTORIES OF A VIRAL TEXT IN DIFFERENT COMMUNICATIVE EVENTS: ENTEXTUALISATION, INDEXICALITY, IDENTITY PERFORMANCES AND ETHNOGRAPHY

Thayse Figueira GUIMARAES*
Luiz Paulo da Moita LOPES**

- **ABSTRACT:** Based on an ethnographic study, this paper analyses the trajectory of a viral text through different communicative events. We aim at examining the recontextualisation processes of a video by Luisa Marilac – a trans-woman who identifies herself as a transvestite – in the identity performances of Luan - a black gay young man -, in Web 2.0 interactional practices and in his classroom. The focus is on language-in-movement as sociointeractional action, which is permeated by indexical values. These, on their turn, point to larger scale social phenomena. This research is guided by performance, entextualisation and indexicality theories and relies on a multi-sited ethnography. In the analysis, we have tried to understand how fragments of the video by Luisa Marilac are recontextualised in Luan’s interactions with his classmates and with his Facebook friends. The analysis points out that the study of the circulation of a text offers different possibilities of accessing identification processes, social hierarchies and power relations, which constitute contemporary interactional practices.
- **KEYWORDS:** Recontextualisation. Identity Performances. Indexicality. Multi-sited ethnography.

Introduction

On June 27, 2010, Luisa Marilac, then a thirty-seven-year-old trans-woman¹, self-identified as a transvestite, published a home-made fifty-nine second video on YOUTUBE, which went viral² and generated more than three million accesses and

* UninCor – Universidade Vale do Rio Verde. Programa de Mestrado em Letras. Três Corações – MG – Brasil. 37410-000 – thayse.guimaraes@unincor.edu.br

** UFRJ – Universidade Federal do Rio de Janeiro. Faculdade de Letras. Rio de Janeiro – RJ – Brasil. 21941-500 – moitalopes@pq.cnpq.br

¹ We use the term ‘trans-woman’ to refer to people who transit from men-to-women, by identifying themselves with the gender which is different from that designated by birth (BORBA, 2014). Luisa identifies herself as a transvestite in the social networks.

² Viral videos acquire high circulation power in the Internet and have become very popular as a typical Web 2.0 phenomenon (BLOMMAERT; VARIS, 2014).

several likes and comments about her performances. In her video, Luisa is shown in a swimming-pool, wearing a bikini, holding a champagne glass and enacting stereotypical performances of transvestite identifications. She does so by stylizing³ linguistic and body resources, which are in common sense understood as socially-recognized signs of the so-called emphasised femininities (CONNEL; MESSERSCHMIDT, 2005). In this video, while she talks, Luisa sensually moves her hips, touches her boobs and hair, speaks to a high-pitched voice, wears a bikini and lightly holds her glass. Below you find the video transcription⁴ (<https://www.Youtube.com/watch?v=ikzC29rV75A>, accessed April 2, 2015):

1. Luisa: this summer, I decided to do something different.
2. ((speaking in a swimming-pool, Luisa looks straight to the camera))
3. I decided to stay home, in my pool, having some nice drinks!
4. ((she points to the pool and raises the champagne glass she is holding))
5. enjoying this WONDERFUL European summer, in Spain.
6. and sharing with you these moments ((she raises the glass while rotating her body))
7. the water is pretty icy! ((she takes off her sun-glasses))
8. let's try to dive into the pool?
9. ((she turns her hair around, rotates her body again and gets ready for diving.
10. after diving, she stands up, touches her hair, reaches for her sun-glasses and her champagne glass and turns to the camera))
11. and there was rumor that I was having a bad time! Fuck, if I am having a bad time!
12. what people mean when someone is having a good time, right? ((she talks while gesticulating and looking at the camera))

From her Facebook posts and interviews on TV shows in Brazil, it was possible to learn that this short text was recorded in Spain, where she was a sex-worker. Her text travelled (BLOMMAERT, 2005; 2010) to Brazil, via YOU TUBE, in which it became popular and circulated intensely through 'likes' and 'shares'. Blommaert (2010) argues that text mobility through different contexts are continuous entextualisation practices. In Bauman and Briggs' words (1990, p.73), entextualisation "[...] is the process of rendering discourse extractable, of making a stretch of linguistic production into a unit – a text – that can be lifted out of its interactional setting".

Luisa's video brings about relevant issues in relation to contemporary text mobility. The video which first circulated in YOU TUBE originated other texts. The video was quoted, commented on, liked, parodied, became a focus object of discussion on TV

³ According to Rampton (2006, p.117), "style is seen as a manner of using language which is 'natural' and typical (of a particular topic, of a kind of interaction or of a person)".

⁴ See transcription conventions in Annex 1 (all content has been translated into English for the purposes of this paper).

shows and on the social networks. In the following year, due to this textual travel popularity, Luisa came back to Brazil, where again her video circulated in other formats in other text trajectories: in TV interviews, in on-line news shows etc.

Luisa Marilac's video is an invitation to visualise the pluridirectional trajectory of texts, which mainly accounts for social, cultural, identity, semiotic and circulation crossings, typical of contemporary communicative processes, interweaving local and translocal orientations⁵. Her text clearly brings along traces of its migratory flux (Brazil - Spain), of a specific identity group (a text produced then by a transvestite sex-worker), of a style (stylization of emphasised femininities) and of sociocultural mobility (constructed in Spain, but popularised in Brazil on YOUTUBE). The intensification of this phenomenon of text, people, socio-historical and cultural migration are typical of contemporary globalization. As Blommaert and Rampton (2011) point out, these changes have mainly come about because of new media and communication technologies and of information circulation. This new communication technology directly impacted on Luisa's life, whose video was cited, shared, commented on, narrated, becoming as such a new text far beyond its 'original' context (BAUMAN; BRIGGS, 1990). Her short 'piece of text', recontextualised in different communicative events, invites us to reflect on the intensified mobility of semiotic resources in our days.

In Blommaert's words (2010), a research agenda about language in society in contemporary life must consider the claim for the study of language-in-movement rather than the observation of language-in-only-one-place. The presupposition is that the contexts to which people orient their interactions go much beyond the communicative event itself, extrapolating talk-in-interaction (FABRÍCIO, 2012). This view aims at looking into semiosis between communicative encounters (AGHA, 2005). In other words, the discussion is about how repeated signs, which travel from one interactional event to another, establish connectivity between different temporal and spatial communicative encounters at the same time that they produce new conditions for contextualisation (VARIS; BLOMMAERT, 2014). This means that we need a "sociolinguistics of mobility" (BLOMMAERT, 2010) not only because the new conditions of mobility nowadays require the observation of communicative encounters under lenses of social, cultural and linguistic diversity, but also because we need to pay attention to the complexity of the investigation of these processes. Thus, as Bauman and Briggs (1990) argue, texts also carry normativities, ideologies, and histories of use, which crucially relate to power issues.

With this perspective in mind, our objective is to understand the relationship between entextualisations and meaning making. We examine how the circulation of Luisa Marilac's text gets into the dispute for the construction of valid meanings and in

⁵ According to Fabricio (2012, p.5), the notion of context as a reflexive practice, not restricted to what happens to specific events, involves a local/translocal orientation of meaning construction in communicative events "by encompassing both the immediate interactional dimension – in which there is a continuous interpretation of contextualization cues - and a more translocal dimension - in which cues and presuppositions point to a historical dimension".

the enactment of Luan's identity performances⁶, a black gay young man, in interaction both on web 2.0 and in the classroom. The communicative exchanges focused on are part of an ethnographic study, undertaken by one of the authors⁷ (GUIMARAES, 2014) in a state school, situated in the coastal lowlands of the State of Rio de Janeiro, Brazil. This was a multi-sited project (MARCUS, 1995) because it focussed on the identity performances of a group of secondary school seniors⁸, in their classroom interactional context and in their social networks on Facebook and on Twitter. Specially, this research focussed on the interactional ethos⁹ and the gender, sexuality and race performances of one of the students, who will be called Luan, in his participation both in the social on-line networks and in school literacy events. The generated data refer to texts and discourses on gender, sexuality and race produced by this student in multiple interactional contexts.

Particularly, our interest lies on the investigation of how recontextualised signs produce historical social, cultural and identity relations which are translocal. This perspective makes us question how individuals obtain rights and certain modes of enunciation transformation in the mobility of discourses across contexts (BAUMAN; BRIGGS, 1990). This means then, according to Blommaert and Rampton (2011, p.10), that:

[...] the contexts for communications should be investigated rather than assumed. Meaning takes shape within specific places, activities, social relations, interactional histories, textual trajectories, institutional regimes and cultural ideologies, produced and constructed by embodied agents with expectations and repertoires that have to be grasped ethnographically.

Therefore, our view is that the ethnographic observation of how texts are received, incorporated, refuted, maintained and altered by subjects with different interpretive expectations and with specific linguistic / discursive repertoires of meanings, is fundamental for the study of the relationship between entextualisation and meaning attribution. Following this point of view, in the first part, we discuss the entextualising, performative and indexical nature of linguistic signs (BAUMAN; BRIGGS, 1990; SILVERSTEIN; URBAN, 1996; BLOMMAERT, 2005; 2010; PENNYCOOK, 2010). Next, we exemplify our argument with a specific case, by analysing how Luisa Marilac's

⁶ We use the theoretical construct of "identity performances" instead of identities, by following the notion of identity as performance (BUTLER, 1993). We want to emphasise the procedural, provisional and socio-historically sedimented nature of our gender, sexuality and race identifications because they are meaning effects which we produce through the things we do, say and wear in our everyday performances (BUTLER, 2003 [1990]).

⁷ This article builds on a section of Guimaraes' doctoral thesis (2014).

⁸ For ethical reasons, we have used pseudonyms for all the participants in this research.

⁹ In this article, we use the concept of *ethos* in association with the notion of *ethos* as locutionary habits shared by members of a community, as in Kerbrat-Orecchioni (1996). Such "collective ethos" constitutes, for the interlocutors who share it, a "communicative profile", that is, their manner of behaving and of presenting themselves in interactions.

video was recontextualized in Luan's interactions with colleagues from his classroom and from Facebook¹⁰.

The entextualisable nature of texts and language performativity

The crucial issue in relation to the circulation of texts is the process of entextualisation. When Bauman and Briggs (1990, p.73) approach aspects of narrative performance, they draw attention to a fundamental characteristic of discourses: their decontextualising and recontextualising natures. When discourses materialise themselves into texts, they experience successive processes of entextualisation. As pointed out by Blommaert (2005, p.62), texts travel, that is, they follow trajectories through different contexts. This comprehension involves the fact that a 'piece of text' or 'excerpt', understood as a semiotic object, can be extracted from its 'original' context of use and materialised into a new context (VARIS; BLOMMAERT, 2014). This view also underlines the fact that when the 'same' text is transported beyond its 'original' context, it mobilises wide processes of change in the construction of meanings. Therefore, Blommaert (2005, p.45) refers to the processes of meaning construction through which

[...] discourses are successively or simultaneously decontextualised and metadiscursively recontextualised, so that they become a new discourse associated to a new context and accompanied by a particular metadiscourse which provides a sort of 'preferred reading' for the discourse.

In this sense, materialised discourses in texts may be extracted from their original interactional / contextual environment and be replicated in another, becoming as such a new text, and successively so (BAUMAN; BRIGGS, 1990; BLOMMAERT, 2010). The text is then remodelled, renarrated, reframed and the entextualisation becomes the very textual travel. In general terms, this process, according to Silverstein & Urban (1996), is part of "the natural history of discourses". When transported, texts are negotiated in interpretive processes, on the basis of historically-sedimented social systems. Specific interpretations arise and texts are renarrated and reframed in the interactional encounter, obeying certain meanings constructed in chains and repeated along the time. The focus of the investigation is then widened beyond the functioning of language in use, in communicative events circumscribed to specific moments. It aims at the study of texts by following their multiple trajectories so that the mobility of the texts produced constructs new interpretations of the interactional context in each phase

¹⁰ Facebook is a social network, in which participants create a personal profile, exchange private and public messages and take part in groups of affinities with other participants.

of entextualisation-decontextualisation-recontextualisation, in which new identity signs are in action (WORTHAM, 2006).

In the case of Luisa Marillac's performances, we can state that her textual travel begins quite ahead of the very posted video. Her performance is oriented by the entextualisation of a style identifiable in society (RAMPTON, 2006), since it relies on identity-semiotic resources which are naturalised and which project for herself a stereotypic identification of transvestite performances. In other words, it relies on the enactment of 'femininity', based on hyperbolic styles, which are related to symbolic attributes, conventionally associated with the so-called emphasised femininity (CONNEL; MESSERSCHMIDT, 2005). Thus, it is necessary to take into account that Luisa is a product of the entextualisation of stylised models of gender and sexuality, presented through an intense performance¹¹ (BAUMAN, 1986).

The entextualisation and mobile dimension of these semiotic resources, culturally available, help us understand that identity performances are "the repeated stylization of the body, a set of repeated acts within a highly rigid regulatory frame that congeal over time to produce the appearance of substance, of a natural sort of being" (BUTLER, 1990, p.33)¹². Therefore, identifications are constituted by successive repetitions of identity signs (WORTHAM, 2006) which, through entextualisation, are transported from a context to another (SILVERSTEIN; URBAN, 1996). In this trajectory, it is possible then to visualise language performativity¹³ in enactment since, in this text travel, something from the previous context is kept, while novelty, creativity and change flourish (PENNYCOOK, 2007; 2010). As Blommaert (2005) emphasises, entextualisation involves a set of transformations.

This perspective therefore rejects a simplified linguistic analysis or description, which considers solely the textual, semantic and linguistic borders of a text. In this sense, the issue to be problematised in this text, when focussing on Luisa's video circulation, are not only the semiotic resources made recourse to in her stylisation as a transvestite (for example, ways of moving her body, accent, posture, the social voices mobilised, indexical cues etc.), but also how these semiotic units which are put together in the format of a video locally produce historical, cultural, political and identity relations. In other words, how these text pieces circulate and are recontextualised in different interactional contexts, oriented by local and translocal aspects (BLOMMAERT; RAMPTON, 2011). This way, it is relevant to understand how social subjects frame the stylisation presented in the video with particular purposes, by evoking identity signs and involving themselves in specific communicative practices.

¹¹ In his study about narrative performances, Bauman (1986) distinguishes between intense performances and mundane performances. He argues that intense performances are temporally and spatially highlighted in the everyday flux of communication. They are programmed, planned and typically pre-announced through emphasised meta-communicative features, in other words, through hyperbolic features.

¹² Although Butler (1990) refers specifically to gender performances, we here widen the scope of her view of performances to other types.

¹³ For a deeper discussion of this issue, see Pennycook (2007; 2010).

Therefore, when we focus on entextualisation, it is necessary to understand the vulnerability of the understanding which emerges here-and-now, where texts participate in the struggles for meaning construction. Taking into account then that a text is mobile and that, when it moves, it is adapted and modified, we will next discuss indexicality with a view to understanding the nexus between locality and translocality, that is, between the use of semiotic resources in situated performances and its embeddedness in the repetition of use which sediments its semantics and the expected performative effects.

Indexicality

As above said, the view that texts travel does not imply that they themselves are autonomous and auto-sufficient objects and that they do not have a historicity of use, which points to sociocultural and historical regimes of truth. The solidified meaning effects may gain visibility through the theoretical construct of indexicality. Silverstein (2003) argues that the linguistic forms are indexical, which indicates the social and cultural aspects shared by interlocutors. Thus, in so-called Brazilian Portuguese, the addressing forms *Senhor / Senhora*, differently from the pronoun *você*, would indexically express a level of respect and distance in relation to interlocutors, in which one of them may be older or occupy a social superior position. In this case, such uses may be still understood as signs of politeness and good manners. As Silverstein and Urban (1996), Agha (2007) and Collins (2011) have argued, indexicality is the propriety of the linguistic sign to point to textual-semiotic projections, which indicate the interpretation of a contextualised local and cultural communicative act. More concretely, “[...] indexicality is the dimension of meaning in which textual features ‘point to’ (index) contextually retrievable meanings” (BLOMMAERT; MALY, 2014, p.4). The point here is that every indexical sign presupposes and creates its contexts in a dialectical relationship between “indexical presupposition” and “indexical entailment”¹⁴ (SILVERSTEIN, 2003, p.195). According to Silverstein (2003, p.195), the indexical fact involves the social regularities and norms of use to which signs point as well as the uses and emerging contexts of use, derived from the former and to which they also point¹⁵.

Thus, whenever Luisa’s video travels, indexical relations are brought to bear. These indexical links are dependent both on what happens in the interactional events and on the sets of cultural norms and conventions, which are associated with the history of use of mobilised semiotic resources. This way it is possible to understand that, for example, her video mobilises semantic-pragmatic fields which indexically express something about Luisa’s communication such as her belonging to transvestite identifications. However,

¹⁴ “[...] Now in relation to micro-social context in the most general sense, any such socially conventional indexical (legi-sign [=type] is dialectically balanced between indexical presupposition and indexical entailment”.

¹⁵ According to Silverstein (2003, p.196), the mediating factor between presupposed pragmatics and implied pragmatics is the metapragmatic function. In this sense, Blommaert (2005, p.47) states that the indexical order is the metapragmatic organization principle behind what is widely understood as language pragmatics.

such indexicalisation is not a direct equation, mainly in the case of Luisa's video which circulated through several communicative contexts. Any semiotic resource, because of its dependence on the contexts in which it is negotiated, may produce different identifications for an individual (WORTHAM, 2001; BLOMMAERT, 2005; AGHA, 2007; COLLINS, 2011). Besides this, these identifications generate specific hierarchical values. As Blommaert (2010) states, in the action of decentering and recontextualising texts, subjects in their practices are oriented by discursive orders¹⁶ (FOUCAULT, 2009 [1970]), which are in operation at one time. Normativities, systems of stratifications and hierarchisations are constitutive of the ways through which we define valid meanings, create belongingness and identifications in society.

In this sense, "the linguistic forms index particular contexts and, besides this, they generate specific representations about the mobility of discourse and the manner through which such discourse must be recognized" (SILVA; ALENCAR, 2014, p.266). This aspect makes clear that entextualisation is dependent on the interactional context in the same way that Gumperz's contextualization cues (1983, p.131) are. Cues such as lexical, grammatical, phonological, intonational, voice quality, alignment, intertextual choices etc. cannot be discussed if contexts are not taken into account.

Linguistic, paralinguistic and discursive choices help to define positionings and to shape identifiable person types with particular gendered, sexual, racial, national, social class characteristics etc. in particular interactional situations, signalling social hierarchies and power relations (MOITA LOPES, 2013; 2015). In short, as Blommaert and Maly (2014, p.4) indicates:

[...] we see signs as indices of social relationships, interests and practices, deployed in a field which is replete with overlapping and intersecting norms - not just norms of language use, but norms of conduct, membership, legitimate belonging and usage; and not just the norms of a here-and-now, but norms that are of different orders and operate within different historicities.

Thus, by investigating the recontextualisation of Luisa Marilac's video in Luan's interactions, we are concerned with understanding the "indexical cues" mobilised in the processes of text recontextualisation. When focusing on indexicality, Wortham (2001) coined the phrase "indexical cues", inspired by Gumperz's contextualization cues (1982/2002), building on these as cues of how a certain discourse resource may be interpreted by those involved in an interactional practice. In the analyses that follow, we highlight cues such as reference, predication and citation (WORTHAM, 2001)¹⁷,

¹⁶ Foucault (2009 [1970]) states that "in every society the production of discourse is simultaneously controlled, selected, organised and redistributed by some procedures which have the function of contriving its power and danger, dominating random happenings, avoiding its heavy and fearsome materiality".

¹⁷ Reference has to do with naming things and people and predication with attributes given when naming people and the world. Citation is the direct appropriation or the paraphrase of someone's else discourse (WORTHAM, 2001, p.71).

among others. Although we do not develop Wortham's approach (2001) and do not make recourse to all the cues he lists as analytical tools, we use his metalanguage to approach indexicality as a phenomenon oriented both by the constraints which guide its production in specific contexts and by a macro-social order. This is so, because in Fabrício's words (2013, p.155), communication is "an interactional accomplishment during which local processes of meaning negotiation indexicalise larger sociocultural processes".

From this perspective, when we focus on the recontextualisations of Luisa's text, we include attention to identity performances which emerge in association with a series of unstated discourses, anchored in social structures, value presuppositions, social hierarchies, cultures etc. in a specific communicative encounter. Luisa's stylisation is brought about by some semiotic choices which operate as indexical cues which point to stereotypical models of transvestite identifications. Such models are highly reflexive and shared, making it possible for Luan and his classroom and social network friends to engage themselves with discursive practices about Luisa's performances. These practices favour the understanding of "metadiscursive struggles" and "performative struggles" (SILVERSTEIN; URBAN, 1996, p.12), that is, power-knowledge struggles in the recontextualisations of texts, which are going to constitute social identifications at play. This view, beyond talk-in-interaction, has powerful implications for the understanding of language in globalisation, as above indicated, in relation to the pluridirectional trajectory of texts in the world of fluxes in which we live.

Notes on the ethnographic field: research context, Luan, analytical and methodological procedures

As made explicit above, the case focussed on is part of a larger ethnographic study, which was undertaken by one of the authors of this paper and which took into account participant-observation in different interactional practices, namely, online social networks such as Facebook and Twitter and the school context, during 10 months. This approach is based on a multisited or multilocal perspective (MARCUS, 1995), in which the researcher follows the meaning chains, trajectories and threads, which are constitutive of a phenomenon under investigation. Such an approach is derived from the juxtaposition of social sites, where the investigated practices are lived and where the researcher is trying to draw connections (WITTEL, 2000) across these spaces and practices. Following a person's or a group of persons' practices, cultural artefacts and narratives is a way of making such an approach possible (MARCUS, 1995, p.106). In this research, the multisited ethnography strategy followed Luan (the focal participant), his stories and discourses, in school interactions and on-line social networks.

In the process of defining the scope of this project and after being allowed to get into the school by the principal, the morning-shift senior group was selected to participate in the project because it was more receptive to the researcher's presence

both in the classroom and on the virtual world. Also, the writing teacher and the philosophy teacher were quite receptive to our project. The initial focus of the study was the interactional ethos and the gender, sexuality and race performances, enacted by participants on the social networks and at school literacy events. Before starting the research, all participants signed the Terms of Consent, by which they allowed the classroom recordings and individual interviews. However, we chose Luan, whose identity performances in interactional practices were closely studied.

In classrooms, we audio-recorded the interactions through the use of two tape-recorders: one was placed on the teacher's table and the other at the back of the room, near Luan's and the researcher's desks. Other methodological instruments were: field notes which were transformed into the researcher's diary, print-outs of Facebook and Twitter interactions, and individual interviews with teachers' and students'.

During classroom observation, Luan called our attention because of the trajectory of his texts on gender, sexuality and race. Luan, a black young man who was constantly positioned as gay in classroom and on on-line interaction, gained prominence in the investigation because he continuously discussed issues we were concerned with in the ethnographic research project. In this study, it was possible to see that when a set of semiotic resources, amalgamated through power relations, indexed his gender/sexuality and race, it also became part of a struggle for the negotiation of valid and value-based meanings. His texts were produced through the constant negotiation of meanings about body, normativity patterns, social stereotypes, legitimate social voices, among others. Further, Luisa Marilac's voice was frequently entextualised by the young man in his interactional practices, both at school and on the social networks. Luisa's discourse brought about some aspects related to how Luan interacted on Facebook and it could be analysed as a strategy of how he participated on this social network. In this connection, it is worth focussing on some field notes about how he entextualised Luisa Marilac's text:

[..] This is not the first time that I hear him recovering the transvestite Marilac's voice in his texts. Apparently, Luan quite usually quotes texts which circulate in popular culture when enacting his participation in these contexts. For example, Funk lyrics, international pop music and hip-hop female stars' lyrics, Beyoncé and Rihanna (Field notes, May 19, 2011).

Because of these entextualisations, Luan was commonly a target for pejorative evaluations. Through our ethnographic observation, it was possible to understand how Luan constructed his identity performances at school and among his classmates in performative struggles for the construction of valid meanings. Having in mind that "entextualisation practices turn out to be about 'identity'" (SILVERSTEIN; URBAN, 1996, p.10), we will now focus on how fragments from Luisa's discourse are hierarchically evaluated when they come into the production of intelligible identifications between Luan and his school and Facebook friends.

Besides this, the mapping of the valuation of indexical signs in the processes of Luisa's text recontextualisation may be made operational by means of the observation of how frames and footings are being constructed through indexical cues. Goffman's theoretical constructs of frame and footing (1974; 1981) are relevant for the understanding of participants' interpretive work in the entextualisations of texts sociohistorically situated.

According to Tannen and Wallat (2002 [1987], p.188), "the notion [...] of frame refers to the definition of what is going on in interaction". This basic principle is related to how our structures of expectations affect how we interpret and categorise the meanings of interactional events. Such meanings are constructed when participants in an interactional event ask themselves: "what is it that is going on here?" (GOFFMAN, 1974, p.25). Frame refers to the meta-communicative control of the entextualised text and footing or alignment, related to the negotiation of frames, has to do with participants' positionings. The frames of an interaction are constantly negotiated and the alignments have a central role in this process of negotiation (GOFFMAN, 1974). This way, such constructs are productive because they account for discursive negotiations and changes, in the emerging nature of meaning construction. This fact presupposes texts in constant mobility in processes of entextualisation-decontextualisation-recontextualisation.

Analysis of the trajectory of Luisa's text in communicative events

The following excerpts show Luan talking with his classmates, in different interactional contexts: on Facebook and in his classroom. In the analysis of the excerpts, we draw attention to how fragments of Luisa's enunciations are recontextualised by Luan and to how they are part of the interactional struggles between Luan and Sávio. He is one of Luan's classmates and also a research participant. In classroom interaction and interviews, Sávio positioned himself as a heterosexual man. Besides this, Sávio usually made use of stigmatised racial and sexuality signs when talking to Luan and other classmates. The first excerpt is an interaction on Facebook. Besides Sávio, Luan also interacts with Carla, Rocha, Marcela e Maria, some of his other classmates. The focus is on how the group understands Luan's performances and on how Luan negotiates particular regimes of truth when recontextualising fragments of Luisa's discourse, which circulate beyond the situated event. In order to avoid the identifications of Facebook participants, we gave the participants different names and their photos and links are not identifiable; therefore, we decided to transcribe the interactions rather than use the printed screen version.

Excerpt 1

- 1 Luan's post: Late afternoon it is time to eat a ham and cheese sandwich and to have some nice drinks.
- 2 [10 likes]
- 3 Carla: what what's up girl you're marvellous; x LOL [1 like]
- 4 Sávio: little nigger girl, tell me the truth you are about to have bread and water
- 5 because your time in the slave quarters is over
- 6 Rocha: LOL
- 7 Marcela: just because I am black, kisses :(
- 8 Luan: I don't give a damn to what you say. My pleasure I am a NEGRO MAN from the slave quarters
- 9 I know that you you you want it
- 10 after that if you want me to I can delete you from the group of my friends on facebook, no prejudice Sávio
- 11 Maria: LOL :-)
- 12 Sabrina: fuck if that means to be doing poorly, what does it mean to be doing well ;)

In this post, Luan decontextualises Luisa Marillac's viral video and recontextualises it in his text, adapting it to the interactional purposes of this interactional event. The video is retrieved by means of the direct citation "nice drinks" (l.1) and this citation points to the following fragment of Luisa's enunciation: "I decided to stay home, in my pool, having some nice drinks!" (l. 3 cf. Introduction). Luan animates his enunciation as if these were his own words and an unaware interlocutor would not manage to distinguish Luan's voice from Luisa Marillac's. In this post, the entextualised enunciation engenders the enactments of transvestite Luisa Marillac's performances and brings about how Luan interacts on Facebook. His enunciation can be analysed as his participation strategy on this social network.

Luan's post received 10 likes until the moment the data were generated (l.2), which draws attention to his interlocutors' positive evaluation of Luan (these interlocutors are not identifiable in the transcription). They therefore align themselves in agreement with Luan's performances. Such a resource seems to mobilise meanings which show how adequate Luan is to this interactional context and signals the comprehension of his post by his friends.

On line 3, we see Carla acting in the evaluation of Luan's identity performances. The post evaluation is constructed by: a) the repetition of " what what's up", with a questioning value; b) the unification of separate lexical items, forming a new word "you're marvellous"; and c) the predicative reference "girl" (1.3). In the context of digital interactions, the use of repetition and the juxtaposition of items forming one single word are frequently used on-line for emphasis. Such cues contribute to the construction of Luan's performances in a similar manner to Luisa's, mainly because the signs "girl" and "you're marvellous" indexically express identity discourses socially constructed as part of the feminine world. The signs mobilised in Carla's words seem to provide a positive evaluation of Luan's semiotic resources in his performances.

In opposition, Sávio's comments (1.4 - 5) seem to bring up a communicative realignment by relocating Luan through the juxtaposition of gender/sexuality and race social identifications¹⁸. Sávio (1.4) initiates his post with the identity sign "little nigger girl", which indicates that Luan belongs to a particular type of a culturally recognised identification. The reference "little nigger girl" positions Luan as a black young man with feminine identifications. This footing is also constructed by the lexical items "bread and water" and "slave quarters", which mobilise stigmatised sociocultural routes. These are based on a supposed racial origin, which positions Luan as related to slavery and heavy labour. Besides this, the item "little" in "little nigger girl" provides Sávio's enunciation with an ironic and derogatory footing in relation to Luan's performances and contributes to the construction of a mockery frame, which signals the negotiation of power relations in this social interaction.

By positioning Luan as black and effeminate, Sávio makes use of signs with a high degree of stability in Brazilian society and which relationally contributes to the construction of his own identity performances as that of a white heterosexual man. We then see that Sávio produces pejorative alignments in relation to Luan's entextualisation and performances. Therefore, the indexical links to the references "little nigger girl", "bread and water" and "slave quarters" provide the citation of Luisa's text with a specific direction. While the mobilised signs in Luan's post and on Carla's comment (1.3) seem to value Luan's performances, in Sávio's comment the indexicalities point to another direction: that of stigmatised and derogatory meanings.

When replying to this evaluative post through the assertion "My pleasure I am a NEGRO MAN from the slave quarters" (1.8), Luan makes recourse to identity-semiotic resources socially naturalised in Brazil, which project for himself an identification which points to the masculine gender. The items "NEGRO" in capitals, indicating a high pitch tone, together with "slave quarters", emphatically signal the stylised dimensions of Luan's gender/sexuality and race performances. In this assertion, Luan accepts the identity sign Sávio projected on him, but instead of putting himself in an inferior position, Luan positions himself positively through the phrase "My pleasure" (1.8).

¹⁸ For a deeper comprehension of the intersectionalities of gender, sexuality and race performances, see Guimaraes and Moita-Lopes (2016).

Further, by beginning line 8 with “ I dont give a damn to what you say”, Luan projects a footing of a non-victimised person in relation to Sávio’s possible derogatory practices.

Within this struggle frame, Luan repositions Sávio’s participation by entextualising the lyrics of the Funk¹⁹ “I know you you you want it” (l.9). With the help of Melon Woman’s voice, he creates an association between the provocative alignment projected by Sávio and homoerotic gender/sexuality identifications, suggesting an alleged sexual desire on the part of Sávio for Luan. Strategically, the text entextulised by Luan seems to de-legitimise Sávio’s vigilance over Luan, by challenging Sávio’s heteronormative performances.

As regards this struggle, the interactions between Luan and Sávio are also evaluated by other participants, suggesting a positive alignment in reference to how Luan responds to Sávio’s provocative footing. When Maria (l.11) makes recourse to a semiotic resource, which indicates laughter (LOL), and to the sign “:-)” (which signals agreement), she seems to be in favour of Luan’s comment. The same is also true of Sabrina (l.12). When she says “fuck if that means to be doing poorly, what does it mean to be doing well”, she entextualises a fragment of Luisa Marilac’s enunciation (Fuck, if I am having a bad time! what people mean when someone is having a good time, right?) – cf. Introduction), which, in this interactional context, implies that she is supportive of Luan’s post.

Thus, as a part of the struggle for the entextualisation of Luisa’s text in the construction of his performances on Facebook, Luan renegotiates discourses of gender/sexuality and race on the basis of stereotypical discourses of social identifications. Luan seems to be aware of the interactional game between knowledge/power relations which construct rigid identifications for our bodily lives. He engages himself with signs which produce the effects of specific identifications: blacks in the slave quarters, entextualising racial and sexual intersubjectivities at the translocal level (which come from stigmatised signs, regimenting repetitive historical meanings) and, at a local level, he makes use of these meanings in his favour on Facebook interactions, contesting the footings projected by Sávio. This combination of levels point to performative and metadiscursive struggles in action in the communicative events, which can only be studied by relating the most local with translocal meanings.

Next we follow another travel of Luisa’s video into another interactional encounter. The excerpt again presents an interaction between Luan and Sávio, initiated after a classroom task developed by Luan, in a Philosophy class. The teacher has asked students to interview different professionals and inquire them about ethics and moral values. Luan interviewed Lohana, a person who identifies herself as a transvestite, This interactional moment in classroom consisted of frames which signalled reprobation alignments of the interview with the transvestite. In this regard, the indexical evaluative signs in the discursive event pointed out that Lohana’s voice was not legitimate in this

¹⁹ “Do you want it?” (also known as “You, you, you, you, you, you, you want it?”) is a Funk by the Brazilian Funk female singer Melon Woman.

interactional practice. However, Luan does not allow himself to be beaten and again meta-discursive struggles are brought into the interaction.

The excerpt below presents another section of an interaction between Luan and Sávio. In the excerpt, we again draw attention to how Luan renegotiates his texts, with a focus on a quotation by Luisa Marilac and on the interactional and identity consequences of this entextualisation. After the presentation of his interview with the transvestite, Luan goes back to his desk and talks to Sávio, projecting a non-institutionalised frame on their conversation, which occurs in parallel to the institutional frame of a classroom oral presentation.

Excerpt 2²⁰

- 59 ° Sávio: you keep trying to justify your gayness @@@@° ((he gazes at Luan while he talks))
- 60 Luan >°you keep saying I am a faggot because of this?° <=
- 61 Sávio: =I'm kidding
- 62 Luan: I just think that birds of a feather shouldn't provide opposite points of views
- 63 [I know that you know transvestite and gay slang very well°]
- 64 Teacher: [Talita and João. it is your turn now?]
- 65 Sávio: that doesn't make any sense, everybody is familiar with this kind of slang
- 66 Bruno: hum.: I am not familiar with any gay slang @@@@
- 67 ((he speaks to Sávio while standing up))
- 68 Luan: people know that you like to have some nice drinks! ((class laughs))

In this interaction, we see Sávio interpelating Luan's performances at the end of Luan's presentation. In line 59, the phrase "to justify your gayness" creates an apparent relationship between Lohana's identity performances and gender/homoerotic identifications. Sávio's alignments seem to evoke existing gender expectations, which relate Lohana's entextualised enunciation to Luan's alleged homoerotic practices. Besides this, his alignments point to meanings which deligitimise Lohana's voice and, consequently, Luan's presentation in this interactional context.

In line 60, in his reply to Sávio, Luan projects a questioning footing on this supposed correlation between Lohana's voice and his own gender/sexuality performances when he says ">°you keep saying I am a faggot because of this? °<". Immediately afterwards, in an almost simultaneous turn, Sávio re-frames that interactional moment as a joke when he says "I'm kidding". This enunciation brings about an indexical link which

²⁰ Please, see transcription conventions in Annex 1.

locates the stigmatising act, “gayness”, within the ambiguous meanings of a joke (which is favoured by the interlocutors’ proximity as classmates). This ambiguity may strategically mitigate a more aggressive positioning on Luan’s part.

Nevertheless, such indexicality seems not to be ratified by Luan, who is going to contest Savio’s words, when he says that “birds of a feather shouldn’t provide opposite points of views” (l.62). With this statement, Luan establishes a symmetrical relationship between himself and Sávio, making use of an idiomatic expression “birds of a feather” to position Sávio in accordance with his own homoerotic performances. In this game, Luan performatively produces the effect of a specific identification for himself and for Sávio: gay young men. Next, in line 63, when Luan states that “[I know that you know transvestite and gay slang very well], he also positions Sávio in association with the trans universe and gay identifications.

In the meaning negotiation game, Sávio replies that “that doesn’t make any sense, everybody is familiar with this kind of slang” (l.65). In this fragment, Sávio seems to defend himself as a heterosexual man, re-framing the situation and protecting himself against the indexical signs which the idiomatic expression “birds of a feather” presupposes in that interactional context. However, Luan again does not accept Sávio’s disagreement and in line 68 directly relates Savio’s footing with Luisa Marilac’s performances. Luisa’s enunciation is recontextualised in line 68 by the citation “nice drinks”. Such quotation is used as an identity-semiotic resource which indexes the transvestite’s identifications.

As regards the negotiations of the identity performances, such a citation is a cue which positions Sávio within the same identity borders as of Luisa Marilac’s. This fact challenges the ontological security of the heteronormative masculinity identifications often enacted by Sávio in school interactions. Strategically, Luan dislocates the focus on differences, de-stabilising the authority of this hegemonic other, who speaks from an apparently heteronormative space. At the level of the negotiation of legitimate meanings in classroom, the recontextualisation of Luisa’s enunciation is also part of the contestation game of indexical signs which the enunciation “to justify your gayness” entails. In sum, the analysis of this excerpt allows to see that the dispute for the construction of valid meanings in the classroom context takes place in the recontextualisation of identity signs crystallised in time, which are in friction with situated performances.

A final word

We believe this article provides ways of considering relevant issues in connection with the mobility of semiotic resources and the construction of meaning in contemporary life. First, the analysed interactions make clear a type of flux which is typical of contemporary interactions. Mobility here was accounted for through a multisited ethnographic methodology (MARCUS, 1995). One of the authors followed the trajectories

of texts about gender, sexuality and race, in which Luan (the focal participant) took part. The study of how textual trajectories are intensified in contemporary life was made possible through the ethnographic observation of: a) how participants recontextualise semiotic resources in their everyday interactions, based on Luisa Marilac's text and on how she makes recourse to a trans universe stylisation to create her own video; and b) the reception of her video in Luan's interactions with his friends on-line and at school.

Secondly, Luan's interactions with his classmates entextualise other voices and words, which are not mere copies of what was said. As Pennycook (2010) points out, when repeating what was said before, there is also room for creativity and re-signification. In the analysed scenes, when Luan and his colleagues are recontextualising Luisa Marilac's video, they are shaping this discourse in accordance with her communicational purposes. Obviously, the entextualisation of Luisa's video accounted for indexical signalling which goes beyond textual, semantic and linguistic borders. When these texts travel from an event to another and are recontextualised, they locally produce historical, social and identity meaning relationships. In the excerpts, Luan's performances are constrained by a white and heterosexual matrix, by means of racist and homophobic discourses which populate Sávio's comments. In the interaction with these discourses, meta-discursive struggles took place in the power relations between Luan and his classmate, both on-line and in classroom. Strategically, by contesting the derogatory sites in which Sávio localised him, Luan entextualises crystallised race and sexuality signs and makes use of them in his own favour when interacting with Sávio. Such struggles draw attention to how his discursive entextualisations are productively and agentively used through a micropolitics which destroys the hegemonic positions occupied by this classmate.

This perspective implies the need to understand both oral and written texts as links in the discursive communicative chain of a particular field (BAKHTIN, 2003 [1953], p.296). The gains of this view for language studies are clear, for they dislocate the focus on language as pure, transparent and separate from everyday social life to the study of the performative and ideological effects of these linguistic units which are grouped together in texts (MOITA-LOPES, 2013; 2015). Such an understanding of linguistic analysis from this point of view brings about a theoretical, analytical and methodological displacement from a "linguistics of system" to a "linguistics of mobility", accounting for multiple chains of entextualisations and text trajectories.

Such a view orients contemporary studies in the field of linguistic anthropology (BAUMAN; BRIGGS, 1990; SILVERSTEIN; URBAN, 1996) and sociolinguistics (AGHA, 2005; 2007; BLOMMAERT, 2005, 2010; BLOMMAERT; RAMPTON, 2011). In Brazil, the research by Guimaraes and Moita-Lopes (2016), Fabrício (2013; 2015), Silva (2014), Melo & Moita-Lopes (2014) are some examples which take this perspective into account. These are theoretical-analytical and also political positionings which point to the entextualisable, performative and indexical interpretation of signs and texts. However, this logic, which is still little explored in the field of language studies, claims for other studies which focus on different analytical aspects of the

contemporary mobility of texts, mainly as regards the struggles for recontextualisations in the construction of identifications in social life.

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- *RESUMO: Com base em um estudo etnográfico, analisamos a trajetória de um texto viral em diferentes eventos comunicativos, neste artigo. Busca-se refletir sobre os processos de recontextualização do vídeo de Luisa Marilac, uma mulher trans que se identifica como travesti, na construção das performances identitárias de Luan, um jovem negro e de identificações homoeróticas, em interação na web 2.0 e na sala de aula. O foco aqui é colocado na linguagem-em-movimento enquanto ação sociointeracional, perpassada por valores indexicais e que apontam para fenômenos sociais mais amplos. Este trabalho é guiado pelos pressupostos teóricos da performance, da entextualização e da indexicalidade. Tem como método de pesquisa a etnografia multissituada. Nas análises, buscou-se observar como fragmentos do vídeo de Luisa Marilac eram recontextualizados nas interações de Luan, com colegas de sua sala de aula e da rede social Facebook. As análises apontam que o estudo da circulação de um texto oferece possibilidade diferenciada de acesso aos processos de identificação, às hierarquizações e às relações de poder que constituem as práticas interacionais contemporâneas.*
- *PALAVRAS-CHAVE: Recontextualização. Performances Identitárias. Indexicalidade. Etnografia multissituada.*

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Annex 1

Adapted from Bucholtz (2000)

[]	overlap beginning and end
CAPITALS	louder talk
> talk <	speeding up the pace
(())	transcriber comment
<u>underline</u>	emphatic stress or increased amplitude
:	length
,	slightly rising tone a sense of continuation
?	end of intonation unit; rising intonation
!	end of intonation unit; emphatic falling intonation
.	end of intonation unit; falling intonation
° talk °	degree sign
talk =	latching (no pause between speaker turns)
@@@	laugh

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IDEOLOGY, PRODUCTIVE POWERS AND SIGNIFICATION PROCESSES: THE WORD *SELFIE* AS AN IDEOLOGICAL SIGN

Luiz Rosalvo COSTA*

- **ABSTRACT:** Based on the assumption that the foundations of the linguistic theory of the Bakhtin Circle (which results from the combination of Voloshinov, Medvedev and Bakhtin works) are constructed in dialogue with theoretical traditions among which Marxism plays an important role, this paper discusses aspects related to the way the understanding of this group about the status of relations between infrastructure and superstructure is linked to the concept of ideological sign. Considering that and using mainly the notions of reflection and refraction, the paper focuses on the word *selfie*, trying to analyze it as a sign in which ideas, meanings and values are condensed, associated with reorganization processes of the productive forces in the contemporary world and, in this line of reasoning, the paper proposes the conclusion that this word, illustrating exemplary propositions of the Circle about the linkages between the socio-economic life and the prevailing ideas in society, can be seen as a territory of signs in which fundamental features of the contemporary society are reflected and refracted.
- **KEYWORDS:** Ideology. Discourse. Bakhtin Circle. Ideological sign. Infrastructure. Superstructure.

Introduction

The line of thought developed by the group known in the Western world as the Bakhtin Circle¹ has become, in the past few years, one of the most important theoretical sources for studies interested in discourse as an activity of language constituted *in* and *by* interaction processes developed in the scope of historically situated social practices. Since the foundations of this line of thought were formed in a dialogue with different

* USP – University of São Paulo. Dialog – Research Group and Group of Discourse Studies. São Paulo – SP – Brazil. 05508-900 – luizrosalvo@uol.com.br

¹ There is not enough room here to approach the controversies related to the Circle, which extend from the authorship of the so-called disputed texts to the effective existence of a circle around Bakhtin and the true role he played in this group. For the benefit of clarity, it seems fit to register that, in consonance with the positions held by Costa (2014), the works of Medvedev, Voloshinov and Bakhtin are assumed in this article as individual productions that are related to shared preoccupations and a common background conception of language. From this perspective, the authors of the works herein discussed are considered as those under whose name they were originally published. For a deeper discussion on the aforementioned controversies, see, among others, Sériot (2010), Bronckart and Bota (2012), Vasilev (2006) and Morson and Emerson (2008).

traditions present in the Russian intellectual context of the beginning of the 20th century, my goal in this article, which resumes and elaborates on propositions made by Costa (2014), is to discuss the ‘dialogue’ of the Circle with the Marxist tradition and explore the idea that one of the main aspects of the language conception proposed by the group (in which the ideological nature of the sign is very important) is based upon a certain understanding of the relations between, on the one hand, means and processes of production and reproduction of material existence and, on the other, ideas, images, values, meanings and senses circulating in the many spheres of social life; in other words, that which, in Marxist tradition, is known as base and superstructure. Going along the lines of analyses suggested by this conception, I afterwards focus on the word *selfie*, with the purpose of showing aspects in which this word, precisely in its quality of ideological sign, interacts with the question of relations between the productive powers and the signification processes in society.

The science of ideologies and its dialogue with Marxism

The presence of the *base-superstructure* subject in the work of the Circle is particularly perceptible in the texts written by Medvedev and Voloshinov, and blatantly apparent in the fact that the work they develop in the 1920s is guided by the construction project of a science of ideologies. This project, in conformity with the agenda of the Institute for Comparative History of Literatures and Languages of West and East – ILIaZV² –, to which both scholars belonged, is clearly explicit in Medvedev’s case in *The Formal Method in Literary Scholarship* (MEDVIÉDEV, 1978 [1928]). As for Voloshinov, allusions to this purpose can be found in, for example, the *Rapport d’activité à L’ILJAZV pour l’année académique 1927-1928* (VOLOSHINOV, 2010 [1928]) and in *Marxism and the philosophy of language* (VOLOSHINOV, 1973 [1929]).

Although they have incorporated into their conception of language a personal understanding of the ideological phenomenon, which deviated in certain aspects from orthodox Marxism, one of the initial references for their work is the way Marxist tradition (disseminated in Russia, at that moment, mainly by the works of authors such as Plekhanov (1978 [1908]; 1987 [1897]) and Bukharin (1970 [1921])) perceives the relation between systems of ideas, values and meanings (moral, philosophical, esthetic, scientific, religious, etc.) and the socio-economic reality, or, in other words, between society’s *ideological superstructures* and *material base*.³

² Research institute from Leningrad, where, during the 1920s, many linguistic and literary studies were produced and where, besides Medvedev and Voloshinov, researchers such as Boris Eichenbaum, Boris Tomachevski, Vladimir Shishmarev, Viktor Zhirmunski, Lev Shcerba and Lev Iakubinski worked. For the importance of the institute in the Soviet intellectual scenery, see Brandist (2006).

³ Connections between the work of the Bakhtin Circle and Marxist authors such as, for example, Bukharin, Plekhanov and Lukacs, served as an object of interest for many scholars, among which Brandist (2000; 2002) and Tihanov (1998; 2000). For the relations between the Circle and Marxism considered from the dichotomy “primary genres-secondary genres”, it is worth verifying Grillo (2008).

Deference to this tradition is stamped right in the first few pages of *The Formal Method in Literary Scholarship* (1928), where Medvedev presents the theoretical frame to which the proposal of a science of ideologies affiliates itself:

The bases of the study [science]⁴ of ideologies (in the form of a general definition of ideological superstructures, their function in the whole of social life, their relationship to the economic base, and some of their interrelationships as well) have been profoundly and firmly established by Marxism (MEDVEDEV, 1978 [1928], p.3).

Further on, incorporation to the Marxist canon is reaffirmed when, reiterating one of the basic principles of this canon, Medvedev emphasizes the idea that forms of consciousness are determined by material existence and sustains that the ideological environment

[...] is the realized, materialized, externally expressed social consciousness of a given collective. It is determined by the collective's economic existence and, in turn, determines the individual consciousness of each member of the collective (MEDVEDEV, 1978 [1928], p.14).

In the same text, however, Medvedev indicates the Circle's detachment from positions held by the orthodoxy and refuses the idea that this determination occurs in a mechanical way and that, therefore, the superstructure is a direct reflection of the base. In his opinion,

Marxists often do not fully appreciate the concrete unity, variety, and importance of the ideological environment, and move too quickly and too directly from the separate ideological phenomenon to conditions of the socioeconomic environment. This is to lose sight of the fact that the separate phenomenon is only a dependent part of the concrete ideological environment and that it is directly determined by this environment in the most immediate way. It is just as naïve to think that separate works, which have been snatched out of the unity of the ideological world, are in their isolation directly determined by economic factors as it is to think that a poem's rhymes and stanzas are fitted together according to economic causality (MEDVEDEV, 1978 [1928], p.15).

A similar opinion to Medvedev's is held by Voloshinov, who dedicates the entire second chapter of *Marxism and the philosophy of language* (1929) precisely to the

⁴ I insert the word *science* in square brackets to indicate that, in this paper, I follow the understanding of the translators Ekaterina Vólkova and Sheila Grillo (MEDVIÉDEV, 2012), for whom the term *hayka*, used by Medvedev in the original text, should be translated into Portuguese as *ciência*.

examination of the “Concerning the Relation of the Basis and Superstructures”. Here, just as Medvedev had done, Voloshinov also assumes the Marxist references as a parameter and, further developing propositions that were already present in *The Formal Method in Literary Scholarship* (1928), rejects the idea that relationships between base and superstructure can be explained by mechanical causality. In his view, an adequate understanding of those relationships must consider the specificities and mutual influence of different ideological spheres, in which, under the action of different mediations, the conditioning for the base is reflected and refracted.

Thus, Voloshinov turns the Marxist epistemological matrix into the main interlocutor for the formulation of his propositions regarding how language dialogues with the problem of relations between production and reproduction methods of socio-material existence and the ideological superstructures. At the same time, following the example of Medvedev, he does not shirk from pointing out his detachment from orthodox Marxism in some crucial aspects. Firstly, by signaling to the conditioning reciprocity between base and superstructure.⁵ Secondly, by stating that the economic structure’s determinations not only are reflected, but are also refracted in the sign.

This is a fundamental aspect in which the Circle marks its vision on ideology and signals to the uniqueness of its understanding in regards to the controversial dichotomy base-superstructure, which, initially employed by Marx and Engels to fight off idealism (which attributed to ideas the main role in historical processes) and to sustain the determining character of material existence and productive relations in configuring the social whole, became in ulterior developments an excessively schematic and reductionist model of society description, understood, through the mechanical application of this model, as a linear and vertical reality constituted by two overlapped levels or layers: a material base and, above and after it, an ideological superstructure that would be the later a *reflection* (inverted or not) of the relationships kept at base level. Such a path, as Williams (1977, p.59) points out, ended up weakening the critical potential of Marx’s construct and, by succumbing to the “naïve dualism of ‘mechanical materialism’”, lost sight of the explanation of reality as a totality in which ideas and consciousness, albeit determined by socio-material existence, are also, simultaneously and indissolubly, components of this existence.

One of the ways in which this reductionism gained importance was through the tendency of perceiving the correspondences between the superstructure phenomena and the base elements in the form of resemblances. Examples of this procedure can be found even in the work of great Marxists, such as Bukharin (1970 [1921], p.194) (in the passage in which he compares the separation of body and soul, in the religious sphere, to the separation between directors and executors, at the factory production level), and Plekhanov (1978 [1908], p.66) (when he states that “Descartes’s philosophy reflects

⁵ This understanding is present in the text, for example, in the following passage: “The problem of the interrelationship of the basis and superstructures – a problem of exceptional complexity, requiring enormous amounts of preliminary data for its productive treatment – can be elucidated to a significant degree through the material of the word” (1973 [1929], p.18-19).

very vividly the needs of economic evolution” or that “the intellectual movement’s turn takes a parallel direction to the economic development’s and social and political development’s turn, being also conditioned by what preceded it”).

In critical dialogue with this tradition, the work of the Circle preferred to explore elements of Marxism without necessarily adhering to the mechanical inclinations of some of its branches and, with respect to relationships between the socio-economic reality and the ideological superstructures, this was revealed, for example, in the understanding that the determinations of the first over the latter occur not only through *reflexive* operations, but also *refracting* ones. With such a perspective, to perceive the ways in which this happens is precisely one of the tasks of the study of ideologies:

Looked at from the angle of our concerns, the essence of this problem comes down to *how* actual existence (the basis) determines sign and *how* sign reflects and refracts existence in its process of generation (VOLOSHINOV, 1973 [1929], p.19).

It is in this framework that, during the 1920s, the Circle’s understanding of the relations between base and superstructure will build close ties to its conception of *ideological sign*.

Ideological sign and social psychology

In disagreement with the dominating position in the most divulged form of Marxism, the Circle proposes an original way of understanding the relations between base and superstructure. By associating the notion of *reflex* with the idea of *refraction*, the group conceives society’s ideology as an array of meanings and senses materialized in sign-objects and in concrete *utterances* in which the determinations emanated from society’s economic and political structures are reflected and refracted.⁶

Being inserted into discursive and social practices in different spheres of activity and communication, these sign-objects and concrete utterances are, consequently, territories in which (under the action of diverse mediations, for instance the mediation of discursive genres) the negotiations, disputes and, consequently, the power relations manifest themselves, in a reflected and refracted manner.

One of the original aspects of this conception resides precisely in the fact that the sign (and ultimately, the utterance) is regarded as an inherently conflict-ridden terrain, since the material reality (the being) that manifests itself in it is the dialectic result of a process of contradictions and antagonisms. In Voloshinov’s (1973 [1929], p.23) words:

⁶ For a detailed argument on the ideas regarding *reflection* and *refraction* in Russia in the beginning of the 20th century, see Bondarenko (2008).

