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ACQUIRING OBLIGATORY AND VARIABLE MOOD SELECTION:
SPANISH HERITAGE SPEAKERS AND L2 LEARNERS' PERFORMANCE IN
DESIDERATIVES AND REPORTED SPEECH CONTEXTS

By

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ABSTRACT OF THE DISSERTATION

Acquiring obligatory and variable mood selection: Spanish Heritage Speakers and L2

Learners' Performance in Desideratives and Reported Speech Contexts

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This dissertation examines Spanish heritage speakers (HS) and second language (L2) learners' acquisition of obligatory and variable mood selection in two complement clauses: desideratives and reported speech contexts. Previous studies have reported this area of language to be particularly troublesome for early and late Spanish/English bilinguals, especially in variable contexts (Borgonovo, Bruhn de Garavito & Prévost, 2008; Collentine, 1993; Iverson, Kempchinsky & Rothman, 2008; Montrul, 2007, 2009, 2011; Pascual y Cabo, Lingwall and Rothman, 2012; Silva-Corvalán, 1994; Torres, 1989; *inter alia*). These investigations, however, have focused on structures that belonged to different modalities, comparing obligatory selection in deontic predicates with alternations in epistemic and epistemological contexts.

This study interviewed 137 participants (HS: $N=69$; L2ers: $N=68$) with different proficiency levels using four experimental tasks: a truth-value judgment, two production tasks (written and oral), and an acceptability judgment task. Results show that mastery of

mood selection is dependent on the interplay between participants' level of proficiency, age of onset and frequency of Spanish use. Highly proficient bilinguals tended to be more accurate in their performance, while those with lower command of the language displayed more variability. Differences in age of exposure and frequency of activation appeared at intermediate levels of proficiency, where HS outperformed their L2 peers in the interpretation and production of subjunctive in reported speech contexts. It is argued that earlier onset of acquisition and active use of Spanish favored the attainment of these structures. In general, the results suggest that the potential effects of vulnerability expected to emerge in mood alternations, appear to be minimized when propositional modality is controlled for.

This dissertation contributes to the fields of L2 and heritage language acquisition in two ways. First, the comparison of these groups reveals contrasts at the interpretive and productive level, furthering our understanding on how differences in age of onset and exposure modulate bilinguals' linguistic outcomes. Second, the analysis of mood within deontic predicates also suggest that the source of morphological variability in these constructions is not the obligatoriness of the selection (as argued by Montrul, 2007, 2009) but the type of modality expressed by the predicate under evaluation.

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DEDICATION

A mi abuelo Máximo, al que le prometí que le dedicaría un libro.

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CHAPTER 1: INTRODUCTION

1.1. Introductory remarks

The main objective of this dissertation is to explore how syntax and the lexicon are represented in the bilingual mind. The analysis of mood in Spanish/English bilinguals provides valuable insight regarding this issue, as it allows researchers to study the potential effects of crosslinguistic influence in structures that not only instantiate different feature specifications in English and Spanish, but also involve the presence of morphosyntactic properties at different interface domains. This dissertation also intends to examine the role of extra-linguistic factors in the acquisition of mood by comparing early and late bilinguals with differing levels of proficiency and exposure to the L2/weaker language. The study of age of onset, proficiency and language activation provides additional information about the variables that might be modulating participants' performance, addressing some of the basic concerns examined in current theories of bilingual language acquisition.

In order to analyze these issues, the present study adopts a generative framework (Chomsky, 1993, 1995, 2000 *et sequitur*) by which language is understood as the integration of different linguistic components: the lexicon, where functional features (FFs) and lexical items are stored, and the computational system, responsible for assembling and interpreting syntactic derivations. According to the minimalist program (Chomsky, 1995, 2000) all speakers have access to the same basic syntactic operations (Move, Merge and Agree), which are generally motivated by the interaction of FFs and lexical items. Features can be characterized as interpretable or uninterpretable based on their semantic contribution (or lack thereof). While the former are used by the semantic

component to determine the meaning of an expression, the latter do not carry any type of interpretive content, and simply trigger syntactic operations.

Based on the fact that a large percentage of monolingual children acquire the basic properties of their language by age 5;0 (Clark, 2003; Bloom, 1991, Lightbown & Spada, 1999), access to and processing of these features does not appear to be particularly burdensome. Crosslinguistic variation in feature specifications, however, has been found to affect the acquisition task of early and late bilinguals. Since the set of features associated to a particular functional category does not necessarily need to be identical across languages, bilinguals' reliance on the feature specifications of their dominant language might give way to cross-linguistic influence (CLI)¹, potentially affecting their grammatical performance (Flynn & Martohardjono, 1994; Geeslin, 2014; Lardiere, 1998; Meisel, 2011; Schwartz & Sprouse, 1996; Selinker, 1969, 1974; White, 1989, 2000).

The degree of successful reassembly of particular feature specifications seems to be significantly affected by linguistic and well as extra-linguistic factors (Lardiere, 1998, 2009). Previous research (Hulk & Müller, 2000; Müller & Hulk, 2001; Sorace, 2000, 2011) has linked bilinguals' pervasive optionality² in morphosyntactic development to the presence of constructions at the interface between the computational component and discourse/pragmatics. According to these investigations, external interfaces (i.e. syntax-pragmatics/discourse) are more vulnerable to CLI and optionality than internal interfaces

¹ In this dissertation, Cross-linguistic Influence (CLI) will refer to the temporary or permanent adoption of previously learned patterns in a language onto a less dominant system, affecting the linguistic performance or development of the individual (Gass & Selinker, 1994; Odlin, 1989; Kellerman & Sharwood Smith, 1986).

² The term optionality will be understood as the "simultaneous presence in a learner's grammar of two features that should be mutually exclusive"(Truscott, 2006:31), giving way to a higher degree of grammatical variability.

because of the additional cognitive cost involved in the integration of information at different levels. Additionally, according to Kroll, Van Hell, Tokowicz & Green (2010), Putnam & Sánchez (2013), and Sunderman & Kroll (2006), bilinguals' performance also seems to be dependent on their level of proficiency and the frequency of language use in the L2/weaker language. Highly proficient bilinguals, who are more likely to have activated the L2/weaker language for a prolonged period of time, have been found to be more successful at feature reassembly than those with lower levels of proficiency and less frequent linguistic activation, as established by Cuza & Frank (2011), Montrul (2007, 2009) and Silva-Corvalán (1994, 2014), *inter alia*.

This dissertation is interested in the analysis of contexts prone to residual optionality and CLI with the objective of exploring how syntax and the lexicon are represented in the bilingual mind. In this respect, the study of obligatory and variable mood selection in Spanish/English bilinguals provides researchers with the opportunity of observing the effects of CLI in structures that, despite presenting a partial degree of syntactic overlap across languages, still require the reassembly and remapping of interpretable FFs onto morphology (see Chapter 2 for a more detailed analysis of this dissertation's target structures). The analysis of bilinguals' performance in variable mood selection, involving elements at the syntax/discourse interface, as well as in obligatory subjunctive use, triggered by the lexical semantics of the matrix predicate (Kempchinsky, 2009) is also expected to contribute to the study of morphosyntactic development at different interface domains.

As it has been mentioned earlier in this section, bilinguals' interpretation and production of FFs across languages is also subject to extra-linguistic factors, such as their

level of proficiency and their average frequency of language activation of their L2/weaker language. The present work also explores these variables by incorporating two different groups of bilinguals: heritage speakers (HS), who have been exposed to Spanish from an early age, and second language learners, who started acquiring this language after puberty. As discussed in Austin, Blume & Sánchez (2015), -and later on in the results from this dissertation-, crosslinguistic influence in simultaneous and sequential bilinguals can be effectively explained “as a result of varying degrees of activation of functional and lexical features in their mapping onto phonological and morphological forms” (p.145). The present work is aimed at investigating how the aforementioned linguistic and extra-linguistic factors modulate early and late bilinguals’ interpretation and use of obligatory and variable mood selection in Spanish, with the ultimate goal of shedding some light on how syntax and the lexicon are represented in the bilingual brain.

1.2. The research problem

Although there has been a considerable number of studies dedicated to the analysis of obligatory and variable subjunctive mood selection in second language learners and HS (Borgonovo, Bruhn de Garavito & Prévost, 2008, 2014; Collentine, 1993, 2010; Correa, 2011; Kanwitt & Geeslin, 2014; Iverson, Kempchinsky & Rothman, 2008; Montrul, 2007, 2009; Pascual y Cabo, Lingwall and Rothman, 2012; Terrell, Baycroft & Perrone, 1987; Silva-Corvalán, 1994, 2003, 2014; Torres, 1989; *inter alia*), there are only a few that have compared the performance of early and late bilinguals using the same type of linguistic structures and experimental tasks (Lynch, 2008; Mikulski, 2006, 2010; Mikulski & Elola, 2013; Montrul, 2011). A contrastive analysis of these groups’ results might be able to reveal underlying differences in access and

retrieval of FFs and lexical items based on their age of onset of bilingualism and varying degrees of Spanish activation.

In addition to these factors, all the aforementioned studies have characterized bilinguals' command of obligatory and variable mood selection based on the comparison of constructions belonging to different types of propositional modality. In the majority of the cases, researchers have contrasted participants' representation of lexically-selected constructions in deontic predicates, such as desideratives (1) and directives (2) with their command of variable mood selection in epistemic and epistemological predicates, such as adverbial (3) and adjectival clauses (4), or cognitive-factive verbs headed by negation (5):

- (1) Juana quiere que escriban/*escriben mejor los artículos
 Juana wants[3ps] that write[3ppSUBJ/*IND] better the articles
 Juana wants (them) to write the articles better
- (2) Carmen pide que graben/*graban las entrevistas
 Carmen asks[3ps] that record[3ppSUBJ/*IND] the interviews
 "Carmen asks (them) to record the interviews"
- (3) a. El profesor lo explica de manera que todos entiendan
 The teacher CL explains of way that all understand[3ppSUBJ]
 "The teacher explains it so that everybody understands"
 b. El profesor lo explica de manera que todos entienden
 The teacher CL explains of way that all understand[3ppIND]
 "The teacher explains it in a way that everybody understands"
- (4) a. Julio busca un análisis que explica esa construcción
 Julio looks for an analysis that explains[3psIND] that construction
 b. Julio busca un análisis que explique esa construcción
 Julio looks for an analysis that explains[3psSUBJ] that construction
 "Julio looks for an analysis that explains that construction"
- (5) a. Nuria no cree que necesitamos más práctica
 Nuria not believe that need[1ppIND] more practice
 b. Nuria no cree que necesitemos más práctica
 Nuria not believe that need[1ppSUBJ] more practice
 "Nuria does not think that we need more practice"

As it will be argued in Chapter 3 (§3.4.2), several studies have shown that the type of modality instantiated in a predicate affects the way in which subjunctive is acquired (Blake, 1983; Lozano, 1995; Merino, 1983; Pérez-Leroux, 1998; Silva-Corvalán, 1994, 2003, 2014). While subjunctive in deontic predicates –such as the one in examples (1) and (2)- is acquired rather early in monolingual and bilingual populations (2;5-3;0), predicates involving the evaluation of complex notions such as presupposition and veridicality –as seen in the epistemic and epistemological predicates provided in examples (3) through (5)- exhibit variability until much later (7;0-9;0), as documented by Gallo Valdevieso (1994) and Pérez-Leroux (1998).

Given the apparent role played by modality in the acquisition of subjunctive by monolingual and bilingual populations, comparisons between participants' performance in the lexically selected subjunctive found in deontic predicates and variable mood selection in epistemic and epistemological constructions might not be entirely equivalent. The following section outlines how the present study contributes to the analysis of bilinguals' mood selection by analyzing their performance in maximally comparable linguistic environments.

1.3. Research proposal

In an attempt to minimize any potential confounding effects derived from the comparison of variable and obligatory mood selection in predicates featuring different modalities (i.e. lexical selection in deontic predicates vs. variable mood selection in epistemics), this dissertation circumscribes the analysis of these two types of mood selection to early-acquired deontic constructions. On the one hand, bilinguals' command of obligatory mood selection is tested through their use of the subjunctive in desiderative

constructions such as the one illustrated in (6). Variable contexts, on the other hand, are examined in predicates headed by the verb of communication *decir* (“to say”), where the choice of indicative and subjunctive depends on semantic/pragmatic factors (7):

- (6) a. El cartero quiere que los vecinos le abran la puerta
 The mailman wants that the neighbors CL open[3ppSUBJ] the door
 b. *El cartero quiere que los vecinos le abren la puerta
 The mailman wants that the neighbors CL open[3ppIND] the door
 “The mailman wants the neighbors to open the door”
- (7) a. La mujer les dice a sus perros que se portan bien
 The woman CL says to her dogs that behave[3ppIND] well
 “The woman tells her dogs that they behave well”
 b. La mujer les dice a sus perros que se porten bien
 The woman CL says to her dogs that behave[3ppSUBJ] well
 “The woman tells her dogs to behave well”

In the case of structures like (6), the matrix predicate selects a specific mood (subjunctive) and disallows any possible mood alternations (as seen in 6b). The type of variable mood selection illustrated in (7), however, allows for the alternation of indicative and subjunctive based on the communicative nature of the subordinate clause. While indicative is used to report assertions (7a), subjunctive mood signals the presence of an indirect command (7b).

As discussed in previous sections, the ultimate objective of this dissertation is to explore how syntax and the lexicon are represented in the bilingual brain. The study of mood in Spanish/English bilinguals provides valuable insight into the potential effects of CLI in structures that not only instantiate different feature specifications in English and Spanish (see §2.3 for a complete comparative analysis of both structures), but also involve the presence of morphosyntactic properties at different interface domains. Previous work on the acquisition of mood in bilinguals found this area of language to be

particularly problematic for HS and L2 learners of Spanish (Massery & Fuentes, 2012, 2014; Montrul, 2011; Gudmestad, 2012, 2013, 2014, *inter alia*). Some of these researchers (Montrul, 2007, 2009) have linked the occurrence of morphological erosion and optionality to representational deficits in the interpretation of indicative/subjunctive mood distinctions. However, there is also a budding body of research that presents evidence supporting control-like processing of mood distinctions (Villegas, Dussias & Morgan-Short, 2013), and in some cases, in the spontaneous and elicited production of indicative and subjunctive in obligatory and variable contexts (Iverson et al. 2008, Mikulski, 2006; Mikulski & Elola, 2013; Rothman, Pascual y Cabo & Lingwall, ms).

