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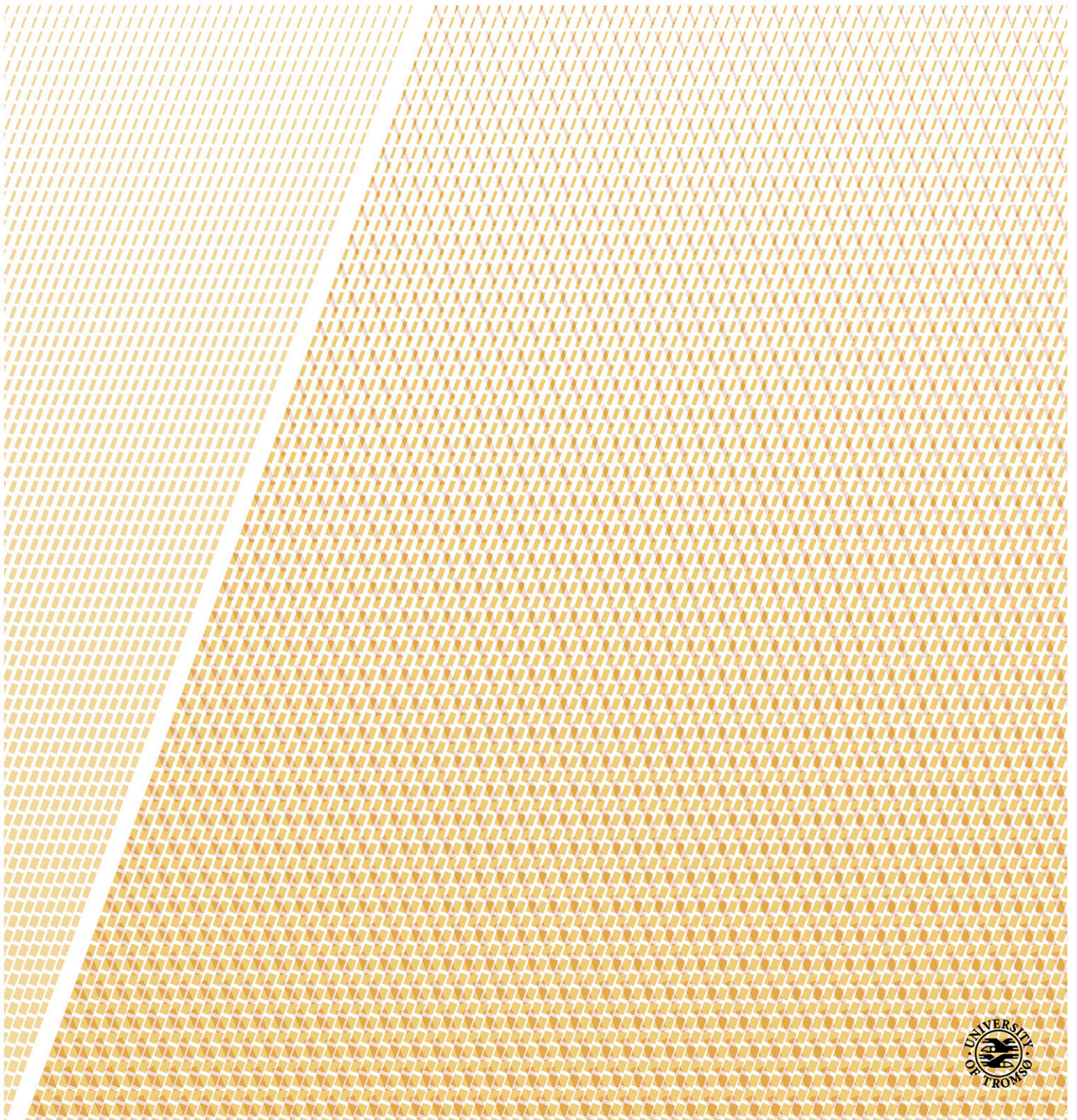
Heritage and adult L2 acquisition of empty categories in a bidialectal-bilingual context

Brazilian and European Portuguese in contact

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Tammer Castro

A dissertation for the degree of Philosophiae Doctor – September 2016



**Heritage and adult L2
acquisition of empty categories
in a bidialectal-bilingual
context: Brazilian and European
Portuguese in contact**

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A dissertation submitted for the degree of Philosophiae Doctor

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To Dora

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About four years ago, when I was getting ready to move to Tromsø, several people asked me if I thought I could be happy living so far north of the equator. The answer turned out to be a resounding, “Yes.” In the middle of fighting polar bears, and coping with six months of darkness per year and fifty degrees below zero temperature, I wrote this dissertation. I couldn’t have done it without the support of my amazing colleagues and the good friends I’ve made along this journey. I will attempt to cover all the bases in no particular order.

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Abstract

HERITAGE AND ADULT L2 ACQUISITION OF EMPTY CATEGORIES IN A BIDIALECTAL-BILINGUAL CONTEXT

by

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Despite their high degree of mutual intelligibility, Brazilian Portuguese (henceforth BP) and European Portuguese (henceforth EP) have been argued to differ in many microparametric domains (see Martins, 2006; Escudero et al., 2009). This suggests that speakers with enough exposure to both varieties could potentially acquire them as separate mental systems, as has been shown to occur in the bilingual brain (de Bot, 1992, 2004). The present study makes use of this language pairing to investigate issues raised in current literature on heritage language (HL) and second language (L2) acquisition (e.g., Montrul & Polinsky, 2011, Sorace, 2011), L2 processing (Hopp, 2016; Hartsuiker & Pickering, 2008) and first language (L1) attrition (Altenberg, 1991; Schmid, 2011).

With this in mind, we apply a comprehension task in order to test anaphora resolution in two groups of speakers exposed to BP and EP, taking into account the different null subject distribution in these languages. We investigate whether late BP-EP bilinguals and heritage BP speakers growing up in Portugal, tested in both dialects, will pattern like native controls or display some effects of EP on their native BP or vice-versa. Through an open-ended production task, we also attempt to measure these speakers' distribution of both null subjects and objects and compare that to the pattern shown by monolingual controls. In a second comprehension task, we test the extent to which BP immigrants arriving in adulthood display cross-linguistic effects such that either or both EP and BP differ(s) from monolinguals.

Our findings indicate that, for this language pairing, the directionality of cross-linguistic influence is more dependent on which properties are being acquired, as the target groups displayed different patterns for null subjects and null objects. In this bidialectal bilingual scenario, cross-linguistic influence is partly geared by age of acquisition, as heritage speakers and L2 learners do not perform alike in comprehension but do so in production. Furthermore, the high degree of typological proximity between the L1 and the L2 appears to facilitate L1 attrition and delimit the acquisition of L2 properties. We relate the findings of the present study to key theoretical questions and debates within the context of the larger field of bilingual studies.

List of abbreviations

AJT	Acceptability Judgment Task
AoA	age of arrival
BP	Brazilian Portuguese
BPC	Brazilian Portuguese controls
CLI	cross-linguistic influence
D1	first dialect
D2	second dialect
DP	determiner phrase
<i>ec</i>	empty category
EP	European Portuguese
EPC	European Portuguese controls
HL	heritage language
HLA	heritage language acquisition
HS	heritage speaker
IH	Interface Hypothesis
L1	first language
L2	second language
L2ers	second language learners
L3	third language
LDS	Left Dislocated Subject
MAIN	Multilingual Assessment Instrument for Narratives
ML	majority language
NAI	null animates in islands
NAS	null animates in simple clauses
NES	Null Embedded Subject
NII	null inanimates in islands
NIS	null inanimates in simple clauses
NNSL	non-null-subject language
NSL	null-subject language
OAI	overt animates in islands
OAS	overt animates in simple clauses
OES	Overt Embedded Subject

OII	overt inanimates in islands
OIS	overt inanimates in simple clauses
PAH	Position of Antecedent Hypothesis
PLD	Primary Linguistic Data
PVT	Picture Verification Task
SLA	second language acquisition
UG	Universal Grammar
VP	verb phrase

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- PAPER I Castro, T., J. Rothman, & M. Westergaard. (forthcoming). Comparing Anaphora Resolution in Early and Late Brazilian Portuguese-European Portuguese Bidialectal Bilinguals. *RESLA – Revista Española de Lingüística Aplicada / Spanish Journal of Applied Linguistics*. [special issue]. Amsterdam: John Benjamins.
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Heritage and adult L2 acquisition of empty categories in a bidialectal-bilingual context

1 Introduction

Out of many possible definitions that have been given to the word *bilingual*, the clear consensus is that speakers who display knowledge of two languages are considered bilinguals. From this general definition, bilinguals are classified according to various factors that determine their type of bilingualism. For instance, bilinguals may differ with respect to the onset of bilingualism, and thus be classified as *child bilinguals* or *adult bilinguals*. Bilinguals can acquire language naturalistically, through every-day use of the language, or in a classroom setting, typically with the help of a tutor or a teacher. A child exposed to two languages soon after birth is typically referred to as a *simultaneous bilingual*, whereas *successive/sequential bilinguals* acquire their second language (L2) sometime after having acquired their first language (L1). In the case of child bilinguals, the language spoken at home by either parent is a *heritage language* (HL), if different from the language of the community, or *majority language* (ML) (e.g. Grosjean, 1985, 2010; Romaine, 1989 for discussion).

This dissertation deals with issues in late L2 acquisition and HL acquisition from a formal linguistics perspective, particularly with respect to selective cross-linguistic transfer—whether from L2 to L1 or the reverse—and retention of the L1 (i.e. potential L1 attrition). While few studies have approached issues in adult L2 acquisition and its correlation with L1 attrition in the context of bidialectalism (see e.g., Cornips, 2014; Garraffa, Beveridge & Sorace, 2015), this study endeavors to examine different subgroups of adult native Brazilian Portuguese (BP) speakers under naturalistic exposure to European Portuguese (EP) as their L2. Despite the high degree of typological

relatedness between BP and EP, these two Portuguese variants have been claimed to display structural distinctions in virtually all linguistic domains, i.e. syntax, semantics, morphology, phonology, discourse, lexis; (see e.g., Costa, Lobo & Silva, 2009; Barbosa, Duarte & Kato, 2005 for discussion). The degree of these structural differences make it reasonable to consider them as distinct grammatical systems on linguistic categorizing grounds, as discussed in Bagnó (2001). Therefore, we deal with two closely related variants that are distinct enough to be treated as different grammars, instead of dialect pairings where the main differences are restricted to phonology and lexicon (e.g. Shockey, 1984, for American and British English).¹ Though the standard distinction between *dialect* and *language* is typically tied to historical reasons, we do not intend to further delve into this issue and make the claim that BP and EP are two genetically related languages of mutual intelligibility or sub-dialects of one another. More importantly, we take BP and EP to constitute unique grammars, as a result of diachronic changes that took place in each variant. Thus, we consider Brazilians living in Portugal who are (seemingly) both BP and EP proficient users to be (*bidialectal*) *bilinguals*.

Against the backdrop of bidialectal-bilingualism, we use BP and EP monolingual baselines to compare and contrast two types of learners: (i) adult heritage speakers (HS) of BP who acquired EP as an L2 as children in Portugal and (ii) BP natives who have acquired EP as an L2 in Portugal as adults. We measure their performances in a production and a comprehension task—plus one additional comprehension task only for late L2ers—in order to understand how null and overt subjects and objects are distributed across the different populations. We capitalize on the structural differences that determine the distribution of null vs. overt subjects and objects in each variant to test the extent to which: (a) cross-linguistic effects are found in HL and L2 acquisition of different syntactic features in this language pairing, (b) age determines the directionality of influence between the L1 and the L2, provided that such influence is in fact found, and (c) the high level of typological

¹ Note that studies by Ledgeway (2000, 2003) have explored dialectal variation in southern Italy (see also a volume edited by d’Alessandro, Ledgeway & Roberts, 2010), and shown that southern Italian dialects differ from one another in various linguistic domains, but are nevertheless still categorized as *dialects*.

proximity between BP and EP in a bidialectal-bilingual scenario has an effect on HL and L2 acquisition of each language, respectively. Moreover, we explore the different pattern of distribution of null objects in the two systems to gauge whether typological relatedness leads to L1 attrition and/or influences L2 processing in late L2 learners. As contextualized above, the linguistic scenario of Brazilians in Portugal is an optimal context to closely investigate possible effects of typological relatedness within the context of bidialectal-bilingual acquisition.

This dissertation is organized as follows: Section 2 provides a general overview of the key issues explored in this study. Section 3 details the differences in the distribution of empty categories in BP and EP. Section 4 presents the main goals of the study. Section 5 describes the methodologies used and the participants involved in this study in detail. Section 6 presents a brief summary of the results of the three tasks. Section 7 provides a general discussion of the findings and their theoretical implications, along with some shortcomings of the study and suggestions for future research. Section 8 sums up the general conclusion of the study. The three articles discussed throughout the dissertation immediately follow it.

2 Heritage and Second Language Acquisition

2.1 Theoretical Background

It is generally accepted that adult L2 acquisition most typically differs in development and ultimate attainment as compared to native monolingual acquisition (Meisel, 2011, see Slabakova, 2013 for review). L2 speakers often show a large degree of variation from one another despite seemingly similar input and instruction conditions, and at times, variation could surface within a single speaker and even in a single utterance. The success in ultimate attainment in the L2 acquisition process seems to depend highly on the context of learning, as naturalistic learners on average are more convergent than classroom learners (see Isabelli, 2004; Rothman & Iverson, 2007; Rothman, 2008). It is not clear, however, what explains the differences in adult L2 speaker outcomes in comparison with monolingual outcomes (see White, 2008; Slabakova, 2009, 2013 for critical discussion).

Over the past two decades in particular, studies testing heritage language acquisition (HLA) have been on the rise (see Benmamoun, Montrul and Polinsky, 2013; Montrul 2016; Kupisch and Rothman, 2016 for review). Heritage Speaker (HS) bilinguals are child acquirers of a heritage language in a specific sociolinguistic setting. A heritage language (HL) is a language spoken in a home or community context where it is not the majority language (ML) of the larger society (Montrul, 2008; Rothman, 2009). Valdés (2001, p. 38) defines HSs in an English-speaking society, for instance, as people who were “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 English”. The degree to which they are bilingual is highly dependent on exposure and use.

Much of the research has shown that HL differs from non-HL acquisition to various degrees and across different domains of grammar (e.g., Nagasawa, 1995; Gass & Lewis, 2007; Polinsky, 2008). At the same time, some HSs generally show very sophisticated knowledge of the HL in some domains. Au, Knightly, Jun & Oh (2002) concluded that HSs display advantages for ac-

quisition of phonology when compared to L2 learners, though no advantages were reported for acquisition of morpho-syntax. Similar results were also found in Chang, Haynes, Rhodes & Yao (2008), where HSs typically pattern with native speakers regarding the phonological distribution of Mandarin Chinese, presumably due to early exposure to L1 phonological constraints. Conversely, HSs have also been reported to show difficulties in acquiring morpho-syntactic features, as a result of exposure to the morpho-syntactic patterns of the ML (see Polinsky, 2011; Montrul, 2010 for review). Rinke & Flores (2014), for instance, have shown that the morpho-syntactic distribution of clitics in heritage European Portuguese (EP) spoken in immigrant communities in Germany does not reflect the EP monolingual pattern. The authors claim that the linguistic competence of HSs differs from that of monolinguals as a result of reduced input and lack of formal instruction, in addition to influence from the ML. Research on formal approaches to HLA within recent years has offered various proposals as an attempt to explain this general behavior (see Kupisch & Rothman, 2016; Montrul, 2005, 2008; Polinsky, 2011; Rothman 2007; Pascual y Cabo & Rothman, 2012; Putnam & Sánchez, 2013). Some of the proposals offered to explain this variation argue that it can be attributed to the quality and quantity of input HSs receive, attrition of previously acquired structure, incomplete acquisition of structure or acquisition that has a complete, yet different path than monolingualism. The general consensus seems to be that none of the aforementioned approaches are mutually exclusive and all of these processes are plausible ways to explain HS outcomes.

As for child SLA, Meisel, Elsig & Rinke (2013) defend that children who acquire two languages from birth are able to develop native-like competence in both by mere exposure to the primary linguistic data (PLD). These children would then have two first languages, if they receive a significant amount of PLD during the most sensitive stages of their grammatical development. Regarding successive bilingualism, age of onset appears to be the key element in the equation. Research findings have shown that significant changes in grammatical development take place around age 7, but morpho-syntax can be affected as early as age 3. Therefore, the age range between 4 and 6 is crucial in the development of morpho-syntactic features. As a result of a critical period

spanning from age 3;6 to 15, child L2 learners can resemble L1 speakers in some domains and L2 learners in others (Meisel, 2009). This refers to children who immigrate with their parents at age 4 or later, and the claim is that they develop native-like competence in the L2, but can show non-native linguistic behavior in specific domains. Regarding maturational constraints in L2 acquisition, it has been argued that child L2ers have an advantage over adult L2ers with respect to ultimate attainment (Long, 2005, 2007; DeKeyser, 2012; Granena & Long, 2013, among others). However, some studies have shown that a small subset of adult L2ers do reach nativelike proficiency levels (see Bongaerts, 1999; Moyer, 1999), and that not all child L2ers reach nativelike proficiency in adulthood, presumably because age of onset is not the only factor that determines successful L2 acquisition (see Hyltenstam & Abrahamsson, 2003 for discussion). Studies by Schwartz (1992, 2004, 2009) and Herschensohn, Stevenson & Waltmunson (2005) have shown that child L2 learners can resemble adult L2 learners in the domains of syntax and inflectional morphology, despite having different developmental stages. These studies indicate that bilingualism itself might be a factor that separates child L2 grammars from monolingual grammars. In other words, being proficient in two languages can have direct consequences on the linguistic structure of each. Even though child L2ers are arguably faster than adult L2ers in the initial stages of acquisition, there is growing evidence that they are not different in advanced stages of learning, particularly with respect to syntax and inflectional morphology (see Schwartz, 2009 for discussion).

The issue of L1 attrition has also been widely explored in the last two decades (e.g., Sharwood Smith, 1989; Altenberg, 1991; Köpke, 1999; Cook, 2003; Schmid, 2014). Ecke (2004, p. 322), defines attrition as “the decline of any language (L1 or L2), skill or portion thereof in a healthy individual speaker”. When L2 learners reach high levels of proficiency in the target language, they might display signs of transfer into their L1, manifested across different linguistic domains. Among the factors that can contribute to L1 attrition, frequency of L1 usage and length of L2 exposure have been cited in the literature (Köpke, 2007, Schmid, 2011). While word retrieval and processing

have been claimed to be most vulnerable to attrition (Schmid & Köpke, 2008), core syntactic computations are arguably unaffected by the L2 (Tsimpli, Sorace, Heycock & Filiaci, 2004).