Existence reflected in sign is not merely reflected but refracted. How is this refraction of existence in the ideological sign determined? By an intersecting of differently oriented social interests within one and the same sign community, i.e., by the class struggle.

According to this perspective, the sign-objects and the utterances in which and through which ideology is constituted are also arenas where, somewhat differently, social struggles and disputes between society's opposing positions take place.

Here we also see perfect harmony with the argument developed by Medvedev, who, in *The Formal Method in Literary Scholarship* (1928), states:

Let us imagine that two inimical social groups have at their disposal the same linguistic material, absolutely the same lexicon, the same morphological and syntactical possibilities, etc.

Under these conditions, if the differences between our two social groups arise from important socioeconomic premises of their existences, the intonation of one and the same word will differ profoundly between groups; within the very same grammatical constructions the semantic and stylistic combinations will be profoundly different. One and the same word will occupy a completely different hierarchical place in the utterance as a concrete social act.

The combination of words in the concrete utterance or the literary performance is always determined by their value coefficients and the social conditions under which the utterance is produced (MEDVEDEV, 1978 [1928], p.123-124).

Moving even further on this line of thought, Voloshinov believes that, just like ideology, the sign (and, ultimately, the utterance) gains its form not as a mere representation (or reflection) of reality, but as a domain in which the image of reality that is projected is a disputed and negotiated image, riddled by struggles and conflicting appreciative accents, and, for this reason, a refracted image, virtually transformed.

Another aspect that is equally important to Voloshinov in regard to the base-superstructure relation is the role enacted by mediations, among which social psychology deserves to be highlighted; already present in Plekhanov's and Bukharin's systematization, it is understood as a diffused array of beliefs, "fragmented notions", "disperse ideas", "unthought-of values", "ways of thinking", "established opinions", "tastes", "diverse judgments", "unthought-of representations" (BUKHARIN, 1970 [1921], p.244), which are not yet organized in the established ideological systems (moral, science, philosophy, religion, etc.).

So, as we can see, for these authors there is a contiguity and implicational relation between social psychology and ideology: the latter is a deputation of the former. In this sense, Bukharin (1970 [1921], p.253, emphasis in the original) says:

Social psychology is, in a certain way, a deposit for ideology (...) We saw in the beginning of this paragraph that ideology becomes distinct because of a larger systematization of its elements, that is, of thoughts, feelings, sensations, images etc. What does ideology systematize? It systematizes that which has been little or not at all systematized, that is, social psychology. *Ideologies are the crystallization of social psychology.*

Almost the same conception appears in Voloshinov, to whom social psychology, also called *behavioral [life] ideology*,⁷ maintains an organic relationship with ideological systems. One difference worth mentioning, as stated by Tihanov (1998), is that, while Bukharin seems to concede a role of superiority to ideology, diminishing social psychology's relevance, Voloshinov bestows on the latter great importance, considering it a vital nurturer of established ideologies. In a reasoning that recaptures and, at the same time, surpasses Bukharin's, he sustains that

[...] the established ideological systems of social ethics, science, art, and religion are crystallizations of behavioral [life] ideology, and these crystallizations, in turn, exert a powerful influence back upon behavioral [life] ideology, normally setting its tone. At the same time, however, these already formalized ideological products constantly maintain the most vital organic contact with behavioral [life] ideology and draw sustenance from it; otherwise, without that contact, they would be dead, just as any literary work or cognitive idea is dead without living, evaluative perception of it (VOLOSHINOV, 1973 [1929], p.91).

Therefore, in regards to the way Voloshinov conceives relations between base and ideological superstructures, social psychology (or life ideology) is of capital importance because, "on one side, it links up directly with the processes of production; on the other, it is tangent to the spheres of the various specialized and fully fledged ideologies" (VOLOSHINOV, 1973 [1929], p.14).

In this condition of intermediary domain, it is the place where the great processes and movements of ideas are conceived, later to be organized and formalized in established

⁷ In Voloshinov's own words: "[...] we may say that behavioral [life] ideology in our conception corresponds basically to what is termed 'social psychology' in Marxist literature" (1973 [1929], p.91). I insert the word *life* in square brackets to indicate that here I follow the understanding of Tihanov (1998), for whom a more appropriate translation for the original Russian construction *жизненная идеология* would be *life-ideology*, marking, thus, the echoes of *Lebensphilosophie* in the ideology conception explored in *Marxism and the philosophy of language* and in later works of Bakhtin, such as *Discourse in the novel* (1934-35) and *Rabelais and Folk Culture of the Middle Ages and Renaissance* (1940).

ideological systems. This is where we can find the embryonic forms of senses and meanings that will build up until they crystallize into ideas, values and patterns established in society. “Chit-chats”, “exchange of opinions”, accidental interactions and other modes of daily life communication are, according to Voloshinov, the raw material, the submerged forms of continuous ideological creation. It is this type of communication that accumulates “the barely noticeable shifts and changes that will later find expression in fully fledged ideological products” (VOLOSHINOV, 1973 [1929], p.20).

The importance of word and the method for studying ideological signs

Understanding the ways in which the socio-economic structure relates to the ideological universe, without forgetting to consider life ideology’s mediation and the processes of reflection and refraction of the being in the sign, is, therefore, one of the basic tasks of the science of ideologies and implies in certain conditions and procedures. To begin with, we should not ignore the fact that the sign is a result of struggle and negotiation procedures between socially organized and interacting individuals, reason why, according to Voloshinov, its forms (of the sign) “*are conditioned above all by the social organization of the participants involved and also by the immediate conditions of their interaction*” (VOLOSHINOV, 1973 [1929], p.21, emphasis in original).

Thus, changes in the individuals’ sociomaterial organization will be felt in the circulating signs. According to Voloshinov (1973 [1929], p.21),

[...] only so approached can the problem of the *relationship between sign and existence* find its concrete expression; only then will the process of the causal shaping of the sign by existence stand out as a process of genuine existence-to-sign transit, of genuine dialectical refraction of existence in the sign.

The direction for this work of comprehending determination processes of the sign by the being, that is, by the sociomaterial existence, is not previously at hand. It is a construction, to which Voloshinov suggests a few steps, some “methodologic prerequisites” (VOLOSHINOV, 1973 [1929], p.21). Firstly, he says, “*ideology may not be divorced from the material reality of sign*” (VOLOSHINOV, 1973 [1929], p.21, emphasis in original), positioning it, as done by idealist subjectivism, in the level of individual conscience, or in any “other vague and elusive regions” (VOLOSHINOV, 1973 [1929], p.21). Secondly, it is necessary not to separate the sign “*from the concrete forms of social intercourse*” (VOLOSHINOV, 1973 [1929], p.21, emphasis in original), that is, always consider it in the midst of a historical and socially situated system of communication, out of which the sign is no more than a physical object. Thirdly, it is indispensable not to separate the communication and its forms from the material basis (VOLOSHINOV, 1973 [1929], p.21).

The necessity of not separating signs from communication processes in which they are situated is a recurrent topic in Voloshinov's argumentation and strengthens the idea that sign-objects and concrete utterances are important bonds of a great network, produced and put into circulation in the midst of society's discursive flow and communication chain. It is in this framework of social communication network that verbal interaction occurs, with the consequent production and circulation of utterances. Verbal communication, as Voloshinov says in his text *La structure de l'énoncé*, from 1930, "is not but one of the many forms of becoming of the social community, and where, at discourse level, the (verbal) interaction occurs" (VOLOSHINOV, 1981 [1930], p.288).⁸ And, further on, in the same text: "*the true essence of language is the social event that consists of a verbal interaction and that gains form through one or more utterances*" (VOLOSHINOV, 1981 [1930], p.288, emphasis in the original).⁹

As he indicates in *Marxism and the philosophy of language* (1929), once more, in this text from 1930, Voloshinov proposes an understanding of utterance production focused on its relationship with the base; and, reproducing, *mutatis mutandis*, the five-stage model applied by Plekhanov,¹⁰ presents a scheme through which the utterance (the concrete unit of discursive communication) should be studied. At the basis of this scheme is the economic organization of society. On top of this foundation, we find, on one level, the relationships that form social communication and, on another, verbal interaction. Next come the utterances and, lastly, language's grammatical forms.

Since the utterance is the main territory of reflection and refraction of the conditionings of society's material organization, it is not surprising that the word is granted great importance. Not, of course, to the word as it appears in the dictionary, but to the word-utterance. On this matter, we may notice a great convergence between authors, including Bakhtin, who, in his *Problems of Dostoevsky's Work*, from 1929, proves to be in complete acceptance of the positions held by Medvedev and Voloshinov, by stating:

The word is not a thing, but the eternally moving, eternally mutable environment of social exchange. It is never enough to one voice alone, one lonely conscience. The life of the word is in the passing from mouth to mouth, from one context to another, from one social group to another, from one generation to another [...] This is why the position of a word between words, the many ways in which someone else's word can be understood and the different reactions it may produce are, perhaps, the

⁸ Original: "[...] *la communication verbale n'est elle-même qu'une des nombreuses formes du devenir de la communauté sociale où a lieu, au niveau du discours, l'interaction (verbale).*"

⁹ Original: "*L'essence véritable du langage, c'est l'événement social qui consiste en une interaction verbale, et se trouve concretisé en un ou plusieurs énoncés.*"

¹⁰ According to Tihanov (1998, p.603), the five-stage model, or *piatichlenka*, is the name of the model used by Plekhanov (1978 [1908], p.62) to describe, in levels, the way a society functions, using the relationship between productive powers and ideological superstructures.

essential problems of a sociology of the word – of every word, here included the artistic word (BACHTIN, 1997 [1929], p.210-211).¹¹

In Voloshinov, the importance of the word is specially highlighted by a series of characteristics that turn it into the ideological sign *par excellence*: semiotic purity, ideological neutrality,¹² participation in human daily communication, possibility of functioning as an interior sign and necessary presence in all conscious human acts. Besides, the word plays a fundamental role in verbal interaction at the social psychology level, that is, life ideology level, because, according to Voloshinov, “the material of behavioral [life] communication is preeminently the word. The locale of so-called conversational language and its forms is precisely here, in the area of behavioral [life] ideology” (VOLOSHINOV, 1973 [1929], p.14).

For its social ubiquity, the word penetrates into all social relationships and, therefore, it

[...] is the most sensitive *index of social changes*, and what is more, of changes still in the process of growth, still without definitive shape and not as yet accommodated into already regularized and fully defined ideological systems. The word is the medium in which occur the slow quantitative accretions of those changes which have not yet achieved the status of new ideological quality, not yet produced a new and fully-fledged ideological form. The word has the capacity to register all the transitory, delicate, momentary phases of social change (VOLOSHINOV, 1973 [1929], p.19, emphasis in original).

Such a characterization is made in a context in which Voloshinov is discussing the connection between the word (as sign) and the question of the relationship between base and superstructure. This is when he asserts that “the material of the verbal sign allows one most fully and easily to follow out the continuity of the dialectical process of change, a process which goes from the basis to superstructures” (VOLOSHINOV, 1973 [1929], p.24).

With this perspective, there is no one better than it, the word, to show us the historical processes that, while related to transformations in the world of productive

¹¹ Original: “*La parola non è una cosa, ma l’ambiente eternamente mobile, eternamente mutevole dello scambio sociale. Essa non è mai sufficiente a una sola voce, una sola coscienza. La vita della parola è nel passaggio di bocca in bocca, da un contesto all’altro, da un coletivo sociale all’altro, da una generazione a un’altra generazione [...] È per questo che l’orientamento della parola altrui e i diversi modi di reagire ad essa sono, forse, i problemi essenziali della sociologia della parola – di ogni parola, ivi compresa quella artistica.*”

¹² According to Voloshinov, word’s neutrality refers to the fact that it can operate as a sign in any role and in any ideological sphere: “The word”, he says, “is not only the purest, most indicatory sign but is, in addition, a neutral sign ... it can carry out ideological functions of any kind – scientific, aesthetic, ethical, religious” (VOLOSHINOV, 1973 [1929], p.14, emphasis in original).

powers and socioeconomic relations, are also felt in the world of ideas and discursive communication in society.

The word *selfie* as an index of contemporary transformations

Based on these theoretical and methodological propositions, this paper aims at focusing on the word *selfie* as a very illustrative sign of the way in which changes in the forms of organizing production are related to alterations in interaction processes and in ethical, esthetic and cognitive references and patterns in effect nowadays.

That such a sign has reached great importance in the communication processes of the contemporary society (and specially in those situated in daily communication) can be testified by the distinction granted to it by the *Oxford Dictionary*, which, in 2013, offered *selfie* the title of ‘word of the year’, justifying this decision based on its overwhelming success: that same year, the frequency with which the word was used went up 17.000%.¹³

In search of its origins, the same dictionary, according to Carpin (2014), traced its use back to 2002, when a man with face wounds caused by a domestic incident took a picture of his own face and published it in an *online* Australian forum and called it a *selfie*. Regardless of this having been or not the first or one of the first uses of the word, the fact is that, since then, both the word and its referent have been closely tied to the interaction processes that progress through the utilization of new information and communication technologies. Therefore, *selfie* cannot be mistaken for *self-portrait*. Albeit sharing familiar ties, the elements of reality to which the signs point at are different. While a self-portrait designates, in general, an image, painting or photograph that someone produces of himself, *selfie* and its referent are essentially phenomena of the contemporary world, indissociable from social, inter-rational and discursive practices that are characteristic of network communication and of virtual environments and technological platforms. It is no accident that its meaning is described by the *Oxford Dictionary* as “a photograph that one has taken of oneself, typically one taken with a smartphone or webcam and shared via social media”.¹⁴ Thus, the very meaning of *selfie* already places the word in a specific historical-social time-space, covering a set of specific traces of this time-space, such as virtuality, technologization, fluidity and online communications.

The morphosemantic structure of the word, which is the concrete basis for this characterization, also reveals important things. Firstly, the morpheme *self*¹⁵ indicates

¹³ See, for example, the following links: <blog.oxforddictionaries.com/press-releases_oxford-dictionaries-word-of-the-year-2013>; <www.bbc.co.uk/portuguese/noticias/2013/11/131119_selfie_oxford_fn> and <www.dn.pt_inicio_globo_interior.aspx_content_id=3540144>.

¹⁴ See <<http://www.oxforddictionaries.com>>. Visited in: 20 apr. 2016.

¹⁵ “A person’s essential being that distinguishes them from others, especially considered as the object of introspection or reflexive action”. See <<http://www.oxforddictionaries.com>>. Visited in: 20 apr. 2016.

that the information in the real world of which it speaks is *one's self*, pointing out to a certain precedence of the *I* in our times. Secondly, the suffix *ie* (also spelled *y*, in the variant form *selfy*) declares that to this *one's self*, which has become a noun, are added semantemes of affectivity and informality,¹⁶ making the word compatible with interaction processes situated chiefly at the daily communication level, domain in which, in the understanding of the Circle, the embryonic forms that may become crystallized ideologies in organized systems are found. Another important aspect that may be inferred from the word's physiognomy is the fact that it is a form used in the whole world in its original language, regardless of translation, which proves that it is a globalized word, typical of a society connected through the intertwining of multiple networks.

Consequently, when the communication situations in which the word is usually employed are considered, the very use of the sign *selfie* already draws forth a set of images, perceptions, ideas and appreciations that are intrinsically tied to the contemporary society. In association with the technological progress and inherently tied to the new ways of building identities and configuring the body through interactions mediated by computers and other technological devices, such appreciations, embedded in the senses that circulate in society's discursive flow, tend to be mainly positive and manifest their principal effects on the subject's feeling of being a protagonist, on the speed and precision of the image-capturing mechanism, on the speed of the communication process and on the feeling of connection and flow through the networks, among others.¹⁷

Therefore, considering the Circle's terms as formulated by Voloshinov, we may, through this characterization, speak of a semiotic constitution that, in many elements of the word, reflects and refracts the society's productive organization, turning *selfie* into a good illustration of the way in which ideology and material existence intertwine and interact in language. Showing the immanently ideological nature of the meanings and senses that circulate in society, the word *selfie* can be seen, thus, as a good example of the links that tie determinations of the economic system to forms of signifying and attributing senses to reality. In it are crystallized elements that are originally associated to the universe of material production and production relations. These elements also act as determining factors in the interaction systems, in socializing forms, in cognitive models, in space-time references and, ultimately, in the ways of understanding and representing human existence that are embedded in the sign-establishing and enunciative practices related to social and economic order that has been shaped in most of the world in the past four or five decades.

In this small word processes are gathered that are unleashed by the vast reorganization of the productive system and that also operate in other domains of society and produce

¹⁶ Affectivity and informality are attested by the fact that this suffix is used, according to the same dictionary, to form diminutives, nicknames and hypocorisms (such as *nightie*, *auntie*, *Tommy*, *foodie*, *Francie*, etc.). See <<http://www.oxforddictionaries.com>>. Visited in: 20 apr. 2016.

¹⁷ On the relationships between information and communication technologies and identity construction forms, as well as the use of images for configuring the body and subjectivities in the virtual world, see, among others, Recuero and Rebs (2013), Sibilia (2004), Lemos (2002), Recuero (2009) and Santaella (2008).

transformations in the creation and circulation of signs and utterances in the most varied spheres of activity and communication. Anchored to the great development of information and communication technologies and to certain forms of appropriation of science and of incorporation of knowledge to economic and social life, these transformations become effective through a discursive production in which the word *selfie* and the interactional practices associated to it represent a very meaningful sample.

With this in view, and going beyond the boundaries drawn by its immediate referent, *selfie* indicates a much broader reality, translated into forms of signifying and producing senses that are conditioned by a set of processes, among which we may highlight:

- The development of forms of labor and production organization that are based on the compression of time and space;
- The consolidation of a productive regime that is fueled by a constant movement of technological innovations;
- The sharp development of microelectronics, telematics, digital technology and wireless communication.
- The intensification of performance and productivity;
- The aggravation of individualism and competition.¹⁸

While it determines the rhythm of productive systems and labor management procedures, and of the time and space that are typical of economic life in these days, this set of processes redefines the levels of control that capital has over social life as a whole and, at the same time, reflects and refracts itself in the production of signs and utterances in practically all levels of activity and communication, and shows itself in a particularly clear manner in parts of the meaning of the word *selfie*, such as:

- Image obtained through high-technology electronic and digital devices;
- Immediate nature of the image-obtaining process;
- Possibility of instantaneous circulation and divulgence of the obtained image;
- Image is destined for virtual interaction processes.

The very semantemic components of *selfie* indicate, as shown above, a very suggestive homology between the characteristics of the interaction processes that the word integrates or refers to and the forms of organizing contemporary economic production, which are also based on the incessant flow of technological innovations, great speed in movements (financial, administrative, material, etc.), the instant nature of

¹⁸ Among several contributions that, dedicated to the study of contemporary society, made it possible to identify these processes, it is worth mentioning: Featherstone (1995), Harvey (2008; 2010), Jameson (1996), Lévy (1996; 1999), Oliveira (2005; 2008), Lipovetsky (2004a; 2004b) and Rubim (2000).

business and transactions of diverse types and the virtualization of spaces, environments and operations.

Very symptomatic of this correspondence between the modes of economic regulation and the references incorporated into sign production is the intensification of individualism that, clearly stamped in the surface of the word by the morpheme *self*, alludes to an organization model that reaffirms the individual's competitive performance as the basic principle of the system's operation, measuring this individual's performance by the capacity of providing himself with the goods for satisfying the requirements of the moment and participating in a web of relationships (also alluded by the meaning of the word) distinguishable for the hypertrophy of the "I" and the transformation of personal events into spectacles, that pervade the interaction processes in virtual platforms and in networks, where *selfies* and other correlated signs move around frantically.

One of the fundamental aspects shown by these correspondences is that, in the contemporary society, the space-time paradigms, the reasoning patterns and the models for action and representation that are peculiar to the type of rationality that has been implanted into the world of economic production, have spread out into the most diverse dimensions of social life in such a way that they determine (in some aspects, to its image and likeness) the esthetic and cognitive references, the ways of thinking and the forms of consciousness, that are consolidated by the meanings and senses that are established and that circulate in utterances produced in different ideological spheres.

Thus embedded in the sign and utterance production, speed, fluidity, contingency, fragmentation, instantaneousness and the demand for performance and productivity (characteristics of economic logic) become 'natural' information of existence and consecrate the undervaluing of behavior and thought that are not subordinated to productive, competitive or performative ends. Expressions of this tendency may be recognized in both daily life and in established ideological spheres (art, religion, law, media, science, etc.), where meanings, practices and values pervade, consolidating an atmosphere of acceleration, anxiety, fluidity and speed, where the determining space-time reference is the *here-now*.

As many other fields, science is also fully struck by this process; this may be seen reflected and refracted in *selfie* chiefly through the technologization aspect, that, semiotically embedded in the sign's content level, alludes to the way knowledge is incorporated into contemporary life. This is mainly characterized by scientific knowledge's subordination to the production logic conducted by the imperative requisites of productivity and technological innovation.

Everything considered, it isn't surprising that discourses attached in some way to the scientific sphere, such as the scientific dissemination discourse, are important fields of reflection and refraction of this entire set of transformations.

Therefore, *selfie*'s notoriety, providing evidence of the role of the word as ideological sign and, consequently, as an index for historical and social processes that are in course, points directly or indirectly to the ways the transformations in forms of organizing

production can be reflected and refracted in the sign and utterance production universe and in society's interaction processes.

Conclusion

What I hope to have achieved in the pages above is, firstly, that, given the strong presence of the Marxist tradition as a main participant in the dialogue that the authors of the Circle (particularly Voloshinov and Medvedev) maintain with the distinct theoretical matrixes that were present in the intellectual environment of the early 20th century in Russia, the conception of language they elaborated carries in it a vision of ideology to which a certain understanding of the relations between society's economic organization and ideas, values, meanings and senses predominant in social life is associated. In this conception, sign-objects and concrete utterances that are produced and circulated in each sphere of activity or socio-ideological communication (religion, moral, law, media, education, science, etc.) and also in daily communication, represent territories in which, under the effect of diverse mediations, the struggles, negotiations and arrangements operated by the powers competing for economic control (it is worth saying, control over production and distribution of wealth) in society are reflected and refracted.

Secondly, following the suggestions offered by this conception in regard to the role played by the word (understood as a sign full of meanings and historically situated), I also hope to have shown that the word *selfie*, endowed with great importance in the interaction processes of contemporary society, can be seen as an extremely representative sign of the way how elements of language relate to forms of organizing production and socio-economic reality in this society, or, in Voloshinov's words, of the way the being reflects and refracts in the sign.

As regards the way how these reflections and refractions project themselves in the sign, it is worth stressing that the interpretation held here is that this happens in such a manner that the senses, perceptions and values to which the word *selfie* is usually associated with (speed, high-technology, instantaneity, the I as protagonist, fluidity, flexibility, etc.) are covered by a positive appreciation of value, the same way they are at the production organization level. The ingredient with a negative changing power, in this case, is the concealment of the struggles implied in the construction of these senses and, consequently, the erasing of the fact that appreciations contrary to these were subjugated, beaten and silenced. The celebration of the victorious meanings amplifies, therefore, the control of the also victorious powers at the level of productive organization and productive relations.

In other words, capital's logic, that, by reorganizing itself, invents and leads to victory new forms of self-valuing, expansion and exploitation of labor, also wins the fight for meanings, stamping an appearance of stability, harmony and unity to historical processes riddled by struggles, victories and defeats.

Consequently, if anything similar to a science of ideologies is still justifiable, one of the goals of such a project could be to try and connect theory to a methodology capable of contributing decisively in making these concealments visible and the silenced voices loud and clear.

ROSALVO, L. Ideologia, forças produtivas e processos de significação: a palavra *selfie* como signo ideológico. *Alfa*, São Paulo, v.61, n.1, p.33-51, 2017.

- *RESUMO: Assumindo o pressuposto de que as bases da teoria linguística do Círculo de Bakhtin (resultante da conjugação dos trabalhos de Volóchinov, Medviédév e Bakhtin) constroem-se em diálogo com tradições teóricas entre as quais o marxismo ocupa papel importante, o presente artigo discute aspectos sobre o modo como a compreensão desse grupo acerca do estatuto das relações entre infraestrutura e superestruturas e articula com a concepção de signo ideológico. A partir daí, apoiado nas noções de reflexo e refração, focaliza a palavra selfie com o intuito de analisá-la na condição de signo em que se condensam ideias, sentidos e valores associados a processos de reorganização das forças produtivas na contemporaneidade e, nessa linha de raciocínio, propõe a conclusão de que esse vocábulo, ao ilustrar exemplarmente proposições do Círculo a respeito dos nexos entre a existência socioeconômica e a consciência social, pode ser visto como um território sógnico no qual se refletem e se refratam traços fundamentais da sociedade atual.*
- *PALAVRAS-CHAVE: Ideologia. Discurso. Círculo de Bakhtin. Signo ideológico. Infraestrutura. Superestrutura.*

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EMBODIED INTERACTION: MULTIMODALITY, BODY AND COGNITION IN THE ANALYSIS OF CONVERSATIONS INVOLVING INDIVIDUALS WITH ALZHEIMER'S

Fernanda Miranda da CRUZ*

- **ABSTRACT:** This article aims to explore, theoretically and analytically, how we construct multimodal interaction spaces, i.e. how an action (verbal or non verbal) is constructed by virtue of an ecology of sign systems (GOODWIN, 2010) structurally different among themselves, but intrinsically related. For this end, we included some theoretical references in the field of Interaction Studies that understand social interaction and human cognition as embodied (*embodied interaction*, STREECK et al., 2011). This discussion is based on the microanalysis of two excerpts from conversations involving Alzheimer's patients. The data were extracted from the *DALI (Alzheimer's Disease, Language and Interaction)* audiovisual corpus. Inspired by videoanalysis research (MONDADA, 2008; KNOBLAUCH et al., 2012), this paper explores the role of the body and gestures in the construction of an interaction space. The analytical focus is on the so-called minimal gestures present in the course of the interaction, and the moments when it is possible to detect a synchronicity between speech and gestures. As a potential contribution, the discussion promoted in this study aims to reflect on a multitude of cognitive resources which are or may be mobilized and analyzed in the construction of face-to-face interaction.
- **KEYWORDS:** Embodied interaction. Gestures. Videoanalysis. Ecology. Body. Cognition. Pathologies.

A brief introduction to the empirical research of pathologies affecting social interaction

Si le face-à-face invente le langage...¹

The overall purpose of this study is to explore the elements at play in an interaction space where the actions are temporally and spatially organized based on collaborative

* UNIFESP – The Federal University of São Paulo. School of Philosophy, Letters and Human Sciences – Guarulhos – SP – Brazil. 07111-080 – fernanda.miranda.cruz@gmail.com.

¹ “If the face-to-face invents the language ...”. Quote from the film *Adieu au langage* (Goodbye to Language, 2014) by French filmmaker Jean-Luc Godard.

work among participants in their face-to-face interactions. These actions involve speech, gestures, body, objects of the physical space, objects of a discursive space, orchestrating the construction of meanings and social actions produced face-to-face. More specifically, I would like to analyze the elements making up the space and the time of the interaction, starting from two excerpts from interactive situations with a common characteristic: in these interactive situations, the participants are affected by clinical disorders like Alzheimer or autism that affect social and mental life in a different way.

Many investigations and reflections within clinical disorders have given us opportunities to review and reframe the boundaries between normality and disease. Here we can mention some Brazilians research and clinical practice studies in which the notion of clinical practice, for example, is assigned a broader meaning, such as Pál Pélbart (2014), on the boundaries between art and philosophy; Kastrup (2007), on the field of psychology; Lier-De-Vito (2005), on the field of psychoanalytic speech therapy; Coudry (1996) and Morato (2013), on the field of language studies, among others. These reflections come from philosophy, arts, sciences, therapeutic practices, the literature and even the very experiences of the individuals with disease conditions. Studies along these lines offer important elements for understanding and reflecting on language, the possible and potential modes of human existence, and the creative forms of reorganization in the face of diseases or disorders.

We know that language is a form of social action. Maybe the same goes for the pathology-affected language, or language-impairing diseases. It is with ‘this language disorder’ that everyday practices are constructed. Added to it is the fact that everyone involved in an interaction relates to ‘this language’ or the conditions laid down by a pathology, and not just the individual affected by the disease. This is the picture that I want to paint here, i.e. to explore the relationship between some of the elements that compose the interaction space cut across by diseases that affect those interactions. This is what I call looking at the minimal, or concentrating on the constant language invention work that we carry out in face-to-face situations.

Looking at the minimal: the example of audiovisual corpora of Alzheimer’s and autism

Part of the reflection brought in this article is the result of previous analyses or observations that I did to conduct up to this point, based on my attempts to constitute and explore audiovisual *corpora* of ordinary social conversation/interaction, especially in the Alzheimer’s or autism’s field. The videoanalysis (MONDADA, 2008; KNOBLAUCH et al., 2012), in general, is dedicated to the development of collections tools, transcriptions, representations and analyses of video-recorded social interactions, from a videographic perspective (KNOBLAUCH, 2012), to make direct reference to the ethnography which turns towards encounters and social situations.

Among the analyses I conducted, special note should be made on some specific language characteristics observed in two audiovisual corpora in Portuguese Language: the *DALI Corpus [Alzheimer's Disease, Language and Interaction]* (CRUZ, 2008; 2015) and the *CELA (Corpus for Language Studies in Autism)*².

Before we proceed with describing the previous analyses, it is worth making an important remark about the study of the pathologies mentioned here, Alzheimer's and autism. In nosological classification or clinical terms, they are not necessarily comparable. However, here they are juxtaposed based on a perspective very different from the clinical-biomedical perspective. In interactions involving person with some kind of pathology affecting language or social interaction, therefore either in Alzheimer's or autism or other diseases, the interaction itself can be constructed without the central presence of verbal language.

In the case of Alzheimer's Disease, when investigating, for example, repetition and echolalia in individuals with Alzheimer's, I could confirm that such repetition and echolalia were present in the language of individuals with Alzheimer's, as commonly described in the clinical, neurolinguistics or clinical linguistics literature (CULLEN et al., 2005; HWANG et al., 2000). But I could also verify that when analyzing these occurrences and their impact on the organization of the interaction and the talk of the co-participant non-Alzheimer, they seemed to point to the fact that also individuals without Alzheimer's, when dealing with those productions, had a particular role in that ecology. Moreover, the arrangement of turns and sequences was orchestrated with those echolalic or deviant productions with respect to descriptors of normal language uses. If, in a way, we are fairly familiar with concepts such as 'pathology-affected language' and 'deviant language', we would perhaps find others such as 'pathology-affected interaction' or 'deviant interaction' quite strange. In some studies, such as (CRUZ, 2010), I could see how echolalic repetition found in the verbal production of a speaker with Alzheimer's, and also in that of the speakers non-Alzheimer, served as environment or substratum for semantic operations or reorganizations of conversational turn-taking. This 'excessive linguistic materiality' of echolalia should therefore be considered, in analytical terms, a component element of the sequentiality, the dynamics of turn-taking,

² The CELA corpus (São Paulo, Brazil) is currently under construction by Caroline Paola Cots in the context of her undergraduate research entitled «*The line of errancy of autism and the method-thinking of Fernand Deligny: where the language is absent, what is there?*», funded by FAPESP (Research Support Foundation of the State of São Paulo, under process # 2014/15206-6). This corpus is an integral part of the Minimal Gestures Project. 'Minimal Gestures' refers to the beautiful work of Fernand Deligny on the modes of existence of autistic children. But 'minimal gestures' is also an invitation to the very investigation of human interactions. The investigators in this project are interested in the minimal, as minimally described. Thus, this research project aims to study the modes of interaction of individuals with autism. This study is based on the construction of audiovisual corpora of individuals in natural environments (institutional or otherwise). In human interaction, the actions are not always organized through one single medium, such as speech, for example, but constructed by the simultaneous use of multiple semiotic resources with very different properties. Our analytical movement implies the acknowledgment of this diversity of semiotic resources used by participants in the interaction, and the investigation of how these resources interact to locally construct an action. The project scope also includes the challenges of multimodal transcription notations and the development of micro-video analyses.

the time and the rhythm (AUER et al., 1999) of that interaction, i.e., creating an ecology from which the interaction environment takes form, with all its component actions.

Another example relates to interactions involving a child with autism, which constitute the CELA corpus. When the verbal production of one of the participants is not present or not central to an interaction, as seen in these interactions, there is a whole reorganization visible in the production of meanings, in which everyone involved takes part, be they speakers with intact linguistics skills or not. There, the bodies, gestures, objects and a multitude of movements, including verbal, establish a time and a space specific to those interactions. Perhaps these nonverbal elements could be considered secondary in a linguistic and interactional analysis of situations in which the role of talk-in-interaction is central to the organization of the interaction. However, in those interactions³, an analysis exclusively based on verbal elements, although possible and productive as shown by our long tradition of linguistic data studies, could be limiting or fail to cast light on important aspects.

Comparing this audiovisual material from the CELA corpus with audiovisual and written productions by Fernand Deligny (1913-1996) on autistic children interacting with others and with the environment, we can see a potential direction of analysis of these interactions. This French thinker is concerned with understanding these interactions not for the absence of verbal language, but for the powerful presence of gestures, body and actions, or, in his terms, for the acting. Deligny, whose work has been organized by Toledo (2007), microanalytically brings to light the minimal gesture, sometimes reflecting a particular communicability or sociability among participants who are sensitive to other semiotic systems and not so tied to the structuring of verbal language.

When observing and trying to carefully transcribe the existing interactive modes involving individuals with autism, we, as researchers, are continuously challenged to resist the temptation of placing verbal language as a central organizer of communication and human interactions. Perhaps it is not by hazard that so much praise is given to the silences in artistic performances, philosophical texts, poems...

One question to be raised when analyzing linguistic impairment would be: if on the one hand we cannot neglect or ignore the importance of describing occurrences and characteristics of the language as affected by certain conditions, on the other, it is intriguing how speakers, either or not affected by disease, relate to the language, and how interactions take place before any and every element integrating a field of relationships (i.e. an ecology). In other words, despite the 'absence of verbal language,' an interaction space exists and is analytically visible (GOODWIN, 2010a,b).

To set our analyses in this direction, we adopt a situated and contingent perspective of social actions (MONDADA, 2002; 2011) as a prism to observe the interactions involving disease-affected participants. In an instance of interaction, the analysis of

³ Although here I am referring to interactions involving individuals with disorders that affect language, the same could be said for interactions involving a complex articulation with the material world, such as interactions in professional environments (workplace studies). In these interactions, the description of actions involving the body and material word is important for understanding the construction of the interaction.

language practices looks at the participants' language in a specific time and place, i.e., the action is situated and contingent to certain conditions. This allows us to assume that if, among the participants, there is one or more individuals with a condition that affects language, that interaction as a whole will be somehow affected, even with regard to the linguistic profile of non-affected individuals. In other words, the diseases here are not isolated as a clinical category but investigated in everyday life⁴.

An analysis in this direction would not be interested in showing, prospectively or exclusively, the descriptive elements particular to the language in use in some specific disease, such as “the language of dementia”, “the language of schizophrenia” or autism, among others. Furthermore, it would not be exclusively intended to highlight the descriptive characteristics of these languages or linguistic and communicative behaviors such as echolalia, repetitions, delays, nonsense, paraphasias, pauses or silences. Nor is the purpose to disregard or neglect the impact of diseases on the language and life of individuals. It would rather be focused on the task of descriptively restoring an ecology of interaction dynamics, taking into account the time, the space, and the elements involved in the actions that make up this certain time and space.

Notes on an ecological perspective, multimodality and embodied interaction

Let us start by trying to understand this notion of ecology of interaction dynamics, as already mentioned here a few times. In general, the notion of ecology is very productive, because it refers to the interaction between living things and the environment. And it implies the idea of systems, levels of organization, networks of interactions, laws and rules, and a complex dynamics of changes, variables and constants at play within the interaction.

We can say that our human actions, including the talk-in-interaction, make up an ecology of signs or signals, structurally distinct from each other, but closely related (GOODWIN, 2010a,b). Thus, individuals construct their interaction spaces in a multimodal way, where multimodal means that an action (verbal or non-verbal actions, linguistic or otherwise) is constructed and completed thanks to the combination of these sign systems structurally distinct from each other. In the 60s, Erving Goffman, in *The Neglected Situation* (1964)⁵, describes what would be a microecological orbit in which social actions are constructed. This part of the text deserves attention and has even been highlighted by some scholars in their publications on multimodality:

⁴ The wording « in everyday life » is a free reference to the book “The Psychopathology of Everyday Life” (FREUD, 2006 [1901]), in which Freud shifts the boundaries between normality and disease through very concrete examples of linguistic behaviors and acts or actions of the speakers.

⁵ GOFFMAN, E. **The Neglected Situation**. *American Antropologist.*, 66 (6, part. 2), p.133-136, 1964. The Portuguese translation can be found in **A Situação Negligenciada** (RIBEIRO; GARCEZ, 2002).

First, while the substratum of a gesture derives from the maker's body, the form of the gesture can be intimately determined by the microecological orbit in which the speaker finds himself. To describe the gesture, let alone uncover its meaning, we might then have to introduce the human and material setting in which the gesture is made. For example, there must be a sense in which the loudness of a statement can only be assessed by knowing first how distant the speaker is from his recipient. *The individual gestures with the immediate environment, not only with his body. So, we must introduce this environment in some systematic way.* Secondly, the gestures the individual employs as part of speaking are much like the ones he employs when he wants to make it perfectly clear that he certainly isn't going to be drawn into a conversation at this juncture. At certain levels of analysis, then, the study of behavior while speaking and the study of behavior of those who are present to each other but not engaged in talk cannot be analytically separated. (GOFFMAN, 2002 [1964], p.15).

The notion of microecological orbit seems fundamental to me. Orbit implies a space in motion, and microecological implies minimal elements in a relationship. With respect to social interactions, Goffman suggests that when speaking occurs, it occurs within a social arrangement (op.cit., p.18). This also tells us that sometimes it does not occur during our actions. What human interactions seem to indicate, as Goffman would say, is that in every situation, a meaning is assigned to different elements that are not necessarily associated with verbal exchanges, such as, for example, body elements, but are still part of a certain form of communication within a social arrangement. Pasquier (2008), when trying to systematize the concept of body in the work of Goffman, and from there investigate the dimensions of corporeality in social relations, stated: "The body speaks. We are forced to deal with it more or less spontaneously in our face-to-face relations."⁶

So if we turn to what constitutes this arrangement, we turn to the joint action (i.e. involving at least two people) of constructing the universe of signs and signals that make up this orbit, this kind of *space in motion*. The notion of joint action evokes the tradition of studies on collaborative actions or processes (CLARK; WILKES-GIBBS, 1986; CLARK, 1992; 2005; TOMASELLO, 2008; 2009; LEVINSON; ENFIELD, 2006, to name a few). As reinforced by authors dedicated to the field of multimodal interaction analysis, such as Goodwin (2010a,b), Erickson (2010), Streeck (2010) and Mondada (2012), among others, an ecology would imply not only the occupation of the same place and time within the interaction, but also the collaborative construction of this environment.

⁶ Free translation by me of the original « Nos corps parlent. Nous sommes obligés de « faire avec » plus ou moins spontanément dans nos relations de « face à face ». Pasquier, S. (2008). Le corps chez Goffman, Quel statut du corps dans la réalité sociale ; quelle réalité sociale au-delà du corps?, *Revue du MAUSS permanente*. Available at <<http://www.journaldumauss.net/?Le-corps-chez-Goffman>>. Visited on sep 28, 2015.

Streeck et al. (2011), for example, while introducing and systematizing research studies of the embodied interaction (op.cit, p.6), consider that the first extract above from the article published by Goffman in 1964 is some kind of presages for the common ground of contemporary research studies on embodied and multimodal interaction.

We know that the talk-in-interaction has been this privileged place for a more thorough and detailed study of the co-construction of social actions. In methodological and analytical terms, the conversation and the system of turn-taking (a universal component of human action, STIVERS et al., 2009), favor a sociological and/or linguistic analytical exercise due to, among other aspects related with their systematization and organization, their possibility of being recorded in audio, transcribed, analyzed and re-analyzed in detail. The conversation tells us a lot about the social organization and how the speakers organize their actions. And on this subject, we fortunately have an important legacy in the field of linguistic interaction studies (to name a few references we have GARFINKEL, 1984; SACKS, 1972, 1992; ATKINSON;HERITAGE, 1984; DURANTI, 1997; and in Brazil, we have, among others, the works of OSTERMANN, 2002; SILVEIRA; GAGO, 2005; GARCEZ, 2006; ALENCAR, 2007; OSTERMANN; OLIVEIRA, 2015, whose analyzes of talk as an action apply to different empirical domains such as interactions in educational settings, medical encounters, call centers, court hearings).

But there is also a range of interaction spaces structurally organized in temporal and sequential terms in which, although talk or verbal language appears as one additional element among many other signal systems, its isolation in methodological and analytical terms could lead us to overlook a number of variables or cues that are central to the understanding of collaborative actions. In this sense, there are quite a few authors/analysts who have been devoted to describing and analyzing social interaction in its multimodal conception, i.e., as a temporal, spatial, body and materially collective organization. We have the pioneering studies focused on the actions that constitute and organize the talk-in-interaction, such as gaze direction (GOODWIN, 1979), hand gestures (KENDON, 1983; GOODWIN, M.; GOODWIN, C., 1986), and overall gestures (GOODWIN, 2007; STIVERS; SIDNEY, 2005; MONDADA, 2004; DUNCAN, 2002). Special note should also be made of the studies that employ a multimodal analysis and, starting from the verbal actions, give very distinct outlines to key notions of the analysis of talk-in-interaction and social interactions, such as turn-taking, sequentiality and indexicality, as pointed out in Mondada (2004, 2013).

Among these authors dedicated to a multimodal dimension of human interaction, we sometimes find some criticism to the sort of logocentrism that sees talk or verbal communication as privileged in the analysis of social interaction. Historically, in the 70s, there seems to have been some lament in the scenario of American research over the artificial separation between verbal and nonverbal behavior, as pointed out by Streeck et al. (2011). This topic could certainly warrant extra attention in our research about interaction in Brazil, and even has important implications on the interaction research agenda; the construction of new empirical fields and studies, and

the practices for transcription and presentation of audiovisual data on interactions, to name just a few.

With no disregard to the presence of talk in our everyday actions, perhaps we can analytically see it as just one more among so many sign systems. Thus, a multimodal approach⁷ of human actions would focus on that simultaneity, i.e. the simultaneous use of multiple sign systems with quite different structural properties.

The analytical focus would be trying to understand how participants simultaneously make use of different types of semiotic resources, which, in turn, have different structural properties and are instantiated in different types of semiotic materials, as shown by Streeck et al. (op.cit., p.2): linguistic structure in the stream of speech; signs such as pointing displayed through the visible body; the construction and operation with referents and spatial objects in interactions involving work activities, such as geographers, architects, surgeons etc.

A multimodal analysis would then be an analysis of a fundamental minimal, of that which synchronizes speech, gestures, space and other actions in constructing the interaction, casting light on how social interactions and meanings shape themselves in the sequentiality and temporality of these actions.

Finally, with respect to data from interactions involving individuals with diseases such as Alzheimer's, I would like to show some elements of this space in motion in these interactions, by looking at the minimal. This method of looking at the minimal converses directly with multimodal studies and the tradition of ethnomethodological interaction studies (see, for example, the publication "*Doing Conversation Analysis*," TEN HAVE, 1995; GARCEZ et al., 2014), concerned with the nature of data, audiovisual records, thorough and detailed transcription, "line by line" description (in reference to the way transcriptions are presented, but also the dynamics of sequentiality of interaction), and the temporality of the actions.

Presentation of data and transcription notation: a few words before the analysis

We present below two excerpts from interactions involving individuals with Alzheimer's, taken from the *DALI* audiovisual corpus. The transcription of audiovisual data is a key aspect and an important analytical tool. Very often, important elements for understanding the structure and organization of situations have a multimodal constitution, including openings and closures of interactions; hesitations; adjacent pairs (of questions and answers); turn-taking dynamics; repairs etc. In audiovisual *corpora*, these actions can be seen, transcribed and thoroughly analyzed in sequential terms

⁷ The notion of multimodality also applies to studies of text, with scope, objectives and analyses different from those of analyses focused on human actions. We have studies concerned with the semiotics of text, such as images and films (KRESS; VAN LEEUWEN, 2001; NORRIS, 2004). In Brazil, we have a significant production in this field of studies looking at the relationship between orality and writing. See, for example, Marcuschi, L. A.; Dionísio, A. P. (Org.). **Oralidade e Escrita**. Belo Horizonte: Autêntica, 2005.

through hand movements, body movements, gazing, pointing, and gestural references to objects present in the space. However, the transcription of multimodal elements is not always an easy task. In situations where data are orally presented, such as courses, conferences etc., video can be a good resource or support to provide visibility to the data. Nonetheless, it does not eliminate the need for transcriptions work that is, in itself, an analytical activity (OCHS, 1979; MONDADA, 2000; TEN HAVE, 2002). Transcribing is therefore a “see-through” activity, to see through the potential analytical elements in an interaction.

The data as presented in this article raise some questions as previously explained. They were transcribed using a transcription notation system based on elements proposed by Mondada (2004). What justifies the adjustments is that both the transcription practice and notation adopted are sensitive to the effects that theoretically and analytically configure this practice. Table 1 shows the transcription notation used.

Table 1 – Transcription notation system.

General information	<p>Each participant is indicated by two initials (MA, MH and AN, for Excerpt 1 and ME, PA, AC for Excerpt 2).</p> <p>Capitalized initials indicate speech.</p> <p>Small initials indicate gestures.</p> <p>Where reference is made to the participant by another participant within the speaking turn, we use the alias corresponding to the initials indicated.</p> <p>In the text for data analysis, we use the alias.</p> <p>Each transcription line is numbered and <i>does not</i> necessarily correspond to speaking turns.</p> <p>Each participant receives a graphic symbol indicative of his or her gestures. In the case of Excerpt 1: + MH’s gestures; * MA’s gestures; # AN’s gestures. In the case of Excerpt 2: + PA’s gestures.</p> <p>To graphically distinguish speech from gestures, the first is shown in bold and the second in <i>italics</i>.</p> <p>Translation: an indicative translation is provided line per line in grey; its primary aim is to help the reading of the original transcript.</p>
Unintelligible segment	Xxx

Sequential phenomenon: marks the continuity of the speaking turn by the same speaker after a break in the transcription line to introduce the description of a gesture by the other speaker	&
Pauses	. (small pauses, less than 0.3 seconds, not measured) (x,x s) pauses measure with the help of the audio edition program (free software) Audacity version 1.2.6.
Segmental phenomena	: syllable lengthening .h marks the speaker's inhalation
Intonation - Prosodic structure	/ and \ rising and falling intonation // question intonation (rising) Underlined segment: particular emphasis (intensity, accent) Capitalized segment: loud voice ° ° low voice, breathy voice ↑: Rise in the intonation curve on nuclear syllables (before the syllable) ↓: Fall in the intonation curve on nuclear syllables. → Neutral intonation curve on nuclear syllables.
Description and marking of actions like (gestures, gazing and posture)	+----+ delimitation of the action described in relation with the speech transcribed in the previous line. The transcribed speech has graphic symbols indicating gestures (+, *, #), positioned at the exact moment they are made in relation to the speech. ,,, indicates the action described is ongoing ----> (line x) indicates the action described continues down to a certain line ---->+ indicates the exact moment when, in an ongoing action described, there is another focal action; or when there is an action at a precise moment within the speaking turn.

Source: author's elaboration.

Analyses: silence and body in interactions involving individuals with Alzheimer’s

In Excerpt 1, we have an interaction involving Maria Helena (MH), a woman who had been diagnosed with Alzheimer’s; Marcia (MA), her daughter in law; and Andre (AN), her grandson. The data on Maria Helena were collected between 2006 and 2007, corresponding to a relatively diverse series of everyday interactions involving Maria Helena in her family environment. Maria Helena had been diagnosed with Alzheimer’s about 10 years before the date of data collection.

In these interactions, we not always have signs or evidence of speech or verbal expression coming from Maria Helena. Certain characteristics described in clinical studies of language in Alzheimer’s settings, or in descriptions of the linguistic behavior of Alzheimer’s patients, confirm that over the course of dementia, there is progressive loss of the drive to speak, as well as silences and even mutism (FERRIS; FARLOW, 2013). Silence, in very general terms, is sometimes associated with the idea of a gap or absence. Here, I would like to analytically explore a situation in which we identified “silence” from an individual with Alzheimer’s. How does it integrate into the ecological orbit of the interaction? And yet, what could the proposal of looking at the minimal in these interactions provide as inputs for understanding the social and cognitive resources of the individuals?

In the excerpt below, the three participants are sitting at the table, eating lunch. Marcia speaks to her son, drawing his attention to the food spilling on his clothes (reference to Figure 1).

Figure 1 – DALI Corpus



Source: author’s elaboration.

Excerpt 1 – DALI Corpus

```

01 MA +AndRE;/ você tá se sujando to:do di di macarrão\+
    +AndRE;/ you are spilling a:ll your your pasta\+
02 ma +-----MH volta-se para AN-----+
    +-----MH turns to AN-----+
03 MA +Andre;/ a o macarrão caindo+
    +Andre;/ look at the pasta spilling+
04 mh +-----MH volta-se para AN-----+
    +-----MH turns to AN-----+
05 MA **na sua ca- no seu prato aí (0.3) Andre\.+
    *+on your sh- on your plate right there (0.3) Andre\.+
06 ma *MA aponta para André
    *MA points to André
07 mh +-----MH volta-se para AN-----+
    +-----MH turns to AN-----+
08 MA +me poupe\ . põe; esse prato pra perto\
    +come on\ . pull; that plate closer\
09 (1.5)
10 MA ã:::+\
    ahn:::+\
11 mh +-----MH volta-se para MA
    +-----MH turns to MA
12 MA e CO;me hein\+
    and EA;t your food\+
13 mh + MH volta-se para a mesa
    + MH turns to the table
14 AN já TO comendo
    I AM eating
15 (1.9)
16 AN +se eu comer posso xxx/
    +if I eat can I xxx/
17 mh +....volta-se para AN,,,,,,+
    +....turns to AN,,,,,,+
18 +(1.0)+
19 mh +---MH olha para MA----+
    +---MH looks at MA----+
20 #+(0.8)+#
21 mh +MH volta para MA+
    +MH turns to MA+
22 an #AN volta par MA #
    #AN turns to MA #
23 MA *limpa essa boca*\
    *clean that mouth*\
24 *movimento negativo com a cabeça*
    *shakes head in disapproval*
25 ((todos voltam a comer))
    ((all go back to eating))

```

In this interactive situation, the verbal action, which I shall restrict to the use of talk (lines 01, 03, 05, 08, 10, 12, 14, 16, 23) take place between Marcia and Andre at the same time the three participants eat a meal. We see that Marcia, Andre’s mother, repeatedly calls his attention to the food spilling from the plate. During these interventions, Marcia requires a response from Andre in the form of an action. This type of exchange was analyzed as an interaction sequence referred to as an embodied directive sequence by

M. Goodwin (2006) and Cekaite (2010), in which the mother/father or an adult asks something of the child who, in turn, may respond or not with a body action, thus forming a question-answer adjacent pair. So, *sit straight at the table/pull the plate closer/eat the food* make up the sequence of requests from Marcia to Andre. Looking at the way these sequences organize themselves in this interaction, there is a temporality marked by Marcia's waiting for Andre to fulfill her requests. This temporality of waiting, so to speak, is spatially visible in the multimodal construction of the participants' joint attention to the problem, i.e. the food spilling from the plate. This joint attention is mutually constructed through verbal resources: "*Andre / look at the pasta spilling on your sh- on your plate there (0.3) Andre*" (lines 03-05), with presence of the deictic form (*a ô = look at the, structure type look + X*, as in the proposal of Bernardo (2005), for example). But also gestural: "*Marcia points to Andre*" (line 06).

At every request from Marcia and every new information in constructing joint attention to the problem, Maria Helena indicates, with her gaze direction, the exchange dynamics of these request-response pairs between Marcia and Andre. In this case, Maria Helena participates in this joint construction of attention by monitoring and anticipating, through her gazing, the turn-taking alternation. In other words, we can say that Maria Helena, without expressing herself verbally, tracks the sequential organization of this activity through her gazing and body posture.

The actions taken by the three participants to accomplish this type of sequence (*embodied directive*) provide a situated dimension of the child's socialization through body practices and gestural movements in this interaction space. This is one of the analyses proposed by Ceikate (2010), particularly interested in interactions involving children. For Excerpt 1, we can infer some aspects that converse with an analysis of sociability processes and what they indicate about the resources used (or not used) by individuals with cognitive impairments. In methodological and analytical terms, many variables could and can be mobilized to understand an interactive situation or action being co-constructed by individuals, such as: age; degree of familiarity among participants; shared knowledge; different types of motivation, such as emotional, psychological, ideological, etc.; purpose of the interaction; competencies and skills; cognitive, cultural aspects; the environment; and many others we can imagine or describe when observing an interaction, considering the conditions that are specific to each situation.

Amid this wide range of possibilities to analytically explore these actions, here we have chosen an emic perspective of the interaction and human practices, i.e., one that adopts the point of view of the actors or participants of an interaction (see DURANTI, 1997; GARCEZ, 2008). This has a direct implication on how to see and analyze interactions. It means assuming, for example, that the relevance or pertinence of the resources mobilized by the actors is given at the time of a certain interaction by the participants themselves, and by the circumstances limiting the action in question. But what we want to reinforce is not just the fact that during our daily interactions we activate a wide range of resources and actions to produce meaning. The focus is to point out how

the elements of this architecture of intersubjectivity (HERITAGE, 1984; SCHEGLOFF, 1992) are arranged in the space and time of what is defined as the interaction dynamics, and how participants take it into account, publicly, in their actions (see concepts of *accountability* (HERITAGE, 1984); and *explicability* (GARCEZ, 2008)).