Although the aforementioned studies have resorted to a wide variety of measures to assess participants' performance and document potential asymmetries across tasks, some have overlooked the fact that different types of instruments tap into distinct types of knowledge, as reported by Geeslin (2010) and Montrul, Foote & Perpiñán (2008). The present dissertation is designed to contribute to this body of research by triangulating data from multiple tasks, including evidence from participants' interpretation, production and grammatical intuitions regarding obligatory and variable mood selection, as well as information about their specific sociolinguistic background. The incorporation of different types of experimental tasks is meant to allow for a more nuanced understanding of how factors such as age, language use and proficiency modulate linguistic performance at various levels.

1.4. Research questions and hypotheses

Taking into consideration the previously stated research problem and proposal, this dissertation is focused on answering the following research questions:

1. Are structures with mood alternations based on semantic/pragmatic constraints more prone to attrition/optionality and crosslinguistic influence than those where mood is lexically selected?

Although it has been reported that purely syntactic operations can also be vulnerable to optionality and CLI (Cuza & Frank, 2011; Cuza, 2013), it is widely accepted that properties at the syntax-pragmatics interface such as variable mood selection are particularly prone to morphological erosion and transfer (Belletti, Bennati & Sorace, 2007; Sorace 2000; Tsimpli & Sorace, 2006). Based on this body of research, subjunctive and indicative mood selection in verbs headed by a verb of communication are expected to exhibit higher rates of optionality and CLI than subjunctive selection in desideratives, where mood is dependent on the lexical semantics of the matrix verb. This hypothesis is aligned with previous findings reporting higher rates of erosion/attrition and CLI in contexts that allowed for mood alternations –albeit in predicates featuring different types of propositional modalities-. However, and as will be explained in the following chapters in more detail, there are several considerations that might alter these predictions. Reported directives headed by verbs of communication, for example, can also convey the notions of indirect command and volition using periphrasis of obligation instead of subjunctive morphology:

- (8) José le dice a sus hijas que tienen que lavarse las manos
 José CL says to her daughters that have to wash[3ppl] the hands
 “José tells her daughters that they have to wash their hands”

As illustrated in (8), the choice of this type of periphrasis over subjunctive eliminates the need to map an interpretable feature to a specific morphological item that is not present in the linguistic repertoire of the bilinguals’ dominant language. In fact, the use of periphrases in these contexts is also a grammatical possibility in English, where it

co-exists with non-finite constructions (i.e. *José tells her daughters to wash their hands*). It is hypothesized that this structural overlap between Spanish and English is likely to positively affect³ bilinguals' performance, allowing them to avoid a language-specific construction that has generally been argued to have low communicative value (subjunctive morphology) in favor of an alternative construction present in both languages. As it will be discussed in Chapter 2 (§2.2.2.2), one of the most challenging tasks of the Spanish/English bilingual acquirer dominant in English will consist on identifying that in Spanish, the introduction of a deontic model of evaluation is represented by the presence of subjunctive mood in the subordinate clause, and not by the use of a non-finite construction headed by the prepositions *for* and/or *to*, as it is the case in English.

While the first research question focused on the comparison of structures involving properties at different interface domains, the second one investigates HS and L2 learners performance in more detail. It is expected that an analysis of these groups performance in interpretation and production will provide further opportunities to inform about the acquisition of linguistic properties prone to optionality/attrition and CLI in bilingual language acquisition. The second research question presented below tackles precisely this issue:

2. How do HS and L2 learners of Spanish represent obligatory and variable mood selection in deontic predicates?

³ The notion of positive transfer is understood as the facilitative effect derived from the presence of similar structures in the first and second language of a bilingual, favoring the transference of knowledge across languages.

The acquisition of obligatory and variable mood selection has been reported to be particularly troublesome for early and late Spanish/English bilinguals, especially in participants with low levels of proficiency (Kanwit & Geeslin, 2014; Martinez-Mira, 2010; Montrul, 2007, 2009, 2011; Silva-Corvalán, 1994, amongst others). As it has been argued by previous researchers (Iverson et al. 2008, Pascual y Cabo et al. 2012 and Rothman et al. ms), the low productivity of subjunctive morphology and the lack of mood contrasts in English, is likely to affect the acquisition of indicative/subjunctive selection in Spanish, which involves the resetting of the feature values present in the English Force head (from uninterpretable to interpretable), as well as the remapping of FFs to new lexical items (Kempchinsky, 2009).

Despite these difficulties, the majority of these studies have documented that bilinguals' representation of indicative/subjunctive alternations and obligatory subjunctive selection is very similar to that of controls' in highly proficient populations (Borgonovo et al. 2014; Iverson et al. 2008; Pascual y Cabo et al. 2012). Production in these same contexts, on the other hand, seems to yield much less accurate results (Montrul, 2009, 2011), suggesting an asymmetry between bilinguals' representational and productive abilities, as noted in previous studies focused on bilingual language development (Hendriks & Koster, 2010; Sherkina-Lieber, Pérez-Leroux & Johns, 2011).

As noted above, it is expected that the adoption of experimental tasks targeting several linguistic domains (interpretation and production) will facilitate a more nuanced analysis of bilinguals' acquisition of obligatory and variable mood selection. However, the diverse nature of these tasks is also expected to affect participants' overall performance across contexts and groups (Geeslin, 2010; Geeslin & Gudmestad, 2008). In

addition to the previously mentioned comprehension/production asymmetries, several researchers also document that tasks exhibiting high metalinguistic demands, such as grammaticality or acceptability judgments, generally favor L2 learners over HS (Correa, 2011; Mikulski & Elola, 2013; Montrul & Perpiñán, 2011; Potowski, Jegerski & Morgan-Short, 2009)⁴. Consequently, it is anticipated that these two groups will be more accurate in tasks targeting comprehension than in production, and that there might be a contrast between their scores in the Acceptability Judgment Task (grammatical intuitions) based on their metalinguistic training.

In addition to these predictions, there is another factor that needs to be taken into consideration. As it has been discussed throughout this chapter, previous research on the acquisition of mood by early and late Spanish/English bilinguals has been focused on structures that belonged to different semantic modalities, comparing the results of mood selection within deontic predicates with those obtained in studies targeting epistemic and epistemological contexts (Montrul, 2007, 2009; Iverson et al. 2008; Rothman et al, ms; *inter alia*). Several researchers have argued that the type of modality instantiated in a particular structure seems to affect its rate of acquisition (Choi, 2005; Papafragou, 1998; Papafragou & Ozturk, 2007). In particular, linguistic properties linked to deontic predicates (such as mood in desideratives and reported directives) seem to be acquired earlier than others involving epistemic and epistemological components, such as indicative and subjunctive selection in the examples (3-5), as documented by Blake (1983), Lozano (1995) and Pérez-Leroux (1998). This dissertation intends to take this research into account by limiting the analysis of mood selection to deontic predicates, and

⁴ See Chapter 3 (§ 3.3. and 3.4. for more information regarding these studies).

comparing participants' performance in three types of tasks: a truth-value judgment task targeting interpretation, two elicited production activities focused on the use of indicative/subjunctive mood, and an acceptability judgment task aimed at examining their grammatical preferences.

An important factor that has not yet been addressed in this chapter is the lack of semantic contrast in desiderative predicates, which do not allow for the alternation of indicative and subjunctive in the embedded clause. Although this particular configuration disallows the analysis of participants' interpretation of subjunctive morphology in lexically selected contexts, it introduces a variable that could affect bilinguals' overall performance in this structure. Desideratives of the type seen in previous examples, allow for the alternation of subjunctive morphology and infinitival forms based on the binding properties of the complement clause (Kempchinsky, 1987, 1995, 2009; Sánchez-Naranjo, 2010, 2014). Consequently, this dissertation will also take into consideration this particular semantic effect (subjunctive disjoint reference) in the acquisition of obligatory mood selection in desideratives constructions:

3. In the case of desiderative constructions, how do early and late bilinguals represent the syntactic/semantic constraints that modulate obviation effects triggered by the use of the subjunctive?

To my knowledge, the analysis of obviation effects in bilinguals has been limited to tasks targeting interpretation and grammatical intuitions (Bruhn de Garavito, 1995, 1997; Massery & Fuentes, 2012; Mikulski, 2006, 2010). In the work of Mikulski (2006, 2010), HS' ability to interpret and produce disjoint and co-referential settings was compared to that of second language learners'. Results showed that early bilinguals had a significant advantage over their proficiency-matched L2 counterparts when they were

asked to differentiate between disjoint and co-referential contexts in desideratives. Bruhn de Garavito (1995, 1997) and Massery & Fuentes (2012) also examined the same type of obviation effects in adult L2ers, and concluded that proficiency appeared to overwhelmingly modulate the level of accuracy attained by group of bilinguals.

Although the present work is focused on the analysis of bilinguals' mastery of obligatory and variable mood selections, it will be argued that the acquisition of obviation in Spanish desideratives is very much connected to their ability to access and retrieve language-specific morphosyntactic items that are not present in their dominant language. Unlike their English counterparts, Spanish desideratives alternate between two different constructions in the embedded clause (featuring the presence of an overt complementizer and subjunctive or a infinitival form) based on its binding properties:

- (9) a. $Julia_i$ quiere que ($pro_{*i/j/g}$) lave los platos
 Julia wants[3ps] that (pro) clean[1/3psSUBJ] the dishes
 "Julia wants me/him to do the dishes"
 b. $Julia_i$ quiere ($pro_{i/*j/*g}$) lavar los platos
 Julia wants[3ps] (pro) clean[inf] the dishes
 "Julia wants to do the dishes"

In Spanish, the use of subjunctive in structures like (9a) marks that the subject of the matrix clause (*Julia*) is not co-referential with that of the subordinate clause (pro). Conversely, subject co-referentiality is expressed by means of an infinitival form (9b), which indicates that the subject of the matrix clause (*Julia*) is also the agent of the action expressed in the embedded proposition (*lavar los platos*, "clean the dishes"). As it will be discussed in Chapter 5, it is possible that the competition between subjunctive and infinitive in the subordinate clause may have affected bilinguals' interpretation and use of subjunctive in desideratives, allowing for the overgeneralization of infinitive forms to

SDR contexts to avoid the use of subjunctive. As reported in previous studies on this topic, it is expected that high rates of accuracy will be modulated by the frequency of use of the minority language (Spanish), age of onset of bilingualism and participants level of proficiency (Bruhn de Garavito, 1995, 1997, Mikulski, 2006). In fact, these are the some of the variables that motivated the last research question guiding this dissertation:

4. To what extent do extra-linguistic factors such as proficiency in the weaker language/L2, frequency of language use and age of onset of bilingualism modulate bilinguals' knowledge of obligatory and variable mood selection?

A considerable number of studies have reported that high proficiency in the L2/weaker language seems to facilitate obligatory and variable mood selection (Gudmestad, 2006; Iverson et al. 2008; Montrul, 2007, 2009; *inter alia*). As it will be argued throughout this dissertation, it is predicted that highly proficient bilinguals are more likely to successfully access and reassemble the specific feature configurations involved in different morphosyntactic properties (i.e. mood, gender, aspect). Work by Segalowicz and collaborators (Favreau & Segalowicz, 1983; Segalowicz & Gatbonton, 1995; Segalowicz, Segalowicz & Wood, 1997, *inter alia*) has explained this advantage by establishing a connection between the notions of proficiency and automaticity. The latter, understood as “the economical restructuring of underlying processing mechanisms” (Segalowicz & Gatbonton, 1995:134), seems to promote facilitation and appropriate levels of inhibition when processing a particular structure (Segalowicz & Hulstijn, 2005: 374). In the case of the constructions examined in this dissertation, the automaticity derived from higher levels of proficiency would positively affect bilinguals' ability to: 1) inhibit any competing structures from their dominant language that may have been

activated along with their Spanish equivalents; and 2) access and select the appropriate feature specifications involved in obligatory and variable mood selection in Spanish.

The notions of proficiency and automaticity are also linked to that of linguistic activation, as reported by De Carli et al. (2014), Gollan, Montoya, Cera & Sandoval (2008) and Paradis (1985, 1993). According to these researchers, frequent use of the weaker language/L2 facilitates access to its lexical items and functional features. Taking all of these considerations into account, I hypothesize that the frequency by which the weaker/second language of a bilingual is activated will affect their overall linguistic performance in obligatory and variable mood selection. Although language activation and proficiency appear to be very much related to one another (Cuza, 2010; Gürel, 2004; Hulsen, 2000, *inter alia*), the nature of current measures of language proficiency used in experimental research does not fully ascertain the degree to which frequency of use may affect bilinguals' linguistic system as a whole. Most of the tasks used in previous investigations are limited to the analysis of specific aspects of language competence, such as grammatical or lexical knowledge. In the present work, I address these limitations by incorporating two complementary measures to study how these factors might modulate bilinguals' linguistic performance. To do so, I used an adapted version of the *Diploma de Español como Lengua Extranjera* (DELE) (Montrul, 2008) to examine grammatical and lexical knowledge, and a language background questionnaire to obtain more information about HS and L2 learners' patterns of language use. Following Unsworth's (2012) Utrecht Bilingual Language Exposure Calculator (UBiLEC), this last measure included a section where participants were asked to report their percentage of language use (of Spanish and English) in a wide variety of situations and social circles. In contrast with

previous studies, this information was used to operationalize bilinguals' level of linguistic activation in the L1/L2 in a way that it could be correlated with their performance across tasks.