In order to account for cases of non-convergence and optionality in near-native L2 speakers, Sorace and colleagues developed the Interface Hypothesis (IH) (Sorace, 2000, 2003; Tsimpli et al., 2004; Sorace & Filiaci, 2006). The original concept behind the IH was centered around the idea that structures involving an interface (e.g. syntax-semantics, syntax-discourse/pragmatics) can be problematic for L2 acquisition, whereas purely syntactic computations might be more easily acquired. Regarding L1 attrition, the IH initially suggested that only structures involving interpretable features such as animacy and discourse-linking can undergo L2 transfer, while uninterpretable features such as Case and Agreement are expected to remain unaffected (Sorace & Filiaci, 2006). Since its inception, the IH has been revised, and its most recent version (Sorace, 2011) maintains that external interfaces such as syntax-discourse are more prone to optionality in advanced non-native grammars than internal interfaces, such as syntax-semantics. This optionality, *residual* in L2 acquisition and *emerging* in L1 attriters, is typically manifested through an overuse of overt pronouns, as a strategy to compensate for eventual inefficiency in computing mappings at the syntax-discourse interface (Sorace, 2011). In other words, the directionality of cross-linguistic effects can be predicted by the structural composition of the two systems. If one of the two languages, regardless whether it is the L1 or the L2, allows for two possible analyses of a syntactic structure, and the other language only accepts one of them, then the directionality of influence is expected to be from the language that instantiates the less restrictive option to the other, as long as the structure involves the syntax-pragmatics interface.

Scholars have also measured possible L1 interference in L2 processing (e.g., Elston-Güttler, Paulmann & Kotz, 2005; Clahsen & Felser, 2006, Hopp, 2010). The shared-syntax model (Hartsuiker, Veltkamp & Pickering, 2004) suggests that lexical co-activation of the L1 results in its syntactic co-activation, which in turn can hinder target-like L2 processing. One might expect lexical co-activation of the L1 to be more likely to take place in cases where the L2 lexicon is similar, in

case of typologically related languages, or in cognate words (Kroll, Gullifer & Rossi, 2013). Conversely, it has also been suggested that lexical co-activation of the L1 can lead to successful L2 processing, as it would help inhibit L1 syntax instead (e.g., Miller, 2014; Hopp, 2016).

2.2 Effects of Typological Relatedness

Early studies investigating effects of typological relatedness on SLA reported that cross-linguistic influence was more likely to take place in cases where learners perceive a large degree of similarity between the L2 and their L1 than in cases where the two languages are distant (Singleton, 1987, 2012). In fact, many scholars have tested the correlation between typological relatedness and cross-linguistic transfer, be it L1 => L2 (e.g. Håkansson, Pienemann & Sayehli, 2002; Bohnacker, 2006; Pliatsikas & Marinis, 2013) or L2 => L1 (e.g., Altenberg, 1991; Yağmur, 1997; Gürel, 2008). It is arguably the case that that typological relatedness is seen as a determining factor for language transfer, i.e., the closer the source language is to the target language, the more likely it is to be transferred (see e.g. Cenoz, 1997, 2001; Wolfram & Schilling-Estes, 1998; Bardel & Falk, 2007; Long, 2007). Ringbom & Jarvis (2009, p. 106) state that “similarities have a much more direct effect on language learning and performance than differences do”. In more recent years, scholars have also investigated the effects of typological relatedness in third language (L3) acquisition (e.g., Cenoz, 2003; Foote, 2009; Rothman & Cabrelli-Amaro, 2007, 2010; Rothman 2010, 2011, 2015; Child, 2013). If the L3 acquisition scenario is one where the L3 is related to one of the languages (whether it is the L1 or the L2) but not to the other, one could assume that it should be possible to measure the effects of typological relatedness in terms of which of the two languages transfer comes from. The Typological Primacy Model (Rothman, 2011, 2015) maintains that, in L3 acquisition, transfer takes place selectively from either the L1 or the L2, depending on which language is taken by the parser early on to be the more closely related to the L3 at the level of underlying grammatical structure. For instance, in a scenario with two groups of L3 learners of BP, (i) L1 Italian-L2 English learners, and (ii) L1 English-L2 Spanish learners, Rothman (2011) concluded that learners from

both groups showed signs of transfer from the closest language (Italian or Spanish), regardless of order of acquisition.

As for L1 attrition, typological proximity has been suggested as one of twelve loss-inducing properties (Sharwood Smith, 1989). Altenberg (1991) has tested this in a case-study of a native German couple exposed to L2 English in the United States, and found that the typological similarities between the two languages has caused their L1 German to show signs of transfer from their L2. Because of possible alternation of dominance in near-native L2 speakers, and thus constant activation of the L1 and the L2 systems, learners experience that the rules of the two languages compete, which has been claimed to happen more easily when there is high typological similarity between the L1 and the L2 (Paradis, 2007; Köpke, 2007; Gürel, 2008).

2.3 This study: bidialectal bilingualism

BP and EP are very closely related Portuguese variants which are usually mutually intelligible. Issues of comprehensibility, however, are often one-sided. Portugal is a relatively small country, with low demographic density and less world presence than Brazil. Brazil exports soap operas, movies and music worldwide, especially to Portugal, but this is not a two-way exchange. It is possible to claim that most BP speakers have not had much exposure to EP, whereas BP can often be heard on Portuguese media. As a result, the extent to which the Brazilian populations investigated in this study acquire the new variant should be highly dependent on the length of exposure to EP and on the frequency of EP usage as the acquisition takes place in a naturalistic setting.

As I show in Section 3, the morpho-syntactic differences between BP and EP make it very difficult to categorize the two as mere dialects of the same language, though this has been perceived to be the case both in Brazil and Portugal, for political reasons. This dissertation does not enter into the inherently circular debates of what constitutes a language and a dialect per se. The point made here is simply a linguistic one; despite their high degree of mutual intelligibility and typological similarity, BP and EP display distinct grammars, at much more than the lexical and superficial levels.

The Brazilian populations investigated in this dissertation are separated by age of exposure to EP, which allows us to examine the acquisition of BP as an HL and the acquisition of EP as an L2. This innovative language pairing and these data can yield substantial input for discussion of theories of adult L2 acquisition and debates within HL acquisition, particularly with respect to effects of typological relatedness on L1 attrition and L2 acquisition/processing.

2.4 Summary

The purpose of this section was to provide a brief account of the theoretical issues investigated in this study. Researchers have debated on differences between SLA and HLA, particularly with respect to ultimate attainment, with various possible explanations ranging from input, possible L1 attrition and incomplete acquisition. It has been shown that structures at the syntax-discourse interface are taken to be particularly vulnerable to L1 attrition and can undergo cross-linguistic effects in both child and adult L2 acquisition. Typological relatedness has been claimed to be one of many factors that can contribute to L1 attrition and influence L2 acquisition/processing. The studies mentioned in this section are of great importance to the development of this dissertation, as the bidialectal-bilingual scenario of Brazilians in Portugal provides us with an ideal context to simultaneously test for L1 attrition and L2 acquisition, while taking the high degree of typological relatedness between BP and EP as an important variable.

3 Empty Category Distribution in Portuguese

3.1 Overview

Generally speaking, most Romance languages have been categorized as pro-drop, or null-subject languages (NSLs), since they allow for phonetically unpronounced subjects in discourse-appropriate contexts. This is illustrated in the following examples:

- (1) a. Eres hermosa. [Spanish]
be._{2sg} beautiful._{FEM}
- b. Sei bella. [Italian]
be._{2sg} beautiful._{FEM}
- c. Ești frumoasă. [Romanian]
be._{2sg} beautiful._{FEM}
- d. *(Tu) es belle. [French]
you be._{2sg} beautiful._{FEM}
- e. *(You) are beautiful.

In a context like the one shown in (1), Romance NSLs allow for the pronominal subject “You” to remain implicit, since Agreement is marked by the morphology of the verb, as we see in (1a)-(1c). Since the verb is in the 2nd person, the subject must be “You”. Conversely, non-null-subject languages (NNSLs) such as French and English require the pronominal subject to appear overtly.

In Romance NSLs, null and overt subject pronouns do not co-occur freely. Particularly in intra-sentential anaphora contexts, the choice of null vs. overt pronoun can yield different co-reference patterns. The Position of Antecedent Hypothesis (PAH), put forth by Carminati (2002), states that, in Romance NSLs, overt subject pronouns in embedded clauses usually have co-referents in a lower syntactic position, whereas null subject pronouns in the same contexts have a

stronger tendency to be linked to the subject of the matrix clause. This is especially true in ambiguous sentences, as the choice of null vs. overt embedded subject helps solve the ambiguity, as seen in the Italian example in (2):

(2) Maria_i scriveva frequentemente a Piera_k quando lei_{??i/k} era negli Stati Uniti.

Maria wrote frequently to Piera when she was in+the States United

‘Maria_i wrote frequently to Piera_k when she_{??i/k} was in the USA’.

(Carminati, 2002, p. 78)

In non-ambiguous contexts, the PAH is arguably more flexible, so null/overt subject alternations are possible, as shown in (3):

(3) Quando Maria ha chiamato Mario, Ø era contento/lui era contento.

When Maria has called Mario, Ø was_{.3sg} happy_{.MASC}

‘When Maria called Mario, he was happy.’

(Carminati, 2002, p. 187)

The PAH was also shown to hold for other Romance NSLs such as Spanish (Bel & García-Alcaraz, 2015) and Romanian (Geber, 2006). This is in light with Chomsky’s Avoid Pronoun Principle (Chomsky 1981, p. 65), which states that “a lexical pronoun should be avoided whenever possible in favor of pro or PRO”. Sorace & Filiaci (2006) claim that the embedded subject position in Romance NSLs is at the syntax-discourse interface, as it involves the syntactic conditions which license the occurrence of null subjects and the discourse conditions that determine the choice of co-referent. Thus, violations of the PAH are not necessarily ungrammatical, but rather inappropriate.

While most Romance languages have null subjects, few have phonetically unpronounced objects (Costa & Lobo, 2007). As is the case with null subjects, their distribution is restricted to discourse-appropriate contexts. In the cases of discourse linked null objects, French allows them as instances of clitic-drop, as in (4) (from Cummins and Roberge, 2004, p. 12):

- (4) A: ‘-Tu as lu les pages?’
 you have._{2sg} read._{PART} the pages
 ‘-Did you read the pages?’
 B: ‘-Il avait lu ____.’
 he had._{3sg} read ____
 ‘-He had read (them).’

- (5) *He had read _____

Null direct objects are also known to appear in most Spanish dialects, with non-specific referents, as shown in the examples below (from Schwenter, 2006, p. 27):

- (6) a. Fui a la tienda a comprar café pero no tenían Ø.
 went._{1sg} to the store to buy coffee but no had._{3pl}
 ‘I went to the store to buy coffee but they didn’t have (any).’
 b. Fui a la tienda a comprar el periódico pero no lo/*Ø tenían.
 went._{1sg} to the store to buy the newspaper but no it had._{3pl}
 ‘I went to the store to buy the newspaper but they didn’t have it.’
 c. Fui a la tienda a comprar una revista (específica) pero no la/*Ø tenían.
 went._{1sg} to the store to buy a magazine (specific) but no it had._{3pl}
 ‘I went to the store to buy a (specific) magazine but they didn’t have it.’
 d. Fui a la tienda a comprar una revista (cualquiera) pero no *la/Ø tenían.
 went._{1sg} to the store to buy a magazine (any) but no had._{3pl}
 ‘I went to the store to buy a (=any) magazine but they didn’t have (one).’

While both Brazilian Portuguese (BP) and European Portuguese (EP) have been both classified as Romance NSLs, null subjects occur less frequent in the former than in the latter. Moreover, even though both grammars allow for the occurrence of null objects, the constraints that

govern their distribution in BP and EP are arguably different. The remainder of this section covers these distinctions in more detail.

3.2 Phonetically unrealized subjects

The distribution of null subjects is one domain of the grammar where one can easily spot substantial differences between BP and EP. Studies investigating syntactic distinctions between the two systems have shown that the latter has remained steady, while the former has undergone some changes that have led to a transitional status, whereby overt pronominal subjects are preferred (Duarte, 1995; Kato & Negrão, 2000).

3.2.1 *European Portuguese*

EP has been claimed to be a consistent NSL of the Italian type (cf. Rizzi, 1982; Jaeggli, 1984; Roberts & Holmberg, 2010), which, as mentioned above, entails that it can have phonetically null subjects whose referents can be recovered by contextual clues. In coordinated structures, as seen in Costa, Faria & Matos (1998), an alternation between null and overt embedded subjects yields distinct co-reference patterns in EP, as illustrated in (7) (from Costa et al., 1998, p. 176):

- (7) a. A Helena_i viu a Maria_i no cinema mas Ø_i não a cumprimentou.
the Helena saw the Maria at+the cinema but no her greeted
'Helena_i saw Maria_i at the movie theater but did not greet her.'
- b. A Helena_i viu a Maria_i no cinema mas ela_{i/j} não a cumprimentou.
the Helena saw the Maria at+the cinema but she no her greeted
'Helena_i saw Maria_i at the movie theater but she_{i/j} did not greet her.'

Barbosa, Duarte & Kato (2005) claim that in EP, there is generally no co-reference between overt embedded pronouns and matrix subjects, as shown in (8):

- (8) a. O João_i disse que ele_k comprou um computador.
the João said that he bought a computer
- b. O João_i disse que Ø_i comprou um computador.
the João said that Ø bought a computer
‘John_i said that he_{i/k/*Ø} bought a computer.’
- c. O João_i disse ao Pedro_k que ele_k precisava comprar um computador.
the João said to+the Pedro that he needed to buy a computer
- d. O João_i disse ao Pedro_k que Ø_i precisava comprar um computador.
the João said to+the Pedro that Ø needed to buy a computer
‘John_i told Peter that he_{i/k/*Ø} needed to buy a computer.’

This pattern is predicted by the PAH (Carminati, 2002), since EP is a Romance NSL. Thus, the choice of null or overt subject pronoun in embedded contexts with intra-sentential anaphora resolution should be dependent on the syntactic distance of the referent. By this account, the overt embedded subject in (8c) is the first choice to establish co-with the object *o Pedro* “Peter”, and using an overt embedded subject for this purpose is not ruled out, but highly marked, as the null subject in (8d) is the preferred option.

3.2.2 Brazilian Portuguese

Unlike most standard Romance languages, BP has undergone a series of changes with respect to subject pro-drop, especially in 3rd person contexts. Diachronic studies by Duarte (1993, 1995) reveal that the person-verb paradigm in BP has been increasingly losing its morphological distinctions, which consequently has led to an increase in overt pronominal subjects. For instance, in many regions of Brazil, the 2nd person pronoun *tu* “you” has been either lost or replaced with *você* “you”, which requires agreement with the verb in the 3rd person. In addition, in most parts of Brazil where *tu* has remained, speakers often make use of a mixed-agreement system where 2nd and

3rd person forms have been collapsed, which is ungrammatical in all Romance languages but has become acceptable in BP (see Scherre, Dias, Andrade & Martins, 2015 for discussion).

As argued by Duarte (1995), in contexts with embedded subjects coreferential with the subject of the matrix clause, an originally obligatory null-subject pronoun has become optional, as shown in (9) and (10):

- (9) **Ela**, ficou solteira porque (**ela**); quis.
she stayed single because she wanted
'She remained single because she wanted to.' (Duarte, 1995, p. 43)
- (10) Porque **eu** não 'tava certo se **eu** ia querer fazer escola técnica ou se **eu** queria
because I not was sure if I would want to make school technical or if I wanted
continuar fazendo o científico.
continue making the scientific
'Because I was not sure whether I wanted to go to technical school or if I wanted to
continue high school.' (Duarte, 1995, p. 64)

This optionality is perhaps what most visibly distinguishes BP from the other typical Romance NSLs. In the examples above, no focus reading or semantic/pragmatic effects are present, which challenges the Avoid Pronoun Principle, since there is optional alternation with null counterparts (Duarte, 1993, 1995).

3.3 Phonetically unrealized objects

Both EP and BP restrict the occurrence of null objects to 3rd person referents that are pragmatically identifiable (see Kato, 1993). This means that, even though the syntactic conditions for licensing empty categories are met, null arguments must be semantically interpretable, and therefore, they need to occur in a context in which the referent can be recovered with the help of contextual clues.

3.3.1 *European Portuguese*

It has been shown by Raposo (1986) and Costa, Lobo & Silva (2009) that EP allows null object constructions in simple clauses such as in (11) (from Costa et al., 2009, p. 145), but not in contexts such as in (12) (from Raposo, 1986, p. 381):

- (11) a. A: - Sabes quem é aquele rapaz?
you.know who is that boy
‘Do you know who that boy is?’
B: - Sei. Conheço(-o) da faculdade.
I.know. I.remember-(him) from college
‘Yes. I know him from college.’
- b. Comprei aquele livro e dei(-o) à Maria.
I.bought that book and gave (it) to Maria
‘I bought that book and gave it to Maria.’
- (12) a. *Eu informei a policia da possibilidade de o Manel ter guardado Ø no cofre
I informed the police of the possibility of the Manel had kept (it) in the safe
da sala de jantar.
of the dining room
‘I informed the police of the possibility that Manel had kept (it) in the dining room safe.’
- b. *O rapaz que trouxe Ø mesmo agora da pastelaria era o teu afilhado.
the boy that brought (it) just now of the bakery was the your godson
‘The boy that brought (it) right now from the bakery was your godson.’

The examples in (11) illustrate that EP does not seem to have semantic constraints that limit the occurrence of null objects (Costa et al., 2009). Thus, sentences found in contexts such as (11a) and (11b), containing an optionally realized clitic, with animate and inanimate referents respectively,

are arguably acceptable in EP. The examples in (12) contain what is known in syntactic theory as *strong islands*. These structures do not allow extraction—movement to a higher position in the clause—without the use of a resumptive pronoun (Szabolcsi, 2005). Among many other contexts, classic examples of strong islands constructions include headed complement clauses (12a) and adjunct clauses (12b). Raposo’s (1986) claim is that, in EP, null objects are not instances of *pro*—thus not resumptive pronouns—, but instead are categorized as variables bound by a null operator [Op], as illustrated in (13) (from Raposo, 1986 in Kato, 2003, p. 133):

- (13) Op_i [O Manuel trouxe *ei* agora mesmo]
 the Manuel brought (it) now just
 ‘Manuel just brought (it).’

Because of the syntactic constraints which prevent movement from within strong islands, pronominal objects in EP must surface overtly. In other words, if null objects in EP were instances of *pro*, no extraction would take place, and they would thus be felicitous. Since they are not grammatical, they cannot be instances of *pro* and therefore must be variables (Raposo, 1986).

3.3.2 Brazilian Portuguese

Phonetically unrealized objects in BP can arguably appear within strong islands, and therefore have been described in the literature as an instantiation of the empty category *pro* (Farrell, 1990; Rothman & Iverson, 2013). This is shown in (14) and (15):

- (14) Eu guardei o livro depois de ler Ø.
 I put away_{-past-1psg} the book after of read_{-inf}
 ‘I put the book away after I read (it).’
- (15) a: “- E o carro?”
 and the car
 ‘What about the car?’

b: “- A Maria quer saber quem comprou Ø.”

the Maria wants to know who bought

‘Maria wants to know who bought it.’

There are, however, pragmatic and semantic constraints that seem to limit the occurrence of null objects in BP. Schwenter & Silva (2002) claim that pronominal objects must have referents that are inanimate or non-specific in order to be dropped. If both conditions are not met, the pronoun must be overt. This is shown in examples (16-17) (from Lopes & Cyrino, 2005, p. 3) and (18-19) (from Schwenter & Silva, 2002, p. 579):

(16) [+animate, +specific]

O policial insultou o preso antes de torturar *___/ele.

The policeman insulted._{3sg} the prisoner before of torture._{INF} *___/him

‘The policeman insulted the prisoner before torturing (him).’