What is at stake in this explicability is a complex field that can be analytically decomposed, involving the coordination of actions and movements. We can say that Maria Helena, an Alzheimer's patient, is also monitoring and actively constructing that coordination of actions, and playing a role distinct from that of Marcia, the child's mother, who is requesting those actions. Maria Helena, in turn, follows this coordination of actions and this dynamic of request-response pairs directing her gaze to follow all movements closely. The construction of this temporally marked alignment of the participants' actions is completed just as the sequence of requests and responses ends (*lines 25 and 25*), and when all three participants finally begin to eat (*line 26*).

An embodied interaction approach has stressed that the primary place for organization of human action, cognition, language and social life consists of a situation in which the various participants are jointly co-constructing an interaction space and, at the same time, jointly co-constructing the actions that outline and shape their social world. Moreover, all this happens while they mutually orient themselves to the detailed organization of the ongoing talk; to the relevant events in the environment; and to the multiple activities in which they are engaged (HADDINGTON et al., 2013).

In terms of coordination of actions, here we have a social interaction involving multiple activities, basically defined as simultaneous activities, whose organization casts light on how individuals interact with each other at the same time their attention and time are directed to other activities (eating, educating a child, talking...).

In the case of interactive situations involving people with Alzheimer's, I believe this is an interesting niche to explore, particularly due to the question of what we could analytically identify as evidence of social cognitive resources mobilized by the individuals, with or without cognitive impairment, during the collaborative construction of the actions. As a leading indicator, we must bring to the field of interaction analysis the role of the body in that interaction space. The body displays primarily to the other participants during the social interaction a multitude of cognitive resources being mobilized in the coordination of these actions.

I will try to dig deeper on the role of the body in an interaction space, and the implications of an embodied perspective of cognition for the collection of data on diseases that affect language and cognition, by exploring a second interactive situation.

The following scenario takes place in a clinical institution that operates as a care center for people with Alzheimer's, in São Paulo, Brazil. Just like Excerpt 1, this is also data taken from the DALI corpus, from the collections dedicated to interactions in clinical settings. I chose to indicate the participants according to doctor-patient categories directly related to this clinical setting (see, for example, Ten Have, 1999 for the discussion on the choice of participants during the practice of transcription).

We have here a patient diagnosed with Alzheimer's (PA); a doctor (ME); and the wife/companion who is accompanying the patient to the appointment (AC).

Excerpt 2 – DALI Corpus

01 **ME** **e a memória/ (.) como é que anda/**
 ME and how is/ (.) your memory/
02 **PA** **como//(.) a memória//**
 PA what the//(.) memory//
03 **ME** **é**
 yes
04 **PA** **a: doutor xx+xxxxx né/ vo- agora difícil mas tá**
 well: doctor xx+xxxxx well/ now it- is hard but
05 **chegando+**
 it is coming back+
06 **pa** **+volta-se para sua esposa do lado**
 +turns to his wife next to him
07 **AC** **eu não sei nada**
 how would I know
08 **ME** **o que que a senhora acha//**
 what do you think//

In the Excerpt 2, the doctor asks the patient about the status of his memory. Memory problems are one of the main complaints and most important signs of Alzheimer's disease. This type of question is part of medical appointments for people with Alzheimer's. Some discursive manifestation or explicability of the cognitive state is then expected. Although common, this type of question reveals some tensions, because it places evidence on the subjects' memory problem and all the related social consequences (CRUZ; MORATO, 2005; CRUZ, 2014). But interactionally, would it be possible to analyze some of the tensions and their implications for the course of this interaction?

The cognitive state of a patient being evaluated in a clinical appointment is checked within an interactive dynamics, even if this requires the use of standard or structured tests with questions and answers (MARLAIRE; MAYNARD, 1990). These medical appointments for assessment of the cognitive state bring to light the different ways through which individuals manifest their "mental state". For example, discursively, through account such as "*I don't know, I don't remember, I forgot*", "*my memory is not good*" as well as linguistically and interactionally, through hesitations, pauses, search for words or repairs. This last aspect is of interest for us.

In the example above, the doctor's question about memory is answered by the patient with a repair: "*what//(.) the memory//*" (line 02). The repair, as an interactional phenomenon, has important implications in the analysis of the course of an interaction, because it is with this resource that participants demonstrate to the others what they consider a trouble source i.e. that which has the potential to be interactionally treated by the participants (see SCHEGLOFF; JEFFERSON; SACKS, 1977; DREW, 1997;

GARCEZ; LORDER, 2005, among others). In this sense, repairs, from the sequential standpoint, do not just happen at any point. In the example above, this is a fundamental characteristic for us to build a plane of analysis of the several small tensions and actions that take place in the clinical settings, with respect to the mental state of someone diagnosed with progressive loss of his cognitive capacity.

In Excerpt 2, we have a repair design initiated by the patient regarding the previous turn, immediately after the moment he is asked by the doctor about his memory. The patient identifies, in interactional rather than cognitive terms, the question about his memory status as a trouble source. This repair displays in the sequentially 'next' step an understanding of what the 'prior' turn was about. The doctor confirms the trouble source which is displayed by a repair ("yes", line 03). Next, after confirmation of the repair by the doctor, the patient starts responding to the question-answer adjacent pair (*question about memory status/answer*) proposed by the doctor before the repair. At this time, he adds an assessment, a self-evaluation: "now it is hard" (line 04) and then a projection that seems to transport the action of remembering (or the cognitive ability being questioned) to the present moment of the interaction: "but it is coming back", referring to the memory. In the construction of this turn, we see a combination of some of the patient's actions: repairs, the answer to the question-answer adjacent pair; an evaluation about his own cognitive state; a projection of a latent memory that is supposedly coming back; and, finally, in line 06, a body action, when the patient turns his gaze to his wife, AC.

By gazing at his wife, the patient selects her to take on the role of speaker in the conversation with the doctor, proposing a different participation framework and the roles played by the three participants. Please note that the patient does this in a multimodal way, combining the speech with the actions described above, and continuing the construction of the turn.

Although his wife refuses, at first, to actively talk with the doctor, the latter aligns with the patient's action and effectively accomplishes it. By selecting another participant to take his place in the conversation and reorganizing the participation framework established so far, the patient is less required to talk about his cognitive state in this situation. What the patient is building over the course of this interaction may be interpreted as strategies for maintaining face. In a recent study by Pollock (2007), a very similar finding was demonstrated. Pollock (2007) explored how actions for face-work (GOFFMAN, 2011 [1967]) are constructed in situations of psychiatric consultations. According to the author, the term *face* consists of

[...] the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact. Face is an image of self delineated in terms of approved social attributes-albeit an image that others may share, as when a person makes a good showing for his profession or religion by making a good showing for himself (GOFFMAN, 2011, p.14)

In the complex game of interactions, many events orient and organize everything that makes up a ritual. Its complexity, according to Goffman, does not seem to be in major events or movements, but in “glances, gestures, positionings and verbal statements that people continuously feed into situations, whether intended or not.” (op.cit., p.9). Therefore, among repairs, pauses, hesitations, small and brief gazing, we have a set of minimal gestures, verbal and body, impregnated with pragmatic and semantic effects, constructing the interaction. These elements cast light on how individuals with Alzheimer’s and their network, including family members and healthcare professionals, deal with the mental states at different relevant moments of this microecological orbit involving an interaction.

Discussion: observability of mental states and social interaction

Talking about “*the way they manifest*” or “*manifestation of*” mental states leads us directly to an important question in the field of empirical human sciences focused on human cognition, the question of the *observability* of cognitive states. During interactions, the manifestations indicative of a mental state are not restricted to the linguistic structure or the verbal behavior of the individuals with AD. This type of finding converses with studies in other fields, and this topic deserves some lines in the reflection proposed in this article.

The field of *Discourse Psychology* (EDWARDS, 1997; MOLDER; POTTER, 2001) investigates the way psychological and mental aspects are described, nominated and evoked in an interaction, as well as the ways psychological categories and notions are used by the individuals as tools for action taking. In this approach, some central terms of the field of classic cognitive research have been revisited from a perspective which is not mentalist but rather discursive, such as, for example, the notions of memory (EDWARDS; POTTER, 1992; LYNCH; BOGEN, 2005); attitude (POTTER, 1998); categories and identities (EDWARDS, 1991), emotion (LOCKE; EDWARDS, 2003) and script (EDWARDS, 1997). The studies based on this approach propose a way to conceive and focalize mental or psychological phenomena starting from the way they would be constructed, adjusted and situated in natural human interactions.

Thus, a repertoire of terms related with mental states is conceived in the form of discursive attributes, related not only to the representation of internal mental states, but also the expression of these states over the course of an interactional activity, for discursive and interactional purposes. The several studies in this field investigate both the rhetorical nature and the rhetorical use that participants can make of these terms, and the ways the terms or other actions attributed to certain mental states can act to organize the microaspects of the interaction.

In the field of interaction studies, not necessarily linked to psychological dimensions, the mental or cognitive states present in the interaction also receive the status of object of analysis. An example in the field of conversational analyses is the study by Goodwin

(1987) showing how manifestations of forgetfulness, uncertainties and hesitations may operate as a request for collaborative work, established during a narrative activity or a conversational sentence. In this sense, the manifestations of forgetfulness or difficulty evoking may be analytically understood as *resources* (DREW, 2005, p.166) used by participants during interactive practices. The notion of resource has to do with the fact that they play a crucial role in the social and interactional organization of an activity. The question here is how to think of *resources* in cases where forgetfulness, confusion etc. are difficulties resulting from a neurodegenerative disease of a known nature? We must recap what was previously said about the ecological perspective of disease-affected pathologies.

We can say that the manifestations linked with a mental state are imbricated and expressed within an interaction dynamics (i.e. at what time and in which sequential order a manifestation of difficulty, forgetfulness, confusion emerges); at discursive levels (i.e. which are the different discursive formulations that give visibility to a linguistic reference to mental states); in linguistic and interactional forms (particularly visible in terms of linguistic structure and interactional temporality as hesitation marks, uncertainties, pauses, repairs, repetitions etc.); and in multimodal forms (through gestures and the body).

Some final words on minimal gestures, the body, language and ‘de mens’

The clinical and diagnostic investigations of Alzheimer’s disease seek to provide clues on how cognitive decline can affect different dimensions of everyday life, such as language, social behavior, routines, chores or work tasks. The investigation of these activities for analytical purposes (i.e. separate investigation of language, memory, attention, or even specific linguistic levels or linguistic skills, for example) has been yielding some important findings, also validated by consolidated investigative protocols in the field of neuropsychological investigations. Likewise, an analytical decomposition in interactional terms also reveals the complex cognitive work performed by individuals, which illustrates what we do in our everyday life, dealing all the time with social, verbal and embodied actions.

However, when interacting, we are always immersed in a microecological orbit, in which various things happen at the same time as we speak. This “at the same time”, i.e. this synchronous and simultaneous character of some actions, still seems to be an unexplored field in studies of interactions involving speech and gestures. The different things we do, under a magnifying glass (a microscope for social life, in the words of BUSCHER, 2005), reveal that all of us, individuals with or without diseases that impair our cognitive abilities, construct meaning from and assign symbolic value to a multitude of actions we perform when in face-to-face situations. That is exactly where, according to Godard in *Adieu au langage*, we invent language, as stated in the introductory paragraphs of this text. All clues of everything involved in the construction

of meanings are first provided by the individuals engaged in that language, which is invented as the interaction is established, ideated by different levels of sharing of the cultural and socially situated functions of said clues.

In the case of investigations involving interactions with individuals in a state of cognitive loss, this type of analysis may help understand the role of the body in the interaction space, which persists, even when the cognitive decline is at advanced stages and verbal language is already absent. In other words, although the notion of absence of the mind is itself embedded in the name *dementia* (*de-mens*), when we effectively turn to the concept of embodied cognition, we are invited to revisit a question that always seems to occur in human and social sciences investigations touching on the field of mental and cognitive diseases: what to do with the body when the mind is no longer present? Perhaps this question could be formulated differently if we set ourselves to consider the embodied form of language, interaction and cognition.

CRUZ, F. Interação corporificada: multimodalidade, corpo e cognição explorados na análise de conversas envolvendo sujeitos com alzheimer. *Alfa*, São Paulo, v.61, n.1, p.53-78, 2017.

- **RESUMO:** *Este artigo procura explorar, teórica e analiticamente, como construímos os espaços interacionais multimodalmente, ou seja, como uma ação (verbal ou não) é construída graças a uma ecologia (GOODWIN, 2010) de sistemas de signos, estruturalmente distintos entre si, mas intrinsecamente relacionados. Para isso, trazemos alguns referencias teóricos do campo dos estudos interacionais que concebem a interação social e a cognição humana de forma corporificada (embodied interaction, STRECK et al., 2011), como uma organização temporal, espacial, corporal e materialmente coletiva. Propomos essa discussão com base na análise de dois excertos de conversas envolvendo sujeitos com Alzheimer: Os dados analisados foram extraídos do corpus audiovisual DALI (Doença de Alzheimer; Linguagem e Interação). Inspiradas nas pesquisas em vídeo-análises (MONDADA, 2008; KNOBLAUCH et al., 2012), as análises trazidas permitem destacar o papel do corpo e dos gestos na construção de um espaço interacional. O enfoque analítico recai sobre os chamados gestos mínimos localizados no curso da interação e sobre os momentos em que é possível apontar uma sincronia entre a cadeia da fala e os gestos. Como potencial contribuição, a discussão promovida aqui procura refletir sobre uma infinidade de recursos cognitivos que são ou podem ser mobilizados e analisados na construção de nossa fala-em-interação.*
- **PALAVRAS-CHAVE:** *Interação corporificada. Patologias. Gestos. Vídeo-análises. Ecologia. Corpo. Cognição.*

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CHILDREN'S PERCEPTUAL AUDITORY PERFORMANCE IN IDENTIFYING PHONEMIC CONTRASTS

Larissa Cristina BERTI*

- **ABSTRACT:** This study aimed at investigating children's perceptual auditory performance in identifying phonemic contrast in Brazilian Portuguese (henceforth BP). The hypothesis is that the perceptual auditory acquisition develops in a gradual fashion, following a systematic acquisition order. We performed four identification tasks using the instrument PerceFAL with 66 children (of both genders) between 4-5 years old. The task relied on the presentation of an acoustic stimulus, through earphones, and the choice of an image corresponding to the word shown, having two image possibilities available on the computer screen. We compared both the stimulus length of time and reaction time of children automatically through the aid of the software PERCEVAL. The children's perceptual auditory performance occurred gradually and depended on the phonemic class. A greater accuracy regarding the phonemic contrast identification seems to follow the sequence: vowels, sonorants, stops e fricatives. The reaction time for the correct answers was shorter than that of the incorrect answers (except for the vowel class). From the perceptual maps, we verified that, within the vowel class, the anterior-posterior parameter plays an important role in perceptual salience. For the obstruents and sonorants (nasal and liquid), the acoustic cues that characterize voicing (in the case of obstruents) and the articulation mode (in the case of sonorants) are perceptually more robust than the cues from the point of articulation. Although speech perception should not be reduced to a mere sensory interpretation, the acoustic cues of speech segments exert influence on their categorization.
- **KEYWORDS:** Speech perception. Language Acquisition. Acoustic Phonetic. Brazilian Portuguese.

Introduction

Throughout the phonetic and phonological acquisition of a language, researchers usually highlight the role performed by children's articulatory and auditory skills, besides the sensory-motor connections that underlie such a process (MUNSON et al., 2005; GATHERCOLE, 2006; HARDCASTLE et al., 2010; PANNETON; NEWMAN, 2011; as the latest study references).

* UNESP – State São Paulo University. Faculty of Philosophy and Science. Speech Language Pathology and Audiology Department. Marília – SP – Brazil. 17525-900 – berti.larissa@gmail.com

In the Brazilian context, studies developed on phonemic acquisition have primarily tackled speech production investigation, that is, when and how children reach the target production in their language (LAMPRECHT et al., 2004). There are not, as far as our preliminary bibliographic review indicated, studies that focus on the process of phonological contrasts acquisition taking perception into account.

In the international literature, there have been reports of researches on children's phonemic contrasts domain, especially regarding the skills of discriminating and identifying such contrasts since the late 1940s, with a great surge in the 1970s and 1980s.

We understand, according to Hazan and Barrett (2000), that the discrimination task assesses the skill to perceive difference between two sounds, and the listener does not have to categorize the sounds in question – the comparison is performed *in praesentia*.

Concerning children's auditory perceptual development, previous studies have shown that 1-month old babies are able to discriminate phonemic contrasts of their native language, and also phonemic contrasts of other languages (EIMAS et al., 1971; STREETER, 1976; TREHUB, 1976; EILERS; GAVIN; OLLER, 1982; MEHLER, 1985, for a more detailed review).

Likewise, previous studies in literature have shown that children's skills at discriminating non-native contrasts rapidly diminish in childhood due to linguistic experience. At the same time, there is an increase in accuracy to discriminate phonemic contrasts in their language (WERKER; POLKA, 1993, for a review of studies that establish such an observation). In other words, the ability related to children's phonemic discrimination is gradually impaired in the following pattern: from discrimination of potential phonemic contrasts (non-native and native) to discrimination of contrasts in their native language.

In a series of investigations, Werker and colleagues (WERKER et al., 1981; WERKER; TEES, 1984a, b; WERKER; LALONDE, 1988; BEST; McROBERTS, 1989; BEST, 1994) have demonstrated that the decline in the ability to discriminate non-native contrasts takes place along the child's first year.

What is particularly fascinating in the described findings relies on the fact that the decline in the perceptual ability does not seem to occur in the same fashion for all non-native contrasts. The experimental results indicate that the failure to distinguish certain contrasts occurs before the failure related to other contrasts – which allows to hypothesize that the decline of auditory perceptual development is gradual and occurs in a systematic order.

As possible explanations for the impairment of non-native auditory perceptual discrimination, Best and McRoberts (1989), Best (1993), Best (1994), Werker and Tees (2002), have suggested that such a decline might reflect the first stage of children's phonological acquisition. However, the authors do not discuss which developing phonological aspect could be responsible for the change in the auditory perceptual domain.

In order to acquire the phonology of a language, from an auditory perceptual perspective, children have to learn and discriminate not only the sound patterns in

their language, but also organize them effectively into appropriate phonemic categories (HAZAN; BARRETT, 2000). The latter ability is known in the speech perception literature as “phoneme categorization” or “phoneme identification”, in which the listener is required to categorize sounds, that is, the comparison is performed *in absentia*¹.

Regarding the development of the identification ability, researchers have demonstrated that children’s ability to identify (or categorize) phonological contrasts of their native language develops not only gradually but systematically in terms of acquisition (SHVACHKIN, 1948; GARNICA, 1973; EDWARDS, 1974; BARTON, 1980; BROWN; MATTHEWS, 1993, 1997).

In a classic study, for example, Shvachkin (1948) investigated the development of Russian-speaking children to identify certain contrasts and found out they tend to be better when compared to others. Thus, there might be an auditory perceptual acquisition order, similar to that described by Jakobson (1968)² when it comes to speech. According to him, children undergo two great periods in their auditory perceptual development: in the first place, a distinction among vowels (discrimination and identification) and in the second place, among consonants. In the second period, in turn, there might be 11 distinct stages, namely: (1) distinction between presence x absence of consonants (ex: /ok/ vs. /bok/); (2) distinction between sonorants and what the author called articulated obstruents (ex: /m/ vs. /b/); (3) distinction between palatalized consonants x non-palatalized consonants; (4) distinction between sonorants (nasal vs. liquid); (5) distinction between sonorants and what the author called non-articulated obstruents (ex: /l/ vs. /x/); (6) distinction between labials and coronals; (7) distinction between stops and fricatives; (8) distinction between coronals and dorsals; (9) distinction between voiced and voiceless; (10) distinction between strident sibilants and non-strident sibilants and, finally, (11) distinction between liquids.

Further studies (EDWARDS, 1974; BARTON, 1980; BROWN; MATTHEWS, 1993; HAZAN; BARRETT, 2000; PATER et al., 2004) have systematically reinforced three broad trends for auditory perceptual phonemic acquisition, namely: (a) seven-year old children are still to finish the process of phonemic contrasts perception; (b) phonemic perception gradually develops, usually with production advancement; (c) the order of perceptual acquisition tends to become uniform among the world languages, but it is not universal. Trends in differentiations are common in varied languages (e.g. the distinction between consonants vs. vowels, oral vs. nasal). Nevertheless, there is

¹ In order to learn in depth the concepts of auditory discrimination and identification, as well as the tasks that assess skills, we recommend the following reading: Gerrits (2001).

² Jakobson (1968) establishes that phonological development, in terms of production, derives from an original situation and tends to become differentiation and separation. The first great opposition occurs with consonants and vowels, followed by the oral vs. nasal opposition, for consonants and vowels. Afterwards, there is a distinction between labials and dentals for consonants and the distinction between broad and narrow vowels, which anticipates the opposition between front and back consonants. The presence of fricatives suggests the presence of stops. Likewise, the presence of affricates suggests the presence of fricatives. Round vowels appear after non-round vowels. Back consonants appear after the presence of front consonants, as voiced consonants occur after voiceless consonants. Liquid consonants are the last to appear and the distinction between lateral and non-lateral liquids are seen to be acquired later in the languages that harbor them.

divergence in opinion as for the appearance of distinction between labials vs. dentals vs. dorsals or even between stops vs. fricatives vs. affricates.

Since the abilities to discriminate and identify play a fundamental role in the phonemic acquisition process, it is relevant to understand how they modify and evolve throughout the process.

Hence, this study aims at investigating children's auditory perceptual performance in the identification of phonemic contrasts in the BP. More specifically, this study will verify the level of difficulty a given phonemic class poses; and, within each class, an indication of similarity/dissimilarity among the phonemes, with a proposal of perceptual maps for each phonemic class.

Considering existing studies in international literature, our hypothesis relies on the idea that auditory perceptual acquisition gradually evolves, so as to follow a systematic acquisition order.

The scientific gains for both Linguistics and Speech Therapy are the following: (a) contribution for the understanding of acquisition and development of children's auditory perception with typical language development; (2) generation of data of auditory perception phonemic contrasts in the BP; (3) contribution for the study of production and speech perception.

Method

Participants

This study was approved by the Research Ethics Committee at the Universidade Estadual Paulista (UNESP/Marília), having received the following number 132/2010.

Data from 140 children aged between 4 and 8 years old were collected. The criteria to include children in the sample selection were: typical language development and absence of otological and/or auditory conditions, which was confirmed by a previous auditory triage; whereas the criterion to exclude was the participation of each child in the four identification experiments.

In the end, the sample contained 66 children, of both genders, aged between 4 and 5 years old. The children were selected from a municipal school in the city of Marília, in the state of São Paulo. The children's parents and tutors signed an Informed Consent and allowed the children to participate in the research.

Material

We used a phonemic contrasts identification instrument – PerceFAL (BERTI, 2011) and the software PERCEVAL (Perception Evaluation Auditive & Visuelle) (ANDRÉ et al., 2009).

PerceFAL is composed of a subset of four experiments: (a) PerceVog (which evaluates the identification of stressed vowels); (b) PerceOcl (which evaluates the identification among stops); (c) PerceFric (which evaluates the identification among fricatives); (d) PerceSon (which evaluates the identification among sonorants).

This instrument deals with two-syllable words with stress on the first syllable, familiar to the children, containing the 19 consonantal phonemes of BP.

The words were chosen according to the following criteria: (1) contrast the six BP stops, so as to compose minimum pairs of words; (2) be represented by means of pictures; (3) belong to children vocabulary; (4) belong to a word list from a previous study (MOTA, 2001).

With PerceVog, it is possible to evaluate the identification of stressed vowels from a set of 42 contrasting pairs (through combinatorial analysis: 7 stressed vowels vs. 6 other distinctive vowels); with PerceOcl, it is possible to evaluate the identification of stops, from 30 minimal pairs (6 stops x 5); with PerceFric, it is possible to evaluate the identification of fricatives, considering 30 contrasting pairs (6 fricatives x 5) and; finally, with PerceSon, it is possible to evaluate the identification of the sonorants, from 42 contrasting pairs (7 sonorants (3 nasals and 4 liquids) x 6).

The following Figures (1-4) show the contrasting pairs selected to compose our experiment.

Figure 1 – Minimal word pairs involving the stressed vowels in the PerceVog

Vowel Contrasts	Minimal Pairs
/i/ - /e/	bico–beco
/i/ - /ɛ/	vila–vela
/i/ - /a/	pipa–papa
/i/ - /ɔ/	chique–choque
/i/ - /o/	figo–fogo
/i/ - /u/	lixo–luxo
/e/ - /ɛ/	feira–fera
/e/ - /a/	pera–para
/e/ - /ɔ/	feira–fora
/e/ - /o/	seco–soco
/e/ - /u/	seco–suco
/ɛ/ - /a/	berro–barro
/ɛ/ - /ɔ/	cheque–choque
/ɛ/ - /o/	beca–boca
/ɛ/ - /u/	fera–fura
/a/ - /ɔ/	bala–bola
/a/ - /o/	saco–soco
/a/ - /u/	lava–luva
/ɔ/ - /o/	toca–touca
/ɔ/ - /u/	coca–cuca
/o/ - /u/	soco–suco

Source: author’s elaboration.

Figure 2 – Minimal word pairs involving the stops in the PerceOcl

Stop Contrasts	Minimal Pairs
/b/ x /t/	berço-terço
/b/ x /k/	bola-cola
/g/ x /b/	gola-bola
/b/ x /p/	bote-pote
/b/ x /d/	bucha-ducha
/d/ x /g/	danço-ganso
/g/ x /t/	guerra-terra
/p/ x /g/	pato-gato
/p/ x /d/	pente-dente
/p/ x /k/	porta-corta
/t/ x /d/	tia-dia
/t/ x /p/	torta-porta
/k/ x /g/	cola-gola
/k/ x /t/	couro-touro
/d/ x /f/	fada-faca

Source: author's elaboration.

Figure 3 – Minimal word pairs involving the fricatives in the PerceFric

Fricative Contrasts	Minimal Pairs
/f/-/v/	faca-vaca
/f/-/s/	fanta-santa
/f/-/z/	forro- zorro
/f/-/ʃ/	fora-chora
/f/-/ʒ/	faca-jaca
/v/-/s/	vela-sela
/v/-/z/	cavar-casar
/v/-/ʃ/	veia-cheia
/v/-/ʒ/	vaca-jaca
/s/-/z/	caçar-casar
/s/-/ʃ/	sapa-chapa
/s/-/ʒ/	selo-gelo
/z/-/ʃ/	rosa-rocha
/z/-/ʒ/	zangada-jangada
/ʃ/-/ʒ/	xis-giz

Source: author's elaboration.

Figure 4 – Minimal word pairs involving the sonorants in the PerceSon

Sonorant Contrasts	Minimal Pairs
/m/-/n/	mata-nata
/m/-/ɲ/	uma-unha
/m/-/l/	mata-lata
/m/-/ʎ/	comer-colher
/m/-/r/	fumo-furo
/m/-/R/	mata-rata
/n/-/ɲ/	sono-sonho
/n/-/l/	nata-lata
/n/-/ʎ/	finá-filha
/n/-/r/	caneta-careta
/n/-/R/	nata-rata
/ɲ/-/l/	punho-pulo
/ɲ/-/ʎ/	pinha-pilha
/ɲ/-/r/	sonho-soro
/ɲ/-/R/	unha-urra
/l/-/ʎ/	vela-velha
/l/-/r/	pulo-puro
/l/-/R/	lata-rata
/ʎ/-/r/	alho-aro
/ʎ/-/R/	colher-correr
/r/-/R/	caro-carro

Source: author's elaboration.

In order to carry out the identification test, PerceFAL features auditory stimuli, corresponding to audio files of all the words by a typical adult speaker; visual stimuli, graphic pictures of each word; besides scripts³ to run the identification experiment in the software PERCEVAL.

Experimental procedure

The perceptual experimental procedure consisted of an identification test (also known as forced choice task), composed of three distinct steps: recognition of the experiment words, training and testing.

³ The scripts of the identification experiments can be sent by the author upon request: berti.larissa@gmail.com.

The recognition step consists of the presentation of visual and auditory input to children so as to verify whether they know the words and/or pictures used in the experiment. Some words in the instrument have easy corresponding pictures (*pato*, *gato*, etc.), whereas some might raise doubts (as in *unha*, *gola*, etc.). After children were familiar with the experiment input, we checked whether they knew the words. A threshold of 80% of correct answers would lead the children to the training step and the perceptual step.

The training step is carried out automatically by the software and aims at enabling the participants to understand the task. This step consists of the perceptual identification task, but the results are not computed. The experiment stimuli are randomized and 10 presentations are selected. Afterwards, the testing step is initiated.

For the identification task, the children were comfortably placed in front of a computer screen (with the software PERCEVAL installed) and used KOSS headphones, inside an acoustic booth. Each child heard (with binaural presentation) one of the minimal pairs word, and had to decide and indicate the corresponding picture. Two pictures were displayed on the computer screen. For example: they heard the word *pote* and two pictures appeared on the computer screen, representing the words *pote* and *bote*. The participant had to decide and indicate the picture that corresponded to the auditory stimulus. Both the time the auditory and visual stimulus was shown and the reaction time were controlled and measured automatically by the software PERCEVAL.

The overall duration of each experiment was approximately 15 minutes per child. Even though the experiments were performed in different days to prevent children from becoming exhausted, the conclusion did not last more than a week.

Analysis criteria

The following analysis criteria were used: a) auditory perceptual accuracy; b) reaction time for right and wrong answers; c) pattern recognition with the aid of multidimensional scaling and a similarity matrix.

Results

Auditory perceptual accuracy

Since one of the goals of the proposed analysis was to detect auditory perceptual accuracy in identifying phonemic contrasts in BP, instead of analyzing only the percentage of correct answers, the data were transformed by using a measure of sensitivity known as d' prime (MACMILLAN; CREELMAN, 1991). This sensitivity index takes into consideration the variation of answers from subjects by adjusting the number of hits (right answers, that is, stimulus A is chosen when the stimulus shown

was A) by the number of false alarms (wrong answer, stimulus A is chosen when the stimulus shown was B). D'prime is calculated by the conversion of the proportions of hits (H) and false alarms (FA) into z-score and, afterwards, by the subtraction of the proportions ($d' = z(H) - z(FA)$).

Perfect accuracy (only hits and no false alarms) would show an infinite d'prime value. Then, the hit and false alarm values were adjusted to a proportion of $H=0,99$ and $FA=0,01$, with a nearly perfect accuracy value, $d'=4,65$. Thus, the closer to 4,65 the d'prime is, the higher the auditory perceptual accuracy.

Table 1 shows d'prime values for phonemic classes.

Table 1 – Auditory perceptual accuracy for phonemic classes

Phonemic Class	Number of Answers (number of contrasting pairs x 66 children)	% of correct answers	d'prime
Vowels	2,772	88.34 (2449/2772)	1.73
Sonorants	2,772	87.01 (2412/2772)	1.56
Stops	1,980	84.04 (1664/1980)	1.43
Fricatives	1,980	75 (1485/1980)	0.93

Source: author's elaboration.

The children's auditory perceptual accuracy was seen to be dependent on the phonemic class, with the following pattern: vowels>sonorants>stops>fricatives. The accuracy values (d'prime) varied from 1.73 to 0.93.

Reaction time for wrong and correct answers

Table 2 shows the comparison between the mean response time for the answers in the phonemic classes.

Table 2 – Comparison between the mean response time for the answers

Phonemic Class	Mean reaction time for right answers (ms)	Mean reaction time for wrong answers (ms)	T-test for independent samples
Vowels	2,158.31 (± 221.49)	2,243.83 (± 455.80)	$t=-1.34$, $p=0.17$
Sonorants	2,171.17 (± 251.99)	2,388.74 (± 478.09)	$t=-2.92$, $p=0.00$
Stops	2,037.04 (± 218.90)	2,200.90 (± 543.34)	$t=-6.45$, $p=0.00$
Fricatives	2,346.71 (± 236.02)	2,411.51 (± 346.39)	$t=-2.10$, $p=0.03$

Source: author's elaboration.

The reaction time refers to the time elapsed until the children made the decision in the identification task. Since the identification tasks were performed within four

phonemic classes (vowels, sonorants, stops and fricatives), the reaction times for wrong and right answers were compared considering each class individually and not the comparison among classes.

According to Table 2, the reaction time mean value for wrong answers was higher than the reaction time mean value for right answers in all phonemic classes. A t-test was run so as to check whether the reaction time mean value for right answers was significantly different from the reaction time mean value for wrong answers. The alpha value established was 0.05. That means that when the p-value is lower than 0.05, the null hypothesis is rejected (there is no difference between the mean reaction times for wrong and right answers) and the alternative hypothesis is accepted (there is difference between the mean reaction times for wrong and right answers). Hence, the inferential statistical analysis showed that mean reaction time for right answers was lower, except for the vowel class.

The final procedure was the verification of the class, similarities and dissimilarities among the phonemes, transforming the distance measures, as proposed by Johnson (1991), so as to create perceptual maps.

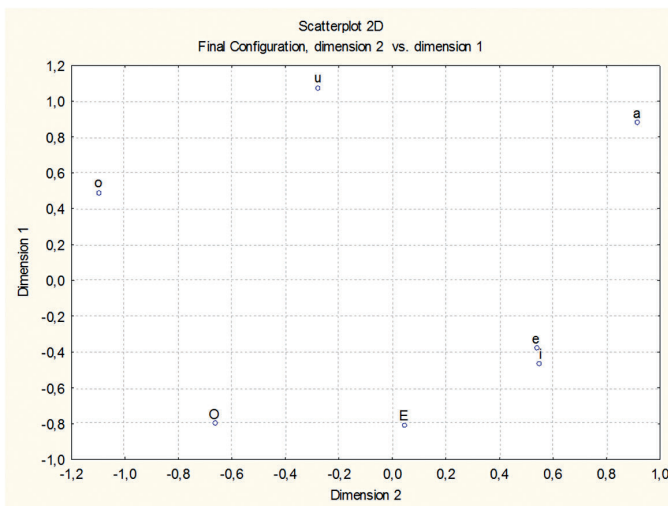
A confusion matrix⁴ of each phonemic class was generated by the children's answer pattern and a statistical exploratory analysis was performed (multidimensional scaling and similarity matrix) to verify the similarities/dissimilarities in the contrasting pairs investigated.

Taking into consideration the similarity values for all the investigated contrasting pairs, distance measures were calculated for the pairs, resulting in conceptual maps. For example, in the fricatives class, identification errors involving the pair /s/ vs. /ʃ/ were more frequent than the errors involving the pair /s/ vs. /v/. In other words, the frequency which a sound is confused with another one is caused by similarity. Then, the voiceless coronal fricatives proved to be more similar, for children, than the pair /s/ vs. /v/. The distance measure obtained from the contrasting pairs similarity shows that the distance between voiceless coronal fricatives is lower than the distance between /s/ vs. /v/.

The four conceptual maps are displayed with the phonemic class investigated: vowels, stops, fricatives and sonorants.

⁴ A confusion matrix is a notational system used to quantitatively and qualitatively catalog children's answer pattern. Children's wrong and right answers are registered. This type of register provides information regarding lower and higher similarity contrasts in the identification task, as well as the most frequent patterns.

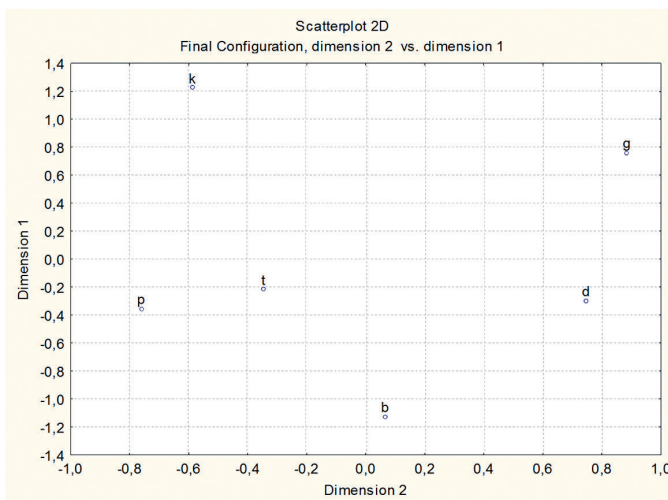
Image 1 – Perceptual Map for the stressed vowels of children



Source: author's elaboration.

The perceptual map shows that there is an unequal distribution among the vowel phonemes in the vowel class, with a pronounced division in the vowel elements considering backness. The front vowels are clustered in the lower right, the back vowels are displayed on the left of the map and the central vowel /a/ is seen in the upper right. Furthermore, within the front vowels, the vowels /e/ and /i/ show a short distance, which reflects high perceptual similarity in children.

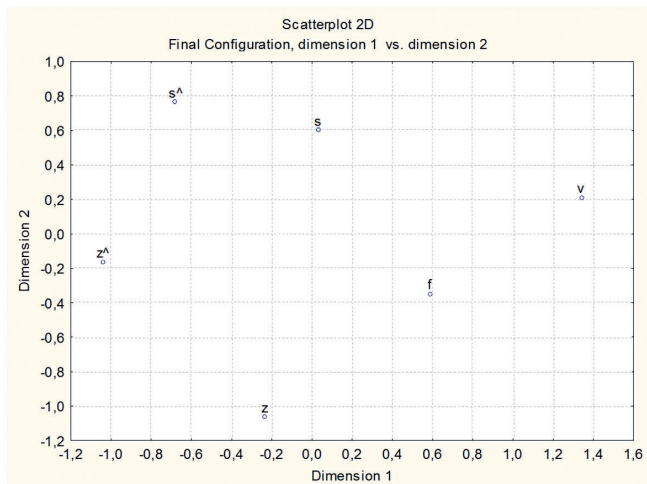
Image 2 – Perceptual map of the stops in children



Source: author's elaboration.

The perceptual map of the stops demonstrates that there is an evident separation between voiceless stops (on the left) and voiced stops (on the right). Additionally, the labial and dental stops are closer when compared to dental and velar stops.

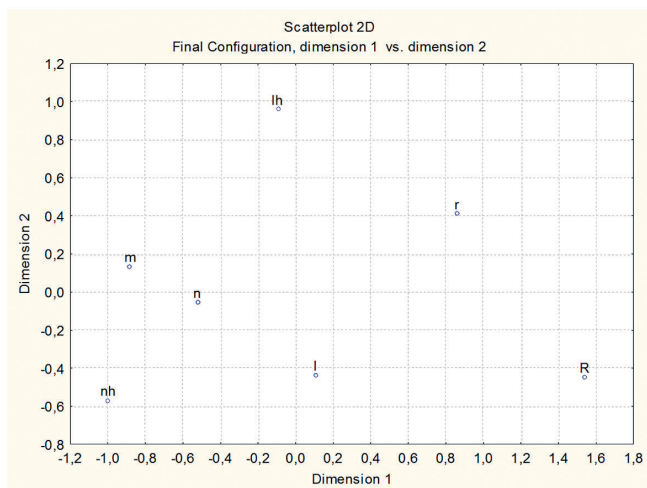
Image 3 – Fricatives perceptual map of children



Source: author's elaboration.

The fricatives perceptual map shows that in the stops, there is a separation between voiced fricatives (more distributed in the edges) and the voiceless fricatives (central part of the map). The coronal fricatives show a shorter distance among themselves.

Image 4 – Sonorants perceptual map of children



Source: author's elaboration.

Finally, the observation of the sonorant perceptual map allows to see a distinction between nasal and liquid class. The nasals are clustered in the lower left whereas the liquids are distributed on the right. Within each subset, the nasals are seen to be closer among themselves when compared to the liquids.

Discussion

Auditory perceptual accuracy

Three aspects of the obtained results can be highlighted when it comes to auditory perceptual accuracy. The first refers to the accuracy value (d') shown by the children varying from 0.93 to 1.73. The children in the age range (4-5 years) studied still do not show effective mastery at the contrast identification – all the values were lower than 4.65 (reference value for perfect accuracy).

The fact that four and five-year olds do not show effective mastery in the phonemic identification is consistent with the findings described by Edwards (1974) and Werker and Lalonde (1988), which state that seven-year olds are still to finish the process of phonemic contrasts perception, which suggests that the conclusion and steady perception of phonemic contrasts take place years later. It is feasible to think about not only as a phonological acquisition process in line with phonemic class, but also as an ongoing process throughout development.

The second aspect concerns a gradual domain of the phonemic classes, that is, from a perceptual standpoint, the children's development follows a pattern: vowels>sonorants>stops>fricatives.

The obtained results corroborate those found in international classic studies (SHVACHKIN, 1973; EDWARDS, 1974; BROWN, 1997; 2000; PATER; STAGER; WERKER, 2004), which predict not only a gradual auditory perceptual acquisition, but also a an acquisition hierarchy.

Particularly, the vowels are the first to be differentiated, followed by the consonants. Within the consonant class, the distinction between sonorants x stops comes before a distinction between stops x fricatives, as previously described by Shvachkin (1948).

The phonemic classes with more accuracy in the identification task, vowels and consonants, show a well-defined formation pattern in the acoustic structure (KENT; READ, 1992), characterized by a reinforcement of 300-3000 Hz frequencies. This frequency band features the frequencies perceived by the human ear, and this frequency set is amplified (around 10-12 dB) thanks to physical and physiological characteristics of the ear (LOPES; CAMPOS, 1994; JOHNSON, 1991).

On the other hand, the lower accuracy for the affricate class also reinforces the important interaction between acoustic features and anatomical-physiological features of the human ear for the phonemic identification. From an acoustic perspective, the fricatives are usually present with aperiodic energy distributed in the frequency spectrum

according to the length of front cavity resulting from production. More specifically, the shorter the front cavity length in the fricatives, the higher the resonance frequencies (KENT; READ, 1992). In terms of human ear sensibility, frequencies higher than 5,000 Hz do not receive any increment, and are less salient to lower frequencies (JOHNSON, 1997).

All these findings entail the importance of acoustic features of speech sounds for the classification.

Finally, the third aspect refers to the absence of correspondence for the established order in terms of oral acquisition. The liquid class is the last to be acquired in terms of production (JAKOBSON, 1968; LAMPRECHT et al., 2004). The data indicate that the liquids were treated in conjunction with nasals, within the sonorant class, liquids showed a lower percentage of wrong answers (18.57% - 60/323) than the nasals (36.22% - 117/323). Despite the relation between production and speech perception, it is not linear.

In line with Casserly and Pisoni (2010), since speech production cannot be reduced to a mere motor activity, speech perception cannot be reduced to mere sensory interpretation either.

Reaction time for wrong and right answers

Taking into consideration each class, the reaction time for right answers was seen to be inferior to the reaction time for wrong answers, except for the vowels.

Pisoni and Tash (1974) predicted the relationship between perceptual similarity and reaction times in perceptual experiments. According to them, the higher the acoustic difference between two pairs, the faster the subject should answer (the lower the reaction time). On the other hand, the lower the acoustic difference, the higher the time for the subjects to take a decision (the higher the reaction time).

Understanding that the reaction time should be higher for similar segments, we speculate that the perceptual auditory mistakes made by children are likely to involve more similar segments, which would demand a higher reaction time.

It is feasible to understand that the consonantal phonemic contrasts that are linked to more mistakes in the identification task do pose more perceptual auditory similarity, which eventually entails more time for decision taking, in terms of psycholinguistic processing.

The exception for the vowels is justified by their own acoustic features, that is, vowels are segments with more duration and acoustic energy. They also contribute to the reinforcement of frequencies (formants) in a special band for the human ear, facilitating perception (KENT; READ, 1992; JOHNSON, 1991). Then, similarity in the vowel class was seen to be lower than in the consonant class.

Another explanation allows to state that the higher reaction time for wrong answers might stem to the absence of causality in the answers, providing reliance. If the mistakes

made by the children in the identification task had happened at random, that is, if the children had guessed the answer, a lower reaction time would have been found for the wrong answers.

Perceptual maps

The children's perceptual map for the stressed vowels shows an unequal distribution for the vowel phonemes, which reflects different levels of perceptual similarity of the elements. Furthermore, the front vowels /e/ and /i/ were seen to show a shorter distance among them, demonstrating an enormous perceptual similarity by children.

Different levels of perceptual auditory similarity among vowels have been reported in previous studies (POLKA; WERKER, 1994; POLKA; BOHN, 1996; BERTI; ROQUE, 2013). The explanation given by Polka and Bohn (1996) is that the stimuli, in a perceptual domain, are not equally salient. They state that the peripheral vowels serve as a "anchoring place" in the perceptual auditory task, labeled by the authors as natural perceptual magnets.

The data obtained in the children's perceptual performance regarding the vowel class are in accordance with the Polka and Bohn (1996): it is possible to observe the presence of extreme vowels distributed peripherally throughout the map; The Brazilian Portuguese also seems to have a phonetic similarity for the vowels. The vowel raising involving the mid vowels (TENANI; SILVEIRA, 2008) shows that a language fact is present in perceptual similarity/dissimilarity in children aged 4-5.

Regarding the results of the children's perceptual map for the stops and fricatives, two items should be pointed out. The first is related to voiced and voiceless obstruents, more evident in the case of stops (with a clear separation in the map) and subtler in the case of fricatives (the voiced sounds are distributed at the ends and the voiceless sounds are in the center of the map).

The second aspect encompasses the role of phonetic cues and the place of articulation of obstruents in the children's perceptual performance. In the case of the stops, there is a shorter distance between labial and dental stops when compared to labial vs velar and dental vs velar, especially in the voiceless stops. As for the fricatives, the coronal fricatives show a shorter distance.

We hypothesize that phonetic features concerning the place of articulation and voiced obstruents might play a key role in children's perceptual performance.

The perceptual distinction between voiced and voiceless obstruents has also been described in a previous study (MILLER; NICELY, 1955), which found that voicing is the most salient acoustic cue for English-speaking adults. The acoustic cues that mark voicing are more salient than the cues that mark the place of articulation.

Ferreira-Silva and Pacheco (2011), in a study on the fricative contrast perception, also highlighted the importance of voicing so as to distinguish fricatives.

Concerning the role of the acoustic cues that mark the place of articulation, despite the perceptual differences related to the obstruents place of articulation, it is not fully understood how such differences are perceptually established in adults (MILLER; NICELY, 1955; WANG; BILGER, 1973; WINTERS, 2000).

According to Miller and Nicely (1955), in the places of articulation of the obstruent consonants, the coronals show more auditory perceptual salience. Nevertheless, there are no substantial differences between labial and velar obstruents in terms of auditory perceptual salience. Differently, Wang and Bilger (1973) found that labial and coronal obstruents show, high auditory perceptual salience, whereas velar obstruents show less salience. More recently, Winters (2000) found that labial obstruents are typically more salient as place of articulation, whereas velar obstruents are described as less salient consonants. Berti et al. (2012) described that labial and coronal stops showed more similarity among children when compared to velar stops.

Children's perceptual results for the obstruents are similar to those reported by Wang and Bilger (1973). The labials (in the case of the stops) and coronals were seen to have a shorter distance, which suggests more perceptual auditory similarity.

Phonetic features of the obstruents are likely to play a fundamental role in children's perception.

As for the children's perceptual map of the sonorants, there is a difference between nasals and liquids. Within each subclass, the nasals are closer than the liquids.

A possible interpretation lies on the phonetic features of the segments in children's perception. The distinction between nasals and liquids leads to more perceptual similarity among same subclass elements. Acoustically, the nasals are characterized by the presence of a well-defined nasal formant (KENT; READ, 1992), which may explain both the separation of classes and the nasal phonemic proximity.

The findings also corroborate the predictions of Borden et al. (1994), regarding the distinct perceptual saliences of acoustic cues – interpreted here as a type of perceptual hierarchy. The acoustic cues that mark the manner of articulation seem to be more salient than the acoustic cues that mark the place of articulation, as there is a more distinct division between manners (nasal and liquid) than point of articulation.

These findings confirm the hypothesis that there is a perceptual auditory acquisition in the Brazilian Portuguese. Such acquisition occurs gradually and obeys a systematic order in which the idea of phonemic class plays a major role. In the perceptual auditory acquisition, different phonemic classes should be taken into account and within each class, there is an internal hierarchy, where the cues define voicing. The cues to distinguish manner are more salient than the cues that define articulation.

We are aware that our study has an important limitation: the instrument that was used relied on pictures that do not show the same representability and the words were not controlled in terms of frequency in the language, part of speech, vowel context, etc. The children's perceptual performance might have been influenced.

Conclusions

Children's perceptual auditory performance occurs gradually and is dependent on phonemic class. The identification of phonemic contrasts seems to follow a pattern: vowels, sonorants, stops and fricatives.

The perceptual maps show that, within the vowel class, backness can play an important role in perceptual salience. For the obstruent class (fricatives and stops) and sonorants (nasals and liquids), the acoustic cues that define voicing (in the case of obstruents) and the manner of articulation (in the case of sonorants) are more perceptually salient than the cues of the place of articulation.

Finally, even though there is a relationship between speech production and perception, it is not viable to assure that such relationship is linear or mirrored. Theories and experimental evidences need to converge so as to find out how production and perception interact in the complex communication act.

The children's perceptual auditory performance in identifying phonemic contrasts will be extended and will consider not only the age range studied, but also the development of longitudinal studies.

BERTI, L. Desempenho perceptivo-auditivo de crianças na identificação de contrastes fônicos. *Alfa*, São Paulo, v.61, n.1, p.79-99, 2017.

- *RESUMO: O objetivo deste estudo foi investigar o desempenho perceptivo-auditivo de crianças na tarefa de identificação de contrastes fônicos do Português Brasileiro (doravante PB). A hipótese foi a de que a aquisição perceptivo-auditiva se desenvolve maneira gradual, obedecendo a uma ordem sistemática de aquisição. Quatro tarefas de identificação, usando o instrumento PerceFAL, foram realizadas com 66 crianças (de ambos os gêneros), entre 4- 5 anos de idade. A tarefa consistiu na apresentação do estímulo acústico, por meio de fones de ouvido, e na escolha da gravura correspondente à palavra apresentada, dentre duas possibilidades de gravuras dispostas na tela do computador. O tempo de apresentação do estímulo e o tempo de reação das crianças foram computados automaticamente pelo software PERCEVAL. O desempenho perceptivo-auditivo de crianças ocorreu de modo gradual e é dependente da classe fônica. A maior acurácia na identificação dos contrastes fônicos parece obedecer a seguinte ordem: vogais, sonorantes, oclusivas e fricativas. O tempo de reação das respostas corretas foi menor do que das respostas incorretas (exceto para a classe das vogais). A partir dos mapas perceptuais, pode-se verificar que, no interior da classe das vogais, o parâmetro ântero-posterior parece exercer um importante papel na saliência perceptual. Para a classe das obstruintes e sonorantes (nasais e líquidas), as pistas acústicas que marcam o vozeamento (no caso das obstruentes) e o modo de articulação (no caso das sonorantes) são mais robustas perceptualmente do que as pistas de ponto de articulação. Embora a percepção da fala não deva ser reduzida a uma mera interpretação sensorial, as pistas acústicas dos segmentos da fala exercem uma importante influência para a sua categorização.*

- *PALAVRAS-CHAVE: Percepção de fala. Aquisição da linguagem. Fonética acústica. Português brasileiro.*

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A METHODOLOGY FOR THE ELABORATION OF A PORTUGUESE ANALOGICAL DICTIONARY

Michelle Machado de Oliveira VILARINHO*

- **ABSTRACT:** The topic of this work is part of a line of research known as Lexicon and Terminology, developed at the Center of Terminological and Lexical Studies (LexTerm Center), at the University of Brasília. The object of study is an analogical dictionary, understood as a lexicographic repertoire, onomasiological in nature, in which lexemes are organized from ideas or concepts to lexical units. The main objective of this research is to present a proposal for a Portuguese Informatized Analogical Dictionary (DIALP, following the Portuguese spelling). The main target audience of the dictionary is the learner of Brazilian Portuguese as a Second Language (PBSL). The selection of lexemes to compose the entries is guided by Kleiber's (1990) Extended Version of Prototype Theory, Fillmore's (1977a,b) Semantic of Frames, as well as by the reformulation of entries from Azevedo's (2010) analogical Dictionary of the Portuguese language. In order to elaborate the model for the proposed dictionary, we have adopted the methodological principles for the elaboration of lexicons, dictionaries and glossaries, as postulated by Faulstich (2001), and we also applied Vilarinho's (2013) proposal. This research contributes to promote Brazil's technological development, since no previous work has appropriately reached the goals set by the present study.
- **KEYWORDS:** Analogical Dictionary. Extended Version of the Prototypes. Frame Semantics. Semantic Relations.

Introduction

The present research is inserted in a line of research known as Lexicon and Terminology, developed within the Graduate Program in Linguistics at the University of Brasília (UnB). This research was carried out at the Center of Lexical and Terminological Studies (LexTerm Center),¹ at the Department of Linguistics, Portuguese and Classical Languages (LIP), at UnB. It is an extension of a previous proposal introduced by Vilarinho (2013), as well as a presentation of partial results from the project titled

* UnB – Universidade de Brasília. Departamento de Linguística, Português e Línguas Clássicas. Brasília – DF – Brasil. 70910-900 – michelleprofessora@gmail.com.

¹ Centro de Estudos Lexicais e Terminológicos (Centro Lexterm).

