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CROSS-LINGUISTIC INTERACTION IN L3 PRODUCTION:

PORTUGUESE AS A THIRD LANGUAGE IN A BILINGUAL CONTEXT.

PORTO ALEGRE

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Dissertação apresentada como requisito parcial para obtenção do grau de Mestre em Letras na área de Linguística ao Programa de Pós-Graduação da Faculdade de Letras da Pontifícia Universidade Católica do Rio Grande do Sul.

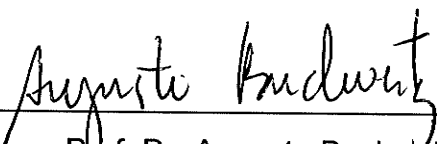Orientador: Dr. Augusto Buchweitz

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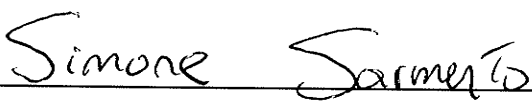# CROSS-LINGUISTIC INTERACTION IN L3 PRODUCTION: PORTUGUESE AS A THIRD LANGUAGE IN A BILINGUAL CONTEXT

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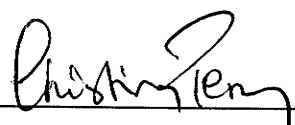
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ABSTRACT

Extensive research on Bilingualism and Multilingualism has found evidence that different languages compete for activation in the bilinguals and multilinguals' mind (Dijkstra, Van Heuven, 2002; Dijkstra, 2003, Green, 1998.) The present study investigates crosslinguistic interaction in the oral productions of Portuguese by English-Spanish and Spanish-English bilinguals. For the study, twelve participants – all learners of Portuguese as a third language – were divided in two groups according to their first language (either English or Spanish). For the data collection, participants narrated the picture story "Frog, where are you?" by Mercer Mayer (1969). Participants also filled out the Language Experience And Proficiency Questionnaire (LEAP-Q) (Marian, Blumenfeld, and Kaushanskaya, 2007.) The instances of language interaction were coded as 'syntactic', 'morphological', and 'vocabulary'. Statistics tests were run in order to determine which of the linguistic levels were highly present in the tokens and from which source language: English or Spanish. According to Hammarberg (2001), factors such as typology, second language (L2) status, proficiency, and language mode can predict the interactions among different languages in multilinguals. Based on the factors for interaction, two research questions were asked: 1) Which factors exert more influence in third language oral production: the typological distance or the L2 status?; 2) Which linguistic features in the target language (Portuguese) will be more influenced by the two previously acquired languages (English and Spanish): vocabulary, morphology or syntax? Based on these questions, two mutually exclusive hypotheses were formulated: 1) There will be more language interaction from Spanish than English due to the closest typological distance of Spanish in relation to Portuguese, if compared to English (Carvalho and Silva, 2006; Rothman, 2010;) 2) When English is the speakers' second language, it will generate more language interaction to Portuguese as L3 due to the foreign language status shared by the L2 and the L3 (Hammarberg, 2001.) The results show that the typology factor seems to play a more important role in the types of interaction found in the sample researched. When Spanish as L2 was a more recurrent source of language interaction, it coincided with its closest typological distance in relation to Portuguese. Vocabulary interaction occurred more frequently than syntactic or morphological interaction. English as L2 did not show significance in the interaction of items with Portuguese.

Key-words: Multilingualism. Crosslinguistic Interaction. Transfer. Portuguese as L3.

RESUMO

Pesquisas sobre Bilinguismo e Multilinguismo encontraram evidência de que diferentes línguas competem entre si por ativação na mente de bilíngues e multilíngues (Dijkstra, Van Heuven, 2002; Dijkstra, 2003, Green, 1998). O presente estudo busca investigar a interação crosslinguística na produção oral de Português por bilíngues Inglês-Espanhol e Espanhol-Inglês – todos alunos de Português como terceira língua (L3). Para o estudo, doze participantes foram divididos em dois grupos de acordo com a sua primeira língua. Para a coleta de dados, os participantes narraram a história em imagens "Frog, where are you?" de Mercer Mayer (1969). Os participantes também preencheram o Questionário de Experiência Linguística e Proficiência (LEAP-Q na sigla em inglês) (Marian, Blumenfeld e Kaushanskaya, 2007.) As interações crosslinguísticas foram codificadas de acordo com os níveis linguísticos em: sintáticas, morfológicas e de vocabulário. Testes estatísticos foram realizados para se determinar os níveis linguísticos mais transferidos e de qual língua fonte partiram: se do Inglês ou do Espanhol. De acordo com Hammarberg (2001), fatores como a tipologia, o status de língua estrangeira da segunda língua (L2), a proficiência e o modo de linguagem podem prever as interações entre os diferentes idiomas em multilíngues. Com base nos fatores para interação linguística, duas questões de pesquisa foram feitas: 1) Quais os fatores que exercem maior influência na produção oral de uma terceira língua: a distância tipológica ou o status de língua estrangeira da L2?; 2) Quais níveis linguísticos da língua-alvo (Português) serão mais influenciados pelas duas línguas previamente adquiridas (o Inglês e o Espanhol): o vocabulário, a morfologia ou a sintaxe? Baseando-se nessas questões teóricas, duas hipóteses mutuamente excludentes foram feitas: 1) Haverá maior interação crosslinguística partindo do Espanhol do que do Inglês devido à menor distância tipológica do Espanhol em relação ao Português, se comparado ao Inglês (Carvalho e Silva, 2006; Rothman, 2010); 2) Quando o Inglês for a segunda língua dos falantes, ele gerará mais interação com o Português como L3 devido ao status de língua estrangeira compartilhado entre a L2 e a L3 (Hammarberg, 2001.) Os resultados mostram que o fator tipologia parece desempenhar um papel mais importante no tipo de interação encontrada na amostra pesquisada. Quando o Espanhol como L2 revelou-se fonte mais recorrente de interações, isso coincidiu com a sua distância tipológica ser mais próxima ao Português do que o Inglês. A transferência de vocabulário ocorreu com maior frequência do que a gramatical (morfológica e sintática). O Inglês como L2 não mostrou taxa significativa de interação com o Português.

Palavras-chave: Multilinguísmo. Interação Cross-linguística.Transferência. Português como L3.

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LIST OF ABBREVIATIONS

First Language	L1
Second Language	L2
Third Language	L3
Second Language Acquisition	SLA
Third Language Acquisition	TLA
The University of New Mexico	UNM
Contrastive Analysis	CA
Crosslinguistic Influence	CLI
Crosslinguistic Interaction	CLIN
Dynamic Model of Multilingualism	DMM
Language Experience And Proficiency Questionnaire	LEAP-Q

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INTRODUCTION

1.1 Preliminaries

The present study investigates language interaction in the oral production of six English-Spanish and six Spanish-English bilinguals, learners of Portuguese as a third language. The goal of the study is to describe the patterns of language interaction and identify which factors exert more influence on third language oral production: the typological factor or the foreign language status of the second language (L2.) In the present study, we address typology as the structural similarity between languages (Greenberg, 1960.) Spanish and Portuguese, for example, are Romance languages, while English is a Germanic language. Hammarberg (2001, p. 37) defines the L2 status factor as "the general tendency to activate an earlier secondary language in L3 performance than an L1." Both language typology and the foreign language status of the L2 (also L2 status) have already been described in Multilingualism studies (Cenoz, 2003; Carvalho and Silva, 2006; Rothman, 2010.)

The present study also aimed to investigate which linguistic features in the target language (Portuguese) will be greater influenced by the two previously acquired languages (English and Spanish): vocabulary, morphology or syntax. The study originated from my interest in Bilingualism and Multilingualism and in understanding the mechanisms of interaction among multiple languages. In 2012, I received a Fulbright scholarship to teach Portuguese in New Mexico, United States. In the classes of Portuguese as a foreign language, there was a characteristic that immediately called my attention: the fact that students were fluent English and Spanish speakers in their majority. During the class activities, I informally observed that the learners of Portuguese would use both Spanish and English language forms when speaking Portuguese; most times, the speakers would use the different forms without noticing the difference between the languages.

The mixed use of languages was not in the form of code-switching but they were cases of language interaction. Code-switching is "the alternative use by bilinguals of two or more languages in the same conversation" (Milroy and Muysken, 1995, p. 7). In code-switching, whole sentences are produced while alternating between languages; code-switching can be done deliberately, especially when speakers share bilingual knowledge. So, non-target words are

inserted *on purpose* in a sentence when two bilinguals are conversing, as it happens between English and Spanish in the state of New Mexico, an officially bilingual state. From a Second Language Acquisition (SLA) point of view, transfer is defined as "the influence resulting from the similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired" (Odlin, 1989, p. 27.) By the use of the term "imperfectly", it is possible to infer the negative view of language interaction present in SLA studies.

Although language selectivity is still controversial, the phenomenon of linguistic interaction between different languages in bilinguals and multilinguals is very well-defined (Odlin, 2005.) Words can compete either phonologically (Portuguese: fraco (weak), Spanish: flaco (thin)); orthographically (Spanish: red (net), English: red (the color)); or semantically (Spanish: perro, English: dog, Portuguese: cachorro). According to Bialystok et al (2009, p. 93), the joint activation of the two languages makes it necessary for bilinguals "to resolve competition not only from within-language alternatives – as monolinguals do to select among close semantic neighbors – but also from between-language alternatives for the same concepts."

The observation of bilingual language production in the classroom, and my own research on the literature on Multilingualism and types of crosslinguistic interaction, suggest that this phenomenon is quite common in multilinguals. Crosslinguistic interaction might not be random; it may be motivated by linguistic factors, such as typology and L2 status, or non-linguistic factors[1], such as proficiency and language mode[2] (Hammarberg, 2001). For the present study, only the linguistic factors (typology and L2 status) were controlled. These factors are further discussed in section 2.4. The role of language typology and L2 status in the interaction of two previously acquired languages in relation to a third language being acquired is investigated.

1.2 The study

The present study draws on Carvalho and Silva (2006) and Rothman (2010), who found evidence for the highest influence of typology in comparison with order of acquisition in L3 production. Carvalho and Silva (2006) focused on the controlled production of sentences in the

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[1] Here 'non-linguistic' is understood as a factor external to the language itself, and more linked to the speaker.
[2] See Section 2.4

present and future subjunctive, which are structurally similar between Spanish and Portuguese. Rothman, in turn, studied syntactic interaction, such as word order and Subject-Verb-Object order in grammatical judgment tasks involving English, Spanish and Portuguese.

Based on those previous studies, two research questions were proposed:

1) Based on Carvalho and Silva (2006) and Rothman (2010), who found typology to be the most influential factor for linguistic interaction: Which factors exert more influence in third language oral production: typological distance or the order of acquisition of previous languages?

2) Which linguistic levels in the target language (Portuguese) would be highly influenced by the two previously acquired languages (English and Spanish): the vocabulary, the morphology or the syntax?

Question number two takes the previous studies a step further in the investigation of crosslinguistic interaction.

Based on the 2 questions, two hypotheses mutually exclusive hypotheses were generated:

1) There will be more language interaction from Spanish than English due to the closest typological distance of Spanish in relation to Portuguese, if compared to English (Carvalho and Silva, 2006; Rothman, 2010);

2) When English is the speakers' second language (as in group 2), it will generate more instances of language interaction to Portuguese as L3 due to the same foreign language status shared by the L2 and the L3 (Hammarberg, 2001).

The hypotheses were mutually exclusive intentionally, since in case one was verified, the other could not happen under the same circumstances.

Phonological interferences also occurred but they were not analyzed as part of the scope of the present study.

1.3 Significance and objectives

Multilingualism has been receiving increased attention in linguistic and cognitive studies over the years, though research in the field is still incipient and receives less attention than bilingualism. According to Herdina and Jessner (2002, p. 1), "as the majority of the world's population is multilingual, research on linguistics should be centered on the multilingual speaker as the norm, not on the monolingual individual." Linguistic interaction between multiple

languages offers the opportunity to observe the complexity of multilingualism. Therefore, the study has drawn on the literature and the unique opportunity of interacting with a multilingual population to try to identify patterns of crosslinguistic interaction.

As Schönpflug states (2003, p.28):

> The larger the number of linguistic systems at work, the more interactions between the various levels of the system are to be expected. Hence, trilingual language processing is more complex than just the doubling of the interactions of a bilingual system. In a trilingual system, one or two language systems may be dominant, thus offering the unique opportunity to observe two dominant and one weak system.

Increasing attention is being paid to multilingual acquisition and multilinguals' language production (Carvalho and Silva, 2006; Cenoz, 2000, 2003, 2011, 2013; Cenoz, Hufeisen, Jessner, 2001, 2003; Dewaele, 2001; Dijkstra, 2003; Hammarberg, 2001; Jessner, 2001, 2003, 2008; Rothman, 2010; Rothman and Amaro, 2009.)

However, more natural, less-controlled speech production tasks (such as narratives) are infrequently used in multilingual studies, especially in studies that investigate crosslinguistic interaction (Cenoz, 2001; Hammarberg, 2001; De Angelis and Selinker, 2001; Dewaele, 2001).

Therefore, the mechanisms of speech production in trilinguals and the factors relevant for interaction among different languages in this population have yet to be investigated. The gap in research on language production supports our choice of a speech production task for investigating the result of the interactions of previous languages on a third language still in process of acquisition. The English-Spanish bilingual context at the University of New Mexico (UNM), where data was collected, and the large enrollment in Portuguese courses are ideal for a study on Multilingualism. As trilingual linguistic systems are not merely extensions of bilingual systems (Jessner, 2003), the study of the influence of two previously acquired languages on a third one may increase the understanding of third language acquisition.

As the main objective, the study aims to contribute to the research on Multilingualism and crosslinguistic interaction identifying the source language of interaction when three languages with different typological distances and order of acquisition are involved. It also aims to identify the types of linguistic interaction in the language production of English-Spanish-Portuguese multilinguals – whether it is on vocabulary, morphology or syntax. It does not intend to simply

state that language interaction exists or criticize instances of language interaction as situations in which a speaker may lack vocabulary or proficiency. Rather, instances of language interaction are understood as a recurrent phenomenon in multilinguals.

1.4 Organization of the thesis

This thesis is organized in five chapters. In Chapter 2 concepts of Bilingualism, Multilingualism, language language interaction, some models of language production, and the linguistic factors related to language interaction are explained and linked to the present study. At the end of the chapter, the status of research on Portuguese as a third language is discussed. In Chapter 3, the method of the experiment, information about the subjects and the materials and procedures of the data collection and analysis are described. Chapter 4 brings the results and discussion of data. Finally, in Chapter 5, there are the final considerations of the study as well as its limitations followed by some suggestions for further research.

2 REVIEW OF LITERATURE

2.1 Bilingualism: definition, scientific studies and advantages

In this section, literature on Bilingualism is reviewed. The definition of what being a bilingual means has been discussed along the studies on language acquisition and use. According to Grosjean (1998, p.132), "bilinguals are those who use two or more languages (or dialects) in their everyday lives." The definition excludes the idea that to be bilingual a person should master all language components equally and use them with the same frequency. This *holistic view* (Grosjean, 1985, 1998, 2008) rejects the *monolingual view* of Bilingualism, which implies that bilinguals should master two languages as if they were two monolinguals in one person.