(17) [+animate, -specific]

O policial insulta presos antes de torturar ___/eles.

The policeman insult._{3sg} prisoners before of torture._{INF} ___/them

‘The policeman insults prisoners before torturing (them).’

(18) [-animate, +specific]

Sabe a árvore grande que tinha na minha rua? A prefeitura derrubou Ø/?ela.

know-pres-_{3sg} the tree big that had on+the my street? the city hall knocked down she

‘You know the big tree that was on my street? City Hall knocked (it) down?’

(19) [+animate, +specific]

O cachorro da Ana adora ir na rua. Ela sempre leva ?*Ø/ele para passear.

the dog of+the Ana love._{3sg} go on+the street. she always take-_{3sg} he to walk

‘Ana’s dog loves to go out in the street. She always takes him for walks.’

3.4 Summary

This section has provided a general overview of empty category distribution in BP and EP. To sum up what has been said about the differences between the two grammars with respect to the distribution of empty categories, a few generalizations can be made:

(a) weaker agreement in the person-verb paradigm in BP yields more frequent occurrence of overt subject pronouns than in EP;

(b) in BP, overt embedded subjects which are co-referential with the subject of the matrix are arguably in free variation with their null counterparts, without the semantic or pragmatic effects present in EP, such as focus reading or topic change.

(c) In EP, null objects are ruled out within strong island due to movement constraints. These constraints do not apply in BP as null objects are instantiations of *pro* in this language.

(d) EP does not limit the occurrence of null objects by semantic constraints such as animacy and/or specificity, which arguably determine their felicitousness in BP.

The next section covers the goals of this research study in more detail.

4 Goals of the Present Study

4.1 Overview

Taking into consideration the theoretical background presented in the previous sections—the differences between heritage language acquisition and adult second language acquisition, the recent debates on L1 attrition and L2 acquisition, and the main distinctions between the distributions of empty categories in BP and EP—I highlight in this section the goals of the present study. I first expose the existent research problem and gaps in current literature. The research proposal is presented next, where I show how I intend to tackle the issues raised here. Lastly, I introduce the research questions that have motivated the present study.

4.2 The Research Problem

Despite the growing number of studies on HL acquisition and late L2 acquisition in recent years, it is typically the case that studies on these domains analyze language pairings involving typologically distinct languages, such as e.g. English-Russian and English-Spanish (Ionin, Zubizarreta & Maldonado, 2008) or German-EP (Rinke & Flores, 2014). A few scholars have also tested closely related languages (Bini, 1993 and Filiaci, 2010 for Spanish-Italian; Montrul, Dias & Santos, 2011 for Spanish-Brazilian Portuguese). Research investigating HL and L2 acquisition simultaneously is much less common (but see Montrul, 2012), and even less so when it comes to acquisition of closely related varieties. To the best of my knowledge, studies investigating both L2 and HL acquisition in the context of bidialectalism have yet to be carried out. This dissertation will fill this gap by examining how HS and adult L2 acquirers perceive fine-grained distinctions between BP and EP, two closely related Portuguese varieties. Taking a close look at morpho-syntactic domains where BP and EP are substantially different will help us understand how Brazilians, after considerable natural-

istic exposure to EP, deal with these distinctions, and how/whether the exposure to both languages affects their production and/or comprehension, both in their L1 and in their L2.

4.3 The Research Proposal

This study explores two syntactic domains where BP and EP have been argued to differ substantially. One of them is the distribution of null/overt subjects: as shown in the previous subsection, EP displays the Romance NSL pattern, with overt pronominal subjects typically used for pragmatic reasons (Barbosa, 1995; Carminati, 2002). BP, on the other hand, shows a mixed pattern with a higher occurrence of overt subjects than EP (e.g., Duarte, 1993, 1995; Barbosa, Duarte & Kato, 2005). The other is the domain of null/overt objects. BP limits restrictions on null object distribution to animacy and specificity constraints, while freely allowing for their occurrence in strong syntactic islands (Farrell, 1990; Maia, 1997; Rothman & Iverson, 2013). EP displays a topic-operator variable syntax to which these semantic constraints do not apply (Costa, Lobo & Silva, 2009), and does not allow for argument drop within strong syntactic islands (Raposo, 1986).

With these differences in mind, this study targets two sets of EP-BP bidialectal-bilinguals: (i) adult heritage speakers (HS) of BP who learned EP as children and (ii) adult BP speakers who moved to Portugal and then learned EP in adulthood. We investigate their performance in a comprehension task geared to measure whether their anaphora resolution preferences are affected by the differences in the distribution of null subjects across the two grammars. We also apply an elicited production task with the purpose of analyzing how null and overt subjects and objects are produced across the different populations. In an additional comprehension task, we focus on how the distribution of null objects is interpreted by late L2 learners. The target groups in all tasks are tested in BP and EP, which yields a unique data set that serves as the basis for a complete comparative analysis. Ultimately, we explore the extent to which the different empty category distribution has an effect for either HL or L2 learners (in both the L1 and L2, that is, BP and EP) in a closely-related language pairing, manifested through cross-linguistic effects. We compare HSs and L2 learners in

order to check whether age of onset of exposure to the L2 delimits differentially the directionality, the type and/or degree of such influence. Moreover, we test whether the naturalistic acquisition of a closely related grammar can lead to L1 attrition and/or affect L2 performance in late L2 learners.

4.4 The Research Questions

Taking into account the research trends in heritage and adult L2 acquisition and the syntactic differences between the two grammars, the following research questions (a-d) are raised, along with the corresponding hypotheses for each (a'-d').

- (a) In the language scenario tested here, are crosslinguistic effects predicted? If so, in what direction: unidirectional (L1->L2 or L2->L1) or bidirectional (L1<->L2)?
- (b) Is the answer to (a) conditioned by age of arrival to Portugal, i.e. are there distinctions between the status of HS and L2 learners that can influence the directionality of cross-linguistic effects?
- (c) Does the high degree of typological proximity between BP and EP have an effect on the acquisition of L2 properties or possible L1 attrition in either target group?

For each of the research questions, the following predictions are drawn:

(a') We predict that crosslinguistic effects should surface from BP to EP, for both groups (HS and L2 learners), but only in the null subject domain, manifested through overuse/over-acceptance of overt subject pronouns in EP-mode. This prediction is based on the Interface Hypothesis (IH) (Sorace, 2011), according to which structures at the syntax-discourse interface, such as the null vs. overt subject distribution in EP, are prone to residual optionality in advanced non-native grammars. Since both groups consist of advanced speakers of L2 EP, they are both predicted to display these effects, both in production and comprehension. The domain of null objects should not be affected, since the syntax-semantics interface is predicted to be less

vulnerable. In short, neither bilingual group is expected to show cross-linguistic effects in their native BP, but their L2 EP should be marked by an overuse of overt subject pronouns.

(b') Since HSs acquired EP as children, we can hypothesize that no significant distinctions will be found between the two groups with respect to how these cross-linguistic effects surface. This prediction is in line with Herschensohn et al. (2005) and Schwartz (2009), who maintain that, despite taking different developmental paths, the end states of child and adult L2 acquisition are similar, particularly with respect to syntax and inflectional morphology.

(c') We predict that the high degree of typological similarity between BP and EP will lead to transfer (which can surface as positive or negative), since typological relatedness has been shown to be a determining factor with respect to transfer (Wolfram & Schilling-Estes, 1998; Long, 2007; Ringbom & Jarvis, 2009; Rothman, 2015). As far as processing, we take the shared-syntax model proposed by Hartsuiker et al. (2004) as our starting point, and predict that the lexical co-activation of the L1, as a consequence of the shared BP-EP lexicon, will lead to its syntactic co-activation, which, in turn, should result in non-target-like L2 performance in comprehension. Starting from the general consensus that there is a link between typological similarity and L1 attrition (Altenberg, 1991; Gürel, 2008; Schmid, 2011 among others), whereby the closer the L1 and the L2 are typologically, the more likely the L1 will show signs of the L2 syntax, we can also predict that the high degree of typological relatedness between BP and EP will lead to L1 attrition.

5 Methodological Approach

5.1 Overview

Considering the research questions and predictions stated in the previous section, it is crucial that the participants fit a very strict profile in order to qualify as test subjects. In order to test for production and comprehension of phonetically null subjects and objects both in BP and EP, two tasks were administered first—reported in the first two papers, for both HS and L2 learners—plus one extra task at a later stage—in the third paper, for L2 learners only. The methodology used will be briefly described throughout the remainder of this section.

5.2 Papers I and II

5.2.1 Study population

Brief information about the target and control groups tested in this study has been provided previously. Table 5-1 presents more detailed descriptions of each group:

Table 5-1. Profile of Participants, Papers I and II.

	HSs (n=17)	L2ers (n=20)	BPC (n=20) (BP controls)	EPC (n=20) (EP controls)
Mean age	29.1	37.9	31.0	30.5
(at time of testing)	(range=18-52)	(range=25-58)	(range=18-54)	(range=20-52)
<i>Standard Deviation</i>	9.323483021	9.406912352	10.80034722	8.145550933
Mean age of	5.6	27.8		
L2 onset	(range=1-8)	(range=19-43)	----	----
<i>Standard Deviation</i>	2.116012441	7.608383534	----	----
Mean length of	23.5	10.1		
L2 exposure	(range=14-45)	(range 6=30)	----	----
<i>Standard Deviation</i>	8.9647522	6.255197839	----	----

To ensure that L2ers were indeed adult learners, the minimum age of EP onset was set at 18. In addition, speakers with less than six years of EP exposure did not qualify to participate in the

study, as we wanted to ensure that they had reached a stable level of L2 attainment. As for HSs, we only recruited participants who arrived in Portugal at age 8 or younger, to avoid complete settling of BP structures before EP exposure. Since all participants were 18 or older, the minimum length of exposure for HSs was set at ten years. The groups of participants recruited in Portugal (L2ers, HSs and EPCs) were tested in and around the city of Braga, in the Minho region of northern Portugal (see Figure 5-1), between March and July 2014. The BPC group was recruited in the city of Fortaleza, in the northeast of Brazil (see Figure 5-2), during July and August 2014.



Fig. 5-1: area of testing in Portugal – while most participants were tested in Braga, the range extended as far west as Rio Tinto and Gondomar, districts of Porto.



Fig. 5-2: area of testing in Brazil – most BPCs were born and raised in Fortaleza, but some participants in this group came from as far west as Rio Branco, and as far south as Porto Alegre.

5.2.2 Methods: Measurements, data collection and analysis

We applied a modified version of the Picture Verification Task (PVT) originally used in Sorace & Filiaci (2006), where anaphora resolution in Italian-English bilinguals was tested, as it targets anaphora resolution in potentially ambiguous contexts. Experimental items consisted of five fillers plus 15 sentences divided among three conditions: overt embedded subject (OES), null embedded subject (NES) and left dislocated subject (LDS):²

Each test item consisted of a sentence shown on the computer screen with three pictures.

² See Appendix C for all PVT test items.

The initial screen contained detailed instructions, which the participants were asked to read out loud, to ensure that they fully understood how to match the pictures to the sentences.³ Once ready, they could start matching, also reading the sentence out loud before choosing the picture that best described it. The pictures showed three possible referents for the overt pronoun: (i) the matrix subject; (ii) the matrix object; (iii) a disjoint referent. After the participants made their choice, they clicked on the button *Próximo* (next) to move on to the next item. All of their choices were automatically registered online after each click.

The production task chosen to elicit null vs. overt subjects and objects was adapted from Gagarina et al. (2012), from an instrument named MAIN (Multilingual Assessment Instrument for Narratives). It consists of four stories built in sets of six pictures each.⁴ Participants were given as much time as needed to look over each story. They were then instructed to retell the story to the investigator, either myself in BP-mode, or a native EP-speaking assistant in EP-mode. Once finished with the story, they were asked to look over the next story and repeat the process, until all four stories were told.

5.3 Paper III

5.3.1 *Study population*

A few adjustments were made to the original group distribution shown in the previous two papers, to cover some limitations. We had originally done a study on phonologically unpronounced objects with the same populations detailed in Papers I and II. However, the data had to be discarded as the task presented some methodological issues (discussed in more detail in subsection 7.5). Thus, we created a new task to be applied with a new population. Originally, the purpose of the data collected at this stage was to be compared to the data obtained for Papers I and II. Thus, it was crucial that the groups tested were composed by participants under similar conditions. Unfortunately, we were not able to recruit a substantial number of heritage speakers for our compa-

³ See Appendix B for PVT instruction screens.

⁴ See Appendix D for all four stories used in the production task.

rative analysis, so Paper III focuses on adult acquisition of EP by BP natives. The three populations tested are illustrated in Table 5-2:

Table 5-2. Participant information, Paper III.

	L2ers (n=32)	BPC (n=34) (BP controls)	EPC (n=32) (EP controls)
Mean age (at time of testing)	33.1 (range=22-53)	30.3 (range=20-54)	27.0 (range=18-67)
<i>Standard deviation</i>	7.577331	7.919049	9.708818
Mean age of L2 onset	22.9 (range=13-42)	—	—
<i>Standard deviation</i>	6.700332	—	—
Mean length of L2 exposure	10.2 (range=6-17)	—	—
<i>Standard deviation</i>	3.005728	—	—
Mean frequency of BP usage	45.31%	88.97%	21.09%
Mean frequency of EP usage	54.69%	11.03%	78.91%
<i>Standard deviation</i>	15.86384	12.41776	11.0252

Unlike what was done in the earlier stages of testing, as seen in Papers I and II, the participants in the control groups were not all recruited in the same region, but rather spread across both Brazil and Portugal to wash out possible dialectal distinctions within each country. Minimum age of EP onset was set at 13, which is still within adult L2 range. A detailed geographical distribution of the participants in each control group can be seen in Figures 5-3 and 5-4.

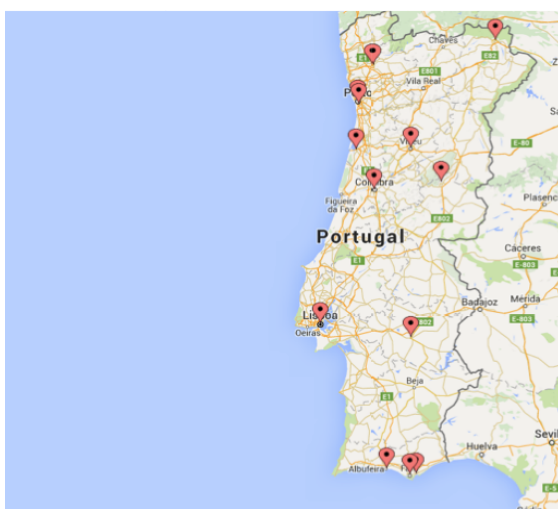


Fig. 5-3: control participants in Portugal – controls were recruited across the entire country, from as far north as Trás-os-Montes down to coastal towns in the Algarve.



Fig. 5-4: control participants in Brazil – the distribution of BPCs spreads from north to south, including participants in the less populated Amazon region.

The target group was recruited in and around the city of Lisbon, in April and May 2016. Participants were asked to fill out a background questionnaire, also seen in Appendix A, where they indicated their place of origin, age, frequency of BP/EP usage and level of instruction. Lisbon has reportedly the largest Brazilian community in Portugal; therefore, we chose this area to recruit participants as we predicted to find more variation among them, with respect to their socioeconomic status, age of arrival, linguistic upbringing and place of origin in Brazil. This ensured a fair comparison as the group was matched with the controls as far as its diversity.

5.3.2 Methods: Measurements, data collection and analysis

We used an Acceptability Judgment Task (AJT), by which participants judged the acceptability of sentences on a Likert scale of 1 to 6 after reading and listening to the context and the target sentence. Each point on the scale was labeled to make sure participants would understand with precision how they were distributed. The scale used in this task is detailed in Table 5-3:

Table 5-3. Acceptability Scale, AJT.

	1	2	3	4	5	6
EP	<i>Péssima</i>	<i>Muito Má</i>	<i>Má</i>	<i>Boa</i>	<i>Muito Boa</i>	<i>Excelente</i>
BP	<i>Péssima</i>	<i>Muito Ruim</i>	<i>Ruim</i>	<i>Boa</i>	<i>Muito Boa</i>	<i>Excelente</i>
English	Poor	Very Bad	Bad	Good	Very Good	Excellent

Experimental items consisted of 40 items, plus 40 fillers which served as target items for another study, and 20 random fillers to ensure equal distribution of grammatical and ungrammatical items for both versions of the task.⁵ The 40 items were divided into eight conditions, five per condition:

- null animate in islands (NAI);
- null inanimate in islands (NII)
- null animate in simple clauses (NAS)
- null inanimate in simple clauses (NIS)
- overt animate in islands (OAI)
- overt inanimate in islands (OII)
- overt animate in simple clauses (OAS)
- overt inanimate in simple clauses (OIS)

The first page consisted of a screen with a text containing detailed instructions that had also been recorded and were played automatically.⁶ Once they were ready to begin, the participants were told to click in *Continuar* “Continue” to begin judging. All of their choices were automatically registered online after each click.

⁵ See Appendix F for AJT test items.

⁶ See Appendix E for AJT instruction screens.

6 Summary of Results

6.1 Overview

This section presents a brief summary of the results found in each paper. In each subsection, I offer a descriptive account of the statistical models used and what they indicate about the performance of both target and control groups. The theoretical implications of the data will be referred to in the following section.

6.2 Paper I

In order to test whether the target groups displayed any statistical differences across the different modes and conditions, we used a mixed effects linear regression model.⁷ The threshold for statistical significance was set at $p \leq .05$. The statistical model included variables of group, mode (BP vs. EP) and condition (overt vs. null embedded subject) as fixed effects. The left-dislocated subject (LDS) condition was used as a filler, and thus not included in the statistical analysis.

The overall percentage of acceptance across all groups when considering co-reference with the matrix subject as the baseline is presented in Figure 6-1, for each of the target conditions.

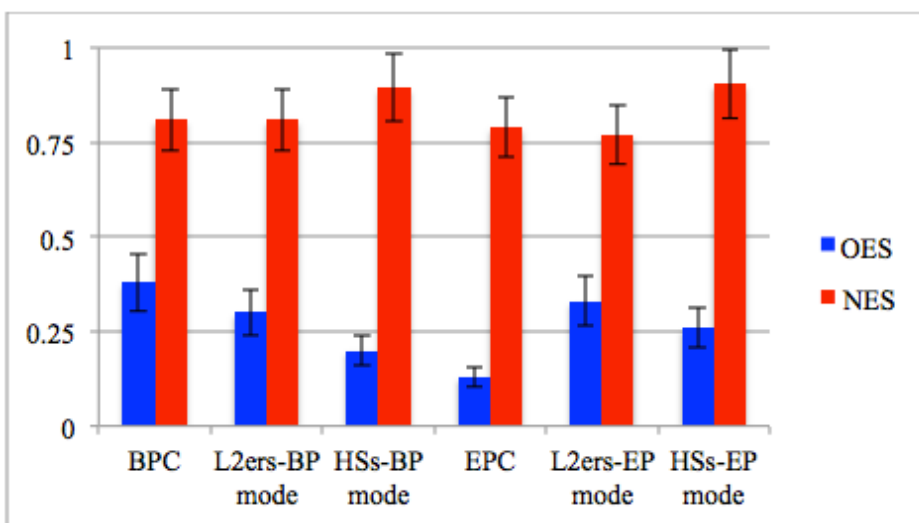


Fig. 6-1: percent acceptance, co-reference with subject

⁷ Detailed tables with the statistical analysis can be found in Appendix G.