“Informatized Analogical Portuguese Dictionary”, supported by the Brazilian Research Foundation FAP-DF.² The main objective of this research is to develop a proposal for a Portuguese Informatized Analogical Dictionary (referred to as DIALP in this paper).³ The primary target audience of the aforementioned dictionary is the learner of Brazilian Portuguese as a Second Language (BPSL) (i.e., foreigners, indigenous people, and deaf learners).

The object of study is the analogical dictionary (ideological), defined as “[...] a lexicographical repertoire, onomasiological in nature, in which lexemes are organized in a systematic order, from ideas or concepts to lexical units”,⁴ according to Vilarinho (2010, p.35). This type of dictionary leads the user to a grouping of related lexemes. Therefore, in case of unfamiliarity with a lexical item or forgetfulness of the signifier, the desired lexeme can still be found. For instance, in case the user does not know or forgets the linguistic expression used to designate the professional responsible for planning and elaborating a construction or renovation project, he or she can look up the entry for *profissão* (i.e., profession), with the objective of discovering or recalling the lexeme *arquitecto* (i.e., architect), which conveys the idea in question. It is worth noting that a common dictionary does not allow the user to take the onomasiological path just described.

According to Gaudin and Guespin (2000, p.71):

[...] the analogical dictionary prefigures the analogical system by virtue of its organization around a word that “marks the common idea associated to all the words that refer to it”. Therefore, the organization is notional. It is not a reference system of words to words, but an organization by meaning relations in which a prefiguration of lexical fields is established.⁵

The analogical dictionary is comprised of categorization and entries. Categorization governs the organization of entries and is ordered by lexical fields. Each category and subcategory forms an entry. After the introduction of categorization, entries are arranged alphabetically, so that lexemes related to the entry words (also known as headwords) are registered based on semantic relations (hypernym, hyponym, holonymy, meronym, synonym, and related concept, to be further detailed).

² Fundação de Apoio à Pesquisa do Distrito Federal.

³ Dicionário Informatizado Analógico de Língua Portuguesa (DIALP).

⁴ Original: “[...] *repertório lexicográfico, de caráter onomasiológico, no qual os lexemas são organizados em ordem sistemática, com base nas ideias ou nos conceitos para chegar às unidades lexicais*”.

⁵ Original: “[...] *le dictionnaire analogique préfigure le système analogique par son organisation autour d'un mot «marquant l'idée commune à tous les mots dont il est question». L'organisation est donc notionnelle. Il ne s'agit pas d'un système de renvois de mots à mots mais d'une organisation par apparentements de sens dans laquelle se dessine comme une préfiguration des champs sémantique.*”.

The analogical dictionary model proposed by Vilarinho (2013) is the starting point for the elaboration of entries to compose DIALP, a dictionary aimed to provide users with the Brazilian Portuguese lexicon, and also to spread our culture and our language.

The globalization process diminishes the boundaries between people, who increasingly need to communicate in a multilingual environment. In this linguistic setting, Portuguese is one of the ten most widely spoken languages in the world. In order to organize the lexicon of this language in a systematic way, there is need for further development of Lexicography, a discipline that can be improved through the application of linguistic theories as well as technological resources from Computational Linguistics.

Brazil has an important role in the international scene, either by being part of economic trade blocks or by hosting major sporting events. Therefore, Brazil has a relevant role, both political and linguistic, in the context of a new map of social interactions and intercommunication between peoples. In this sense, our country holds a favorable position for teaching and learning Portuguese (VILARINHO; FAULSTICH, 2009, p.201), and a dictionary is an indispensable tool. This lexicographical repertoire: “[...] is a systemic organization of the lexicon, a description of the lexicon of a language”, according to Biderman (2001, p.131).⁶

Informatized dictionaries may employ computational resources that provide tools to extend the content of lexicographical repertoires. However, Duran e Xatara (2007, p.210) note that: “[a]lthough informatized dictionaries have become common, in most cases, they mimic the layout of the printed dictionaries.”⁷ Brazilian informatized dictionaries still display a simple structure, when compared to French and English dictionaries. According to Vieira and Lima (2001, p.10), “[t]here is a lot of research and work carried out mainly for English, Spanish, German, French and Japanese. We find, however, a lack of research, tools, linguistic and human resources to computationally address Portuguese Language.”⁸

Considering this lexicographical scenario, we intend to contribute to the development of a more coherent and complete Portuguese dictionary in an informatized format. Based on our teaching practice in Lexicon and Terminology courses in the context of the Undergraduate Program in Letters: Brazilian Portuguese as a Second Language (PBSL) at UnB, we have identified the need for monolingual dictionaries designed to help teaching Portuguese as a second language. Thus, in order to fill this lexicographical gap, we propose the elaboration of DIALP, aimed at the aforementioned audience.

Since analogical dictionaries present the grouping of related concepts or ideas, this type of work is a useful BPSL teaching aid tool, offering a range of words that enables the learner to go through entries to find what he or she needs to use in a linguistic

⁶ Original: “[...] constitui uma organização sistêmica do léxico, uma descrição do léxico de uma língua”.

⁷ Original: “[e]mbora os dicionários informatizados tenham se tornado comuns, na maioria das vezes, ainda imitam o leiaute dos dicionários impressos.”.

⁸ Original: “[h]á muita pesquisa e trabalhos realizados principalmente para o Inglês, Espanhol, Alemão, Francês e Japonês. Encontramos, porém, carência de pesquisas, ferramentas, recursos linguísticos e humanos para tratar computacionalmente a Língua Portuguesa.”.

context. However, to ensure that the user will understand the meaning of each lexeme, our dictionary model also presents the analogical part, in addition to the alphabetical one. The analogical part provides the definition for the entry word. It also presents to the user a set of lexemes that is semantically related to that entry. The alphabetical part, in turn, as the name suggests, presents lexemes in alphabetical order, just like a common language dictionary. However, the entries are elaborated with a focus on the learner of BPSL.

Analogy

In order to organize the analogical dictionary, it is necessary to determine the analogies for the purpose of structuring the entries. As the human mind captures identity relations subjectively, we have determined how the analogies should be established so that they are not too general.

With respect to this, it is worth noting the following passage by Gaudin and Guespin (2000, p.195):

[...] thanks to analogy, we can enumerate a large amount of information based on the entry word. However, we could not extend such amount of information to encompass an enumeration that would take an encyclopedic character. [...] Indeed, the analogy remains closely limited to discourse relations carried out in the language and has cultural value for a language community. [...] We could not relate it only by virtue of its insertion in the culture.⁹

Thus, analogies group a set of words that display affinities. These affinities are culturally oriented. There are lexemes registered in the entries because of lexical inferences based on encyclopedic information. Therefore, in the proposed dictionary model, analogies are established by semantic relations or by lexical inferences.

Each language is autonomous to create lexical inferences, since world knowledge is not the same among speakers of different linguistic communities. In this respect, we agree with Cabrera and Filho (2007, p.14):

[...] two things or relations could have the same name, or have equivalent names in different languages, but totally different meanings, which would allow lexical inferences in certain languages, but not in others.

⁹ Original: “[...] grâce à l’analogie, on peut donc recenser un grand nombre d’informations à partir du mot-vedette. Cependant, on ne saurait accroître l’étendue de ces informations jusqu’à un recensement qui prendrait un caractère encyclopédique. [...] En effet, l’analogie reste étroitement limitée aux relations discursives reçues en langue, et possède une valeur culturelle pour une communauté de langue. [...] On ne pourra l’approcher que par son insertion dans la culture.”

The corresponding institutions could be profoundly different across languages.¹⁰

The creation method of DIALP can be used for developing analogical dictionaries in many languages, provided that the necessary adjustments are made — since analogies present in the model will not always apply in other languages, due to the particular way each society interprets and relates things in the world.

In this work, analogy is “[...] similarity and, above all, identity of relations, as the lexemes are linked by connections of semantic character around a central idea based on semantic connections” (VILARINHO, 2010, p.36).¹¹

We highlight the fact that the analogical dictionary has no relation to the meaning of ‘analog’ in Computer Science. In this field, ‘analog’ is defined as: “a measurement unit or representation of quantities in which a sensor or indicator continuously monitors, without pauses or gaps, the variation of quantity being measured or represented” (HOUAISS, 2009).¹²

The next section describes the methodological procedures followed in this research.

Methodology

This research is both qualitative and descriptive. The descriptive-analytic method was used to prepare lexicographical paradigms that meet the scientific and linguistic Brazilian needs.

In order to decide which lexemes would make up the dictionary’s nomenclature, we were guided by Azevedo’s (2010) dictionary and by the reformulation of its entries. The choice of this work is based on the fact that Azevedo’s (2010) dictionary is the most current and up-to-date Portuguese analogical dictionary. The first edition dates back to 1950 and is out of print. In 2010, Lexikon Publishing Company has reissued the dictionary, and it can now be easily found in bookstores. We have decided to reformulate the entries from Azevedo (2010) because of the commendable collection of lexemes that it presents. As Azevedo’s (2010) lexicographical proposal is intended to consultants of Portuguese as a mother tongue, a reformulation was needed in order to adapt the presentation of the dictionary to our target audience (i.e., learners of BPSL). Thus, we have excluded from the entries those lexemes that are not used in contemporary Portuguese, adding those that are currently employed. The criterion adopted for this

¹⁰ Original: “[...] *duas coisas ou relações poderiam ter o mesmo nome, ou terem nomes equivalentes em diferentes línguas e terem sentidos totalmente diferentes, o que permitiria inferências lexicais em certas línguas e não em outras. As instituições correspondentes poderiam ser profundamente diferentes de uma língua para outra.*”

¹¹ Original: “[...] *semelhança, e, principalmente, identidade de relações, já que os lexemas estão ligados por conexões de caráter semântico em torno de uma ideia central.*”

¹² Original: “*forma de medida ou representação de grandezas na qual um sensor ou indicador acompanha de forma contínua, sem hiatos nem lacunas, a variação da grandeza que está sendo medida ou representada.*”

judgment was that the lexeme's definition had to be semantically related to the entry word. The analysis followed the subsequent steps:

- i. selection of entries that cover the defined thematic areas;
- ii. organization of the lexemes in alphabetical order;
- iii. checking the definition and usage notes of each lexeme from Azevedo (2010) in the following Portuguese language dictionaries: Houaiss Electronic Dictionary (HED) (2009) and New Aurélio Dictionary (NAD) (2010). These are contemporary dictionaries that serve as the basis for identifying the definitions and the nomenclature currently used in Portuguese.

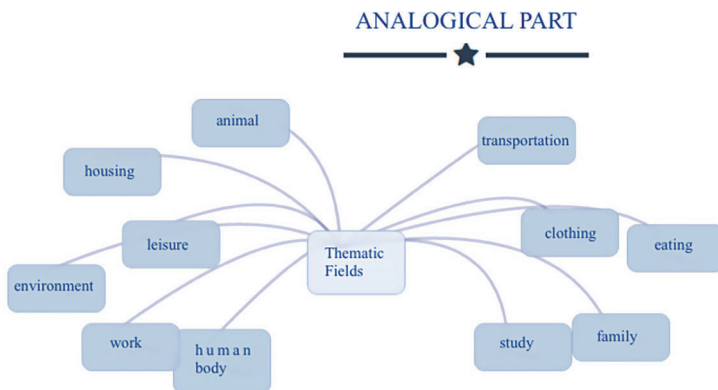
After selecting the lexemes from Azevedo (2010) to compose the nomenclature of DIALP, it was necessary to include additional lexemes, so that the entries would comprehensively cover the lexical field. Therefore, to include new lexemes, the criteria were based on our encyclopedic knowledge and the consultation of Digital Aulete Dictionary Lexikon (2010), HED (2009), Terminological Glossary of Clothing by Cruz (2013), and Cambridge Word Routes (2007). We have adopted both Aulete (2010) and HED (2009) as a reference based on their high lexicographical quality and general distribution. Regarding Cruz's (2013) Glossary, we have chosen this work based on the fact that it was produced at Lexterm Center and it presents a collection of lexical units from the field of "clothing", which is useful for DIALP's purposes. It is important to note that we have only selected lexemes used in common language from the aforementioned terminological glossary. Cambridge (2007) was also considered, since it is organized by lexical fields and semantic relations. Thus, it was possible to access a work that is systematically organized, as DIALP is intended to be.

DIALP was developed in a computer program that enables semasiological and onomasiological search, since it displays both the alphabetical and systemic parts. The alphabetical part has the same structure of a common language electronic dictionary. Therefore, the user is able to access the definitions. The entries in the alphabetical part consist of all the lexemes found in the analogical part of the dictionary and include: + entry word, + grammatical information, + definition, ± source of the definition, ± reference to another entry word, ± context, ± phraseology.

The innovative aspect of this research is the analogical part, which is systemic. In this part, the lexemes are analogically organized. The entries are composed of: + entry word, + grammatical information, + definition + lexical relations (hypernym, hyponym, holonym, meronym, synonym, antonym, and related concept), ± usage notes, ± context, ± reference to another entry word, + analogical verbs. The entry word and the lexemes are presented in alphabetical order.

The analogical part is structured as a mental map to display the lexical fields, as shown in Figure 1.

Figure 1 – DIALP Lexical Fields



Source: <http://www.dicionarioonlineanalogoico.com.br/campos-tematicos/analoga> (with adaptations).

The above layout with the thematic fields is the display screen of the analogical part. With the use of Javascript plugins, the layout enables an interactive presentation, allowing movements on screen. The available thematic fields in the dictionary are: *alimentação* ‘eating’, *animal* ‘animal’, *corpo humano* ‘human body’, *estudo* ‘study’, *família* ‘family’, *habitação* ‘housing’, *lazer* ‘leisure’, *meio ambiente* ‘environment’, *trabalho* ‘work’, *transporte* ‘transportation’, and *vestuário* ‘clothing’. These fields cover the basic lexicon that the target audience of the dictionary can consult.

Delimitation of those fields is based on the lexical fields taken from Cambridge Word Routes (2007, p.vii), which “[...] groups together words and expressions with similar meanings under headings that inform the reader about a given lexical field.”¹³ Lexical fields are understood as:

[...] a lexical paradigm formed by the articulation and distribution of a continuum of lexical content through various units of the language (words) that are opposed to one another based on simple content features. That is, the lexical field comprises a set of lexical units sharing a common area of meaning based on immediate oppositions (VILELA, 1979, p.60).¹⁴

Thus, the lexical field is composed by a set of lexemes having common and distinctive features. Common features indicate that the lexemes belong to the same

¹³ Original: “[...] agrupa palavras e expressões de significado semelhante sob cabeçalhos que informam o leitor a respeito de um determinado campo lexical.”.

¹⁴ Original: “[...] um paradigma lexical formado pela articulação e distribuição de um contínuo de conteúdo lexical por diversas unidades existentes na língua (palavras) e que se opõem entre si por meio de simples traços de conteúdo. Isto é, o campo lexical compreende um conjunto de unidades léxicas que dividem entre si uma zona comum de significação com base em oposições imediatas.”.

category. Distinctive features, in turn, highlight particular characteristics of the objects under description.

We have also consulted Nascimento's (1984) work, titled *Português Fundamental* [Fundamental Portuguese]. This work, the result of a quantitative and qualitative research conducted by the Linguistics Centre at the University of Lisbon, aimed to investigate lexemes commonly used in European Portuguese. Nascimento's work determines the focus of interest of Portuguese learners as L2 or as a Foreign Language (LE). This research has contributed to our dictionary model by helping us to identify lexical fields. Within this scope of interest, the following areas are conceived as lexical fields:

[...] human body; clothing; educational institutions (including people and things); health and diseases (excluding the names of diseases); personal hygiene; sports; meals; food and drinks; kitchen and cutlery; means of transportation; traveling; the city; village and field work; house and furniture; family and family life; love life; mail; media; shops; profession and occupation; art.

In order to check the mode of categorization of the lexical fields, we have also consulted the *Visual Dictionary 3 in 1* (2011), by Dorling Kindersley Limited. This dictionary covers English, French, and Portuguese. It presents the lexicon organized in a systemic order; thus, after examining the lexical fields of the aforementioned dictionary, we have delimited the lexical fields of the new model of Portuguese analogical dictionary.

The computational program presents the parts of the dictionary interconnected using hyperlinks. If the user clicks on any lexeme in an entry from the analogical part, he or she is referred to the entry from the alphabetical part.

In order to structure the entries, we have adopted the methodological principles for the elaboration of lexicons, dictionaries and glossaries, postulated by Faulstich (2001), which served as the basis for preparing the lexicographical forms for the alphabetical part. The lexicographical form for the analogical part was based on Vilarinho's proposal (2010). The templates for both the alphabetical and the analogical forms can be seen in the following tables:

Figure 2 – Lexicographical Form for the alphabetical part

entry word	
grammatical category	
Gender	
variant(s)	
Area	
definition	
source of the definition	
source of the definition (abbreviated)	
context	
context source	
context source (date of publication)	
context source (abbreviated)	
reference to another entry	
hypernym	
note(s)	
Author	
Editor	
date	

Source: Faulstich (2001, with adaptations).

Figure 3 – Lexicographical Form for the analogical part

entry word		
grammatical category		
Gender		
definition		
source of the definition		
Noun	synonym	
	hypernym	
	meronym	
	holonymy	
	related concept	
verb		

Source: Oliveira (2010, p.28, with adaptations).

According to Faulstich (2010, p.181), in an entry, “[...] the context consists in the reproduction of a piece of text containing the lexeme in question, in order to demonstrate how it is used [...]”.¹⁵ Contexts, in this research, are taken from Sketch Engine. According

¹⁵ Original: “[...] o contexto é um excerto de texto no qual o lexema aparece registrado, transcrito com o fim de demonstrar como é usado [...]”.

to Kilgarriff et al. (2014), “[t]he Sketch Engine is a leading corpus tool, widely used in lexicography. Now, at 10 years old, it is mature software. The Sketch Engine website offers many ready-to-use corpora, and tools for users to build, upload and install their own corpora.” This corpus tool enables us to perform a search that attests language in use. Therefore, contextualization based on corpora was chosen in order to prioritize language use. Furthermore, in lexicographic repertoires, the creation of contexts that can reproduce stereotypes or contexts that do not contribute to the understanding of the meaning of a lexeme should be avoided. Selected examples extracted from literary work aimed to complement the meaning of a lexeme and also to represent certain Brazilian cultural traits.

In this paper, variants are “[...] forms in competition with the entry word, [...] they correspond to one of the alternatives to denominate the same referent”, as proposed by Faulstich (2001).¹⁶

The analogical part is innovative; therefore, it should be explained in detail. As nouns are grouped by semantic relations, we will explain each one of them. Semantic relations are recorded in the lexicographical forms using abbreviations. Synonymy, for instance, “[...] is meaning identity”, according to Ilari and Geraldí (1943, p.42). This relation is established when there is a connection between lexemes in certain contexts and one lexeme may be replaced by the other. In the entry for *vestimenta* ‘clothing, garment’, for instance, we find the verbs *vestir* ‘to dress’ and *trajar* ‘to wear’, that can be synonymous in a given context. Synonyms are not always perfect, since this replacement may result in a change in meaning, depending on the context.

Hypernym and hyponym establish meaning inclusion, in the sense that the meaning of the hyponym is included in the hypernym. Thus, there is a hierarchical relationship: the subordination of the hyponym to the hypernym. The hypernym is the highest lexeme in the hierarchy, since its meaning includes the meaning of the subordinate lexeme (hyponym) (FAULSTICH, 1995, p.287). For example, in the entry for *veículo* ‘vehicle’, a hypernym, there are several hyponyms, such as: *bicicleta* ‘bicycle’, *carro* ‘car’, *carro de mão* ‘wheelbarrow’, *carroça* ‘cart’, *trenó* ‘sled’, among others. Therefore, hyponyms are members of the same category as the hypernym.

Holonym and meronym represent the hierarchical part-whole relationship. According to Gaudin and Guespin (2000, p.141), these relations “[...] establish between signs the relationship that language defines between referents. In order to elucidate the character of this linguistic relationship, we call *holonym* the whole and *meronym* the part.”¹⁷ These authors define 5 types of part-whole relations, described below.

¹⁶ Original: “[...] formas concorrentes com a entrada, [...] correspondem a uma das alternativas de denominação para um mesmo referente.”

¹⁷ Original: “[...] établissent les signes qui sont des relations celles que le langage dessine entre les referents. Pour le caractère indiquer linguistique de cette relation, on parle d’holonyme pour le tout et pour la partie méronyme.”

- 1) Object/element: the part has a function in the whole, it is inseparable from the whole, and the part's name is not autonomous.
- 2) Set/member: the members form a set that is not necessarily homogeneous and each member is separable.
- 3) Mass/portion: mass consists of all the parts, all of which are homogeneous and have the same properties as the whole.
- 4) Object/constituent: the constituent is part of its holonym and inseparable from it, but the object and constituent are not homogeneous.
- 5) Activity/phase: the phase has a function within a temporal process.¹⁸

In what follows, each one of these types is exemplified. In the entry for *partes do corpo humano* 'parts of the human body', there is an example of the object/element relationship, since this entry lists the elements that constitute the object *cabeça* 'head'. For this object, we find the following lexemes: *sincipúcio* 'sinciput', *crânio* 'skull', *pericrânio* 'pericranium', *olho* 'eye', *testa* 'forehead', *orelha* 'ear', *rosto* 'face', *boca* 'mouth', *língua* 'tongue', among others (AZEVEDO, 2010, p.177-178). Thus, for the correct functioning of the human body, each part of the head performs a function. These elements are not separable from the object (i.e., the head), otherwise the body cannot function properly. In the entry for *vegetable*, the lexemes *floresta* 'forest' and *árvore* 'tree' are, respectively, a set and a member. The set of trees forms the forest, but not every tree looks the same, so they are not homogeneous.

The mass/portion relationship can be seen with the lexemes *flocos de neve* 'snowflakes' and *neve* 'snow', from the entry for *frio* 'cold'. Snowflakes are portions of snow, a mass noun.

Examples of object/constituent can be found in the entry for *doçura* 'sweetness'. For instance, *bala* 'candy' refers to a sweet made with *açúcar* 'sugar' (i.e., a type of jelly bean). Sugar is the constituent, since candy and sugar are not separable. However, sugar may be used to make other types of candy, not only jelly beans.

With respect to the activity/phase relationship, a year is divided into 12 months, and each month is a stage (or a phase). Months can be further divided into days, and days are phases of the month. In the entry for *tempo* 'time', we find the following lexemes: *ano* 'year', *dia* 'day', and *mês* 'month'. The first illustrates the activity, and the last two illustrate the phases or stages.

¹⁸ Original:

- 1) *Objet/élément: la partie remplit une fonction dans un ensemble, la partie est inséparable de l'ensemble, le nom de partie n'est pas autonome.*
- 2) *Ensemble/membre: la réunion des membres forme un ensemble non nécessairement homogène, mais chaque membre est séparable.*
- 3) *Masse/portion: la masse est constituée de l'ensemble des portions, lesquelles sont toutes homogènes et possèdent les mêmes propriétés que l'ensemble.*
- 4) *Objet/constituant: le constituant entre dans la composition de son holonyme; il en est inséparable, mais l'objet et le constituant ne sont pas homogènes.*
- 5) *Activité/phase: la phase remplit une fonction au sein d'un processus temporel.*

After this explanation, we will focus on the discussion of the associative relationship, which is more abstract. Therefore, it needs to be carefully defined. The associative relationship involves the notion of related concept, understood as a lexeme that is “[...] juxtaposed with another lexeme in the same hierarchical level, displaying a coordination of meanings, and its semantic content has the same value” (FAULSTICH, 1995, p.287).¹⁹ Furthermore, the notion of related concept originates from the associative relationship, as the “[...] lexical units belong to the same domain, but these units are not hyponymies, nor equivalents or opposites. The meaning of one lexical unit, by analogy, refers to the meaning of the other lexical unit” (FAULSTICH, 1993, p.94).²⁰ We conclude that the guiding criteria for the associative relationship in the analogical dictionary are lexical inferences taking place in the mind of the speaker.

Cabrera and Filho (2007, p.14) postulate that lexical inferences are not based on formal inferences using logic symbols. Lexical inferences are “[...] inferences that seem valid in virtue of certain connections established between the terms, although its form is not supported by any sector of modern logic, classical or non-classical.”²¹ Thus, these inferences “[...] have the support of our native intuitions” (FILHO, 2007, p.20)²² and are carried out through the process of reasoning.

Deductions made by the speaker of a language to establish connections between different lexemes occur in virtue of lexical inferences. Therefore, “[...] the existence of lexical inference seems evident in any language that contains terms with which it is possible to represent predicates” (FILHO, 2007, p.19).²³ The established connections are not only originated from relations with the meaning itself, but also arise from encyclopedic information, which depart from “[...] ‘pragmatic’ maneuvers in touch with the world” (FILHO, 2007, p.21).²⁴ Thus, we understand lexical inference as the cognitive process of interpreting predicates of a language by identifying connections between the meanings of lexemes or through encyclopedic information stemming from the world knowledge shared by a society.

For instance, lexemes that display an associative relationship with the entry for *transporte* ‘transportation’ include the following related concepts: *aceleração* ‘acceleration’, *ambulância* ‘ambulance’, *atropelamento* ‘running over’, *batida* ‘hit’, *colisão* ‘crash’, *condução* ‘driving’, *deslocamento* ‘displacement’, *locomotoção* ‘locomotion’, *mobilidade* ‘mobility’, *movimentação* ‘movement’, *navegação* ‘navigation’, *velocidade* ‘speed’, *voo* ‘flight’, *tráfego* ‘traffic’, *trânsito* ‘transit’, *viagem*

¹⁹ Original: “[...] *juxtaposto em um mesmo plano hierárquico, que se encontram em coordenação de significados, e seus conteúdos semânticos são de mesmo valor.*”.

²⁰ Original: “[...] *unidades lexicais pertencem à mesma esfera de domínio, mas não são nem hiponímicos, nem equivalentes, nem opositivos. O significado de um remete, por analogia, ao outro.*”.

²¹ Original: “[...] *inferências que parecem válidas em virtude de certas conexões entre termos, embora sua forma não seja amparada por nenhum setor da lógica moderna, clássica ou não-clássica.*”.

²² Original: “[...] *têm apoio de nossas intuições nativas.*”.

²³ Original: “[...] *a existência de inferências lexicais parece evidente em qualquer linguagem que contenha termos, com os quais se possam representar predicados.*”.

²⁴ Original: “[...] *de manejos ‘pragmáticos’ em contato com o mundo.*”.

‘travel’, *carro* ‘car’, *caminhoneiro* ‘truck driver’, *carroceiro* ‘teamster’, *ciclista* ‘cyclist’, *condutor* ‘conductor’, *motorista* ‘driver’, *motociclista* ‘rider’, and *taxista* ‘taxi driver’.

As shown above, the related concepts are in coordination with the entry word, *transporte* ‘transport’ by analogy. It is possible to analyze the link between related concepts and the entities of meaning by observing the relationship between the lexemes such as *aceleração* ‘acceleration’ and *transporte* ‘transport’. The latter means ‘vehicle for conveying people or cargo’. The former means ‘a process, an increase in speed’. The relation identity between these meanings is such that, as *transporte* ‘transporte’ is a system or means to move from one place to another, this movement may involve *aceleração* ‘acceleration’, that is, an increase in speed. Therefore, we have made lexical inferences to apprehend the link between the lexemes, since there is a relationship between the meaning of the two lexemes.

Another example of relation identity between lexemes is the link between *transporte* ‘transport’ and related concepts such as: *caminhoneiro* ‘truck driver’, *carroceiro* ‘teamster’, *ciclista* ‘cyclist’, *condutor* ‘conductor’, *motorista* ‘driver’, *motociclista* ‘motorcyclist’, and *taxista* ‘taxi driver’. These lexemes refer to the human beings who drive some kind of vehicle, therefore, involving the meaning of transport.

The associative relationship can be further divided into subclasses, in order to group together concepts with greater semantic proximity. For each entry of the analogical dictionary, it is necessary to delimit the subclasses of related concepts, so that each subclass corresponds to a particular sense of the word. An example of these subclasses would be *local* ‘location’ and *profissão* ‘profession, occupation’, as further depicted in Figure 6.

Applied Linguistic Theories

The proposal for the analogical dictionary is based on Linguistic Theories of Cognitive Semantics, namely: the Extended Version of Prototype Theory and Frame Semantics. The entry word is the family. The words are family members, belonging to the same entry by virtue of having at least one common feature serving as the association with another referent that also belongs to the family.

The Extended Version of Prototype Theory is a model that predicts (but does not require) that members of the same category have features in common. In order to justify the fact that the sharing of common features is not a requirement, Schlyter (1982, p.12 apud KLEIBER, 1990, p.156) states the following: “[t]here are few properties, if any, that are shared among all peripheral individuals, there is only a family resemblance or similarity between individuals and the prototype.”²⁵

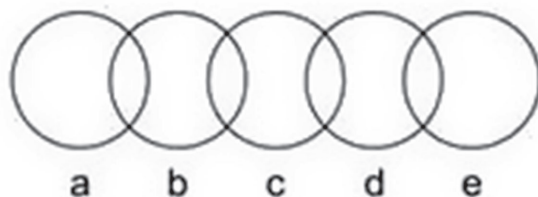
²⁵ Original: “Il y a peu de propriétés, peut-être aucune, qui sont tous les communes to individus périphériques, il n’y a qu’une famille des ressemblance or ressemblances avec le prototype.”

The notion of family resemblance, a fundamental concept in this theory, is defined below:

[...] it characterizes a set of similarities between different instances of the same family. However, the crucial question is to determine what similarities are these: properties that are not necessarily shared by all members, but which are found in at least two members (KLEIBER, 1990, p.157-158).²⁶

Thus, family resemblance is the property that justifies the fact that the members of a class are interconnected, although there is no common property defining the category. The idea of family resemblance was first proposed by Wittgenstein (1953). Based on this concept, categories are connected at the sides, not at the center, as shown below in Givón's scheme (1986 apud KLEIBER, 1990, p.160) in Figure 4.

Figure 4 – Representation of prototypicality effects



Source: Kleiber (1990, p.160).

It is not necessary that a common property is shared among objects in a given series, as in the standard version of the theory. Thus, “[...] family resemblance may then involve a set of referents A, B, C, D, E interconnected by associative relations: AB BC CD DE that justify a common denomination” (KLEIBER, 1990, p.159).²⁷

Categorization is justified by associative links between different referents, not by a common link shared among them. Family resemblance, on the contrary, does not necessarily involve a property that is shared by all members, but a common property that is shared by at least two members (KLEIBER, 1990, p.157-159).

Regarding Frame Semantics, Charles J. Fillmore, an American Professor at the University of California, postulated in the Seventies a theory based on “[...] the

²⁶ Original: “[...] caractérise un ensemble de similarités entre différentes occurrences d’une même famille. La question cruciale est cependant de voir quelles sont ces ressemblances: ce sont des propriétés qui n’ont pas besoin d’être partagées par tous les membres, mais que l’on retrouve au moins chez deux membres.”.

²⁷ Original: “[...] une ressemblance de famille peut donc consister en un ensemble referents A, B, C, D, E unis between par eux des relations de type associatif: AB BC CD justifient qui une appellation commune.”.

hypothesis that the human conceptual apparatus is not composed by individual concepts, but by conceptual sets internally structured” (SILVA, 1999, p.20).²⁸

The guiding principles of Frame Semantics are ‘scene’, ‘schema’ and ‘frame’. Scene refers to “[...] experiences in the real world, actions, objects, perceptions and personal memories”,²⁹ according to Fillmore (1975, p.82). Frame “[...] refers to the linguistic units associated with the cognitive scene, [...] they presuppose a fairly complete understanding of the nature of the total transaction or activity” (FILLMORE, 1975, p.78-79). The scene can activate the frame and vice versa. Frames are associated in memory with other frames, as well as scenes are related to other scenes (FILLMORE, 1977b, p.127).

Schema refers to “[...] conceptual structures or frameworks that are linked together in the categorization of actions, institutions and objects found in sets of contrast, object prototypes, among other” (FILLMORE, 1977b, p.27). Faulstich (2010, p.192), interpreting Fillmore’s ideas, argues that:

[...] the notion of schema is equivalent to an action frame or a larger context within which each lexical item has its own meaning. This frame is organized, consequently, from a set of notions or clues that becomes necessary for the characterization of an event, for example, an advertising message.³⁰

According to Fillmore (1977a, p.77), “[t]he study of semantics is the study of the cognitive scenes that are created or activated by utterances.” The author exemplifies this statement as follows: “[w]henver a speaker uses any of the verbs related to the commercial event, for example, the entire scene of the commercial event is brought into play — is “activated” — but the particular word chosen imposes on this scene a particular perspective.” In this context, a person who listens and understands each utterance has the scene in mind, with all the necessary aspects of the event. The meanings are relativized to scenes. Words related to the scene are the frames. The set of frames of this event gives rise to the schema.

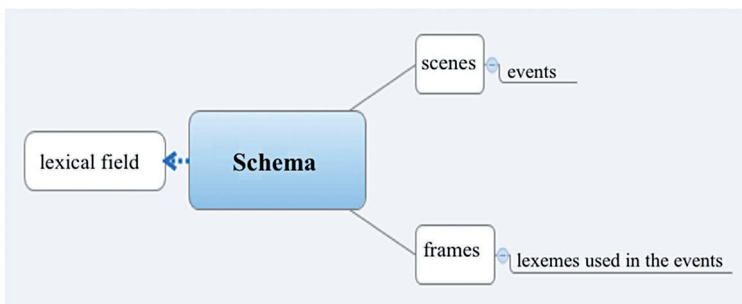
In the realm of analogies established in the analogical dictionary, it is possible to apply Frame Semantics. The scenes depicted in events select frames, which are the lexemes related to the event. The scene and frames form the schema, consisting of a lexical field, as exemplified below in Figure 5.

²⁸ Original: “[...] parte da hipótese de que o aparato conceptual humano é constituído não por conceitos isolados, mas por conjuntos conceituais internamente estruturados.”.

²⁹ Original: “[...] experiências do mundo real, ações, objetos, percepções e memórias pessoais.”.

³⁰ Original: “[...] a noção de esquema é equivalente à de um quadro de ação ou de um contexto maior, dentro do qual cada item lexical tem uma significação própria. Esse quadro se organiza, por consequência, a partir de um conjunto de noções ou de pistas que se tornam necessárias para a caracterização de um acontecimento, como, por exemplo, uma mensagem publicitária.”.

Figure 5 – Application of Frame Semantics



Source: Vilarinho (2013, p.86).

Given the above, we believe that the target audience of analogical dictionaries need to have access to words that will be useful to build lexical fields' scenes and schema. Therefore, the analogies to be established cannot be restrictive, nor excessive. In view of this observation, when selecting words to compose each entry, we have adopted as a criterion the inclusion of words that allow the speaker to build scenes, using schemes established through frames. In the case of analogical verbs, we have considered frames that may occur in the scenes. Fillmore's studies, therefore, have helped us to include verbs that are generally used communication situation.

In order to illustrate this, we present the entry for *vestuário* 'clothing' from the clothing lexicon, made up, for example, by the following lexemes: *traje* 'costume', *roupa* 'clothes', *veste* 'garment', *vestuário* 'raiments', among others. The category *vestuário* 'clothing' forms the family. The set of similarities between the different entities of the same family is known as family resemblance, consisting of the common semantic features shared by members of the same family. The words denote a series of objects, so that it is necessary and sufficient that each member from the same category has at least one property in common with other members of the same category. This means that the word *calça* 'pants' shares with *blusa* 'blouse' at least one feature; *blusa* shares a property with *casaco* 'coat', and *casaco* shares a property with *saia* 'skirt' and so on. In what follows, we present the entry for *vestuário* 'clothing', from the analogical dictionary (with adaptations), with the application of the Extended Version of Prototype Theory.³¹

³¹ In Figure 6, "família/esquema" means "family/schema", and "membro da família/frame" means "member of the family/frame". Additionally, in this entry (and in all subsequent entries presented in this paper), the abbreviation "m.n." stands for "masculine noun", and "f.n." stands for "feminine noun".

Figure 6 – Entry from the analogical dictionary with the application the Extended Version of Prototype Theory

<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;"> família/esquema </div>	
<div style="border: 1px solid black; padding: 5px;"> <p>vestuário <i>s.m.</i> peça de roupa que serve para cobrir qualquer parte do corpo humano.</p> </div>	
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin-bottom: 5px;"> membro da família/frame </div> <p style="color: red; margin: 0;">substantivo</p>	<p>sin. indumentária, indumento, traje, roupa, vestes, vestimenta. hip. v. acessório, agasalho, anágua, <i>baby look</i>, balonê, bata, bermuda, biquíni, bolero, blazer, blusa, burca, calcinha, calça, v. calçado, calção, camisa, camiseta, camisetete, camisola, capa, capa de chuva, capacete, casaco, cigarrete, cinta, colete, combinação, cueca, espartilho, farda, fio-dental, fraque, jaleco, jaqueta, jardineira, <i>legging</i>, <i>lingerie</i>, longuete, macacão, macaquinho, maiô, moletom, paletó, pantalon, pijama, pulôver, robe, roupão, saia, salopete, segunda pele, <i>short</i>, <i>smoking</i>, sobretudo, suéter, sunga, sutiã, tanga, terminho, terno, túnica, uniforme, vestido. mer. alça, algodão, aplicação, barra, botão, capuz, cós, couro, colarinho, <i>jeans</i>, forro, malha, manga. con. (lugar) 1 brechó, butique, loja. con. (lugar) 2 guarda-roupa, provador, vestiário. con. (profissional) 3 alfaiate, costureiro, designer, editor de moda, estilista, figurinista, modelista, produtor. con. 4 coleção, corte, costura, grife, elegância, estilo, moda, mostruário, trapo.</p>
<p style="color: blue; margin: 0;">verbo</p>	<p>agasalhar, ajustar, aprontar, arrematar, arrumar, colocar, cortar, costurar, engravatar, estar com, experimental, fardar, fantasiar, lavar, manchar, modelar, molhar, passar, provar, rasgar, secar, tirar, vestir, uniformizar, usar.</p>

Source: Vilarinho (2013, with adaptations).

By analyzing concepts from the Extended Version of Prototype Theory and Frame Semantics, we see similarities between these theories to be applied to the analogical dictionary's entry. As an example, we have seen that the entry for *vestuário* 'clothing' groups together a set of lexemes, which forms a lexical field, constituting the schema. The schema involves scenes that, when implemented, activate lexemes. The speaker can produce an utterance, such as: "*A modelo vestiu o casaco da moda*" ("the model wore the fashionable coat"). In this example, the scene is motivated by the action performed by the agent (i.e., the model). The lexemes: *modelo* 'model', *vestiu* 'wore', *casaco* 'coat', and *moda* 'fashionable' are the frames, generating the schema of the scene. When there is a scene, there is a selection of frames that creates the schema.

Presentation of the Dictionary

We are unaware of any previous work that has successfully achieved the goals that this project aims to achieve, and the outcome of the present project will be made available in computerized form. Therefore, this research will contribute to the technological development of our country. In addition, DIALP is an innovation, since

there are no Portuguese analogical dictionaries targeting learners of BPSL. Thus, the dictionary to be developed will provide learners of Brazilian Portuguese as a Second Language with a helpful tool to develop communication skills in an immersion environment.

The content of DIALP is intended for:

- i. learners of Portuguese as a Second Language, since the analogical organization of the dictionary may lead them to the meaning of the desired lexeme;
- ii. designers of language activities, crossword puzzles, word games and quizzes, since these professionals consult sets of related linguistic units;
- iii. teachers, students, lecturers, editors, and other professionals, who need a range of word choices, both from oral and written production, and/or are looking for expanding their vocabulary;
- iv. composers, poets, writers, translators, journalists, and people looking for the arrangement of words with related meanings;
- v. lexicographers, terminologists, and terminographers, who need to identify notional, semantic, lexical, and associative fields, as well as lexical relations, and also to establish cross-reference systems in dictionaries, glossaries, lexicons and vocabularies; and
- vi. researchers, indexers, documentalists, and laypeople, who intend to perform onomasiological searches and see how words of a language can be categorized in a systematic way.

DIALP is available online at: www.dicionarioonlineanalogico.com.br, a website that enables dynamic and continuous access to the dictionary. The entries were elaborated by senior undergraduate students, majoring in Brazilian Portuguese as a Second Language, by following the methodology described in this paper. Students enrolled in Course Project: Multimedia Elaboration have worked on the entries as their Final Project (i.e., Senior Thesis), linked to the project titled “Application of the methodological steps of Lexicology, Lexicography, Terminology, and Terminography to systematize lexemes and terms”, coordinated by Prof. Dr. Michelle Machado de Oliveira Vilarinho.

At the present stage of development, there are seven entries in the analogical part. These entries govern the elaboration of entries for the alphabetical part, which is composed of 205 entries. The research is still in progress, therefore more entries will be added to both parts. Lexemes added to the nomenclature of DIALP that were not collected from the work of Azevedo (2010) appear underlined. The information for grammatical category and gender is abbreviated in the entries. Furthermore, crossreferencing is made with the use of the abbreviation “*cf.*”, which refers the user to the analogical part of the dictionary.

In what follows, we present the entries for *alimentação* ‘eating’, *estudo* ‘study’, *família* ‘family’, *lazer* ‘leisure’, *trabalho* ‘work’, *transporte* ‘transportation’, and *vestuário* ‘clothing’, from the analogical part of the dictionary.

Figure 7 – Entry for ‘eating’

alimentação <i>s.f.</i> 1 abastecimento com substâncias para nutrição.		
substantivo	<p>Sinônimo alimento, iguaria, manutenção, rango, sustentação, sustento.</p> <p>Conceito conexo (utensílio doméstico) bateria de cozinha, <u>colher</u>, <u>eskorredor</u>, <u>espremedor</u>, <u>faca</u>, <u>fôrma</u>, <u>frigideira</u>, garfo, louça, <u>panela</u>, prato, <u>rolo</u>, saladeira, salseira, talher, travessa, <u>tigela</u>, trincho, <u>vasilha</u>.</p> <p>Conceito conexo (refeição) almoço, café da manhã, ceia, colação, consoado, <i>fast-food</i>, jantar, lanche, sobremesa.</p> <p>Conceito conexo (profissão) atendente, confeitoiro, cozinheiro, <u>garçom</u>, <u>garçonete</u>, nutricionista, padeiro.</p> <p>Conceito conexo (lugar) <u>bar</u>, cafeteria, <u>cantina</u>, churrascaria, confeitaria, copa, cozinha, <u>espaço gourmet</u>, <u>feira</u>, <u>lanchonete</u>, <u>padaria</u>, <u>pizzaria</u>, restaurante, sorveteria, <u>supermercado</u>.</p> <p>Conceito conexo alimento, apetite, bulimia, cardápio, <i>chef</i>, churrasco, comes e bebes, comestíveis, comilança, comilão, deglutição, degustação, dieta, desjejum, gastronomia, gastrônomo, gula, gulodice, guloseima, guloso, indigestão, ingestão, <i>mâitre</i>, mantimentos, mastigação, menu, pitêu, quiete, rapa, recheio, subsistência, sustança, trituração, voracidade.</p>	
	Remissões (VILARINHO, 2013)	<i>cf.</i> acompanhamentos; <i>cf.</i> bebida; <i>cf.</i> condimento e tempero; <i>cf.</i> entrada; <i>cf.</i> grão; <i>cf.</i> fruta; <i>cf.</i> legume e verdura; <i>cf.</i> massas; <i>cf.</i> prato principal; <i>cf.</i> sobremesa
verbo	<p>abarroto, absorver, alimentar, almoçar, amamentar, beber, cear, chupar, comer, comer um boi, consumir, dar de beber, dar uma dentada, deglutir, degustar, desjejuar, devorar, digerir, empanturrar, empanzinar, encher, encher o bucho, engolir, engordar, ingerir, fartar, jantar, lambr, lanchar, manter, mascar, matar a fome/sede, lambiscar, mastigar, merendar morder, nutrir, por à boca, provar, papar, petiscar, provar, quebrar o jejum, rangar, regar, saborear, saciar, satisfazer, sustentar, tomar, triturar.</p>	

Source: Linhares e Vilarinho (2016, p.261-262).

Figure 8 – Entry for ‘study’

<p>estudo <i>s.f.</i> 1 processo de exercer atividades de aprendizagem e de conhecimento para compreender algo que se desconhece ou de que se tem pouco conhecimento; 2 conhecimento adquirido pela aplicação da inteligência; 3 trabalho que precede a execução de uma obra artística ou científica; 4 investigação artística ou científica sobre determinado assunto; 5 observação, exame minucioso de algo; análise (Houaiss, adapt.).</p>	
<p>substantivo</p>	<p>conceito conexo (atividade) <u>dissertação</u>, <u>ensaio</u>, <u>esboço</u>, <u>estágio</u>, <u>fichamento</u>, <u>lição</u>, <u>monografia</u>, <u>relatório</u>, <u>resenha</u>, <u>resumo</u>, <u>portfólio</u>, <u>prova</u>, <u>sabatina</u>, <u>seminário</u>, <u>tese</u>, <u>tarefa de casa</u>.</p> <p>conceito conexo (evento) curso, palestra, seminário.</p> <p>conceito conexo (exposição) aula, instrução.</p> <p>conceito conexo (disciplinas da educação básica) <u>artes</u>, <u>biologia</u>, <u>educação física</u>, <u>ensino religioso</u>, <u>filosofia</u>, <u>física</u>, <u>geografia</u>, <u>história</u>, <u>língua espanhola</u>, <u>língua inglesa</u>, <u>língua portuguesa</u>, <u>matemática</u>, <u>química</u>, <u>sociologia</u>.</p> <p>conceito conexo (instituição) <u>academia</u>, <u>colégio</u>, <u>conservatório</u>, <u>creche</u>, <u>educandário</u>, <u>escola</u>, <u>escola-modelo</u>, <u>externato</u>, <u>faculdade</u>, <u>ginásio</u>, <u>instituto</u>, <u>internato</u>, <u>jardim de infância</u>, <u>maternal</u>, <u>universidade</u>, <u>escola</u>.</p> <p>conceito conexo (local) <u>anfiteatro</u>, <u>classe</u>, <u>plataforma</u>, <u>púlpito</u>, <u>tablado</u>, <u>tribuna</u>, <u>laboratório</u>, <u>sala de aula</u>.</p> <p>conceito conexo (móvel/objeto) <u>apagador</u>, <u>cadeira</u>, <u>carteira</u>, <u>giz</u>, <u>lousa</u>, <u>livro</u>, <u>materiais</u>, <u>pinça</u>, <u>púlpito</u>, <u>quadro</u>.</p> <p>conceito conexo (nível de escolaridade) <u>doutorado</u>, <u>educação básica</u>, <u>educação infantil</u>, <u>ensino fundamental</u>, <u>ensino médio</u>, <u>ensino superior</u>, <u>graduação</u>, <u>mestrado</u>, <u>pós-graduação</u>.</p> <p>conceito conexo (pessoa/grupo de pessoas) <u>aluno</u>, <u>congregação</u>, <u>discente</u>, <u>discipulado</u>, <u>docente</u>, <u>estudante</u>, <u>internado</u>, <u>mestrança</u>, <u>professorado</u>, <u>professor</u>, <u>universitário</u>.</p> <p>conceito conexo (procedimento) <u>adiantamento</u>, <u>aproveitamento</u>, <u>matrícula</u>.</p> <p>conceito conexo (processo) <u>admissão</u>, <u>aprendizado</u>, <u>aprendizagem</u>, <u>ensino</u>, <u>extensão</u>, <u>investigação</u>, <u>orientação</u>, <u>pensamento</u>, <u>progresso</u>, <u>regência</u>, <u>reflexão</u>, <u>revisão</u>, <u>análise</u>, <u>pesquisa</u>.</p> <p>conceito conexo <u>aptidão</u>, <u>cátedra</u>, <u>ciência</u>, <u>cognição</u>, <u>cultura</u>, <u>disciplina</u>, <u>docência</u>, <u>erudição</u>, <u>habilidade</u>, <u>leitura</u>, <u>livre docência</u>, <u>magistério</u>, <u>noviciado</u>, <u>postulado</u>, <u>pré-vestibular</u>, <u>matéria</u>, <u>vestibular</u>.</p>
<p>verbo</p>	<p><u>adquirir</u>, <u>analisar</u>, <u>anotar</u>, <u>aplicar</u>, <u>aprender</u>, <u>aprimorar</u>, <u>aprofundar</u>, <u>assimilar</u>, <u>armazenar</u>, <u>colher</u>, <u>compreender</u>, <u>cursar</u>, <u>decorar</u>, <u>dedicar</u>, <u>defender</u>, <u>diplomar</u>, <u>dissertar</u>, <u>educar</u>, <u>ensaiar</u>, <u>ensinar</u>, <u>entender</u>, <u>escrever</u>, <u>estar</u>, <u>estudar</u>, <u>explicar</u>, <u>fazer</u>, <u>folhear</u>, <u>formar</u>, <u>frequentar</u>, <u>graduar</u>, <u>instruir</u>, <u>ler</u>, <u>matricular</u>, <u>obter</u>, <u>orientar</u>, <u>passar</u>, <u>pensar</u>, <u>pesquisar</u>, <u>pós-graduar</u>, <u>preparar</u>, <u>progredir</u>, <u>receber</u>, <u>refletir</u>, <u>repassar</u>, <u>revisar</u>, <u>saber</u>, <u>ser</u>, <u>soletrar</u>.</p>

Source: Peres e Vilarinho (2016, p.163-164).

Figure 9 – Entry for ‘family’

<p>família <i>s.f.</i> 1 grupo de pessoas ligadas por laços sanguíneos, casamento, união estável, afinidade ou adoção, cuja função é cuidar uns dos outros.</p>	
<p>substantivo</p>	<p>Sinônimo parentela; parente. Merônimo <u>adúltero</u>, <u>afilhado</u>, <u>amante</u>, avó, avô, bastardo, bisavô, bisavó, bisneto, <u>comadre</u>, <u>compadre</u>, <u>cunhado(a)</u>, <u>enteado</u>, esposa, filho, <u>gêmeos</u>, <u>genro</u>, <u>irmã</u>, <u>irmão</u>, <u>irmão cacula</u>, <u>irmão de criação</u>, irmão de leite, <u>irmão do meio</u>, irmão gêmeo, <u>irmão mais velho</u>, <u>madrasta</u>, <u>madrinha</u>, mãe, <u>mãe de aluguel</u>, <u>mãe de leite</u>, <u>mãe solteira</u>, <u>marido</u>, <u>meio irmão</u>, neto, <u>nora</u>, órfão, padrasto, <u>padrinho</u>, <u>pai pai biológico</u>, <u>pai de criação</u>, <u>pai de família</u>, <u>pai solteiro</u>, pais, parente, <u>primo</u>, <u>primo-irmão</u>, primo-segundo, sobrinho, sogra, <u>sogro</u>, tetranelo, tetravô, tia, tia-avó, tio, tio-avó, trineto, trisavô. Variante mamãe, papai, <u>títio(a)</u>, <u>vó</u>, <u>vô</u>, vovó, <u>vovô</u>. Conceito conexo adúlterino, ancestrais, ancestralidade, antepassado, árvore genealógica, ascendência, ascendente, <u>casamento</u>, casta, <u>consanguinidade</u>, descendência, <u>divórcio</u>, estirpe, filiação, fraternidade, <u>genearca</u>, genitor, herdeiro, linhagem, maternidade, <u>nepostismo</u>, parentesco, paternidade, patriarca, primogênito, raça, sangue, sanguinidade, <u>separação</u>, tribo, unigênito. Conceito conexo (lugar) casa, lar.</p>
<p>verbo</p>	<p>adotar, <u>amamentar</u>, <u>apadrinhar</u>, <u>batizar</u>, criar, <u>cuidar</u>, descender, <u>educar</u>, <u>filiar</u>, ser da família de, ser do mesmo sangue de alguém, ser parente.</p>

Source: Carvalho (2014).³²

Figure 10 – Entry for ‘leisure’

<p>lazer <i>s.m.</i> 1 tempo que sobra do horário de trabalho e/ou do cumprimento de obrigações, utilizado para fazer atividades que causam alegria e satisfação. (Adaptado do Houaiss)</p>	
<p>substantivo</p>	<p>Sinônimo descanso, diversão, divertimento. Conceito conexo acampamento, brinco, <u>camping</u>, distração, entretém, entretenimento, entretimento, esparecimento, excursão, farra, feriado, férias, folga, folguedo, passatempo, passeio, piquenique, ponto facultativo, recreação, recreio, repouso, solaz, sueto, turismo. Conceito conexo (lugar) <u>academia</u>, <u>campo de futebol</u>, cinema, <u>clube</u>, <u>estádio</u>, feira, jardim zoológico, parque, <u>praça</u>, <u>praia</u>, teatro, <u>quadra</u>, <u>shopping</u>.</p>
<p>remissões</p>	<p><i>cf.</i> brincadeira, <i>cf.</i> brinquedo, <i>cf.</i> jogo, <i>cf.</i> esporte, <i>cf.</i> música, <i>cf.</i> evento, <i>cf.</i> filme.</p>
<p>verbo</p>	<p>alegrar-se, aproveitar, bailar, batucar, brincar, curtir, dançar, descansar, desenfadar-se, desentediado, dispor do seu tempo, distrair-se, divertir, dormir à sombra dos louros, empinar um papagaio, entregar-se as distrações, entreter, entreter-se, esbaldar-se, esparecer, estar em férias, farrear, fazer arraiá, fazer, avenida, feriar, folgar, folgazar, foliar, garotar, garrir, jardinar, jogar, jogar entrudo, matar o tempo, passar a vida alegre e folgada, passear, pimpar, pintar e bordar, pintar o sete, polcar, recrear, recrear-se, refocilar-se, relaxar, repimpar-se, repousar, saltar, sambar, sapatear, sossegar, ter férias, ter o seu tempo livre, ter/dar folga, tomar férias, traquinar, trebelhar, tripudiar, valsar.</p>

Source: Lima (2014).³³

³² This entry was written by Rebeca de Almeida Carvalho for her Final Project “Lexical field for ‘family’: entries for DIALP”, during the second semester of 2014.