In addition to these variables, several studies have suggested that age of onset of bilingualism, that is, whether participants were exposed to English and Spanish from early on (as it is in the case of the majority of HS) or later in life (L2 learners), also plays a role in mood selection (Mikulski, 2006, 2010; Montrul, 2011). Although this line of work points to an advantage of HS over L2ers because of their early exposure to the minority language, other studies have indicated that this initial positive effect does not necessarily imply the maintenance of accurate mood selection later in life (Silva-Corvalán, 1994; Montrul, 2009; Perez-Cortes, 2014; Putnam & Sánchez, 2013). In contrast, data obtained in this dissertation suggest a three-way interaction between age of onset, proficiency and language activation, where early bilinguals with productive and prolonged levels of language activation outperform proficiency-matched L2ers, and sequential HS obtain higher rates of accuracy than their simultaneous counterparts as proficiency decreases. These results suggest that the advantage observed in HS emerges at lower levels of proficiency, and only in that case of participants that reached a certain threshold of activation of the minority language.

With these research questions and hypotheses in mind, I intend to provide a better understanding of early and late bilinguals' representation of obligatory and variable mood selection. As it has been argued in the first research question, the analysis of two structures involving different interface domains is expected to shed light on the role of interface vulnerability as a source of morphosyntactic optionality in HS and L2 learners

(Sorace, 2003, 2005, 2011; Montrul, 2009). Previous work anticipates that reported directives and assertions will be more affected by optionality/attrition than desideratives, due to the added difficulty of integrating information involving syntactic as well as pragmatic domains (Beletti et al. 2007; Sorace & Filiaci, 2006, Sorace, 2011). The present work, however, intends to show that in the case of predicates belonging to the same type of semantic modality (i.e. deontic), the integration of syntactic information with elements from other modules of the grammar does not seem to increase the likelihood of morphological erosion and CLI.

As suggested in the second research question, the study of bilinguals' interpretation and production of these two structures will provide a more detailed analysis of the potential linguistic and extra-linguistic factors that affect bilinguals' mood selection across tasks. Based on previous studies, it is expected that HS and L2 learners will obtain higher scores in tasks targeting their interpretation of mood and obviation than in those focused on their production (Geeslin, 2010; Hendriks & Koster, 2010; Sherkina-Lieber, et al. 2011). However, it is also hypothesized that participants' accuracy across contexts will increase with higher levels of proficiency and activation of the weaker language/L2. As reported in this section, these two variables have been found to facilitate access to the L2/weaker language's lexical items and functional features (Paradis, 1995, 1993), increasing the chances of successful feature reassembly (Lardiere, 1998, 2009).

1.5. Organization of the dissertation

In order to achieve these goals and effectively explore the aforementioned research questions, the present dissertation is organized as follows. Chapter 2 summarizes the most influential research on mood and modality, focusing on semantic and syntactic

analyses of obligatory and variable mood selection in Spanish, as well as on the contrast between this language and English. Chapter 3 describes previous research regarding the acquisition of mood and obviation by monolingual and bilingual populations, placing a particular emphasis on Spanish heritage speakers and second language learners. This chapter specifically addresses the issue of how age of onset of bilingualism, proficiency and language activation may have modulated bilinguals' performance in previous studies.

Chapter 4 is devoted to the description of the research methodology, description and implementation of the tasks. This chapter presents a description of the research questions and hypotheses, as well as a detailed report of the methods of data collection (questionnaires, tests and experimental tasks) used in the study. In order to show how data were analyzed, Chapter 5 provides a summary of the results obtained in the experimental tasks, analyzing their potential significance in light of the research questions and initial hypotheses postulated in Chapters 1 and 4. Chapter 6 summarizes and discusses the main findings presented in the previous chapters, connecting them to the research questions presented in Chapters 1 and 4. To conclude, Chapter 7 draws the present dissertation to a close by acknowledging some of the methodological limitations found in the study, presenting some final remarks, and suggesting future lines of research related to the study of bilingual language acquisition.

CHAPTER 2: ANALYSIS OF MOOD SELECTION IN SPANISH AND ENGLISH

2.1. Introduction

The current chapter provides a comprehensive summary of the most relevant semantic and syntactic analyses in relation to indicative and subjunctive mood selection, placing a particular emphasis on desiderative and reported directives. As it has been mentioned in the introduction, the particular feature specifications of these two constructions in Spanish and English allow for the examination of crosslinguistic influence (CLI) in areas that require the reassembly and remapping of interpretable FFs onto morphology. Additionally, the comparative study of obligatory and variable mood selection in HS and L2 learners significantly contributes to the study of bilingual morphosyntactic development at different interface domains.

After introducing the notions of mood and modality at the beginning of the chapter, I provide a summary of the most influential proposals regarding the syntax and semantics of obligatory and variable mood selection in Spanish. The following sections examine the structure of desideratives and reported directives in Spanish and English, suggesting some general predictions for the acquisition of these structures, taking into account semantic as well as syntactic factors (i.e. role of propositional modality, structural differences and the importance of feature checking and valuation).

2.2. Mood and modality

There have been a considerable number of semantic and syntactic proposals aimed at capturing the complexity of mood selection in Spanish (Ahern & Leonetti, 2004; Gómez-Veiga, García-Madruga & Moreno-Ríos, 2010; Heras Sedano, 2006; Palmer, 2001; Quer, 1997, 1998, 2007, 2009, 2010, Villalta, 2008; *inter alia*). Early

investigations opted for an exhaustive examination of all possible contexts of indicative/subjunctive use (Bolinger, 1968; Bosque, 1990; Butt & Benjamin, 1988), proposing notions such as assertion and presupposition as driving forces behind mood choice. More recent work on this matter (Fábregas, 2014; Giannikidou, 2013; Gielau, 2015; Quer, 2001) has shifted its focus towards the need for establishing a model capable of integrating the main principles behind mood selection, while still acknowledging the fact that indicative and subjunctive are not uniform linguistic categories. In what follows, I will present a review of the most influential semantic and syntactic analysis with respect to indicative and subjunctive use.

In Spanish, the modality of a proposition can be conveyed by means of different linguistic expressions (modal verbs, adverbs, indicative/subjunctive verbal inflection). Crucially, all grammatical manifestations of mood are considered operators (or markers of operators) that quantify over predicates, which are in turn evaluated in light of all possible worlds (Borgonovo, 2003; Fábregas, 2014). In order to understand the basic principles behind mood selection, we need to know more about the set of presuppositions that restrict the scope of these modal semantic operators. In this dissertation, I will assume Chung and Timberlake's (1985) proposal, by which the evaluation of subordinate predicates is constrained by three different parameters: epistemic, epistemological and deontic modal bases⁵. The difference between epistemic and epistemological modality is very subtle: while the former (10) involve the evaluation of an event with respect to all possible worlds, the latter (11) also includes speaker's attitudes as sources of information in the process of evaluation. In the case of deontic modality (12), the evaluation is

⁵ Following Kratzer (1977, 1981) modal bases will be defined as the common conversational background shared by speakers when they evaluate a particular proposition.

dependent on the notions of permission, necessity and obligation, which are very closely related to directive speech acts. According to Palmer (2001:24), while epistemic and epistemological modalities concern the factual status of the proposition, deontic modal bases refer to the potentiality of events. The following examples provide a practical illustration of the interplay between these three types of modality and mood selection in Spanish:

- (10) Busco a una secretaria que hable/habla inglés británico.
 Look for [1psg] a one secretary that speak[3psSUBJ/IND] English British.
 “I am looking for a secretary who speaks British English”
- (11) Creo que la secretaria habla/*hable demasiado
 Think [1psg] that the secretary talk[3psIND/*SUBJ] too much
 “I think that the secretary talks too much”
- (12) Quiero que la secretaria hable/*habla menos
 Want [1ps] that the secretary talk[3psgSUBJ/*IND] less
 “I want the secretary to talk less”

The relative clause in (10) is an example of mood alternation in an epistemic context, where the choice of indicative/subjunctive depends on the speakers' certainty (or lack thereof) of there being a secretary who speaks British English. Mood selection in (11), on the other hand, operates within an epistemological modal base, and is restricted to the speaker's attitudes showing either commitment or uncertainty with respect to the truth of the proposition. In the deontic predicate reproduced in (12), the speaker expresses a desire (“for the secretary to talk less”), which is dependent upon the completion of an indirect speech act. Like this last example, the structures tested in this investigation (reported directives and desideratives) belong to a deontic type of modality, aimed at “influenc(ing) the intentional behavior of the hearer in such a way that the latter carries out the action specified by the proposition” (Palmer, 2001: 7).

In this respect, many studies have found that propositional modality appears to modulate the acquisition of other linguistic properties (i.e. modal verbs, scalar implicatures, adverbs) in a wide variety of languages (Choi, 2005; Papafragou, 1998; Papafragou & Ozturk, 2007). The general consensus is that children start acquiring linguistic properties linked to deontic modality much earlier (around 2;0) than those involving epistemic and epistemological components, which may be firmly established as late as 5;0. As noted in Lozano (1995) and later on in Pérez-Leroux (1998), the degree of inference involved in the evaluation of embedded predicates also seems to influence the course of acquisition of mood selection in monolingual and bilingual populations. While mood selection within epistemological and epistemic predicates entails the computation of rather complex notions, such as presupposition, factuality and commitment to the truth-value of the proposition, mood choice in deontic constructions is connected to more semantically ‘transparent’ notions (i.e. obligation, desire, necessity), “independent of the speaker’s evaluation of the clause” (Zagona, 2013: 787) and closely related to observable speech acts. In contrast with previous studies, which have focused on bilinguals’ mastery of mood selection in epistemic and epistemological predicates, this dissertation will be centered on deontic structures. As I will discuss throughout this chapter, the type of propositional modality is likely to have an effect on the acquisition/attrition of mood selection in both heritage speakers and L2 learners.

2.2.1. Semantic proposals for a unified characterization of mood

The complexity underlying the semantic contribution of modals verbs and mood morphology in Spanish has generated a wide variety of proposals aimed at unifying all forms under one common notion. Traditionally, indicative/subjunctive distinctions have

been explained on the basis of a *realis/irrealis* semantic contrast (Whitley, 2002).

According to this analysis, the notion of *realis* is associated with actualized situations that are either occurring at the moment of the utterance, or are known by *quasi*-direct perception, whereas the scope of *irrealis* circumscribes situations to the realm of thought and alternative worlds (Giorgi & Pianesi, 2007; Haverkate, 2002; Palmer, 2001, *inter alia*):

Realis

- (13) a. El profesor cree que eres muy desordenado.
The professor thinks[3psg] that are[2psgIND] very untidy [msg]
b. *El profesor cree que seas muy desordenado.
The professor thinks[3psg] that are[2psgSUBJ] very untidy [msg]
“The professor thinks that you are very untidy”

Irrealis

- (14) a. Sara quiere que vayas a su casa mañana.
Sara wants that go[2psgSUBJ] to her[fsg] house tomorrow
b. *Sara quiere que vas a su casa mañana.
Sara wants that go[2psgSUBJ] to her[fsg] house tomorrow
“Sara wants you to go to her house tomorrow”

In addition to being connected to the notions of *realis/irrealis*, mood selection has also been associated to the concepts of contextual commitment and veridicality (Farkas, 1992; Giannakidou, 1997; Portner & Rubinstein, 2012; Terrell & Hooper, 1974). According to this body of research, the choice between indicative and subjunctive is a reflection of the speaker’s commitment towards the truth-value of the embedded proposition. For instance, in the case of the desiderative construction provided in (14), the speaker is not able to fully commit to the truth-value of the complement *que vayas a su casa mañana* (“for you to go to her house tomorrow”) because even if there is a possibility that the event is fulfilled, it is also conceivable that it will never be realized.

- (15) Sara promete que irá/*vaya a tu casa mañana
 Sara promises [3psg] that will go[3psgIND/*SUBJ] to your house tomorrow
 “Sara promises that she’ll go to your house tomorrow”

This analysis would also explain why a verb such as *prometer* (“promise”), which is semantically related to *querer* (“want”) would select the opposite mood. Whereas the completion of the event in (14) relies solely on the willingness of the addressee (*tú*, “you”) to comply with the request -weakening the commitment of the speaker-, in a sentence like (15) the obligation is placed upon the actor of the reported action (Sara). This situation increases the likelihood of the event being completed, affecting the speaker’s level of the contextual commitment.

The relation between speaker-addressee-utterance is also capitalized in research focused on the role of presupposition in mood selection (see Mejías-Bikandi, 1998 for a comprehensive survey). The main assumption behind these analyses is that subjunctive is used when the content of the embedded proposition is presupposed (i.e. old information) whereas the indicative is generally used to present new information:

- (16) Lamento que tenga que irse
 Regret[1psg] that have to[3psgSUBJ] leaveCL[3psg]
 “I am sorry that he has to leave”
- (17) Te informo de que tienes que irte
 CL[2psg] inform[1psg] of that have to[2psgIND] goCL[2psg]
 “I inform you that you have to leave”

In the case of (16), for example, the fact that “he has to leave” is presented as common ground for both speaker and hearer. In (17), however, the factive verb *informar* (“to inform”) introduces new information in the embedded clause (“that you have to leave”), justifying the presence of indicative. The notions of assertion, presupposition and contextual commitment set the foundations for Quer’s model (1998, 2001). This analysis

is based on the idea that subordinate clauses introduce specific models of interpretation into the context, and that in Spanish, shifts in the model of evaluation of a proposition's assertiveness are marked by subjunctive mood. Embedded propositions that are evaluated as being true –because of the speakers' commitment to the truth-value of the statement or the inherent nature of the event- are known as *weak intensional* predicates. Examples of this class include predicates stating beliefs (18) promises (19) and reported assertions (20), introduced by the presence of indicative mood:

- (18). La mujer cree que irá a la fiesta
 The woman thinks[3psg] that will go[3psgIND] to the party
 “The woman thinks she’ll go to the party”
- (19). La mujer promete que irá a la fiesta.
 The woman promises[3psg] that go[3psgIND] to the party
 “The woman promises that she’ll go to the party”
- (20). La mujer dice que irá a la fiesta
 The woman says[3psg] that will go[3psgIND] to the party
 “The woman promises that she’ll go to the party”

In the case of the examples above (18-20), the matrix verb introduces only one conceivable world, where the truth-value of the evaluated model is asserted. Conversely, when the main verb presents a shift in the model that consists in the evaluation of the embedded predicate as an alternative realization of the actual world (in future or counterfactual situations), Quer proposes the notion of *strong intensional* predicates:

- (21). Laura exige que limpies tu habitación.
 Laura demands[3psg] that clean[2psgSUBJ] your room
 “Laura demands that you clean your room”
- (22). Laura quiere que limpies tu habitación.
 Laura wants[3psg] that clean[2psgSUBJ] your room
 “Laura wants you to clean your room”

In (21) and (22), the main verbs *exigir* (“to demand”) and *querer* (“want”) open the possibility to several situations. It could be the case, for example, that Laura’s demand/want (*that you clean your room*) is fulfilled. The chance of it being ignored, however, is also imaginable and would explain the categorization of the embedded clauses in (21) and (22) as strong intensional predicates, whose veridicality cannot be asserted. This proposal can be extended to explain mood choice in indicative/subjunctive alternations such as the ones observed in relative clauses and negated epistemics. In these cases, it is suggested that the selection of indicative or subjunctive marks the model of evaluation that is used when assessing the embedded clause.