Figure 6-2 illustrates the overall choices taking co-reference with the object as the baseline.

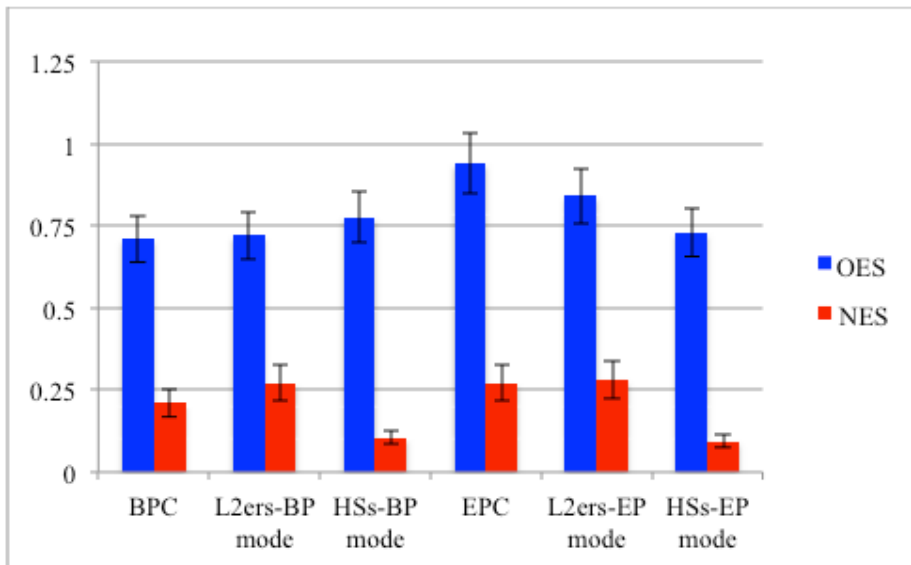


Fig. 6-2: percent acceptance, co-reference with object

The difference between the control groups in the Overt Embedded Subject (OES) condition was highly significant ($p=0.000$), indicating that the two grammars display different patterns. In BP-mode, the L2 learners pattern with BPC ($p=0.325$), but not with EPC in EP-mode ($p=0.007$). They also seemed to behave similarly to the HSs in both modes (BP, $p=0.178$; EP, $p=0.376$). As for HSs, they differ from BPCs ($p=0.024$), but do not differ from themselves across BP vs EP-mode ($p=0.719$). Unlike the L2ers, they pattern with EPCs in EP-mode ($p=0.088$).

In the Null Embedded Subject (NES) condition, BPCs and EPCs showed no statistical difference ($p=0.970$). The L2 learners patterned with both controls in their respective modes, EP ($p=0.668$) and BP ($p=0.852$). They also did not diverge from the HSs in BP-mode ($p=0.122$), but did so in EP-mode ($p=0.025$). No statistical differences were registered for the L2ers across the modes ($p=0.803$). HSs also patterned with BPCs ($p=0.169$) and EPCs ($p=0.052$) in each respective mode, maintaining similar behavior across the modes ($p=0.488$).

If we attempt to establish a comparison between the NES and OES conditions to see the effect caused by the inclusion of an overt subject, we reach the following results. BPCs are statistically different from EPCs ($p=0.001$). The L2 learners in EP-mode are also different from EPCs ($p=0.002$), but not different from BPCs when in BP-mode ($p=0.509$), nor are they different

from themselves across the modes ($p=0.699$). The HSs in EP-mode pattern with the EPCs ($p=0.822$), but in BP-mode they differ from the BPCs ($p=0.002$). They do not differ from themselves across the modes ($p=0.716$), so no mode effect was found for either L2 or HS groups. The HSs are significantly different from L2ers both in EP-mode ($p=0.003$) and in BP-mode ($p=0.014$).

6.3 Paper II

In order to analyze the production data for both subjects and objects, we used different mixed effects models with group and mode as fixed effects.⁸ The overt pronominal subject distribution as performed by all groups is shown in Figure 6-3, and the overt pronominal object distribution is illustrated in 6-4:

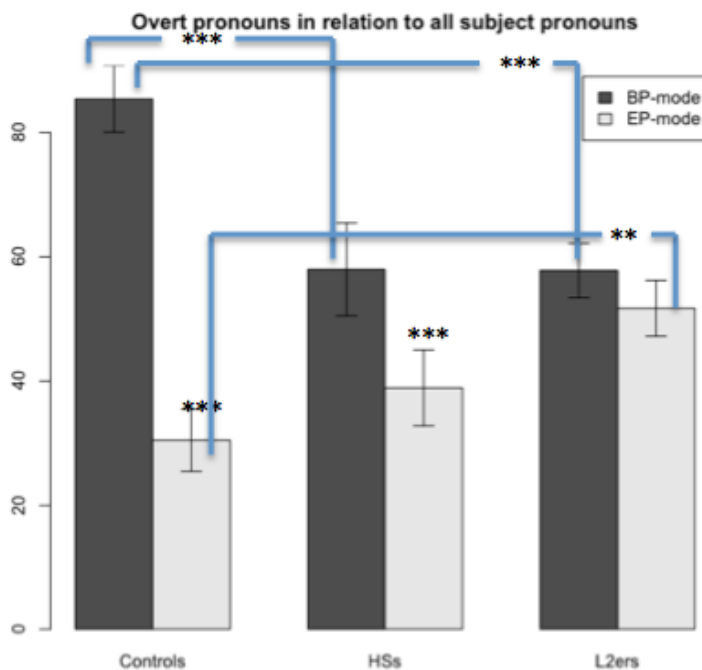


Fig. 6-3: overt subject pronouns in relation to all subject pronouns

We find that, regarding the frequency of overt pronouns in relation to all subject pronouns, the controls are visibly different from each other ($p=0.000$). L2ers do not show a mode-split ($p=0.344$). Interestingly, they differ significantly from both sets of controls (BP-mode: $p=0.000$;

⁸ Detailed tables with the statistical analysis can be found in Appendix G.

EP-mode: $p=0.004$), which indicates bidirectional cross-linguistic effects. HSs show a significant split across the two modes ($p=0.008$). In BP-mode, HSs seem to differ from monolingual BP controls ($p=0.004$), but not from EP controls in EP-mode ($p=0.274$). HSs and L2ers do not differ from one another ($p=0.304$).

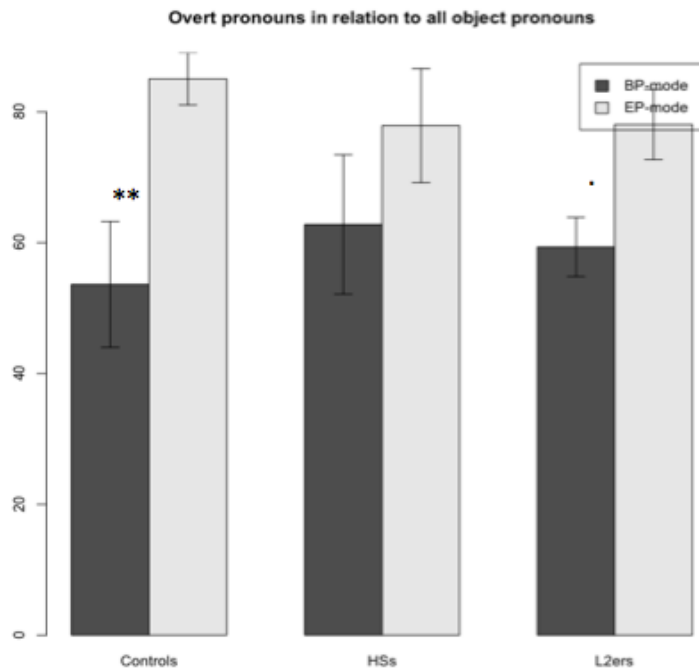


Fig. 6-4: overt object pronouns in relation to all object pronouns

As was shown for subjects, the control groups also show significantly different behavior regarding the distribution of overt pronominal objects ($p=0.004$). L2ers do not show significant distinctions across the two modes ($p=0.055$), and pattern with both controls (BP-mode: $p=0.491$; EP-mode: $p=0.468$), which suggests no cross-linguistic effects in either direction. Contrary to what was found for subjects, HSs show no mode-split regarding their null vs. overt object preferences ($p=0.112$). They also seem to pattern with BPCs and EPCs (BP-mode: $p=0.388$; EP-mode: $p=0.481$). No statistical difference was found between L2ers and HSs with respect to null vs. overt object preferences ($p=0.909$).

6.4 Paper III

A descriptive analysis of the performances for each group is presented below, followed by a summary of the statistical analysis. Figures 6-5 and 6-6 below illustrate the means of the values attributed to each condition, divided according to the groups tested. These means are spelled out in Table 6-1.

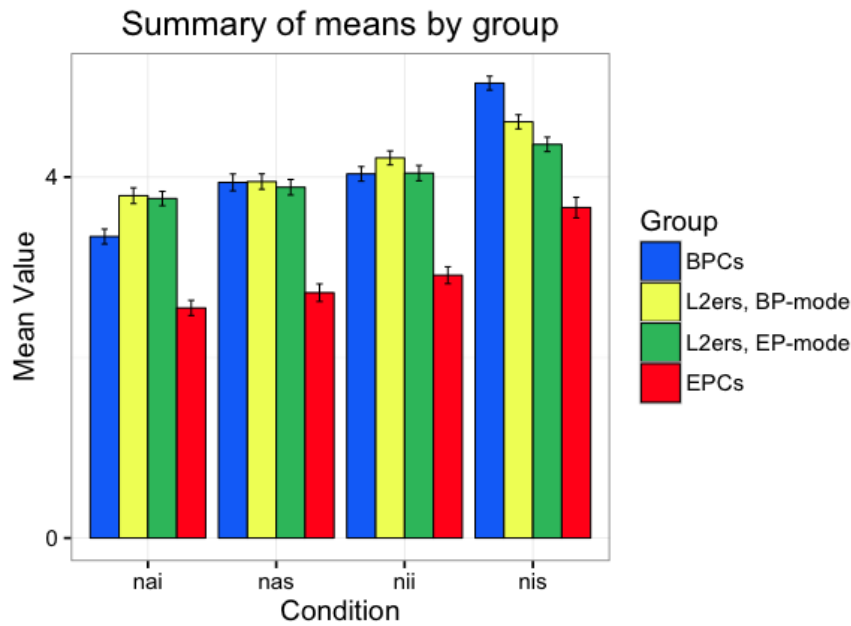


Fig. 6-5: means by group, null conditions

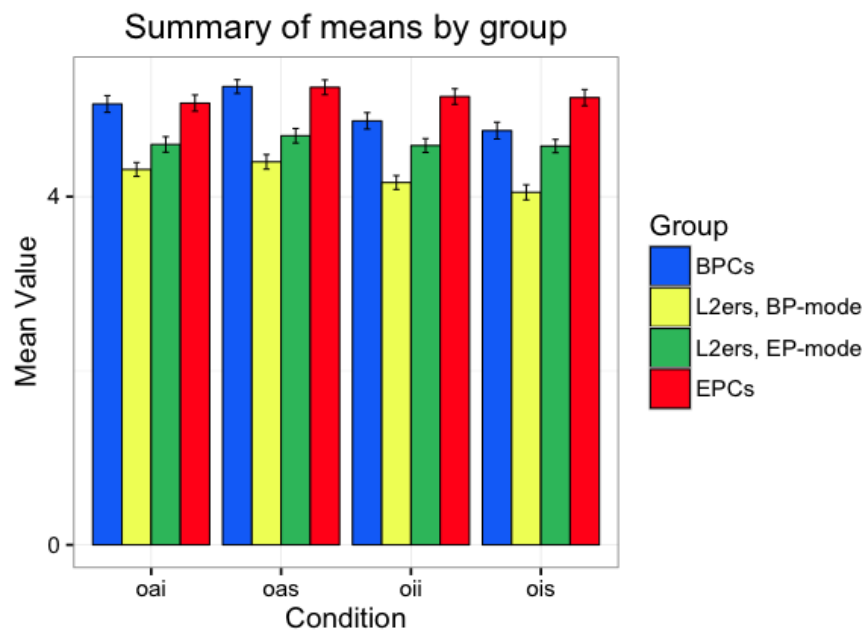


Fig. 6-6: means by group, overt conditions

Table 6-1. Means by group for each condition, grouped as null conditions (top) and overt conditions (bottom).

Condition	BPCs	L2ers – BP-mode	L2ers – EP-mode	EPCs
NAI	3.341176	3.79375	3.76250	2.55000
NAS	3.941176	3.95000	3.88750	2.71875
NII	4.035294	4.21250	4.04375	2.91250
NIS	5.041176	4.61250	4.36250	3.66250
OAI	5.064706	4.31250	4.60000	5.07500
OAS	5.264706	4.40000	4.70000	5.25625
OII	4.870588	4.16250	4.58750	5.15000
OIS	4.758824	4.05000	4.58125	5.13750

We ran several mixed-effects models with condition and group as fixed effects, to make sure all variables were considered in our comparisons.⁹ With respect to how the groups interpreted the null vs. overt distinction, we have the following results:

- (i) BPCs and EPCs understand that all four null contexts must be attributed values that are significantly different from their overt counterparts ($p < 0.05$). The proportions by which the two control groups understand this distinction are also significantly different from one another in all four contexts. In other words, both BPCs and EPCs recognize that null and overt conditions should be given different values, but the spread of this difference is not the same across the two groups;
- (ii) L2ers also interpret the null contexts as different from their overt counterparts, with two exceptions: no distinction between null inanimates in islands (NII) and overt inanimates in islands (OII) in BP-mode ($p = 0.686$) and no distinction between null inanimate in simple clauses (NIS) and overt inanimates in simple clauses (OIS) in EP-mode ($p = 0.077$). For three of the four comparisons, we detected a mode-split, which means that in most contexts, the way in which L2ers interpreted the differences between the null and overt conditions was different across BP- and EP-modes. The only context where they did not show any mode distinction was with animate referents within strong islands (NAI-OAI) ($p = 0.068$).

⁹ Detailed tables with the statistical analysis can be found in Appendix G.

(iii) Compared to BPCs, L2ers in BP-mode only showed similar behavior in contexts with inanimate referents in simple clauses (NIS-OIS) ($p=0.104$). In the other three contexts, they did not display BP-like behavior. In EP-mode, BP-like results were found for contexts with inanimate referents in strong islands (NII-OII) ($p=0.091$). When compared to EPCs, L2ers did not show EP-like behavior when tested in either mode, all differences being statistically significant ($p<0.05$).

When taking into consideration the semantic constraints tested in the study, namely the distinction between animate and inanimate referents, we find that in contexts with an overt pronoun in strong islands (OAI-OII), all groups show no statistical differences regarding animacy (BPCs, $p=0.106$; EPCs, $p=0.544$; L2ers in BP-mode, $p=0.226$; L2ers in EP-mode, $p=0.919$). L2ers and EPCs, in addition, show no differences between their judgments for contexts with animate and inanimate referents with overt pronouns in simple clauses (OAS-OIS) ($p=0.337$ for both groups). The comparisons with null pronouns show that all groups display significant distinctions between animate and inanimate referents in these contexts, regardless of the syntactic environment (simple clause or island).

When we isolate the syntactic environment as the basis for our comparisons (strong island vs. simple clause), we find that BPCs only show significant differences in the null conditions (NAI-NAS and NII-NIS), but not in the overt conditions (OAI-OAS and OII-OIS) ($p=0.096$ and $p=0.352$, respectively). The L2ers (in both modes) and EPCs show similar behavior; the only context where significant differences were found was in sentences with null pronouns and inanimate referents (NII-NIS).

7 Discussion

7.1 Overview

In this section, I bring together the findings of all three papers, discussing the results shown in Section 6. I then address each of the research questions and discuss the predictions made in Section 4, along with the theoretical implications the data bring to the field. Towards the end of the section, I point out some limitations of this study, and indicate possible directions for future research.

7.2 Theoretical Implications

Having reviewed the empirical findings of the study, I now return to the research questions presented in Section 4. Each question will be addressed with respect to the results of each of the three papers, followed by a consideration of implications for the study of SLA.

- (a) In the language scenario tested here, are crosslinguistic effects predicted? If so, in what direction: unidirectional (L1->L2 or L2->L1) or bidirectional (L1<->L2)?

In order to measure cross-linguistic effects in this language pairing, it is crucial that we first show the different distribution across the two control groups. In Paper I, the statistical difference found between BPCs and EPCs in the Overt Embedded Subject (OES) condition suggests that, even though BPCs, like EPCs, prefer co-reference with the object, they still allow for co-reference with the subject significantly more than EPCs (BPC=38%; EPC=13%; $p < 0.01$). This difference is expected given the optionality of the overt pronoun in BP (Duarte, 1993; 1995). While EP speakers make use of overt pronouns for pragmatic reasons such as emphasis or contrast, BP speakers seem to alternate between null and overt pronouns without the same effects. Thus, the presence of an overt pronoun does not seem to change co-reference in BP to the same extent that it does in EP. Regarding the null vs. overt pronominal subject distribution, the grammatical differences between BP and EP shown in Section 4 are also confirmed by the control data presented in Paper II. The

data show a much higher overall occurrence of overt pronominal subjects in BP (86.92% overt; 226/260), while the EP control data indicates a preference for null subjects (26.18% overt; 50/191). The comprehension data from Paper III show that BPCs and EPCs interpreted the distinctions between null and overt objects differently, which was expected given the different distribution in each system. The spread of the difference between null and overt object contexts was larger in EP than in BP, and that must be attributed to how each group interpreted the syntactic and semantic variables that were tested.

Taking the Interface Hypothesis (IH) as our point of departure, we predicted that both target groups would display crosslinguistic effects from BP to EP, in the null subject domain, by overusing /overaccepting overt subject pronouns in EP-mode. As mentioned in Section 2, the IH (Sorace, 2011) maintains that structures at the syntax-discourse interface, such as the null vs. overt subject distribution in EP, are vulnerable in advanced non-native grammars. Since this distribution is not at an interface in BP, no L2->L1 effects are predicted by the IH. Given that both groups consist of advanced speakers of L2 EP, the IH predicts that both groups would produce more overt pronouns than EP controls, and accept them in contexts which are less preferred by monolinguals. The IH does not predict any effects in the domain of null objects, since the syntax-semantics interface is predicted to be less vulnerable. In short, neither bilingual group is expected to show cross-linguistic effects in their native BP, but their L2 EP should be marked by an overuse of overt subject pronouns.

The results from Paper I show that L2ers in EP-mode do, in fact, accept overt subject pronouns in contexts where EP speakers prefer a null counterpart, and show no EP->BP effects in comprehension. In Paper II, this group also produced significantly more overt subject pronouns in EP-mode than EP monolinguals. Data from Paper II also show that neither group displayed cross-linguistic effects in the domain of null objects. These three findings are in line with the IH. However, most of our data cannot be explained only in terms of an account based on underspecification of interface conditions. First, HSs (child L2 learners of EP) patterned with EP

monolinguals, both in production and comprehension of the null subject pattern, without making use of the bilingual strategy predicted by the IH, i.e. overuse of overt pronouns. We also find that, in production, both groups showed effects in the direction EP->BP, which surfaced as an overuse of null pronouns. This was not predicted by the IH since this structure is not at an interface in BP, and any effects of bilingualism were expected to surface in the form of more overt pronouns—but what we see is precisely the reverse. Furthermore, the results presented in Paper III also show that even the null vs. overt object distribution was vulnerable to bidirectional cross-linguistic effects in L2ers. Though this pattern was only shown in comprehension, it goes against the effects predicted by the IH.