³³ This entry was written by Fernanda Souza de Lima for her Final Project “A proposal for entries to compose DIALP’s lexical field of ‘leisure’”, during the second semester of 2014.

Figure 11 – Entry for ‘work’

<p>trabalho <i>s.m.</i> 1 ocupação, esforço físico e/ou mental a fim de alcançar determinado objetivo. 2 atividade remunerada ou não.</p>	
<p>substantivo</p>	<p>Sinônimo emprego, negócio, ocupação, ofício, quefazer, serviço, trabalho.</p> <p>Conceito conexo (transação) crédito, débito, <u>DOC</u>, <u>empréstimo</u>, financiamento, investimento, operação, <u>parcelamento</u>, <u>TED</u>, <u>transferência</u>.</p> <p>Conceito conexo (níveis de formação) aperfeiçoamento, especialização, <u>graduação</u>.</p> <p>Conceito conexo (local) campo, comércio, departamento, divisão, empresa, <u>escritório</u>, esfera, indústria, loja, lugar, mercadoria, ministério, posto, repartição, setor, venda.</p> <p>Conceito conexo (estratégia empresarial) marketing, <u>merchandising</u>, otimização, <u>publicidade</u>.</p> <p>Conceito conexo (método de trabalho) automação, informatização, reciclagem.</p> <p>Conceito conexo (característica profissionais) ambição, cuidado, <u>competência</u>, competitividade, <u>comprometimento</u>, dinâmica, <u>entusiasmo</u>, especialidade, operosidade, participação, <u>pontualidade</u>, sujeição, tática.</p> <p>Conceito conexo (estratégia operacional) agenda, balanço, cronograma, <u>gráfico</u>, orçamento, organização, organograma, planejamento, planilha.</p> <p>Conceito conexo (atribuição) dever, <u>dom</u>, encargo, encomenda, função, <u>habilidade</u>, incumbência, ministério, missão, obra, obrigação, papel, plano, posição, posto, projeto, <u>propensão</u>, <u>vocação</u>.</p> <p>Conceito conexo (profissão) administrador, advogado, agente de viagens, agricultor, agrônomo, alfaiate, analista de sistemas, antropólogo, arquiteto, artista, artista plástico, ator, barbeiro, biólogo, carpinteiro, cientista político, cineasta, chapeleiro, comunicador social, contador, costureira, dentista, desenhista industrial, designer, diarista, economista, editor, eletricitista, enfermeiro, engenheiro, escritor, esportista, estilista, fabricante, farmacêutico, filólogo, físico, fisioterapeuta, fonoaudiólogo, gráfico, historiador, joalheiro, jornalista, juiz, lenhador, lexicógrafo, maquinista, marceneiro, marinheiro, matemático, mecânico, médico, militar, mineiro, motorista, músico, nutricionista, operador, operário, ourives, paisagista, pedagogo, piloto, programador, professor, promotor, psicanalista, psicólogo, publicitário, químico, relojoeiro, sapateiro, serralheiro, sociólogo, tecelão, técnico, urbanista, veterinário.</p> <p>Conceito conexo 8 arte, carreira, comissão, custeio, custo, déficit, especialidade, <u>estipêndio</u>, estímulo, estratégia, estruturação, exercício, incentivo, logística, <u>lucratividade</u>, lucro, metodologia, mercadoria, ônus, <u>orçamento</u>, <u>ordenado</u>, prática, profissão, <u>provento</u>, ramo, rentabilidade, tarefa, tirocinio.</p>
<p>verbo</p>	<p><i>administrar, advogar, agenciar, <u>analisar</u>, aperfeiçoar, aplicar, <u>arquitetar</u>, assumir, <u>atuar</u>, <u>clínica</u>, <u>conduzir/efetuar/fazer</u>, <u>costurar</u>, <u>cuidar</u>, <u>dedicar</u>, <u>desempenhar</u>, <u>desenhar</u>, <u>destinar</u>, <u>dirigir</u>, <u>editar</u>, <u>empenhar</u>, <u>empreender</u>, <u>empregar</u>, <u>encarregar</u>, <u>ensinar</u>, <u>entrar</u>, <u>entregar</u>, <u>envolver</u>, <u>escrever</u>, <u>especializar</u>, <u>estabelecer</u>, <u>estar</u>, <u>exercer</u>, <u>fabricar</u>, <u>funcionalizar</u>, <u>gastar</u>, <u>gerenciar</u>, <u>incumbir</u>, <u>lexicografar</u>, <u>medicar</u>, <u>ocupar</u>, <u>operar</u>, <u>pilotar</u>, <u>programar</u>, <u>realizar</u>, <u>reciclar</u>, <u>responsabilizar</u>, <u>sacrificar</u>, <u>seguir</u>, <u>ser</u>, <u>servir</u>, <u>suportar</u>, <u>negociar</u>, <u>ter/possuir/desfrutar</u>, <u>tomar</u>, <u>trabalhar</u>, <u>tratar</u>.</i></p>

Source: Nóbrega e Vilarinho (2016, p.181-182).

Figure 12 – Entry for ‘transportation’

transporte <i>s.m.</i> 1 veículo utilizado para locomoção de passageiros ou cargas.	
substantivo	<p>Hipônimo <u>automóvel</u>, avião, barco, <u>bicicleta</u>, bote, <u>bonde</u>, <u>caminhonete</u>, <u>camioneta</u>, <u>caminhão</u>, <u>caminhão-trator</u>, canoa, carro, <u>carro-de-mão</u>, <u>carroça</u>, <u>ciclomotor</u>, <u>charrete</u>, metrô, <u>micro-ônibus</u>, <u>motocicleta</u>, <u>motoneta</u>, <u>mototáxi</u>, navio, <u>ônibus</u>, <u>quadriciclo</u>, <u>reboque</u>, ríquixá, <u>semi-reboque</u>, submarino, táxi, trator, trem, trem-bala, <u>trenó</u>, <u>tríciclo</u>, <u>Veículo Leve sobre Pneus (VLP)</u>, <u>Veículo Leve sobre Trilhos (VLT)</u>.</p> <p>Merônimo acelerador, amortecedor, banco, buzina, cabine, capô, cinto de segurança, embreagem, escapamento, hélice, farol, freio, limpador de para-brisas, macaco, marcha, painel, motor, para-choque, para-brisa pedal, pisca-alerta, placa, para-choque, porta-mala, pneu, porta, radiador, retrovisor, roda, teto, triângulo, vagão, vela, vidro, volante.</p> <p>Conceito conexo (profissional) 1 caminhoneiro, carroceiro, ciclista, condutor, motociclista, motorista, taxista.</p> <p>Conceito conexo 2 aceleração, ambulância, atropelamento, batida, colisão, condução, deslocamento, locomoção, mobilidade, movimentação, navegação, sinalização, velocidade, voo, tráfego, trânsito, viagem, viatura.</p>
verbo	acelerar, afundar, atropelar, aumentar, bater, colidir, correr, deslizar, deslocar, diminuir, frear, mover, transportar, quebrar, voar.

Source: Vilarinho (2013, p.167).

Figure 13 – Entry for ‘clothing’

vestuário <i>s.m.</i> 1 peça de roupa que serve para cobrir qualquer parte do corpo humano.	
substantivo	<p>Sinônimo indumentária, indumento, traje, roupa, vestes, vestimenta.</p> <p>Hipônimo v. <u>acessório</u>, agasalho, anágua, <i>baby look</i>, <i>balonné</i>, bata, bermuda, biquíni, bolero, blazer, blusa, burca, calcinha, calça, v. calçado, calção, camisa, camiseta, <u>camisete</u>, camisola, capa, capa de chuva, capacete, casaco, <u>cigarrete</u>, cinta, colete, combinação, cueca, espartilho, farda, fio-dental, fraque, jaleco, jaqueta, <u>jardineira</u>, <u>legging</u>, <u>lingerie</u>, <u>longuete</u>, <u>macacão</u>, <u>macaquinho</u>, maiô, <u>moletom</u>, paletó, pantalonina, pijama, pulôver, robe, roupão, saia, <u>salopete</u>, segunda pele, <i>short</i>, <i>smoking</i>, sobretudo, suéter, sunga, sutiã, tanga, terminho, terno, túnica, uniforme, vestido.</p> <p>Merônimo <u>alça</u>, <u>algodão</u>, <u>aplicação</u>, <u>barra</u>, <u>botão</u>, <u>capuz</u>, <u>cós</u>, <u>couro</u>, <u>colarinho</u>, <u>forro</u>, <u>jeans</u>, <u>malha</u>, manga.</p> <p>Conceito conexo (lugar) 1 <u>brechó</u>, butique, loja.</p> <p>Conceito conexo (lugar) 2 guarda-roupa, provador, vestiário.</p> <p>Conceito conexo (profissional) 3 alfaiate, costureiro, <u>designer</u>, <u>editor de moda</u>, estilista, figurinista, <u>modelista</u>, <u>produtor</u>.</p> <p>Conceito conexo 4 <u>coleção</u>, costura, corte, <u>griffe</u>, <u>elegância</u>, <u>estilo</u>, <u>moda</u>, <u>mostruário</u>, <u>trapo</u>.</p>
verbo	<u>agasalhar</u> , <u>ajustar</u> , <u>aprontar</u> , <u>arrematar</u> , arrumar, <u>colocar</u> , <u>cortar</u> , <u>costurar</u> , engravatar, estar com, <u>experimentar</u> , fardar, <u>fantasiar</u> , <u>lavar</u> , <u>manchar</u> , <u>modelar</u> , <u>molhar</u> , <u>passar</u> , <u>provar</u> , <u>rasgar</u> , <u>secar</u> , <u>tirar</u> , vestir, uniformizar, usar.

Source: Vilarinho (2013, p.168-169).

For the elaboration of definitions to compose the alphabetical part, when possible, we have adopted the model ‘what is it’ + ‘what for’, known as ‘pragmatic definition’, as proposed by Faulstich (2014, p.382). The first question is answered with the hypernym. The second question is answered with the functionality of the unit being defined. The adaptation of this model is based on the specificity of the lexeme to be defined, as detailed in the following figure (with adaptations).

Figure 14 – Model of the definition

Field	Model of the definition	Entry
<i>alimentação</i> ‘eating’	+ hypernym (professional or individual), ± area of activity (food and health), + function. + hypernym (place, shop), + function	churrascaria ³⁴ <i>s.f.</i> 1. restaurante cujo prato principal é o churrasco, que geralmente é servido em rodízios. “ <i>Para completar, o rodízio da churrascaria terá um preço especial para quem participar do evento, apenas R\$25,00 por pessoa.</i> ” (PF ³⁵ , 2014). <i>Cf. alimentação (parte analógica)</i>
<i>estudo</i> ‘study’	+ level of education, + function	doutorado ³⁶ <i>s.m.</i> 1. o grau/graduação de doutor. 2. curso de pós-graduação <i>stricto sensu</i> de mais elevada titulação no Brasil, para obtenção do título de doutor, o que torna o profissional especializado em área de conhecimento. “O ex-bolsista do programa Ciência sem Fronteiras (CsF) [...] concluiu o doutorado no Programa de Pós-Graduação em Engenharia Química da Universidade Federal do Ceará (UFC).” (CAPES) ³⁷ . [No curso de doutorado, o estudante precisa defender a tese, que deve ser original, resultante de pesquisa acadêmica. Se for aprovado no exame de defesa da tese, obterá o diploma de doutor. A duração mínima para o doutorado são 2 anos, mas o tempo regulamentar do curso são 48 meses (4 anos). Após o doutorado, o profissional pode realizar estágio pós-doutorado (denomina-se o profissional como PhD). Para esse estágio, não há nova titulação. (MEC, CAPES, adaptado por APP)].

³⁴ Entry for *churrascaria* ‘steak house’ written by Linhares e Vilarinho (2016, p.263).

³⁵ *Portal Fluminense* is abbreviated to PF. Available at: <<http://portalfuminense.com.br/futebol/16/09/2014/fluminense-oferecera-para-cada-socio-um-ingresso-gratuito-para-jogo-com-o-vitoria/14083/>>. Accessed date: September 30, 2014.

³⁶ Entry for *doutorado* ‘Doctorate’ written by Amanda Pereira Peres.

³⁷ Coordenação de Aperfeiçoamento de Pessoal de Nível Superior abbreviated to CAPES. Available at: <<http://www.capes.gov.br/sala-de-imprensa/noticias/7441-bolsista-do-ciencia-sem-fronteiras-recebe-duplo-diploma-de-doutorado>>. Accessed date: April 6, 2015.

Field	Model of the definition	Entry
<i>família</i> 'family'	+ kinship, ± function	marido ³⁸ <i>s.m.</i> 1. homem casado em relação à pessoa a quem se uniu cuja função é proteger a família. “ <i>O marido ou esposa é herdeiro havendo ou não filhos ou pais do falecido</i> ” (GOG ³⁹ , 2014). <i>Cf.</i> Família (parte analógica).
<i>vestuário</i> 'clothing'	+piece of clothing (hypernym), ± masculine or feminine, +characteristics (part of the body that it covers)	pijama ⁴⁰ <i>s.m.</i> 1. peça do vestuário usada para dormir, composta de blusa e short, ou blusa ou calça. “ <i>O pai vestia o pijama depois do jantar e se deitava com os filhos para contar histórias</i> ”. (CB ⁴¹ , 2016). <i>Cf.</i> vestuário (parte analógica)
<i>transporte</i> 'transportation'	+vehicle, +type of propulsion (humane; animal traction; fuel; electricity; impellent power) ±number of wheels (1; 2; 3; 4; or more than 4 wheels), +means of displacement (rails, road water, air, ice or snow) +specificity of use (to transport cargo, passenger or agricultural use or mecanized earthmoving)	ônibus ⁴² <i>s.m.</i> 1. veículo motorizado, movido por combustível, com quatro rodas, usado na locomoção por via, para transporte coletivo de passageiros. “ <i>Há ônibus que percorrem toda a ilha, passam em média a cada três minutos e despejam os passageiros no centro da cidade</i> ” (CB, 2016). <i>Cf.</i> transporte (parte analógica).
<i>trabalho</i> 'work'	+ hypernym, + function	arquiteto ⁴³ <i>s.m.</i> 1. profissional que planeja e elabora projeto de construção e reforma. <i>O projeto da reforma é do arquiteto paulistano Jorge Elias</i> (CB, 2016). <i>Cf.</i> Profissão (parte analógica).

Source: Vilarinho (2017)⁴⁴.

The adoption of this model serves to standardize entries that belong to the same category. However, it is not always possible to follow this model. In any case, there was an effort to make explicit the categorization, based on the object's hypernym and functionality.

³⁸ Entry for *marido* 'husband' written by Rebeca Carvalho.

³⁹ Gazeta On-line Globo abbreviated to GOG. Available at: <http://gazetaonline.globo.com/_conteudo/2013/03/cbn_vitoria/artigos/1417143-como-fica-o-direito-de-heranca-e-a-igualdade-entre-os-filhos-na-hora-de-herdar-um-imovel.html>. Accessed date: September 28, 2014.

⁴⁰ Entry for *pijama* 'pajamas' written by Vilarinho (2016) for the purpose of this research.

⁴¹ Corpus Brasileiro abbreviated to CB. Available at: <<http://www.linguateca.pt/aceso/corpus.php?corpus=CBRAS>>. Accessed date: February 15, 2016.

⁴² Entry for *ônibus* 'bus' written by Vilarinho (2017), for the purposes of this research.

⁴³ Entry for *arquiteto* 'architect' written by Nóbrega e Vilarinho (2016, p.184).

⁴⁴ Table made for the purposes of this research.

Final remarks

To summarize, based on the application of Kleiber's (1990) Extended Version of Prototype Theory, Fillmore's (1977) Semantic of Frames, as well as on the reformulation of entries from Azevedo's (2010) analogical dictionary, it was possible to present the model for DIALP. In the present research, we have adopted the methodological principles for the elaboration of lexicons, dictionaries and glossaries, as postulated by Faulstich (2001), as well as Vilarinho's (2013) proposal. In addition, we have adopted the pragmatic definition model (FAULSTICH, 2014, p.382) to write the definitions of DIALP.

Since Brazil has a relevant role in the international scene, as previously stated, there is a favorable context for teaching and learning Portuguese. Therefore, the findings presented in this paper will help disseminate both the Portuguese language and the Brazilian culture, as the description of the lexicon reveals cultural aspects.

Finally, given that Distrito Federal (DF) hosts several embassies, and that there are many foreigners living in Brasília, DF, in addition to refugees, traders, NGO workers, missionaries, apprentices, priests etc., the results of this project will provide tools to help these people develop language skills to communicate in Brazilian Portuguese in an immersion environment.

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VILARINHO, M. Metodologia para elaboração de Dicionário Analógico de Língua Portuguesa. *Alfa*, São Paulo, v.61, n.1, p.101-129, 2017.

- *RESUMO: O tema desta pesquisa se insere na linha de pesquisa Léxico e Terminologia, desenvolvida no Centro de Estudos Lexicais e Terminológicos (Centro Lexterm), da Universidade de Brasília. O objeto de estudo é o dicionário analógico, entendido como um repertório lexicográfico de caráter onomasiológico, no qual os lexemas são organizados partindo das ideias ou dos conceitos para chegar às unidades lexicais. O objetivo principal desta pesquisa é a criação de uma proposta de Dicionário Informatizado Analógico de Língua Portuguesa (DIALP). O público-alvo principal da obra é o aprendiz de Português do Brasil como Segunda Língua (PBSL). A seleção dos lexemas para compor os verbetes se baseia na aplicação da Versão Ampliada da Teoria dos Protótipos de Kleiber (1990) e da Semântica de Frames de Fillmore (1977) e na reformulação dos verbetes do Dicionário Analógico da Língua Portuguesa de Azevedo (2010). Para elaborar o modelo de dicionário postulado, adotamos a proposta metodológica para elaboração de léxicos, dicionários e glossários de*

Faulstich (2001) e aplicamos a proposta de Vilarinho (2013). A realização desta pesquisa contribui para o desenvolvimento tecnológico do Brasil, uma vez que não há registro de outra obra que tenha atingido satisfatoriamente os objetivos que este projeto se propõe a alcançar.

- **PALAVRAS-CHAVE:** *Dicionário analógico. Versão Ampliada da Teoria dos Protótipos. Semântica de Frames. Relações Semânticas.*

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THE MINIMAL WORD IN EUROPEAN PORTUGUESE: THE ORALIZATION OF ABBREVIATED FORMS

João VELOSO*

- **ABSTRACT:** The phonological constraints that define which phonetic chains are eligible to become a word in a given language generally include a Minimality Condition (MC). MC imposes a minimal amount of phonological substance that must be included by any single word of the language. Traditionally, MC is measured in terms of syllable weight or syllabic extension of the word. It has been much debated whether MC corresponds to a truly universal constraint; as for Portuguese, previous studies have been conflicting between the acceptance and the refusal of its productivity in the phonology of the language. In this study, we will assess the functionality of MC for the building of Portuguese lexical entries by means of observing the oralization of abbreviations. This is assumed here as a word-productive process in Portuguese. Based upon an experimental study with a group of native speakers of Contemporary European Portuguese (CEP), we conclude that (i) MC is an operative constraint in the phonology of Portuguese, and (ii) its defining criterion is purely linear and segmental. According to our proposal, MC is respected in CEP when a phonetic chain contains a minimum of three segments, regardless of syllable weight and syllabic extension.
- **KEYWORDS:** Minimality Condition. Syllable Weight. Word. Wordiness Constraints. Well-formedness.

Introduction

A satisfactory definition of the word, as it is well-known, is one of the main difficulties for linguists. A substantial part of such difficulty lies, first of all, on the lack of universal, objective, formal criteria that make it possible to identify this concept in an unambiguous way and to segment larger linguistic structures in units unanimously recognized as “words”. In addition, we lack further criteria allowing an intrinsic distinction and characterization, based solely on linguistic arguments, of the various types of meaning-bearer units, like affixes, clitics, clitic groups, among others. Different approaches, comprehending typologically different languages, have discussed this *paradox*: why an intuitive, basic unit such as the word proves to be so hard to define

* FLUP/CLUP – Universidade do Porto. Faculdade de Letras/Centro de Linguística. Porto – Portugal. jveloso@letras.up.pt

in purely technical terms? Examples of such reflections on this issue, some of which focusing on this very contradiction between the “easiness” of the self-intuitive notions of the word and the difficulties of a technical explicitation of this concept, may be found in Jones (1931), Krámský (1969), Juilland; Roceric (1972), Halle (1973), Aronoff (1976), Bisol (2000; 2004; 2007), Julien (2006), Rosa (2006), Veloso (2009; 2010; 2016), Haspelmath (2011; 2012a,b), Ferreira (2012), Villalva (2012), Mendes (2013), Ulrich (2013), Elordieta (2014), Ibarretxe-Antuñano; Mendivil-Giró (2014) and others.

Among the requirements commonly mentioned as a fundamental criterion for a satisfactory definition of the word, the *Minimality Condition* (MC) is found very often: in a given language, a sound chain will be a good candidate to be recognized as a word if and if only, together with other properties, it contains a minimum amount of phonological material. If below such limit, no units can be admitted as words of that language (see, for a review of these arguments, McCARTHY; PRINCE, 1995). MC is the central issue of the present study.

In some previous analyses of the same problem (see again, e.g., McCARTHY; PRINCE, 1995), it has been argued that MC is not a universal property: some languages could not include any minimality constraints in their phonologies, whereas cross-linguistic MC parametrization may vary importantly from grammar to grammar.

As far as Portuguese is concerned, two positions are assumed by the literature: on the one hand, some authors postulate the ineffectiveness of any minimality constraint in this language; oppositely, other analyses advocate MC as a mandatory constraint in the phonology of Portuguese:¹

In languages like Portuguese (either in its European or Brazilian varieties), the occurrence of words like *pé* ‘foot’, *mi* ‘mi’ or *nu* ‘naked’ has led several authors – e.g., Bisol (2000), Vigário (2003) – to the conclusion that such constraint [Minimal Word Constraint] is inoperative in Portuguese. However, Vigário (2003: 159) notices that, in the *Português Fundamental* corpus [a corpus of the most frequent words of European Portuguese], including approximately 7.000 inflected forms, only 138 (lexical) monosyllabic words are found; within this subset, 28 only consist of open syllables. Such low values have motivated Booij

¹ Original quotation, in Portuguese: “Em línguas como o Português (na variedade brasileira ou europeia), a possibilidade de encontrarmos palavras como *pé*, *mi* ou *nu*, levou autores como Bisol (2000) e Vigário (2003) a considerar que tal restrição [Restrição de Palavra Mínima] não se encontra operativa nessa língua. Contudo, Vigário (2003: 159) não deixa de notar que, tendo em conta a lista do *Português Fundamental* [...] que inclui cerca de sete mil formas flexionadas, apenas 138 palavras (lexicais) são monossilábicas, e destas apenas 28 constituídas por sílaba aberta. Tais baixos valores conduzem Booij (2004) a contrapor que o Português é de facto sensível a restrições de minimalidade, mas que existe um reduzido número de palavras que a violam.

(.....)

Os resultados [do nosso próprio estudo] mostram que a proporção das palavras monomoraicas/monossilábicas em relação aos restantes formatos de palavra é muito maior do que a revelada [por estudos anteriores] [...]. O efectivo uso de formas monomoraicas/monossilábicas aponta, assim, para que *a palavra prosódica no Português (Europeu) não seja de facto sensível a restrições de tamanho mínimo.*” (VIGÁRIO; MARTINS; FROTA, 2005, p.903; our italics)

(2004) to argue that Portuguese, in fact, admits minimality constraints, even though a small amount of words can violate them.

(.....)

[Our own] results show that the proportion of monomoraic/monosyllabic words in relation to the other word formats is higher than [previously] demonstrated [...]. The effective usage of monomoraic/monosyllabic forms suggests, thus, that *the prosodic word in (European) Portuguese is not conditioned by minimal extent constraints.*”

(VIGÁRIO; MARTINS; FROTA, 2005, p.903; our translation, our italics)

In our study, it is our aim to gather evidence that could lead us to a better evaluation of two specific, inter-related questions: **is MC a functional constraint in Portuguese, and, if so, how is it parametrized in this language?**

Our analysis will be limited to European Portuguese (EP)² and follow a methodology previously adopted: the oralization of abbreviations as initialisms or acronyms.

Throughout the paper, the terms “abbreviation” and “abbreviated form” will be used to make reference to the process and to the result of a specific word-formation routine which converts special phonetic chains into “new” lexical words by means of one of the following ways³ (which are not the only abbreviation procedures available in Portuguese):⁴

(i) *acronymy*: phonetization of a longer expression into a shorter one (=“acronym”) through the combination of morphologically unmotivated subsegments of the several words found in the original, larger expression; this gives rise to a phonetic chain similar to a phonological word (ω) of the language, since it respects its phonotactic rules and is in accordance with all phonological, morphological, syntactic and semantic conditions (stress, lexical class, thematic class, inflection, gender, meaning, etc.). Example: *Organização das Nações Unidas* ‘United Nations Organization’ → “*ONU*”=[$\text{ɔ}^{\text{h}}\text{nu}$] _{ω -Noun_Feminine};

(ii) *initialization*: phonetization of a longer expression into a shorter one (=“initialism”) through the spelling of the initial letters of each lexical word

² For this reason, only initialisms and acronyms that are current in the European variety of Portuguese will be considered here; accordingly, all phonetic transcriptions will take the standard norm of European Portuguese as the pattern.

³ Bearing in mind that abbreviations are functionally equivalent to the longer expressions they replace and the fact that they absorb the essential grammatical properties of morphosyntactic words (see examples and analyses in the text), we assume them here as true entries of the speakers’ mental lexicon. In fact, most of them are largely shared by the speakers’ community and acquire a stable meaning (very often, they are even admitted by lexicographers as entries of current dictionaries). Their lexical representation, though, is inevitably subject to the natural variability that is found when individual lexicons are compared. For a discussion of this topic, see, among others, (CORREIA; LEMOS, 2005).

⁴ See, for instance, and limiting the literature on this subject to the studies referring to European Portuguese exclusively, Correia e Lemos (2005), Villalva (2008) and Pereira (2013), who offer more detailed descriptions of abbreviation (and other non-concatenative) processes in Portuguese and discuss their role as word-formation – hence, as truly *morphological* – processes in this language.

contained in the original, longer expression, so that a prosodic word group (VIGÁRIO; FERNANDES-SVARTMAN, 2010) is formed, behaving as a sole morphosyntactic word though (one sole gender, one sole lexical class, etc.). Example: *Movimento Democrático das Mulheres* ‘Democratic Women’s Movement’ → “MDM”=[^lεmĩ]_o[^lde]_o[^lεmĩ]_o]_{PWG_Noun_Masculine}.

In the second part of our study, an empirical exploration will be presented. We shall then observe the linguistic behaviour of a group of native speakers of EP when confronted with this kind of specific chains and asked to treat them as “words” of their language.

Subjects will be given a list of written representations⁵, introduced as abbreviated forms and embedded in syntactically invariant sentences. They will be asked to read that list. Therefore, we shall try to find cues giving us relevant information about the linguistic processing of this kind of stimuli and, simultaneously, about the obligatory conditions of the language’s words. More specifically, it is our purpose to check the eventual functionality of MC in the implicit phonological knowledge of EP native speakers/listeners. In brief, this way to investigate this specific issue coincides with Plénat’s (1993) methodology to study the same question with French speakers.

Based on these preliminary questions, our article will be divided as follows:

- in section 2, a review of some basic assumptions related to MC and other phonological constraints, either at a general level or focusing on Portuguese, will be made;
- in section 3, we shall discuss the relevance of the methodological option that will be followed in our empirical study – the oralization of abbreviations – as a valid means to evaluate MC and other phonological constraints as mandatory requirements for the wordiness in Portuguese;
- the empirical study, with data and subjects of Contemporary EP, will be presented in section 4;
- section 5 will present the final observations of the study.

Phonological constraints and wordiness

As said in the Introduction, an exhaustive inventory of all linguistic criteria leading to a clear definition, identification and delimitation of words as linguistic units, even for inflectional languages like Portuguese, has challenged and motivated different interpretations.

Studies such as the aforementioned have attempted to identify the *wordiness conditions* (ARONOFF; FUDEMAN, 2005, p.36-38) which make it possible, at

⁵ As explicitly admitted by authors such the researchers mentioned in note 4, in languages with an alphabetic, conventional system of writing – as it is the case of Portuguese – the abbreviation processes are regularly grounded on the written forms of the larger words or expressions that are the input for abbreviation.

least partially, to assign or to refuse the status of “word” to given phonetic chains in a given language.

Wordiness conditions, in fact, are shared by the different grammar modules (namely, phonology, morphology and syntax). In the present study, however, as said before, we shall not deal with all these wordiness dimensions: we shall focus, deliberately and exclusively, on *Minimality Condition*.

Minimality Condition: general formulation

MC is the phonological constraint that, interacting with others, imposing a minimum amount of phonological material so that a phonetic chain may be admitted as a word in a given language. Although its parametrization varies cross-linguistically, we assume, as a general formulation of MC potentially valid for a great number of languages of the world, a formulation like (1),⁶ based on McCarthy and Prince (1995, p.321-322).⁷

(1). Generic formulation of the MINIMALITY CONDITION (*ap.* McCARTHY; PRINCE, 1995, p.321-322)

(1a). In **languages WITH quantitative distinctions**: the minimal word must contain at least one heavy syllable.

(1b). In **languages WITHOUT quantitative distinctions**: the minimal word must contain at least two syllables.

The Minimality Condition in Portuguese

We shall now enter the discussion of the specific issue of the relevance of MC in EP.

Since Portuguese does not admit quantitative distinctions, we should expect, according to McCARTHY; PRINCE’s (1995) postulate referred to in (1) (see (1b)), that all words of Portuguese would correspond, at least, to two syllables.

Contemporary EP lexicon includes, though, a non-neglectable amount of monosyllabic words. In addition to clitics,⁸ EP has many monosyllabic lexical words, as shown in Figure 1. Words in this list are categorized in *light* monosyllables (non-

⁶ This formulation – taken here and among many other authors as generic – is not absolutely consensual. Vigário; Martins; Frota (2005), e.g., can be counted among the authors who discuss it very critically.

⁷ “In *quantity-sensitive* languages, which distinguish syllable weight, the minimal word is bimoraic; in *quantity-insensitive* languages, all syllables are presumptively monomoraic, and so the minimal word is disyllabic.” (McCARTHY; PRINCE, 1995, p.321-322).

⁸ The special status of clitics as real “words” has been largely discussed by previous literature, both with respect to Portuguese and to other languages as well. See, for example: Vigário (1998; 2003; 2007); Nespor (1999); Van Oostendorp (1999); Van Riemsdijk (Org., 1999); Vogel (1999); Ennaji (2000); Sadiqi (2000); Gerlach; Grijzenhout (2000); BISOL (2004); Nespor; Vogel (2007); Gori (2007); Ferreira (2012); Veloso (2012; 2013; 2016). Given its specificities and the limited scope of this study, we will not go any further into the analysis of clitics and their relation to MC in Portuguese.

branched rhyme) and *heavy* monosyllables (branched rhyme, according to the several prosodic and morphological conditions explicated in the right-foremost columns of Figure 1); the reasons for this categorization will be made more clear later on.

Figure 1 – Examples of monosyllabic words in Portuguese⁹

<i>Light</i> monosyllables	<i>Heavy</i> monosyllables		
	Branched nucleus	Segmentally filled coda	Branched nucleus + Segmentally filled coda (lexical /S/)
<i>é</i> ‘is’	<i>rei</i> ‘king’	<i>três</i> ‘three’	<i>dois</i> ‘two’
<i>pé</i> ‘foot’	<i>pau</i> ‘stick’	<i>mal</i> ‘evil’	<i>pois</i> ‘then’
<i>dó</i> ‘sorrow’	<i>boi</i> ‘ox’	<i>mar</i> ‘sea’	
<i>ré</i> ‘re [musical note]’	<i>mau</i> ‘bad’	<i>cal</i> ‘lime’	
<i>mi</i> ‘mi [musical note]’	<i>sei</i> ‘(I) know’	<i>cor</i> ‘colour’	
<i>fã</i> ‘fa [musical note]’	<i>sou</i> ‘(I) am’	<i>faz</i> ‘(it) makes’	
<i>lá</i> ‘la [musical note]’	<i>teu</i> ‘your(s)’	<i>par</i> ‘even’	
<i>si</i> ‘ti [musical note]’	<i>céu</i> ‘sky’	<i>ter</i> ‘to have’	
<i>pá</i> ‘shovel’	<i>nau</i> ‘ship’	<i>sul</i> ‘south’	
<i>sé</i> ‘cathedral’	<i>lei</i> ‘law’	<i>sal</i> ‘salt’	
<i>pó</i> ‘dust’			
<i>há</i> ‘there is’			
<i>fé</i> ‘faith’			
<i>dá</i> ‘gives’			
<i>cá</i> ‘here’			
<i>tu</i> ‘you’			
<i>nu</i> ‘naked’			

Source: author’s elaboration.

At first sight, these examples could lead us to conclude that EP would belong to the set of languages for which MC, as formulated by McCarthy and Prince (1995) (see (1)), does not play any role as a phonotactic constraint or as a wordiness condition. In fact, according to such argument, if EP does not admit quantity-based vowel oppositions, its phonology should not allow any phonetic chains with less than two syllables. This is the main reason for several authors to refute the relevance of MC in Portuguese, as summarized in the aforementioned quotation from Vigário, Martins and Frota (2005).¹⁰

These conflicting, contradicting phonological interpretations feed the discussion that will be developed in the following sections of this paper.

⁹ OBS.: 1. This table includes as “words” inflected forms of verbs and nouns. 2. In the examples of segmentally filled codas, we excluded all possible cases of inflected forms with a non-lexical final /S/. 3. VG diphthongs were assumed as branched nuclei. 4. In the present study, we deliberately exclude nuclei with phonetically nasalized vowels. 5. This table does not include forms traditionally described or classified as “clitics”.

¹⁰ Other interpretations, referred to by the same study that is quoted here, see the scarcity of this kind of words – seen as *exceptional, marked* cases, then – as an argument to go on accepting MC as a wordiness condition in Portuguese. This is the explanation found in Booij (2004), as cited by Vigário, Martins and Frota (2005) (see quotation in Introduction).

Syllable weight and wordiness in Portuguese

In our opinion, a complete evaluation of the effectiveness of MC in the phonology of Portuguese requires a deeper examination of dimensions that cannot be reduced to the minimum number of syllables per word. Thus, we shall pay attention, in the next paragraphs, to the specific question of syllable weight and its relation to wordiness in Portuguese, bearing in mind the connection between such property and MC, according to the formulation of this constraint as found in (1) and McCarthy and Prince's (1995) thoughts on the distinction between the language types under consideration there.¹¹

The importance of syllable weight in Portuguese will be examined here based on several arguments related to two different phonological phenomena: stress-assignment and historical evidence attested in Medieval Portuguese (MP), that is to say, the cases of Latin etyma that almost invariably originated heavy monosyllables.

Syllable weight and word stress

Traditionally, phonological descriptions of EP consider syllable weight as a neglectable factor in domains where it is accepted to operate quite systematically as far as other languages are concerned, as it is the case of stress-assignment. Studies such as Pereira's (1999), Roca's (1999), Mateus and D'Andrade (2000) and Mateus et al.'s (2003), among others, describe word stress in Portuguese as exclusively governed by morphological conditioning: nouns and verbs follow different stress patterns; within each word class, stress-assignment is sensitive to particular morphemes or morphological/morphosyntactic combinations. As we said before, this is the most consensual viewpoint regarding word-stress assignment among phonologists dealing with EP.

It is worthy to confront this interpretation, though, with some arguments provided by alternative explanations that do not exclude so categorically the interference of syllable weight on word-stress assignment. Brandão de Carvalho (1988; 1989; 2011), focusing on European Portuguese, as well as Wetzels (2007), considering the Brazilian varieties of the language, are among the authors who emphasize the inexistence of words stressed on the antepenultimate with a heavy syllable on the penultimate position, in addition to the statistical predominance of last-syllable-accented words with a heavy final syllable, as two key arguments in favour of the *phonological conditioning* of word stress in Portuguese and its sensitivity to syllable weight, mainly in the class of nouns and adjectives. This makes it a little more difficult to categorize Portuguese within the set of languages whose phonology does not admit the importance of syllable weight, a very pertinent criterion for the typological distinction proposed by McCarthy and Prince (1995) in (1). It should also be highlighted here, in accordance with Wetzels (2007), that quantity-based vocalic oppositions are not the sole evidence of syllable

¹¹ See quotation in note 7.

weight effectiveness in the phonology of any language, contrarily to what could be inferred from a quicker interpretation of McCarthy and Prince (1995).

Syllable weight and heavy-monosyllable words in Medieval Portuguese

Our second argument in favour of the phonological importance of syllable weight in Portuguese stems from language diachrony. In Medieval Portuguese (MP), a non-neglectable number of words consisting of one sole heavy syllable is found. Tables 2 and 3 show us a few examples of such type of words. Quite interestingly, we could notice that many of such words descend from Latin monosyllabic etyma (see Table 2). In our view, however, a much greater interest comes from the observation of the cases found in Table 3, where the Portuguese heavy monosyllable (=monosyllabic word) is not explainable through etymology, as these words cannot be viewed as the historical inheritance of Latin monosyllables. Instead, they derive from other prosodic word formats; what is more, their formation in Medieval Portuguese preserves – in some cases, it even introduces – certain phonological structures that were generally deleted in regular historical changes from Latin to Portuguese. This is the case of heavy monosyllabic words which preserved final nasals (lost in Vulgar Latin itself) – e.g., *matre* > *mãi* ‘mother’, *fine* > *fim* ‘end’ – or an intervocalic lateral alveolar, as illustrated by examples such *sale* > *sal* ‘salt’, *sole* > *sol* ‘sun’). A plausible explanation for these exceptional cases of marked structure preservation could be the need for Portuguese to comply prosodically with MC prohibiting the existence of words containing less than one heavy syllable. This could allow us to postulate a MC constraint for MP such as found in (2); accordingly, we should accept that constraint (1a) would be available and mandatory at this early stage of Portuguese (the same postulate would allow us to reject the existence of quantity-based distinctions in Medieval Portuguese, too).

Figure 2 – Medieval Portuguese words corresponding to heavy monosyllables descendant from Latin heavy monosyllables too; their preservation could be explained as a way of satisfying Minimality Condition [MP: $\{\omega \geq \sigma_H\}$]

Lat. <i>sum</i> > MP <i>sam</i> ‘(I) am’
Lat. <i>cum</i> > MP <i>com</i> ‘with’
Lat. <i>non</i> > MP <i>nom</i> ‘no’
Lat. <i>sic</i> > MP <i>sim</i> ‘yes’

Source: author’s elaboration.

Figure 3 – Medieval Portuguese words corresponding to heavy monosyllables that do not descend from Latin heavy monosyllables; their formation as such is probably due to the need of satisfying Minimality Condition [MP: $\{\omega \geq \sigma_H\}$]

Lat. <i>patre</i> > MP <i>pae</i> ‘father’
Lat. <i>matre</i> > MP <i>māi</i> ‘mother’
Lat. <i>fine</i> > MP <i>fim</i> ‘end’
Lat. <i>bene</i> > MP <i>bem</i> ‘well’
Lat. <i>sale</i> > MP <i>sal</i> ‘salt’
Lat. <i>sole</i> > MP <i>sol</i> ‘sun’

Source: author’s elaboration.

Other phonotactic constraints related to wordiness requirements in Portuguese

In previous sections, CM and syllable weight were given particular emphasis in our discussion of wordiness conditions of EP, in view of the special relation of such constraints to the central questions of this study.

Nonetheless, as many other studies on the same subject have highlighted (see, a.o., ELORDIETA, 2014, VELOSO, 2016), other phonological constraints apply at the word-level. These will be the focus of the following sections of our paper, emphasizing those that are more relevant for our main purpose.

In (3), we give a short summary of the main phonological constraints that, in languages like Portuguese, a morphological word has to comply with, mandatorily:

(3). Phonological constraints mandatorily observed by any phonetic chain admissible as *morphological words* in Portuguese.

(3a). One and one only primary stress, in full compliance with the stress-assignment prosodic rules (with the notable exception of Clitics).

(3b). Strict accordance with the phonotactic rules of the language and with the Structure Preservation Principle (KIPARSKY, 1985).

As for the phonological constraint found in (3a), let us recall that stress-assignment is one of the major phonological processes that take the word as a domain of application; therefore, it contributes for the identification/delimitation of this linguistic unit AND for the distinction between *phonological words* (bearing one, and not more than one only, primary stress), *clitic words* (inherently unstressed) and prosodically more complex, longer units, such as the *clitic group* (comprehending more than one single morphological word, but bearing just one single primary stress, according to Vigário (1998; 2003; 2007; 2010), Bisol (2000; 2004; 2007), Veloso (2012; 2013) and others, as far as Portuguese is concerned) or the *prosodic word group* (grouping different phonological words and clitics in one single, complex, longer prosodic unit, according, for instance, to VIGÁRIO; FERNANDES-SVARTMAN, 2010).

In relation to the phonotactic rules mentioned in (3b), we highlight here the fact that candidates to wordiness in EP should also obey a specific set of rules governing the selection and combination of segments. Such rules correspond, basically, to the Syllabification Algorithm of Mateus and D’Andrade (2000, p.60-64). In short, these rules specify that Portuguese words be in accordance with the basic principles found in (4).

(4). Major phonotactic constraints of contemporary EP (mainly, MATEUS; D’ANDRADE, 2000, p.60-64)

(4a). *The syllable nucleus is primarily filled by vocoids.* (Exceptionally, “empty nuclei” are admitted, for structures not respecting (4b).)

(4b). *Branched onsets are strictly governed by Sonority Principle and Dissimilarity Condition.*

(4c). *Segmental and autosegmental filling of the coda is highly restricted in this language.* (Word-finally, coda restrictions can be somehow alleviated – VELOSO, 2009; 2010): inexistence of branched codas; coda consonants admitted in coda position limited to the subset of /r l ([ʃ]) S/.

The importance of abbreviations’ oralization for the assessment of Minimality Condition

In the following paragraphs, it is our aim to make it explicit why abbreviations’ oralization was chosen as a way to assess the importance of MC as a wordiness condition in Portuguese. As said in the Introduction, the same methodological choice was followed by Plénat (1993) in his study about French; Plénat’s (1993) methodology is the main basis for the empirical study that will be presented in section 4.

We come back, at this point of our study (see Table 4), to part of the information that was given before regarding the two main possibilities of abbreviations’ oralization in Portuguese – initialization and acronymization. Current examples of EP will be also given.

The cases under A in Table 4 disallow the acronymization modality, since all of them contain gross violations of the major phonotactic rules of Portuguese like the ones that are given in (4): for example, if these potential phonetic chains do not seem to include vocoid nuclei, their prosodization as *acronyms*¹² becomes impossible; this makes it irrelevant to check any application of MC in their eventual oralization. For this reason, cases like those of column A, Table 4, are excluded from further analysis.

Examples under B and C of Table 4 correspond to a distinct case: both situations respect the constraint of vocoid-filled nuclei, and this makes their production as

¹² See the arguments that are summarized in note 3 for the acceptance of abbreviated forms as particular cases of phonological words.

acronyms possible. The question that arises from a careful comparison between both situations is as follows: if, due to the respect of that constraint, both types of candidates can be oralized as acronyms, how can we explain that this does not occur with the examples of A as well as with the examples of B? In fact, the examples under C are commonly produced as acronyms; notwithstanding, the examples under B – which could also be produced as acronyms due to the presence of potential vocalic nuclei – are mainly produced as initialisms. Therefore, *the phonotactic constraint that requires vocalic nuclei seems to be a necessary – yet not sufficient – condition for acronymization*. This observation renders research on the phonological conditions of wordiness in Modern EP more necessary. Previous research has suggested that a considerable multiplicity of phonological and prosodic variables may be implied in the so-called “marginal” processes of word formation (see, a. o., the work on Brazilian Portuguese by ARAÚJO, 2002; CHACON, 2004; TENANI, 2004; GONÇALVES; LIMA; THAMI DA SILVA, 2005; ABREU; ROSA, 2006; LIMA, 2008; ABREU, 2009; LIMA; THAMI DA SILVA; GONÇALVES, 2009; CUNHA, 2012, as well as recent research regarding EP – FERREIRA, 2012; PEREIRA, 2013). Evidence has been gathered from data of language acquisition, children’s early written production, abbreviation procedures, hypocoristic formation and other modalities of truncation. In this study, attention will be paid only to abbreviation procedures as a way to assess MC in Portuguese.

It should be borne in mind that, in the cases of column C of Table 4, C2 represents a specific subset of examples which, in spite of respecting the constraint of vocalic nuclei (see (4a)), do not agree with other important phonotactic constraints of EP, since they show codas potentially filled by obstruents or by sonorants unallowed in coda position. These are the cases, e.g., of FENPROE, [fɛn'prɔf], and REN, ['rɛn]). The formation of this particular type of acronyms has been taken into consideration by previous studies (see, e.g., PEREIRA, 2013) and might be explained, for instance, by the frequent phonetic deletion of final unstressed vowels in contemporary EP. This originates, at the phonetic level, the high frequency of occurrence of this type of “irregular” codas. Such result could be interpreted as a manifestation of their representation in the speakers’ phonological knowledge as “regular” syllables” and viewed as a first hint of their possible on-going phonologization in the current stage of the language. Just as in the cases under A in Table 4, these examples will not be considered further on in the present study, since they raise specific questions that do need the prior understanding of the more general, central topics that constitute the central research of our study.

Figure 4 – Initialization and acronymization of current abbreviated forms in Contemporary European Portuguese¹³

CURRENT ABBREVIATIONS (CEP)		
Unadmitted as words of the language, in view of their violation of the mandatoriness of a vowel-filled syllabic nucleus	Admitted as words: full respect of the phonotactic constraints of European Portuguese	
A: INITIALISMS	B: INITIALISMS	C: ACRONYMS
FCT (=Fundação para a Ciência e a Tecnologia, ‘Foundation for Science and Technology’) : [ˈɛfiˈseˈte] ; *[fkt] CGTP (=Confederação Geral dos Trabalhadores Portugueses, ‘General Confederation of the Portuguese Workers’) : [ˈseˈzeˈteˈpe] ; *[kgtp]	BE (=Bloco de Esquerda, ‘Leftist Party’) : [ˈbeˈɛ] SU (=Serviço de Urgência, ‘Emergency Unit’) : [ˈesiˈu] (ou [ˈɛˈsju])	C1: Without violation of any phonotactic rules BES (=Banco Espírito Santo, ‘Espírito Santo Bank’) : [ˈbɛʃ] NATO (=North Atlantic Treaty Organization) : [ˈnatu] C2: Coda filled by an unadmitted sonorant or obstruent in this prosodic position FENPROF (=Federação Nacional dos Professores, ‘National Federation of Teachers’) : [fɛnˈprɔf] REN (=Rede Elétrica Nacional, ‘National Electric Network’) : [ˈrɛn]

Source: author’s elaboration.

On the basis of these assumptions, we hypothesized that speakers, when faced with the task of reading letter sequences presented as abbreviations, could follow one of two possible paths:¹⁴

- **Option 1.** The speaker recognizes the chain as a current abbreviation of his/her language (as it the case of the abbreviations found in Table 4 for native speakers of CEP). In a way, these abbreviations correspond to lexicalized words; thus, they are processed as any other word pertaining to the speaker’s lexical inventory (although, as mentioned before, individual lexical repertoires vary considerably). Therefore, the main processing way activated by the speaker in the oralization of these stimuli is their **lexical knowledge** (which is conceived of here as the set of linguistic information related to all entries of the individual’s “mental lexicon”, which includes indications about the phonetic form of such entries);

¹³ OBS.: 1. All acronyms of this table are often used in EP. So, they are assumed as potential lexical entries of the individual lexicons of a great number of speakers of the language. 2. Phonetic transcriptions (in this table and in all passages of our text) assume that each initialism contains more than one prominence; since the prosodic status of these units is not the main focus of our study, we do not make any distinction, within each initialism, between primary- and secondary-stress bearing syllables. 3. Each acronym is assumed as one sole prosodic word (bearing, thus, just one main stress).

¹⁴ See Abreu (2009, p.48 ss.) for a broader, more detailed discussion on the various psycholinguistic mechanism that are activated by the processing of written abbreviations.

- **Option 2.** In the case of an unknown abbreviation, the speaker must activate other resources of his/her implicit linguistic knowledge, namely his/her phonological knowledge (PhK). Excluding the cases of column A, Table 4 – which would never be oralized as acronyms, for the reasons that were explained above –, we assume those abbreviations could be read either as acronyms OR as initialisms as the result of the activation of constraints such as MC, plausibly one of the main responsible factors, in the speakers' PhK, for the wordiness evaluation of any given phonetic chain.

Option 2 admits that the competing oralization procedures (acronymization vs. initialization) are not selected at random. Following Plénat's (1993) proposal for French, it is admitted that minimality is the factor that determines the choice of either strategy. This will be the basic assumption for our empirical research, even though other phonological variables are not excluded.¹⁵

This assumption seems to be specially enhanced if we compare, for instance, one of the pairs found in Table 4. Indeed, if we compare the current oralization of "BE" (σ_L) as an initialism ($=[b'e'\epsilon]$) and the oralization of an abbreviation which differs from this one in just one segment and in syllable weight – "BES" (σ_H), oralized as an acronym ($=[b'e\zeta]$) –, we could infer that syllable weight is, indeed, the key factor eliciting the Portuguese speakers' preference for the acronymization (i.e., for the oralization of abbreviations as phonological words: these will emerge only with abbreviations with a syllable weight equaling σ_H). This inference would lead us to accept constraint (2) (postulated for Medieval Portuguese) as still operational in CEP, too, somehow contradicting McCarthy and Prince (1995)'s constraint (1), which limits the importance of syllable weight to quantity-sensitive languages.

All these questions will be assessed by the empirical study that will be presented in the next section.

Empirical study

Preliminary remarks

In order to understand the linguistic processing of phonetic chains candidate to be treated as words and to gather evidence regarding the role of MC in Portuguese, we developed the empirical study that will be presented in this section. A group of monolingual speakers of CEP was asked to read a list of 88 abbreviations specifically prepared for this experiment. As far as we could know, these abbreviations were not previously existent – they were assumed thus as unavailable to the subjects' linguistic knowledge. We will refer to them as "*pseudoabbreviations*". The use previously

¹⁵ Other methodologies could have been followed, of course. Abreu and Rosa (2006) e Abreu (2009), e.g., in their studies of the linguistic processing of this kind of stimuli by native speakers of Brazilian Portuguese, take into consideration data obtained from grammaticality judgments and from latency times of stimuli reading. Such studies conclude that variables such as frequency and familiarity also play a role on the processing of written abbreviations.

unattested stimuli was chosen in order to cancel the interference of any level of lexical knowledge (that could comprehend any information regarding the phonological representation of such forms, acceptable as lexical entries, comparable to the ones which are found in Table 4). That is to say, it was our intention to make the subjects follow mandatorily the processing path previewed by Option 2 (see above), i.e., we wanted to activate the subjects' *phonological knowledge* as their only means of processing these stimuli. Only the isolation of this processing strategy could lead us to clear information about the role of MC and other phonological constraints on the phonological representation of wordiness conditions among Portuguese speakers.

Hypotheses

The three following hypotheses were formulated.

(5). Experimental Hypotheses:

Hypothesis A: Monosyllables corresponding to a heavy syllable (and respecting the language's phonotactic rules), when presented as written abbreviations, will be oralized as ACRONYMS.

Hypothesis B: Monosyllables corresponding to a light syllable, when presented as written abbreviations, will be oralized as INITIALISMS.

Hypothesis C: Disyllables and trisyllables, when presented as written abbreviations, will be oralized as ACRONYMS.

Hypotheses A and B, related to the processing of monosyllabic stimuli only, are motivated by our previous analysis of data shown in Table 4 (see section 3).

As for Hypothesis C, dealing with the processing of stimuli with 2 or more syllables, its motivation is found in de McCarthy and Prince's (1995) Minimality Condition (see (1b)).

Method

Participants

Subjects were 12 adult (8 women, 4 men), monolingual, native speakers of CEP, mostly speakers of the Northern dialects of this language. All of them are undergraduate students at the University of Porto. Their participation was free. None was previously informed of the specific purposes or questions of the study. Participants' age ranged from 16 to 60 years old (mean=38 years; SD=16,06 years).

Linguistic material and procedure

Linguistic material

Pseudoabbreviations were embedded in a set of 130 sentences bearing a syntactic and lexical invariant structure: the only spot that varied was where abbreviations were inserted. In 88 sentences, such abbreviations corresponded to the aforementioned pseudoabbreviations. The remaining 42 sentences included abbreviations assumed as common in everyday language for a native speaker of European Portuguese. In all sentences, grammatical gender was attributed to the abbreviated form: in the case of current abbreviations, the current grammatical gender was maintained in the corpus. As abbreviations and pseudoabbreviations were always embedded as the nucleus of a noun phrase, gender agreement was overtly given by the definite article (“masculine”/“feminine”) determining the abbreviation.

The structure of the carrier sentence of our stimuli is given in (6).

(6). Structure of the carrier sentences used as stimuli

O Presidente d(x) [Z] ABREVIACÃO/PSEUDOABREVIACÃO demitiu-se.

The_Masc_Sg President of(x) [Z]
ABBREVIATION/PSEUDOABBREVIATION has quit.