The holistic view states that a bilingual cannot be compared to an ideal speaker-hearer in monolingual standards (Grosjean, 2008). It also takes into consideration the interaction between the different languages learned, by debunking the (outdated) notion that a bilingual speaker is two monolingual speakers in one. Yet, the notion of perfectly mastering of two languages persists. Anecdotal evidence shows that proficient bilinguals do not consider themselves fluent enough if they have acquired a second language later in life. Speakers of two languages judge problems in pronunciation or lack of vocabulary as signs of not being 'real bilinguals'.

Despite those issues of self-perception, there is current evidence that there are cognitive advantages associated with being bilingual (Lauchlan, Parisi and Fadda, 2012; Bialystok, Craik and Luk, 2008; Bialystok et al, 2009). These advantages carry over to other – domain-general and non-linguistic – abilities, such as problem-solving abilities and attentional control. Moreover, bilinguals, in comparison to monolinguals, are protected by some sort of "cognitive reserve" and there seems to be protective effects against the dissolution of cognitive abilities in bilinguals (Bialystok, 1998; 1999; 2001; 2006; Bialystok et al., 2004).

Even accompanied with scientific evidence, the positive relation between Bilingualism and cognition was not always accepted. Since the 1920s, researchers have been trying to answer whether Bilingualism would be positive or negative for general cognition (Peal and Lambert, 1962). Verbal and non-verbal IQ scores, executive control tests in monolingual and bilingual children have been used but without conclusive results Independently of the geographical areas and socioeconomic status, no positive relation of Bilingualism on intelligence was initially found

(Bialystok et al, 2009). On the contrary, early researchers constantly argued that being bilingual would bring negative cognitive effects (Peal and Lambert, 1962).

One example of the negative view on Bilingualism is seen in "The problems of the hybrid language". In the work, Roberts (1939, p.23) wrote about the "bizarre and mysterious works of Bilingualism". Roberts (1939) was not discussing the cognition involved in Bilingualism; rather the goal was to explain how languages would disappear and originate new ones because of interlinguistic contact. Nonetheless, the negative tone about Bilingualism is evident:

> When two languages come to be spoken by the same society for the same purposes, both of these languages are certain to deteriorate. The sense of conflict disturbs in both of them the basis of articulation, deranges the procedure of grammar, and imperils the integrity of thought. The representation of the mind is divided into incongruous halves; and the average speaker, being no linguistic expert, finds it difficult to keep the two media apart. Confusion follows. (Roberts, 1939, p.23).

Only in the 1960s did science debunk negative notions about Bilingualism and found a positive influence of Bilingualism on cognition. Peal and Lambert (1962) changed the perspective on the issue with a study about the positive effects of Bilingualism on general intelligence. In the study with English-French children in Montreal, the authors found that bilinguals have a striking advantage over monolinguals in verbal and non-verbal tasks. The authors claimed that "the studies finding no difference or a deficit for bilinguals were simply using inappropriate measures" (Peal and Lambert, 1962, p. 6). The authors of the pioneer study explained the results stating that:

> The experience with two languages leaves the bilinguals with a mental flexibility, a superiority in concept formation, and a more diversified set of mental abilities (…) there is no question about the fact that he [the bilingual] is superior intellectually (Peal and Lambert, 962, p.20.)

The number of people who are in contact with more than one language also denotes the representation of bilinguals in the world. "As the world becomes more interconnected, it is increasingly apparent that Bilingualism is the rule and not the exception" (Bialystok et al, 2009.)

The approximately 7,000 different languages and dialects, according to the Ethnologue[3] in the world, the proximity of borders and the varied and distinct cultures that coexist in a same continent make   language contact – and consequently Bilingualism – a reality of the modern world (Cenoz, Hufeisen, Jessner, 2003.)

Language policies also play an important role in the language status of a community. When more than one language is considered official (as in Canada, Spain, and Belgium) the different language groups must become bilinguals (or even multilinguals) in order to communicate in the different linguistic situations. Bilingualism remains because the official languages have equal status and are taught at school, used in the media, and used in official communication.

Immigration can also contribute to the development of multiple languages. Depending on the social context of the immigrants and the country they immigrated to, a person may use a language at home with their family and another at work or school. Bilingualism can also be a reality when: family speaks a heritage language[4] at home, while living in a foreign country, when one receives formal education in a foreign language, and when a person moves temporarily to another country for business or educational reasons (Bialystok et al., 2009.)

Bialystok et al. (2009, p. 90) state that "bilingual language acquisition is as effortless, efficient, and successful as monolingual acquisition" while stressing the similarities of monolingual and multilingual acquisition. So, according to the author, both monolingual and multilingual language acquisition processes are similar and are shaped by the individual's environment, attention, perception, cognition and conceptual abilities:

> It is now clear that language acquisition is not a simple matter of biological unfolding, as some had previously believed, but rather a process that is finely tuned to features of the environmental input, the child's attentional and perceptual abilities, and the development of cognitive and conceptual competencies. All of these factors conspire as well to shape the process of acquiring two languages. Moreover, the major milestones concerning competence in sounds, words, and sentences that are the foundation of acquiring language are passed at equivalent times for children growing up with one language in the home and those growing up in a multilingual home (Bialystok et al, 2009, p. 90.)

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[3] http://www.ethnologue.com/
[4] 'A heritage language speaker' (in a North American context) is someone who is raised in a home where a non-English language is spoken, who speaks or at least understands the language, and who is to some degree bilingual in that language *and* in English. These speakers are also bilinguals or multilinguals (Valdés, 2001)

It is usually assumed that being bilingual means developing perfectly balanced and equivalent skills in two (or more) languages. Most people who are able to communicate in more than one language would not be considered bilingual according to this notion. But if Bilingualism is understood as a dimensional human phenomenon, that is, along a continuum of skill development – rather than a definition that depends on all-or-none achievement of linguistic skills – Bilingualism becomes more of a rule than the exception. Most bilingual people use different languages for different purposes, in different situations and with different people. In this thesis, as stated, we will adopt the practical and up-to-date definition put forth by Grosjean (2008; 2010): Bilingualism is the regular use of more than one language; bilinguals are people who *need and use* more than one language in their everyday lives.

2.2 Third Language Acquisition (TLA) and Multilingualism

Multilingualism, much like Bilingualism, is increasing worldwide. The European Commission (2012) shows that just over half of Europeans can hold a conversation in at least one foreign language; approximately a quarter are able to speak at least two additional languages, and almost half say they can read a newspaper or magazine article in a foreign language [5].

With the cooperation of Google, the Endangered Languages Project[6] is an organization that acknowledges the existence and the importance of Multilingualism in the world. Foreseeing the necessity of language documentation for preservation, it holds a website where people from all over the world can upload videos featuring speakers of languages that are about to become extinct. The project also shows a map of the world pointing the languages which have a higher risk of becoming extinct.

But research on Multilingualism is relatively new in Psycholinguistics. Even though Multilingualism has developed from SLA and Bilingualism research, it has become an independent field of study, with its own characteristics and goals (Jessner, 2003). Because of the incipient status of Multilingualism research, the terminology is still being discussed and the definitions are also problematic. Multilingualism is sometimes seen as synonymous of third language acquisition, and sometimes as a general term encompassing the knowledge of more

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[5] http://ec.europa.eu/index_en.htm
[6] http://www.endangeredlanguages.com/about/

additional language(s). Also, due to higher complexity, Multilingualism cannot be simply labeled an extension of SLA and Bilingualism and must develop as an independent field of study:

> Bilingualism is a phenomenon that may have a lot in common with Multilingualism, but research on the acquisition and processing of two languages cannot explain the specific processes resulting from the interaction between the languages that may result from the simultaneous presence of more than two languages in the multilingual person's mind (Cenoz, Hufeisen, Jessner 2003, p.2.)

Grosjean (1998) does not differentiate the term 'bilingual' from 'multilingual' while Cenoz (1997, 2003) does. In the present study, the same view of Cenoz (1997, 2003) is adopted to make such distinction. This is because the present study will investigate bilingual subjects learning a third language and the influence of the first and/or second language (Spanish, English) on the third one (Portuguese); clearly a multilingual environment.

According to Herdina and Jessner (2002), Multilingualism research bridges the gap between Bilingualism and SLA. This is because, in SLA, any language learned after the first is considered the speaker's second language, even if it is the third or fourth one. Also, linguistic interaction phenomena are more likely to occur in one direction: from the L1 into the L2, as below:

L1 $\longrightarrow$ L2
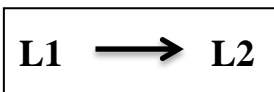
Adapted from Jessner, 2003, p. 44

Being bilingual, however, means that language interaction can happen. Bilingualism research will focus then on finding evidence for the bidirectional relationship between languages, the L1 and L2 mutually providing the possibility of language interaction, as below, and not in a one-hand basis only:

L1 $\longleftrightarrow$ L2
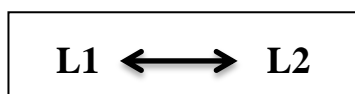
Adapted from Jessner, 2003, p. 44

In TLA or Multilingualism, however, language interaction is multifaceted and involves more than a bidirectional relationship. The L1 and the L2 can mutually exchange language items, as well as the L2 and the L3 or other additional languages (Lx). Also, the L1 can interact with the L3 in a reciprocal and more complex configuration. The schema below attempts to show those interactions:

$$L1 \longleftrightarrow L2 \longleftrightarrow L3 \longleftrightarrow Lx$$
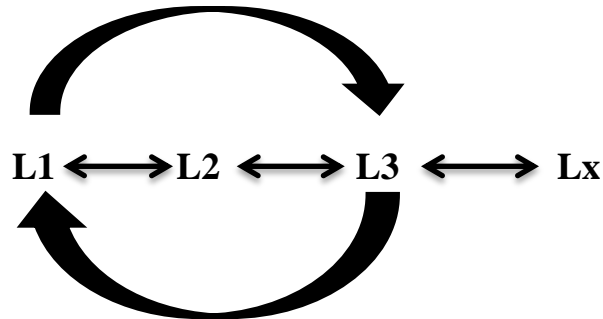
Adapted from Jessner, 2003, p. 45

According to Jessner (2003), "as multilinguals cannot be measured by monolingual standards, Multilingualism cannot simply be explained by extended monolingual acquisition models" (Jessner, 2003, p.48.) Due to the highest complexity involved, Multilingualism opens a vast field of study, ranging from: the effects of Bilingualism on third language acquisition (Cenoz, 2013; 2003; 1997), multilingual language acquisition (Cenoz, 2000), cognitive effects of Multilingualism (Perquin et al, 2013), language interaction in L3 production (Cenoz and Gorter, 2011; Romualdo Jr, 2005), lexical access in multilinguals (Lemhöfer et al, 2004), the role of L1 and L2 in the learning of an L3 (Hammarberg, 2001; Cenoz, 1997), crosslinguistic interaction of multiple languages (De Angelis & Selinker, 2001), and factors of language interaction (Cenoz, 1997, 2000, 2003; Carvalho and Silva, 2006; Rothman, 2010.)

2.3 Language interaction: a historical overview

The notion of 'language interaction' started as 'transfer' in SLA studies motivated by the psychological school of Behaviorism with studies of Contrastive Analysis (CA) (James, 1980; Gass and Selinker, 2008.) According to Gass and Selinker (2008, p. 90), "within the behaviorist

framework, speaking consists of mimicking and analogizing." Since childhood, people would establish a set of behavioral habits and continue linguistic growth by analogizing previous knowledge and mimicking others' speech in order to learn.

According to James (1980), modern CA starts with Robert Lado (1957), in the book Linguistics Across Cultures. The author brings on the notion of 'interference,' stating that L2 learners rely on their native language for learning the second language (Gass and Selinker, 2008.) Rooted in Behaviorist and Structuralist concepts, the Contrastive Analysis Hypothesis stated that, by contrasting language structures, language specialists would be able to predict the difficulties a learner of a determined linguistic background would have when learning a structurally distinct language (Brown, 2007). Still according to Brown (2007, p. 248), in CA, "the principal barrier to Second Language Acquisition is the interference of the first language system in the second language system".

'Transfer' has also been described as 'interference,' which dates back in time a little further than Lado's 1957's work. Weinreich (1953, p.1) defined interference as "instances of deviation from the norms," occurring frequently in bilinguals "as a result of the familiarity with more than one language." In those quotations, the negative view of the word 'interference' is clear, since it is a 'deviation' from pre-established norms.

As noted by Gass and Selinker (2008), a distinction between positive (also called "facilitation") and negative transfer (interference) is commonly made in Second Language Acquisition studies. It is as if transfer could be split in terms of 'correct' and 'incorrect' (meaning 'positive' and 'negative' respectively) types of transfer. The 'positive' type would facilitate language acquisition, while the 'negative' type would inhibit the language acquisition process, making it 'imperfect'. But the authors disagree that there is positive or negative transfer, stating that "there is a process of transfer; there is not a process of negative or positive transfer" (Gass and Selinker, 2008, p. 90.)

Because transfer was seen as positive or negative, CA dealt with language structures' contrasting to predict possible difficulties (or even a facilitative effect) perceived by L2 language learners (James, 1980). So contrastive linguists, or 'contrastivists' (James, 1980, p.1), would see transfer as having two sides: a facilitative one (when languages would have more similarity in structure) or a negative one (when transfer would be pure interference of one language into another).

According to Odlin (1989, p. 27), "transfer is the influence resulting from the similarities and differences between the target language and any other language that has been previously (and perhaps imperfectly) acquired." Here, a contrastive view ("similarities and differences") is also present.

In Multilingualism studies, 'interference,' according to Herdina and Jessner (2002), is generally used to describe the unconscious transfer of structures from L1 to L2. For the authors, the term 'interference' should be applied only to the phenomenon described in CA that is "one language system interfering with the other without resulting in the transfer of structures" (Herdina and Jessner, 2002, p. 10.) This shows that the notion of interference is much more linked to the areas of CA and SLA than with Bilingualism and Multilingualism areas. Also because the terminology on language transfer goes a little further. In the Linguistics revolution of the 60s and 70s, after Behaviorism was supplanted by Cognitive psychology, the notion of transfer also changed (James, 1980.)

Another term referring to language transfer between different languages was brought up. It was *Crosslinguistic Influence* (CLI), coined by Kellerman and Sharwood Smith (1986), cited by Jessner (2003). Kellerman (2001) points that CLI theory clearly differentiates second and third language acquisition. So, these influences between multiple languages must be acknowledged for better understanding second and third language processing and production.

Facing the new dynamic interactions in multilingual systems and aware of the negative notion brought by the term 'influence' across languages, Herdina and Jessner (2002) coined the term *Crosslinguistic Interaction* (CLIN), although the term 'influence' is still used in multilingualism research. According to the authors, the term offers new perspectives to the study of language systems interaction, "including transfer, interference, code-switching and borrowing, as an umbrella term for all transfer phenomena" (Jessner, 2003, p.49.)

According to Herdina and Jessner (2002), CLIN is part of a broader concept which does not see languages as independent systems (L1, L2, L3…), but which is concerned with the language systems (LS_1, LS_2, LS_3) forming part of the whole psycholinguistic system of the multilingual speaker, thus, susceptible of interaction. This notion is based on the Dynamic Systems Theory and it sees language development in multilinguals as "a non-linear, reversible and complex process where the development of the individual language systems is dependent on the interaction of pre-existing systems and those still in development" (Jessner, 2003, p.48).