- (b) Is the answer to (a) conditioned by age of arrival to Portugal, i.e. are there distinctions between the status of HS and L2 learners that can influence the directionality of cross-linguistic effects?

We hypothesized that no significant distinctions would be found between the two groups with respect to how these cross-linguistic effects surfaced, in light of claims by Herschensohn et al. (2005) and Schwartz (2009), who predict that child and adult L2 acquisition should have similar outcomes, particularly with respect to syntax (and inflectional morphology). This is partially confirmed in our results. As discussed in Paper II, no statistical differences were found between the two target groups in production, but Paper I shows that their anaphora resolution preferences were different in both modes. Ringbom & Jarvis (2009) discuss that bilinguals typically display different performance in production vs. comprehension, as a result of how the similarities between the two languages are perceived and encoded by each individual. In production, learners must derive language structures from existing knowledge, based on what they assume to be similar in the two systems. In comprehension, they attempt to establish a link between the structures that they are prompted with and the existing knowledge on the basis of perceived similarities. While this alone does not explain why our target groups were only different in comprehension but not in

production, it illustrates that the two processes are not handled the same way in bilingual minds. The similar outcomes predicted by Herschensohn et al. (2005) and Schwartz (2009) were found in our production data, which shows that both groups *assume* the similarities between the two languages the same way. The differences in comprehension entail that child and adult L2ers do not *perceive* these similarities equally, which must be attributed to the obvious differences between these two types of acquisition. We can assume that, since child L2ers receive EP input early on, they are more successful than adult L2ers at distinguishing the two systems when prompted with each, as they have had to do so for most of their lives. Adult L2ers, on the other hand, were only introduced to the new system later in life, and thus are not as efficient at interpreting the similarities between BP and EP. As a result of limited access to syntactic knowledge, bilinguals typically show less effective processing of constructions at the syntax-discourse interface. Studies targeting processing strategies have also shown that bilinguals are at a disadvantage when it comes to integrating syntax and contextual clues (see Kilborn, 1992; Roberts, Gullberg & Indefrey, 2008). In production, encoding the existing knowledge into language structures involves a heavier processing load, which results in non-target-like behavior as a result of syntactic co-activation of the L1 (Hartsuiker & Pickering, 2008).

- (c) Does the high degree of typological proximity between BP and EP have an effect on the acquisition of L2 properties or possible L1 attrition in either target group?

We predicted that the high degree of typological similarity between BP and EP could lead to either positive or negative transfer, since it has been shown that that in cases where the L1 and L2 are closely related, transfer is more likely to take place than in scenarios involving typologically distant languages (Wolfram & Schilling-Estes, 1998; Long, 2007; Rothman, 2015). In light of Hartsuiker et al. (2004) we predicted that the lexical co-activation of the L1, caused by the vastly shared BP-EP lexicon, would lead to its syntactic co-activation, which would entail L1->L2 effects in comprehension. We also predicted to find some effects in the reverse direction, based on studies

from Altenberg (1991), Gürel (2008) and Schmid (2011) which maintain that the closer the L1 and the L2 are typologically, the more likely the L1 will show signs of the L2 syntax. As we have already shown, data from Paper I show effects of BP transfer in adult L2ers, manifested by an overuse of overt subject pronouns in EP. In production, these learners reached target-like performance in the L2 in the domain of objects, as can be seen in Paper II, but in the comprehension data discussed in Paper III, the pattern shown by the L2ers is different from what the EP monolinguals display. This is in line with Hartsuiker et al.'s (2004) shared-syntax account, as the lexical co-activation of BP—as triggered by the mostly shared lexicon between the two languages—likely leads to its syntactic co-activation, and consequently, to non-target like performance in EP-mode. In other words, the two systems have structural differences regarding the distribution of empty categories, but share most of the lexicon, resulting in syntactic co-activation of BP when prompted with EP contexts. These effects may not have surfaced, or at least not to the same extent, if the typological distance between the two systems was larger, though this still needs to be empirically confirmed.

As for potential L1 attrition, data from Papers I and II show that the heritage BP of the HSs has been affected by their dominant EP (see Montrul & Ionin, 2012 for discussion on dominance effects in HLA), particularly with respect to the null vs. overt subject distribution. L2ers did not show signs of attrition in production of null vs. overt objects, as their performance in BP-mode did not reflect influence from EP, but did so in comprehension as discussed in Paper III. As previously suggested by Altenberg (1991) and discussed in Schmid (2011), typological relatedness seems to be indeed a factor that can contribute to L1 attrition. We conclude from Paper III that the distinction between null and overt objects in EP has been acquired by our target group, or at least enough of it to interfere in their L1 performance, which did not happen with the adult learners from Paper I.

7.3 Additional Observations

In light of Schwenter & Silva (2002), we predicted that BP monolingual controls would accept null objects with inanimate referents more than with animate referents. While an effect of animacy was

indeed found for BPCs, the same animacy effects were also found for EPCs. This was not predicted, as, according to Costa et al. (2009), animacy constraints only determine the occurrence of null objects in BP, not in EP. Another surprising result emerged from the analysis of simple clauses vs. island contexts, where, according to Raposo (1986), EPCs should display a clear difference from BPCs since null objects are not licensed within strong islands.¹⁰ As it turns out, BPCs, like EPCs, displayed so-called “island effects” in their judgments, giving preference to the occurrence of null objects in simple clauses, unlike what had been shown in Rothman & Iverson (2013), Lopes & Santos (2014) and others. In other words, both control groups showed animacy and island effects, despite behaving statistically different from one another. The same syntactic and semantic restrictions seem to apply in both BP and EP, but not to the same extent. The reasons behind this disparity should be further investigated in theoretical studies. Given that EPCs do not distinguish between islands or simple clauses in contexts with animate referents—judging both equally unacceptable—we conclude that animacy plays a stronger role in EP than the syntactic environment.

We find that animacy and syntactic environment also play a role in the L2ers’ performance. The values assigned by the target group to contexts with null objects showed significant variation from animate to inanimate referents, in both syntactic environments tested. Interestingly, they showed significant distinction between null objects in simple clauses when the referent was inanimate, but not with animate referents. L2ers differ significantly from both control groups for the most part, but still display BP-like behavior when in BP-mode in contexts with inanimate referents in simple clauses. In contexts with inanimate referents in strong islands, their performance shows BP-like behavior, even when tested in EP-mode. It can be concluded that the syntactic and semantic factors that have been argued to determine the null object occurrence in BP and EP are both at play, not only for monolinguals but also for speakers exposed to both systems.

¹⁰ Raposo (2004), however, has revised his original concept, considering the examples from Raposo (1986) marginally acceptable. The island effects in EP, and in BP, as shown here, seem to be linked to preference and not to grammaticality.

As for the predictions made by the Interface Hypothesis (IH), we have shown that our data cannot be explained on the basis of interface distinctions (i.e. syntax-semantics in comparison with syntax-discourse). We might interpret this as a sign that there is something about the structural distinction between subjects and objects that causes both L2ers and HSs to interpret them differently. This subject/object asymmetry is arguably related to the fact that subject agreement is by far more common than object agreement, as all sentences have subjects but not all sentences have objects (Wang, Lillo-Martin, Best, & Levitt, 1992) and attributed to structural differences in the syntactic nature of each category (O’Grady, Lee & Choo, 2003).

7.4 Limitations and Future Research

One of the limitations of this research study is that Paper III does not include a heritage speaker group, and since Papers I and II compare HL and L2 acquisition, the lack of heritage data in Paper III does not allow us to make any claims regarding their comprehension of null vs. overt objects. Originally, we had designed a task that was applied with the same speakers from Papers I and II, with the goal of testing whether null objects in BP and EP are understood the same way by both L2ers and HSs. The task was a Truth Value Judgment Task (TVJT), adapted from Costa & Lobo (2009). However, a few methodological issues were raised during the data analysis stage. Unfortunately, the experimental design had incidentally misled the participants to feel less inclined to accept sentences with null objects, because all the experimental items began with DPs.¹¹ The task dealt with judgments of answers to questions, and the repetition of DPs as part of the answer is an unnatural response, as the preferred option would be for an overt pronoun in BP and a null pronoun in EP, and consequently, the acceptance of null/overt objects might have been affected. In addition, the statistical power necessary to confirm the results of the task was relatively low, due to the fact that the items and conditions were not precisely counterbalanced. Therefore, a reformu-

¹¹ It appears to be the case that null objects are more likely to occur in EP in sentences with null subjects. This was pointed out to me by native EP speakers during Going Romance 2014. While I do not have doubts about their native intuition, it must be said that this has not been empirically tested as of yet.

lation of the task, including a larger number of participants and more items for comparison, was deemed necessary. We then developed the AJT and reapplied it in Lisbon with a new population. All of the items of the new task were counterbalanced to account for the asymmetry between both dialects.

Since the Brazilian community in Lisbon is by far the largest in Portugal, it was not hard to find participants for our L2 group. Unfortunately, it was extremely hard to find heritage BP speakers that could be comparable to the ones in Papers I and II within the two months I spent in Lisbon. Most HSs I came into contact with were younger than 15, and the few adult HSs I managed to recruit would not have been enough for an appropriate comparison. As a consequence, we chose to discard their data and only analyze the data obtained from the L2 group. We encourage researchers who are based in Portugal to further investigate BP natives differing in age of arrival and develop the comparisons that lack in this dissertation.

It must also be noted that some of the production data discussed in Paper II may present some limitations with respect to the generalizability of the findings. Given that so few null objects were produced in comparison with the number of null subjects, the pattern displayed by both HSs and L2ers could be interpreted as vague, as statistical differences are hardly ever significant in such a small sample size. We believe that the Elicited Production Task we used was appropriate to test the production of subjects, but the stories did not yield all the contexts we anticipated, especially since we could not test for differences between simple clauses and islands as no island contexts were produced. A new production task, perhaps question/answer based and specifically controlled to elicit null objects both in islands and simple clauses, should be applied.

Further research should pursue whether other domains of the grammar where BP and EP display strong distinctions (e.g. phonology and lexicon) are more vulnerable. Similar studies analyzing the interaction among speakers of other mutually intelligible languages and inter/intra-dialectal variation could also shed light on the issues raised here. The subfields of HL and L2 acquisition can benefit from innovative studies tackling cross-linguistic transfer in closely related

languages. I encourage scholars to explore any gaps left and any questions not answered in this dissertation, in the hope that valuable contributions to the field of formal approaches to second language acquisition continue to bloom.

8 Conclusion

The conclusions drawn in this dissertation aim at shedding light on formal linguistic studies investigating the roles that input and contact play in the acquisition of closely related varieties. The results discussed here give support to the consensus that typological relatedness is a factor that can lead to difficulties in L2 acquisition and processing. We also find that in the language pairing tested here, transfer from the L1 takes place selectively, as a possible consequence of asymmetry in the structure of null subjects and objects, but not as a direct result of differences across interfaces. Furthermore, our results indicate that L1 attrition and typological relatedness are strictly correlated, as previous research involving language scenarios with varying degrees of proximity had suggested.

The findings of this study simultaneously contribute to the subfields of heritage language and second language acquisition, particularly with respect to possible effects of typological relatedness. The language pairing used here allowed for an appropriate investigation of these effects, as it is comprised of two Portuguese variants which are uniquely similar, but different at the same time. The comparisons between the two types of acquisition tested here—HL and child/adult L2—add insightful value to studies investigating naturalistic acquisition within these two subfields. The fact that selective transfer also takes place in closely related varieties gives room for further investigation within bilingual and bidialectal studies.

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Papers I-III

Appendices

APPENDIX A - LANGUAGE BACKGROUND QUESTIONNAIRES



Questionário 1

Nome: _____	E-mail para contato: _____
Data de Nascimento: _____	Profissão: _____
Local de Nascimento: _____	Grau de Instrução: _____
Viveu em outra cidade brasileira? _____	Se sim, onde? _____ de _____ a _____ _____ de _____ a _____

Línguas faladas além do Português Brasileiro _____
Nível de competência em línguas faladas além do Português Brasileiro: _____
Seus parentes próximos falam outros idiomas? Se sim, quais? _____
Viveu no exterior? _____ Se sim, onde? _____ de _____ a _____ _____ de _____ a _____
Recebeu alguma instrução formal no exterior? Qual? _____

Translation of questionnaire 1

Name: _____ E-mail address: _____

Date of Birth: _____ Occupation: _____

Place of birth: _____ Level of Education: _____

Have you lived in another
Brazilian city? _____ If yes, where?
_____ from _____ to _____
_____ from _____ to _____

Languages spoken besides Brazilian Portuguese _____

Level of competence in languages spoken besides Brazilian Portuguese _____

Have you lived abroad? _____ If yes, where?
_____ from _____ to _____
_____ from _____ to _____

Do your close relatives speak foreign languages? If yes, which ones? _____

Have you received formal instruction abroad? What kind? _____

Questionário 2-3

Nome: _____ E-mail para contato: _____

Data de Nascimento: _____ Profissão: _____

No Brasil

Local de Nascimento: _____ Grau de Instrução: _____

Morou em outro estado brasileiro? _____ Se sim, onde? _____ de _____ a _____
_____ de _____ a _____

Línguas faladas além do Português Brasileiro

Nível de competência em línguas adquiridas no Brasil além do Português Brasileiro:

Seus parentes próximos falam outros idiomas? Se sim, quais?

Morou no exterior (além de Portugal)? _____ Se sim, onde? _____ de _____ a _____
_____ de _____ a _____

Recebeu alguma instrução formal no exterior? Qual? _____

Línguas a que foi exposto fora do Brasil: _____

Em Portugal

Quando chegou a Portugal? _____

Em que cidades morou e por quanto tempo? _____

Línguas faladas além do Português Europeu

Nível de competência em línguas adquiridas em Portugal além do Português Europeu:

Translation of questionnaire 2-3

Name: _____ E-mail address: _____

Date of Birth: _____ Occupation: _____

In Brazil

Place of birth: _____ Level of Education: _____

Have you lived in another If yes, where?

Brazilian state? _____ from _____ to _____
_____ from _____ to _____

Languages spoken besides Brazilian Portuguese _____

Level of competence in languages acquired in Brazil besides Brazilian Portuguese

Have you lived abroad If yes, where?

(aside from Portugal)? _____ from _____ to _____
_____ from _____ to _____

Do your close relatives speak foreign languages? If yes, which ones? _____

Have you received formal instruction abroad? What kind? _____

Languages to which you were exposed outside Brazil _____

In Portugal

When did you arrive in Portugal? _____

In what cities have you lived, and for how long? _____

Languages spoken besides European Portuguese _____

Level of competence in languages acquired in Portugal besides European Portuguese



Questionário 4

Nome: _____	E-mail para contato: _____
Data de Nascimento: _____	Profissão: _____
Local de Nascimento: _____	Grau de Instrução: _____
Viveu em outra cidade portuguesa? _____	Se sim, onde? _____ de _____ a _____
	_____ de _____ a _____

Línguas faladas além do Português Europeu	

Nível de competência em línguas faladas além do Português Europeu:	

Seus parentes próximos falam outros idiomas? Se sim, quais?	

Viveu no exterior ? _____	Se sim, onde? _____ de _____ a _____
	_____ de _____ a _____
Recebeu alguma instrução formal no exterior? Qual? _____	

Translation of questionnaire 4

Name: _____ E-mail address: _____

Date of Birth: _____ Occupation: _____

Place of birth: _____ Level of Education: _____

Have you lived in another Portuguese city? _____ If yes, where?
_____ from _____ to _____
_____ from _____ to _____

Languages spoken besides European Portuguese _____

Level of competence in languages spoken besides European Portuguese _____

Have you lived abroad? _____ If yes, where?
_____ from _____ to _____
_____ from _____ to _____

Do your close relatives speak foreign languages? If yes, which ones? _____

Have you received formal instruction abroad? What kind? _____

QUESTIONÁRIO LINGUISTICO – AJT VERSÃO BRASILEIRA

Obrigado pelas respostas! Para facilitar a análise dos nossos dados, por favor preencha os campos abaixo.

Local de Nascimento _____ Sexo () Masculino () Feminino

Idade _____

Grau de escolaridade

- () Ensino Fundamental incompleto () Ensino Fundamental completo
() Ensino Médio incompleto () Ensino Médio completo
() Ensino Superior incompleto () Ensino Superior completo

Se você não mora no Brasil, em que ano chegou a Portugal?

- () Moro no Brasil
() Não moro no Brasil _____

Levando em consideração somente a língua portuguesa, qual das opções abaixo melhor descreve o seu cenário linguístico?

- () Somente interajo com falantes do português do Brasil
() A maioria das pessoas com quem interajo fala português do Brasil
() Metade das pessoas com quem interajo fala português do Brasil, e a outra metade, português de Portugal
() A maioria das pessoas com quem interajo fala português de Portugal
() Somente interajo com falantes de português de Portugal

Translation of Questionnaire – AJT Brazilian Version

Thanks for the answers! To help with the analysis of our data, please fill in the fields below.

Birthplace _____ Gender () Male () Female

Age _____

Level of education

- () Primary school not completed () Primary School completed
() High School not completed () High School completed
() Higher Education not completed () Higher Education completed

If you do not live in Brazil, when did you move to Portugal?

- () I live in Brazil
() I do not live in Brazil _____

Taking into account only the Portuguese language, which of the following best describes your linguistic scenario?

- () I only interact with speakers of Brazilian Portuguese
() Most people with whom I interact speak Brazilian Portuguese
() Half the people with whom I interact speak Brazilian Portuguese, and the other half European Portuguese
() Most people with whom I interact speak European Portuguese
() I only interact with European Portuguese

QUESTIONÁRIO LINGUISTICO – AJT VERSÃO PORTUGUESA

Obrigado pelas respostas! Para facilitar a análise dos nossos dados, por favor preencha os campos abaixo.

Local de Nascimento _____ Sexo () Masculino () Feminino

Idade _____

Grau de escolaridade

- () Ensino Fundamental incompleto () Ensino Fundamental completo
() Ensino Médio incompleto () Ensino Médio completo
() Ensino Superior incompleto () Ensino Superior completo

Se é brasileiro(a), em que ano chegou a Portugal?

- () Não sou brasileiro
() Sou brasileiro _____

Levando em consideração somente a língua portuguesa, qual das opções abaixo melhor descreve o seu cenário linguístico?

- () Somente interajo com falantes do português do Brasil
() A maioria das pessoas com quem interajo fala português do Brasil
() Metade das pessoas com quem interajo fala português do Brasil, e a outra metade, português de Portugal
() A maioria das pessoas com quem interajo fala português de Portugal
() Somente interajo com falantes de português de Portugal

Translation of Questionnaire – AJT Portuguese Version

Thanks for the answers! To help with the analysis of our data, please fill in the fields below.