2.2.2. Syntactic proposals to analyze mood selection

While semantic analysis provide a very comprehensive view of the wide array of notions included in different expressions of modality, they do not fully account for the structural mood alternations observed in different types of predicates (Bosque, 2012; Farkas, 1992; Kempchinsky, 1995, 2009; Quer, 2009). The partial explanatory inadequacy of some of these proposals prompted a more detailed syntactic analysis of mood contrasts cross-linguistically. Consequently, Quer (2009) proposed a further differentiation between *intensional* (also known as lexically selected), and *polarity* subjunctives, illustrated in (23) and (24):

- (23) a. Lamento que *hayas visto* una escena así.
 Regret[1psg] that have seen[2psgSUBJ] a scene this
 b. *Lamento que *has visto* una escena así.
 Regret[1psg] that have seen[2psgIND] a scene this
 “I regret that you have seen such a scene”
- (24) a. Busco un diccionario que tenga sinónimos.
 Look [1psg] one dictionary tha has[3psgSUBJ] synonyms
 “I am looking for a dictionary with synonyms”

b. Busco un diccionario que tiene sinónimos.
 Look [1psg] one dictionary tha has[3psgIND] synonyms
 “I am looking for a dictionary with synonyms”

In the case of an *intensional* subjunctive such as (23a) the matrix predicate selects a specific type of mood and disallows any possible mood alternations (hence, the ungrammaticality of 23b). *Polarity* subjunctive, on the other hand, appears in predicates where indicative is also possible, and it is licensed by either a question/negation operator, or by a specific semantic need. In this particular case, for example, the use of subjunctive responds to the need of differentiating the existence of a non-presupposed complement (24a) from a presupposed one (24b).

In his most recent work, Fábregas (2014) examines the possibility of postulating a model that accounts for all uses of subjunctive, taking into consideration their syntactic and semantic characteristics. This researcher argues that subjunctive could be thought of as “a set of morphosyntactically distinct, but related, forms” (p.25). Based on this model, the semantic and syntactic relations between different types of subjunctive could be explained by means of adjacent syntactic heads that would increasingly add semantic content to a proposition. Although conjectural, this model further supports the predictions for subjunctive acquisition outlined in the previous section. According to Fábregas the meaning of subjunctive is hypothesized to be compositional in nature, going from transparent (i.e. indirect speech acts, futurity) to more opaque semantic notions (such as presupposition and truth-value of a particular statement). This analysis would explain why deontic predicates such as the ones investigated in this dissertation are semantically and structurally different from the ones related to epistemic (relative and adverbial clauses) and epistemological modal bases. In the next section, I will expand these

observations while providing a much more detailed semantic and syntactic description of the two constructions hereby examined.

2.2.2.1. Deontic predicates

This dissertation intends to analyze two types of structures: desideratives (25), where the matrix verb lexically selects subjunctive, and predicates headed by a verb of communication (26), where the presence or absence of subjunctive determines whether the construction is interpreted as an indirect command (26a), or as a reported assertion (26b):

- (25) a. Tu madre quiere que *leas* mejor.
 Your mother wants that read[2psgSUBJ] better
 b. *Tu madre quiere que *lees* mejor
 Your mother wants that read[2psgIND] better
 “Your mother wants you to read better”
- (26) a. El chico les dice a sus amigos que *canten* bien.
 The boy CL[3 plDT] says to his friends that sing[3psgSUBJ] well
 “The boy tells his friends to sing well”
 b. El chico les dice a sus amigos que *cantan* bien.
 The boy CL[3pplDT] says to his friends that sing[3psgIND] well
 “The boy tells his friends that they sing well”

One of the distinctive properties of desideratives and reported directives is that they embody the notion of *irrealis* by “introducing a set of possible worlds that model alternative realizations of the actual world” (Quer, 2001:85; based on Farkas, 1992). In these cases, the truth-value of the embedded clause is momentarily suspended given the uncertainty of the event. In contrast with (26b), the acts of “reading” and “singing” in (25a) and (26a) have not yet been realized in the actual world, preventing the speaker from committing to the veridicality of the proposition (Giannakidou, 2013). The subjunctive used in desideratives and reported directives embedded under deontic

predicates also has the peculiarity of triggering obviation effects, by which the pronominal subject of the subordinate clause has to be disjoint in reference with the subject in the higher clause (Padilla, 1990:11):

- (27) [Pedro_i quiere [que [pro_{*i/j} venga]]]
 Pedro_i wants[3psg] that pro_{*i/j} come[3psgSUBJ]
 “Pedro wants (him) to come”

- (28) [Juan_i le dice a tu hermana_j [que [pro_{*i/j} corra rápido]]]
 Juan CL[3sgDT] says to your sister that pro run[3psgSUBJ] faster
 “Juan told your sister to run faster”

In examples (27) and (28), neither “Pedro” nor “Juan” can be considered as possible actors of the events reported in the embedded clauses. In these cases, the presence of an additional participant is either implied (as in 27, with *pro_j*) or recovered from the object position in the matrix clause (“a tu hermana” in 28). This effect is known as *Subjunctive Disjoint Reference* –henceforth SDR- (Bianchi, 2001; Picallo, 1984, *inter alia*), and is argued to be derived from the presence of a quasi-imperative operator in the embedded clause (Kempchinsky, 1986, 2009). Before clarifying the nature of said operator, it is crucial to mention that these two predicates can also express co-reference with the matrix subject. In the case of desideratives, this is achieved by means of an infinitive form (29). Predicates headed by verbs of communication, on the other hand, resort to the presence of indicative mood when used as reported assertions to express co-referentiality (30):

- (29) a. [Quiero_i [pro_{i/*j} ser una buena investigadora]]
 Want_i [1psg] pro_{i/*j} be[inf] a good investigator]]
 “I want to be a good investigator”
 b. [Quiero_i [que pro_{*i/j} sea una buena investigadora]]
 Want_i [1psg] that pro_{*i/j} is[3psgSUBJ] a good investigator]]
 “I want her to be a good investigator”

- (30) [Julia_k le dice a su tía_l [que pro_{k/l} va deprisa]]
 Julia CL[3psgDT]says to her aunt [that pro_{k/l} goes[1/3psgIND] fast]]
 “Julia_k tells her aunt_l that she_{k/l} goes fast”

As observed in the previous examples, the infinitival form in (29a) acts as a marker of co-referentiality between the matrix and the embedded subjects⁶. In the case of (30), the use of the indicative form in the embedded clause is the only resource that verbs of communication such as *decir* have to open the possibility of co-reference between subjects. Unlike the infinitival form in desideratives, the use of indicative in sentences headed by a verb of communication does not necessarily entail co-referentiality between subjects, although this is certainly a possibility (as indicated by the sub-indexes in 30).

In addition to sharing this property, reported directives and desideratives also display locality effects in their selection of subjunctive (Gielau, 2015; Quer, 1997):

- (31) a. Miguel quiere que (*pro*) crea que tú lees poco
 Miguel wants that (*pro*) think[1psSUBJ] that you read[2psIND] little
 b. Miguel quiere que (*pro*) crea que tú *leas poco
 Miguel wants that (*pro*) think[1psSUBJ] that you read[2psSUBJ] little
 “Miguel wants me to believe that you read very little”
- (32) a. Miguel me dice que (*pro*) crea que tú lees poco
 Miguel CL says that (*pro*) think[1psSUBJ] that you read[2sIND] little
 b. Miguel me dice que (*pro*) crea que tú *leas poco
 Miguel CL says that (*pro*) think[1psSUBJ] that you read[2sSUBJ] little
 “Miguel tells me to believe that you read very little”

⁶ According to Gallego & Alonso-Marks (2014a, 2014b), there is variation among monolingual populations with regards to the expression of subject co-reference in ambiguous contexts (Ia), where the subject of the embedded clause could either be interpreted as being co-referent with that of the matrix sentence (Ana), or as an allusion to an external actor. This ambiguity is also observed in modal verbs (Ib):

- (I) a. Ana_y lamenta que (pro_{y/z}) tenga tanto trabajo.
 b. Ana_y lamenta que pueda tener _{y/z} tanto trabajo.

As seen in the previous examples, neither one of these constructions allow for the licensing of subjunctive in consecutive clauses. This effect is not observed in other predicates that allow for mood alternations, such as the one illustrated in (33):

- (33) Miguel no piensa que yo crea que tú lees/leas poco
 Miguel not think that I think[1sSUBJ] that you read[2pIND/SUBJ] little
 “Miguel doesn’t think that I believe that you read very little”

The semantic and structural similarities between desiderative and reported directives have led some researchers to postulate that they both illustrate a case of intensional (or lexically selected) subjunctive (Borgonovo, Bruhn de Garavito & Prévost, 2014; Fábregas, 2014; Gielau, 2015; Portner & Rubinstein, 2012; Quer, 1997). If we entertained this possibility, we would have to assume that verbs like *decir* present two separate lexical entries, one for reported assertions, which would trigger indicative, and another one for reported commands, selecting subjunctive. Previous work by Ahern & Leonetti (2004), Bosque (2012) and even Fábregas (2014) seem to dismiss this possibility on two grounds. On the one hand, all authors note that communication verbs that introduce reported speech allow for the coordination of subordinate clauses with two different mood realizations (one in indicative and one in subjunctive), weakening the possibility of there being two completely separate lexical entries:

- (34). Dice que llegas tarde y que la olvides
 Says[3psg] that arrive[2psgIND] late and that CL[3psg] forget[2psgSUBJ]
 “She says that you arrived late and that you should/have to forget her”

On the other hand, Ahern & Leonetti (2004) and Giorgi (2009), argue that due to their lexical semantics, verbs of communication do not encode restrictions regarding the nature (assertive/non-assertive) of the complement. This view would place all the interpretive

force on the mood instantiated in the subordinate verb: the combination of subjunctive and a conversational implicature presupposed by the hearer would act as markers “encouraging the addressee to infer that the communication predicate is to be interpreted as introducing an imperative utterance” (Ahern & Leonetti, 2004:10).

In addition to the case presented in (34), desideratives and reported directives also differ in two other ways. On the one hand, “only contrary-to-fact situations can be expressed with the former, but not with the latter” (Mikulski, 2006: 14):

(35) Quiero que *seas* una buena investigadora
 Want [1psg] that be[2psgSUBJ] a good investigator
 “I want you to be a good investigator”

(36) Juan le dice a su amigo que *sea* menos tacaño
 Juan CL[3psgDT] says to his friend that is[3psgSUBJ] less stingy
 “Juan tells his friend to be less stingy”

In the case of (35), for example, it might be possible to wish for someone to become a good investigator even if it is very unlikely to happen. When it comes to the directive in (36), however, it would be counterintuitive to command one’s friend to do something (in this case to “be less stingy”) if this were not a possible outcome.

Desideratives also differ from reported directives in that they present strict constraints with regards to tense agreement. As a result, the verb of the embedded clause in (37) but not in (38) must agree in tense with the matrix clause:

(37) a. Quería que **traigas* agua⁷
 Wanted [3psgpast] that **bring*[2psgpresSUBJ] water
 b. Quería que *trajeras* agua
 Wanted [3psgpast] that bring[2psgpastSUBJ] water
 “(He/She) wanted you to bring water”

⁷ This example of *consecutio temporum* in desideratives seems to be circumscribed to certain dialectal varieties of Spanish. Work by Crespo del Rio (2014) and Sessarego (2010) have documented that both Peruvian and Mexican Spanish accept a distribution of tenses like the one illustrated by (37a).

- (38) a. María le dijo a su hijo que *cuenta* rápido
 María CL[3sgDT] said[3psg]to her son that count[3sgpresSUBJ] fast
 “María told her son to count faster”
- b. María le dijo a su hijo que *contara* rápido
 María CL[3sgDT] said[3psg]to her son that count[3sgpastSUBJ] fast
 “María told her son to count faster”

While (37a) is considered ungrammatical because of the lack of tense agreement between the verb in the matrix clause (featuring past tense) and the one in the embedded clause (in the present tense), reported directives like (38) allow for more flexibility.

Notwithstanding, the actions expressed in both (37) and (38) are always interpreted as taking place “after the act of will expressed in the main predicate” (Padilla, 1990: 26), and it is generally considered that these slight syntactic and semantic divergences do not seemingly affect the underlying structure of either type of predicate.

In summary, the type of subjunctive found in subordinate clauses headed by a verb of communication exhibit properties shared by both intensional and extensional predicates⁸, as illustrated by the table below:

Table 1.

Summary of syntactic and semantic conditions in different types of mood selection.

Type of predicate	SDR effects	Sequence of tense effects	Contrary to fact situations	Mood alternations	Locality conditions
Intensional	✓	✓ (dialectal differences)	✓	✗	✓
Extensional	✗	✗	✗	✓	✗
Desideratives	✓	✓	✓	✗	✓
Reported directives	✓	✗	✗	✓	✓

While desideratives and reported directives trigger SDR effects and only license subjunctive selection under locality conditions, both types of constructions differ in their

⁸ Recall that the notion of intensional predicates refer to structures that select indicative or subjunctive lexically, whereas the term extensional includes constructions that allow for the alternation of indicative and subjunctive based on pragmatic/semantic grounds.

ability to present mood alternations, contrary to fact situations and *consecutio temporum* effects. The contradictory findings regarding the status of reported directives with respect to their intensional/polarity nature have motivated two different proposals to characterize their underlying syntactic structure. On the one hand, the type of subjunctive present in subordinate clauses headed by a verb of communication has been compared to the one found in other mood alternations, such as adjectival and adverbial clauses. These analyses emphasize the importance of pragmatics and semantics in the valuation of the modal feature present in the subordinate clause, and discard the possibility that subjunctive mood is selected by the matrix verb (Kempchinsky, 1987, 2009).