In the present work, the term *interaction* is preferred over transfer, interference and influence. Also, the interaction of multiple languages – or Crosslinguistic Interaction – is understood neither as positive nor negative. It is rather a recurrent phenomenon which can help linguists to understand the mechanisms of language interaction involving three languages: Spanish, English, and Portuguese.

2.4 Factors related to Crosslinguistic Interaction (CLIN)

As discussed in the previous section, the term Crosslinguistic Interaction (CLIN) has been used in the area of third language acquisition for embracing all phenomena related to the instances of interaction of a native language with one or more non-native languages (Herdina and Jessner, 2002).

Because of the higher complexity of Multilingualism, several linguistic and non-linguistic factors are involved in CLIN. Hammarberg (2001) highlights linguistic and extra-linguistic factors. The linguistic factors include: the linguistic typology (or psychotypology), and the L2 status (or foreign language status). The extralinguistic or user-related factors include: the speaker's proficiency, the language mode, the frequency and recency of language use (Hammarberg, 2001). All of the referred factors can be addressed as predictors of the interaction between all the languages known by the speaker in the moment of language production. However, for methodological issues, in the present study, only the linguistic factors will be investigated: the language typology and the L2 (or foreign language status). In this section, the linguistic factors which can motivate CLIN are discussed and related to the present study.

2.4.1 Linguistic factors for Crosslinguistic Interaction

2.4.1.1 Linguistic Typology / Psychotypology[7]

Among all factors, Linguistic Typology has been proved as one influential factor for CLIN. It can be viewed from two perspectives: a diachronic perspective and a synchronic

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[7] Psychotypology can also be considered an extra-linguistic factor, since it is also related to the speaker's metalinguistic awareness about the similarities between languages.

perspective (James, 1980). Diachronically speaking, typology refers to the structural similarity between languages which have a common origin, according to the genetic historical classification of languages into families (Greenberg, 1960.) Spanish and Portuguese, for example, have the same origin as Romance languages. English, however, has its origins in Germanic languages, such as German and Dutch. The diachronic parallel to typology is also known as Philology (James, 1980.)

Figure 1 below[8] shows the similar typologies among the major European languages and how they can be organized according to those similarities:

Figure 1: Language typologies
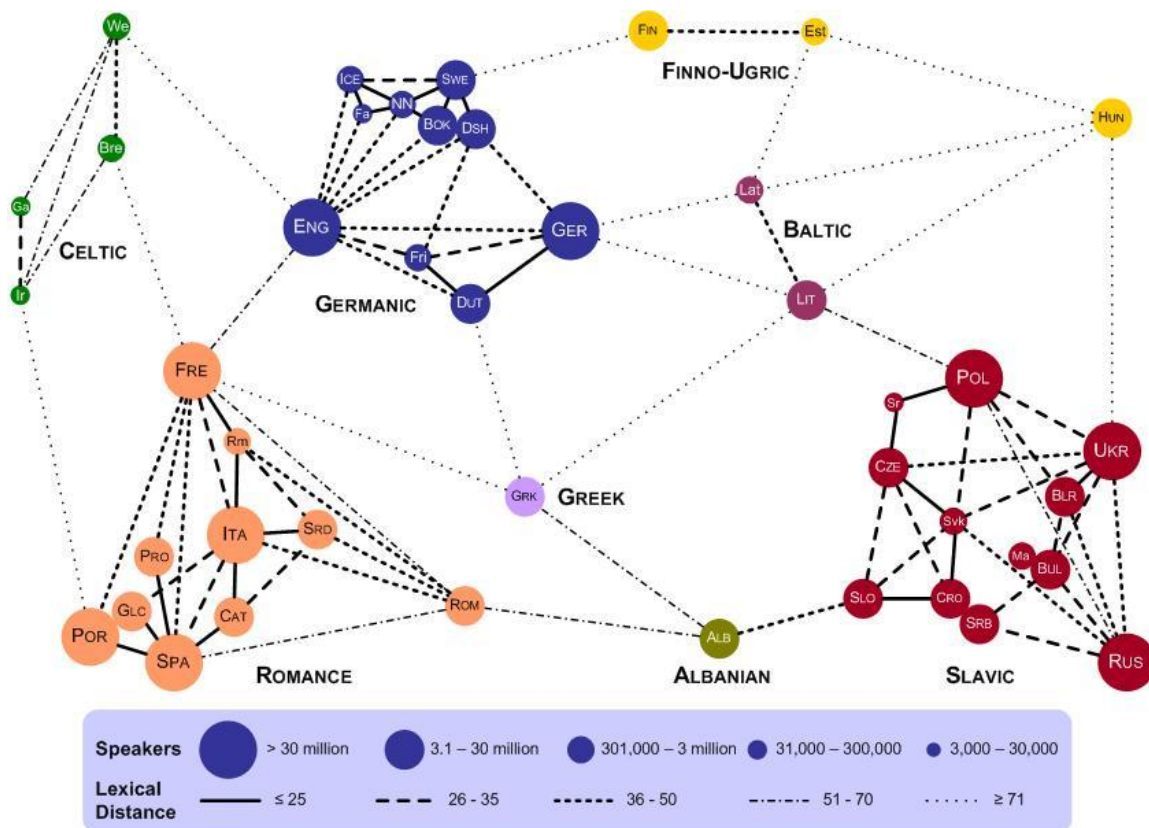
The size of each circle represents the number of speakers for that language. Circles of the same color belong to the same language group. English is a member of the Germanic group (blue) within the Indo-European family, while Spanish and Portuguese belong to the Romance group, what make the two languages clearly closer in terms of structure and vocabulary.

Synchronically, according to James (1980), Linguistic Typology is rooted in Contrastive Linguistics, which views the languages of the world as comparable and classifiable into different types. Linguistic Typology has established a classificatory system for the languages of the world into which individual languages can be grouped according to their present-day grammatical features: synthetic, analytic, inflectional, agglutinating, and tone languages (James, 1980.)

Typology is also related to Language Universals. Croft (2003) states that, by comparing diverse languages and discovering universal grammatical patterns, it is possible to distinguish what is universal from what is peculiar in each of the language grammars analyzed by the linguist. Also according to Croft (2003, p. 340) "the field of linguistic typology explores the diversity of human language in an effort to understand it (…) Typology uses a fundamentally empirical, comparative, and inductive method in the study of language." Real languages of the world are studied and compared in order to find what is universal in terms of grammatical patterns. It is not an abstract (theoretical) grammar of universals, but an empirical field of investigation (Croft, 2003.)

Croft splits the work of the typologist, who aims to find typological similarity or differences, in three steps: first of all, the linguist must examine a sample of languages and infer patterns in their grammars, looking at the range of grammatical diversity; second, phenomena from one language must be identified as comparable with the ones from the other languages in the sample; finally, the typologist must identify a range of grammatical patterns or types used to express the meaning under question, and classify languages according to those types used in them (Croft, 2003).

The typological factor has been studied in Multilingualism, for the possibility of contrasting more than two languages (Cenoz, 1997.) Through a language production task with Spanish and Basque bilingual children learning English as a third language, Cenoz (2003) verified that typology exerted more influence in the instances of language interactions during the narration of a picture story (the same used in the present study). The children's L1 (Spanish) generated more instances of interaction than their L2 (Basque) in the production of English as L3.

The conclusion was that the typological distance between Spanish (L1) and English (L3), both Indo-European languages, favored the cases of language interactions, while Basque, as a non-Indo-European language, interfered less. Cenoz (2001, p. 18) found that "student's awareness of linguistic distance in crosslinguistic influence is confirmed by the fact that they foreignise only terms from Spanish and not from Basque".

Carvalho and Silva (2006) also found evidence for the highest influence of typology in comparison with the foreign language status of the L2 in L3 production. The authors focused on a controlled task: the production of sentences in the present and future subjunctive. In the study, it was observed a higher interference from Spanish instead of English in the production of sentences in Portuguese.

Along with typology, the notion of psychotypology is also relevant in Crosslinguistic Interaction studies. Kellerman (1983) coined the concept of psychotypology to refer to the perception that speakers have about language similarities.

For Rothman and Amaro (2009, p.10), "psychotypology is assessed not at a parameter-to-parameter level, but based on a holistic impression of the two languages' grammatical proximity".

The notions of typology and psychotypology are important in the present study. Besides the structural/typological similarities between Spanish and Portuguese, there are also the similarities perceived by the language learners. In the next section, the second linguistic factor for CLIN is presented.

2.4.1.2 Foreign language or L2 status

Hammarberg (2001, p. 37) defines the L2 status factor as "a desire to suppress L1 as being 'non-foreign' and to rely rather on an orientation towards a prior L2 as a strategy to approach the L3", and also as "the general tendency to activate an earlier secondary language in L3 performance than an L1" (Hammarberg, 2001, p.23.) The author explains the roles of L1 and L2 as instrumental and supplier, respectively.

This division can be traced back to two different stages of the language acquisition process: a) as the L2 was acquired differently from the L1, there would be a reactivation of the

L2 type mechanism in L3 acquisition; b) the L1 would be suppressed for its "non-foreign" status and the learner would rely rather on a prior L2 as a strategy to learn an L3 (Hammarberg, 2001.) This factor is also related to the present study, since the speakers have already acquired two previous languages when started learning the L3.

Sarah Williams and Björn Hammarberg started a longitudinal case study in the 1990's having Sarah herself as the research subject. Sarah was born and raised in England, studied German and French at University and lived for 6 years in Germany where she "acquired near-native German competence" (Hammarberg, 2001, p. 24.) In 1990 Sarah moved to Sweden and, in order to document her evolution in learning Swedish without being in any formal learning environment, such as a language course, the researchers recorded their conversations every two weeks for about two years.

The recordings did not have a specific purpose, that is, the researchers were not looking for a specific linguistic feature. The recordings were compiled into a language corpus "without preconceived notions of any particular aspect of language development" (Hammarberg, 2001, p. 25.) Even without any hypothesis in mind, the researchers soon noticed that the role of the previous languages (English as L1, and German and French both as L2) influenced the oral productions of Swedish as L3. In analyzing the instances of L1 and L2 interaction separately, they noticed that both previous languages played different roles in the initial stages of learning: L1 supported the interaction with pragmatic functions – such as asking for clarification or meanings; the authors called it 'the external instrumental language'. On the other hand, the L2 had the role of a 'supplier' in the construction of new words in the L3. These two different roles show that the nature of crosslinguistic interaction is different in nature. For the authors, the factor that seems to be decisive in favoring German as a supplier language is the L2 status, "the fact that German, as Swedish, is a foreign language" tending to 'win' each time in the competition for activation (Hammarberg, 2001, p. 36-38.)

So, based on Williams and Hammarberg (1998), controlling the speakers' L2 seems to be an important variable to investigate. In this study, the twelve participants were divided in two groups, according to the order of their previous languages: an English-Spanish bilinguals group and a Spanish-English bilinguals group. Using Hammarberg's definitions, it was hypothesized that, because the L2 and L3 have statuses of foreign language, the same type of learning mechanisms will be applied to the L3 in the oral productions. Consequently, the speakers' second

language will generate more interaction with Portuguese, due to the foreign language status of the L2. This notion is present in the second hypothesis: When English is the speakers' second language, it will generate more interaction with Portuguese as L3 due to the foreign language status shared by the L2 and the L3 (Hammarberg, 2001.)

Next, language production models, involving Monolingualism, Bilingualism and Multilingualism are presented. Each model will describe oral language production taking in consideration the number of languages involved.

2.5 From Monolingual to Multilingual language production models

Research on Crosslinguistic Influence in TLA is grounded on Psycholinguistic theories of speech processing and production in monolinguals and bilinguals (Cenoz, Hufeisen, Jessner, 2003.) Models of language production changed over the years to adapt evidence found for crosslinguistic interaction between languages in bilinguals and multilinguals.

Starting at monolingual production, models were extended to bilingual models and, more recently, adapted to include multilingual systems. In this section, some models of language speech production used in language studies are described since the focus of this investigation is on language production and not comprehension.

2.5.1 Monolingual language production model

Speech production's theory attempts to describe the mental processes since its non-linguistic form in the brain, until the final physical action of production of sounds. As stated by Hartsuiker and Pickering (2007, p. 479), "to produce a sentence, a speaker needs to engage in two sets of processes. One set is concerned with retrieving words from the speaker's mental lexicon. The other set places these words in a sentence structure, so that the sentence conforms to the rules of grammar." This means that language production involves both the retrieval of vocabulary (or words) and of grammar rules in the speaker language.

Levelt's model (1989) describes all the steps of monolingual speech production, from mental organization, through word formation and, ultimately, until sound production. At least three kinds of operations are described in "Speaking, from intention to articulation" (Levelt,

1989): conceptualization (thinking of what to say), formulation (finding the words in your language to convey your ideas) and articulation (moving your muscles and produce physically and semantically meaningful perceived sounds). The model encompasses all mental steps of language production in systematic and serial steps, each dependable on the preceding level to advance to the next one, in a serial, feed-forward and incremental process (Traxler, 2012.)

According to Levelt's model, the conceptualizer is the module which structures the ideas being conveyed into a formal grammar. The result of this initial process is passed to the formulator, which has a grammatical encoder and a phonological encoder. The grammatical encoder creates the sentence pattern and the phonological encoder generates the phonetic output (Levelt, 1989.)

Only the formulator has access to the mental lexicon of the speaker, which contains words with lemmas and forms. 'Lemmas' encode the word's meaning and grammar rules and are used by the grammatical encoder. 'Forms' contain the information about the word's morphology and phonology and are used by the phonological encoder. The final stage is the phonetic plan which is delivered by the formulator to the next and final module: the articulator, which turns it into audible speech (Levelt, 1989). De Bot (2004) presents a scheme of the model with all the steps from the conceptualization (communicative intentions) to the final output. The scheme shows clearly how the system is incremental and how it works feeding the next stages with input from the preceding steps. See figure 2:

Figure 2 - Levelt's monolingual speech production model[9]
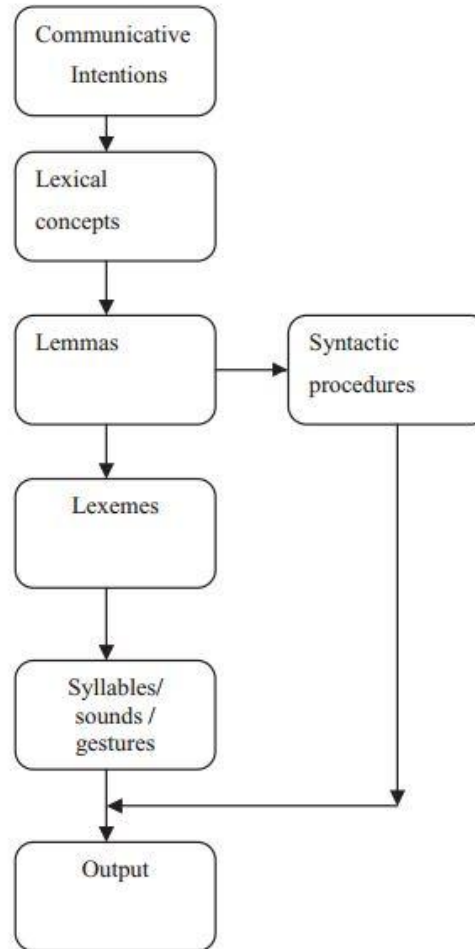
2.5.2 Bilingual language model

De Bot (1992) extended Levelt's monolingual production model to bilinguals' language production. This model also assumes the same modules of Levelt's model (conceptualizer, formulator and articulator). The new feature proposed by De Bot is that the lexicon is shared between the bilingual's two languages. Words would be connected in networks and two separate formulators (one for each language) could interact with each other. The degree of interaction could vary according to linguistic distance and proficiency. Closely related languages would

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[9] De Bot (2004, p. 9) The multilingual lexicon: modeling selection and control

share the formulator, and balanced bilinguals would have a greater degree of separation between languages (Hartsuiker and Pickering, 2007.)