Birthplace _____ Gender () Male () Female

Age _____

Level of education

- () Primary school not completed () Primary School completed
() High School not completed () High School completed
() Higher Education not completed () Higher Education completed

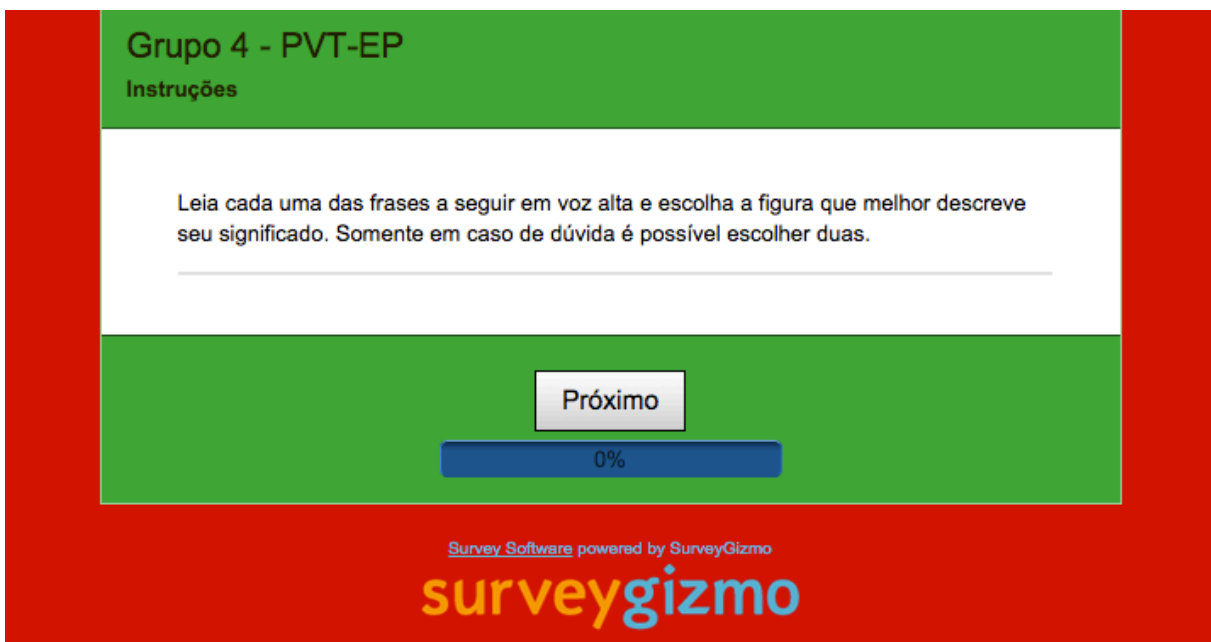
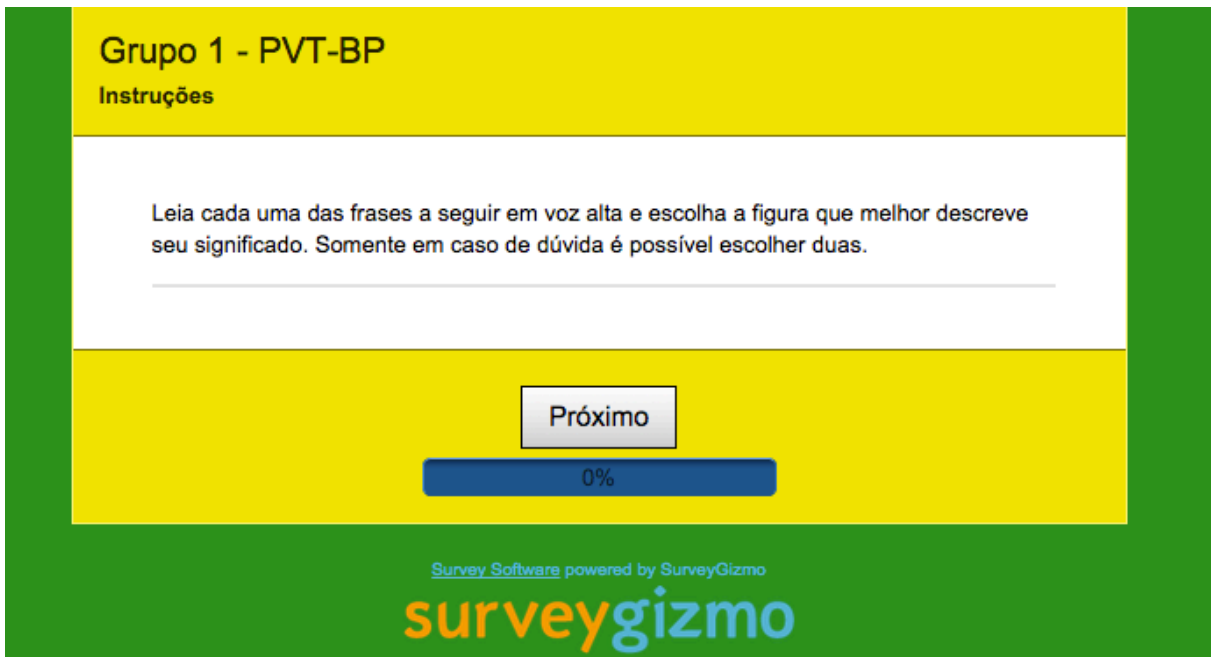
If you are Brazilian, when did you move to Portugal?

- () I am not Brazilian
() I am Brazilian _____

Taking into account only the Portuguese language, which of the following best describes your linguistic scenario?

- () I only interact with speakers of Brazilian Portuguese
() Most people with whom I interact speak Brazilian Portuguese
() Half the people with whom I interact speak Brazilian Portuguese, and the other half European Portuguese
() Most people with whom I interact speak European Portuguese
() I only interact with European Portuguese

APPENDIX B - PVT INSTRUCTION SCREENS



Translation of PVT instruction screens:

Read each of the following sentences out loud and choose the picture that best describes its meaning. Only in case of doubt is it possible to choose two.

APPENDIX C - PVT TEST ITEMS (not randomized)

BP Version

OVERT EMBEDDED SUBJECT (OES)

A senhora acena para a garota enquanto ela atravessa a rua.

A secretária ajuda a enfermeira enquanto ela escreve uma carta.

O avô conversa com o neto enquanto ele lê um livro.

A avó mostra uma foto à neta enquanto ela come

A loira dá os documentos à secretária assim que ela entra no escritório.

NULL EMBEDDED SUBJECT (NES)

A mãe beija a filha enquanto veste seu casaco.

O pai acena para o filho enquanto anda de bicicleta.

O policial vê o ladrão enquanto corre.

A professora aponta para a aluna enquanto fala.

O treinador fala com o atleta enquanto bebe.

LEFT DISLOCATED SUBJECT (LDS)

O empregado, ele fecha a mala enquanto dá o dinheiro ao tesoureiro.

O porteiro, ele cumprimenta o carteiro enquanto abre a porta.

A senhora, ela se aproxima da faxineira enquanto olha para o relógio.

O policial, ele vê o ladrão assim que vira a esquina.

O cliente, ele paga a conta ao garçom enquanto põe vinho na taça.

EP Version

OVERT EMBEDDED SUBJECT (OES)

A senhora acena para a garota enquanto ela atravessa a rua.

A secretária ajuda a enfermeira enquanto ela escreve uma carta.

O avô conversa com o neto enquanto ele lê um livro.

A avó mostra uma foto à neta enquanto ela come.

A loira dá os documentos à secretária assim que ela entra no escritório.

NULL EMBEDDED SUBJECT (NES)

A mãe beija a filha enquanto veste o seu casaco.

O pai acena para o filho enquanto anda de bicicleta.

O polícia olha para o ladrão enquanto corre.

A professora aponta para a aluna enquanto fala.

O treinador fala com o atleta enquanto bebe.

LEFT DISLOCATED SUBJECT (LDS)

O empregado, ele fecha a mala enquanto dá o dinheiro ao tesoureiro.

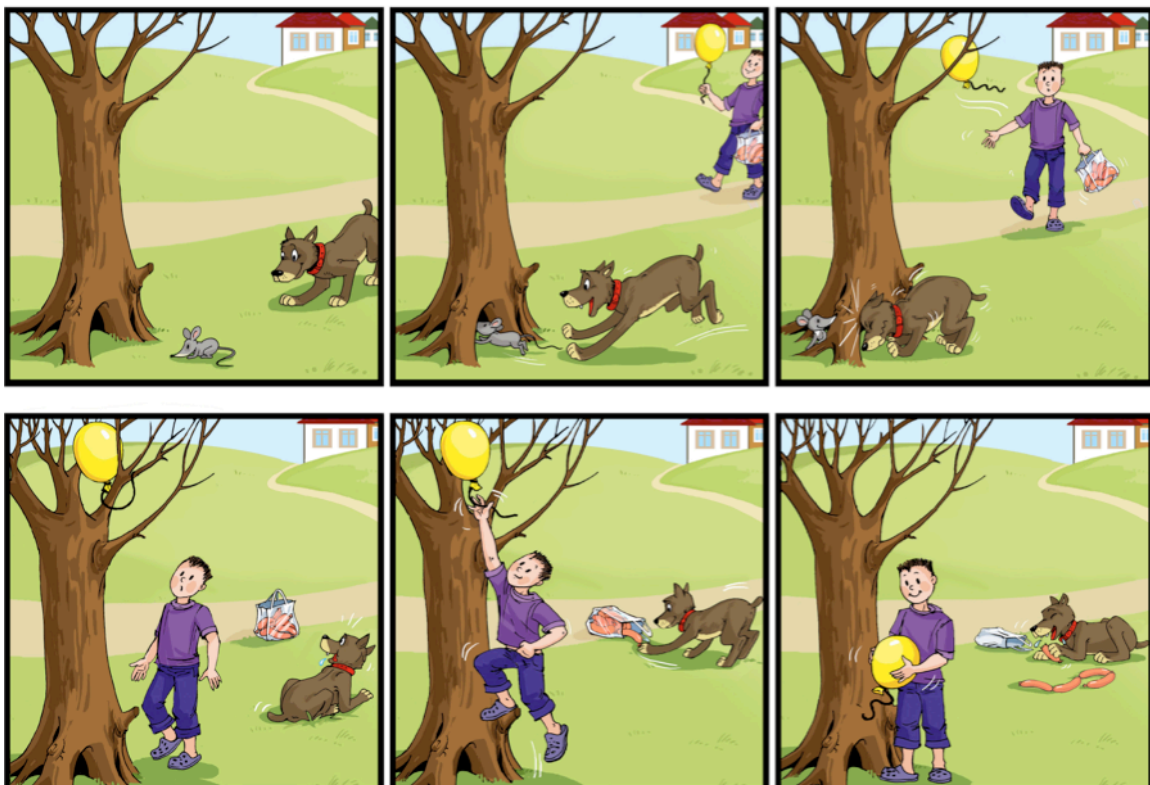
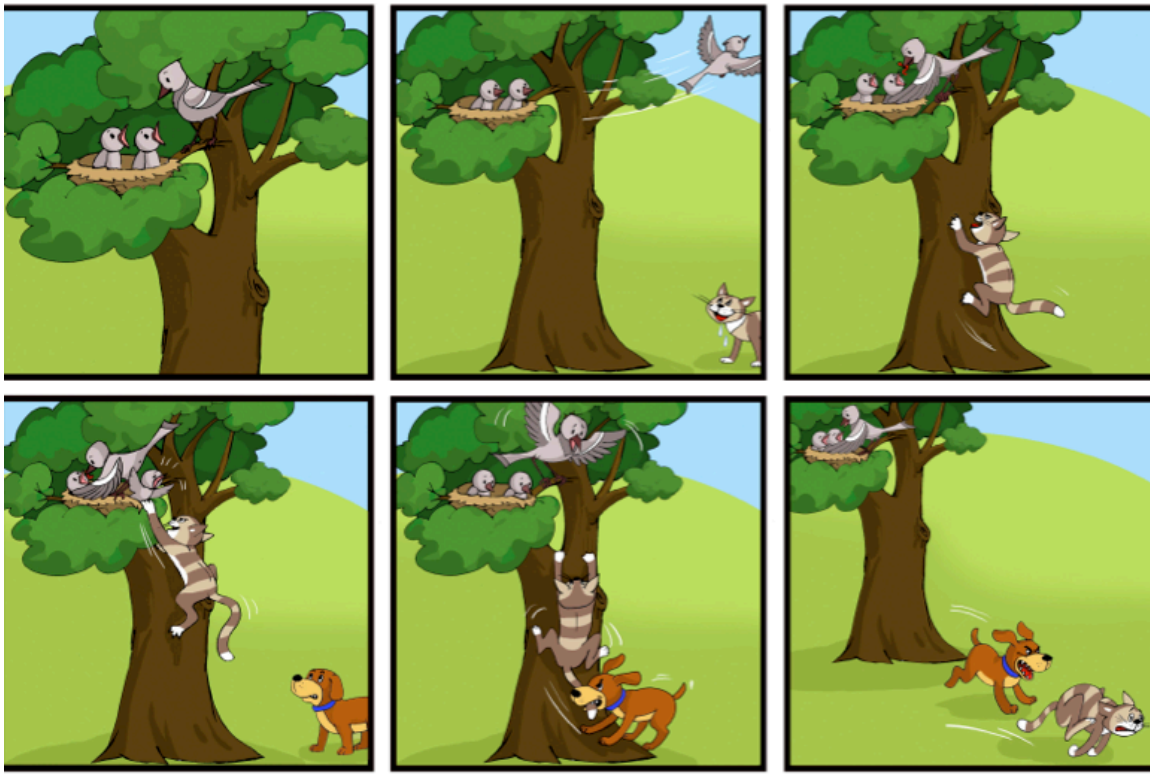
O porteiro, ele cumprimenta o carteiro enquanto abre a porta.

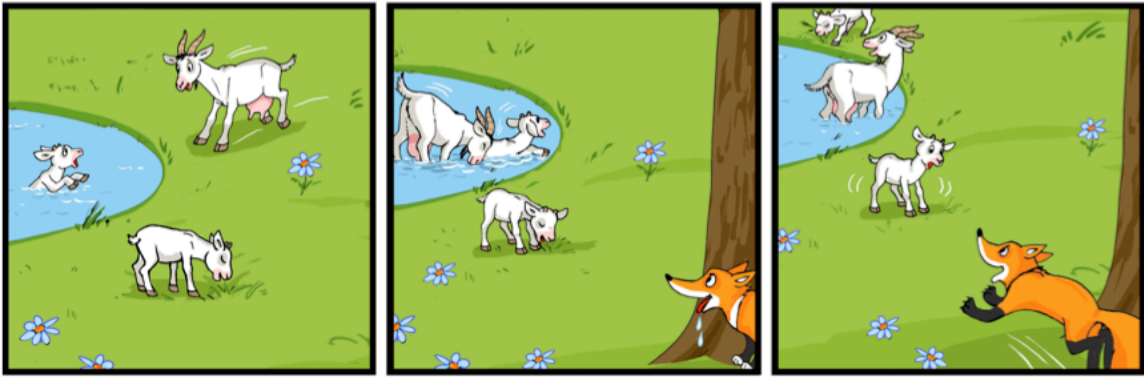
A senhora, ela aproxima-se da empregada enquanto olha para o relógio.

O polícia, ele vê o ladrão assim que vira a esquina.

O cliente, ele paga a conta ao empregado enquanto põe vinho no copo.

APPENDIX D - PRODUCTION TASK STIMULI





APPENDIX E - AJT INSTRUCTION SCREENS



Versão Brasileira

Instruções

Bem vindo à versão **brasileira** desta experiência. Durante este teste, você deverá julgar a aceitabilidade de diversas frases em português brasileiro. Cada frase será acompanhada por um contexto para facilitar a compreensão. Escolha a opção que melhor descreve cada frase de acordo com o português que você **fala**. Tente não se deixar influenciar pelas regras gramaticais da escola. As opções são: "Péssima", "Muito Ruim", "Ruim", "Boa", "Muito Boa", "Excelente". Quando estiver pronto para dar início, por favor clique em "Continuar" abaixo.

00:37 00:44

Continuar

Translation of AJT Instruction screen – Brazilian Version

Welcome to the Brazilian version of this experiment. During this test, you should judge the acceptability of various sentences in Brazilian Portuguese. Each sentence comes preceded by a context to help with its comprehension. Choose the option that best describes each sentence according to the Portuguese that you speak. Try not to let yourself be influenced by the grammar rules from school. The options are: “Poor”, “Very Bad”, “Bad”, “Good”, “Very Good”, “Excellent”. When you are ready to begin, please click on “Continuar” below.



Translation of AJT Instruction screen – Portuguese Version

Welcome to the Portuguese version of this experiment. During this test, you should judge the acceptability of various sentences in Portuguese. Each sentence comes preceded by a context to help with its comprehension. Choose the option that best describes each sentence according to the Portuguese that you speak. Try not to let yourself be influenced by the grammar rules from school. The options are: "Poor", "Very Bad", "Bad", "Good", "Very Good", "Excellent". When you are ready to begin, please click on "Continuar" below.

APPENDIX F - AJT TEST ITEMS (not randomized)

BP VERSION

- **NULL ANIMATE IN ISLANDS (NAI)**

“- *O André convidou a Priscila para um jantar. O que foi que aconteceu?*”

“- André invited Priscila to dinner. What happened?”

“- ***O André pagou a conta quando Ø levou Ø ao restaurante.***”

“- André paid the bill when Ø took Ø to the restaurant.”

“- *O pai da Leticia não gosta que ela saia sozinha à noite, pois a cidade é perigosa. O que foi que ele decidiu fazer?*”

“- Leticia’s father does not like her going out alone at night, because the city is dangerous. What did he decide to do?”

“- ***O pai dela ficou aliviado quando Ø deixou Ø em frente ao cinema.***”

“- Her father was relieved when Ø left Ø in front of the cinema.”

“- *O Lucas tentou falar com a Jéssica um mês depois de discutirem. Qual foi a reação dela?*”

“- Lucas tried to talk to Jéssica one month after their argument. What was her reaction?”

“- ***A Jéssica foi criticada porque Ø ignorou Ø de propósito.***”

“- Jéssica was criticized because Ø ignored Ø on purpose.”

“- *A Talita disse que o noivo dela se emocionou antes do casamento. O que foi que aconteceu?*”

“- Talita said that her fiance was emotional before the wedding. What happened?”

“- ***O noivo começou a chorar quando Ø viu Ø na igreja.***”

“- The groom started to cry when Ø saw Ø at the church.”

“- *A Débora e o Mateus se separaram. O que foi que mudou na vida dela?*”

“- Débora and Mateus split up. What has changed in her life?”

“- ***A Débora se tornou muito mais feliz quando Ø trocou Ø pelo Jorge.***”

“- Débora became much happier when Ø traded Ø for Jorge.”

- **NULL ANIMATE IN SIMPLE CLAUSES (NAS)**

“- *O namorado da Tatiane estava entediado. O que foi que ela decidiu fazer?*”

“- Tatiane’s boyfriend was bored. What did she decide to do?”

“- ***Ø levou Ø pra praia.***”

“- Ø took Ø to the beach.”

“- *O filho da Gabriela estava doente. O que foi que ela fez?*”

“- Gabriela’s son was sick. What did she do?”

“- ***Ø deixou Ø na casa da avó antes de ir trabalhar.***”

“- Ø left Ø at grandma’s house before going to work.”

“- *Ontem, a Daniela tentou falar com o Gustavo várias vezes. O que foi que ele fez?*”

“- Yesterday, Daniela tried to speak with Gustavo several times. What did he do?”

“- ***Ø ignorou Ø a noite inteira.***”

“- Ø ignored Ø all night.”