On the other hand, reported directives have recently been examined as a subclass of intensional predicates, where lexical semantics become essential to explain subjunctive selection in these type of predicates (Gielau, 2015; Quer, 1998). In what follows, I will summarize how these two proposals represent obligatory mood selection in desideratives, and mood alternations in predicates headed by a verb of communication.

Despite suggesting two different analyses to account for the use of subjunctive in reported directives, all the aforementioned authors (Kempchinsky, 2009; Gielau, 2015 and Quer, 1998) propose similar models to explain lexical selection in desideratives. Specifically, it is assumed that these predicates have a *quasi*-imperative modal operator in C, establishing a connection between these constructions' underlying semantic structure and simple imperatives. This operator, which is argued to introduce the notion of "indirect command" present in desideratives and reported directives, is theorized to be located in the head of a Fin phrase in the embedded CP layer (p. 1795). Based on Rivero & Terzi's (1995) syntactic analysis of simple imperatives, Spanish-type languages are

argued to present a two-step checking process, where the uninterpretable feature (uW) is checked twice, once in Fin P and then in Force P by the interpretable feature in Mood. This checking relation would trigger V to C movement, as seen in the following example taken from Kempchisky's (1987, 2009) work⁹:

- (39) Marta quiere que escuches más
 Marta wants that listen[2psgSUBJ] more
 "Marta wants you to listen more"
- $$V_w \left[\begin{array}{c} \text{CP} \left[\text{ForceP} \left[\text{Force} \begin{array}{c} [uW] \end{array} \right] \left[\text{FinP} \left[\text{Fin} \begin{array}{c} [uW] \end{array} \right] \text{Op} \right] \left[\text{TP} \left(\text{DP} \right) \left[\text{MoodP} \left[\text{V} + \text{T} + \text{M}_w \right] \left[\text{TP} \dots \right] \right] \right] \right] \right] \right]$$
- selection (identification)
checking (Agree)

This analysis relies on the interpretability of the feature in Force to explain the difference between cases that allow for mood alternation and those where mood is lexically-selected. In (39), for example, the selection of subjunctive by the verb in the matrix clause is expressed by means of an uninterpretable feature in Force, which enters an agree relation with the head of MoodP. In the case of structures headed by "decir-like" verbs, where mood alternations are allowed under specific semantic/pragmatic constraints, Kempchinsky (2009) proposes a process of identification between an interpretable feature in Force and one in MoodP, as in the following example:

- (40). a. Mamá te dice que llames más a menudo
 Mom CL[2sgDT] says that call[2psgSUBJ] more to often
 "Mom tells you to call more often"
- b. Mamá te dice que llamas más a menudo
 Mom CL[2sgDT] says that call[2psgIND] more to often
 "Mom tells you that you call more often"

⁹ It is worth noting that Gielau's (2015) analysis eliminates the presence of the semantic operator in ForceP, claiming that lexical selection does not depend on its presence to trigger the presence of subjunctive.

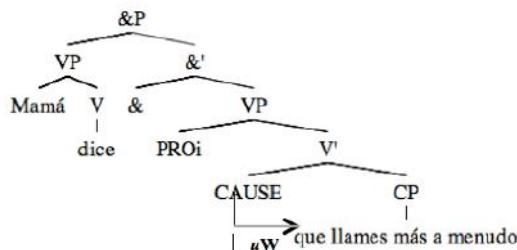
$$V \left[{}_{CP} \left[{}_{ForceP} \left[Force \left[{}_{[W]} \right] \left[{}_{FinP} \left[{}_{Fin} +Fin \right] \left[{}_{TP} (DP) \left[{}_{MoodP} \left[V+T+M_W \right] \left[{}_{TP...} \right] \right] \right] \right] \right] \right]$$

identification

In contrast with the previous analysis, where the semantics of the matrix predicate introduced a modal element that triggered the reference to a set of future worlds, variable mood selection such as the example illustrated in (40) relies much more heavily on the identification of the feature value present in the embedded verb. In (40a), this feature would exhibit a [+subjunctive] value, whereas in (40b) it would select [-subjunctive], triggering the interpretation of an assertion instead of an indirect command.

The syntactic structure proposed for (40) is based on the premise that verbs of communication like *decir* (“to say”) do not present different lexical entries for reported directives (40a) and assertions (40b). Gielau (2015) and Quer (1997, 2001), however, suggest that in the case of indirect commands, the verb *decir* subcategorizes subjunctive mood similarly to *querer* (“want”) in desideratives. According to these authors, reported directives should be analyzed as *weak intensionals*, “where the subjunctive clause is coordinated with another (covert) VP headed by CAUSE [...] and the verb of communication expresses the manner of causing” (Gielau, 2015: 130). Thus, a sentence like (40a) should be the semantic equivalent of “Mother’s order will cause you to call more often”, and present the following structure:

- (41) Mamá dice que (pro) llames más a menudo
 Mom says that (pro) call[2psgSUBJ] more to often
 “Mom says that you should call more often”



As seen in (41), the selection of subjunctive mood in these structures would be triggered by the causative predicate, which would assign an uninterpretable feature to the subordinate clause (where checking and deletion would take place). Although this analysis explains the similarities between reported directives and desideratives (as seen in Table 1), it does not explicitly account for the alternation of indicative/subjunctive in reported speech contexts.

Consequently, the present dissertation will adopt Kempchinsky's (2009) proposal to represent this particular instance of mood alternation in Spanish. This analysis will assume that the presence of subjunctive mood in desideratives and reported directives, signals a shift in the predicate's modal base¹⁰, indicating the need to interpret the subordinate clause under the premises of a particular modality. As we have presented in §2.2, desideratives and reported directives headed by a verb of communication belong to a deontic type of modality, where complement clauses are interpreted as desired outcomes or expectations. Whereas Spanish marks this type of shifts in the modal base by using subjunctive mood, English does not generally do so overtly. The following section will be dedicated to the analysis of English desideratives and reported directives with the aim of identifying potential locus of CLI in Spanish/English bilinguals.

2.2.2.2. Mood and modality in English

Although it is possible for English to grammaticalize modality by means of mood morphology and modal verbs, the latter are much more productive to express notions such as commands, predictions, futurity or opinions (Ojea, 2005: 56). According to

¹⁰ Whereas this shift is a consequence of the semantics of the matrix verb in desideratives, it is dependent on the discourse in the case of reported directives.

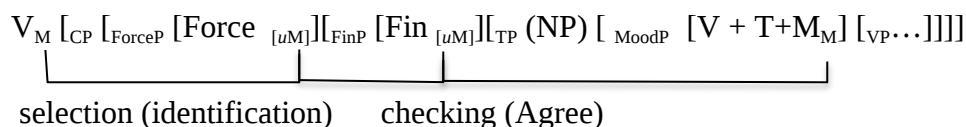
Kanno & Nomura (2012), although uncommon, English subjunctive also has a future interpretation that is triggered by the lexical properties of the matrix verb (p. 83):

(33) I request/command/insist that she *go* to the store.

The type of verbs seen in (33), for example, necessarily involves the introduction of a set of alternative (future) worlds when evaluating the possibility that the act of “going” may be realized. Like in Spanish, the presence of subjunctive in these sentences marks a shift in the context of evaluation of the subordinate clause (*that she go to the store*), signaling the need to interpret it as a deontic predicate.

There have been several attempts at modeling a syntactic account of English volitional predicates that could potentially hold across different languages (Cornilescu, 2004; Kempchinsky, 2009; Ojea, 2005, 2008, 2013; Quer, 2009; Radford, 1988, 2007; Roussou, 2009). Some of these researchers have proposed that volitional *that-subjunctive* clauses (42) have a similar structure to the one postulated for intensional (or lexically-selected) Spanish subjunctives, involving a two-step process of feature checking and identification (Iverson et al. 2008; Radford, 2007):¹¹

(43) I request that she *go* to the store

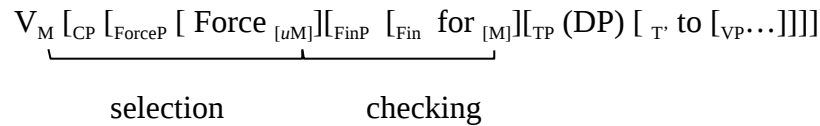


The use of this type of constructions, however, has been increasingly displaced by the preference for alternative expressions, such as *(for)to*-infinitives (I requested her *to go*/ *for her to go* to the store) and the use of certain modal verbs conveying necessity or

¹¹ See Aarts (2012) and Huddleston & Pullum (2002) for alternative proposals.

obligation (I request that she *should go* to the store). These much more frequent constructions are argued to present a different underlying structure. In the case of *(for)to*-infinitival complements, for example, it is assumed that the preposition *to* has an inherent modal value associated with non-factuality and hypothetical readings (van Gelderen, 2001; Ojea, 2008), connecting these structures to the presence of some type of modal operator. In contrast with (43), it is the preposition (*for/to*) and not the verbal morphology (subjunctive) that hosts the interpretable modal feature (M):

(44) I request for her to go to the store



This type of *(for)to*-infinitival complements are found in the desideratives analyzed in this dissertation¹²:

- | | |
|--|---------------------|
| (45) a. *I want that she <i>go</i> to the store | (that-subjunctive) |
| b. I want her <i>to go</i> to the store | (to-infinitive) |
| c. I want <i>for</i> her <i>to go</i> to the store | (for-to infinitive) |
| d. #I want that she <i>should go</i> to the store | (modal verb) |

While both (45b) and (45c) are possible options in standard English, the use of a modal verb to express desire (45d) seems to elicit a lesser degree of acceptability. *(For)to* infinitival constructions are also preferred in embedded clauses headed by verbs of communication when expressing orders (46), but in contrast with desideratives, the use of modal verbs in indirect commands seems to be widely accepted:

¹² The grammaticality judgments reported in (45) and (46) have been obtained from previous work by (Cornilescu, 2004) and confirmed by two separate L1 English informants.

- (46) a. *I told her that she *go* to the store (that-*subjunctive*)
 b. I told her *to go* to the store (to-infinitive)
 c. ##I said *for* her *to go* to the store. (*for-to* infinitive)
 d. I said/told her that she *had to go* to the store (modal verb)

The high variability in the preference and use of this type of expressions by monolingual English speakers (as seen in 45 and 46) presents a layer of added complexity to the Spanish/English bilingual acquirer, whose dominance in the majority language may allow him/her to entertain a wider range of syntactic structures as being transferable to the minority language. I hypothesize that Spanish/English bilinguals will have to detect several structural and morphological contrasts across both languages in order to successfully acquire these constructions. In the case of desideratives, Spanish lacks the type of ECM constructions observed in examples (45b) and (45c), and subordinate clauses are introduced by the complementizer /*que*/ followed by a finite clause –in contrast with the English equivalent where a prepositional complementizer heads a non-finite clause of the type seen in (43). Additionally, early and late bilinguals will also need to remap the modal feature hosted in the prepositions (*for-to*) in FinP/TP onto mood morphology (subjunctive) in MoodP. Although the same process will have to be taken into consideration in the case of reported directives, it is also hypothesized that English dominant bilinguals might resort to alternative means of expression (modal verbs), available in English to convey the notion of indirect command (46d). As it has been discussed in the previous section, one of the most important considerations that Spanish/English bilinguals have to take into account when dealing with these constructions is that the shift from a real world model (assertions) to a future/counterfactual one is marked by mood morphology in Spanish, but not in

English.¹³ The following section will be focused on discussing some general predictions in the acquisition of mood selection by Spanish/English bilinguals, taking into account syntactic as well as semantic factors.

2.3. Theoretical predictions for the acquisition of subjunctive

In order to master desideratives and reported directives, early and late bilinguals have to internalize a series of complex structural and pragmatic constraints very much dependent on their preferences in the dominant language (English). If bilinguals present a productive use of subjunctive in English (i.e. 42), the contrast between both languages with respect to their use of this form should be minimal. In both cases, the matrix verb would trigger a shift in the modal base of the subordinate clause (from the consideration of real worlds to the evaluation of future ones). This change in the evaluation of the predicate would entail the checking and deletion of an uninterpretable feature that would maintain a relation of agreement with the interpretable feature present in the head of MoodP¹⁴. Notwithstanding, the general consensus is that subjunctive has a very low productivity in English (Ojea, 2005, 2008; Palmer, 2001; Whatley, 2014), and that speakers are expected to favor prepositional complementizers heading non-finite constructions over subjunctive forms (i.e. 45 or 46b). As it has been argued in previous sections, the interpretable feature present in MoodP in Spanish, would be mapped onto the prepositions *for/to* in English, hence their status as markers of volition. Consequently, HS and L2ers would have to recognize that in Spanish, the introduction of a deontic

¹³ Examples like (42) are the only exceptions to this statement. However the use of subjunctive in English directives is very limited and generally restricted to a formal register (Palmer, 2001).

¹⁴ Although this could be a plausible possibility, several studies have documented the low productivity of subjunctive in English (see Whatley, 2014 for a thorough review of the sources).

model of evaluation is represented by the presence of subjunctive mood in the subordinate clause, and not by the prepositions *for* and/or *to* as it is the case in English.

With regards to reported directives and assertions, the ambiguity of the matrix verb heading the subordinate clause (*decir*) necessarily involves the consideration of the discursive factors surrounding the context of the utterance (i.e. whether it is intended to report an assertion or an indirect command). Thus, mood selection in these contexts implies that Spanish/English bilinguals will be able to determine that in Spanish the matrix verb is allowed to co-exist with either feature value [$\pm$ subjunctive], and that its valuation depends on the assessment of the set of possible worlds in the propositional content (*indicative*: world of “reality”, factual; *subjunctive*: set of future/possible worlds).