(x=definite article, singular, masculine or feminine)

[Z]=word or expression that, in certain sentences, was introduced for the sake of semantic plausibility)¹⁶

The complete list that subjects were asked to read is found in (7). The order in which stimuli appear in this list corresponds to the order of presentation of all sentences to each participant; it was randomly obtained during the preparation of the linguistic material.

Including abbreviations *and* pseudoabbreviations in the stimuli list was meant to create a distractor effect so that participants were induced to oralize each abbreviation/pseudoabbreviation either as an initialism or as an acronym according to their own lexical knowledge (in the case of abbreviations) or to their implicit phonological knowledge (in the case of pseudoabbreviations). That is to say, we aimed at eliciting more than one single path in the processing of the stimuli, assuming that participants would choose the most adequate way of processing each stimulus according to its linguistic status.

Thus, each participant was asked to read a set of 130 sentences; 88 sentences contained written chains corresponding to pseudoabbreviations. 42 sentences contained abbreviations which are current among speakers of Portuguese – assumed as probably

¹⁶ Example: “*O Presidente da Comissão da CREL demitiu-se.*”

previously known by most of the participants, then¹⁷. These current abbreviations – containing cases of sequences in accordance with the phonotactic rules of the language and cases that violate such rules – comprehend 23 current initialisms and 19 current acronyms.

As for the 88 pseudoabbreviations found in the corpus, all respected the phonotactic rules of Portuguese as formulated in (3) and (4). That is to say, all pseudoabbreviations of the stimuli list – on which our analysis will be exclusively focused – correspond to the cases under B and C1 of Table 4. The more debatable cases of A and C2 of Table 4 were then excluded from the present study.

In our analysis, we will pay attention to the results regarding the oralization of pseudoabbreviations only. In (7), such pseudoabbreviations are found in the underlined written sentences; it should be borne in mind, however, that the materials given to all participants during the experiment did not in any manner emphasise or differentiate pseudoabbreviations from supposedly real abbreviations. All instructions and materials were absolutely clueless regarding this matter.

¹⁷ In fact, it is rather difficult to determine which current abbreviations do or do not belong to the specific individual lexicon of an individual speaker, due to the aforementioned variability among individual lexicons. Similarly, we cannot exclude categorically that some of the pseudoabbreviations that were coined on purpose for our study did not belong to the individual lexicon of some of our participants: for instance, they could correspond to the current designation of small, local companies or institutions eventually familiar to some or few of our subjects. For the list of (7), our own linguistic intuition and knowledge was strongly taken into consideration. In addition, for each (real) abbreviation that was assumed as current in Portuguese, we looked for at least one occurrence in any printed materials, in the internet and/or in general dictionaries of the language. The pseudoabbreviations were explicitly forged on the basis of the phonological variables that we wanted to test; their inoccurrence in the same sources (general press, internet, dictionaries) was also controlled.

Figure 5 – List of stimuli presented to the participants¹⁸

1 - O Presidente da RDIS demitiu-se.	41 - O Presidente da ONU demitiu-se.
2 - <u>O Presidente do RU demitiu-se.</u>	42 - O Presidente da RTP demitiu-se.
3 - <u>O Presidente do Instituto EUPA demitiu-se.</u>	43 - O Presidente do PS demitiu-se.
4 - <u>O Presidente da UISMA demitiu-se.</u>	44 - <u>O Presidente do SOUGA demitiu-se.</u>
5 - O Presidente do BPN demitiu-se.	45 - O Presidente da AIP demitiu-se.
6 - O Presidente da SPA demitiu-se.	46 - <u>O Presidente do GA demitiu-se.</u>
7 - <u>O Presidente da FAS demitiu-se.</u>	47 - <u>O Presidente do GREL demitiu-se.</u>
8 - O Presidente do PSD demitiu-se.	48 - <u>O Presidente do LAIRA demitiu-se.</u>
9 - O Presidente da UEFA demitiu-se.	49 - O Presidente da NATO demitiu-se.
10 - O Presidente do SITAVA demitiu-se.	50 - O Presidente da CCVM demitiu-se.
11 - O Presidente da Comissão da VCI demitiu-se.	51 - <u>O Presidente do PRICA demitiu-se.</u>
12 - <u>O Presidente da FAIMA demitiu-se.</u>	52 - O Presidente da Comissão do SIGARRA demitiu-se.
13 - <u>O Presidente do BLO demitiu-se.</u>	53 - <u>O Presidente do FLEU demitiu-se.</u>
14 - O Presidente do SINDEPO demitiu-se.	54 - <u>O Presidente da CO demitiu-se.</u>
15 - <u>O Presidente do CLAUS demitiu-se.</u>	55 - <u>O Presidente da CLARCO demitiu-se.</u>
16 - O Presidente da UGT demitiu-se.	56 - <u>O Presidente da ARCI demitiu-se.</u>
17 - <u>O Presidente da AU demitiu-se.</u>	57 - <u>O Presidente da FE demitiu-se.</u>
18 - <u>O Presidente do CRAITA demitiu-se.</u>	58 - <u>O Presidente da FIBA demitiu-se.</u>
19 - O Presidente da Direcção da CREL demitiu-se.	59 - <u>O Presidente do COIS demitiu-se.</u>
20 - <u>O Presidente do GATE demitiu-se.</u>	60 - <u>O Presidente da UNIVA demitiu-se.</u>
21 - O Presidente da FAP demitiu-se.	61 - <u>O Presidente do CLA demitiu-se.</u>
22 - <u>O Presidente da FLEUDO demitiu-se.</u>	62 - O Presidente da APE demitiu-se.
23 - O Presidente da FNE demitiu-se.	63 - <u>O Presidente da BLURMA demitiu-se.</u>
24 - <u>O Presidente do EUS demitiu-se.</u>	64 - <u>O Presidente da AUPE demitiu-se.</u>
25 - O Presidente da CGTP demitiu-se.	65 - O Presidente do GROISMI demitiu-se.
26 - <u>O Presidente da CLAUSBA demitiu-se.</u>	66 - O Presidente da GIU demitiu-se.
27 - O Presidente da CIP demitiu-se.	67 - O Presidente da ECOFIN demitiu-se.
28 - O Presidente do BE demitiu-se.	68 - <u>O Presidente da UIS demitiu-se.</u>
29 - <u>O Presidente do BLUR demitiu-se.</u>	69 - <u>O Presidente do GREMA demitiu-se.</u>
30 - O Presidente do CDUP demitiu-se.	70 - <u>O Presidente da AUSPA demitiu-se.</u>
31 - <u>O Presidente do GRALCO demitiu-se.</u>	71 - <u>O Presidente da AICA demitiu-se.</u>
32 - <u>O Presidente do CEUNA demitiu-se.</u>	72 - O Presidente da Fiscalização do IVA demitiu-se.
33 - <u>O Presidente da CIL demitiu-se.</u>	73 - <u>O Presidente do BLOLI demitiu-se.</u>
34 - O Presidente da EI demitiu-se.	74 - <u>O Presidente da FAUSPA demitiu-se.</u>
35 - O Presidente da ULMI demitiu-se.	75 - <u>O Presidente do IR demitiu-se.</u>
36 - O Presidente da CLAUPA demitiu-se.	76 - <u>O Presidente do SEI demitiu-se.</u>
37 - <u>O Presidente da EISTI demitiu-se.</u>	77 - <u>O Presidente da ASPO demitiu-se.</u>
38 - O Presidente da CDU demitiu-se.	78 - O Presidente do BES demitiu-se.
39 - <u>O Presidente da CRAI demitiu-se.</u>	79 - <u>O Presidente da FEU demitiu-se.</u>
40 - O Presidente da FEUP demitiu-se.	80 - <u>O Presidente do FRISPE demitiu-se.</u>
	81 - O Presidente da UP demitiu-se.

¹⁸ OBS.: In this list, the underlined sentences correspond to those where pseudoabbreviations were embedded. In the materials given to the participants, no formal distinction was made between these sentences and those that supposedly carried current abbreviations.

82 - <u>O Presidente da FREIS demitiu-se.</u>	106 - <u>O Presidente da TERPE demitiu-se.</u>
83 - <u>O Presidente do PRI demitiu-se.</u>	107 - <u>O Presidente do GALVE demitiu-se.</u>
84 - <u>O Presidente da OITI demitiu-se.</u>	108 - <u>O Presidente do LITE demitiu-se.</u>
85 - <u>O Presidente do SIR demitiu-se.</u>	109 - <u>O Presidente do PRUI demitiu-se.</u>
86 - <u>O Presidente do REISTA demitiu-se.</u>	110 - <u>O Presidente do GOISPA demitiu-se.</u>
87 - <u>O Presidente da ESPE demitiu-se.</u>	111 - <u>O Presidente do PRUILE demitiu-se.</u>
88 - <u>O Presidente da FLEUSTA demitiu-se.</u>	112 - <u>O Presidente da FREISPO demitiu-se.</u>
89 - <u>O Presidente da GNR demitiu-se.</u>	113 - <u>O Presidente da Comissão da IVG demitiu-se.</u>
90 - <u>O Presidente da OL demitiu-se.</u>	114 - <u>O Presidente da AS demitiu-se.</u>
91 - <u>O Presidente do CESP A demitiu-se.</u>	115 - <u>O Presidente da FUIS demitiu-se.</u>
92 - <u>O Presidente da FIFA demitiu-se.</u>	116 - <u>O Presidente do GEUS demitiu-se.</u>
93 - <u>O Presidente da OU demitiu-se.</u>	117 - <u>O Presidente da AUS demitiu-se.</u>
94 - <u>O Presidente da PAC demitiu-se.</u>	118 - <u>O Presidente da FRIS demitiu-se.</u>
95 - <u>O Presidente do PRU demitiu-se.</u>	119 - <u>O Presidente do CLADA demitiu-se.</u>
96 - <u>O Presidente do Instituto da CRIL demitiu-se.</u>	120 - <u>O Presidente do NEFA demitiu-se.</u>
97 - <u>O Presidente da DAUS demitiu-se.</u>	121 - <u>O Presidente do SASU demitiu-se.</u>
98 - <u>O Presidente da AL demitiu-se.</u>	122 - <u>O Presidente do OISCI demitiu-se.</u>
99 - <u>O Presidente da AI demitiu-se.</u>	123 - <u>O Presidente da RAI demitiu-se.</u>
100 - <u>O Presidente da CLAU demitiu-se.</u>	124 - <u>O Presidente da SORPI demitiu-se.</u>
101 - <u>O Presidente do Gabinete do IRS demitiu-se.</u>	125 - <u>O Presidente da PT demitiu-se.</u>
102 - <u>O Presidente do OIS demitiu-se.</u>	126 - <u>O Presidente da PLAIS demitiu-se.</u>
103 - <u>O Presidente da URSS demitiu-se.</u>	127 - <u>O Presidente da FER demitiu-se.</u>
104 - <u>O Presidente da FAUSTE demitiu-se.</u>	128 - <u>O Presidente do GROUS demitiu-se.</u>
105 - <u>O Presidente da FENPROF demitiu-se.</u>	129 - <u>O Presidente da PSP demitiu-se.</u>
	130 - <u>O Presidente do PLAR demitiu-se.</u>

Source: author's elaboration.

The 88 pseudoabbreviations contained in the corpus are prosodically controlled: monosyllables for syllable weight; polysyllables for syllable type of initial syllable and syllabic extension (number of syllables). As for syllable type, all unmarked syllable formats of Portuguese were included, either as the only syllable of monosyllabic pseudoabbreviations or as the initial syllable of polysyllabic pseudoabbreviations. In these positions, nasal vowels were excluded. As for syllabic extension, two sets of pseudoabbreviations were created, so that we could obtain results with monosyllables and results with di- and trisyllables, in order to test the validity of (1b) for EP. All stimuli whose written form could potentially elicit the production of one single vocalic nucleus (\cong one single written vowel) were assumed here as monosyllabic; stimuli whose written forms contained more than one potential vocalic nucleus (\cong two or more written vowels) were assumed as polysyllabic.

Therefore, we aimed at gathering information on the roles of *syllable weight* (see Hypotheses A and B) and *syllabic extension* (see Hypothesis C) on the definition of wordiness conditions in Portuguese.

Crossing these 3 variables throughout our corpus, the 88 pseudoabbreviations can be categorized as it is done in Table 5.

Figure 6 – Categorization of the 88 pseudoabbreviations of the corpus according to the variables SYLLABLE WEIGHT, SYLLABLE TYPE and SYLLABIC EXTENSION

SYLLABLE WEIGHT (monosyllabic pseudoabbreviations and initial syllable of polysyllabic abbreviations)	SYLLABLE TYPE ¹⁹ (monosyllabic pseudoabbreviations and initial syllable of polysyllabic abbreviations)	SYLLABIC EXTENSION
Heavy syllables: 20 Light syllables: 68	V: 2 CV: 9 VC: 6 VG: 8 VS: 1 VGS: 7 CVC: 6 CVG: 7 CVS: 2 CVGS: 8 CCV: 9 CCVC: 6 CCVS: 2 CCVG: 7 CCVGS: 8	Monosyllabic: 40 Di-/Trisyllabic: 48

Source: author's elaboration.

Method

Each subject was tested individually in a silent room at the Faculty of Arts of the University of Porto (Portugal).

All sentences were presented in written form and displayed on A4 sheets, printed out in Times New Roman, 14 pt. type, double-spaced. Each abbreviation was capitalized, without any signs separating the constituting letters. Sentences were sequentially numbered, from 1 to 130, with Arabic numerals.

Each subject was asked to read each sentence as naturally as s/he could. All were previously informed that all sentences had the same structure; this structure was explicitly explained beforehand. In the pre-test session, each participant was also told that sentences would vary in just one point of the word-chain, after “Presidente de” (‘president of’). They were then informed that, after this sequence, they would be shown an “abbreviation”. The instruction given at this point was as follows: if they recognized such abbreviation, they should read it according to the usual form they pronounced it. They were also told that many abbreviations could be unknown, since they designated small companies or institutions which were not very well-known. This precision was made in order to prepare the participants for the oralization of pseudoabbreviations.

¹⁹ (*): C=Consonant (contoid); V=Vowel (vocoid); G=Glide; S=Coronal Fricative (corresponding to written <S>).

They were asked to read such abbreviated forms so that they sounded “more natural” to them. In the beginning of each session, participants were given a brief explanation of the two possible ways of “reading” an abbreviated form (either as an initialism or as an acronym, without using this explicit terminology). Participants were allowed to make pauses during their reading sessions whenever they felt like it. Each individual session lasted about 15 minutes, approximately. Participants’ productions of abbreviated forms were immediately transcribed in IPA by the experimenter as the reading session was going on.

Results

Table 1 displays the results for each syllable type, both with monosyllabic and polysyllabic pseudoabbreviations.

Each cell shows the mean number (and standard deviation) of the oralization of the 88 pseudoabbreviations, either as initialisms or as acronyms. Values were obtained from the 1056 recorded productions (=88 pseudoabbreviations X 12 participants). Both types of response (initialisms vs. acronyms) are statistically compared separately for monosyllabic and di-/trisyllabic stimuli. Results are restricted to the cases for which it was possible to obtain a statistical comparison on the basis of a T-Student test. As for the variables *syllable type* and *syllable weight* of disyllables and trisyllables, results regard first syllable only.

Table 1 – Mean (and SD) and statistical comparison (T-Student Test) of the participants’ responses for each syllable type. Mono-, di- and trisyllabic pseudoabbreviations. For di- and trisyllabic pseudoabbreviations, analysis takes into consideration responses regarding the first syllable only. Variables considered: *syllable type*, *syllable weight*²⁰

	MONOSYLLABLES			DISYLLABLES/TRISYLLABLES		
	Initialism: Mean (Standard Deviation)	Acronym: Mean (Standard Deviation)	T-Student	Initialism: Mean (Standard Deviation)	Acronym: Mean (Standard Deviation)	T-Student
LIGHT SYLLABLES						
CV	2,67 (1,56)	1,33 (1,56)	t(11)=1,483, n.s.	0,17 (0,39)	3,83 (0,39)	t(11)=-16,316, p<0,000 **
CCV	1,33 (1,37)	2,58 (1,50)	t(11)=-1,512, n.s.	0,08 (0,29)	3,92 (0,29)	t(11)=-23,000, p<0,000 **

²⁰ Significance levels: * p<0,05; ** p<0,005

OBS.: Results not allowing a statistical comparison based on a T-Student Test were excluded.

HEAVY SYLLABLES						
VC	3,58 (0,90)	0,42 (0,90)	t(11)=-6,092, p<0,000 **	0,75 (0,75)	3,25 (0,75)	t(11)=-5,745, p<0,000 **
VG	3 (1,54)	1 (1,54)	t(11)=2,253, p<0,05 *	1,25 (1,36)	2,75 (1,36)	t(11)=-1,915, n.s.
VGS	2,33 (1,37)	1,58 (1,37)	t(11)=0,950, n.s.	1 (1,28)	2,92 (1,24)	t(11)=-2,653, p<0,05 *
CVC	0,83 (0,83)	3,17 (0,83)	t(11)=-4,841, p<0,000 **	0,17 (0,58)	3,83 (0,58)	t(11)=-11,000, p<0,000 **
CVG	0,5 (0,67)	3,42 (0,67)	t(11)=-7,705, p<0,000 **	0,25 (0,87)	3,75 (0,87)	t(11)=-7,000, p<0,000 **
CVGS	0,75 (0,62)	3,25 (0,62)	t(11)=-6,966, p<0,000 **	0,17 (0,58)	3,83 (0,58)	t(11)=-11,000, p<0,000 **
CCVC	0,25 (0,45)	3,75 (0,45)	t(11)=-13,404, p<0,000 **	0,42 (1,16)	3,58 (1,16)	t(11)=-4,710, p<0,005 **
CCVG	0,33 (0,65)	3,67 (0,65)	t(11)=-8,864, p<0,000 **	0,33 (1,15)	3,58 (1,16)	t(11)=-4,892, p<0,000 **
CCVGS	0,25 (0,45)	3,75 (0,45)	t(11)=-13,404, p<0,000 **	0,25 (0,87)	3,75 (0,87)	t(11)=-7,000, p<0,000 **

Source: author's elaboration.

Discussion

Monosyllabic stimuli

Hypotheses A and B made us expect that light syllables (CV and CCV) would be preferably oralized as initialisms, whereas heavy syllables were expected to be oralized mainly as acronyms.

Results as shown in Table 1, however, do not seem to be completely conclusive as far as this initial assumption is concerned:

- CV monosyllables ($=\sigma_L$) were, in fact, mainly oralized as initialisms, but the difference between this type of response and acronymization was not statistically significant;

- by the other hand, CCV monosyllables (light syllables, too) were very often oralized as acronyms, contrarily to what was previewed by Hypothesis B, although the difference between both responses was not significant;

- finally, it should be noticed that the only cases where a comparison between both types of response (initialism vs. acronym) is not significant are found in light syllables and with VGS-syllables: with other syllable types ($=\sigma_H$), results always show a clear statistical preference towards either of response.

Such preference, for monosyllabic stimuli only, is as follows:

-with (heavy) syllables with the structure VC, VG and VGS (for the former, without a statistically significant difference between the two types of response), *initialisms* are statistically preferred over *acronyms* (contrarily to Hypothesis A);

-with syllables CVC, CVG, CVGS, CCVC, CCVG and CCVGS (also heavy syllables), *acronyms* are statistically predominant; contrarily to results obtained with VC-, VG- and VGS-syllables, these results could be interpreted as a confirmation of Hypothesis A.

Finally, it should be borne in mind that, within monosyllabic stimuli, the syllable type that reaches the higher score of oralizations as acronyms is VC, a *heavy syllable*; let us remind here that, according to Hypothesis A, acronymization was more expectable than initialization in these cases.

Disyllabic and trisyllabic stimuli

As far as di- and trisyllabic stimuli are concerned, the predominant strategy that is followed by most participants (see Table 1) is acronymization. This seems to confirm Hypothesis C. For each syllable type, and just looking at the first syllable of each stimulus (σ_1), the mean number of acronymizations is always statistically higher than the number of initializations (with one single exception: the disyllable where $\{\sigma_1=VG\}$, which attains the highest scores of acronymization, although the difference between this kind of oralization and initialism-type is not statistically significant).

In our view, these results need further examination: more data, from a larger number of participants, would give us a clearer picture of the several, interacting variables.

Notwithstanding, a few general comments can be drawn. First, on the one hand, we could conclude that syllable weight effect is not entirely clear for determining which candidates are better or worse to be accepted as words in European Portuguese: heavy monosyllables are very often oralized as acronyms (see the results for CV and VG monosyllables, for instance), and this is not absolutely clear for a definite confirmation or refutation of Hypothesis A. On the other hand, light monosyllables were not systematically produced as initialisms, contrarily to the initial assumptions of

Hypothesis B: with CV stimuli, indeed, initialisms are predominant, but this is not the case for CCV (mostly produced as acronyms). In these stimuli, comparisons between both types of response were not statistically significant either.

If we confront these results with our initial hypotheses, the only hypothesis that seems minimally confirmed is Hypothesis C: when processing stimuli with two or more syllables, participants show a clear preference towards acronymization in detriment of initialisms.

This preliminary observation – not allowing a clear refutation or confirmation of Hypotheses A and C, but supporting, at least in a limited way, the acceptance of Hypothesis C – could be seen as empiric evidence in favour of McCarthy and Prince’s (1995) proposal as found in (1b): in languages without quantitative oppositions (as it is the case of CEP), Minimality Condition obeys the word’s syllabic extension, not syllable weight.

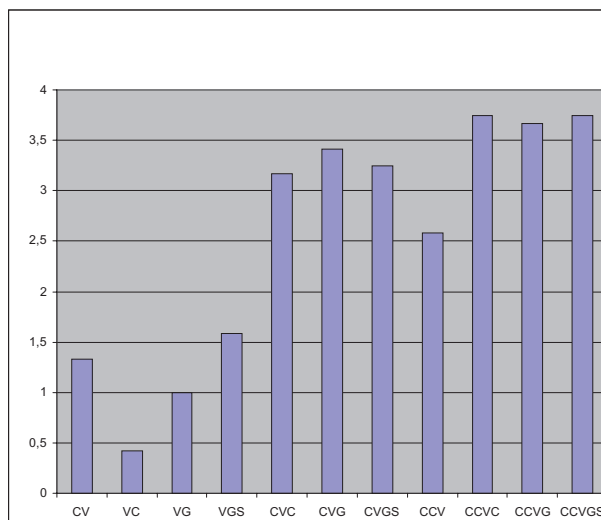
However, a deeper analysis of this rough conclusion brings us a few more supplementary arguments to be taken into consideration for us to understand it better how monosyllabic stimuli are processed by CEP native speakers. These arguments challenge in some ways the state of the art as well as the experimental hypotheses that were explored earlier in this paper. The most striking finding that such analysis provides us with has to do with the stimuli extension, not in terms of syllables, but in terms of segments.

Indeed, there seems to be a highly interesting, suggestive regularity regarding the possible effect of a Minimality Condition of any potential word in European Portuguese – *be that minimality be measured, though, in number of segments, not in syllable weight or number of syllables*. In our view, such regularity could explain, quite satisfactorily, why monosyllabic pseudoabbreviations are systematically oralized according to one single type of production. *Native speakers of CEP process phonetic chains with three or more segments preferably as acronyms, and process phonetic chains with less than three segments preferably as initialisms – regardless of such stimuli being mono- or polysyllabic, and regardless of syllable weight, too*. If this interpretation proves true, this is the explanation why stimuli like, e.g., “BLO” and “PRU”, are preferably oralized as acronyms ([blo], [pru]) and seldom as initialisms. This would lead us to postulate a **linear** MC constraint in CEP, contrary to Hypothesis B. The same explanation would apply to the results obtained with stimuli such as “AU” and “EI”. Although they correspond to heavy monosyllables, they were mainly oralized as initialisms ([a’u], [e’i]), not as acronyms, contrarily to Hypothesis A.

Figure 7, with results of the 40 monosyllabic pseudoabbreviations only, illustrates how the score of acronymizations increases as the stimuli extension measured in number of segments also gets higher: stimuli with just two segments (CV, VC, VG) show an average number of acronymizations also lesser than 1,5. Stimuli with 3 or more segments show higher scores of acronymization, even when the only case of light syllable within this set is considered: CCV, in spite of showing a lesser number of acronymizations than other stimuli with 3 or more segments, was processed as

an acronym more often than light or heavy monosyllables (formed by 2 segments only) were.

Figure 7 – Mean number of oralizations of *monosyllabic* pseudoabbreviations as acronyms



Source: author's elaboration.

We could then postulate a Minimality Condition, which would apply specifically in CEP, clearly grounded on the number of segments of the word, regardless of syllable weight. This constraint is formulated in (8).

- (8). Minimality Condition in Contemporary European Portuguese
 CEP: {WMinExtSg \geq 3}
 WMinExtSg=Word Minimal Extension, measured in number of segments

This constraint, in our view, would also explain results such as the following:

1 - Disyllables and trisyllables are produced, quite regularly, as acronyms, not as initialisms (as previewed by Hypothesis C and admitted by McCarthy and Prince (1995) Minimality Condition found in (1b));

2 - Monosyllables with just 2 segments are produced as initialisms, not acronyms, regardless of syllable weight (see Table 1 and Figure 7);

3 - Monosyllables with 3 or more segments are mainly produced as acronyms, not as initialisms, also regardless of syllable weight (see again Table 1 and Figure 7).

We admit that a formulation like (8) does not explain the presence of Portuguese words that are formed just by a light monosyllable (see examples at 1st column of Table 1). In fact, it remains unanswered how a constraint such (8) is violated by this set of

words of the language, even though it consists of a not very large set. We cannot ignore, first, that the answer for this question, very crucial for the phonological description of Portuguese, cannot be categorically given by a study like this one and on the sole basis of the oralization of abbreviated forms. Notwithstanding, we will try to gather some possible explanations for this interrogation.

First of all, it should be reminded that these words form – as it is explicitly acknowledged by several authors who were previously mentioned – a very small subset of the Portuguese lexicon. In an oversimplified manner, they could be presented as *exceptions* to MC in Portuguese, in line with interpretations such as Vigário's (2003) and Booij's (2004), for instance.

Additionally, it is interesting to notice here that most of these words descend from Latin or medieval disyllables (words that, originally, agreed with (2) or (8), thus), as the result of heterosyllabic vowel contraction, as exemplified by *mala*>*maa*>*má* 'bad_FEM', *fede*>*fee*>*fê* 'faith', *pala*>*paa*>*pá* 'shovel', *pede*>*pee*>*pé* 'foot', *nudu*>*nuu*>*nu* 'naked', *dolu*>*doo*>*dó* 'sorrow, mourning', *solu*>*soo*>*só* 'only' (see MACHADO, 1977, for these etymologies).

If we accept Brandão de Carvalho's (1988; 2011) explanations, higher sonority degrees – rendering certain vowels immune to vowel reduction (see CEP examples such as, e. g., *pegada* 'footprint' ([pe'gadɐ], *[pi'gadɐ]) – are another inheritance, in present-day EP, of such phonologically *unlost* syllable weight.

Therefore, we cannot exclude completely that such monosyllables preserve, in their underlying forms, an abstract structure that maintains their status as heavy syllables: for example, *pé* 'foot' =/pɛ/_{σH}, *má* 'bad_FEM' =/ma/_{σH}, their syllable heaviness (σ_H) being kept by higher degrees of vowel sonority, according to Brandão de Carvalho (2011, p.59). In some cases, we can even admit the presence, at the maximally abstract level of phonological representation, of 3 phonological segments (*nu* 'naked' =/nuu/, *dó* 'sorrow, mourning' =/dɔɔ/). This even becomes segmentally very transparent in morphological derivations of these stems, in cases like *desnudo* 'naked [poetic]', *dolorido* 'consumed by sorrow', etc. (accordingly, then, with (8)). Such explanation would render these words more compatible with the various MC versions that were analyzed in this study, cancelling the need for *ad hoc* explanations strongly based on the exceptionality of those forms as the only explanation for their insertion in the Portuguese lexicon (even if we cannot ignore that these cases do correspond to very particular cases and further investigation would be necessary to reach more robust conclusions about them).

Concluding remarks

Based on our data and our discussion, and not ignoring the limitations of our study, we think it possible to draw some final observations that can shed some light on the initial questions and hypotheses of our research.

The main conclusion is that it seems indeed possible *to advocate the pertinence of a Minimality Condition in Contemporary European Portuguese*, mandatorily obeyed by the gross majority of lexical entries of this language.

Contrarily to the general understanding about the MC parametrization in Portuguese and other languages, though, CEP's MC does not depend on syllable weight or syllabic extension: according to our data, CEP's MC seems to be peculiarly conditioned by one single parameter, different and independent from those – *the number of segments of the word*. We propose, in this paper, that phonetic chains with 3 or more segments are good candidates to wordiness in CEP, regardless of their syllable weight and syllabic extension. The participants' behavior in the experimental task they were confronted with showed a consistent tendency, statistically probable, confirming this proposal. In several moments of our paper, we acknowledged that this MC formulation does not comply with most previous versions of minimality for Portuguese and other languages, precisely because of the apparent cancelling of syllable weight and/or syllabic extension, which are generally assumed as the most important variables related to wordiness and minimality (McCARTHY; PRINCE, 1995 – see (1)).

A second conclusion that can be drawn from our study is that MC, as any other phonological property of a given language, is subject to historic variation. The MC that is proposed here for CEP ($\{W_{MinExtSg} \geq 3\}$ - see (8)) is not the same as the MC that was eventually productive in Medieval Portuguese ($\{w \geq \sigma_H\}$ - see (2)), much more sensitive to syllable weight.

We emphasize here that the apparent lack of importance of syllable weight as a crucial criterion of MC in CEP does not equate its elimination from the set of phonological constraints of this language. The conclusion that, *at the current stage of the language*, syllable weight does not play a decisive role for the parametrization of MC has to do with data that show that monosyllables with at least 3 segments, be they light (with a branched onset but an unbranched rhyme, as in “BLO”, “PRI” or “CLA”) or heavy (with a branched rhyme, as in “EUS” and “OIS”), are preferably oralized as acronyms, contrasting with monosyllables with just 2 segments, also regardless of their syllabic weight, which are preferably oralized as initialisms. At other levels – namely as for non-verb stress-assignment, for instance – arguments in favour of syllable weight as a productive phonological property seem to be very relevant, as we have briefly seen in 2.2.1 and according to the descriptions of Brandão de Carvalho (1988; 1989; 2011) or Wetzels (2007). This specific subject, however, was not addressed as a central question of this study.

Four questions remain unanswered in this study, in need of future research:

- the processing of pseudoabbreviations phonologically similar to clitics;
- the specific case of words corresponding to light monosyllables formed by 2 segments only (underneath, thus, the MC in terms of syllable weight, syllabic extension or number of segments);

- the oralization of phonetic chains that respect important phonotactic constraints of the language but violate others, namely the prohibition of segments in principle unadmitted in coda position (e.g.: FENPROF, RENN; see examples C2 in column C, Table 4);

- the oralization of pseudoabbreviations potentially ending in a nasal segment, that were deliberately excluded from the scope of our study, as previously explained.

VELOSO, J. Palavra mínima em português europeu: a oralização de abreviações. *Alfa*, São Paulo, v.61, n.1, p.131-163, 2017.

- *RESUMO: Entre as restrições fonológicas a que qualquer cadeia fonética está obrigatoriamente sujeita para poder ser aceite como uma palavra da língua conta-se a Condição de Minimalidade (CM), que impõe uma quantidade mínima de material fonológico que deve ser contido por qualquer palavra. A CM costuma ser medida em termos de peso silábico ou de extensão silábica. Sendo discutível se se trata de uma restrição verdadeiramente universal, estudos anteriores relativos ao português têm-se dividido quanto à sua operacionalidade na fonologia desta língua. Neste estudo, avaliaremos a funcionalidade da CM na constituição do léxico do português através da oralização de abreviações, assumida como um processo produtivo em português. A partir de um estudo empírico realizado com um grupo de falantes nativos do português europeu contemporâneo (PEC), propomos (i) que a CM seja uma condição fonológica operacional nesta língua e (ii) que o critério a que ela obedece em PEC seja um critério de ordem puramente linear e segmental. De acordo com a proposta aqui apresentada, respeitam a CM em PEC cadeias com três ou mais segmentos, independentemente do peso silábico ou da extensão silábica.*
- *PALAVRAS-CHAVE: Condição de Minimalidade. Peso silábico. Palavra. Restrições de Palavridade. Boa Formação.*

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LIST OF MAIN ABBREVIATIONS AND CONVENTIONS
FOLLOWED THROUGHOUT THE TEXT

<p>C = Consonant/Contoid CEP = Contemporary European Portuguese EP = European Portuguese G = Glide Lat. = Latin MC = Minimality Condition MP = Medieval Portuguese PhK = Phonological Knowledge PWG = Prosodic Word Group SD = Standard-Deviation</p>	<p>S = Underspecified Coronal Fricative V = Vowel/Vocoid WMinExtSg=Word Minimal Extension, measured in number of segments σ_1 = Initial syllable of a word σ_H = Heavy Syllable σ_L = Light Syllable ω = Phonological/Prosodic Word</p>
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THE UNSTRESSED VOCALISM IN THE HISTORY OF PORTUGUESE

Juliana Simões FONTE^{1*}

- **ABSTRACT:** *In contemporary European Portuguese, mid vowel raising rule operates in all unstressed contexts: pretonic (p[i]gar [to take], t[u]car [to touch]) or posttonic (núm[i] r[u] [number], ár[v]u[r[i]] [tree], pel[i] [skin], pel[u] [fur]). In the case of the varieties of contemporary Brazilian Portuguese, this rule applies generally only to the vowels in posttonic final open syllables (pel[i] [skin], pel[u] [fur]) or in syllables locked by /S/ (Londr[i]s [London]); in the pretonic context, mid vowel raising is a variable rule in current Brazilian varieties, commonly conditioned by specific phonetic-phonological contexts (p[i]dido [request], c[u]stume [custom], [i]scola [school], [i]mprego [employment], d[i]sconto [discount]). In order to investigate the process of unstressed mid vowel raising throughout the history of Portuguese, this paper presents and compares data from the 13th, 15th and 16th centuries, that suggest the productivity of the raising rule in pretonic and posttonic vowels in these periods. These data, obtained by Fonte (2010a,b, 2014) based on a study of the orthographic practices in *Cantigas de Santa Maria* by Alfonso X, *Cancioneiro Geral* by Garcia de Resende and *Os Lusíadas* by Camões, indicate that, until the 16th century, at least, mid vowel raising was a variable rule, affecting relatively productive pretonic vowels, but still incipient for word-final posttonic vowels.*
- **KEYWORDS:** *Unstressed vowels. Vowel raising. Variation. History of Portuguese.*

Introduction

This paper aims to examine raising rule productivity in unstressed vowels of ancient Portuguese, by analyzing orthographic practices representing pretonic and word-final posttonic vowels in poetical texts from the 13th, 15th and 16th centuries.

According to Mateus and d'Andrade (2000), in contemporary European Portuguese (EP) (Lisbon standard variety), the productivity of unstressed (pretonic and word-final posttonic) vowels is commonly based on a raising and retraction rule which reduces a seven-vowel phonological system (/i, e, ε, a, ɔ, o, u/) in stressed position to a four-

* Post-doctoral researcher. UNESP – Universidade Estadual Paulista “Júlio de Mesquita Filho”. Faculdade de Ciências e Letras – Departamento de Linguística. Araraquara – SP – Brazil. 14800-901. jujufonte@yahoo.com.br

vowel system in unstressed positions: [i, i, e, u]. In EP, according to the authors, this is a general rule used in all unstressed contexts (e.g.: *p[ɛ]gar* [to pay], *p[i]gar* [to take], *t[u]car* [to touch], *cér[i]bro* [brain], *pér[u]la* [pearl], *leit[i]milk*, *jur[u]* [interest]), with very few lexically marked exceptions (e.g.: *p[a]deiro* [baker], *cr[ɛ]dor* [creditor], *end[e]usar* [to deify], *c[ɔ]rar* [to blush], *s[o]ltar* [to release], *sensív[ɛ]l* [sensitive]).

Contemporary Brazilian Portuguese (BP), for its part, presents different vowel systems in the majority of its varieties according to the unstressed vowel position: if the vowel is before (pretonic) or after (posttonic) the stressed syllable. Câmara Jr. (2007 [1970]) points out that it is a result of a gradual loss of distinctive opening features (neutralization)¹ following the weakening degree of the current BP syllables: tonic > pretonic > posttonic syllables. The author considers that a first neutralization between open-mid vowels (/ɛ, ɔ/) and close-mid vowels (/e, o/) reduces the seven-vowel phonological system (/i, e, ɛ, a, ɔ, o, u/) in the stressed position to a five-vowel system (/i, e, a, o, u/) in the pretonic position. In the final posttonic (the least prominent) context, Câmara Jr. (2007 [1970]) considers the occurrence of a neutralization between mid (/e, o/) and high vowels (/i, u/), and the system is reduced to only three phonemes (/i, a, u/).²

Therefore, in contemporary BP, according to this proposal, upper-mid vowels ([e,o]) occur in pretonic position (e.g.: *pegar* [to take], *morar* [to live]) and, despite the fact that, at the phonetic level, cases of pretonic mid vowel raising³ are common in Brazilian varieties (e.g.: *p[i]dido* [request], *c[u]stume* [custom], *[i]scola* [school], *[i]mprego* [imploymnt], *d[i]sconto* [discount]), the raising rule of unstressed vowel is general, in Brazil, only in the word-final posttonic position (e.g.: *pel[i]* [skin], *pel[u]* [fur]).⁴

¹ It is worth highlighting that it relates to a neutralization of the opposition, that is, of the distinction among vowels, and not an elimination of vowels in the passage from a (stressed) system to another (unstressed) system. And this explains why unstressed subsystems proposed by Câmara Jr. (2007 [1970]) also comprise current BP variation (including those lower and upper-mid vowels in pretonic position), as we will see below.

² In accordance with Câmara Jr. (2007 [1970]), in non-final posttonic position, the current PB vowels system comprises four phonemes: /i, e, a, u/. Then, when suggesting this system, Câmara Jr. (2007 [1970]) accepts neutralization for /u/, solely in back vowels. In front vowel series, the author states that neutralization does not apply in contemporary BP (standard variety of Rio de Janeiro), and two pronunciations occur: ([e] and [i]). Therefore, even though Câmara Jr. (2007 [1970], p.44) recognizes that it is difficult to find opposite minimal pairs between non-final posttonic [e] and [i] in current BP, the author adds both vowels in BP phonological framework, justifying that a raised posttonic vowel pronunciation for a word as *número* [number], for example, is unusual. Bisol (2003), for her part, based on the pronunciations from the Southern Region of Brazil (statistics by Vieira, 2002) and on the Autosegmental Phonology (especially Feature Geometry Model, by Clements and Hume, 1995), supports that current BP solely presents two subsystems for unstressed vowels (and not three, as Câmara Jr. 2007 [1970]) used to propose): a five-vowel set in pretonic position, and another three-vowel set in final unstressed position. In non-final posttonic context, according to Bisol's understanding (2003), there is a fluctuation between both subsystems (of five and three-vowel). This paper, which focus on the analysis of the unstressed vowels of ancient Portuguese, by considering Bisol's proposals (2003), focus on the positions that represent the two unstressed genuine subsystems of contemporary BP, that is, the pretonic and the word-final posttonic.

³ It is worth noting that, in some varieties of contemporary BP, the lowering of the pretonic mid vowel also occurs (e.g.: *R[ɛ]cife* [Recife], *s[ɔ]taque* [accent]). This paper, however, will not address this process, as it aims to analyze the raising phenomenon in the history of this language.

⁴ Bisol (2003) recognizes the existence of only three phonemes, in the framework of final unstressed vowels of contemporary BP, but reminds that the raised pronunciation ([i] and [u]) is not categorical in all Brazilian varieties. The author shows that Vieira's data (2002), for instance, reveal a resistance to the use of the raising rule, especially in front vowels, in some speeches of the southern region of Brazil (in Curitiba, for example, from 100 cases analyzed,

By noting these differences between European and Brazilian unstressed vocalism in contemporary Portuguese framework, some researchers consider the chance that the generalization of the raising rule in unstressed vowels of contemporary EP is somewhat recent: probably after the 16th century, as this rule was not transferred to Brazil along with the Portuguese vessels that arrived here from the 1500s on.

This hypothesis therefore suggests that contemporary BP (at least concerning the unstressed vocalism) would be closer to ancient Portuguese than to contemporary EP, as the raising rule in Brazil remains variable in some specific unstressed contexts. According to Marquilhas (2003), such raising rule first became generalized in EP in word-final posttonic vowels, exactly as in contemporary BP, and then it was spread to other unstressed positions.

To examine (stressed, pretonic and posttonic) vowel systems of ancient Portuguese, Fonte (2010a,b; 2014) mapped and analyzed rhymes and spelling of remaining poetical texts of Galician-Portuguese (13th century), Middle Portuguese (15th century) and Modern Portuguese (16th century). Particularly in relation to the unstressed vowels, by examining the corpus concerned the spellings involving mid and high vowels in pretonic and posttonic syllables, Fonte (2010a,b; 2014) took results that partly object Marquilhas' (2003) proposal, since they suggest that, at least up to 16th century, the vowel raising rule was more common in Portuguese pretonic vowels than in posttonic vowels, in general.

It is worth noting that, in studies focused on Portuguese unstressed vocalism, Teyssier (1994 [1980]) had already mentioned the lack of evidence on raising of word-final posttonic vowel before the 18th century in the history of the Portuguese language. Therefore, Fonte's data (2010a,b; 2014), while contesting Marquilhas' hypothesis (2003), support Teyssier's statement (1994 [1980]).

Given the information above, this study aims to present the data collected by Fonte (2010a,b; 2014), in order to: *i.* publish the findings of this research, which brings relevant information on the pronunciation of a past period of the Portuguese language that has left no oral registers; and *ii.* analyze the debate brought by the author, giving rise to speculations about the possible reasons that would have made the raising rule more common, in BP, among the word-final posttonic vowels than among the pretonic vowels – exactly the opposite of what probably occurred in the 16th-century Portuguese.

As there was no spelling system in ancient Portuguese imposed by the law, it was common to find spelling variations in the representation of a same word in the remaining writings of this period (e.g.: *egreja*, *eigreja*, *igreja* [church]). Based on this resource, Fonte (2010a,b; 2014), in a poetical corpus comprising *Cantigas de Santa Maria* (13th century) by Alfonso X, *Cancioneiro Geral* (15th century and beginning of the 16th century), by Garcia de Resende, and *Os Lusíadas* (16th century), by Camões, searched for all spelling variations between mid and high vowels in unstressed syllables (e.g.:

raising was found in 37 only). For Bisol (2003), Vieira's data (2002) support the thesis that the final unstressed raising, even being a general rule in most Brazilian varieties, shows itself, in some regions of Brazil, as a variable rule in the progress of becoming a general rule.

pedido ~ *pidido* [request], *costumes* ~ *custumes* [customs]; *sangue* ~ *sangui* [blood]). In addition to that, using the same corpus, the author also mapped all spelling (including invariable) representations for mid and high unstressed vowels unlike the contemporary spelling (e.g.: *pipino* [cucumber], *pulicia* [police]).

It is evident that one should not understand writing data as an accurate representation of speaking, as writing should not play the role of phonetic transcription. On the other hand, considering the lack of official spelling rules in the 13th, 15th and 16th centuries, one may say that scribes and composers of that time were free to represent, in writing, some particularities of the speech such as the mid vowel raising in unstressed vowels, for example. Based on these arguments, Fonte (2010a,b; 2014) understood the spelling representations of *Cantigas de Santa Maria*, *Cancioneiro Geral* and *Os Lusíadas* as clues of the speeches from the 13th, 15th and 16th centuries.

In relation to the corpus used by the researcher, one may say that it includes works representing different phases of the history of the Portuguese language (see CASTRO, 2008). *Cantigas de Santa Maria*, by Alfonso X, written in the second half of the 13th century, are a relevant testimony of Galician-Portuguese. In its turn, *Cancioneiro Geral* (1516), by Garcia de Resende, includes poems written throughout the 15th century and beginning of the 16th century by almost 300 poets and represents, within Fonte's corpus (2014), Middle Portuguese, a period in which there would have been a separation between the Galician, specific from the High North of the Iberian Peninsula (Galicia), and Portuguese languages.

At last, the epic work by Camões, *Os Lusíadas* (1572), consisting of 10 songs and 1102 stanzas, can be considered as a legitimate representative of Modern Portuguese not only for being iconic of Renaissance in Portugal, but (and primarily) for playing a decisive role in the history of Portuguese language, highly influencing the characterization of standard Portuguese; most especially in relation to the creation of our spelling (see Souza, 2009).

In the sections below, the findings reported by Fonte (2010a,b; 2014) are presented and discussed by analyzing the orthographic practices of these three poetical works in that they represent the unstressed vowels from the 13th, 15th and 16th centuries.

Pretonic vowels in the 13th, 15th and 16th centuries

We have already observed that, in contemporary EP, the (pretonic and posttonic) unstressed phonological system does not comprise mid vowels due to the actuation of a raising and retraction rule (except for few lexically marked cases).

In contemporary BP, although the phonological system (/i, e, a, o, u/) includes upper-mid vowels in the pretonic context, variationist studies developed in several regions of the country reveal that the realization of pretonic /e/ and /o/ as [i] and [u], respectively, is common in Brazilian varieties.

According to such studies, the vowel harmony process characterized by the influence of the high vowel (/i/ or /u/) of the stressed syllable is one of the primary triggers of the pretonic mid vowel raising in contemporary BP (e.g.: *p[i]dido* [request], *s[i]guro* [safe], *p[u]lícia* [police], *c[u]stume* [custom]). In addition, researches also point out that, by means of a process called vowel reduction, some consonants may condition the raising phenomenon of pretonic mid vowel in Brazilian varieties. In the studies focused on this topic, velar consonants, for example, are often referred to as a trigger of the pretonic vowels raising, both for front (e.g.: *p[i]queno* [small]), and back series (e.g.: *ç[u]lher* [spoon]). Specifically in regard to the back vowel (/o/), researches also assign pretonic vowel raising to the influence of adjacent labial consonants (e.g.: *b[u]neca* [doll], *m[u]leque* [brat]). Concerning the front vowel (/e/), coronal consonants (e.g.: *ç[i]roulas* [briefs]) are pointed out as a recurring trigger of the process. In relation to front vowels, raising also seems to be categorical in word-initial context in Brazilian varieties, especially in syllables closed by a sibilant (e.g.: *[i]scola* [school], *[i]special* [special]) or a nasal (e.g.: *[i]mprego* [employment], *[i]nsino* [teaching]) consonant, in vowel encounters (e.g.: *bob[i]ar* [to make mistake], *g[i]ada* [frost]) and in the initial syllable *des-* (e.g.: *d[i]saparecer* [to disappear], *d[i]sconto* [discount]).

In contemporary BP, pretonic mid vowel raising may be explained, in most of the cases, by the assimilation of adjacent segments, whether they are vowels or consonants. In vowels, for example, raising may be supported from the assimilation of opening features of the high vowel existing in the adjacent syllable. In consonants, the influence of labial and velar (dorsal) consonants in back vowels and the influence of coronals to front vowels series are supported by the fact that back vowels are labial and dorsal, and front vowels are coronal.

On the other hand, it should be highlighted that, in some varieties, the front mid vowel raising, which lacks the [dorsal] and the [labial] features, may occur before dorsal or labial consonant as well. Bisol (2009), for instance, reports data from Porto Alegre, in the Southern region of Brazil, where subsequent labial consonants triggered the raising of /e/, but did not influence the pronunciation of /o/, thus going against the initial hypothesis. In such cases, therefore, the process could not be supported from the sharing of features.

These and other inconsistencies lead Bisol (2009) to propose that vowel harmony is a typical assimilatory process, while vowel reduction, which is still weak in contemporary BP varieties, would present all characteristics of an authentic neutralization case as it changes a five-vowel subsystem into a three-vowel subsystem, such as happened in European Portuguese. According to the author, as vowel harmony is a regular process, conditioned by a specific phonetic-phonological context, it may be included in the neogrammarian assumptions. Vowel reduction, in its turn, would be considered a lexical diffusion process.

According to Bisol's proposal (2009), vowel harmony can be classified as a neogrammarian approach because pretonic vowel raising tends to be categorical in Brazilian varieties before high vowel in (stressed or unstressed) adjacent syllable.

However, according to Bisol (2009), vowel reduction does not depend on a specific phonetic-phonological context and it has been gradually spread in the language to incorporate new lexical items.

It is important to highlight, however, that pretonic vowel raising in both cases (vowel harmony and lexical diffusion) is a variable rule in contemporary BP. For that reason, even vowel harmony may not occur in certain contexts.

In order to obtain clues about the actuation of the raising rule in ancient Portuguese, Fonte (2010a,b; 2014) searched for signs of past pronunciations in the writing of *Cantigas de Santa Maria*, *Cancioneiro Geral* and *Os Lusíadas*.

The methodology adopted by the author, as already mentioned in this paper, was the mapping of all spelling variations between pretonic <e> and <i>, and <o> and <u> in the referred *corpora*. In addition to variation cases, Fonte's studies (2010a,b; 2014) also included data of mid and high pretonic vowels invariable spellings that are different from the contemporary ones.⁵

After collecting data, Fonte (2010a,b; 2014) organized them according to the phonetic-phonological context involved in the supposed raising of the pretonic mid vowel. Considering the contexts that benefit raising in contemporary BP, when arranging the data, the author considered the following criteria:

- the high vowel influence (/i/ or /u/) of the stressed syllable (vowel harmony process);
- the assimilation to the high (/i/ or /u/) unstressed subsequent vowel;
- the influence of the adjacent consonant (vowel reduction process).

Particularly in relation to the vowel reduction, based on articulation points of consonants (C Point) proposed by the Features Geometry Model of Clements and Hume

⁵ One should note that, among the (variable or not) spellings that are different from the contemporary (official) spelling, in the representation of pretonic vowels of ancient Portuguese registered by Fonte (2010a,b; 2014), there were: *i*. cases in which such pretonic vowel, in the contemporary language spelling, is represented by <e> or <o> (e.g.: *pipino* [cucumber], *pulicia* [police]); and *ii*. cases in which such pretonic vowel is represented by <i> or <u> (e.g.: *fegura* [figure], *vezinho* [neighbor], *fogir* [to escape], *somir* [to disappear]). When consulting the etymology of words with different spelling from the contemporary one, Fonte (2010a,b; 2014) attested that, among the cases in which a pretonic vowel in contemporary Portuguese is high, but it represented by a mid vowel in ancient Portuguese, in some data, such mid vowel was an etymological vowel (e.g.: *fegura* < *fĭgŭram* [figure], *fogir* < *fĭgĕre*) [to escape]; and in other cases, it was not (*vezinho* < *vĭcĭnus* [neighbor], *somir* < *sŭmĕre* [to disappear]). Such data, written with a high vowel in contemporary Portuguese, but written with an etymological mid vowel, in the *corpora* analyzed by Fonte (2010a,b; 2014), were understood by the author as changes in the language history, in which the phonetic variant (e.g.: *figura*, *fugir*), with a high vowel resulting from the use of the raising rule, has replaced the variant with etymological mid vowel (e.g.: *fegura*, *fogir*) in Portuguese phonological and spelling system. On the other hand, data written with non-etymological mid vowel, in past poetical spellings, were understood by Fonte (2010a,b; 2014) as hypercorrection: before a recurrent phonetic variation, the one who wrote <e> or <o> (e.g.: *vezinho*, *somir*), instead of an etymological <i> or <u> (e.g.: *vizinho*, *sumir*), would have believed that he registered the etymological variant, not the phonetic one. In order not to exceed the appropriate limits, this paper will only prioritize Fonte's data (2010a,b; 2014) written in the referred *corpora* with pretonic <i> or <u> instead of etymological <e> or <o> and that did not change over the history of the language, that is, the variation cases still remaining in many contemporary BP varieties (e.g.: *pipino* [cucumber], *pulicia* [police]).

(1995), data were arranged as *coronal*, *dorsal* and *labial* features of adjacent consonants. It must be highlighted that dental, alveolar, palato-alveolar and palatal consonants present [coronal] feature.⁶ [Labial] feature is shared by bilabial and labiodental consonants. Finally, [dorsal] feature is present in velar consonants.

In addition, when arranging her data, Fonte (2010a,b; 2014) also considered variation that included word-initial pretonic vowels. Still on the front vowels ([e] and [i]), the data beginning by unstressed syllable (prefix or not) *des-* were also worth of Fonte's attention.

The results obtained by Fonte (2010a,b; 2014) can be checked in the items below, related to each of the *corpora* analyzed.

Pretonic mid vowel raising in the spelling of *Cantigas de Santa Maria*

In 420 *Cantigas de Santa Maria*, which correspond to the religious side of the troubadour lyric, Fonte (2010a,b; 2014) found cases of spelling variation in mid and high pretonic vowels, which the author attested as signs of phonetic variation containing vowel raising in the 13th century Portuguese.

Phonetic-phonological contexts engaged in the variation found by Fonte (2010a,b; 2014) for Galician-Portuguese are equivalent to contexts responsible for the pretonic mid vowel raising in contemporary BP varieties.