The idea of bilinguals sharing the lexicon is important to highlight since in this thesis we are investigating transfer and crosslinguistic effects. Because the two formulators can interact with each other in the bilingual model, linguistic items from the non-target language can be inserted in the target language formulation and in its articulation, later. As the linguistic distance is one of the controlled variables, it will be possible to see whether English or Spanish (more closely related to Portuguese) will interact highly with Portuguese, the speakers' weakest language.

Below there is an illustration of De Bot's model for bilingual language production. Note that the two conceptualizers are overlapping and that there are also two formulators, one for each language, but the lexicon (made of lemmas and forms as in Levelt's model) is shared between both languages:

Figure 3 – Bilingual language production model[10]

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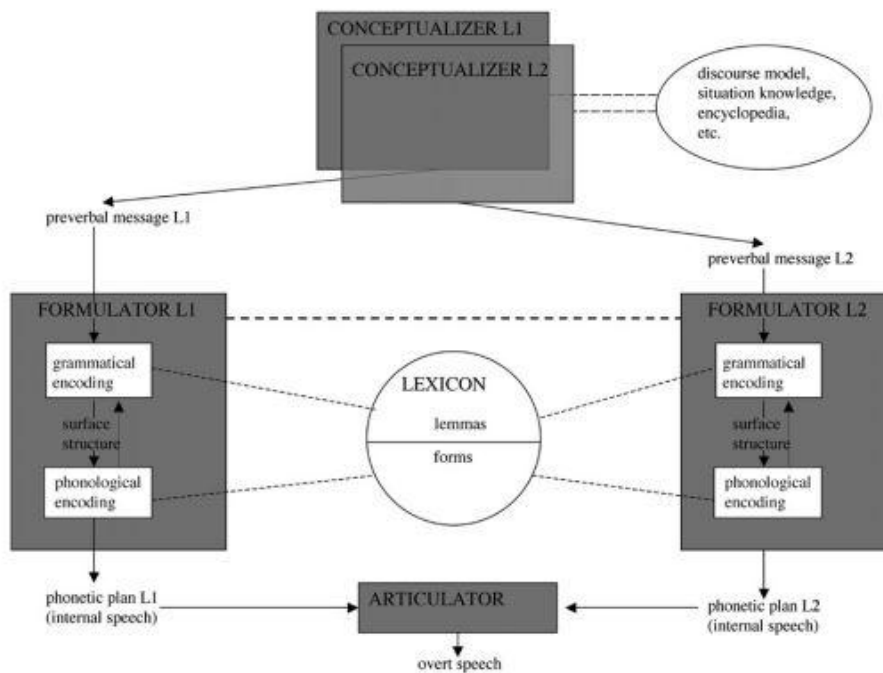
[10] (De Bot, 1992) in Hartsuiker and Pickerman (2007, p. 480)

2.5.3 Multilingual language models

Multilingual language models show the evolution and the ultimate step in language acquisition studies. In this section, this evolution is shows in a model which encompasses SLA and Bilingualism studies, becoming a more complete model to explain the differences in both areas: it is the Dynamic Model of Multilingualism (DMM).

The DMM assumes the holistic approach to Multilingualism as Grosjean (1985) did for Bilingualism. In the DMM, language interaction phenomenon is a significant characteristic of multilingual systems, constituting the primary object of investigation.

The most important assumption of the DMM is the fact that languages are dynamic systems which are able to interact when sharing a same locus and timeframe. Herdina and Jessner (2002) stress the fact that languages are dynamic and a continuous moving in time on the individual level. Language proficiency then is not seen as fixed for all the individual's languages, but more as transient stages and based on individual's differences. Neither the order of acquisition is as immutable as seen in SLA theories. "Multilingual proficiency is, therefore, to be considered as consisting of dynamically interacting linguistic subsystems which themselves do not necessarily represent any kind of constant but are subject to variation" (Herdina and Jessner, 2002, p.75.)

Another important insight of the DMM is the link made with the Dynamic Systems (or Chaos) Theory, which aims at understanding the behavior of living organisms as dynamic systems. Since languages are systems which can be born, change, and die throughout time, they can also be included in the theory of dynamic systems. Even in crosslinguistic interaction phenomenon, in which the language interaction of items might apparently seem chaotic, there seems to be rules and a certain pattern of interaction present. And this is what the present study has attempted to demonstrate.

As stated below:

> A dynamic systems approach makes clear that in this non-linear world which is holistic, everything is interconnected and surface structures can be seen as implicitly correlated to a high degree. This leads to the assumption that there must always be a subtle order present (Herdina and Jessner, 2002, p.84.)

The most appealing idea of the DMM is that it is learner-oriented and it "tries to explain individual differences in language-acquisition" (Herdina and Jessner, 2002, p.75.) The authors refute the notion of a general competence of language but argue for a linguistic competence in one or another of the multilinguals' languages. As we can see, the focus on the learner and on the individual differences in multilingual language acquisition and production are taken into account in this multilingual language model.

Therefore, the DMM model can provide insights for the final analysis and for the explanation of the kinds of language interaction found in the oral production of multilinguals in this study, since the multiple interactions among three languages with different typologies and different statuses are investigated. Also, the apparent chaos will be demystified when patterns involved in the language interactions are unveiled.

SLA research has focused, among other phenomenon, on the language interaction of items from the native into the newly learned language. Bilingualism models have provided great understanding of the interaction between two different languages. However, more research is necessary to account for the complexity of the interactions of three or more languages. The DMM may bridge these gaps and serve as a guide for the investigation of multiple language acquisition and production.

As stated by Jessner (2003):

> We have therefore argued that the interaction phenomena occurring in L3 production should be viewed from a multilingual standpoint and phenomena of language interaction and interference, mostly studied in SLA, and code-switching and borrowing, mostly studied in Bilingualism, should be discussed within a common framework. Such framework could be offered by DMM which focuses in systems in different stages of development, and thus provides a bridge between SLA and Bilingualism research (Jessner, 2003, p.48.)

This evolution of models until the DMM shows how complex the issue of language interaction is. It also provides us a good reason to explore Multilingualism in depth and try to answer the questions related to the interaction of previously acquired languages on a third language still in process of acquisition. Through more investigation it might be possible to better understand the organization of the multilingual lexicon, more specifically, and language acquisition process in general.

2.6 Vocabulary, morphological and syntactic interaction

According to Paradis (2009) verbal capacity includes: 1) *Linguistic competence* in the levels of phonology, morphology, syntax and lexicon; 2) *Metalinguistic knowledge*, which is related to the conscious knowledge of language components; 3) *Pragmatic competence* (the ability to infer meaning from context); and 4) *Motivation* to learn a language.

As already mentioned, one of the goals of the present study is to identify the most common types of crosslinguistic interaction involving languages with different typological distances and order of acquisition (the status as L2). So, in order to narrow the scope of observation, the aspect of verbal capacity chosen to be analyzed here are only three: morphology, syntax and vocabulary competence.

When referring to vocabulary, instead of lexicon (a term frequently used in language acquisition studies) I choose to follow Paradis' indication of the crucial distinction between lexicon and vocabulary. According to the author:

> The distinction between lexicon and vocabulary "was prompted by the need to distinguish between the mere sound-meaning pairings of words, as memorized in traditional second language vocabulary learning, which is a portion of the declarative memory system, and the grammatical properties of words which, independently of their lexical semantic meaning constraints and phonological form, may differ from one language to the next (Paradis, 2009, p. 14).

For Paradis (2009), v*ocabulary* is related to the explicit word-sound-meaning (and word-grapheme-meaning) pairings, which are aspects of language that can be observed consciously. *Lexicon* in its turn refers to the implicit morphological and syntactic properties – subserved by procedural memory and implicit linguistic competence – such as whether a verb is intransitive or transitive. "Words, or the vocabulary, are sustained by the declarative memory. So are their corresponding conceptual representations (usually referred as *semantics*)" (Paradis, 2009, p.21, 22). Here, vocabulary refers to the words used by the speaker, either verbs or nouns. 'Vocabulary interaction' will refer to the use of non-target words (Portuguese) in the oral productions of multilinguals. Therefore, the grammatical interaction will be named as syntactic or morphological and not as 'lexicon' for avoiding confusion.

Examples of morphological interaction can be found in changes of gender marker. For example, when the targets "*a* árvore," and "*a* água," were produced as "*o* árvore" or "*o* água,"

with a masculine gender marker influenced by Spanish, instead of the feminine marker used in Portuguese.

The investigation of morphological language interaction must consider both free and bound morphemes. De Angelis and Selinker (2001) show examples of non-target bound morphemes used with target stems or even target stems combined with non-target bound morphemes in L3 production (Italian target: **aiut**arono; Spanish: **ayud**aron; English: helped; Subject's production: **aiud**arono). De Angelis and Selinker (2001) also mention that the subjects in the research used more Spanish morphemes than English or French when speaking Italian. Spanish is typologically closer to Italian than the other two languages and it was also the subjects' L2.

According to Paradis (2009, p. 16-17) "bound morphemes can be made explicitly known and are automatically processed within implicit competence". Morphemes would be stored in the lexicon and are consequently subserved by procedural memory, differently from the explicit vocabulary, which is stored in the declarative memory. "The implicit grammatical features of the lexicon are not part of the vocabulary.

Examples of syntactic interaction were counted whenever a verb clause was produced according to syntactic rules of Spanish or English. For example, a Spanish syntactic structure would be using a reflexive verb, as in: '*Ele se caiu'* (He fell 'himself') or the verb '*dormir'* (to sleep) as an indirect object, as in *'Ele se vai a dormir'* (He goes 'himself' to sleep). In this example, in Portuguese, the preposition before the verb is not necessary, so those syntactic constructions are not as productive as they are in Spanish. In English, a syntactic structure language interaction would be using a present perfect construction when it would rarely occur in Portuguese for an action done in the past. This example was taken from one participant: '*Eles tem encontrado o sapo'* (They have found the frog).[11]

Examples of vocabulary interaction from English or Spanish into Portuguese are: producing '*perro'* or '*dog'* for '*cachorro'*; or producing 'boy' or *niño'* for '*menino'*. Entire verb forms in English or Spanish will be also considered examples of vocabulary language interaction.

According to Paradis (2009, p.18) "grammatical words tend to be treated as open class words by late L2 speakers who use declarative memory to process the morphosyntactic constructions they have not internalized".

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[11] This was the only example of English syntactic transfer produced by one of the participants.

The higher incidence vocabulary interaction might suggest then that the learners relied on the explicit determinants of language learning when producing the target language (Paradis, 2009). As vocabulary learning is affected by declarative memory in both native and foreign language(s), the same memory mechanisms are used. Paradis (2009) writes that divided attention interferes in the performance of explicit tasks. Thus, for a native speaker, it is not difficult to process different language components (phonological, morphological, and syntactic) during lexical retrieval. However, in L2 processing (here extended to L3), different mechanisms seem to be at work. So, declarative memory is used to compensate for the gaps in L2 implicit linguistic competence.

The use of the declarative memory might explain the preference for using non-target vocabulary in L3 production over morphology and syntactic features. Extending this notion to L3 speakers, verbs would be treated by them as open class words. So producing '*cayó'* for the verb '*caiu'* or using the verb 'be' indiscriminately for both meanings it has in Portuguese (ser/estar) will be considered an item of vocabulary interaction from English, which does not differentiate the two meanings.

2.7 Portuguese as a Third Language

Portuguese is spoken in 8 countries in all continents of the world: Brazil, Portugal, East Timor, Angola, Cape Verde, São Tomé and Príncipe, Mozambique, Guinea-Bissau. It is also spoken in small parts of India (as Goa), and China (as Macau), having a total of 205 million of speakers. Moreover, it is first or heritage language of immigrants in France, Germany, Luxembourg, Canada, United States, Venezuela and South Africa. Portuguese is the fourth language in number of speakers, being the third one in Europe and the sixth in the world rank of languages.[12]

The British newspaper 'The Economist' featured an article in March 2013 stating that Portuguese is the best language if one looks for the best ratio between costs and benefits.[13]

In American Universities, the teaching of Portuguese is increasing over the years. According to Milleret (2012, p.138), in the United States "since 1998, the number of students

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[12] http://observatorio-lp.sapo.pt/pt/dados-estatisticos/as-linguas-mais-faladas/as
[13] http://moreintelligentlife.co.uk/content/ideas/helen-joyce/brazilian-portuguese-best-language

enrolling in Portuguese has grown much faster than in the previous years and it has been greater than overall enrollment growth in all foreign languages combined". Harvard University in Cambridge, Massachusetts, has offered Portuguese courses since 1831. There, students may combine a concentration in Portuguese and Brazilian Studies. The reasons for the increasing of students would be their interest in living and working in Brazil as well as genuine interest for the culture and language.[14]

New Mexico, in the United States, is a bilingual state having English and Spanish as official languages. The University of New Mexico (UNM) offers three basic language programs: Spanish as a Second Language, Spanish as a Heritage Language, and Brazilian Portuguese Studies. The Portuguese program began in the 1940's and it plays a strategic role in the Hispanic serving mission of UNM. [15] The latest UNM census showed a steady growth in enrollment and student credit hours from 2006 to 2010.[16]

There are 3 language courses of Portuguese at UNM, of one semester each. At the beginning level: Portuguese 101 and 275 (intensive); at the intermediate level: Portuguese 276 (intensive) or 277 (for Spanish speakers only); the third level is "Conversation and Pronunciation" and it was the course in which students were recruited. In order to pass to an upper level, students must take tests and oral evaluations, as in any other subject they take at the University. In 2013/1, when data were collected at UNM, there were 16 students in Portuguese III with mixed first and second languages.

So, the English-Spanish and Spanish-English bilingual context at UNM and the large enrollment in Portuguese courses are ideal for a study on Multilingualism. Only third-level students were recruited for this study, for having the proficiency necessary to narrate a story in Portuguese. Any eventual cases of interaction between languages produced by the participants will be the focus of our investigation. A group of beginners would produce tokens of language interaction with previous languages just for its low proficiency and lack of familiarity with Portuguese. And looking at acquisition in the very initial stage is not our objective here.

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[14] http://www.comunidadenews.com/educacao/professora-da-harvard-fala-de-sucesso-do-ensino-do-portugues-na-entidade-8313
[15] http://spanport.unm.edu/
[16] Milleret et al. (2011) Report on "The Portuguese Comprehensive Degree Program & Response To Flagging" (unpublished)

Previous studies in Portuguese as a second and third language point to inconsistent results. Romualdo Jr. (2005), Carvalho and Silva (2006), Silveira (2010)[17] studied the interaction between Spanish, English and Portuguese in production (first two studies: writing, speaking) and comprehension (last study: lexical decision task). The studies used different tasks and controlled for different variables reporting the presence of language interaction between Spanish and English (acquired earlier) and Portuguese (still in process of acquisition) in multilinguals.