While the mechanisms of feature identification and checking involved in obligatory and variable mood selection in Spanish are also present in English, these languages grammaticalize the modal shift derived from the consideration of imaginary/future worlds differently. While Spanish uses mood morphology to mark a change in the model of evaluation, English generally resorts to uninflected constructions to do so.

To this respect, there have been a considerable number of studies dedicated to the impact of feature checking and valuation in morphological acquisition (Liceras et al. 2008, Montrul, 2007, 2009; Liceras, Zobl & Goodluck, 2008; Montrul, 2007, 2009; Valenzuela, Faure, Ramirez-Trujillo, Barski, Pangtay & Diez, 2012, among others). These studies report that feature valuation, a crucial operation in the case of reported directives, seems to be particularly problematic to L2 learners and heritage speakers. Previous work by Liceras et al. (2008) and Guijarro Fuentes (2013) examined this issue

at the DP level, analyzing the effects of feature valuation (gender assignment) and feature checking (gender agreement). Both authors reached the conclusion that while the former seems to be temporarily resolved by the use of unspecified forms (using a default gender value), the latter is established very early on (Liceras et al., 2008: 847-848).

Although the two structures analyzed in this dissertation involve the identification of specific feature values in the process of mood selection, only constructions headed by verbs of communication are able to alternate between two settings (indicative or subjunctive). Thus, it is hypothesized that even with the same degree of lexical activation, feature values in variable contexts are more likely to remain unspecified, since the type-frequency¹⁵ of each instance (verb+subjunctive – verb+indicative) would have to be equivalent in all possible contexts in order for both values to be available in the identification process. Although this might not be an issue in monolingual language acquisition, HS and L2 learners' lack of activation of FF for comprehension and production purposes is likely to have affected the strength of the association between functional, semantic and PF features in the weaker language (Spanish), as suggested in Putnam & Sánchez (2013).

Thus far, all indications seem to imply that retrieval and selection of subjunctive in desideratives are likely to be less burdensome than in the case of reported directives, where two feature values temporarily compete with each other. There are, however, several semantic and syntactic considerations that would seem to point to the opposite conclusion. On the one hand, it is worth noting that the lack of modal contrast in desideratives could potentially affect the degree of acquisition/attrition of this intensional

¹⁵ According to Bybee (2007), *type frequency* is understood as the “the number of items that are represented by a specific pattern” (p.218).

type of subjunctive. Although the meaning attributed to this type of subjunctive is not totally vacuous (it expresses prospectivity with respect to moment of the utterance), the interpretive/semantic weight is mainly carried by the matrix verb, which automatically triggers the selection of subjunctive morphology. Such a strong dependence on the main verb, which cannot occur in the case of reported directives, could entail the partial weakening or loss of the subjunctive morphology, whose communicative value would be rather low.

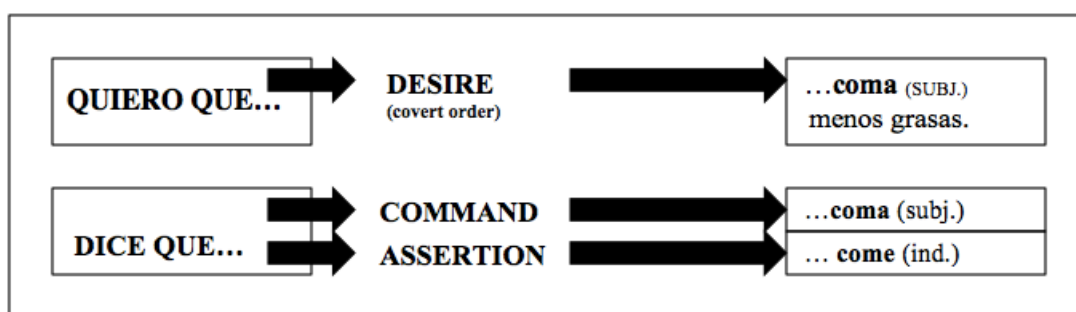


Figure 1. Semantic contribution of matrix verbs

As it can be observed in Figure 1, the process of comprehension and production of these two constructions requires different levels of analysis on the part of the speaker. On the one hand, the semantic contribution of the matrix verb is much more straightforward in the case of desideratives, where the verb *querer* (“want”) already introduces the notion of desire. Once the meaning of the main sentence has been established, the speaker proceeds to select the expected verbal inflection (subjunctive) to convey that the subordinate clause introduces the presence of imaginary/ future worlds. In these constructions, the semantic component of the subjunctive form is somewhat “redundant”, especially when the primary connotation of the proposition (irrealis) has already been provided by the matrix verb. In the case of sentences introduced by a communication verb such as *decir* (“to say”), the main verb does not disambiguate between the two possible interpretations of

the embedded clause: an assertion or an indirect command. In order to distinguish between the two, the speaker will have to focus on the context of the utterance and the communicative intent of the speaker before settling for one of the two meanings. Once this step has been taken, one last association will disambiguate the meaning of the main verb: reported assertions will be expressed by indicative morphology and indirect commands by subjunctive forms. It is possible that the increased semantic value of subjunctive in these cases –especially when they are compared to intensional subjunctive in desideratives- could reinforce their form-feature mappings, yielding higher levels of accuracy.

In contrast with previous studies (Montrul, 2007, 2009; Silva-Corvalán, 1994), the present dissertation proposes a model that accounts for higher levels of accuracy in contexts allowing for mood alternations (rather than obligatory mood selection) based on the degree of semantic opacity of the features under valuation. While mood selection in constructions headed by verbs of communication entails the assessment of notions connected to speech acts (i.e. wanting somebody to do or react to something), the evaluation of epistemic and epistemological predicates such as the ones present in adverbial clauses and negated epistemics (i.e. perception, cognitive-factive verbs) forces the speaker to deal with more complex assumptions regarding the presupposition and/or assertion of the information expressed in the embedded clause. As it will be observed in the results, mood alternations that operate within deontic predicates yield considerably higher scores than those previously tested within epistemic and epistemological contexts, reinforcing our initial hypothesis (Borgonovo et al. 2014, 2008; Iverson et al. 2008; Montrul, 2007, 2009; Pascual y Cabo et al. 2012, *inter alia*).

In addition to the aforementioned arguments, I suggest that the partial structural overlap between English and Spanish in their use of modal verbs is also expected to favor higher accuracy rates in the production of reported directives¹⁶. As discussed in §2.2.2.2, these type of structures –but crucially not desideratives– allow for the co-existence of modal verbs and uninflected forms in the embedded clause to express orders or requests:

- (47) a. The teacher tells the students that they *have to/should* be quiet.
 b. The teacher tells the students *to be* quiet¹⁷

It is hypothesized that the existence of a similar construction in Spanish (*El profesor les dice a los estudiantes que tienen que estar callados*) is likely to favor the use of periphrases of obligation over subjunctive morphology, which exhibits a very low productivity in the speaker's dominant language. The plausibility of these predictions will be analyzed more closely in Chapter 3, where I summarize the most relevant work on the acquisition of mood morphology and modal distinctions by children (monolingual and bilingual) and adults (HS and L2 learners of Spanish).

2.4. General conclusions

I have begun this chapter by introducing the construct of modality, which has been found to modulate the acquisition of linguistic properties at the interface between syntax/semantics/pragmatics in a wide variety of languages (Choi, 2005; Papafragou, 1998). Following this description, I have provided a summary of the most relevant semantic and syntactic analyses concerning mood selection in Spanish and English,

¹⁶ This advantage as a result of “positive” transfer is not necessarily connected to higher rates of subjunctive use. In fact, results from the elicited production task (§5.4.1) show that bilinguals with lower levels of proficiency obtain higher scores in the reported directive condition as a consequence of periphrasis use, not subjunctive production.

¹⁷ Although modal verbs can be used in both Spanish and English as mandates, their directive force is somewhat weaker than the one generated by subjunctive morphology.

placing a particular emphasis on the notions of truth-value, model shift and intensional/polarity subjunctive.

The next section examined Kempchinsky (1987, 2009) Gielau (2015) and Quer's (1997, 2001) syntactic analysis to illustrate obligatory mood selection in Spanish desideratives, as well as indicative/subjunctive alternations of the type found in predicates headed by a verb of communication. To conclude the chapter, these proposals have been contrasted with their English counterparts with the objective of outlining some general predictions for the acquisition of mood selection in English/Spanish bilinguals.

With these predictions in mind, the next chapter (Chapter 3) will be dedicated to provide a comprehensive overview of the most relevant literature on the acquisition of Spanish mood selection in monolingual and bilingual populations.

CHAPTER 3: THE ACQUISITION OF MOOD IN SPANISH

3.1. Introduction

The intricate nature of obligatory and variable mood selection in Spanish makes it a rich area of study in the field of language acquisition. As it has been discussed in previous chapters, the choice between indicative and subjunctive mood in a particular embedded proposition depends on the lexical-semantics of the matrix verb, as well as on the model of evaluation chosen to anchor the interpretation of the subordinate proposition (intensional vs. extensional predicates). The interface of three linguistic domains (syntax-semantics-pragmatics) makes the acquisition of mood selection under the scope of deontic predicates particularly relevant, as it provides researchers with the opportunity of observing the effects of cross-linguistic influence (CLI) and interface vulnerability in structures showing varying degrees of syntactic overlap across the languages of a bilingual.

To this end, the goal of the present chapter is to review the most relevant literature on the acquisition of mood by Spanish monolingual children and by early and late Spanish/English bilinguals, placing a particular emphasis on how proficiency in the L2/weaker language and interface vulnerability influence the development of mood morphology in bilingual populations. After a brief introduction, section 3.3 is dedicated to the analysis of early language acquisition, including the pioneering studies by Blake (1983), Echeverría (1975, 1978), Gallo Valdevieso (1994), and Padilla (1990) concerning monolingual populations; Merino (1983), Silva-Corvalán (2003, 2014), Cuevas de Jesús (2011) as well as an exploratory corpus search to study child bilinguals; and Montrul (2007, 2009), Pascual, Lingwall & Rothman (2012), and my own work in Perez-Cortes

(2014) on adult heritage speakers. Section 3.4 presents a summary of research focused on late adult bilinguals, reviewing the work of Bruhn de Garavito (1997) on L2 learners' acquisition of obviation effects, as well as Mikulski (2006), Iverson, Kempchinsky & Rothman's (2008) and Massery & Fuentes' (2014) work on the acquisition of mood in obligatory and variable contexts. To conclude, section 3.5 provides a brief summary of predictions concerning early and late acquisition of mood selection, focusing on the objectives of the present study.

3.2. The effects of age, proficiency, frequency of language use and interface vulnerability in bilingual morphological acquisition

Research on second language development from a generative perspective has been primarily concerned with bilinguals' ability to access language-specific features – alongside their corresponding feature values- when learning a language (White, 1989, 2003). Although it is assumed that all speakers have access to the same basic syntactic operations (Move, Merge and Agree), bilingual language acquisition exhibits a considerable degree of variability of linguistic outcomes. Differences between monolinguals and early and late bilinguals have been traditionally used as support for a critical period in second language acquisition (Johnson & Newport, 1989, 1991). According to this view, age of onset of bilingualism would be strongly correlated with levels of linguistic performance, predicting less control-like linguistic attainment in late L2 learners than in early bilinguals (HS).

Although age of acquisition is a critical factor in determining L2 learners and HS' grammatical competence -especially when it comes to the maintenance of uninterpretable features “selected in childhood as part of the functional lexicon” (Montrul, 2008: 90)-,

work on these populations has shown that there are other variables that play a significant role in bilingual language development (Cuza & Frank, 2014; Montrul, 2002, 2004, 2008, *et sequitur*, Silva-Corvalán, 1994, 2003).

Research on the acquisition of Spanish mood, for example, documents that early and late bilinguals with higher levels of proficiency are more accurate than their lower-level counterparts, who rarely discriminate between indicative/subjunctive interpretations in non-obligatory contexts, and who also seem to overextend indicative forms to structures whose matrix verb selects subjunctive (Iverson et al. 2008; Mikulski, 2006; Montrul, 2007; 2009; Silva-Corvalán, 1994). Dekydtspotter & Renaud (2014) found similar effects of language proficiency in bilingual morphological development in her study on adjectival agreement. According to this researcher, learners with higher levels of proficiency might be able to rearrange the functional features of specific lexical items more accurately than lower-level learners due to a decreased processing load. This last group of bilinguals would manage the additional morphological processing costs by using unspecified forms in production, such as generalized masculine gender in the case of the noun-adjective agreement, or indicative in the case of variable mood selection.

Continuous activation of the weaker/second language for comprehension and production purposes also appears to be correlated with increased levels of proficiency (De Houwer, 2007; Grey, Cox, Serafini, Sanz, 2015; Gürel, 2001; Hulsen, 2000). The incidence of frequent language activation in bilingual development has been primarily examined in early bilinguals (children and adults), where it has been found to be a good predictor of language maintenance and grammatical stability (Putnam & Sánchez, 2013; Unsworth, 2013). Following Putnam & Sánchez (2013), this dissertation assumes that the

majority of Spanish HS in the US go through a process of “dominance shift” where the input in the L1/LA (Spanish) is generally reduced in favor of the L2/LB (English)¹⁸. This gradual change in dominance is argued to affect the strength of the association between functional, semantic and PF features in the weaker language as a result of constant inhibition. Although it is possible to recover from this state of ‘deactivation’, it may increase the chances of dominant language transfer and reassembly of features, as originally proposed in Lardiere (1998, 2009) and later on revisited by Cuza & Frank (2011), Montrul & Ionin (2010) and Santos & Flores (2013) to address the acquisition of morphosyntactic properties in heritage populations.

In line with Dekydtspotter & Renaud’s (2014) findings, highly proficient bilinguals seem to be more likely to recover from long periods of inhibition in order to successfully access and reassemble the specific feature configurations involved in different morphosyntactic properties (i.e. mood, gender, aspect). As discussed in Chapter 1 (§1.4), Segalowicz and collaborators (Favreau & Segalowicz, 1983; Segalowicz & Gatbonton, 1995; Segalowicz, Segalowicz & Wood, 1997, *inter alia*) have explained this advantage as a consequence of automatization, which is argued to facilitate crosslinguistic activation between the languages of bilingual and minimize the likelihood of CLI (Segalowicz & Gatbonton, 1995).