“- *O Thiago disse que a Júlia voltou a se embriagar. Como é que ele sabe?*”

“- Thiago said Julia is getting drunk again. How does he know?”

“- ***Ø viu Ø no bar da esquina.***”

“- Ø saw Ø at the corner bar.”

“- *O Cláudio e a namorada não estavam se dando bem. O que foi que ele decidiu fazer?*”

“- Cláudio and his girlfriend were not getting along. What did he decide to do?”

“- ***Ø trocou Ø por uma mais legal.***”

“- Ø traded Ø for a cooler one.”

• NULL INANIMATE IN ISLANDS (NII)

“- *O Guilherme recebeu uma bicicleta da avó. O que foi que aconteceu?*”

“- Guilherme got a bike from his grandmother. What happened?”

“- ***O Guilherme ficou feliz quando Ø levou Ø pra casa.***”

“- Guilherme was happy when Ø took Ø home.”

“- *O Paulo se esqueceu de fechar a porta de casa. Qual é a reação dele?*”

“- Paulo forgot to close the front door. What’s his reaction?”

“- ***O Paulo está impaciente porque Ø deixou Ø aberta.***”

“- Paulo is impatient because Ø left Ø open.”

“- *A situação econômica da Bahia piorou no último mês. O que foi que o governador decidiu fazer em relação a essa crise?*”

“- The economic situation in Bahia¹ worsened in the last month. What did the governor decide to do about this crisis?”

“- ***O governador foi criticado porque Ø ignorou Ø descaradamente.***”

“- The governor was criticized because Ø blatantly ignored Ø .”

“- *A Luciana ouviu um barulho e suspeitou que o carro dela tinha sido roubado. O que foi que aconteceu?*”

“- Luciana heard a noise and suspected that her car had been stolen. What happened?”

“- ***A Luciana ficou aliviada quando Ø viu Ø na garagem.***”

“- Luciana was relieved when Ø saw Ø in the garage.”

“- *O relógio da Patrícia estava sempre parando. O que foi que ela decidiu fazer?*”

¹ A state in Northeastern Brazil.

“- Patricia clock was always stopping. What did she decide to do?”

“- *A Patrícia só ficou feliz quando Ø trocou Ø por um Rolex.*”

“- Patricia was only happy when Ø exchanged Ø for a Rolex.”

• **NULL INANIMATE IN SIMPLE CLAUSES (NIS)**

“- *A professora tinha em casa um livro interessante. O que foi que ela fez?*”

“- The teacher had at home an interesting book. What did she do?”

“- *Ø levou Ø pra escola.*”

“- Ø took Ø to school.”

“- *A Juliana decidiu sair de casa sem o celular. O que foi que ela fez?*”

“- Juliana decided to leave the house without her phone. What did she do?”

“- *Ø deixou Ø em cima da cama.*”

“- Ø left Ø on the bed.”

“- *O dólar fechou mais uma vez em alta na semana passada. O que foi que a ministra decidiu fazer em relação a esse problema?*”

“- The dollar reached a high again last week. What did the minister decide to do about this problem?”

“- *Ø ignorou Ø sem remorso.*”

“- Ø remorselessly ignored Ø.

“- *O Rogério estava falando sobre uma cidade onde todo mundo vive nu. Como foi que ele soube disso?*”

“- Rogério was talking about a city where everyone lives naked. How did he know that?”

“- *Ø viu Ø na televisão.*”

“- Ø saw Ø on TV.”

“- *A mochila do Bruno estava rasgada. O que foi que ele decidiu fazer?*”

“- Bruno’s bag was ripped. What did he decide to do?”

“- *Ø trocou Ø por uma nova.*”

“- Ø traded Ø for a new one.”

• **OVERT ANIMATE IN ISLANDS (OAI)**

“- *O André convidou a Priscila para um jantar. O que foi que aconteceu?*”

“- André invited Priscila to dinner. What happened?”

“- *O André pagou a conta quando Ø levou ela ao restaurante.*”

“- André paid the bill when Ø took her to the restaurant.”

“- *O pai da Leticia não gosta que ela saia sozinha à noite, pois a cidade é perigosa. O que foi que ele decidiu fazer?*”

“- Leticia’s father does not like her going out alone at night, because the city is dangerous. What did he decide to do?”

“- **O pai dela ficou aliviado quando Ø deixou ela em frente ao cinema.**”

“- Her father was relieved when Ø left her in front of the cinema.”

“- *O Lucas tentou falar com a Jéssica um mês depois de discutirem. Qual foi a reação dela?*”

“- Lucas tried to talk to Jéssica one month after their argument. What was her reaction?”

“- **A Jéssica foi criticada porque Ø ignorou ele de propósito.**”

“- Jéssica was criticized because Ø ignored him on purpose.”

“- *A Talita disse que o noivo dela se emocionou antes do casamento. O que foi que aconteceu?*”

“- Talita said that her fiance was emotional before the wedding. What happened?”

“- **O noivo começou a chorar quando Ø viu ela na igreja.**”

“- The groom started to cry when Ø saw her at the church.”

“- *A Débora e o Mateus se separaram. O que foi que mudou na vida dela?*”

“- Débora and Mateus split up. What has changed in her life?”

“- **A Débora se tornou muito mais feliz quando Ø trocou ele pelo Jorge.**”

“- Débora became much happier when Ø traded him for Jorge.”

• **OVERT ANIMATE IN SIMPLE CLAUSES (OAS)**

“- *O namorado da Tatiane estava entediado. O que foi que ela decidiu fazer?*”

“- Tatiane’s boyfriend was bored. What did she decide to do?”

“- **Ø levou ele pra praia.**”

“- Ø took him to the beach.”

“- *O filho da Gabriela estava doente. O que foi que ela fez?*”

“- Gabriela’s son was sick. What did she do?”

“- **Ø deixou ele na casa da avó antes de ir trabalhar.**”

“- Ø left him at grandma’s house before going to work.

“- *Ontem, a Daniela tentou falar com o Gustavo várias vezes. O que foi que ele fez?*”

“- Yesterday, Daniela tried to speak with Gustavo several times. What did he do?”

“- **Ø ignorou ela a noite inteira.**”

“- Ø ignored her all night.”

“- *O Thiago disse que a Júlia voltou a se embriagar. Como é que ele sabe?*”

“- Thiago said Julia is getting drunk again. How does he know?”

“- **Ø viu ela no bar da esquina.**”

“- Ø saw her at the corner bar.”

“- *O Cláudio e a namorada não estavam se dando bem. O que foi que ele decidiu fazer?*”

“- Cláudio and his girlfriend were not getting along. What did he decide to do?”

“- **Ø trocou ela por uma mais legal.**”

“- Ø traded her for a cooler one.”

• **OVERT INANIMATE IN ISLANDS (OII)**

“- *O Guilherme recebeu uma bicicleta da avó. O que foi que aconteceu?*”

“- Guilherme got a bike from his grandmother. What happened?”

“- **O Guilherme ficou feliz quando Ø levou ela pra casa.**”

“- Guilherme was happy when Ø took it home.”

“- *O Paulo se esqueceu de fechar a porta de casa. Qual é a reação dele?*”

“- Paulo forgot to close the front door. What’s his reaction?”

“- **O Paulo está impaciente porque Ø deixou ela aberta.**”

“- Paulo is impatient because Ø left it open.

“- *A situação econômica da Bahia piorou no último mês. O que foi que o governador decidiu fazer em relação a essa crise?*”

“- The economic situation in Bahia worsened in the last month. What did the governor decide to do about this crisis?”

“- **O governador foi criticado porque Ø ignorou ela descaradamente.**”

“- The governor was criticized because Ø blatantly ignored it .”

“- *A Luciana ouviu um barulho e suspeitou que o carro dela tinha sido roubado. O que foi que aconteceu?*”

“- Luciana heard a noise and suspected that her car had been stolen. What happened?”

“- **A Luciana ficou aliviada quando Ø viu ele na garagem.**”

“- Luciana was relieved when Ø saw it in the garage.”

“- *O relógio da Patrícia estava sempre parando. O que foi que ela decidiu fazer?*”

“- Patricia clock was always stopping. What did she decide to do?”

“- **A Patrícia só ficou feliz quando Ø trocou ele por um Rolex.**”

“- Patricia was only happy when Ø exchanged it for a Rolex.”

• **OVERT INANIMATE IN SIMPLE CLAUSES (OIS)**

“- *A professora tinha em casa um livro interessante. O que foi que ela fez?*”

“- The teacher had at home an interesting book. What did she do?”

“- **Ø levou ele pra escola.**”

“- Ø took it to school.”

“- *A Juliana decidiu sair de casa sem o celular. O que foi que ela fez?*”

“- Juliana decided to leave the house without her phone. What did she do?”

“- **Ø deixou ele em cima da cama.**”

“- Ø left it on the bed.”

“- O dólar fechou mais uma vez em alta na semana passada. O que foi que a ministra decidiu fazer em relação a esse problema?”

“- The dollar reached a high again last week. What did the minister decide to do about this problem?”

“- **Ø ignorou ele sem remorso.**

“- Ø remorselessly ignored it.

“- O Rogério estava falando sobre uma cidade onde todo mundo vive nu. Como foi que ele soube disso?”

“- Rogério was talking about a city where everyone lives naked. How did he know that?”

“- **Ø viu ela na televisão.**”

“- Ø saw it on TV.”

“- A mochila do Bruno estava rasgada. O que foi que ele decidiu fazer?”

“- Bruno’s bag was ripped. What did he decide to do?”

“- **Ø trocou ela por uma nova.**”

“- Ø traded it for a new one.”

EP VERSION

• NULL ANIMATE IN ISLANDS (NAI)

“- O João convidou a Fernanda para um jantar. O que é que aconteceu?”

“- João invited Fernanda to dinner. What happened?”

“- **Ele pagou a conta quando Ø levou Ø ao restaurante.**”

“- He paid the bill when Ø took Ø to the restaurant.”

“- O pai da Maria não gosta que ela saia sozinha à noite, pois a cidade é perigosa. O que é que ele decidiu fazer?”

“- Maria’s father does not like her going out alone at night, because the city is dangerous. What did he decide to do?”

“- **Ele ficou aliviado quando Ø deixou Ø em frente ao cinema.**”

“- He was relieved when Ø left Ø in front of the cinema.”

“- O Fábio tentou falar com a Sónia um mês depois de discutirem. Qual foi a reação dela?”

“- Fábio tried to talk to Sónia one month after their argument. What was her reaction?”

“- **Ela foi criticada porque Ø ignorou Ø propositadamente.**”

“- She was criticized because Ø ignored Ø on purpose.”

“- A Mónica disse que o noivo dela se emocionou antes do casamento. O que é que aconteceu?”

“- Mónica said that her fiance was emotional before the wedding. What happened?”

“- O noivo desatou a chorar quando Ø viu Ø na igreja.”

“- The groom started to cry when Ø saw Ø at the church.”

“- A Verónica e o António divorciaram-se. O que é que mudou na vida dela?”

“- Verónica and António split up. What has changed in her life?”

“- Ela tornou-se muito mais feliz quando Ø trocou Ø pelo Rui.”

“- She became much happier when Ø traded Ø for Rui.”

- **NULL ANIMATE IN SIMPLE CLAUSES (NAS)**

“- O namorado da Carolina estava entediado. O que é que ela decidiu fazer?”

“- Carolina’s boyfriend was bored. What did she decide to do?”

“- Ø levou Ø para a praia.”

“- Ø took Ø to the beach.”

“- O filho da Helena estava doente. O que é que ela fez?”

“- Helena’s son was sick. What did she do?”

“- Ø deixou Ø na casa da avó antes de ir trabalhar.”

“- Ø left Ø at grandma’s house before going to work.

“- Ontem, a Catarina tentou falar com o Diogo várias vezes. O que é que ele fez?”

“- Yesterday, Catarina tried to speak with Diogo several times. What did he do?”

“- Ø ignorou Ø a noite inteira.”

“- Ø ignored Ø all night.”

“- O Manuel disse que a Marta voltou a se embriagar. Como é que ele sabe?”

“- Manuel said Julia is getting drunk again. How does he know?”

“- Ø viu Ø no bar da esquina.”

“- Ø saw Ø at the corner bar.”

“- O Vítor e a namorada dele já não se davam bem. O que é que ele decidiu fazer?”

“- Vítor and his girlfriend were not getting along. What did he decide to do?”

“- Ø trocou Ø por uma mais legal.”

“- Ø traded Ø for a cooler one.”

- **NULL INANIMATE IN ISLANDS (NII)**

“- O Tiago recebeu uma bicicleta da avó. O que é que aconteceu?”

“- Tiago got a bike from his grandmother. What happened?”

“- Ele ficou feliz quando Ø levou Ø pra casa.”

“- He was happy when Ø took Ø home.”

“- O Jonas esqueceu-se de fechar a porta de casa. Como é que ele está a reagir?”

“- Jonas forgot to close the front door. What’s his reaction?”

“- Ele está impaciente porque Ø deixou Ø aberta.”

“- He is impatient because Ø left Ø open.”

“- *A situação econômica de Portugal piorou no último mês. O que é que o presidente decidiu fazer em relação a essa crise?*”

“- The economic situation in Portugal worsened in the last month. What did the president decide to do about this crisis?”

“- ***Ele foi criticado porque Ø ignorou Ø descaradamente.***”

“- He was criticized because Ø blatantly ignored Ø .”

“- *A Heloísa ouviu um barulho e suspeitou que o carro dela tinha sido roubado. O que é que se passou?*”

“- Heloísa heard a noise and suspected that her car had been stolen. What happened?”

“- ***Ela ficou aliviada quando Ø viu Ø na garagem.***”

“- She was relieved when Ø saw Ø in the garage.”

“- *O relógio da Joana estava sempre a parar. O que é que ela decidiu fazer?*”

“- Joana’s clock was always stopping. What did she decide to do?”

“- ***Ela só ficou feliz quando Ø trocou Ø por um Rolex.***”

“- She was only happy when Ø exchanged Ø for a Rolex.”

- **NULL INANIMATE IN SIMPLE CLAUSES (NIS)**

“- *A professora tinha em casa um livro interessante. O que é que ela fez?*”

“- The teacher had at home an interesting book. What did she do?”

“- ***Ø levou Ø para a escola.***”

“- Ø took Ø to school.”

“- *A Filipa decidiu sair de casa sem o telemóvel. O que é que ela fez?*”

“- Filipa decided to leave the house without her phone. What did she do?”

“- ***Ø deixou Ø em cima da cama.***”

“- Ø left Ø on the bed.”

“- *O dólar fechou mais uma vez em alta na semana passada. O que é que a ministra decidiu fazer em relação a esse problema?*”

“- The dollar reached a high again last week. What did the minister decide to do about this problem?

“- ***Ø ignorou Ø sem remorsos.***

“- Ø remorselessly ignored Ø.

“- *O Carlos estava a falar de uma vila onde vivem todos nus. Como é que ele soube disso?*”

“- Carlos was talking about a town where everyone lives naked. How did he know that?”

“- ***Ø viu Ø na televisão.***”

“- Ø saw Ø on TV.”

“- *A mochila do Hugo estava rasgada. O que é que ele decidiu fazer?*”

“- Hugo’s bag was ripped. What did he decide to do?”

“- ***Ø trocou Ø por uma nova.***”

“- Ø traded Ø for a new one.”

• OVERT ANIMATE IN ISLANDS (OAI)

“- *O João convidou a Fernanda para um jantar. O que é que aconteceu?*”

“- João invited Fernanda to dinner. What happened?”

“- ***Ele pagou a conta quando Ø a levou ao restaurante.***”

“- He paid the bill when Ø took her to the restaurant.”

“- *O pai da Maria não gosta que ela saia sozinha à noite, pois a cidade é perigosa. O que é que ele decidiu fazer?*”

“- Leticia’s father does not like her going out alone at night, because the city is dangerous. What did he decide to do?”

“- ***Ele ficou aliviado quando Ø a deixou em frente ao cinema.***”

“- He was relieved when Ø left her in front of the cinema.”

“- *O Fábio tentou falar com a Sónia um mês depois de discutirem. Qual foi a reação dela?*”

“- Fábio tried to talk to Sónia one month after their argument. What was her reaction?”

“- ***Ela foi criticada porque Ø o ignorou propositadamente.***”

“- She was criticized because Ø ignored him on purpose.”

“- *A Mónica disse que o noivo dela se emocionou antes do casamento. O que é que aconteceu?*”

“- Mónica said that her fiance was emotional before the wedding. What happened?”

“- ***O noivo começou a chorar quando Ø a viu na igreja.***”

“- The groom started to cry when Ø saw her at the church.”

“- *A Verónica e o António divorciaram-se. O que é que mudou na vida dela?*”

“- Verónica and António split up. What has changed in her life?”

“- ***Ela tornou-se muito mais feliz quando Ø o trocou pelo Rui.***”

“- She became much happier when Ø traded him for Rui.”

• OVERT ANIMATE IN SIMPLE CLAUSES (OAS)

“- *O namorado da Carolina estava entediado. O que é que ela decidiu fazer?*”

“- Carolina’s boyfriend was bored. What did she decide to do?”

“- ***Ø levou-o para a praia.***”

“- Ø took him to the beach.”

“- *O filho da Helena estava doente. O que é que ela fez?*”

“- Helena’s son was sick. What did she do?”

“- ***Ø deixou-o na casa da avó antes de ir trabalhar.***”

“- Ø left him at grandma’s house before going to work.

“- *Ontem, a Catarina tentou falar com o Diogo várias vezes. O que é que ele fez?*”

“- Yesterday, Catarina tried to speak with Diogo several times. What did he do?”

“- ***Ø ignorou-a a noite inteira.***”

“- Ø ignored her all night.”

“- *O Manuel disse que a Marta voltou a se embriagar. Como é que ele sabe?*”

“- Manuel said Julia is getting drunk again. How does he know?”

“- ***Ø viu-a no bar da esquina.***”

“- Ø saw her at the corner bar.”

“- *O Vítor e a namorada dele já não se davam bem. O que é que ele decidiu fazer?*”

“- Vítor and his girlfriend were not getting along. What did he decide to do?”

“- ***Ø trocou-a por uma mais legal.***”

“- Ø traded her for a cooler one.”

- **OVERT INANIMATE IN ISLANDS (OII)**

“- *O Tiago recebeu uma bicicleta da avó. O que é que aconteceu?*”

“- Tiago got a bike from his grandmother. What happened?”

“- ***Ele ficou feliz quando Ø a levou pra casa.***”

“- He was happy when Ø took it home.”

“- *O Jonas esqueceu-se de fechar a porta de casa. Como é que ele está a reagir?*”

“- Jonas forgot to close the front door. What’s his reaction?”

“- ***Ele está impaciente porque Ø a deixou aberta.***”

“- He is impatient because Ø left it open.

“- *A situação económica de Portugal piorou no último mês. O que é que o presidente decidiu fazer em relação a essa crise?*”

“- The economic situation in Portugal worsened in the last month. What did the president decide to do about this crisis?”

“- ***Ele foi criticado porque Ø a ignorou descaradamente.***”

“- He was criticized because Ø blatantly ignored it .”

“- *A Heloísa ouviu um barulho e suspeitou que o carro dela tinha sido roubado. O que é que aconteceu?*”

“- Heloísa heard a noise and suspected that her car had been stolen. What happened?”