One of the recurring contexts in the variation mapped by Fonte (2010a,b; 2014) in *Cantigas de Santa Maria* was the high vowel in the stressed syllable. The examples below present the productivity of vowel harmony in the raising of front (01) and back (2) pretonic vowels in Galician-Portuguese:⁷

(01)

<i>comedir</i> (CSM 115, 126, 143, 154, 295, 401)	<i>comidir</i> (CSM 423)	[to moderate]
<i>consentir</i> (CSM 14, 64)	<i>consintir</i> (CSM 281)	[to consent]
<i>ferir</i> (CSM 12, 31, 35, 47, 239)	<i>firir</i> (CSM 31 <i>To</i> , 59 <i>To</i> , 63 <i>To</i>)	[to hurt]

⁶ In general, researches include palatal consonants among the segments presenting [coronal] feature (see MATZENAUER, 2005, p.22), although Chomsky and Halle have not attributed such feature to palatal sounds.

⁷ In this section, in each set of examples, data are arranged as follows: first, the verbs in alphabetical order, and then the non-verbs, also in alphabetical order.

<i>pedir</i> (CSM 21, 22, 44, 64, 98)	<i>pidir</i> (CSM 44 <i>To</i> , 98 <i>To</i> , 401)	[to ask]
<i>repentir</i> “arrepender-se” (CSM 10, 94, 204, 390)	<i>repintir</i> (CSM 98 <i>To</i>)	[to repent]
<i>crerezia</i> “clerezia” (CSM 11, 115, 125, 208, 253, 405)	<i>crerizia</i> (CSM 66, 285)	[clergy]
<i>eregia</i> “heresia” (CSM 15 <i>T</i> , 18)	<i>erigia</i> (CSM 15 <i>E</i> , <i>To</i>)	[heresy]
<i>ferida</i> (CSM 15, 22, 28, 35, 38, 84, 141, 159)	<i>firida</i> (CSM 28 <i>To</i> , 63 <i>To</i> , 84 <i>To</i>)	[wound]
<i>menina</i> (CSM 79, 84, 94, 122, 132, 133, 180 <i>T</i> , 195, 378)	<i>minina</i> (CSM 180, 317, 285, 321)	[girl]
<i>menino</i> (CSM 4, 5, 6, 21, 23, 53 <i>T</i> , 138 <i>T</i> , 215, 269, 378)	<i>minino</i> (CSM 53, 115, 149, 323, 393, 403, 406)	[boy]

(02)

<i>descobrir</i> (CSM 93, 97, 115, 131, 149, 151, 159, 299, 316, 404, 405, 410)	<i>descubrir</i> (CSM 316 <i>F</i>)	[to discover]
<i>nozir</i> “prejudicar” (CSM 109, 134, 193)	<i>nuzir</i> (CSM 5, 190)	[to harm]

The variations listed in (01) and (02) may be explained by the assimilation to the opening feature of the adjacent high stressed vowel. In both cases, the high stressed vowel corresponds to a front (/i/), and not back (/u/) vowel. According to Bisol (2013), /i/ is also more productive than /u/ in cases of pretonic mid vowel raising in contemporary BP, once the front high vowel is responsible for the raising of both /e/ and /o/ in Brazilian varieties, while /u/ is more active as a trigger in the raising of /o/. Therefore, one may consider a similarity between the 13th century and the contemporary BP data, as the

previous examples reported /i/ influence to raise both /e/ and /o/ in Galician-Portuguese, but they did not bring any mid vowel raising conditioned by the back high vowel (/u/).

The front high vowel in the adjacent unstressed syllable also raised the pretonic mid vowel:

(03)

<i>arcedi</i> ago (CSM 202 F, 204)	<i>ar</i> ci <i>di</i> ago (CSM 202)	[archdeacon]
<i>avezi</i> mao “infeliz” (CSM 346)	<i>av</i> iz <i>i</i> mao (CSM 127, 329)	[unhappy]
<i>nemi</i> galla “nada” (CSM 65, 95, 117, 132, 178)	<i>ni</i> mi <i>g</i> alla (CSM 65 To, 75 E, To; 253 E)	[nothing]
<i>pepi</i> on “antiga moeda de Castela” (CSM 85 T, 102, 145, 305)	<i>pi</i> pi <i>o</i> n (CSM 85 E)	[Old currency in Castile]
<i>peti</i> çon “petição, pedido” (CSM 146, 265, 305, 386, 401)	<i>pi</i> ti <i>ç</i> on (CSM 146 T, 401 To)	[petition/request]
<i>pregui</i> çoso (CSM 37, 69, 171)	<i>pr</i> i <i>g</i> uiçoso (CSM 363)	[lazy]

In these cases, raising may also be supported by the spread of the height node of the high vowel in the subsequent syllable to the target. Based on contemporary BP data, Bisol (1981) states that high vowel tonicity is relevant in vowel harmony process, but it is not a decisive factor. According to the author, in varieties of southern region of Brazil, for instance, there are occurrences of vowel harmony conditioned by the subsequent unstressed high vowel (e.g.: *perdigão* [partridge], *procissão* [procession]). The data presented above indicate that such principle also applies to the cases of vowel harmony of Galician-Portuguese, as the high vowel of the unstressed syllable also triggered the raising of pretonic vowels in the 13th century.

Consonantal segments also seem to have influenced some of the vowel raising cases registered by Fonte (2010a,b; 2014). Examples (04) and (05) below focus respectively on front and back mid vowels and prove such influence by the adjacent consonant on variation of the 13th century:

(04)

pennor “penhor”
(CSM 25, 62, 305, 369)

pinnor
(CSM 62 *T*, *To*)

[pledge]

(05)

jogar
(CSM 6, 42, 136, 154,
156, 163, 254, 401)

jugar
(CSM 174 *E*)

[to play]

çoberto
(CSM 28, 69, 154, 208, 318, 406)

cuberto
(CSM 65, 208 *F*)

[covered]

encoberto
(CSM 401 *To*)

encuberto
(CSM 194, 401)

[covered]

In the variation indicated in (04), palatal consonant ([ɲ]) follows the raised mid vowel. In this case, if we consider that [i] is more coronal than [e] from the phonetic perspective, raising may be supported by the spread of the [coronal] feature (of the palatal consonant) to the (front) pretonic vowel of the subsequent syllable.

In (05), velar (/k, g/) consonants are involved in the reduction process. In these cases, it would not be difficult to justify the pretonic vowel raising by the assimilation to the [dorsal] feature of the adjacent consonant, considering that [u] is phonetically more dorsal than [o].

In general, the analysis of the spelling variation cases presented in this subsection allow us to infer that the pretonic mid vowel raising occurred in the 13th century demonstrates that the rule was primarily conditioned by the assimilation to the opening feature of the (stressed or unstressed) high vowel of the adjacent syllable.

Pretonic mid vowel raising in the spelling of *Cancioneiro Geral*

After a century and a half of troubadour lyric, poetry disappeared from the Portuguese writings up to the 16th century, when Garcia de Resende decided to collect poetic texts produced throughout the 15th century and beginning of 16th century in his *Cancioneiro Geral*, published in 1516. This initiative is responsible for attesting the poetic production of Portugal in the 15th century. It is important to highlight that there is no document that attest Portuguese poetic production in the 14th century.

Fonte (2014) presented a phonological framework of Portuguese vowels by observing successive periods of the language, beginning from the first one (troubador

verse). After analyzing the use of vowels in medieval religious cantigas, the author adopted, as a corpus, the next poetic work in the chronological axis of Portuguese poetry, i.e., the *Cancioneiro Geral*, by Resende.

In data from the 15th and early 16th centuries, Fonte (2014) found traces of pretonic mid vowel raising. However, according to the author, and unlike what occurs in the contemporary century, there were more cases of spelling variation or invariable spelling in the representation of pretonic mid and high vowels, in the *Cancioneiro Geral* than in Alfonso X's cantigas. On the other hand, although the number of cases has increased, in relation to the corpus of the previous period, the raising rule continues to be supported in the majority of the data by the influence of the adjacent segment.

In Middle Portuguese, the high stressed vowel remains a recurring context in raising of pretonic mid vowels, as Fonte's data (2014) point out. In the examples below, front (06) and back (07) high vowels are found in the stressed syllable following the raised (front) pretonic vowel:⁸

(06)

<i>espediõ</i> "despediu" (p.48, III)	<i>espidiõ</i> (p.90, III)	[she/he dismissed]
<i>pedir</i> (p.149, I; p.371, 458, II; p.77, 288, 314, III; p.28, 71, 85, 86, 112, 159, 203, 221, 236, 245, 256, 286, 311, 313, 327, 336, IV)	<i>pidir</i> (p.235, 299, 301, 305, II; 178, IV)	[to ask]
<i>queria</i> (p.141, 143, 144, I; p.458, II; p.87, 213, 231, 313, 348, III; p.105, 115, 137, 138, 158, 176, 192, 229, 235, 243, 249, 290, 303, 318, IV)	<i>quiria</i> (p.214, 245, II)	[he/it wanted]
<i>seguir</i> (p.74, 76, 92, 94, 154, I; p.311, 390, 398, II; p.161, 212, III; p.18, 30, 54, 70, 124, 136, 151, 218, 287, IV)	<i>siguir</i> (p.487, I; 243, II; 88, 91, 100, III)	[to follow]

⁸ In Middle and Modern Portuguese data, in addition to the variable spellings, there are many invariable spellings, unlike the occurrences in the contemporary century. For this reason, the examples of this and the subsequent section were also arranged based on this variation criterion: after separating the different parts of speech (verb and non-verb), the variant data, which come first, were separated, in each part of speech, from the invariant data, which come at last. This arrangement applies to all examples showed in this in the next section, except for cases of vowel reduction, whose division, as we will see below, will consider the type of consonant involved (coronal, labial or dorsal) and its position in relation to the vowel (before or after), in addition to the criteria already referred.

<p style="text-align: center;"><i>sentir</i></p> <p>(p.75, 77, 80, 84, 105, 132, 141, 143, 145, 150, I; p.63, 68, 170, 174, 234, 248, 350, 357, 373, 412, 417, 448, 463, 468, II; p.7, 13, 42, 58, 63, 114, 117, 123, 124, 131, 144, 149, 164, 183, 193, 211, 290, 301, 352, III; p.3, 12, 15, 16, 36, 42, 58, 82, 87, 92, 95, 105, 113, 117, 122, 130, 143, 147, 233, 236, 245, 253, 290, 297, 302, 319, 321, IV)</p>	<p style="text-align: center;"><i>sintir</i></p> <p>(p.180, I; p.65, 68, 131, 170, 211, 223, 228, 235, 244, 245, 256, 346, II)</p>	<p>[to feel]</p>
<p style="text-align: center;"><i>servir</i></p> <p>(p.14, 80, 81, 85, 92, 93, 121, 141, 143, I; p.417, II; p.163, 176, 191, 213, 277, 287, 290, 304, III; p.26, 34, 81, 84, 86, 117, 119, 124, 130, 156, 159, 192, 230, 234, 236, 245, 248, 256, 264, 279, 285, 287, 292, 294, 299, 301, 321, 327, IV)</p>	<p style="text-align: center;"><i>sirvir</i></p> <p>(p.488, I)</p>	<p>[to serve]</p>
<p style="text-align: center;"><i>escrivir</i> (p.305, II)</p>		<p>[I wrote]</p>
<p style="text-align: center;"><i>escrivira</i> (p.416, II)</p>		<p>[I wrote]</p>
<p style="text-align: center;"><i>impidir</i> (p.416, II)</p>		<p>[to prevent]</p>
<p style="text-align: center;"><i>repetir</i> (p.50, II)</p>		<p>[to repeat]</p>
<p style="text-align: center;"><i>enliços</i> (p.214, I)</p>	<p style="text-align: center;"><i>inliço</i> (p.214, I)</p>	<p>[tangle]</p>
<p style="text-align: center;"><i>esprito</i> (p.63, 268, 272, 405, II; p.108, 111, 151, 172, 336, IV)</p>	<p style="text-align: center;"><i>Isprito</i> (p.211, IV)</p>	<p>[spirit]</p>
<p style="text-align: center;"><i>fantesia</i> (p.19, 303, 383, 401, 436, I; p.56, 144, 174, 177, 221, 235, 238, 318, 325, 333, 344, 367, 410, 418, 443, 451, 454, 472, II; p.14, 118, 122, 147, 160, 169, 231, 232, 241, 255, III; p.6, 21, 57, 91, 129, 213, 243, 294, 336, IV)</p>	<p style="text-align: center;"><i>fantisia</i> (p.156, IV)</p>	<p>[fantasy]</p>
<p style="text-align: center;"><i>mediada</i> (p.18, 27, 46, 300, 325, 339, IV)</p>	<p style="text-align: center;"><i>midida</i> (p.211, II)</p>	<p>[measure]</p>
<p style="text-align: center;"><i>menina</i> (p.78, 302, IV)</p>	<p style="text-align: center;"><i>mininas</i> (p.128, III)</p>	<p>[girls]</p>

<i>mentira</i> (p.67, 205, 298, 435, I; 17, 52, 452, 454, II; p.3, 24, III; p.136, 335, IV)	<i>mintiras</i> (p.203, III; p.104, IV)	[lies]
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<i>metido</i> (p.62, 88, I; p.413, II; p.4, 355, 381, III; p.179, IV)	<i>mitido</i> (p.270, II)	[involved]
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<i>mezquinho</i> (p.215, III; p.163, 276, IV) <i>mezquinhos</i> (p.204, I)	<i>mizquinho</i> (p.272, I)	[stingy]
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<i>pedido</i> (p.95, I; p.347, III)	<i>pidido</i> (p.272, II)	[request]
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<i>pedidos</i> (p.161, I; p.51, IV)	<i>pididos</i> (p.222, IV)	[requests]
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<i>sentidos</i> (p.154, I; p.245, 246, II; p.63, 99, III; p.46, 246, 253, 255, IV)	<i>sintidos</i> (p.210, II)	[senses]
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<i>biliz</i> “beliz” (p.222, IV)		[wily]
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<i>bixigas</i> (p.179, I)		[bladders]
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<i>mindigo</i> (p.214, IV)		[beggar]
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<i>pipino</i> (p.309, II)		[cucumber]
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<i>repitida</i> (p.219, II)		[repeated]
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<i>siguinte</i> (p.301, II)		[following]
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(07)

<i>mesura</i> (p.184, I; p.233, 260, IV)	<i>misura</i> (p.320, I)	[curtsy]
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<i>progenitura</i> (p.355, II)	<i>proginitura</i> (p.378, II)	[progeny]
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<i>vestiduras</i> (p.101, III)	<i>vistidura</i> (p.365, III)	[vesture]
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Concerning the pretonic back vowel, in the *Cancioneiro* by Resende, raising cases including front (08) and back (09) high vowel of the stressed syllable were also reported:

(08)

<i>encobr̃ir</i> (p.81, 152, 429, I; p.50, 412, 436, 438, II; p.11, 21, 131, 158, 163, 167, III; p.12, 28, 52, 249, 295, IV)	<i>encubr̃ir</i> (p.183, III; p.96, IV)	[to cover]
	<i>chuvia</i> (p.424, II)	[it was raining]
	<i>pussuir</i> (p.324, I)	[to possess]
<i>cor̃isco</i> (p.209, II)	<i>cur̃iscos</i> (p.220, 317, I)	[spark]
<i>foc̃inho</i> (p.212, 258, I)	<i>fuc̃inhos</i> (p.220, III)	[snout]
	<i>dur̃ido</i> (p.250, II)	[sore]
	<i>lijuñjaria</i> “lisonjaria” (p.237, II)	[flattery]
	<i>pul̃icia</i> (p.209, I)	[police]
	<i>assuṽios</i> (p.106, I)	[whistles]

(09)

<i>cobert̃ura</i> (p.183, 259, I)	<i>cubert̃ura</i> (p.239, III)	[covering]
<i>cost̃umes</i> (p.79, III)	<i>cust̃umes</i> (p.283, 391, II; p.120, IV)	[customs]
<i>doç̃uras</i> (p.318, 357, II)	<i>duç̃ura</i> (p.310, 315, 359, I; p.16, II; p.270, III; p.191, IV) <i>duç̃uras</i> (p.85, I; p.26, 120, III)	[sweetness]

<i>fortuna</i> (p.169, 322, 323, 324, 350, 422, I; p.215, 227, 253, 266, 391, 430, 437, II; p.4, 6, 12, 68, 89, 186, III; p.54, 106, 252, 302, IV)	<i>furtuna</i> (p.76, II; p.182, 252, IV)	[fortune]
<i>monturo</i> (p.208, I)	<i>munuro</i> (p.309, II)	[dump]
<i>budum</i> (p.309, II)		[stink]
<i>apustura</i> “compostura” (p.251, II)		[composure]
<i>cumpustura</i> (p.133, I)		[composure]
<i>rebuludo</i> (p.337, IV)		[plump]

As we may note, in cases of vowel harmony of Middle Portuguese, unlike what was found for Galician-Portuguese, both front (/i/) and back high vowel (/u/) acted like a trigger to the process.

In the unstressed syllable, in the data of *Cancioneiro Geral*, according to Fonte (2014), the front high vowel favors the raising of front mid vowels (10), and the back high vowel influences the raising of back mid vowels (11):

(10)

<i>competidor</i> (p.155, III)	<i>compitidor</i> (p.24, II)	[competitor]
<i>mentirosos</i> (p.76, III)	<i>minitiroso</i> (p.410, II)	[liar]
<i>nemigalha</i> “nada” (p.306, 435, 473, I; p.34, 38, II; p.32, 214, 288, III; p.90, 170, IV)	<i>nimigalha</i> (p.193, IV)	[nothing]
<i>sentimento</i> (p.93, 101, I; p.36, III)	<i>sintimento</i> (p.234, II) <i>sintimentos</i> (p.246, II;)	[feeling]
<i>cirimonía</i> (p.218, II)		[ceremony]

<i>cermonias</i> (p.429, II)	[ceremonies]
<i>dilicada</i> (p.191, IV)	[delicate]
<i>dirivados</i> (p.212, I)	[derivative]
<i>livianas</i> (p.446, II)	[frivolous]
<i>livindade</i> (p.63, III)	[levity]
<i>mixilhão</i> (p.473, I)	[mussel]
<i>mixilhoa</i> “mexerico” (p.201, III)	[gossip]
<i>persiguidores</i> (p.240, II)	[persecutors]
<i>anticiparam</i> (p.70, III)	[they anticipated]
<i>entristicer</i> (p.107, IV)	[to sadden]
<i>vivirá</i> (p.271, I)	[she will live]
<i>vivirei</i> (p.79, 339, II; p.93, 119, IV)	[I will live]
<i>vivireis</i> (p.85, III)	[you will live]

(11)

<i>procurar</i> (p.68, I)	<i>prucurar</i> (p.40, I)	[to search]
<i>acustumar</i> (p.101, III)		[to accustom]
<i>custumar</i> (p.402, III; p.266, IV)		[to custom]
<i>cogumelos</i> (p.337, IV)	<i>cugumelo</i> (p.273, IV)	[mushroom]
<i>costumado</i> (p.389, III)	<i>acustumado</i> (p.128, II)	[accustomed]
<i>portugueses</i> (p.198, II)	<i>prtugues</i> (p.235, III)	[Portuguese]
<i>acustumada</i> (p.191, IV)		[accustomed]
<i>cumunal</i> (p.124, III)		[communal]
<i>custureiro</i> (p.45, II)		[couturier]
<i>custureiros</i> (p.222, III)		[couturiers]
<i>custumada</i> (p.236, II)		[accustomed]
<i>desacustumada</i> (p.128, II)		[unaccustomed]

With regard to the data presented in (10) and (11), it is worth noting that, in many of these examples, the raising of the pretonic mid vowel may be a result of other (verbal or nominal) paradigms, as in *m[i]ntiroso* [liar], *comp[i]tidor* [competitor], *s[i]ntimento* [feeling] and *pers[i]guidores* [persecutors], among the front vowels, in which the raising may be associated to the pronunciation of these vowels (which are also raised) in verbal tenses *m[i]ntir* [to liar], *comp[i]tir* [to compete], *s[i]ntir* [to feel] and *pers[i]guir* [to persecute] (all of them with high vowel in the stressed syllable), or among back vowels, in *pr[u]curar* [to search], *ac[u]stumar* [to accustom] and derivatives, in which high pretonic vowel may be a sign of raising in nominal forms such as *pr[u]cura* [search] and *c[u]stume* [custom] (also with a stressed high vowel).

In word-initial position, the front mid vowel was raised in the spelling of *Cancioneiro Geral* in syllables closed by nasal (12) or sibilant (13) consonants:

(12)

<i>envidar</i> (p.315, III; p.284, IV)	<i>invidar</i> (p.336, III)	[to make]
<i>insinar</i> (p.364, I)		[to teach]

(13)

<i>istenso</i> “extenso” (p.267, II)	[extensive]
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Fonte (2014) also registered a case of spelling variation in *Cancioneiro Geral* including the pretonic front vowel of the prefix *des-*:

(14)

<i>desfavores</i> (p.106, 122, 124, 153, I; p.82, 122, 161, IV)	<i>disfavores</i> (p.99, 106, I)	[disfavor]
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At last, adjacent consonants demonstrated an expressive context in data of Middle Portuguese: the number of cases of mid vowel raising associated to the vowel reduction process in data of the 15th and the early 16th centuries is considerably higher than the one registered in the cantigas of the 13th century. In the examples listed in (15) and (16), consonantal segments are involved in raising cases of front and back pretonic vowels, respectively:⁹

⁹ As previously mentioned in this paper, the arrangement of the examples related to the vowel reduction process considered, overall, the place of articulation of the consonant (coronal, labial or dorsal) and its position regarding the raised vowel. At first, examples were classified by the consonant type and listed according to the following order: coronal, labial and dorsal. Then, within each group, data were divided according to the consonant position in relation

(15)

<i>ensandecer</i> (p.20, I; 174, III; p.59, 297, IV)	<i>ensandicer</i> (p.31, I)	[to go mad]
<i>bocijar</i> (p.71, I)		[to yawn]
<i>divera</i> “deveria” (p.13, 185, II; 104, III)		[I should]
<i>sequer</i> (p.24, 308, 400, I; 19, 88, II)	<i>siquer</i> (p.202, III)	[not even]
<i>caçireiro</i> “carcereiro” (p.99, IV)		[prison officer]
<i>liam</i> (p.318, II; p.398, III; p.169, IV)		[lion]
<i>lião</i> (p.376, 380, 382, 387, 388, 389, 467, II)		[lion]
<i>lioa</i> (p.282, III; p.331, IV)		[lioness]
<i>liões</i> (p.302, 378, 379, 381, I)		[lions]
<i>liões</i> (p.334, IV)		[lions]
<i>liões</i> (p.327, I)		[lions]
<i>liões</i> (p.150, IV)		[lions]
<i>lionado</i> (p.84, IV)		[tawny]
<i>melhor</i> (p.161, 324, 470, I; p.140, 195, 196, 228, 354, 419, 421, 422, 429, II; p.24, 29, 189, 237, 272, III; p.7, 8, 13, 286, 289, 296, 309, 327, 331, IV)	<i>milhor</i> (p.21, 34, 63, 105, 124, 125, 141, 169, 174, 181, 182, 190, 205, 221, 280, 282, 285, 367, 380, 382, 391, 417, 418, 424, 426, 472, 473, 488, 489, I; p.12, 39, 53, 79, 149, 170, 186, 187, 190, 192, 218, 244, 247, 267, 312, 329, 346, 350, 356, 459, 472, II; p.26, 51, 90, 103, 108, 118, 129, 137, 143, 151, 164, 169, 174, 177, 178, 206, 217, 236, 251, 281, 294, 314, 318, 326, 351, 359, 368, 384, 392, III; p.11, 31, 91, 94, 101, 102, 103, 123, 136, 167, 169, 225, 242, 243, 280, 296, IV)	[better/best]
<i>melhores</i> (p.150, 461, 469, I)	<i>milhores</i> (p.174, I; p.314, II; p.356, III)	[better/best]

to each raised pretonic vowel: first the examples with consonant before the vowel; then the examples in which the consonant is in the adjacent syllable. After this division, the arrangement follows the same criterion adopted for the other examples demonstrated in this section: verbs and non-verbs, variable and invariable words and, finally, alphabetical order.

<i>rendeiro</i> (p.370, II; p.377, III)	<i>rindeiros</i> (p.233, III)	[who receives income]
<i>bisouro</i> (p.338, IV)		[beetle]
<i>Marichal</i> (p.29, 259, III)		[marshal]
<i>ninhū</i> (p.376, III)		[none]
<i>pineira</i> “peneira” (p.435, I)		[sieve]
<i>pirnalta</i> (p.366, III)		[leggy]

(16)

<i>joelhos</i> (p.493, I)	<i>juelhos</i> (p.35, II)	[knees]
<i>fogueira</i> (p.382-383, III)	<i>fügueiras</i> (p.330, I)	[bonfire]
<i>muela</i> (p.110, 198, III)		[gizzard]
<i>pumar</i> (p.294, I)		[orchard]
<i>coitado</i> (p.104, 146, I)	<i>cuitado</i> (p.200, II)	[suffering]
<i>cuberta</i> (p.174, 192, 271, I; p.224, III)		[covered]
<i>cubertas</i> (p.345, I; p.32, 247, 397, II)		[covered]
<i>cuberto</i> (p.167, 347, I; p.42, 249, 406, II)		[covered]
<i>cubeertos</i> (p.275, IV)		[covered]
<i>cubertos</i> (p.332, II; p. 97, III)		[covered]
<i>descuberta</i> (p.371, 385, I; 326, 438, II; p.45, IV)		[uncovered]
<i>descubertas</i> (p.345, 405, I; p.217, II; p.74, III)		[uncovered]
<i>descuberto</i> (p.81, 213, 400, I; p.136, 436, 461, II; p.361, III; p.12, 52, 153, IV)		[uncovered]
<i>descubertos</i> (p.332, II)		[uncovered]
<i>encuberta</i> (p.350, 371, I; p.150, II; p.59, IV)		[covered]
<i>encubertas</i> (p.153, I; p.136, 146, II)		[covered]
<i>encuberto</i> (p.143, 286, 296, I; p.189, II)		[covered]
<i>encubertos</i> (p.326, II; p.18, III; p.114, IV)		[covered]

<i>regurosos</i> “rigoroso” (p.419, I)	[rigorous]
<i>jugar</i> “jogar” (p.149, 150, 169, 170, 297, 303, I; 452, II; p.18, 78, 329, III; p.3, 172, IV)	[to play]
<i>jugatar</i> (p.301, I)	[to joke]
<i>juguetar</i> (p.382, III)	[to joke]
<i>jugador</i> (p.18, III)	[player]
<i>jugadores</i> (p.311, I)	[players]
<i>juguetador</i> (p.298, I)	[joker]
<i>juguetas</i> (p.83, IV)	[joker]

The examples listed in (15) present occurrences of front mid vowel raising in the pretonic syllable. In these data, the raised pretonic vowel is preceded or followed by a coronal consonant that may have conditioned the raising rule.

The examples pointed out in (16) highlight the recurrence of labial and dorsal consonants in several raising cases of back pretonic mid vowels. These cases can be motivated by the assimilation of [labial] and [dorsal] features of such consonants, considering, for example, that [u] is phonetically more labial and dorsal than [o]. Among these data, only the variation *joelhos* ~ *juehos* cannot be explained by the assimilation to the feature of the (palatal) adjacent consonant, as back vowels do not present [coronal] feature. On the other hand, we could associate pretonic mid vowel raising to the fact that palatal (as well as velar) consonants are produced in a higher point in the mouth cavity. However, the problem is that this assimilation could not be represented by the Feature Geometry Model, as it does not comprise the opening feature of consonantal segments. The vowel encounter context could also be brought into question to support pretonic mid vowel raising, since such context is also productive in raising cases of contemporary BP. Even so, we could not say that it is an assimilation case. Therefore, these are cases supporting Bisol’s proposal (2009) that the vowel reduction process would be more associated to neutralization rather than assimilation, which has been already mentioned in this paper.

Vowel raising in Middle Portuguese was conditioned by both processes: harmony and reduction. When we match the results of the two periods considered, we find an increase of the passage from Galician-Portuguese to Middle Portuguese in cases including productivity of consonantal contexts, which were as expressive as those regarding high vowel of the (stressed or unstressed) adjacent syllable, among the data of the 15th and the early 16th centuries. Although most of these cases may be justified by the assimilation to the features of the involved consonants, we understand, as Bisol (2009), that the vowel reduction process, unlike harmony, is closer to a neutralization rule – reducing the system from five to three vowels –, than to a rule of feature assimilation. The comparison between data of the two periods analyzed so far suggests

a development of this reduction work of the pretonic vowel system in the history of the language as there has been a relevant increase in the passage from a period to another in vowel raising of pretonic mid vowels followed by a consonant.

Pretonic mid vowel raising in the spelling of *Os Lusíadas*

To provide data on Modern Portuguese, Fonte (2014) selected Camões' masterwork, a classic of Portuguese Literature and an icon of Renaissance in Portugal: *Os Lusíadas* [*The Lusíads*].

This third moment, in the chronological axis of the history of Portuguese language, also brings evidence of raising rule productivity in pretonic mid vowels of that time. The phonetic-phonological contexts involved in the cases documented by Fonte (2014) in Camões' epic work are similar to those registered for the previous periods.

The high stressed vowel was identified as a recurring context among raising cases of front and back pretonic mid vowel. In (17), there is a front high stressed vowel in the subsequent syllable of the (raised) pretonic vowel, which is also a front vowel:

(17)

<p style="text-align: center;"><i>sentir</i></p> <p>(I-15; II-15, 66; III-65, 66, 141; IV-14, 29, 36; V-58, VI-31, 36; VIII-35, 58; IX-48; X-12, 33, 36, 48)</p>	<p style="text-align: center;"><i>sintir</i></p> <p>(V-52)</p>	<p>[to feel]</p>
<p style="text-align: center;"><i>diffrir</i></p> <p>(I-30; VIII-80)</p>		<p>[to differ]</p>
<p style="text-align: center;"><i>devida</i></p> <p>(I-56)</p>	<p style="text-align: center;"><i>divido</i></p> <p>(III-1; VI-55)</p>	<p>[due]</p>
<p style="text-align: center;"><i>embebidos</i></p> <p>(X-24)</p>	<p style="text-align: center;"><i>embibidos</i></p> <p>(V-90)</p>	<p>[soaked]</p>
<p style="text-align: center;"><i>perigo</i></p> <p>(I-43; II-14, 27, 28, 30, 44; III-21; IV-8, 29, 80, 101; V-43; VII-2, 39; VIII-48, 85)</p>	<p style="text-align: center;"><i>pirigos</i></p> <p>(VIII-89)</p>	<p>[danger]</p>
<p style="text-align: center;"><i>Sevilha</i></p> <p>(III-75; VIII-24)</p>	<p style="text-align: center;"><i>Sivilha</i></p> <p>(IV-46)</p>	<p>[Seville]</p>

<i>gingivas</i> (V-81)	[gums]
<i>minina</i> (III-134; IV-3)	[girl]
<i>minino</i> (II-36, 43; III-125; IV-92; IX-30, 35)	[boy]
<i>niquicia</i> “nequícia” (VIII-65)	[malice]
<i>Apinino</i> “Apenino” (III-15)	[Apennines]
<i>Cyfsia</i> “cefisio” (IX-60)	[Cephissian]
<i>Cizimbra</i> “Sesimbra” (III-65)	[Sesimbra]
<i>Hircinia</i> “Hercínia” (III-11)	[Hercynian]

Among the cases of back mid vowel raising registered by Fonte (2014) on the spelling of *Os Lusíadas*, front (18) and back (19) high stressed vowels are also relevant contexts:

(18)

<i>descobrir</i> (I-43, 103; IV-6; V-4, 44; VIII-70, 71, 72; IX-40, 69, 86; X-52, 140)	<i>descubrîr</i> (V-25; VI-26)	[to discover]
<i>sorrîr</i> (V-35)	<i>surrîr</i> (IX-70)	[to smile]
<i>cubrîr</i> (II-15; VII-37)		[to cover]
<i>engulîr</i> (VI-97)		[to swallow]
<i>cobiça</i> (VII-2, 11; VIII-59, 77; IX-93)	<i>cubiça</i> (III-32; IV-95; X-55, 58, 145)	[covetousness]
<i>homicida</i> (X-115)	<i>humicidas</i> (III-136)	[homicidal]
<i>insuffridas</i> (V-43)		[not suffered]
<i>insufribil</i> (I-65)		[insufferable]

(19)

<i>costume</i> (I-45; II-81, 94, 110; III-13, 96; IV-65; V-2, 98; VII-15, 41, 44, 58, 66; X-91)	<i>custume</i> (V-1; VIII-42; X-68, 139)	[custom]
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The examples pointed out in (17), (18) and (19) present the productivity of the vowel harmony process to the pretonic mid vowel raising of Modern Portuguese. In these examples, the front high stressed vowel (/i/) conditioned the raising of both front (e.g.: *sintir* [to feel]) and back (e.g.: *surrir* [to smile]) pretonic vowels. On the other hand, the back stressed vowel (/u/) triggered vowel raising solely of the back pretonic vowel (e.g.: *custume* [custom]).

We previously noted in this paper that, based on data of contemporary BP, Bisol (2013) demonstrates that /i/ tends to be more productive than /u/ as a trigger to pretonic mid vowel raising. According to the author, it happens for primary articulatory reasons, since, according to the cardinal vowels scheme claimed by Jones (1957), /i/ is the highest vowel of the vowel system. This is why, for Bisol (2013, p.54, our translation)¹⁰,

[a back high vowel has little attractive force over /e/ because changing /e/ into /i/ means creating a higher articulation than the /u/ vowel itself, the conditioner. It explains why *veludo* [velvet] and *bermuda* [shorts], for example, tend to preserve the basis vowel, while *pepino~pipino* [cucumber] and *bonito~bunito* [beautiful] tend to change it].

It also explains the higher productivity of the front high vowel, in relation to the back high vowel, to the vowel raising phenomenon of the 16th century.

In the unstressed syllable, according to Fonte (2014), the front high vowel also influenced the raising of the front (20) and back (21) pretonic mid vowel in the data of Modern Portuguese:

(20)

<i>derivar</i> (X-99)	<i>dirivar</i> (III-21; IV-8; IX-54; X-67)	[to derive]
<i>viverão</i> (II-103; VI-78)	<i>vivirão</i> (II-105)	[they will live]
<i>mentirosas</i> (I-11)	<i>mintirosa</i> (IX-44)	[liar]
	<i>declinada</i> (II-98)	[declined]
	<i>misilhões</i> “mexilhões” (VI-17)	[mussels]

¹⁰ “[...] uma vogal alta posterior exerce pouca força atrativa sobre /e/, pois mudar /e/ para /i/ significa criar uma articulação mais alta do que a própria vogal /u/, o condicionador. Isso explica por que *veludo* e *bermuda*, por exemplo, tendem a preservar a vogal da base, enquanto *pepino~pipino* e *bonito~bunito* tendem a alterá-la.” (BISOL, 2013, p.54)

(21)

<i>cobiçoso</i> (III-76; IV-44, 81; VIII-96; IX-72)	<i>cubiçosos</i> (IX-66)	[covetous]
<i>descobridor</i> (VIII-37, 57)	<i>descubridores</i> (IX-1)	[discoverer]
<i>cubiçadas</i> (II-80)		[coveted]
<i>ruciada</i> “rociada” (IX-62)		[sprayed]

The back high unstressed vowel, according to Fonte (2014), conditioned the raising of the pretonic mid back vowel, as pointed out by the data below from Camões’ verses:

(22)

<i>costumar</i> (I-18, 58; II-20; III-4)	<i>custumar</i> (X-122)	[to custom]
<i>costumado</i> (II-57; III-93; IV-45)	<i>custumado</i> (IV-93)	[accustomed]
<i>costumada</i> (II-18; III-81; IV-56)		

The examples presented in (20), (21) and (22) also confirm the higher influence of the front high vowel (/i/) when compared to the back high vowel (/u/), in pretonic mid vowel raising conditioned by the assimilation to the feature of the adjacent high vowel. In all these examples, as already noted, the high vowel that triggers the process is in the unstressed syllable next to the target pretonic vowel. However, in some of these data, raising may be a result from other paradigms of these verbal and nominal forms, where high vowel is in the stressed syllable (e.g.: *mentir* [to lie] > *mentiroso* [liar]; *cubiça* [covetousness] > *cubiçoso* [covetous], *cubiçado* [coveted]; *descubrir* [to discover] > *descubridor* [discoverer]; *rucio* [spray] > *ruciado* [sprayed]; *custume* [custom] > *costumar* [to custom], *custumado* [accustomed]).

The word-initial pretonic front vowel is raised when followed by a nasal consonant in the same syllable, in the spelling registered in *Os Lusíadas*:

(23)

<i>enfiar</i> (VI-98)	<i>infiar</i> (VI-87)	[to thread]
<i>ensinar</i> (I-71, 97; II-78; III-1)	<i>insinar</i> (I-53; II-70; III-120, 140; VI-33; VII-37; VIII-79; IX-27; X-83, 84, 109, 112, 118)	[to teach]
	<i>incurtar</i> (IX-20)	[to shorten]
<i>engenho</i> (I-2, 4; III-13, 14; IV-102; V-17, 98; VII-82; VIII-2, 71, 89; X-9, 19, 80, 82, 110, 145, 154)	<i>ingenho</i> (V-98)	[ingenuity]
	<i>infiado</i> (I-37; II-49)	[threaded]

Finally, vowel reduction process also showed itself relevant in raising front (24) and back (25) pretonic mid vowels registered by Fonte (2014) in Camões' verses:

(24)

	<i>bocijar</i> (VI-39)	[to yawn]
<i>leoneses</i> (VIII-9)	<i>liones</i> (III-70, 89; IV-8)	[Leones]
	<i>cigueira</i> (V-54)	[blindness]
<i>lião</i> (I-68; III-129; IV-34, 80; X-43, 69, 147)		[lion]
	<i>Lião</i> (III-19, 70; VI-56)	[Leon]
	<i>liao</i> (IV-36; V-12)	[lioness]
<i>melhormente</i> (IX-12)	<i>milhor</i> (I-77; II-46; III-18; IV-103; V-34, 35; VI-40; VII-16; VIII-52, 85; IX-8, 10, 12, 58, 93; X-95, 97, 114, 121)	[better/best]
<i>pelouros</i> (X-35, 38)	<i>pilouro</i> (I-67; VI-98; X-31, 43, 147)	[an old bullet type]

(25)

<i>cuberto</i> (I-19, 105; VI-18, 39; X-63)	[covered]
<i>descuberta</i> (IV-63; IX-65)	[uncovered]
<i>descuberto</i> (I-105; II-30; V-14, 32, 65; VI-9, 50, 86; VIII-56, 86)	[uncovered]
<i>encuberta</i> (VIII-55; X-69)	[covered]
<i>reguroso</i> (III-137)	[rigorous]
<i>rigurosos</i> (III-125)	[rigorous]
<i>rigurosas</i> (X-149)	[rigorous]

Similar to the data from Middle Portuguese, the process of vowel reduction in raising pretonic mid vowels of Modern Portuguese also involves the presence of coronal consonants, with regard to front pretonic vowels, and the presence of (velar) dorsal consonants, in relation to back pretonic vowels. Therefore, vowel raising could be supported by the assimilation to the features of adjacent consonants, as front vowels present [coronal] feature and back vowels present [dorsal] feature. However, as already mentioned in this paper, we understand, with Bisol (2009), that vowel reduction process, even allowing an interpretation based on the assimilation of contiguous features, seems to work much more as a neutralization rule than as a merely assimilation process. Modern Portuguese data, such as Middle Portuguese data (considering the due proportions, since Camões' work is smaller than the *Cancioneiro*, in terms of extension), support the hypothesis that vowel reduction process has been gradually spread in lexicon and, as a legitimate neutralization rule aiming to reduce the system, was increasingly including contexts that were sensitive to the raising rule until it became general in EP, remaining as a variable rule in the several varieties of contemporary BP.

Fonte (2010a,b; 2014), when analyzing the spelling used in *Cantigas de Santa Maria*, *Cancioneiro Geral* and *Os Lusíadas*, obtained relevant clues regarding pretonic vowels of Galician-Portuguese, Middle Portuguese and Modern Portuguese.

In the three works analyzed, the author found enough data to classify pretonic mid vowel raising in the 13th, 15th and 16th centuries as a variable rule. With regard to the 13th century, the results found by Fonte (2010a,b; 2014) highlight the productivity of a variable rule, which was conditioned primarily by the assimilation to the feature of the high vowel of the (stressed or unstressed) adjacent syllable. For the 15th and 16th centuries, however, the author's data suggest that such raising rule, although still variable, already included new phonetic-phonological contexts.

When comparing data from the three works analyzed by Fonte (2010a,b; 2014), there is an increase of pretonic mid vowel raising associated to vowel reduction in the passage from Galician to Middle Portuguese. In other words, the comparison of data

seems to suggest the gradual diffusion, in the lexicon, of a rule that, later on, would become general in Portugal (but not in Brazil).¹¹

Following Bisol's proposal (2009), one may understand the vowel harmony occurrences presented throughout this section as a legitimate assimilation process, whereas the vowel reduction cases can be classified as an authentic neutralization rule gradually spread throughout the centuries to new lexical items.

Posttonic vowels from the 13th, 15th and 16th centuries

As previously noted in this work, in contemporary (European and Brazilian) Portuguese, the seven-vowel phonological system in stressed position significantly reduces in the final unstressed position,¹² due to a neutralization between mid and high vowels. It is worth noting that such neutralization favored the pronunciation with raised vowel both in Brazil ([i], [u]) and Portugal ([i], [i], [u]), even though the language orthographic representation benefits mid vowels (e.g.: *pele* [skin], *pelo* [fur]). It means that the raising process among final posttonic vowels of Portuguese, unlike what was observed in this paper for pretonic vowels, is a general rule, conditioned by the accent position, not only in EP, but also in contemporary BP (at least in the majority of the varieties).

In order to analyze the raising process among posttonic vowels of ancient Portuguese, Fonte (2010a,b; 2014) adopted the same methodology that was used for the study of the pretonic vowels, that is, mapping all spelling representations involving posttonic mid and high vowels in *Cantigas de Santa Maria*, *Cancioneiro Geral* and *Os Lusíadas*. Then, in the mapped data, the author looked for cases where a high vowel (<i> or <u>) represented, in the spelling (variable or not) of the referred *corpora*, a vowel represented by the grapheme <e> or <o> (e.g.: *quasi* [almost]) in contemporary Portuguese.

As already noted in the introduction of this paper, the signs of word-final posttonic vowel raising in the 13th, 15th and 16th centuries were lower than those registered by Fonte (2010a,b; 2014) for pretonic vowels of the same period. In the three analyzed *corpora*, the author found rare traces of a final unstressed vowel raising – which solely involved the front mid vowel (<e>).

¹¹ Bisol (2015), studying the productivity of vowel harmony rule throughout the history of Portuguese in the raising process of the pretonic mid vowel, also finds, by analyzing (written and oral) data from different times (since the first periods of the language up to the 21th century), a gradual increase, primarily from the 16th century, of raising cases involving the phonetic-phonological contexts in addition to the high vowel of the contiguous syllable. Therefore, Fonte's data (2010a,b; 2014), from exclusively poetic (written) texts and unlike (except for *Os Lusíadas*) those addressed by Bisol (2015), support, in general, the conclusions of the researcher's work (see BISOL, 2015).

¹² As already mentioned in this paper, in non-final posttonic context, as well as in pretonic position, the mid vowel raising is a variable rule in current BP. As in current BP, the non-final posttonic subsystem is a fluctuation between pretonic and final unstressed subsystems – and also because Brazilian and European unstressed vocalism solely matches with final posttonic context – for posttonic vowels, this paper will solely comprise Fonte's data (2010a,b; 2014) regarding final unstressed position (and without syllabic coda).

In *Cantigas de Santa Maria*, Fonte (2010a,b; 2014) registered some cases of spelling variation between word-final posttonic mid and high vowels of verbal forms of the 13th century:

(26)

<i>dixe</i> “disse” (CSM 55, 125, 144, 233, 238)	<i>dixi</i> (CSM 196)	[he/she said]
<i>diste</i> “deste” (CSM 105)	<i>disti</i> (CSM 40)	[you gave]
<i>feziste</i> “fizeste” (CSM 6, 14, 32, 75, 84)	<i>fezisti</i> (CSM 40)	[you made]
<i>ouve</i> “houve” (CSM 1, 2, 4, 5, 7)	<i>ouvi</i> (CSM 25, 38)	[there was]
<i>ouviste</i> “houveste” (CSM 241, 350, 420, 422)	<i>ouvisti</i> (CSM 40)	[you had]

Among the nominal forms written in Alfonso X’s cantigas, Fonte (2010a,b; 2014) found solely one case of spelling variation involving the vowel of the final posttonic syllable:

(27)

sangue (CSM 38 *T To*, 73, 104, 133, 149) *sanguí* (CSM 38 *E*, 101, 104, 154, 222) [blood]

In *Cancioneiro* by Resende, traces of final unstressed vowel raising were less frequent than those found in the verses of Alfonso X:

(28)

	<i>dizi</i> (p.97, III)	[you say]
<i>Quase</i> (p.203, IV)	<i>quasi</i> (p.227, 230, 234, 284, 334, 427, I; p.7, 217, 248, 397, 400, 401, 405, 471, II; p.1, 65, 80, 96, 216, 255, 316, 379, III)	[almost]

Finally, in *Os Lusíadas*, Fonte (2014) also found few occurrences of final unstressed mid vowel raising:

(29)

<i>Tigre</i> (IV-64)	<i>Tigris</i> (X-102)	[Tiger]
<i>quasi</i> (I-10, 77, 79; II-63; III-20)		[almost]

Therefore, the data presented in this section reveal that, in the three works analyzed by Fonte (2010a,b; 2014), there is a predominance of graphemes <e> and <o> in the word-final unstressed position to represent front and back vowels, respectively. Before this evidence, we are prone to believe that the raising of the final posttonic vowel, although it could occur in Galician and Middle Portuguese and in the beginning of Modern Portuguese, as observed, it was not preponderant in the language up to the second half of the 16th century, at least.

The results obtained by Fonte (2010a,b; 2014) confirm the testimony of Teyssier (1994 [1980]) that there is no evidence, before the 18th century, of a generalization of the raising rule among posttonic vowels of Portuguese. On the other hand, it is possible to consider the hypothesis that the spelling of ancient Portuguese was more conservative in the representation of posttonic vowels than in the representation of pretonic vowels of that time. Moreover, this predominance of mid vowel spellings, in the *corpora* considered, may indicate that a writing pattern was more easily fixed among the posttonic vowels than among the pretonic ones, and that there was, therefore, a general convention in representing all word-final unstressed vowels by <e> and <o>.

Concerning the back vowels, there is still the assertion based on morphological matters to support the lack of the grapheme <u> in the data pointed out by Fonte (2010a,b; 2014), as the final unstressed <o> also represents the morpheme gender marker in Portuguese. Nevertheless, by being aware that the rules of writing at that time were not official and that speakers had more freedom to represent speaking features in writing, it seems controversial the fact that there are so few data indicating a supposed predominant pronunciation of final unstressed [i] and [u] in the past.

Conclusions

The data presented over this paper, which Fonte (2010a,b; 2014) obtained from the analysis of the orthographic practices in *Cantigas de Santa Maria*, *Cancioneiro Geral* and *Os Lusíadas*, provide clues on the pronunciation of the unstressed vowels of ancient Portuguese and, consequently, propose an interesting reflection about the spread of the raising rule in pretonic and posttonic vowels of Portuguese throughout the history.

We observed that, in contemporary EP, mid vowel raising is a general rule both in pretonic and posttonic syllables. On the other hand, in contemporary BP, vowel raising is a general rule in final posttonic vowels and (still) a variable rule in pretonic vowels. By observing solely the contemporary language framework, we could assume that, in historical terms, the raising rule first spread to posttonic vowels of Portuguese and then to pretonic vowels – and this is the hypothesis of Marquilha (2003) already mentioned in the introduction of this paper. Fonte's (2010a,b; 2014) data, however, suggest that up to the 16th century, at least, the raising rule was much more usual in pretonic than in posttonic mid vowels in Portuguese.

Such data, which are against the expectation created by the contemporary Phonology of the language, do not only point that supremacy of the raising rule is new among posttonic vowels in relation to pretonic vowels, as well as it allow us to verify that this supposed transposition of the raising rule would have been caused, apparently, by prosodic aspects.

In other words, this progress of the raising rule among the posttonic vowels, in BP, may be explained by rhythm: the final unstressed syllable vowel is shorter than the pretonic syllable vowel in contemporary BP, and that would have favored the generalization of the rule initially among the final posttonic vowels.

In contemporary EP, as there is an equivalence in the rhythm of the unstressed vowels in general, the duration of the pretonic vowel is very approximate to the duration of the posttonic vowel – which explains the use of the same rule (raising and retraction) for all unstressed vowels.

Finally, Fonte's data (2010a,b; 2014) allow us to conclude that, at least up to the second half of the 16th century, the raising of the unstressed mid vowel was still a variable rule in Portuguese and more productive in pretonic vowels than in final posttonic vowels.

Therefore, this general framework does not correspond to what is found nowadays in terms of unstressed vowels, both in BP and EP, as in these two varieties the raising rule is not variable for final posttonic vowels and, in EP, it is not variable for pretonic vowels either. In this sense, the hypothesis from the previous studies that the current Brazilian pronunciation would be closer to ancient Portuguese pronunciation only applies to pretonic vowels (and not to the whole vowel system).

FONTE, J. O vocalismo átono na história da língua portuguesa. *Alfa*, São Paulo, v.61, n.1, p.165-196, 2017.

- RESUMO: No português europeu atual, a regra de alçamento (elevação) de vogal média atua em todos os contextos átonos, sejam eles pretônicos (*p[i]gar, t[u]car*) ou postônicos (*núm[i]r[u], árv[u]r[i], pel[i], pel[u]*). Já entre as variedades do português brasileiro atual, essa regra costuma ser geral apenas para as vogais postônicas finais, em sílaba aberta (*pel[i], pel[u]*) ou travada por /S/ (*Londr[i]s*); no contexto pretônico, a elevação da vogal média, nos falares brasileiros em curso, é uma regra variável, geralmente condicionada por contextos fonético-fonológicos específicos (*p[i]dido, c[u]stume, [i]scola, [i]mprego, d[i]sconto*). Com o intuito de investigar o processo de elevação de vogal média átona ao longo da história da língua portuguesa, este trabalho expõe e compara dados dos séculos XIII, XV e XVI que apontam a atuação da regra de alçamento entre as vogais pretônicas e postônicas de então. Esses dados, obtidos por Fonte (2010a,b, 2014) a partir da observação da grafia empregada nas *Cantigas de Santa Maria* de Afonso X, no *Cancioneiro Geral* de Garcia de Resende, e em *Os Lusíadas* de Camões, sugerem que, até o século XVI, pelo menos, o alçamento de vogal média era uma regra variável, bastante comum entre as vogais pretônicas, mas ainda incipiente entre as vogais postônicas finais.

- PALAVRAS-CHAVE: Vogais átonas. Alçamento vocálico. Variação. História da língua portuguesa.

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CLAVIS SINICA: A SHORT HISTORY OF THE LONG BATTLE FOR THE CHINESE WRITING SYSTEM IN THE WEST BETWEEN THE XVI AND XIX CENTURIES¹

Cristiano Mahaut de Barros BARRETO*

- **ABSTRACT:** This paper aims to present a brief history of ideas in Europe between 1550 and 1900 on the spoken and written languages of China. With the support of Sylvain Auroux moderate historicism (2004), I have chosen as a guideline to focus on the discussions regarding the nature of Chinese writing: ideographic or phonographic. While refusing to take sides, I intend to show that this debate has developed around recurring issues that have been revisited throughout this period of more than three centuries and that the studies published by the Europeans are deeply rooted in their cultural, social and ideological context of production. The precarious status of *writing* in the history of linguistic ideas is an outstanding evidence that is related to the historical leading role of the written Chinese influencing the development in the West of the concepts pertaining to writing, in particular in its representational possibilities. Finally, I propose that the ongoing debates on the subject still reproduce many of the issues explored throughout this history, the resolution of which is still far from being reached.
- **KEYWORDS:** History of Linguistics Ideas. Chinese. Europe. Writing.

Introduction

Chinese writing has always held a fascination in the West for its beauty and exoticism. Although initially it appears to constitute an impossibly complex array of hundreds or even thousands of small random “drawings”, the Chinese script (*hànzì* 漢字, “Chinese character”) has an underlying intricate structure which spatially arranges the graphical components of sinographs. The characters are “built up” from a limited repertoire of about one dozen *traces* (points, vertical lines, horizontal lines, lines with “hooks” at their end, etc.), which are then combined into *simple characters* (*dú tǐ zì* 独体字, literally: “characters with single body”) indecomposable (except for

* UFF – Universidade Federal Fluminense – Institute of Letters – Niterói – RJ – Brazil. 24220-900 – cristianombb@gmail.com

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traces that form it²), in order of a few hundred. These simple characters may be used in pairings of two or more to compose *complex characters* (*hétǐzì* 合体字, literally “characters with joined body”) and may have a clear iconic import, some kind of stylized semantic indication, or symbolic and/or a more or less precise indication about its pronunciation. The nature and organizing principles of these graphic components and their combinations into simple and complex characters have been the subject of heated debates over the Chinese script among sinologues and people interested in China for over 500 years.