Romualdo Jr. (2005) analyzed written productions of Portuguese as a third language in the University of New Mexico and Kansas University-USA. The author categorized Spanish and English grammatical examples of language interaction. Whenever Spanish was the source language of interaction, the author called the instances of interaction and 'facilitative'. However instances of interaction having English as source language were treated as 'negative interference'. In the conclusion, the author pointed to the role of explicit instruction in the language classroom for trilinguals, however, he did not discuss the broader psycholinguistic implications of this study nor any factor that might be possibly acting on the cases of crosslinguistic interaction, such as the typology factor.

Carvalho and Silva (2006), University of Arizona, USA, instead, have discussed their results under a more psycholinguistic view. The authors have found that typological distance played a more important role in language interaction as compared to the status of the L2. In the study, Portuguese as L3 learners produced sentences using the present and future subjunctive. The results showed a positive interaction of Portuguese with Spanish instead of English. However, the authors focused on the production of sentences in verb tenses that are very similar between Spanish and Portuguese, and this might explain the great amount of language interaction. Both Romualdo Jr (2005) and Carvalho and Silva (2006) pointed to a higher influence of typology in the interactions between the three languages. However, the latter did not control for the order of acquisition of languages as the former did.

Rothman (2010) and Rothman and Amaro (2009) also investigated the role of typology and psychotypology and the L2 status on the L3 learning of syntax. Through a more generative view of language, the authors also found a higher influence of typology for motivating language

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[17] Paper presented at the American Council of Teachers of Foreign Languages Conference (ACTFL), in Boston, MA. 2010

interaction. With the evidence found, the author created the Typological Primacy Model for multilingual language interaction.

Silveira (2010)[18] studied lexical language interaction from Spanish speakers who were studying Portuguese as a third language at UNM. The author found negative influence of Spanish cognates in the recognition of Portuguese words in a semantic priming task. The study showed that the similarity in word forms slowed the responses for Spanish speakers. Although the participants were English and Spanish bilinguals, English status was not controlled. Therefore, the author did not discuss the influence that the knowledge of both English and Spanish might exert on the learning of Portuguese. The study cannot contribute to explain language interaction in multilinguals.

Because Portuguese is gaining visibility as an international language more people are studying it as an additional language, especially if they are speakers of Spanish. So, more studies involving Portuguese as a third language, especially in a bilingual and multilingual context are important in the fields of Linguistics and Psycholinguistics.

The present study differs in its approach to the oral capacity of the multilingual speakers. Other studies have not used more free language production tasks, such as a narrative of a story. It also used quantitative and qualitative measures of analysis for finding the patterns of interaction among three different languages. As discussed above, other studies dealt with the typological factor, however they did not put into question the foreign language status of the L2 as a possible factor for language interaction involving languages with different typologies, such as English and Portuguese. The comparison between two groups, even with a small number of participants, was also innovative and necessary for validating only one of the two hypotheses, since they were mutually exclusive.

In the next section, the method of the study, the material and procedures for data collection, the participants and the procedures for the analysis are explained.

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[18] Paper presented at the American Council of Teachers of Foreign Languages Conference (ACTFL), in Boston, MA. 2010

3 METHOD

In this section, the method of the experiment is described. Information about the materials used (attached in the appendix), the procedures of data collection, the participants' profile along with their language history is displayed in text and charts. Next, the procedures for data analysis bring the statistic tests that were run and the variables under control. Finally, the criteria for vocabulary, syntax and morphology classification of tokens is presented.

3.1 Materials and Procedures of Data Collection

For the data collection, participants narrated the picture story "Frog, where are you?" by Mercer Mayer (1969). The story has been used in a number of psycholinguistic, Bilingualism and Multilingualism studies with children (Reilly et al, 2004; Cenoz, 2003; Cameron and Wang, 1999), adults (Toassi, 2012; Colle et al, 2008; Olshtain and Barzilay, 1991), and in sign language studies (Emmorey, 2008). The images served as a prompt for the participants' narration. They would browse the pages of the book and narrate what they saw in words in Portuguese. The images were not shown in advance for not preparing the subjects for what they would see. This way, the narration could not be rehearsed or words looked up in the dictionary. A full copy of the picture story is attached in the appendices section.

The procedure for obtaining the consent form, the language background questionnaire and the recordings were carried out individually, in the presence of the researcher only, in a private room at the Language Learning Center at UNM. The first step was to explain the steps of the data collection and how it would be carried out. When the participants agreed with the procedures, they signed an informed consent form approved by the University's Human Research Protection Office. The informed consent is attached in the appendices section.

After the consent form was signed, the next step was to hold an informal conversation in Portuguese. The topics ranged from ordinary topics, such as classes, work, habitual activities, and plans for the weekend. According to Grosjean (1985, 1998), it is important to assure that participants have the target language activated before data collection takes place. The language mode is "the state of activation of the bilingual's languages and language processing mechanisms

at a given point in time" (Grosjean, 2008, p. 39.) So, the conversation served as a warm up activity. The goal was to provide participants with a chance to talk freely and to activate the use of the Portuguese language. This is important for not favoring the language interaction from any of the participants' other languages during the L3 production. Eliciting the use of the target language may help to avoid crosslinguistic interaction caused simply by the lack of recent use of the language, what could mislead the final results (Grosjean, 1998). However, in the environment of the data collection, it was not possible to find a monolingual speaker of Portuguese to carry on the experiment. So, it is not possible to say that the language mode of the subjects was a controlled variable.

After the warm-up conversation in Portuguese, participants filled out the Language Experience And Proficiency Questionnaire (LEAP-Q) (Marian, Blumenfeld, and Kaushanskaya, 2007). The test is a measure of "bilingual language status with predictable relationships between self-reported and behavioral measures" (p.940). The questionnaire has versions in different languages, including English and Spanish. Participants were allowed to choose the language version of the questionnaire. The two versions are attached in the appendices section. The questionnaire asks personal information such as age, gender, date of birth and immigration (if that applies), and language knowledge and frequency of use. For confidentiality issues, names were not included in the questionnaire. Instead, a number from 1 to 12 was assigned to each participant and to the subsequent oral recordings and transcripts.

In the present study, the participants self-rated their amount of exposition and use in the three languages. Based on the greater complexity of Multilingualism, Herdina and Jessner (2002) define proficiency as the consistent outcome of the speaker's knowledge of how to use a language. However, they stress that in multilinguals, proficiency is more difficult to define by the fact that the individual language systems interact to produce the systematic deviation of the multiple language systems. The authors conclude by stating that "we must therefore assume that multilingual proficiency observes its own unique principles presented by factors unique to Multilingualism" (Herdina and Jessner, 2002, p. 57). Therefore, in the present study, the level of proficiency, in any of the three languages, was neither controlled as a variable nor tested directly. But it was inferred from the amount of language exposition expressed in the LEAP-Q and from the amount of language instruction in Portuguese all have had up to the day of data collection, which was a minimum of 100 hours or two previous semesters of class.

After the questionnaire signing, the narratives were recorded. The participants individually narrated the picture story in Portuguese. The narratives were produced orally and lasted between five and twenty minutes, depending on each participant. The software Audacity®[19] was used for the recordings. Subjects spoke using a headphone with a microphone connected to the researcher's personal computer. Participants would hit the record button and state the same number assigned to them in the LEAP-Questionnaire into the microphone as soon as they felt ready to start.

The story contains pictures only and the goal was to prompt the use of similar words from participants, but variability in speech production, especially in multilinguals, is to be expected. Because the occasional language shift was important for the study, participants were informed that they should not stop, delete or restart the narration. Therefore, the recordings represent the entire narration by the participant, without any deletions.

The next step was to transcribe all the voice recordings. The recordings were transcribed using a Word® processor file. The transcripts were identified by the participant number assigned to them. All the transcripts are attached at the end of this thesis. In the next section, the participants are described.

3.2 Participants

The study included twelve participants, seven female; their ages ranged from 20 to 34 years old (mean= 25.08; standard deviation= 4.27). There were six trilingual speakers of English-Spanish-Portuguese (participants 1 to 6: group 1) and six trilingual speakers of Spanish-English-Portuguese (participants 7 to 12: group 2). All participants were students of Portuguese as a foreign language enrolled in third level courses at the University of New Mexico, in the United States. Students had at least 100 hours of language instruction in Portuguese (which amounts to two semesters) and studied Portuguese in a classroom environment, with Brazilian instructors. They also had contact with Brazilian Portuguese speakers outside classroom in extracurricular activities.

Table 1 shows participants' age, gender, and exposure to the L1, L2 and L3. The exposure to each of the three languages, Spanish, English and Portuguese, was self-rated by each

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[19] Available for free download at: http://audacity.sourceforge.net/?lang=pt

participant in the LEAP-Q. Subjects 1 to 6 stated that English was their first language in order of acquisition and that it was the strongest language in terms of dominance. Subjects 7 to 12 declared Spanish to be their L1 in terms of acquisition and dominance. Also, that the L3 Portuguese was the weakest in terms of proficiency and exposition for all the participants.

Participants also rated the average exposition of the three languages in percentage: for the L1 the average exposition of all participants was of 58%; for the L2, it was of 29%; and in the L3, of 13%.

Table 1 – Participants' profile

Subject	Age	Gender	L1 acquisition	L1 dominance	L2 dominance	L3	L1 % exposition	L2 % exposition	L3 % exposition
1	34	female	English	English	Spanish	Portuguese	85	5	10
2	23	female	English	English	Spanish	Portuguese	50	25	25
3	23	male	English	English	Spanish	Portuguese	85	10	5
4	26	female	English	English	Spanish	Portuguese	90	2	8
5	31	female	English	English	Spanish	Portuguese	70	25	5
6	24	female	English	English	Spanish	Portuguese	80	4	16
7	29	female	Spanish	Spanish	English	Portuguese	20	70	10
8	24	male	Spanish	Spanish	English	Portuguese	55	35	10
9	20	female	Spanish	Spanish	English	Portuguese	40	40	20
10	21	male	Spanish	Spanish	English	Portuguese	40	45	15
11	21	male	Spanish	Spanish	English	Portuguese	40	40	20
12	25	male	Spanish	Spanish	English	Portuguese	35	50	15
AVERAGE	25						58%	29%	13%

In group 1, the English-Spanish bilinguals (subjects 1 and 5) were teachers of Spanish and were taking their Ph.D. in Spanish Literature or Linguistics. Subjects 2, 4, 5, and 6 have already lived and studied in Spanish speaking countries. Also, all had Spanish speakers as classmates at the University in the Portuguese classes they were enrolled. The only exception was subject 3 who acquired as a child a variety of Spanish known as New Mexican Spanish, which is marked by code switching from and into English. We will see later that this subject's production differed from the rest of the group.

In group 2, the Spanish-English bilinguals, all subjects were immigrants from Spanish speaking countries who now live in the United States. Table 2, summarizes information about the subjects' L2. Only subjects 7 and 8 did not move with their Spanish speaking families to the U.S.

Table 2 – Information about the subjects' second language in group 2

Subject	Began acquiring English as L2	Became fluent in English as L2	Years in the U.S.A
7	13*	17	9
8	7**	10	5
9	10	15	8
10	6	9	15
11	10	12	12
12	17	19	8

*Participant 7 began acquiring English in her home country before moving to the U.S.
**Participant 8 lived in the U.S. for different periods. The first time was at the age of 7 when he started learning English there.

Table 2 reveals the heterogeneity of group 2. The age of acquisition of the L1 varied among the participants, however, most of them have acquired English as L2 in puberty, except for subjects 8 and 10 who moved to the USA at the ages of 7 and 6 respectively.

Four participants were excluded from the study. Two participants were eliminated for declaring Spanish as the first language acquired but the weakest in dominance. One participant was excluded for declaring languages other than English or Spanish as L2. Another participant was excluded for declaring Portuguese as L2 and not L3.

3.3 Procedures for data analysis

For the data analysis the variables 'language typology' and 'foreign language/L2 status' were used. When dividing the participants in two groups according to their first language, it became possible to test which language would be the main source of language interactions: the L1 or the L2. The factor linguistic typology would be significant if Spanish would be the main source of language interaction.

In order to analyze the data quantitatively, the instances of language interaction were counted individually, added and categorized as 'vocabulary' or 'grammar' types (morphological

or syntactic). Tables with the categorization of the cases of language interaction for each subject are attached in the appendix section. Tables with the amounts of language interaction in percentage for each subject (for the average, vocabulary, morphological and syntactic language interaction) were built separately and are displayed in the results section.

The statistic test performed was the T-test. It was used with the help of the Mathematics School at the Pontifical Catholic University of Rio Grande do Sul. This test is used to compare means of values in two different samples with variable amounts in each. As the number of language interactions varied highly among subjects (see table 3 in the next section), the T-test seemed to be the most suitable for this specific sample. There are surely other statistic tests to be performed. However, as the sample was quite limited in terms of subjects, the T-test seemed the most appropriate initially.

A first analysis merging the two groups and comparing only the types of language interaction was run with the data for identifying whether one of the source languages was pointing to a higher amount of language interaction. A second test was performed to verify which language feature would be highly transferred: morphology, syntax, vocabulary (and an average of all), and from which source language, English or Spanish. Whenever the p-value is close to 0.005, it means that the test showed significance for the variable tested. Also, the highest the difference between the two means tested, the most significant that variable is.

In the next chapter, the results are presented with the discussion. We are aware that our sample is reduced and that it shows great variability. We understand this limitation as a drawback of the study, but we also emphasize that this is part of the idiosyncrasies of such specific multilingual population circumscribed to one region, in this case, the University of New Mexico in Albuquerque, United States.

4 RESULTS AND DISCUSSION

The goal of the study was to investigate crosslinguistic interaction in oral production of trilinguals. The occurrence of language interaction involved vocabulary, morphological and syntactic tokens. The use of English or Spanish vocabulary, morphemes (gender and verb inflection), and syntactic constructions by English-Spanish and Spanish-English bilinguals while speaking Portuguese were the object of investigation.

The results show that the amount of words produced varied greatly among the subjects, and so did the amount of language interaction. The ratio (percentage) of language interaction per words produced also showed variability among subjects. Individual differences and variability among multilingual individuals is to be expected in Multilingualism as predicted by the Dynamic Model of Multilingualism (Herdina and Jessner, 2002). Table 3 shows the amount of language interaction and the total amount of words produced by all the 12 subjects in both groups: group 1 is the English-Spanish bilinguals; group 2 is the Spanish-English bilinguals.

Table 3 – Ratio of occurrences of language interaction and total words produced

Group	Participant	Tokens	Words	Tokens/Words
1	1	45	645	7%
1	2	28	728	4%
1	3	123	433	28%
1	4	41	322	13%
1	5	124	860	14%
1	6	65	1113	6%
2	7	16	536	3%
2	8	72	786	9%
2	9	56	969	6%
2	10	18	259	7%
2	11	130	1041	12%
2	12	29	374	8%

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

In the ratio amount of language interaction per words produced, the highest amount of language interaction occurred in group 1, the English-Spanish bilinguals (Subject 3). The lowest figures were in group 2, the Spanish-English bilinguals (Subject 7 produced only 3%). Subject 11 from group 2 showed the highest amount of language interaction per words produced (12%), but it was lower than the amounts seen in group 1.

A t-test was performed for the comparison between English and Spanish language interaction according to the types of language interaction (average of all, morphological, syntactic and of vocabulary) pairing the two groups. The chart shows which type of language interaction would show higher significance independently of the L2 status. The results do not show high difference between the types, only that Spanish vocabulary interaction seems to be the one pointing to a tendency of language interaction with Portuguese (*p* value 0.078). Even though it is not a statistically significant result, it suggests a trend in vocabulary interaction that may be confirmed by an investigation of a larger sample of participants.