This last variable (CLI) is especially relevant in areas that involve the integration of linguistic information with external domains of cognition (Hulk & Müller, 2000; Müller & Hulk, 2001; Sorace, 2000, 2011), such as the interface between syntax-

¹⁸ Following Francis (2011), I will use the terms L1 and L2 to refer to the first and second language of sequential HS and L2 learners. In the case of simultaneous bilinguals (children and adult HS) I will opt for the alternative LA/LB.

semantics-pragmatics present in mood alternations. According to these researchers, external interfaces (i.e. syntax-pragmatics/discourse) are more prone to CLI because of the cognitive cost involved in the integration of information at different levels. This hypothesis is consistent with findings regarding the acquisition of constructions involving the identification of interpretable features, where interface vulnerability would be able to explain remaining optionality in high proficient bilinguals -both HS and L2 learners- in the case of mood alternations dependent on semantic/pragmatics grounds.

As seen in section §2.2.2.2, some instances of transfer might facilitate Spanish/English bilinguals production of reported directives, given the possibility of resorting to the use modal verbs instead of verbal inflection (subjunctive or infinitival constructions) to convey indirect commands in Spanish. Notwithstanding, it is also possible that because of their dominance in English, HS and L2 learners adopt a structure that is not sanctioned in Spanish, such as the use of infinitival or indicative forms in contexts where subjunctive is lexically selected. The following sections will be dedicated to examine the effects of these aforementioned factors in the acquisition of obligatory and variable mood selection in Spanish by monolinguals as well as early and late bilinguals.

3.3. Early language acquisition

Given the importance of age and proficiency effects in adult bilingual populations, it is of utmost importance to determine the developmental sequence followed by monolingual and bilingual children when acquiring mood in Spanish. Despite the considerable number of studies dedicated to the acquisition of mood by adult second language learners and heritage speakers (Collentine, 1995, 2003, 2010; Correa, 2011; Montrul, 2007, 2009, 2011; Silva-Corvalán, 1994 *inter alia*), little research has

been done regarding monolingual and early bilingual acquisition. The following section will explore and review some of the most relevant investigations on this topic, including work on Spanish monolinguals and early Spanish/English bilinguals (children and adults).

3.3.1. Spanish Monolingual children

Before summarizing some of the most relevant work dedicated to L1 acquisition of mood, I would like to emphasize a point that was first presented in Pérez-Leroux's (1998) study on relative clauses and mood selection. Although children have been reported to use subjunctive morphology as early as 2;0, "(mood) selection [...] is a process that spans over a period of six or seven years" (p.586). This observation is crucial for the present study, as it would not be completely accurate to establish a causal relation between the production (or lack thereof) of subjunctive morphology and the ability to distinguish between contexts requiring a specific semantic value to be expressed by means of either subjunctive or indicative morphology. Pérez-Leroux has tried to explain the puzzling asymmetry between early accurate uses of mood morphology and seemingly delayed modal interpretation, especially in cases where constructions allow for mood alternations. One of the most explored hypotheses has been the possibility of establishing a connection between children's cognitive development and the acquisition of the semantic representations that determine mood selection (de Villiers & de Villiers, 2010; de Villiers & Pyers, 2002). According to this view, young bilingual and monolingual children would have to be cognitively ready to handle situations regarding speaker's presuppositions and beliefs, since these two notions have been consistently associated to mood alternations (as seen in §2.1 and §2.2). In Pérez-Leroux's (1998) study, the author

describes a modality-based developmental sequence of mood selection that has been reported to hold in all studies concerning the acquisition of subjunctive mood (Blake, 1983; Hernandez Pina, 1984; Naharro, 1996):

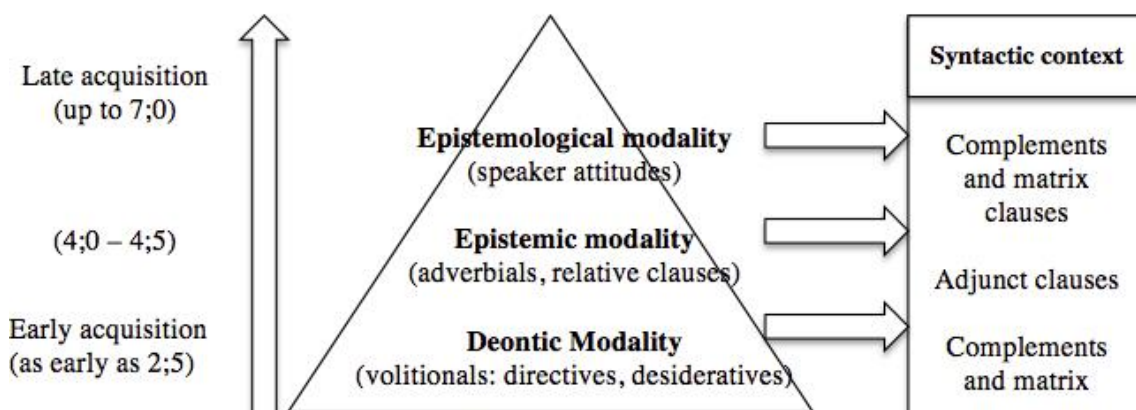


Figure 2. Stages in acquisition of mood as a function of modality and syntactic context.

As illustrated in Figure 2, the order of acquisition of Spanish mood does not seem to be modulated by the obligatoriness of indicative or subjunctive selection (since variable contexts are similarly attested early in the process) or by the structural conditions in which they are integrated. According to Pérez-Leroux (1998), the main difference between volitionals, which are considered to be early acquired, and relative clauses lies in the complexity of the semantic schemas involved in their computation, as well as in their ability to assess the mental states of others. Whereas directives and desideratives comprise the juxtaposition of the actual world and a future one, relative clauses' "frame of reference" involves a selection based on information to be found "among all possible worlds" (p.592), requiring a much more careful consideration, because multiple possibilities (i.e. known or unknown status of the subject/object) must be evaluated simultaneously.

Blake (1983) has widely been cited as one of the pioneering studies in the acquisition of mood in L1 Spanish. In his picture-based sentence completion task, the author tried to elicit subjunctive morphology in a wide variety of semantic (commands, doubt, attitude and assertions) and syntactic contexts (nominal, adverbial and adjectival). The interviewed participants were a group of 134 children from Mexico, whose age ranged from 4;0 to 12;0. The data obtained seems to bring forth two interesting tendencies. On the one hand, children seem to be considerably more accurate when using subjunctive morphology in indirect commands (such as the directive predicates analyzed in this study), and also in adverbial and adjectival contexts. However, as noted by Pérez-Leroux (1998), predicates that denoted doubt, attitude and assertion (belonging to an epistemological modality) seemed to be more problematic. Additionally, Blake observed a pattern that had not been reported in previous studies: both the adult controls (N=39) and the experimental group (N=134) showed variability in the use of subjunctive with certain lexical items, suggesting: 1) influence of parental input in the speech of the children, and 2) the non-obligatoriness of subjunctive with particular matrix verbs in monolingual populations.

Unfortunately, there have been no studies aimed at targeting the interpretation of mood contrasts in early L1 acquisition. Following Blake's (1983) line of work, Gallo Valdevieso (1994) - in López-Ornat's (1994) seminal work- painted a very comprehensive picture of the acquisition of subjunctive morphology in a longitudinal study examining the spontaneous production of a monolingual child (María, 1;07-3;09). According to Gallo Valdevieso (1994), mastery of subjunctive is very much dependent on early instances of imperatives (affirmative and negative). This observation is

particularly relevant for the present study since the volitional constructions targeted here are very much connected to imperatives (see §2.2.2.1 for a more detailed account).

Although subordination in conjunction with subjunctive morphology does not surface until 2;04, there are several examples of negative/affirmative imperatives introduced by the conjunction *que* (“that”) in early language acquisition.

Table 2.

Developmental milestones in imperative and subjunctive (from Gallo Valdeviesto, 1994)

Age	Construction	Example
1;07	Pre-grammatical imperative	<i>Mamá, aupá</i> “Mommy, up”
1;09	Imperative	<i>Sienta, mamá sienta</i> Sit [3pgImp] mommy sit [3pgImp] “Sit, mommy, sit”
2;01	Negative imperative	<i>No te vayas</i> Not CL[2ps] go[2psSUBJ] “Don’t go”
2;04	Conditionals	<i>(Si) no jucas tiro tapa</i> (If) not play[2psgIND] throw[1psIND] lid “If you don’t play, I will throw the lid”
2;08	Consecutives	<i>Pues no me hables así</i> So not CL talk[2psSUBJ] this “So don’t speak to me like this”

Table 2, adapted from Gallo Valdevieso (1994), shows the gradual acquisition of imperative and subjunctive forms in different structural contexts. As it can be observed in the examples, the presence of these forms in monolingual language production seems to appear very early on. In fact, the early acquisition of verbal forms associated with volitional predicates is also observed in Echeverría (1978) and Padilla’s (1990) pioneering studies on mood interpretation.

In the first study, Echeverría (1978) examined one of the structures tested in this dissertation: the verb *decir* selecting polarity subjunctive in directive contexts (*Charlie le*

dijo a Lucy que comprara un helado), and indicative when used to report an actualized event (*Charlie le dijo a Lucy que compra un helado*). His study, which included experimental evidence from 55 Chilean children (ages 3;0-9;0), did not test children's mastery of mood distinctions, but their sensitivity to obviation effects triggered from the presence/absence of subjunctive morphology in the embedded clause. Overall results indicate that even though children do not seem to initially detect co-referentiality in indicative contexts (this notion is gradually acquired throughout childhood), they systematically identify subjunctive disjoint reference (SDR) in constructions headed by communication verbs triggering subjunctive in the embedded clause at around age 3;0 (average accuracy: 80%).

Padilla (1990) expanded on the previous study by presenting 80 Puerto Rican children (ages 3;5-9;0; mean age: 6;5) with an act-out task targeting two aspects of the nature of the previously analyzed constructions: 1) the obligatoriness of SDR in directive predicates; and 2) the role that the lexical class of the matrix verb plays in establishing this constraint. Padilla's results mirrored Echeverría's in that they confirmed the early acquisition of SDR in directive predicates (48), where the only possible actor of the event in the embedded clause is the indirect object:

- (48) La pantera_i le dice a la hormiga_j que pro_{*i/j} coja la bola
 The panther_i CL[3sgDT] says to the ant_j that pro_{*i/j} get[3psgSUBJ]the ball
 "The panther told the ant to get the ball"

Work on monolingual language development seems to reinforce the hypothesis that children as young as 3;0 are aware of the pragmatic constraints determining possible antecedents in structures where communication verbs appear followed by subjunctive.

3.3.2. Spanish/English bilingual children

To the best of my knowledge, there are only a few studies that examine the production and comprehension of subjunctive morphology in bilingual children (Anderson, 1999; 2001; Cuevas de Jesús, 2011; Merino, 1983 and Silva-Corvalán, 2003, 2014). Despite being widely cited, Merino's (1983) cross-sectional study on Chicano children's language loss (N=41; K-4th grade) does not provide conclusive information about participants' early use and interpretation of subjunctive morphology. The author used two types of tasks: a picture-matching exercise where children had to select the drawing that better described the sentence enunciated by the experimenter (comprehension), and a delay imitation task (production). An incomplete inventory of the stimuli used to test subjunctive¹⁹ pointed to the presence of different types of constructions: two items probing for intensional subjunctive (desideratives, purpose clauses) and one item testing polarity subjunctive (dubitative). Results for this task seem to show gradual acquisition and subsequent loss of mood selection across grades in production, and a great degree of variability in comprehension:

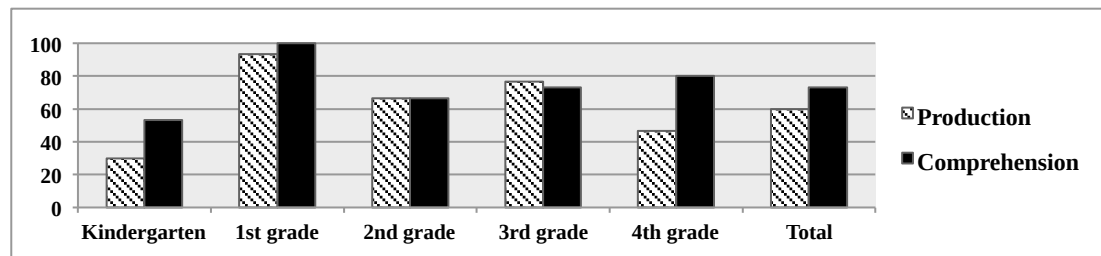


Figure 3. Children's comprehension and production of subjunctive as a function of grade (adapted from Merino, 1983)

¹⁹ Although the author mentions that a total of 12 items were tested for each type of linguistic property (tense, mood, conditionals...), the article only includes examples of 3 tokens.

Figure 3 includes the data provided in Merino's (1983) first study and shows bilingual children's performance when producing and interpreting intensional and polarity subjunctive. While children's performance in production seems to reach a peak at age 6;0-7;0 and then a rapid decrease until reaching a 50% around age 9;0-10;0, their comprehension shows significant fluctuations across grades.

In her second study, Merino (1983) interviewed 32 of the original 42 children two years later. Overall results from subjunctive production seem to indicate significant language loss in this particular category (70% overall accuracy in the first administration of the test and only 54.6% in the second). However, the author does not provide quantitative information about children's comprehension, or an itemized analysis of their performance based on their current age. Therefore, and contrary to what might have been previously reported by other studies (Montrul, 2007, 2009), Merino's work does not provide clear evidence in favor of language attrition, although it may be safe to assume that it documents the effects of decreased frequency of activation of the weaker language/L2 throughout childhood (Putnam & Sanchez, 2013), as a result of the "dominance shift" described in §3.2. The importance of frequent language use for comprehension and production purposes (also referred to as language activation) has been examined in depth by Paradis (1985, 1993). According to his Activation Threshold Hypothesis (henceforth ATH), "every time a trace is activated, its activation threshold is lowered. (Thus), the more frequently a trace is used [...] the easier it is to activate again" (p.138). In the case of bilingual children, the ATH would predict that frequent the activation of the weaker language/L2, would facilitate the access to its lexical items and functional features. Interestingly, Merino (1983) mentions that children who used the

minority language at home were more likely to perform above chance than those who used two languages (English and Spanish), an effect that was also reported in Silva-Corvalán (2003, 2014) and Cuevas de Jesús (2011) work.