“- ***Ela ficou aliviada quando Ø o viu na garagem.***”

“- She was relieved when Ø saw it in the garage.”

“- *O relógio da Joana estava sempre a parar. O que é que ela decidiu fazer?*”

“- Joana’s clock was always stopping. What did she decide to do?”

“- ***Ela só ficou feliz quando Ø o trocou por um Rolex.***”

“- She was only happy when Ø exchanged it for a Rolex.”

• **OVERT INANIMATE IN SIMPLE CLAUSES (OIS)**

“- *A professora tinha em casa um livro interessante. O que é que ela fez?*”

“- The teacher had at home an interesting book. What did she do?”

“- ***Ø levou-o pra escola.***”

“- Ø took it to school.”

“- *A Filipa decidiu sair de casa sem o telemóvel. O que é que ela fez?*”

“- Filipa decided to leave the house without her phone. What did she do?”

“- ***Ø deixou-o em cima da cama.***”

“- Ø left it on the bed.”

“- *O dólar fechou mais uma vez em alta na semana passada. O que é que a ministra decidiu fazer em relação a esse problema?*”

“- The dollar reached a high again last week. What did the minister decide to do about this problem?”

“- ***Ø ignorou-o sem remorsos.***

“- Ø remorselessly ignored it.

“- *O Carlos estava a falar de uma vila onde vivem todos nus. Como é que ele soube disso?*”

“- Carlos was talking about a town where everyone lives naked. How did he know that?”

“- ***Ø viu-a na televisão.***”

“- Ø saw it on TV.”

“- *A mochila do Hugo estava rasgada. O que é que ele decidiu fazer?*”

“- Hugo’s bag was ripped. What did he decide to do?”

“- ***Ø trocou-a por uma nova.***”

“- Ø traded it for a new one.”

APPENDIX G – DETAILED STATISTICS

Paper I

Table A-1. Minimal adequate model of mixed effects linear regression of anaphora resolution preferences, using co-reference with the subject as the baseline.

Random effects

Group	Name	Variance	SD	Corr
informant	(Intercept)	0.8711	0.9333	
	EP-mode	2.9468	1.7166	-0.64
stimulus	(Intercept)	0.5688	0.7542	

Observations: 1140; Groups: Informant: 77, Stimulus: 10

Fixed effects

Variable	Estimate	SE	z	p
(Intercept)	-26257	0.5871	-4.472	7.74e-06
HS/BP-mode	0.8842	0.6124	1.444	0.148756
HS/EP-mode	1.1037	0.6477	1.704	0.088390
L2ers/BP-mode	1.5588	0.5780	2.697	0.006999
L2ers/EP-mode	1.6328	0.6130	2.664	0.007727
BPC	2.0039	0.5732	3.496	0.000472
Condition: NES	4.5011	0.7155	6.291	3.15e-10
HS/BP-mode:NES	-0.1203	0.7366	-0.163	0.870312
HS/EP-mode:NES	0.1668	0.7449	0.224	0.822832
L2ers/BP-mode:NES	-1.6721	0.6526	-2.562	0.010397
L2ers/EP-mode:NES	-1.8843	0.6130	-2.977	0.002913
BPC:NES	-2.0246	0.6499	-3.115	0.001838

Log likelihood: -526.1; Deviance: 1052.2; Residual degrees of freedom: 1124

Table A-2. Minimal adequate model of mixed effects linear regression of anaphora resolution preferences, using co-reference with the object as the baseline.

Random effects

Group	Name	Variance	SD	Corr
informant	(Intercept)	0.9057	0.9517	
	EP-mode	3.8833	1.9706	-0.77
stimulus	(Intercept)	0.3977	0.6306	

Observations: 1140; Groups: Informant: 77, Stimulus: 10

Fixed effects

Variable	Estimate	SE	z	p
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(Intercept)	3.5952	0.6575	5.468	4.55e-08
HS/BP-mode	-2.0775	0.6990	-2.972	0.002958
HS/EP-mode	-2.2114	0.7348	-3.009	0.002618
L2ers/BP-mode	-2.4324	0.6770	-3.593	0.000327
L2ers/EP-mode	-1.4711	0.7254	-2.028	0.042555
BPC	-2.4641	0.6779	-3.635	0.000278
Condition: NES	-5.0051	0.7434	-6.733	1.66e-11
HS/BP-mode:NES	0.8929	0.7985	1.118	0.263440
HS/EP-mode:NES	0.5440	0.8006	0.679	0.496845
L2ers/BP-mode:NES	2.5374	0.7243	3.503	0.000459
L2ers/EP-mode:NES	1.5813	0.7296	2.167	0.030207
BPC:NES	2.1756	0.7366	2.953	0.003143

Reference levels of categorical fixed effects: Group: EPC; Condition: OES
 Log likelihood: -516.5; Deviance: 1032.9; Residual degrees of freedom: 1124

Paper II

For all models run:

Linear mixed model fit by maximum likelihood

t-tests use Satterthwaite approximations to degrees of freedom [`lmerMod`]

Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Table A-3. Minimal adequate model of fixed effects linear regression, highlighting frequency of overt subject pronouns in relation to all subject pronouns.

Fixed effects

Baseline BPC

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	36.984	2.822	93.8	13.105	< 2e-16 ***
EPCs	13.829	4.043	93.8	3.420	0.000 ***

Baseline HS/BP-mode

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	42.0124	5.570	109.3	7.543	< 2e-16 ***
BPCs	27.4112	7.576	109.3	3.618	0.000 ***
HS/EP-mode	-19.0688	6.897	42.4	-2.764	0.008 ***

Baseline HS/EP-mode

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	61.081	5.570	109.3	10.966	< 2e-16 ***
EPCs	-8.425	7.667	109.3	-1.099	0.274

Baseline L2ers/BP-mode

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
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(Intercept)	42.1991	5.135	109.3	8.218	< 2e-16 ***
BPCs	27.5979	7.262	109.3	-3.800	0.000 ***
L2ers/EP-mode	-6.077	6.360	42.4	-0.956	0.344

Baseline L2ers/EP-mode

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	48.276	5.135	109.3	9.401	< 2e-16 ***
EPCs	-21.230	7.357	109.3	-2.886	0.004 **

Baseline BPCs-EPCs

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	48.392	3.027	37.0	15.987	< 2e-16 ***
L2ers vs. HSs	12.618	12.108	37.0	1.042	0.304

Reference levels of categorical fixed effects: Condition: null subject pronouns of all pronouns

Log likelihood: -513.4; Deviance: 1026.9 ; Residual degrees of freedom: 105

Cross-mode comparison: Condition: null subject pronouns of all pronouns

Log likelihood: -336.9; Deviance: 673.9; Residual degrees of freedom: 68

Table A-4. Minimal adequate model of fixed effects linear regression, highlighting frequency of overt object pronouns in relation to all object pronouns.

Fixed effects

Baseline BPC

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	46.373	7.045	96.01	6.582	< 2e-16 ***
EPCs	31.424	9.963	96.01	3.154	0.002**

Baseline HS/BP-mode

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	37.302	7.735	97.92	4.822	< 2e-16 ***
BPCs	-9.071	10.463	97.17	-0.867	0.388
HS/EP-mode	15.203	9.345	36.62	1.627	0.112

Baseline HS/EP-mode

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	22.0982	7.261	96.01	3.043	0.003 **
EPCs	-24.2743	10.117	96.01	0.707	0.481

Baseline L2ers/BP-mode

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	39.286	7.446	98.9	5.276	< 2e-16 ***
BPCs	-7.087	10.251	98.01	-0.691	0.491
L2ers/EP-mode	17.367	8.800	39.82	1.973	0.055 .

Baseline L2ers/EP-mode

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
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(Intercept)	21.9188	6.495	96.01	3.375	0.001 **
EPCs	6.9702	9.582	96.01	0.727	0.468

Baseline BPCs-EPCs

Variable	Estimate	SE	df	<i>t</i>	<i>p</i>
(Intercept)	30.155	3.962	36.34	7.612	< 2e-16 ***
L2ers vs. HSs	-1.823	15.846	36.34	-0.115	0.909

Reference levels of categorical fixed effects: Condition: null object pronouns of all pronouns
 Log likelihood: -473.1; Deviance: 946.3; Residual degrees of freedom: 91
 Cross-mode comparison: Condition: null object pronouns of all pronouns
 Log likelihood: -309.9; Deviance: 619.7; Residual degrees of freedom: 59

Paper III

For all models run:
 Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
 Residual standard error: 1.108 on 5168 degrees of freedom
 Multiple R-squared: 0.2911, Adjusted R-squared: 0.2868
 F-statistic: 68.45 on 31 and 5168 DF, p-value: < 2.2e-16

Table A-5. Within-group analysis, with counterpart null conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionOAI	1.723	0.1202	14.339	0 ***
conditionOAS	1.323	0.1202	11.011	0 ***
conditionOII	0.835	0.1202	6.949	0 ***
conditionOIS	0.282	0.1202	2.349	0.018*
Baseline L2ers (BP-mode)				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionOAI	0.518	0.1238	4.187	0 ***
conditionOAS	0.450	0.1238	3.632	0 ***
conditionOII	-0.050	0.1238	-0.404	0.686
conditionOIS	0.562	0.1238	4.540	0 ***
Baseline L2ers (EP-mode)				
	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionOAI	0.837	0.1238	6.760	0 ***
conditionOAS	0.812	0.1238	6.558	0 ***
conditionOII	0.543	0.1238	4.389	0***
conditionOIS	0.218	0.1238	-1.766	0.077 .
Baseline EPCs				
	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionOAI	2.525	0.1238	20.380	0 ***
conditionOAS	2.537	0.1238	20.481	0 ***

conditionOII	2.237	0.1238	18.060	0 ***
conditionOIS	-1.475	0.1238	-11.905	0 ***

Table A-6. Comparison between control groups, with counterpart null conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionOIS:groupEPC	-1.757	0.1726	-10.181	0 ***
conditionOAI:groupEPC	0.801	0.1726	4.643	0 ***
conditionOAS:groupEPC	1.213	0.1726	7.033	0 ***
conditionOII:groupEPC	1.402	0.1726	8.123	0 ***

Table A-7. Comparison between L2ers in BP- vs. EP-mode, with counterpart null conditions as intercept

Baseline L2BP				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionOAI:groupL2EP	0.318	0.1752	1.819	0.068 .
conditionOAS:groupL2EP	0.362	0.1752	2.069	0.038 *
conditionOII:groupL2EP	0.593	0.1752	3.389	0 ***
conditionOIS:groupL2EP	-0.781	0.1752	-4.459	0 ***

Table A-8. Comparison between controls vs. L2ers in BP- and EP-mode, with counterpart null conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionOAI:groupL2BP	-1.204	0.1726	-6.979	0 ***
conditionOAS:groupL2BP	-0.873	0.1726	-5.060	0 ***
conditionOII:groupL2BP	-0.885	0.1726	-5.129	0 ***
conditionOIS:groupL2BP	0.280	0.1726	1.623	0.104
conditionOAI:groupL2EP	-0.886	0.1726	-5.133	0 ***
conditionOAS:groupL2EP	-0.511	0.1726	-2.960	0.003 **
conditionOII:groupL2EP	-0.291	0.1726	-1.689	0.091 .
conditionOIS:groupL2EP	-0.501	0.1726	-2.903	0.003 **
Baseline EPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionOAI:groupL2BP	2.006	0.1752	11.450	0 ***
conditionOAS:groupL2BP	2.087	0.1752	11.914	0 ***
conditionOII:groupL2BP	2.287	0.1752	13.055	0 ***
conditionOIS:groupL2BP	-2.037	0.1752	-11.629	0 ***
conditionOAI:groupL2EP	1.687	0.1752	9.631	0 ***
conditionOAS:groupL2EP	1.725	0.1752	9.845	0 ***
conditionOII:groupL2EP	1.693	0.1752	9.667	0 ***

conditionOIS:groupL2EP	1.256	0.1752	-7.170	0 ***
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Table A-9. Within-group analysis, with counterpart animate conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNII	0.694	0.1202	5.775	0 ***
conditionNIS	1.100	0.1202	9.152	0 ***
conditionOII	-0.194	0.1202	-1.615	0.106
conditionOIS	0.505	0.1202	4.209	0.018*
Baseline L2ers (BP-mode)				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNII	0.418	0.1238	3.380	0 ***
conditionNIS	0.662	0.1238	5.347	0 ***
conditionOII	-0.150	0.1238	-1.211	0.226
conditionOIS	0.3500	0.1238	2.825	0.004 **
Baseline L2ers (EP-mode)				
	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNII	0.281	0.1238	2.270	0.023 *
conditionNIS	0.475	0.1238	3.834	0 ***
conditionOII	-0.012	0.1238	-0.101	0.919
conditionOIS	0.118	0.1238	0.958	0.337
Baseline EPCs				
	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNII	0.362	0.1238	2.926	0.003 **
conditionNIS	0.943	0.1238	7.617	0 ***
conditionOII	0.075	0.1238	0.605	0.544
conditionOIS	0.118	0.1238	0.958	0.337

Table A-10. Comparison between control groups, with counterpart animate conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNII:groupEPC	-0.331	0.1726	-1.921	0.054 .
conditionNIS:groupEPC	-0.156	0.1726	-0.905	0.365
conditionOII:groupEPC	0.269	0.1726	1.559	0.119
conditionOIS:groupEPC	-0.387	0.1726	-2.243	0.024 *

Table A-11. Comparison between L2ers in BP- vs. EP-mode, with counterpart animate conditions as intercept

Baseline L2BP				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNII:groupL2EP	-0.137	0.1752	-0.785	0.432

conditionNIS:groupL2EP	-0.187	0.1752	-1.070	0.284
conditionOII:groupL2EP	0.137	0.1752	0.785	0.432
conditionOAS:groupL2EP	-0.231	0.1752	-1.320	0.186

Table A-12. Comparison between controls vs. L2ers in BP- and EP-mode, with counterpart animate conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>P</i>
conditionNII:groupL2BP	-0.275	0.1726	-1.595	0.110
conditionNIS:groupL2BP	-0.437	0.1726	-2.535	0.011*
conditionOII:groupL2BP	0.044	0.1726	0.256	0.798
conditionOIS:groupL2BP	-0.155	0.1726	-0.903	0.366
conditionNII:groupL2EP	-0.412	0.1726	-2.392	0.016 *
conditionNIS:groupL2EP	-0.625	0.1726	-3.621	0 ***
conditionOII:groupL2EP	0.181	0.1726	1.052	0.292
conditionOIS:groupL2EP	-0.387	0.1726	-2.243	0.024*
Baseline EPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNII:groupL2BP	0.056	0.1752	-0.321	0.748
conditionNIS:groupL2BP	0.281	0.1752	1.605	0.108
conditionOII:groupL2BP	0.225	0.1752	1.284	0.199
conditionOIS:groupL2BP	-0.231	0.1752	-1.320	0.186
conditionNII:groupL2EP	0.081	0.1752	0.464	0.642
conditionNIS:groupL2EP	0.468	0.1752	2.675	0.007 **
conditionOII:groupL2EP	3.891e-14	0.1752	0.000	1.000
conditionOIS:groupL2EP	0.087	0.1752	0.499	0.617

Table A-13. Within-group analysis, with counterpart strong-island conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNAS	0.600	0.1202	4.992	0 ***
conditionNIS	1.005	0.1202	8.369	0 ***
conditionOAS	0.200	0.1202	1.664	0.096 .
conditionOIS	0.111	0.1202	0.930	0.352
Baseline L2ers (BP-mode)				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNAS	0.156	0.1238	1.261	0.207
conditionNIS	0.400	0.1238	3.229	0.001 **
conditionOAS	0.087	0.1238	0.706	0.480
conditionOIS	0.112	0.1238	0.908	0.363

Baseline L2ers (EP-mode)				
	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNAS	0.125	0.1238	1.009	0.313
conditionNIS	0.318	0.1238	2.573	0.010 *
conditionOAS	0.100	0.1238	0.807	0.419
conditionOIS	0.006	0.1238	0.050	0.959

Baseline EPCs				
	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNAS	0.168	0.1238	1.362	0.173
conditionNIS	0.750	0.1238	6.054	0 ***
conditionOAS	0.181	0.1238	0.605	0.544
conditionOIS	0.012	0.1238	0.101	0.919

Table A-14. Comparison between control groups, with counterpart strong-island conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNAS:groupEPC	-0.431	0.1726	-2.498	0.012 *
conditionNIS:groupEPC	-0.255	0.1726	-1.482	0.138
conditionOAS:groupEPC	-0.018	0.1726	-0.109	0.913
conditionOIS:groupEPC	-0.099	0.1726	-0.575	0.565

Table A-15. Comparison between L2ers in BP- vs. EP-mode, with counterpart strong-island conditions as intercept

Baseline L2BP				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNAS:groupL2EP	-0.031	0.1752	-0.178	0.858
conditionNIS:groupL2EP	-0.081	0.1752	-0.464	0.642
conditionOAS:groupL2EP	0.012	0.1752	0.071	0.943
conditionOIS:groupL2EP	-0.106	0.1752	-0.606	0.544

Table A-16. Comparison between controls vs. L2ers in BP- and EP-mode, with counterpart animate conditions as intercept

Baseline BPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>P</i>
conditionNAS:groupL2BP	-0.443	0.1726	-2.571	0.010 *
conditionNIS:groupL2BP	-0.605	0.1726	-3.510	0 ***
conditionOAS:groupL2BP	-0.112	0.1726	-0.652	0.514
conditionOIS:groupL2BP	0.000	0.1726	0.004	0.996
conditionNAS:groupL2EP	-0.475	0.1726	-2.752	0.005 **
conditionNIS:groupL2EP	-0.687	0.1726	-3.981	0 ***

conditionOAS:groupL2EP	-0.100	0.1726	-0.579	0.562
conditionOIS:groupL2EP	-0.105	0.1726	-0.611	0.541
Baseline EPC				
Variable	Estimate	Std. Error	<i>t</i>	<i>p</i>
conditionNAS:groupL2BP	0.012	0.1752	0.071	0.943
conditionNIS:groupL2BP	0.350	0.1752	1.998	0.045 *
conditionOAS:groupL2BP	0.093	0.1752	0.535	0.592
conditionOIS:groupL2BP	-0.100	0.1752	-0.571	0.568
conditionNAS:groupL2EP	0.043	0.1752	0.250	0.802
conditionNIS:groupL2EP	0.431	0.1752	2.461	0.013 *
conditionOAS:groupL2EP	0.081	0.1752	0.464	0.642
conditionOIS:groupL2EP	0.006	0.1752	0.036	0.971

BIOGRAPHICAL SKETCH

Tammer Castro has been a PhD candidate in Linguistics at the Center for Advanced Study in Theoretical Linguistics (CASTL) at UiT – The Arctic University of Norway. He holds an MA in Linguistics from Florida International University, USA, and a BA in English and Portuguese Linguistics and Literature from State University of Ceará, Brazil. His main research interest is adult second language acquisition, particularly the acquisition of Portuguese syntax. His research has been presented at several international conferences, among which the 9th and 10th International Symposium on Bilingualism (ISB 9, Singapore and ISB 10, USA), 13th Generative Approaches to Second Language Acquisition (GASLA 13, USA), 28th Going Romance, Portugal, and 25th Scandinavian Conference of Linguistics (SCL, Iceland). More information about Tammer can be found at <http://tammercastro.weebly.com>.