Table 4 – Statistical analysis of all types of interaction and source languages

Type of language interaction	Spanish language interaction *p* value	English language interaction *p* value
Average	0.225	0.225
Morphological	0.974	-*
Syntactic	0.396	0.363
Vocabulary	0.078	0.245

There were no significant differences in the types of language interaction.
*the *p* value cannot be computed because none of the groups produced English morphological language interaction.

4.1 Average of language interaction

The average of language interaction shows that Spanish was the main source of language interaction in the two groups; the exception is Subject 3 in group 1, who produced more language interaction from English (30%). Figures in percentages are shown in Table 5.

Table 5 – Average of all instances of interaction per source language of transfer

Group	Participant	Spanish	English
1	1	31%	2%
1	2	33%	0%
1	3	4%	30%
1	4	33%	1%
1	5	33%	0%
1	6	21%	12%
2	7	31%	2%
2	8	32%	1%
2	9	33%	0%
2	10	31%	2%
2	11	33%	0%
2	12	33%	0%

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

Statistical analysis of the average of the total of language interaction showed significance for Spanish as a source language of interaction in group 2, the Spanish-English bilinguals (p = 0.000)[20]. The mean Spanish language interaction was considerably high in comparison with the mean English language interaction (32.52 and 0.81 respectively). The results corroborate the first hypothesis, that there would be more cases of language interaction having Spanish as source language in all subjects. In this sense, language typology seems to override L2 status as a favoring factor for language interaction. Thus, the speakers' L2 in group 1 (English) was not the main source of language interaction.

Table 6 - Statistic analysis of average of all instances of interaction

Type of language interaction	Group	N	Mean Spanish Language interaction	Standard deviation (sd)	Mean English Language interaction	Standard deviation (sd)	*p* value
Average	01	6	25.85	11.78	7.48	11.78	0.114
	02	6	32.52	0.97	0.81	0.97	0.000*

 * Significant for p < 0.05

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

4.2 Morphological interaction

The amount of Spanish language interaction was more significant than for English language interaction. This result also seems to favor the typology factor over the L2 status, probably because of the structural similarity between Spanish and Portuguese, if compared to English. Table 7 shows figures in percentage. Subject 3 did not produce any morphological interaction.

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[20] A *p* value < 0.05 was considered significant for the paired t test.

Table 7 – Morphological interaction in percentage

Group	Subject	Spanish	English
1	1	27%	0%
1	2	36%	0%
1	3	0%	0%
1	4	12%	0%
1	5	10%	0%
1	6	15%	0%
2	7	13%	0%
2	8	19%	0%
2	9	4%	0%
2	10	17%	0%
2	11	5%	0%
2	12	41%	0%

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

English morphological language interaction did not occur in any of the groups. Thus, the results of the statistical analysis show higher significance for Spanish language interaction. So, it might be possible that Spanish favored the morphological interaction with Portuguese, but its status as L1 or L2 may have no effect on language interaction.

Table 8 – Statistical analysis of morphological interactions

Type of language interaction	Group	N	Mean Spanish Language interaction	Standard deviation (sd)	Mean English Language interaction	Standard deviation (sd)	p value
Morphological	01	6	16.74	12.65	0.00	0.00	0.023*
	02	6	16.49	13.67	0.00	0.00	0.032*

* Significant por $p < 0.05$

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

The highest incidence of Spanish morphology in Portuguese speech production suggests that similar language typology favors CLIN. Spanish is more typologically similar to Portuguese; thus, when speakers need to generate a verb form or identify the gender of a noun they tend to search for a Spanish linguistic form in the lexicon more often than they would for an English form.

In the language production, there are many examples of bound morpheme language interaction:

Subject 1:

Target: Port.: sa*indo*; Spanish: sali*endo*; English: going out; Production: S*aiendo*

Target: Port.: sa*iu*; Spanish: sa*lió*; English; (he) went out; Production: sa*ió*

Subject 4:

Target: Port: perceb*eram*; Spanish: no equivalent verb form; English: (they) realized; Production: percib*ieron.*

Target: Port.: diss*eram*; Spanish: dij*eron*; English (they) said; Production: diss*ieron.*

For the production of 'percibieron', the subject joined the free morpheme '*perceb-*' from the verb *perceber*, which is exclusively found in Portuguese and linked it to the bound morpheme 'ieron' used in Spanish verbs ending in –er as *vendieron*, *corrieron*, etc.

Interestingly, in the production of 'dissieron' the Portuguese free morpheme 'diss-' was connected with the bound morpheme –ieron, a morpheme used in verbs ending in –er (as in the Portuguese target verb and not with a bound morpheme for verbs ending in –ir as the Spanish equivalent 'decir').

Subject 9

Target: Port.: sa*iu*; Spanish: sa*lió*; English; (he) went out; Production: sa*ió*

Target: Port: saíram; Spanish: salieron; English: (they) went out; Production: saieram

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4.3 Syntactic interaction

The results show that there was more syntactic interaction from Spanish into Portuguese. Only subject 1 showed a relative high rate of language interaction (20%). English language interaction occurred with Subject 4, and in one single example that was twice produced during the narrative. There were no significant occurrences of syntactic interaction within the groups ($p > 0.05$).

Table 9 - Syntactic interaction in percentage

Group	Subject	Spanish	English
1	1	20%	4%
1	2	0%	0%
1	3	0%	0%
1	4	10%	0%
1	5	2%	0%
1	6	0%	0%
2	7	0%	0%
2	8	0%	0%
2	9	5%	0%
2	10	0%	0%
2	11	7%	0%
2	12	0%	0%

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

Table 10 – Statistical analysis of syntactic interactions

Type of language interaction	Group	N	Mean Spanish Language interaction	Standard deviation (sd)	Mean English Language interaction	Standard deviation (sd)	*p* value
Syntactic	01	6	05.23	8.17	0.74	1.81	0.158
	02	6	02.05	3.21	0.00	0.00	0.179

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

The following are examples of syntactic interaction for subjects 1, 4, 5, 9 and 11.

Subject 1 - Spanish interaction:

O cachorro *se vai* dormir.

O cachorro *se cayó*.

(Ele) sai para fora *a abraçar* o menino.

O animal *se levanta* o menino.

Ele *se cai*.

Subject 1 - English language interaction:

Eles *tem encontrado* o sapo.

Subject 4

Se cayó

Se subió

Se cayerón

Subject 5

Se caem

O menino *se* lastimou a nariz.

Subject 9

O menino e o cachorro *vão a* dormir.

O cachorro *se* cai da janela.

Subject 11

Eles *se van a* dormir.

O menino e o cachorro *se van a* dormir.

A sapo *ha escapado*.

E *se* cayó a casa das abelhas.

E menino *se* sube arriba da pedra.

Nunca *havera visto* tantos sapos.

The examples of Spanish interaction are mainly of verbs followed by reflexive pronoun 'se' as it is frequent in Spanish clauses (El hombre *se murió)* or by the preposition 'a' (Ellos se van *a casar).*

The examples a) Nunca *havera visto;* and b) (A sapo) *ha escapado* were produced using Spanish composed verb forms: a) hubiera visto; b) ha escapado.

The single example in English produced by subject 1 is apparently a translation of an English clause in the present perfect tense into Portuguese: They have found the frog (Eles *tem encontrado* o sapo). In Portuguese, the same sentence would be produced in the simple past tense only (They found the frog/Eles *encontraram* o sapo).

4.4 Vocabulary interaction

Vocabulary interaction was the most frequent in the sample. The figures in percentage clearly show the difference between Spanish and English language interaction in both groups. Subject 3 was the only who showed higher interaction of more items from English than from Spanish (89%). The narrative produced by the subject differed from the rest of the subjects: it was mostly done in English. This subject seems to be code-switching more often than simply transferring random items.

One possible explanation is that, for Subject 3, code-switching from English into Spanish (and vice-versa) is quite the rule instead of the exception. It is possible the participant carried over this behavior to the interaction with another language.

Table 11 - Vocabulary interaction in percentage

Group	Subject	Spanish	English
1	1	47%	2%
1	2	64%	0%
1	3	11%	89%
1	4	76%	2%
1	5	88%	0%
1	6	48%	37%
2	7	81%	6%
2	8	78%	3%
2	9	91%	0%
2	10	78%	6%
2	11	88%	0%
2	12	59%	0%

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

The results show that groups 1 and 2 presented a high significance for language interaction in group 2 – the Spanish-English bilinguals – (p value = 0.000). The mean Spanish language interaction is considerably higher when compared with the mean English language interaction (79.03 and 2.43 respectively) in this group. Group 1 also presented a high difference between Spanish and English mean language interaction, but the p value was not significant (0.229).

Table 12 – Statistical analysis of vocabulary interaction

Type of language interaction	Group	N	Mean Spanish Language interaction	Standard deviation (sd)	Mean English Language interaction	Standard deviation (sd)	*p* value
Vocabulary	01	6	55.59	26.89	21.70	35.78	0.229
	02	6	79.03	11.35	2.43	2.90	0.000

Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

Table 13 presents all types of language interaction and their averages for the contrast between group 1 and group 2. It is clear that vocabulary interaction shows the highest rates, especially in group 2, the Spanish-English bilinguals. In this group, L1 Spanish was the preferred source of language interactions and not the L2 English, showing that typology overrides the foreign language status of the L2.

Table 13 – Types of transfer and source language in contrast
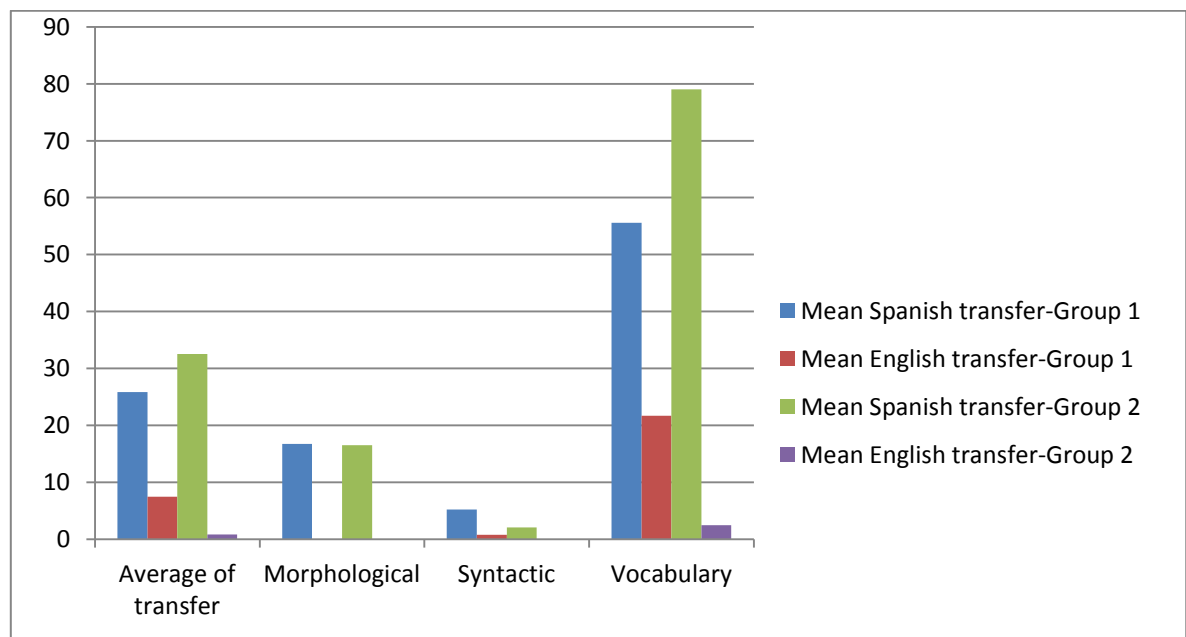
Group 1: English-Spanish bilinguals
Group 2: Spanish-English bilinguals

The possible explanation to the highest rate of language interaction of Spanish items instead of English in both groups is possibly that, again, language typology has influenced the high interaction of Spanish items with Portuguese.

Either the structural and semantic similarities of Spanish and Portuguese words or the speakers' perception of those similarities may be the reason for more language interactions from Spanish than English in both groups. This result again, corroborates our first hypothesis: H1) There was more language interaction from Spanish than English in all subjects.

Hypothesis 2 was partially confirmed: the speakers' second language did generate more language interaction into Portuguese but only when their second language was Spanish. But this may be, again, due to the typology factor, and not to the L2 status of Spanish as a foreign language as Portuguese.

It is necessary to take into account the limited number of subjects (6 in each group) and the great variability of language production in the sample (evidenced by the high standard deviation). The number of subjects who had the profile necessary for this study was limited, so the results must be restricted to the universe of the sample. A larger sample would be necessary for more consistent results.

Besides, other studies should be done, this time involving monolingual speakers of English and Spanish learning Portuguese as their L2. If a higher amount of interaction could be verified in the Spanish speakers group, then the typology factor would find more corroboration. Of course, in case of no previous L2, the foreign status of the L2 could not be tested. Perhaps, a study involving different L2, with varied language structures would be more elucidative (as with Chinese, for example). Unfortunately, such a public was not available at the time of the development of this study.

5 CONCLUSION

This thesis addressed crosslinguistic interactions between three languages: English, Spanish and Portuguese. The participants were Spanish-English and English-Spanish bilinguals who were learning Portuguese as a third language. They were divided in two groups according to the first language acquired.

The factors which seem to play a role in the language interactions of multilinguals are the typological distance between the languages involved and the foreign language status shared between the L2 and the L3.

Models of bilingual and multilingual language production have attempted to explain the competition for activation between words in the bilinguals and multilinguals mental lexicon (De bot, 1992; Herdina and Jessner, 2002.). However, research with multilinguals using oral language production in a less controlled task is still incipient.

Portuguese has provided good reasons to be studied: it is a Romance language as Spanish, it has a vast number of speakers as L1 and it is growing slowly but steadily as an international language, being learned as an additional language, especially in the United States. Language interaction has been extensively studied in multilingualism research, but it is important to include varied languages in multilingualism studies, and relating them to well-studied ones, such as English and Spanish.

For this study, two research questions were asked:

1) What is the influence of two previously acquired languages (English and Spanish) on the vocabulary, morphology and syntax of a third language still in process of acquisition (Portuguese)?

2) Which factors exert more influence in third language oral production: typological distance or the order of acquisition of previous languages?

A first analysis merging the two groups and comparing only the types of language interaction pointed to a tendency of Spanish vocabulary interaction (0.078). This result cannot be taken as categorical, though. However, it was much closer to the significance boundary (0.05).

Analyses contrasting the two groups of multilinguals in relation to the types of language interaction also show that Spanish vocabulary interaction in group 2 (the Spanish-English bilinguals) showed the highest significance inside the sample (0.000). Morphological interaction

from Spanish was also significant, mainly because there was not any English morphological interaction for comparison between the two groups. Syntactic interaction did not show significance inside the sample. Finally, the average of the total of language interaction in the three types researched showed highest significance for Spanish language interaction in group 2.

Therefore, the data shows that Spanish has influenced more the language productions of the English-Spanish-Portuguese multilinguals speaking in Portuguese. Both the average of language interaction and the instances of vocabulary interaction point to group 2 (the Spanish-English bilinguals) as the most significant one for the interaction of items from Spanish with Portuguese.