The concern of the Chinese about the organization of their script dates back at least to the first formal dictionary extant in China, the *Ěryǎ* 爾雅, dating between the fifth and the first century BC. (BOTTÉRO, 2011, p.41; AUROUX, 1995, p.435) An even more fundamental work was compiled around 123 AD by *Xǔ Shèn* 許慎 (c. AD 58 – c. 147 AD), the *Shuōwén Jiězì* 說文解字, which has served as the primary model for most of the future lexical works of China. The *Shuōwén* was the first text to propose a classification of Chinese characters into six categories³ and to sort them according to their *radicals* (*bùshǒu* 部首, lit. “head part”), which were 540 chosen components of characters – later this list has been modified many times and the more widespread current standard has 214 radicals – each one with a purported semantic import. Most traditional lexical works in China employed these semantically based radicals as a classification criterion, except a minority of those that had a particular concern about the sound(s) of the Chinese language(s).⁴

Furthermore, Chinese writing impressed not only due to its visual appearance, but also for its long history which has shown a remarkable diachronic stability from the *Qín* 秦 dynasty (221-206 BC), when it was reformed during the reign of Emperor *Qín Shǐhuáng* 秦始皇. The style was then further standardized in the *Hàn* 漢 dynasty (206 BC-220 AD), which succeeded the *Qín*, being then called *lishū* 隸書 or “clerical writing” – a script already used by the *Qín* in certain special functions. Since then the Chinese characters showed calligraphic variations basically and maintained an extraordinary structural diachronic stability. A key consequence of the reform of the *Qín* and *Hàn* for the studies on Chinese writing was the end of the rampant inconsistency and lack of regularity in the use and design of the characters before its restructuring, which eventually became a formidable barrier to the decipherment and reading of the pre-*Qín* texts.⁵

² This means that the graphical parts (or traces) of the simple characters cannot in isolation constitute new characters and are just graphical units without neither semantic nor phonetic import.

³ The categories are: 1) 象形 *xiàngxín*, pictographs, lit. “appearance in form”; 2) 指示 *zhǐshì*, indicative characters, lit. “to point and show”; 3) 會意 *huìyì*, associative characters, lit. “to assemble meaning”; 4) 形聲 *xíngshēng*, characters with a radical and a phonetic element, lit. “appearance and sound”; 5) 轉注 *zhuǎnzhù*, derived characters, lit. “to move and to concentrate”; e 6) 假借 *jiǎjiè*, borrowed characters, lit. “to lend and to borrow.”

⁴ For more details on the emergence of the phonological studies in ancient China, see Elman (1982), Lepschy (1994), Auroux (1995), and Wang (2010).

⁵ For introductory studies on Chinese writing, see Wendan (2009), Alleton (2010) and Barros Barreto (2011).

The present paper discusses the long and complex history of the Western⁶ views on spoken and written Chinese – with an emphasis on the latter – from the Jesuit expeditions beginning on the last decades of the sixteenth century to the dawn of the twentieth century. One of the most widespread concepts in Europe on the Chinese language during the seventeenth and eighteenth centuries was the so-called *clavis sinica*, the “key” to a faster and more direct decipherment of the Chinese writing. Knowledge of the *clavis* would enable a much faster learning of the Chinese characters and, consequently, the whole language. The principle behind the *clavis* was initially based on the possibility of a universal language and on Chinese as its candidate *par excellence*, either because it was closely related to the original primitive language – predating the post-Babelian confusion – but also through the concept of the *real character*, which permitted that “writing represents not mere words, but also things and ideas”. (MUNGELLO, 2013, p.100) The principles of the *clavis sinica* and *real character* were supported by a certain egalitarianism and a relativism characteristic of early European Rationalism – pre-dating the future encroaching Eurocentrism which tended to accept the cultural and technological superiority in Europe – showing some openness to the Chinese ideas, although laden with European motivations. (LEE, 1991, p.49) Gradually along the eighteenth and nineteenth centuries the idea of *clavis sinica* evolved from a key to rapid learning of Chinese to be related to the Chinese grammar itself, at a time when writing progressively lost ground in the mainstream studies of Sinology.

This is a very broad and complex topic, which is addressed here in an introductory way, driven by the primary objective of presenting a history of ideas in Europe about the status of Chinese script in relation to its speech, highlighting the recurrence of its argumentative patterns, which, even if within a pre-modern historical context, has continued to have a profound influence on the formation of the Western concepts about China, its writing and speech, up to the present times.

We also take notice that the status of *writing* within language studies has always seemed precarious and ambivalent. Western studies were for the most part deeply influenced by the Greek representational view of language – that the linguistic sign means/represents ideas or things of the world,⁷ – which generally considers writing as a visible representation of sound, thus a sub-tool parasitically dependent on speech. This theoretical approach is conventionally named here the *phoneticist theory of writing* or, more succinctly, *phoneticism*. In very general terms, for phoneticism the “ideal” writing is supposed to be the one that offers in the most transparent way possible through its

⁶ The terms *West* and *Western* used in this article do not imply any intention to simplify or essentialize the lives, histories and cultures of any of the regions underlying the areas of influence of the Indo-European languages and the Chinese culture in the Far East. Historically there is a strong tendency of scholars in Europe to see China as a monolithic entity, the same applying to Europe itself and the “Western world.” For more information, see Nancy (1997, p.6), Norman (1988, p.16), Zhang (1998), Casacchia (*In* AUROUX, 1995) and Porter (2001).

⁷ The *locus classicus* of this viewpoint is the brief passage 16a3 in Aristotle’s treatise *De Interpretatione*.

grapheme the corresponding pronunciation in speech. The spoken words are the primary object of interest of linguistics.⁸

On the other hand, as already noted, the Chinese spoken and written language has always captivated the imagination of the West. Since this script is the only one currently in widespread use that appears to employ semantically informed characters – and this is the central issue disputed by the scholars on Chinese writing, – it has become a subject of particular interest to Western grammarology⁹ and has presented a challenge for a phoneticist theory of writing. Semantically based Chinese characters risk to become a “black swan”, which could in theory falsify phoneticism, at least in its more extreme versions, and thus the Chinese script suggests the alternative of a *semanticist theory of writing*, or *semanticism*.

The discussion on the phonetic or semantic representation in writing is not restricted to Chinese. Although there are other examples of writing systems that have a semantic component, such as the Sumerian and Aztec scripts, as well as mixed systems, such as the Egyptian and Mayan scripts, Chinese, because of its millenary unbroken history, offers a much richer picture of its historical contexts of use. Additionally, Chinese characters (used in Chinese as well as in Japanese) can be observed in use through contemporary techniques of writing and reading analysis. Finally, its use for different languages that are typologically very diverse, such as Japanese and Korean, raises even more complex and challenging new questions.

The debate over whether Chinese writing mainly represent the sounds of the Chinese language(s) or more directly its meaning is still ongoing and it is far from reaching any unanimity. This discussion often puts sinologues on one side and linguists on the other and its outcome may have important implications for a theory of writing and even for the linguistic theory as a whole.

This paper endorses the moderate historicism of Sylvain Auroux (2004) and therefore it considers that what has been written in the West about China has been motivated by its specific ideological and socio-historical contexts of production and needs to be taken into account in the formation of Western representations about the Chinese script in Europe (and later, in the Americas). The “otherness” of the Western eye offers the opportunity to think about Chinese culture from a “foreign” point of view, as well as it bids a chance of a glimpse on the ethnocentric prejudices and their universalist ambitions. Additionally, still following Auroux, we should recognize that our current interpretations have been influenced by our history and by the consolidation of our viewpoints and of those around us. Such perspectives will eventually constitute theses and theories that have solidified with time and have helped to shape our evolving common sense.

⁸ For details, see Barros Barreto (2011).

⁹ The term *grammarology* has various meanings and its use by Derrida in the homonymous text of 1967 has been particularly influential. In this paper it is being used in a more general way as “the study of writing system of the world”. As informs Daniels (1990), it was I. G. Gelb who first coined the word in his prestigious *Study of Writing* of 1952.

The radical increase in the importance of China in the world economic – as well as political and cultural – scene has recently generated a parallel increase in the Western interest in theoretical discussions about the Chinese script.¹⁰ However, these are views “dedicated less to its historical development than to a metadiscursive critique of certain conceptions of the Chinese writing system”. (LURIE, 2006, p.251) The present paper, by contrast, follows authors such as Porter (2001), Lurie (2006) and Zhiqun (2008) in promoting the so-called historical point of view. Its main goals are: 1) to present a brief historical overview of the texts in the West about the spoken and written Chinese between the sixteenth and nineteenth centuries; 2) to give evidence of the continuity of the questions and theoretical assumptions underlying this debate, which is still ongoing today, although configured in an entirely different discursive modes; and 3) to show the close relationship between the historical and cultural moment in Europe and its representations about China, in particular the views on Chinese writing and its role in that language.

Chinese writing as a solution to ideal writing

European impressions about China have undergone constant and radical corrections in course since the knowledge about the Chinese and their country has spread on the continent from the time of the European commercial maritime expansion in the sixteenth century onwards. China was admired for its millenary history, its scale, its enormous cultural and human achievements and the extent of its domains. On the other hand, the Chinese civilization was also often seen as one associated with a backward empire, impervious to modern ideas, consumed by obscurantist worldviews that were at odds with the Enlightenment increasingly prevailing in Europe. At the center of this debate stands the absolute dissimilarity of the Chinese speech and its “hieroglyphic” written language.¹¹

The Jesuits were the first Europeans in the sixteenth century who brought more consistent reports on the Chinese life and customs. Motivated by their proselytizing anxieties, the Jesuits tried to reconcile Christian and Confucian beliefs, seeking to assimilate Western values and concepts in the Chinese language and to cross the seemingly insurmountable paths that cut through the alien-like forest of the Chinese characters. Although these attempts had ultimately met defeat,

¹⁰ See, for instance, Alleton (1997, 2008), Mair (2002), Galambos (2006), Bottéro & Djamouri (2006), Wendan (2009) and Branner et al. (2011).

¹¹ Since its “rediscovery” in the sixteenth and seventeenth centuries, Chinese writing was often called “hieroglyphic” because the pictorial parallels perceived by European scholars with the writing of Ancient Egypt. The two writing systems were often studied and grouped together. For details, see Hudson (1994), Auroux (1995) and Lepschy (2014a,b).

[the] early history of the first Western responses to Chinese writing [...] reveals a long-standing, almost compulsive desire to read it as an impossibly pure form of signification and to systematize its notation in a relentless quest for an original and transcendent order. (PORTER, 2001, p.9)

As Latin in Europe inexorably followed its way into oblivion, Chinese writing proved to be a candidate for a potential new model of language stability and “universal meaning,” to be admired against the unpredictability of the new European vernaculars. Thus, European historians turned to the immense task that was to fit the Chinese world into the universal order of the Christian West. (RAMSEY, 2001).

Ideography – the concept that writing could represent the ideas without the mediation of speech – should be considered in this context, “as the domestication of the foreign sign, the process by which the unintelligible becomes is rendered legible and interpreted within a more familiar matrix of meanings [...]” (PORTER, 2001, p.20) The Chinese characters were considered as signs of “ideas”, transcendental and universal concepts, which would in theory enable perfect translation and interlingual communication. They could be the ultimate solution to the problems identified by authors such as Francis Bacon and John Locke, with the elimination of “ill defined names” and the “abuse of words” by the natural identity of the linguistic sign that was offered by means of what was called the *real character*, in stark contrast with the Aristotelian arbitrariness of the Western linguistic sign.¹² As witnessed by the studies of authors such as Locke, Wilkins and Leibniz for the “perfect language,” “the Chinese language attracted a significant amount of attention, [...] beyond a small circle of missionaries and travelers associated with China”. (TONG, 2007, p.502) The Chinese “ideograms” seemed to show to the European eyes their direct and everlasting relationship with the transcendent concepts they allegedly represent, even if the key to this relationship – the legendary *clavis sinica* – remained a baffling mystery to the European scholars.

Thus, Western representations of Chinese writing was balanced between two opposing forces: firstly, the huge influence of the myths of the total ideography and perfect translatability, suggesting that the characters were supposedly of such a primeval origin that their solution (a “key”) was lost and needed be reconstructed. Later – particularly from the eighteenth century – a second force was driven by the desire to include the Chinese script in the universal model of linguistic representation of discourse through writing and the idea of ideography progressively became an embarrassing encumbrance.

Thus Chinese ideography gradually acquired the label of a “myth” and increasingly became anathema to the rationalism of modern times, when the hermetic solutions prominent in the sixteenth century were to decrease significantly in influence after the

¹² On the search for the *real character* in Europe after the eighteenth century, see Hudson (1994), Lepschy (1994b) and Harris and Taylor (1997).

eighteenth century. Thus came a time after the nineteenth century – and especially in the twentieth century – when the new task of linguists and sinologists was to eradicate this “retrograde macula” from the linguistic and cultural studies on China.

The West and the Chinese language in 13th-17th centuries

The reasons listed in the previous section have motivated much of the speculation in Europe about the written and spoken Chinese, which commenced with the first contacts of Europeans with China after Classical Antiquity. The long tradition of works written by Westerners and published in Europe and in China itself began with travelers’ accounts of the thirteenth and fourteenth centuries during the Mongol Empire, with names such as the Franciscans Giovanni del Carpine (c. 1240) and William of Rubruck (1253) and the famous Marco Polo (c. 1300). These authors, however, have dealt only very briefly with the question of Chinese writing. (AUROUX, 1995b, p.300) With the collapse of the Mongols and the foundation of the *Ming* 明 dynasty, Christians were expelled from China in 1369, postponing for almost 200 years new contacts and the exchange of information between East and West.

From the last decades of the sixteenth century many European missionaries, this time mostly belonging to the Jesuit order, returned to China and wrote important treatises on the subject of that civilization, where the issue of the written and spoken Chinese finally begun to be addressed in some more detail. It was a time of intense European overseas exploration that has extended to the following centuries, when compilations of an increasing number of spoken and written languages of the known world were edited and the Chinese script gradually took a more prominent role in language studies.

The first book we know which has mentioned the Chinese writing with some more detailed references was published in 1569 by the Portuguese Gaspar da Cruz (1520-1570), *Tractado em que se co[n]tam muyto por este[n]so as cousas de China...* (UNGER, 1990, p.393; DeFRANCIS, 1984, p.133), scarce six years after the arrival of the first Jesuits in Macau. (WITEK, 2001, p.15) Less than two decades later, in 1585, the Spaniard Juan Gonzalez de Mendoza (1545-1618) wrote his great book, *Historia de las cosas de mas notáveis, ritos y costumbres, del gran Reyno Dela China*. Mendoza was an Augustinian monk who transmitted stories told to him by Spanish and Portuguese priests in the East and China. Until 1600 his book had 46 editions in seven European languages and many scholars consider it the first book on China since Marco Polo that had reached a broader audience in Europe, and where the “European readers encountered actual Chinese characters for the first time”. (PORTER, 2001 p.35). Mendoza dedicated chapter XIII to an extended study on the Chinese characters, from which we have the following excerpt:

[Chinese writing] does not have a number of letters in the same way that we, but all that is written is [done] through drawings, and they learn

[them] over a long time and with great difficulty, because almost every word has its character [...] [the Chinese] use more than six thousand different characters that they signal with great enthusiasm [...] It is a language that is understood better written than spoken, such as Hebrew, because [of] the [written] strokes which differentiate a character from another, while [by] talking [the words] cannot be distinguished easily. [...] It is admirable that while in that realm many languages are spoken, some different from the others, everyone usually understands each other in writing, even if they cannot understand by speaking [...] (MENDOZA, 1585, p.104-105)

This excerpt already points to three key recurring properties of Chinese writing as represented by the Europeans: 1) Chinese writing is difficult to master and only a few reach its command; 2) writing takes precedence over the spoken language (i.e., the language is better understood written than spoken due to its high homophony); and 3) through writing people in China who speak different languages but share this writing system can understand each other. These attributes will return in one form or another in most books on China in the subsequent centuries.¹³

Thirty years after the publication of Mendoza's book, in 1615, a second book was published which has helped to consolidate this initial representation of the language and customs of the Chinese with the Europeans for the next two hundred years. (PORTER, 2001, p.36) In that year father Nicolas Trigault (1577-1628) released a long and detailed commented version of the diaries that the renowned Italian Jesuit Matteo Ricci (1552-1610) wrote in China, in the work entitled *De Christiana expeditione apud Sinas suscepta ab Societate Jesu*, which has brought to Europe for the first time a more rigorous and in-depth knowledge about the country and its language:

The appearance of Trigault's book in 1615 took Europe by surprise. It reopened the door to China, which was first opened by Marco Polo, three centuries before, and then closed behind him by an incredulous public, who received the greater part of its fabulous narrative as the beguiling tale of a capricious traveler. (GALLAGHER, 1953, xvii)

The first edition of 1615 was followed in the next ten years by several full or partial reeditions in Latin, French, German, Spanish, Italian and English. The examination of the manuscripts attributed to Ricci and his superior Michelle Ruggieri led to the discovery in 1934 of a Portuguese-Chinese dictionary in 189 folios, which has the oldest

¹³ The books of Mendoza, and also the edition *Historia natural y moral de las Indias* of José de Acosta (1590) have had a direct influence on Francis Bacon (1561-1626) when he published his prestigious *The Advancement of Learning* in 1605. In an important passage (book 6, chapter 1) Bacon uses the example of the Chinese script to question the traditional Greek idea of writing as representation of speech, assuming that the Chinese characters could be possible candidates for *real characters*, a universal form of communication between people speaking different languages.

Romanization known of the Chinese sounds in what was probably the first European-Chinese bilingual dictionary, written in the 1580s (WITEK, 2001), demonstrating the depth of the knowledge of the two Italians about Chinese. Unfortunately the dictionary was not published contemporaneously in Europe nor included in Trigault's book and so it had insignificant influence in the European knowledge of the Chinese language at that time.

The works of Jesuits based in Macau marked the beginning of the "first phase" of the learning process in Europe about China, discernible by impressions of a Chinese script which increasingly appears to fulfill the European wishes to correct the inherent "faults" of the natural languages. Europe at that time was influenced by the publication in 1660 of the *Grammaire générale et raisonnée* of Port-Royal and by the papers published in England that promoted the search for a universal language and the *real character* of writing, by authors such as Francis Bacon (*The Advancement of Learning*, 1605), Cave Beck (*The Universal Character*, 1657), George Dalgarno (*Ars Signorum*, 1661), John Wilkins (*An Essay towards a Real Character, and a Philosophical Language*, 1668), Francis Lodowick (*Of an Universall Real Character*, 1686), up to John Locke (*An Essay Concerning Human Understanding*, 1689).¹⁴ (PORTER, 2001; HARRIS; TAYLOR, 1997; LEPSCHY, 2014a,b; and AUROUX 1995a,b) For these authors, the ideal (or idealized) language is one that should be ancient, simple, usually modest, with vitality and brevity. (RAMSEY, 2001, p.501) These were characteristics often associated in the seventeenth century with the spoken and written language in China.

The scholars on China of the period argued that the Chinese ideography was presented as the ideal alternative to the unpredictable scenario of the vernacular forms that sprang up and rapidly expanded throughout Europe. At the same time, the Chinese alternative offered an apparent direct and unmediated relationship between words (at least in their written forms) and their meanings. As a last point in its favor, the literate elites in China have always seemed to the Europeans as quite successful in maintaining the purity of their literary language, something that was certainly not happening in Europe at that time. (PORTER, 2001, p.38-39)

Half a century after the book edited by Trigault, one of the most influential books for the European representations of China was published in 1667: *China Monumentis, qua sacris qua profanis, nec non variis naturae e artis Spectaculis, aliarumque rerum memorabilium argumentis illustrata*, commonly known as *China Illustrata*, by the German Athanasius Kircher (1601/2-1680). Although Kircher – a Jesuit scholar mostly based in Rome with a special interest in deciphering ancient writings – had never visited China, he was the first to launch in Europe the widespread discussion on the

¹⁴ Locke's work in some ways marks the beginning of the end of the search for the ideal of linguistic purity when this author admits that the faults and misinterpretations of language are inevitable. For Locke the myth of the perfect language was due to the mistaken notion that language referred to the things of the world, when in fact languages were motivated by the subjective ideas that each has on the world (LOCKE, 1690 [1894]; HARRIS; TAYLOR, 1997; PORTER, 2001). However, as we shall see, the choice of Chinese writing as an alternative to this natural (and not arbitrary) connection remained alive for decades after Locke.

origins of the Chinese culture and language. (SZCZESNIAK, 1952, p.21) His work garnered enormous prestige and his suggestion to link the Chinese and Egyptian origins was defended by some authors up to the nineteenth century and tied for a long time the fates of Chinese writing and that of the ancient Egypt under the common label of “hieroglyphic writing”.¹⁵

Another very influential work in the European discussion about the origins of the Chinese language was *An historical essay endeavoring a probability that the language of the Empire of China is the primitive language*, by the English architect John Webb, published in 1669 and considered by some authors as the first specific treatise on Chinese language that has been widely distributed in Europe. (PORTER, 2001; AUROUX, 1995b, MUNGELLO, 1985) Webb presented a long discussion about the origins of language based on the sacred scriptures with many references to the works of Kircher. For the English author, an intact and perfect Chinese language laid behind the immense wealth and millenary history of their civilization, “because the China possess the primitive language, their society has never lost dominion over nature”. (RAMSEY, 2001, p.488-489) His influence on European thinking on China was profound since Webb proposed to have “solved” the problem of Chinese script accommodation that had been preserved from the time of Adam and Eve – and therefore having predated and then overcome the Babelic collapse – setting it within a revised biblical narrative. The author assumed that Noah had built his ark in China itself, and that after the flood he and his family had returned to their original lands in the East. The Chinese would have escaped the confusion caused by the fall of the Tower of Babel because of the geographical distance of its land and have continued to preserve traces of the primitive language of mankind. (VAN KLEY, 1971; RAMSEY, 2001)

The Orientalist and theologian Andreas Müller (1630-1694), also inspired by Kircher’s *China Illustrata*, published a short announcement in 1674 titled *Inventum Brandenburgicum sive Andreae Mulleri Greiffenhagi, Praepositi Berlinensis, Proposito super Clave sua Sinica* which became renowned for being the first work to explicitly formulate the problem of the *clavis sinica*. Frustrated at not getting what he considered sufficient compensation for his efforts, Müller refused to reveal his “key” and ended up burning his writings on the subject shortly before his death. (PORTER, 2001; MUNGELLO, 1985) Müller’s work was soon followed by that of Christian Mentzel (1622-1701), who in 1685 published *Sylloge minutiarum lexici latino-sinici-characteristici*, considered the first Chinese lexicon published in Europe.

The bases of the knowledge on written and spoken Chinese that have been built in the seventeenth century have profoundly affected Western studies on China until at least the nineteenth century and some of its concepts have remained practically unchanged. Porter (2001) proposes three reasons as the bases for the preservation of the Western fantasy about the linguistic legitimacy of the Chinese: 1) the moment of origin of a

¹⁵ For a critical reading on the impact of Kircher’s *oeuvre*, see Szczesniak (1952), Hudson (1994), Porter (2001) and Lepschy (2014a).

legitimate language is the one when the meaning of their words is authoritatively established, and the older the origin, the stronger is this authority; 2) the true meaning is that one which is coated with immutability, which has an exceptional resistance against the changing forces of history; 3) the causal link between the authority and the immutability of such language lies in its internal code, which, in the case of Chinese, can be solved by the *clavis sinica*. The idea that Chinese had a unique legitimacy claim over all other languages has peaked with Joseph Prémare – as we shall see in the next chapter – already by the early eighteenth century and fifty years after Webb’s book.

However, the slow but continued tide of political and cultural changes in Europe, the development of new ideas about language and the increasing knowledge about written and spoken Chinese from the second half of the seventeenth century into the early eighteenth century began to undermine the project of creating the Chinese language as the “ideal language” and gave hints to the “downfall” of Chinese writing in Europe from the eighteenth century onwards.

The West and the Chinese language in the 18th-19th centuries

Gottfried Leibniz (1646-1716), a brilliant mind and prolific author in several areas of human thought, showed a particular interest for the Chinese language and its script. In 1679 Leibniz, passionate about the possibility of a universal language, wrote about Müller’s *clavis sinica* (PORTER, 2001; MUNGELLO, 1985) and saw Chinese as its most likely candidate. “If God had taught man a language, this language would be similar to the Chinese”, was a phrase that appeared in 1715 in the *Lettre sur la philosophie chinoise* from Leibniz to Nicolas de Remond. The German philosopher wrote that the Europeans, because of their scientific knowledge and more analytically biased spirit, could offer the Chinese the solution so that they would be able to rediscover the lost antiquity of their own language. Chinese writing, Leibniz reasoned, was by its nature the most convenient basis for a universal language, and it only seemed to be lacking a still elusive underlying rational principle, the same conclusions of Wilkins, Webb and other a few decades before. (AUROUX, 1995b; RAMSEY, 2001)

One could argue that Leibniz was a transitional author. He belonged to what we called here the “first phase” of China’s representation in Europe, the founding period characterized by the work of the Jesuit missionaries, when a structured grammar of Chinese was still not known in Europe, marked by the triad of properties of writing highlighted above, and under the strong influence of authors such as Kircher and Webb and the attempt to equate Chinese as an universal language. On other hand, Leibniz is also part of a “second phase”, which has consolidated itself during the first half of the eighteenth century. This is a more complex and ambiguous epoch for which Mungello (2013) proposes a heuristic classification of three “types” of studies and scholars on China prevalent at that time. The *first* type still consisted of the Jesuits’ works, less and less influential, which possessed a deeper understanding of the spoken

and written language, basically focusing its interest in the accommodation of Chinese beliefs to those of Europe. The *second* was represented by an increasing number of “proto-sinologues”, scholars who also had some in-depth knowledge of Chinese, and who were still motivated by ideas of a universal language (Leibniz would be one of those). The major contrast of this new phase comes mainly from the growing influence of the *third* group, constituted by the “popularizers”, who were motivated by the hopes of finding support in China for their political and intellectual ideas and movements in Europe, especially promoting the Enlightenment. These authors formed an ensemble with a more superficial knowledge of the Chinese culture and language and were those with the greater ability to produce distortions about the information from the East that reached the average European reader. Regarding the Chinese script – the focus of this article – the popularizers were among those responsible for keeping alive and well the idea of semantic-biased Chinese writing to the detriment of its spoken language, which was considered as “simple-minded,” and therefore limited in its capacity to articulate ideas. Such points of view were built on fragile and superficial bases, making them easy target for the more rigorous sinologues who later dismantled what they pejoratively labeled as the “myths” about Chinese writing. Leibniz, while praising the Chinese writing as well as believing in the limitations of the Chinese cultural genius and its spoken language, is an author with links to both phases discussed here

The European technological advances opened an increasingly wider gap during the eighteenth century in comparison to the techniques and technical treatises available in China, which was then very firmly anchored in its ancient past. The contempt for the Chinese empire has eventually counterbalanced (and overtaken) the fascination of the European public with the exoticism of their culture (a tendency that was later called *Orientalism*), a move that was reinforced by the work of the popularizers. Their works gradually presented a stronger distinction from the studies of sinologues, who were in turn focused on the inclusion of China and Chinese in the European categories of world. The movement of rejection of China gained momentum at the time when a progressively ubiquitous Eurocentrism was taking hold of Europe and the Jesuit attempts to accommodate Confucian ideas to Christian theology were eventually abandoned. (MUNGELLO, 2013)

Regarding the work of sinologues (the first and second “groups” of Mungello), the presence of the Jesuits – as Joseph Prémare (1666-1736) and Jean Baptiste du Halde (1674-1743) – gave way to secular scholars – for example, Étienne Fourmont (1683-1745) and Nicolas Fréret (1688-1749). As the European linguistic studies gradually opted for the theoretical primacy of speech over writing, Chinese ideography was losing its status as an object of study among sinologues. Although it was still a time when Europeans in their large majority considered Chinese writing as a direct representation of ideas and things, in the new intellectual scene in Europe the Chinese script became identified as a mere initial step in the temporal evolutionary chain of writing systems which culminated with the alphabetic writing. This idea

was tremendously reinforced by the publication in 1737 of *The Divine Legation of Moses*, the influential book of the Englishman William Warburton, which was the first to propose the hypothesis that the writing systems of the world all followed a shared evolutionary line.¹⁶

The work of the Jesuit Joseph Prémare (1666-1736), *Notitia Lingua Sinicae*, published in 1720, constituted the ultimate pinnacle of the old attempt to legitimize Chinese writing as the perfect ideography, the foundations of which dated back to Kircher. Prémare basically found support on the ancient Chinese dictionary *Shuōwén* to coat the sinographs with the necessary legitimacy, proposing a pseudo-systematic ordering of characters. Motivated by a “quasi-mystical speculation on the proto-Christian origins of [Chinese] symbols” (PORTER, 2001), Prémare wanted to show that the key to Chinese writing could only be rediscovered by the intervention of the Christian European knowledge.¹⁷ It should be noted that despite these erroneous speculation about Chinese writing, Prémare was considered the most advanced grammarian of Chinese of his century (AUROUX 1995b; PORTER, 2001; ALLETON, 2004), with a much more effective teaching technique than most of the other grammars produced by other Europeans during the course of the eighteenth century.

It was fundamental to the argument of Prémare that the Chinese of his day had “forgotten” the “true nature” of their script, compelling them to seek the help of Western missionaries equipped with their “scientific” analysis in order to recover the lost knowledge. Thus, a version of the myth of Babel was established in the context of the Chinese language, strongly based on pictographic and symbolic aspect of Chinese writing.

The hypothesis of Prémare paradoxically led the Chinese script to a weaker position before the European eyes. Whereas the legitimacy of Chinese writing was based on their supposed Christian origin, the loss of his “perfect original meaning” by the Chinese of the eighteenth century would make the (“post-Babelic”) Chinese of that time a pale reflection and a bastard son of the original language, this one being the only truly “legitimate” language.

This reversal of fortune of Chinese writing (and its spoken language) is essential in order to understand the progress and context of the studies about China during the eighteenth century. The interest on the Chinese script was marked by a frustration with the lack of systematicity that Prémare attempted to justify as caused by the “lost knowledge” that could, in theory, only be regained via techniques and rationality solely

¹⁶ An excerpt from Warburton’s book that deals the “hieroglyphic” writing systems - including Chinese – was soon translated into French in 1744 by Marc-Antoine Léonard des Malpeines, with an article on the Chinese written by Nicolas Fréret.

¹⁷ Prémare belonged to the group in China called the *figurists* (MUNGELLO, 2013; LEE, 1991), authors who have been influenced by Prémare’s teacher, Father Joachim Bouvet (1656-1730) and who were convinced that the Chinese canonical books hid the truth of the original Christian revelation through figurative and symbolic forms. Contrary to authors who saw in Chinese an universal truth emanating from their own system of writing and speech, to Prémare the truth of the Chinese characters was based on the word of the Christian God, and therefore inaccessible to the Chinese of his time.

accessible to Westerners. Despite the intimate connection of Chinese “hieroglyphic” writing with the Christian universal truths, Prémare saw in contemporary Chinese writing a system which lacked efficiency and he showed a clear preference for alphabetic system. Prémare is thus one of the authors who inaugurated the separation of writing from speech in the studies related to the Chinese language.

Since present-day Chinese writing has decayed and lost its original purity with the passing of the centuries, grammar was to become the new focus of the studies on the Chinese language. The first book to be considered as fully devoted to the Chinese grammar was published in 1703 – that is, nearly twenty years before the major book of Prémare – in Guangzhou, called *Art de la lengua mandarina* by Francisco Varo. (COBLIN; LEVI, 2000) However, with the Chinese characters still monopolizing the interest of the European public, books like Varo’s – that had no Chinese characters in its text – had but a diminished impact and influence at the time of its publication.

One of the first authors to write consistently in the eighteenth century on the Chinese language was Nicolas Fréret (1688-1749), an eminent historian and fierce critic of the theories of Athanasius Kircher, who promoted a new rational scrutiny of old competing theories that were still under strong influence from Kircher and Leibniz’s ideas. Fréret published in 1718 his *De la langue des Chinois: reflexions sur les principes généraux de l’art d’écrire, et en particulier sur les fondements de l’écriture chinoise*, where he suggested a brief history of writing without resorting to classic or Biblical stories. Fréret was much influenced by the book of Warburton, and placed the Chinese script in the English author’s scheme as belonging to the category of “paintings and symbols”. In other words, Chinese should not be considered a verbal writing and had no indication of the associated pronunciation of their characters, which were “immediate signs of the ideas they express”. (MALPEINES, 1744, p.539) On the other hand, Chinese was to be considered as just another writing system, being devoid of the extraordinary potentialities given to it by Leibniz and his followers.

If authors like Fréret and the Jesuit Jean Baptiste du Halde¹⁸ still viewed Chinese as an eminently “philosophical” language – in the sense that each character represented a concept or something “universal” to mankind – Thomas Percy in his *Miscellaneous Pieces Relating to the Chinese* of 1762 saw the total absence of a relationship between speech and writing in Chinese not as sign of its unique origin, but as the mark of a primitivism, a writing founded by “barbarians”. The Chinese spoken language, with its lack of affinity with writing and the phonetic deficiency of its few indeclinable monosyllables, all were indications to the English author of the “uncultivated” character of the Chinese.

We can notice that the contrast between the “simplicity” of the Chinese grammar together with the extreme “complexity” of its writing provoked conflicting perceptions about China and the Chinese language. From being a probable candidate for the Adamic

¹⁸ Du Halde wrote his *Description géographique, historique, chronologique, politique, et physique de l’empire de la Chine et de la Tartarie chinoise* [...] in 1736 and advocated a clear separation between written and spoken Chinese, arguing that the second could not be limited by the first.

language or a perfect writing, as we have seen it in the influential book by John Webb, it would, a few decades later, be rejected by authors like Percy as a simplistic language serving a backward civilization and a retrograde empire.

The (gradual) rise of phoneticism

Although Du Halde and Fréret were some of the first to call attention to the importance of spoken Chinese, they continued to consider Chinese writing as “ideographic”. Throughout the second half of the eighteenth century, however, we have seen the increased presence of sinologues specialized in Chinese language and customs attempting to dismantle the “myth” of a Chinese writing fully independent from its speech, authors who would open the ground for the pioneering work of Abel Rémusat and others in the nineteenth century.

A contemporary of Du Halde, Theophilus Bayer (1694-1738) (*Museum Sinicum*, 1730) was regarded as “the most eminent sinologue of the eighteenth century” (PORTER, 2001, p.59), who has used Müller and Mentzel work as the starting point for his own, proceeding to write the first textbook of Chinese to be printed in Europe. Bayer had the support of Étienne Fourmont (1683-1745) – *Meditationes Sinicae* (1737) and *Linguae Sinarum Mandarinicae hieroglyphicae grammatica duplex [...]* (1742) – to suggest that there was a logical system underlying the Chinese script. Fourmont, one of the few scholars of his time who have used Varo’s grammar, was an influential French Orientalist and member of the *Académie des Inscriptions et Belles Lettres* and one of the first Frenchmen to undergo an in-depth study of the Chinese language. He was among those responsible for disseminating the idea of separate origins of the written and spoken language in China (BRANNER, 2011, p.108) and he has also insisted that the kind of *clavis sinica* imagined by Leibniz “really existed” (PORTER, 2001, p.61), therefore mixing seventeenth century ideas about the *clavis* with the new knowledge on the grammar of Chinese.

Despite the innovative proposals of these authors, in reality there has been no continuous movement of divorce between written and spoken Chinese. Joseph de Guignes (1721-1800) (*Mémoire dans lequel on prouve que les chinois sont une colonie égyptienne*, 1759) was a student and Fourmont’s successor at the *Royal Bibliothèque de France* who obstinately defended the idea that the Chinese nation had been founded by the Egyptians and that the two writing systems were closely related. (HOOKER, 1990; AUROUX, 1995b) Resistance in the European imaginary against the abandonment of Chinese ideography was also evident in the work of Joseph Hager (1757-1819), an Austrian Arabist and historian naturalized Italian. His book, *An explanation of the elementary Characters of the Chinese with an analysis of their ancient symbols and hieroglyphics*, of 1801, was very well received in Europe and was full of calligraphy and models of character based on the I-Ching (*Yijing* 易經). As we have seen, the European public at large rejected the more

“theoretical” books as Fourmont’s and Varo’s, embracing those, like Hager’s, which were lavishly illustrated with drawings of Chinese characters. (AUROUX, 1995b) Even later during much of the nineteenth century, works that consider the Chinese writing strictly an ideography (or pictography) continued to enjoy high prestige and appeal to the audiences in Europe.

This scenario in Europe, in which the question about what the Chinese writing really represented remained very uncertain and took a radical change of course with the revolution in language studies that occurred in the continent especially after the second half of the nineteenth century. Europe was taken by the romantic wave originated in Germany and, from the second half of the century, the evolutionist ideas of Darwin. With Romanticism, the dialectic of culture and nature began to have a prominent influence on all human sciences.

Evolutionism gave a big boost to the theories (like Warburton’s) which considered that the writing systems also followed an evolutionary-like process, from pictographs to alphabets, the latter – pinnacle of human genius – being a principle that was considered more efficient and superior to all other forms of writing and thus strengthened the aversion to ideography. Hegel, a dominant intellectual figure in the Romantic Period, criticized the admiration of Leibniz for the “hieroglyphic” writing and vehemently defended the alphabets and the primacy of speech as the basis for human communication. (HUDSON, 1994) Thus, gradually writing yielded to speech the place of importance in language studies, not because it was perceived as a threat, but rather due to its perceived innocuity: the most efficient script would be the one as transparent as possible in the phonetic representation of its characters.

Chinese characters, which over the centuries had attracted attention as privileged object of interest of lay people and scholars alike and had been considered by many Europeans as remnants of a perfect language lost in the distant past, began to occupy a secondary place in the work of sinologists. The professed goal at that moment was the search for its systematicity through some form of phonetic representation of the Chinese characters and the diachronic reconstruction of the historical forms of spoken Chinese. It was mainly through this careful and thorough study by the sinologists, with the added new ambition of linguistics to be recognized as a legitimate science, that Chinese – and all natural languages of the world – could have their respectability restored within the comparative linguistics and structuralist framework of the late nineteenth and early twentieth century.

Within this context, we can appreciate the influential book *The Dissertation on the Nature and Character of the Chinese System of Writing* by Peter DuPonceau (1760-1844) published in 1838, called “the first truly modern synthesis of Chinese writing”. (ALLETON, 1994; see also CHAO, 1940; DeFRANCIS, 1984) DuPonceau was a prestigious French-American linguist, who for seventeen years presided the *American Philosophical Society*. In his view the Chinese characters were, and could only be, the representation of Chinese (spoken) words, and therefore DuPonceau’s “modernity” is marked by his break with what he considered obsolete conjectures

about Chinese writing in its speculative direct relationship with the abstract world of “ideas”.¹⁹

It is undoubtedly remarkable that even in the absence of more concrete data on the Chinese historical phonology, authors such as DuPonceau and J. M. Callery were able to postulate this link between Chinese writing and speech. DuPonceau has based much of his research in the study of the French Sinologue Abel Rémusat and his much praised main book *Elements de la grammaire chinoise* of 1822, who is recognized as having founded “the modern academic Sinology” (PORTER, 2001, p.73), “the first attempt at a logic synthesis and well-reasoned construction of the Chinese language” (PEYRAUBE, 2001, p.345), when for the first time “knowledge of China in France left the sphere of philosophy [to linguistics]”. (LEE, 1991, p.161) DuPonceau was adamant on his defense of a close link between the written characters and the spoken words when he wrote: “Every one of these significant syllables or words has one or more characters appropriate to it, and every character has a corresponding word”. (DuPONCEAU, 1838, p.109)²⁰. DuPonceau was also clear when he emphasized the primacy of the Chinese speech as the only true Chinese language: “The Chinese language, I mean as it is spoken, for I do not call any writing a *language*, except metaphorically [...]” (DuPONCEAU, 1838, p.108)

The theory of DuPonceau and its influence on the development of a phonetic representation theory of Chinese writing is clear from this passage written by Stephen Andrews in 1854:

Since then, the learned world has leaned quite to an opposite extreme, called the phonetic theory, contended for by Mr. Duponceau, [...] This theory asserts that the great body of the characters of the Chinese system of writing are not ideographic, or that they are so in part only, while they are also phonetic; that is, that they have been formed upon the plan of denoting the sound of the spoken words [...] (ANDREWS, 1854, p.33)

It is necessary to note that the semanticism of Chinese writing still remained very much alive even after the DuPonceau’s book.²¹ However, an increasing number of

¹⁹ Two other pioneering authors of the phoneticist approach were the Portuguese Joaquim Afonso Gonçalves (1781-1834) and the Franco-Italian J.M. Callery (1810-1862). Gonçalves wrote *Arte China: constante de alphabeto e grammatica* (1829) and created an “alphabet” for the Chinese characters, graphics signs in the characters which he called *differences*, adding up to 1411 phonetic groups, in what could be the oldest Chinese syllabary conceived by a European. Gonçalves’ book was soon followed by Callery with his *Systema phoneticum Scripturae Sinicae* in 1841. Callery was a Catholic missionary who also made a proposal for a Chinese syllabary, with 1,040 characters representing the phonemes in the Chinese spoken language.

²⁰ DuPonceau made this claim relying on quotations from the work of Rémusat, though the text of the latter is less assertive and even went so far as to state that “the signs of the [Chinese] writing, taken in general, do not express their pronunciation, but rather, ideas. The spoken and written languages are therefore quite distinct and separated”. (RÉMUSAT, 1822, p.1)

²¹ Some examples are: Léon de Roisny, *Les écritures figuratives et hiéroglyphique des différent peoples* (1860); Frank Chalfant, *Memoirs of the Carnegie Museum: Early chinese writing* (1862); and John Chalmers, *Origin of the Chinese* [...] (1866).

books and articles were published in the last decades of the nineteenth century which dealt mainly with the Chinese grammar and the sounds of its spoken language and that have also proposed to provide lists of so-called *phonetic indicators* (“syllabaries”) for the characters. Teaching manuals have nevertheless often continued to use the support of traditional semantic indicators,²² while academic studies still explored tentatively the phonetic representation models in the Chinese script, seeking to apply DuPonceau’s ideas.

Being interested in the sounds of Chinese speech and its representation in writing, by the end of the nineteenth century some authors wrote what later the famous Swedish sinologue Bernhard Karlgren (1889-1978) would call “somewhat amateur attempts on the phonetic history” of Chinese, speculating on the possibilities of representation of diachronic Chinese speech in its writing, in this way trying decipher the famous *clavis sinica* with the support of Chinese speech.²³ The theoretical ideas proposed by DuPonceau were finally consolidated on a basis deemed compatible with the new scientific methods of the linguistics of the twentieth century with the work of Karlgren, which elaborated on the diachronic relationship between writing and speech in China since the *Hàn* dynasty, an orthographic survey of 2000 years! In 1915 Karlgren began his pioneering studies on Chinese phonology with the work *Etudes sur la chinoise phonologie* after his doctoral thesis in Uppsala, completing them in 1926. The Swedish linguist was considered by many the first European to use the historical linguistic methods applied to Chinese and he revolutionized the knowledge of Chinese historical phonology through a careful reconstruction of Middle and Old Chinese, using data from Sinitic languages and other relevant languages, as well as Japanese and Chinese readings of the Chinese characters in Japanese writing. Thereafter, in the world of Sinology, the idea that this was the founding moment of a scientific knowledge about the history of written and spoken Chinese was consolidated: “The scientific study of Chinese dialects [and its diachrony] began with the work of Bernhard Karlgren and Y.R. Chao”. (NORMAN, 1988, p.5)²⁴.

From this new “founding moment”, in the dawn of the twentieth century, China itself, humiliated politically and economically by the Western powers, turned itself against what it considered his retrograde past and voraciously opened up to the modern scientific thought that was being imposed from the West. The Japanese occupation of China during World War II and the subsequent American victory in the Pacific helped

²² One example is: William Martin, *The Analytical Reader: a Short Method for Learning to Read and Write Chinese* (1897).

²³ Some works of this period were, for example, J. Edkins with his *Introduction to Chinese Characters* of 1876 and Z. Volpicelli in 1896 with *Chinese Phonology*.

²⁴ Despite the invaluable importance of Karlgren work to provide historical phonological information necessary for a phoneticist theory of Chinese writing, the Swedish sinologue maintained a somewhat “oldfashioned” view of Chinese writing as ideographic, as is shown in his *Sound & Symbol in Chinese* (1923) (adapted from *Ordet och Pennan i Mitens Rike* of 1918): “as they [Chinese characters] do not constitute a phonetic but an ideographic script, they give no hint of the *sounds* that formed the words in ancient Chinese”. (KARLGREN, 1923, p.16). It should also be noted, however, that the reconstructions of Karlgren were extensively reviewed and critiqued by modern and contemporary sinologues, as in Baxter (1992) and Baxter and Sagart (2014).

solidify the Western vision of China as a “sick” nineteenth century giant, which could only be cured through the radical transformation coming from Europe and North America (MUNGELLO, 2013, p.2). Throughout the twentieth century a new historical phase of studies on the spoken and written Chinese has consolidated itself, a veritably new world where the rhetoric of discovery and scientific optimism sought to achieve the definitive phonetic reconstruction of diachronic Chinese and its parallel representation in Chinese writing. Although largely unwary, the linguists and sinologues of twentieth and twenty-first centuries are arguably still motivated by the aspirations and visions of European missionaries in China of centuries ago stuck in the perennial debates on the relationship between speech and writing.

Conclusion: Modern reflexes and phoneticism

The book of the well-known American sinologue John DeFrancis (1911-2009) entitled *The Chinese language — fact and fantasy*, published in 1984, aimed at a more comprehensive group of lay readers, was an important work for the defense of phoneticism. The author advocated the explicit intention to dismantle the “myths” related to the Chinese language (spoken and written), resulting, in his view, from centuries of misunderstandings about China and its language. When presenting Chinese writing, the author clearly stated: “Speech is primary, writing is secondary” (DeFRANCIS, 1984, p.37). DeFrancis introduced himself as a linguist and sinologue who had studied Chinese with the “science of language” in mind and his arguments clearly show his commitment to the practice of linguistics. With this authority, he peremptorily rejected everything that was not in agreement with his concepts, labeling them as *myths* against which he claimed to present incontestable *facts*. According to Lurie (2006, p.262.): “The link between insistence on the narrowly phonographic nature of writing and the scientific nature of linguistics as a discipline is also a hallmark of the Critique of the Ideographic Myth”.

DeFrancis is a representative of a group of authors of the twentieth century²⁵ who, despite their immense respect and emotional attachment to China and its traditions, have brought – perhaps inadvertently – their Western scientific apparatus to understand the mechanisms of the inscrutable Chinese script and have elected phoneticism and phonography, eminently Western concepts, to classify and to organize it.

China, separated by physical and cultural distance, enclosed in its borders, was a culturally relatively homogeneous empire which already had had thousands of years of history by the twilight of the sixteenth century, when it was “rediscovered” by European missionaries. The knowledge about China that was created at this time was strongly influenced by reports of those early visitors and then “frozen” in the books by the

²⁵ Among others, Peter Boodberg (1937, 1940), George Kennedy (1951), Marshal Unger (1990, 1993), William Boltz (1994), Victor Mair (2002) and Imre Galambos (2006).

Jesuits of the seventeenth century. In this article, we intended to show that their views of language led Chinese to be recognized as a difficult language to learn, monosyllabic and highly homophonous. The tens of thousands of Chinese characters of its script would represent each one a “thought” or “concept” and, thus, writing should enable interlingual understanding. Europe, faced with the decline of Latin as their *lingua franca*, embraced the Chinese language as a new candidate for a universal language, and considered that Chinese was the oldest spoken and written language, protected by the imperial central power, kept pure and unchanged throughout the centuries, a language whose authority and longevity were founded on its external code, the direct link between its script and the “real” world, objects, concepts and ideas.

However, the reputation of China and its language in Europe followed a tortuous path. After the mid-eighteenth century many European scholars, frustrated with the apparent inaccessibility of the *clavis sinica* and motivated by Eurocentrism and the libertarian and progressive spirit of the Enlightenment, came to see Chinese writing as a hindrance to literacy and repudiated the superficial lack of grammar of what became recognized as a simple-minded language. The idea of ideography, though still fascinating to some scholars and extremely captivating to the European lay reader, became increasingly identified in the academic discourse as a mere first step in the evolution towards a more evolved alphabetic writing. Moreover, European scholars, whether religiously motivated or not, have become progressively convinced that the purported noble origins of the spoken and written Chinese language could only be deciphered through Western lenses, using Western rational tools.

The backwardness of the Chinese in the late nineteenth century was both symbolically evidenced by its obsolete ideographic script and its ailing empire ravaged by opium addiction and vulnerable to the forced installation of Western protectorates areas in the country. To finally overcome it, as Europeans and Americans believed – and the Chinese for the most part were also led to agree with it, – would only be viable through the paradoxical influence of the West itself. The fate of the Chinese script could not be more symbolic of this turn: its writing would be considered a phonography, a “visible speech”. Parasitical dependence of writing on speech has guided the reconstruction of the corresponding spoken Middle and Old Chinese, which in turn directed the “solution” of the problem of phonetic representation in writing. Phonography, in the eyes of an increasingly universally biased West, became the *clavis sinica* of the twentieth and twenty-first century.

BARRETO, C. *Clavis sinica: breve história da longa batalha pelo sistema de escrita chinesa no ocidente entre os séculos XVI e XIX*. Alfa, São Paulo, v.61, n.1, p.197-222, 2017.

- *RESUMO: Este artigo tem por objetivo expor uma breve história das ideias na Europa, entre 1550 e 1900, sobre a língua falada e escrita na China. Seguindo o partido teórico do historicismo moderado de Sylvain Auroux (2004), sugerimos como fio condutor os discursos na*

disputa pela natureza da escrita chinesa: ideográfica ou fonográfica. Recusando-nos a tomar partido de uma ou outra alternativa, mostramos que este debate se desenvolve em torno de questões revisitadas ao longo destes mais de três séculos e que os estudos publicados pelos europeus encontram-se profundamente enraizados em seu contexto cultural, social e ideológico de produção. O status precário da escrita na história das ideias linguísticas se sobressai e aponta para o papel protagonista da escrita chinesa nas concepções de escrita desenvolvidas no ocidente, em particular sobre suas possibilidades representativas. Propomos, por fim, que os debates sobre o tema hoje reproduzem muitas das questões exploradas ao longo desta história, cuja resolução permanece ainda longe de um consenso.

- **PALAVRAS-CHAVE:** História das Ideias Linguísticas. Chinês. Europa. Escrita.

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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 Portuguese, 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.

Step 5. Confirm the submission.

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.

After submission, articles will be assigned to reviewers by the Editorial Board or special issue editors. The journal's Editorial Board and Editors are responsible for the policy of paper selection, which is available at the link **Sobre a Revista>Processo de Avaliação por Pares** (About the Journal>Peer Review Process).

3. Preparation of manuscripts

3.1. Presentation

Authors should ensure that their electronic copy is compatible with *PC/MSWord*, and use *Times New Roman*, 12-point size. The page size should be set to A4 (21cm x 29.7cm), and the text body should be one-and-a-half spaced throughout. Leave 3 cm from the top of the page and on the left margin, and 2.0 cm from the bottom of the page and on the right margin. Articles should have a minimum of 15 pages and not exceed **30 pages**, including bibliography, appendixes, and annexes. The text must meet the rules of Portuguese new orthographic agreement, which became mandatory in Brazil from January 2016. Two versions of the paper must be submitted: one containing the name and academic affiliation of

author(s), and one in which all references to the author(s), including citations and bibliographical references are erased.

3.2. Paper format

The format below should be followed:

Title. The title should be centered and set in **bold** CAPITALS at the top of the first page. Runover* titles should be single-spaced.

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: Ed. 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

PÊCHEUX, 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. p.15-50.

Thesis and dissertations

BITENCOURT, C. M. F. **Pátria, civilização e trabalho:** o ensino nas escolas paulista (1917-1939). 1998. 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. 1 DVD (105 minutos), color.

Paintings, photographs, illustrations, drawings:

ALMEIDA JÚNIOR. **Caipira picando fumo**. 1893. Óleo sobre tela. 17 cm X 23,5 cm. Pintura pertencente ao acervo da Pinacoteca do Estado de São Paulo.

PICASSO, Pablo. [**Sem título**]. [1948]. 1 gravura. Disponível em: <<http://belgaleria.com.br>>. Acesso em 19 ago. 2015.

Music CDs (as a unit or tracks)

CALAZANS, T. **Teca Calazans canta Villa Lobos**. Rio de Janeiro: Kuarup Discos, 1999. 1 CD.

CALAZANS, T. Modinha. In: CALAZANS, T. **Teca Calazans canta Villa Lobos**. Rio de Janeiro: Kuarup Discos, 1999. 1 CD.

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: can be used to highlight parts of the major works, such as titles of poems, articles, chapters. The major works should be highlighted in italics, as the statement above; quotation marks must be used in the body of the text for quotations of excerpts of works. Example: A linguística é uma disciplina que "[...] se baseia na observação dos factos e se abstém de propor qualquer escolha entre tais factos, em nome de certos princípios estéticos e morais" (MARTINET, 1972, p.3).

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.

3.3.6. Tables and text frames

Tables should be used to present statistical information, and text frames should be used to summarize and organize textual information. The title is inserted above the table, centered, beginning with **Table 1** in bold, followed by a hyphen and the title without emphasis, in the same font and size of the body text; the title of figures should be presented above the figure,

centered, beginning with Figure 1 in bold, followed by a hyphen and the title without emphasis, in the same font and size of the body text. 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 appendices; 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, Spanish or Italian must provide the English version of the text until the deadline shown in the e-mail notification of acceptance. The standards for citation of authors in the text and the references of the English version are the same as the ones in Portuguese. *Alfa* appoints reviewers to evaluate the English version of the article. The review is restricted to checking the quality of translation, i. e. adequation to the standard norms of English usage for research papers.

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>.

3.3.12. Copyright transfer – publication authorization

Following acceptance of the paper, the AUTHOR AGREES PROMPTLY TO ASSIGN COPYRIGHT to UNESP, which is granted permission to reproduce it and publish it in the journal. The terms “reproduce” and “publish” are understood

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