The two mutually exclusive hypotheses proposed for the study were:

1) There would be more language interaction from Spanish than English due to the closest typological distance with Portuguese, if compared to English;

2 When English is the speakers' second language (as in group 2), it will generate more instances of language interaction to Portuguese as L3 due to the same foreign language status shared by the L2 and the L3 (Hammarberg, 2001).

Only the first hypothesis was confirmed:

- There was more language interaction from Spanish than English among all subjects.

Hypothesis 2 found partial corroboration in the data: the speakers' second language did generate more language interaction into Portuguese but only when their second language was Spanish, what again makes the typology factor override the foreign language status of the L2. The results follow Carvalho and Silva (2006) and Rothman (2010) who also found the supremacy of the typological factor over the L2 status. So, the typology factor seems to play a more important role in the types of interaction found in the multilingual oral production. When the L2 Spanish also played a role, being a preferable source of language interaction (as in the morphological interaction found in group 1), it coincided with Spanish closest typological distance in relation to Portuguese. Vocabulary interaction occurred more frequently than grammatical interaction. English as L2 did not show significance in the exchanging of items with Portuguese.

Looking at the language features separately, it is possible to see that vocabulary was highly interactive. Syntactic interaction did not show significance inside the sample and morphological items were only sought in Spanish, not in English.

Multilingualism stresses the complexity of linguistic interaction phenomenon, setting it apart from Second Language Acquisition and Bilingualism research. Because of the new approach to investigate the kinds of interaction among more than two languages, Multilingualism has gained more attention recently. However, more research is still necessary to investigate the interaction of multiple languages and its organization in the mind.

The present study attempted to investigate which factors would motivate cross-language interaction in multilinguals with two more balanced background languages learning a third one. However, because of the limited sample, some conclusions might not be extrapolated.

Therefore, in future research, it would be recommended that a bigger population is researched and that other factors are examined for better understanding cross-language interaction in multilinguals. Also, other statistical tests could be performed in order to have more accurate results. Some of the factors that should be better investigated in future research are: the role of proficiency in the amount of cross-language interaction, the role of implicit and explicit instruction of additional languages in multilinguals.

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APPENDICES

APPENDIX A: *Frog, where are you?* (MAYER, 1969)
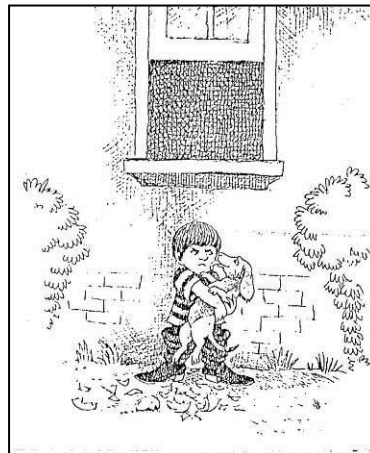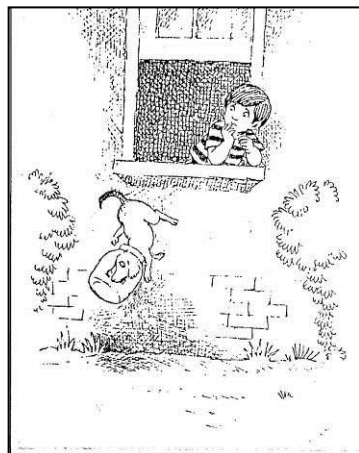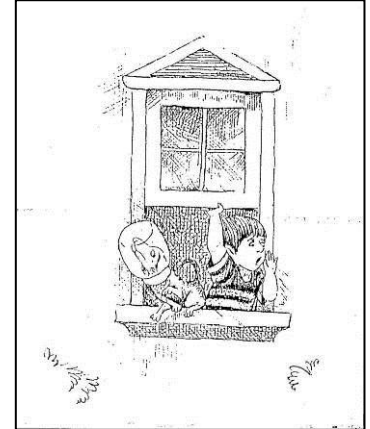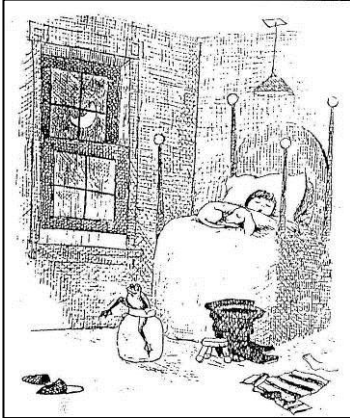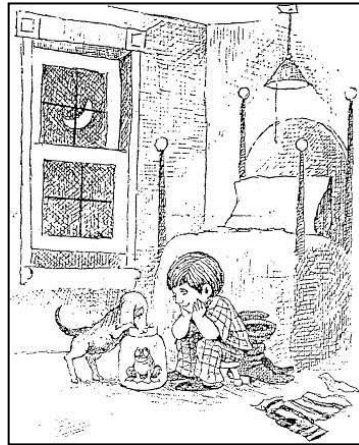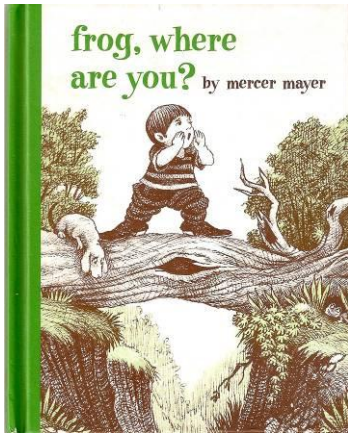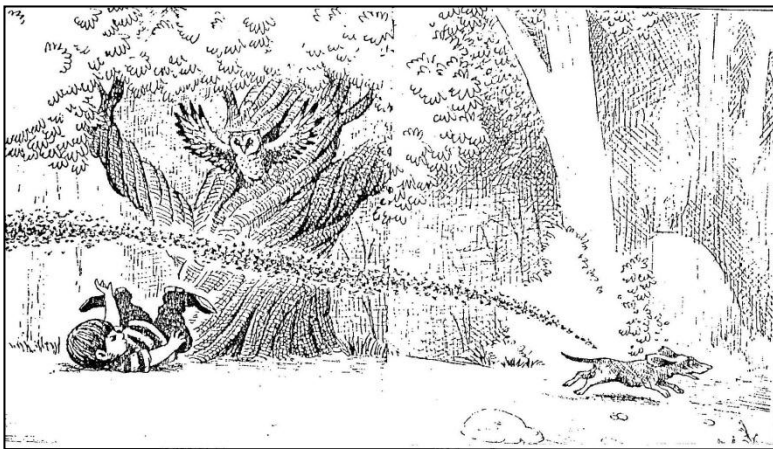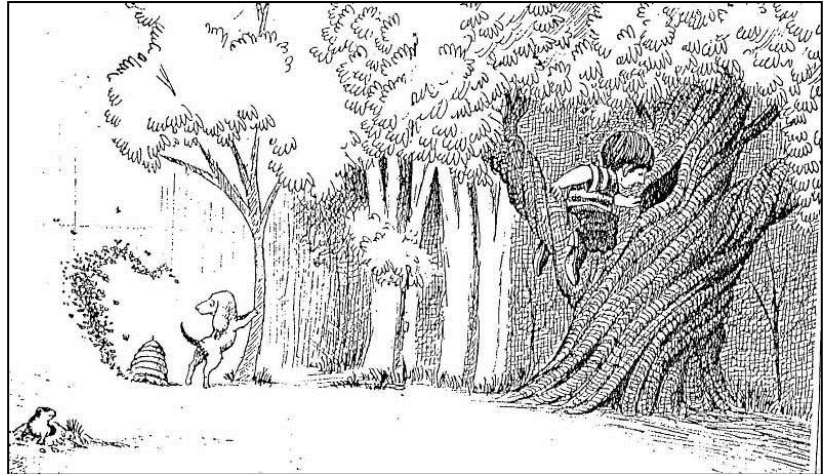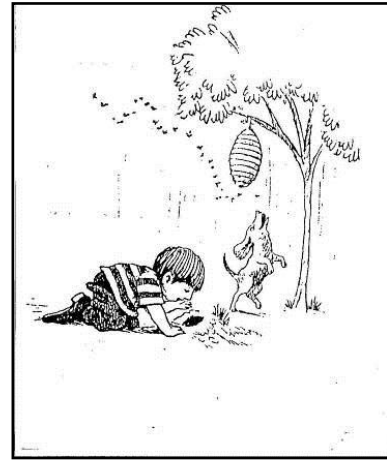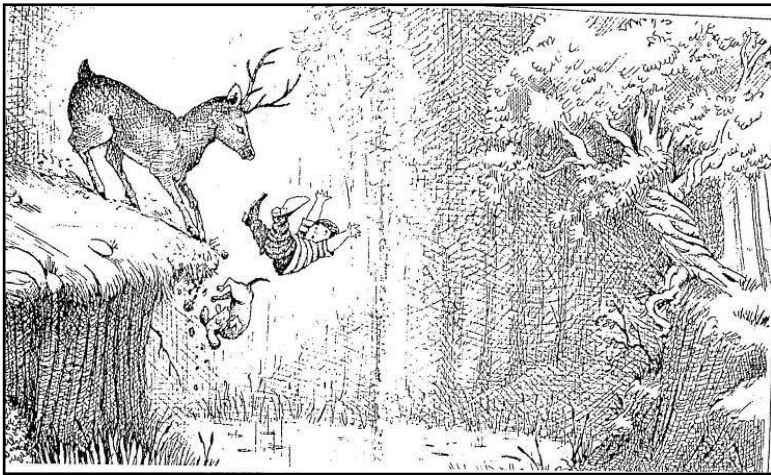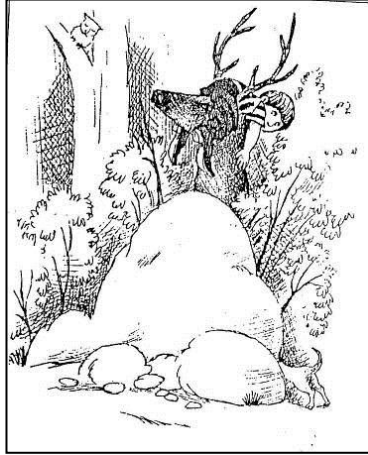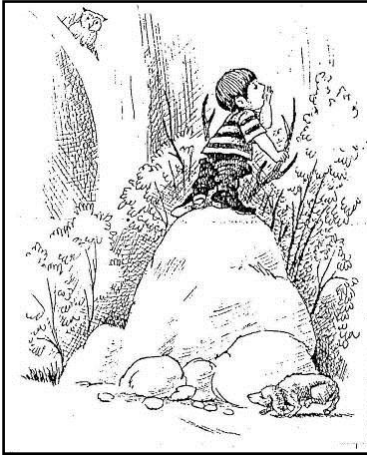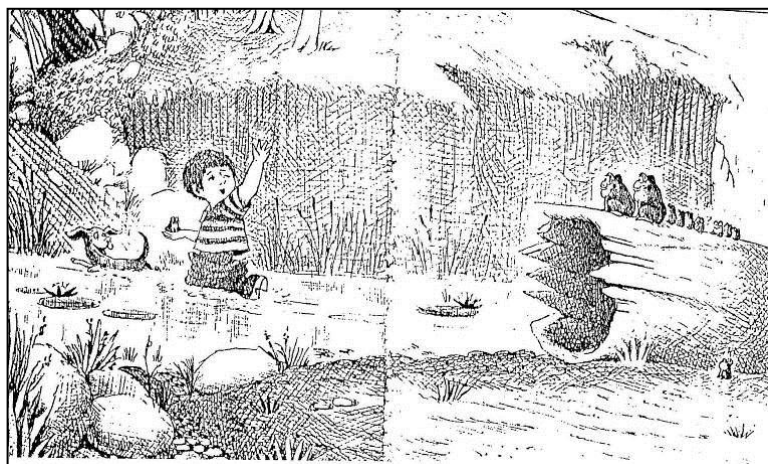
APPENDIX B: Language interaction classification

SUBJECT 1

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
encendida			1			
se vai dormir		1				
saiendo	1					
se cayó		1	1			
Se cai		1				
casita	1					
rompe			1			
a abraçar		1				
o menino é com raiva						1
ahora			1			
nos árvores	1					
sé			1			
no árbol	1		1			
sé			1			
se cai		1				
num árvor	1					
hueco			1			
no árvore	1					
do árvore	1					
fazer *daño*			1			
se cai		1				
do árvore	1					
sé			1			
seu árvore	1					
roca			1			
Venado			1			
Sé			1			
Se levanta o menino		1				
Ahora			1			
Sigue			1			
Venado			1			
tira (para o			1			

lago)						
se cai		1				
venado			1			
Sé			1			
Se caem		1				
Um árvore	1					
No água	1					
Sí			1			
Eles tem encontrado					1	
Tem encontrado					1	
Razón			1			
saió	1					
	12	9	21	0	2	1
	27%	20%	47%	0%	4%	2%

SUBJECT 2

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
alá			1			
contenador			1			
contenador			1			
contenador			1			
a ver (para ver)			1			
contenador			1			
a ver (para ver)			1			
vidrio			1			
vidrio			1			
lastimado			1			
buscar o sapo			1			
no árvore	1					
no árvore	1					
buscar o sapo			1			
do árvore	1					

	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
no árvore	1					
no árvore	1					
um árvore	1					
no seu árvore	2					
roca			1			
roca			1			
perigro			1			
tirou (para um lago)			1			
no árvore	1					
do árvore	1					
mira			1			
muy linda			1			
	10	0	18	0	0	0
	36%	0%	64%	0%	0%	0%

SUBJECT 3

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
looked						1
la			1			
la			1			
ventana			1			
got to						2
era agitado						1
rompou			1			
estará agitado						1
kept						1
looking						1
smelt						1
something						1
funny						1
aire			1			
in a hole						3
quere			1			
jogar			1			
bees						1

came						1
out						1
of						1
the						1
hole						1
bit						1
didn't						2
care						1
at						1
all						1
about						1
quere			1			
jogar			1			
bees						1
meet						1
beehive						1
fall						1
bees						1
ser (agitado)						1
He						1
didn't						2
know						1
what						1
was						1
happening						1
still						1
looking						1
for						1
bees						1
comenzam			1			
comenzam			1			
chase						1
chasing						1
owl						1
scared						1
the						1
owl						1
began						1
chasing						1
that						1
was						1

when						1
was						1
sneaking up						2
beehive						1
was						1
looking						1
to						1
see						1
where						1
he						1
could						1
scare						1
deer						1
popped out						2
of						1
nowhere						1
was						1
stuck						1
on						1
his						1
head						1
The						1
deer						1
was						1
stuck						1
on						1
his						1
head						1
still						1
tried						1
to						1
deer						1
não *pode* (consegue)			1			
The						1
deer						1
cliff						1
stopped						1
abruptly						1
fell						1
into						1
a						1

pond						1
on						1
top						1
of						1
heard						1
something						1
in						1
a						1
log						1
looked						1
over						1
the						1
log						1
uno			1			
dos			1			
era saindo						1
	0	0	14	0	0	109
	0%	0%	11%	0%	0%	89%

SUBJECT 4

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
dormiendo			1			
su			1			
buscou			1			
el			1			
buscou			1			
se cayó		1	1			
rompió			1			
enojado			1			
buscando			1			
abejas			1			
se subió		1	1			
abejas			1			
subió			1			
um árvor	1					

	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
consiguió			1			
sacar			1			
hiva (hive)						1
abejas			1			
outro árvore	1					
abejas			1			
búho			1			
árvor			1			
se cayó		1	1			
buscar			1			
subió			1			
piedra			1			
piedra			1			
empieza			1			
comenzava			1			
un valle			2			
se cayerón		1	1			
su			1			
percibieron	1					
dissierón	1					
adiós			1			
sapitos	1					
	5	4	31	0	0	1
	12%	10%	76%	0%	0%	2%

SUBJECT 5

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
rana			1			
rana			1			
vidrio			1			
rana			1			
ventana			1			
rana			1			
vidrio			1			
buscam			1			
rana			1			
busca			1			

busca			1		
rana			1		
vidrio			1		
ventana			1		
buscar			1		
rana			1		
vidrio			1		
ventana			1		
ventana			1		
ventana			1		
vidrio			1		
roto			1		
cerca			1		
dos árboles	1		1		
rana			1		
animalitos	1				
buscam			1		
rana			1		
buscando			1		
hueco			1		
jugando			1		
no árbol	1		1		
rana			1		
sí			1		
sal (sai)	1				
hueco			1		
se lastimou		1	1		
a nariz	1				
buscando			1		
rana			1		
num árbol	1		1		
hueco			1		
no árbol	1		1		
buscando			1		
mirando			1		
cayó			1		
(coisas) malas			1		
passam			1		
árbol			1		
sal (sai)	1				
árbol			1		
corriendo			1		
volando			1		
dos			1		
roca			1		

piedra			1			
molesta			1			
miedo			1			
roca			1			
rana			1			
una			1			
venado			1			
venado			1			
venado			1			
su			1			
cayó			1			
venado			1			
roca			1			
piedra			1			
sorprendido			1			
venado			1			
empeza			1			
venado			1			
sorprendidos			1			
venado			1			
venado			1			
venado			1			
se caen		1	1			
perro			1			
sorprendidos			1			
venado			1			
cayerón			1			
niño			1			
sonido			1			
rana			1			
num árbol	1		1			
no árbol	1		1			
hueco			1			
cerca			1			
su			1			
rana			1			
buscam			1			
do árbol	1		1			
buscando			1			
do árbol	1		1			
ranas			1			
misma			1			
rana			1			
rana			1			
rana			1			
rana			1			

rana			1			
mirar			1			
rana			1			
árbol			1			
sorprendido			1			
ranas			1			
mascota			1			
empeza			1			
do árbol	1		1			
esclavo			1			
dibujo			1			
assí			1			
	13	2	109	0	0	0
	10%	2%	88%	0%	0%	0%

SUBJECT 6

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
sé			1			
mirando			1			
está verde						1
hops						1
não sé			1			
não sé			1			
pajamas						1
dormiendo			1			
wakes up						1
ir afora			1			
são desorganizadas						1
não são nos seus lugares						1
não sé			1			
pajamas						1
não sé			1			
são na cama						1
o tono			1			
afora			1			
window						1
rescues						1

roto			1			
sé			1			
afora			1			
amarillos			1			
barking						1
hole						1
hole						1
sé			1			
do árvore	1					
angry						1
hive						1
se cayó			1			
um ave	1					
reputation						1
sé			1			
O ave	1					
no árvore	1					
se cayó			1			
O ave	1					
hiding						1
piedra			1			
rock						1
sé			1			
O ave	1					
contento			1			
rock						1
antlers						1
reindeer						1
tem medo			1			
are			1			
cliff						1
sé			1			
contento			1			
todavia			1			
lillypad						1
sono			1			
sono			1			
um árvore	1					
cayó			1			
um árvore	1					
do árvore	1					
todavia			1			
babies						1

sorpreso			1			
do árvore	1					
	10	0	31	0	0	24
	15%	0%	48%	0%	0%	37%

SUBJECT 7

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
decidió			1			
buscaram			1			
buscaram			1			
comenzou			1			
primer			1			
piso			1			
com licença						1
buscar			1			
panal de abelhas			1			
panal de abelhas			1			
buscar			1			
do árbol	1		1			
panal de abelhas			1			
do árbol	1		1			
	2	0	13	0	0	1
	13%	0%	81%	0%	0%	6%

SUBJECT 8

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
hay			1			
eu veo			1			
dormendo	1					
luna			1			
saendo	1					
recipente			1			

siguiente			1			
recipente			1			
caer			1			
recipente			1			
sus braços			1			
siguiente			1			
recipente			1			
estan			1			
pequeña			1			
izquierda			1			
um árbol	1		1			
siguiente			1			
colmena			1			
em general			1			
persiguiendo			1			
colmena			1			
topo			1			
batiendo		1				
o árbol		1	1			
caer		1				
colmena			1			
as abejas			1			
siguiente			1			
colmena			1			
cayó			1			
topo			1			
foro			1			
siguiente			1			
do árbol			1			
foro			1			
owl						1
pájaro			1			
um owl						1
um ave (el ave)		1				
siguiente			1			
nocturna			1			
saió		1				
do foro			1			
do árbol		1	1			
es(tán)			1			
corriendo			1			

o pájaro			1			
tratando subir			1			
una	1					
siguiente			1			
o logra			1			
num árbol	1		1			
um venado			1			
sigue	1					
no árvol			1			
venado			1			
venado			1			
venado			1			
caiendo	1					
cena que sigue			1			
caieram	1					
venado			1			
caer			1			
siguiente			1			
um árvol			1			
en la			1			
perro			1			
	14	0	56	0	0	2
	19%	0%	78%	0%	0%	3%

SUBJECT 9

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
mirando			1			
mirando			1			
vão a dormir		1				
durmendo	1					
logra			1			
desaparició			1			
buscar			1			
pesquisar			1			
pesquisando			1			
nesso			1			

se cai		1				
rompe			1			
abejas			1			
colmena			1			
pesquisando			1			
colmena			1			
mordió			1			
tumbou			1			
colmena			1			
colmena			1			
búho			1			
búho			1			
con			1			
cayó			1			
eso			1			
están			1			
están			1			
persiguiendo			1			
búho			1			
búho			1			
molestar			1			
roca			1			
ramas			1			
ramas			1			
mismo			1			
roca			1			
arriba			1			
ramas			1			
ramas			1			
esos			1			
sé			1			
tarros			1			
ramas			1			
tarros			1			
venado			1			
se frenam		1	1			
caiga			1			
tan			1			
sonido			1			
ningun			1			
ningun			1			

do árvore	1					
buscando			1			
rana			1			
todo			1			
	2	3	51	0	0	0
	4%	5%	91%	0%	0%	0%

SUBJECT 10

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
atrapou			1			
saió	1					
pesquisando pelo bicho			1			
cayó			1			
pesquisou o bicho			1			
no árvore	1					
saió	1					
pesquisando o bicho			1			
cornos			1			
cornos			1			
cornos			1			
cayó			1			
cornos			1			
river						1
pesquisando			1			
contento			1			
decidió			1			
			1			
	3	0	14	0	0	1
	17%	0%	78%	0%	0%	6%

SUBJECT 11

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
empeza			1			
estan			1			
jugar			1			
mucho			1			
con			1			
hocico			1			
rana			1			
se van		1	1			
a dormir		1				
se van		1	1			
a dormir		1				
rana			1			
oportunidad			1			
luna			1			
rana			1			
ha escapado		1				
su			1			
empeza			1			
buscar			1			
empeza			1			
buscar			1			
buscando			1			
van			1			
afora			1			
empezam			1			
rana			1			
rompendo			1			
herida			1			
milagro			1			
elos			1			
van			1			
afora			1			
perro			1			
en el piso			3			
entonces			1			
piso			1			
la			1			
lastima			1			
molestando			1			

estuvo				1		
se cayó			1	1		
donde				1		
um árbol	1			1		
rana				1		
o árbole	1			1		
holas				1		
blancas				1		
rana				1		
um ave	1					
nocturna				1		
mi				1		
destrucção				1		
su				1		
colmena				1		
sento				1		
o ave	1					
quere				1		
sacar				1		
cuernos				1		
venado				1		
cola				1		
sus				1		
búho				1		
su				1		
búho				1		
se sube			1	1		
arriba				1		
empeza				1		
venado				1		
búho				1		
su				1		
peligro				1		
arriba				1		
venado				1		
sea				1		
arriba				1		
donde				1		
tirar				1		
mentras				1		
romper				1		

cerca			1			
tira o menino			1			
arriba			1			
mi permiso			2			
tenia			1			
pantâno			1			
<u>vá a</u> poder		1				
caer			1			
pero			1			
hay			1			
um árbol	1		1			
rededor			1			
pantâno			1			
panza			1			
arriba			1			
arriba			1			
el			1			
venado			1			
venado			1			
venindo			1			
do árbol	1		1			
miram			1			
buscando			1			
contento			1			
dos			1			
dos			1			
mire			1			
mira			1			
havera visto		1				
eso			1			
increível	1					
sacar			1			
vine			1			
esto			1			
cosas			1			
cosas			1			
lleva			1			
traer			1			
contento			1			
	7	9	114	0	0	0
	5%	7%	88%	0%	0%	0%

SUBJECT 12

Tokens	SPANISH morphology	SPANISH syntax	SPANISH vocabulary	ENGLISH morphology	ENGLISH syntax	ENGLISH vocabulary
comenza			1			
saió	1					
saió	1					
siguente			1			
buscou			1			
venta(na)			1			
saieram	1					
não *pode* encontrar			1			
saieram	1					
saieram	1					
dos árvores	1					
pode			1			
saieram	1					
dos árvores	1					
do árvore	1					
siguendo	1					
do árvore	1					
sigue			1			
sube			1			
roca			1			
roca			1			
comenza			1			
uns árvores	1					
consigue			1			
sube			1			
comenza			1			
buscar			1			
comenza			1			
comenza			1			
	12	0	17	0	0	0
	41%	0%	59%	0%	0%	0%

PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO GRANDE DO SUL
FACULDADE DE LETRAS
PROGRAMA DE PÓS-GRADUAÇÃO
TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO

Título da pesquisa: Crosslinguistic Interaction in L3 production: Portuguese as a third language in a bilingual context. *(Interações Linguísticas na produção da L3: Português como terceira língua no contexto bilíngue).*

Convite

Por você ser bilíngue falante de Inglês e Espanhol e aprendiz de Português como terceira língua, você está convidado a participar da pesquisa *Crosslinguistic Interaction in L3 production: Portuguese as a third language in a bilingual context. (Interações Linguísticas na produção da L3: Português como terceira língua no contexto bilíngue).*

Se aceitar participar desta pesquisa, é importante que leia as informações contidas neste documento a respeito do estudo e do seu papel neste estudo. Sua participação não é obrigatória e, a qualquer momento, você pode desistir de participar e retirar o seu consentimento. Sua recusa não trará nenhum prejuízo em sua relação com o pesquisador ou com a Pontifícia Universidade Católica do Rio Grande do Sul. É preciso entender a natureza e os riscos da sua participação e dar o seu consentimento informado por escrito ao final deste documento. Você poderá fazer todas as perguntas que precisar para entender os objetivos da pesquisa, esclarecer dúvidas acerca dos riscos, dos benefícios e outros. São-lhe garantidos esclarecimentos, antes e durante o curso da pesquisa, sobre a metodologia. Você receberá uma cópia fidedigna deste termo na qual constam as informações relativas à pesquisa bem como o telefone e endereço do pesquisador principal, por meio dos quais poderá entrar em contato para dirimir quaisquer dúvidas do projeto e de sua participação. Todas as informações obtidas neste estudo poderão ser publicadas com finalidade científica, porém será preservando o completo anonimato da sua identidade, ou seja, nenhum nome será identificado em qualquer material divulgado sobre o estudo.

1. Pesquisadores

Esta pesquisa tem como pesquisadora responsável a mestranda em Linguística Rita de Cassia Glaeser Stein. Seu endereço é Avenida Ipiranga, 6681, telefone: (51) 3320-3528 ou (51) 8171-8991, email: rita.stein@gmail.com. Além disso, a pesquisa conta com a colaboração do Prof. Dr. Augusto Buchweitz, professor adjunto da Pontifícia Universidade Católica do Rio Grande do Sul - PUCRS.

2.   Objetivo e Justificativa

O objetivo deste estudo é investigar a produção oral em terceira língua de bilíngues em Inglês e Espanhol, aprendizes de Português como terceira língua.

3.   Procedimentos de coleta

Se concordar em participar deste estudo, a realização das seguintes tarefas lhe será solicitada: (1) responder a um questionário sobre proficiência em todas as línguas que utiliza; (2) narrar uma história olhando apenas para imagens.

4. Possíveis desconfortos e riscos

Não há quaisquer riscos à sua integridade física ou emocional. Salienta-se, no entanto, que esta pesquisa será realizada somente se você se sentir em boas condições físicas e emocionais para realizar todas as tarefas solicitadas. Não há maneira certa de narrar a história e a produção não será avaliada em termos de erros ou acertos. O áudio também não será divulgado e não conterá nenhuma identificação pessoal.

5. Benefícios esperados

A pesquisa poderá não trazer-lhe benefícios diretos. No entanto, a investigação das transferências linguísticas entre línguas com diferentes distâncias tipológicas como o Espanhol, o Inglês e o Português é importante para que se entenda melhor quais fatores motivam essas transferências. Assim, poderemos obter respostas para o processo de aquisição da linguagem em multilíngües, bem como sobre a organização do léxico mental em multilíngües.

6. Custos e reembolso para o participante

Sua participação é voluntária e espontânea. Não haverá pagamento pela sua participação.

7. Confidencialidade da pesquisa

Será garantido sigilo absoluto para assegurar a privacidade de todos os sujeitos participantes quanto aos dados confidenciais envolvidos na pesquisa. Você não será identificado quando o material de seu registro for utilizado, seja para propósitos de publicação científica ou educativa. Assim, ao assinar este consentimento informado, você autoriza as inspeções em seus registros.

8. Declaração de consentimento informado

Eu,.. (nome legível e por extenso), declaro que tive tempo suficiente para ler e entender as informações acima. Declaro também que fui devidamente informado(a) pelo pesquisador(a) .... sobre os procedimentos que serão utilizados, os riscos e desconfortos, os benefícios, os participantes e a confidencialidade da pesquisa. Confirmo que toda a linguagem técnica utilizada na descrição da pesquisa foi satisfatoriamente explicada e que recebi respostas para todas as minhas dúvidas. Declaro ainda que me foi assegurado que posso retirar o consentimento a qualquer momento, sem que isso leve a qualquer penalidade ou a perda de benefícios. Confirmo ainda que recebi uma cópia desse Termo de consentimento livre e esclarecido.

Caso tiver novas perguntas sobre esse estudo, posso chamar o Prof. Dr. Augusto Buchweitz e a mestranda Rita de Cassia Glaeser Stein através dos emails: abuchweitz@gmail.com e rita.stein@gmail.com

Dou meu consentimento de espontânea vontade e sem reservas para participar deste estudo.

Assinatura do(a) participante: _____

Data: _____/_____/_____

Eu.. atesto que expliquei cuidadosamente a natureza e o objetivo deste estudo, os possíveis riscos e benefícios da participação nesta pesquisa. Acredito que o(a) participante recebeu todas as informações necessárias, as quais foram fornecidas em uma linguagem adequada e compreensível, e que o(a) participante compreendeu tais explicações.

Assinatura do pesquisador: _____

Data: _____/_____