In her 2003 study, Silva-Corvalán interviewed a total of 7 Spanish-English bilingual pre-school children (ages 5;1-5;11) and analyzed their spontaneous production. Her results indicate that children who were only exposed to the minority language (Spanish) at home produced more accurate tense and mood morphology than their peers. A more detailed analysis of the performance of children living in English-only homes corroborated this trend, and suggested a state of “incomplete acquisition”²⁰. This trend was also observed in her latest work (Silva-Corvalán, 2014), where she analyzed the bilingual development of her two grandsons –Nico and Brennan-, from their first utterances until they were 5;11. In the chapter dedicated to the development of verbal inflection (p. 265-347), Silva-Corvalán documents the siblings’ marking of tense, aspect and mood. According to the author, the first utterances where the siblings could have introduced subjunctive selection were purpose clauses (2;5-2;8), which remained underspecified (using the infinitive form) until 2;11, when target-like examples of these clauses and also past directives (49) were reported:

(49) No te dije que te fueras
 Not CL said that CL go[2sgpastSUBJ]
 “I didn’t tell you to go”

²⁰ Although the term “incomplete acquisition” (IA) has been used by Montrul (2007) to illustrate data compiled by Silva-Corvalán (1994, 2003), it is crucial to take into account that: 1) the evidence reported in those studies is limited to participants’ production, not their representation; and that 2) this notion is only valid if we consider that bilinguals’ “ultimate” attainment has to mirror that of monolinguals’, assumed to be generally stable (see Pascual y Cabo & Rothman, 2012 and Pires & Rothman, 2009 for a more in-depth discussion of this topic).

Command of present and past subjunctive forms appeared to be highly affected by reduced exposure to Spanish input from ages 3;6 to 5;11²¹. This situation seemed to influence the younger sibling (Brennan) the most, who substituted subjunctive mood selection with infinitives, imperatives and present indicative forms. In the case of desideratives, Silva-Corvalán reports that both siblings acquired co-referential constructions rather early (ages 2;3-2;11), but that constructions triggering subjunctive took longer to stabilize (Nico: 3;0; Brennan: after 3;6). The process of acquisition in these structures seemed to go through several stages:

Table 3.

Stages of acquisition of desiderative constructions exhibiting disjoint readings (adapted from Silva-Corvalán, 2014)

Stage	Example
1. Avoidance	<i>Bibi, quiero un cuento a mí</i> ("Bibi, I want you to tell me a story")
2. Use of imperative form	<i>Yo quiero da leche</i> ("I want you to give me milk")
3. Emergence of the complementizer	<i>Yo quiero que tu saltar arriba del agua</i> ("I want you to jump over the water")
4. Emergence of subjunctive	<i>Yo quiero que tú me levantes</i> ("I want you to get me up")

According to Silva-Corvalán, increased exposure to the weaker language (Spanish) seems to accelerate the stages of acquisition outlined in Table 3. When the siblings reach 2;0 they tend to avoid disjoint readings in desideratives by overextending co-referentiality (*Quiero tener un cuento a mí* > *Quiero que me cuentes un cuento*). Around 2;4-2;5 both children seem to detect that the verb in the embedded clause needs to be inflected, and they start using verbal morphology already available to them (imperatives) to convey

²¹ Silva-Corvalán (2014: 345) reported that the siblings' input in Spanish decreased to about 23% of their waking time, especially in the case of Brennan, the younger child.

want and desire. Soon after the complementizer appears in the children's utterances, they start to exhibit target and non target-like forms in the subordinate clauses (infinitives, imperatives, present tense forms and finally subjunctive morphology).

In order to obtain more information about early subjunctive use in young bilinguals, I decided to complement Merino (1983) and Silva-Corvalán's (2003, 2014) data on production by conducting an exploratory analysis of two Spanish Frog Story corpora: Austin, Sánchez, Perez-Cortes & Giancaspro (2015) and Zurer-Pearson (2002). The first dataset, originally collected with the purpose of analyzing bilinguals' distribution of null/overt subjects in Spanish in English, included the narratives of 13 young children (age range in first data collection: 4;1-5;4; and 5;1-6;4 in the second), averaging 500-2000 words per story. The second group of narratives was obtained from Zurer-Pearson's Miami-Dade corpus (1995), available at the CHILDES database (MacWhinney, 2000). This corpus includes data from 178 older bilingual children born and raised in Miami (ages: 7;0-11;5, mean age: 8;8), with stories averaging between 230-250 words.

Both data sets were deemed particularly interesting for several reasons: on the one hand, narratives collected by Austin et al. (in prep.) captured an important turning point in the life of young heritage bilinguals: the moment when they are schooled in the majority language (English) and they undergo a shift in dominance (Birdsong, 2014, Bolonyai, 1998). Austin and collaborators recorded children residing in a Spanish-dominant community in New Jersey a total of four times (every six months) during a two year period. The first set of interviews was conducted during the children's first year of schooling (4;0-5;0), and the second one during their last year of kindergarten (5;0-6;0).

Austin et al.'s work is nicely complemented by Zurer-Pearson's (2002) study with older children from a similar Spanish-dominant community in the US, and it provides a valuable insight into the development of Spanish mood in bilinguals who have been schooled in English for a long time.

The present exploratory corpus-based examination was focused on three types of early acquired constructions triggering mood selection: 1) purpose clauses introduced by the preposition *para* ("for"); 2) desideratives predicates where the subject of the embedded clause was either co-referential or disjoint in reference from the one in the matrix clause; and 3) embedded predicates headed by the communication verb *decir* ("to say"), selecting subjunctive or indicative.

Table 4.

Number of tokens and accuracy rates (%) based on type of structure and age group.

	Purpose		Desideratives		Structures with "decir"	
	Same subject	Different subject	Same subject	Different subject	Reported assertion	Reported directive
Austin et al. (4;0-5;0)	7/7 (100%)	6/8 (85.7%)	16/17 (94.1%)	2/2 (100%)	4/4 (100%)	0/0
Austin et al. (5;0-6;0)	1/1 (100%)	2/7 (27.5%)	13/13 (100%)	0/1 (0%)	5/5 (100%)	2/4 (50%)
Zurer-Pearson (7;0-8;0)	32/32 (100%)	4/6 (66.7%)	21/21 (100%)	0/0	6/6 (100%)	26/30 (86.6%)
Zurer-Pearson (9;0-11;5)	40/40 (100%)	14/14 (100%)	14/14 (100%)	0/0	0/0	20/27 (74%)

Despite the scarcity of the data included in this descriptive analysis, the combination of both data sets provides a more detailed look into the development of early-acquired mood selection. The first thing that can be observed in Table 4 is that in the case of the older bilinguals interviewed by Zurer-Pearson, the percentage of directives in narratives (verb of communication + subjunctive) seems to be higher than reported assertions (verb of communication + indicative) and constructions with lexically selected subjunctive, such

as desideratives (*querer que* + subjunctive) and purpose clauses (*para que* + subjunctive)²². This distribution points towards a more frequent use of subjunctive in this particular construction, which could potentially affect bilinguals' accuracy rates in variable contexts across time.

Interestingly, the production of co-referential purpose and desiderative clauses does not seem to be an issue for either group of bilinguals, who easily select infinitive when faced with these constructions. The choice of indicative in reported assertions introduced by the communication verb *decir* also exhibits performance at ceiling, even though they were no examples of this construction in the narratives of the oldest age group. The low number of tokens found in the disjoint reading condition in desideratives does not allow us to draw conclusions regarding their use; as a result, the comparison between subjunctive selection in obligatory and variable contexts had to be reduced to the analysis of purpose clauses and directive predicates.

While the younger group in Austin et al. exhibited a high degree of variability in subjunctive use in both types of predicates -as seen in examples (50) and (51)-, older children from the Zurer-Pearson's study seemed to resolve this optionality in purpose clauses (52), but only to a certain extent in reported directives (53):

(50) *CHI: <él> [/] él quería escapar para que no lo *coge
 <he>[/] he wanted[3sg] escape[inf.] for that no CL catch[3psgIND]
 "He wanted to escape so he wouldn't catch him"

(51) *CHI: y el niño dice <que> [/] que no me *coge la caña²³
 and the boy says[3sg]<that> [/] that no CL take[3sgIND]the pole
 "And the boy said not to take my (his) pole"

²² Unfortunately, the small number of utterances obtained from the younger group of bilinguals collected by Austin et al. (in prep.) does not allow further comparisons between the two groups of children.

²³ It is also possible that this example illustrated a perspective shift rather than a true quotation (as seen by the type of pronominal reference).

- (52) *CHI: y el niño se puso algo [...] para que callaran
 and the boy CL put[3sg] something [...] for that shut up[3plSUBJ]
 “and the boy put something [...] so they would shut up”
- (53) a. *CHI: el niño le dijo al perro que no hiciera na(da)
 the boy CL said[3sg] to the dog that no do[3sgSUBJ] anything
 “The boy told the dog not to do anything”
 b. *CHI: El niño le dijo a parar hablar a él
 The boy CL told[3sg] to stop talking[INF] to he[acc3sg]
 “The boy told him to stop speaking to him”

Divergences in mood selection also changed as a function of age group: some of the youngest (5;0-6;0) and the oldest bilinguals (9;0-11;5) preferred the use of indicative in contexts where subjunctive was expected (as in the case of 50 and 51), while 7;0 and 8;0 year-olds favored the use of infinitival forms (53b) in reported directives. The co-existence of indicative, infinitive and subjunctive as potential options in Spanish could indicate a case morphological unspecification in this language (see §2.2.2.2 for more information).

Overall, the results from this exploratory corpus-based search seem to point towards a certain degree of variability in subjunctive use, especially in young bilinguals who are experimenting a shift in language dominance (Spanish > English). Considering the variations in the number of tokens across groups, older children seem to exhibit higher rates of accuracy in obligatory rather than in variable contexts, pointing towards a potential locus of attrition in adult heritage bilinguals.

Cuevas de Jesús (2011) also analyzed older child bilinguals (7;0-11;0) in Puerto Rico with the objective of investigating the potential effects of CLI in mood selection within factive-emotive predicates. As seen in Pérez-Leroux (1998), constructions belonging to this type of modality (epistemological) are acquired fairly late in monolingual populations, especially in the case of factive-emotives, where selection is

dependent on pragmatic grounds. Following Quer (2001), Cuevas de Jesús (2011) described the choice between indicative and subjunctive in this type of predicates as being dependent on the episodic (54a) or non-episodic (54b) nature of the embedded proposition:

- (54) a. Me molesta que me llama con prisa
 CL[1psg] annoy[1psg] that CL[1psg] call[3psgIND] with haste
 “It annoys me that (he/she) calls me in a hurry”
 b. Me molesta que me llame con prisa
 CL[1psg] annoy[1psg] that CL[1psg] call[3psgSUBJ] with haste
 “It annoys me that (he/she) calls me in a hurry”

While the interpretation of (54a) is tied to the state of mind of the speaker at the moment of the utterance, the evaluation of (54b) is based on a recurring behavior that could be paraphrased as “*Generally, when a particular eventuality takes place (him/her calling me in a hurry) this annoys me*” (Cuevas de Jesús, 2011: 30).

In order to isolate the variable of language dominance, the author divided her participants in two groups: those who attended a Spanish-speaking school (N=20), and those who went to an English-speaking one (N=20). Furthermore, she subdivided the two groups according to the quality and quantity of the English input received, calculated by means of parental questionnaires. Groups were thus divided into minimal (0-20%), moderate to low (25-46%), and moderate to high (50-70%) exposure to English. All participants were administered three tasks: two elicited production tasks, and an acceptability judgment.

Results from the first production task, focused on the use of subjunctive in non-episodic contexts (*Me gusta que la ranita sea bonita*), showed that only a 46% of the participants selected subjunctive morphology in the embedded clause. The opposite tendency appeared in the second production task, where the expected choice of indicative

only reached a 44%. Cuevas de Jesús noted that these results seemed to be modulated by language exposure: children who activated English more frequently than Spanish tended to overextend indicative to all contexts, while those attending Spanish-only schools, showed the opposite trend. Decreased rates of subjunctive use, however, did not entail divergent mental representations, since the results obtained in an acceptability judgment task confirmed a preference for subjunctive in episodic contexts (74% in the case of children with more Spanish exposure, and 60% in those with more English input)²⁴.

Cuevas de Jesús (2011) study replicates some the tendencies that have been examined in this section: 1) children who activate Spanish more often than English seem to exhibit higher rates of accuracy and maintenance of subjunctive morphology in production; and 2) the loss of morphological distinctions in bilinguals' production does not seem to be a reflection of their underlying representation.

The evidence pointing towards an early acquisition of subjunctive morphology in directive and desiderative constructions is of utmost importance for this study. If these patterns of linguistic development were replicated in adult bilinguals, we would expect adult heritage speakers to retain the use of subjunctive morphology in these contexts given their early (and potentially more extended) activation of these structures throughout childhood. This hypothesis would also affect L2 learners' performance, since they would have been exposed to these structures in the language classroom later than HS. The following sections are aimed at providing a summary of studies dedicated to the acquisition of Spanish mood by adult heritage speakers and L2 learners.

²⁴ Acceptability rates for non-episodic conditions (targeting indicative) were not reported by Cuevas de Jesús (2011).

3.3.3. Spanish Heritage Speakers

In this dissertation, I adopt Wiley & Valdés' (2000) definition of heritage speaker (more recently reformulated by Austin, Blume & Sánchez, 2015), by which HSs are described as either simultaneous or sequential bilinguals “who learned a language other than English at home, but have been immersed in English since childhood, often exclusively schooled in it” (p.80). This characterization includes a wide variety of profiles, with varying levels of language dominance, schooling and proficiency in the minority (Spanish) and the majority language (English), as it will be shown in the following literature review.

In general, studies dedicated to the analysis of adult HSs' acquisition of mood document a recurrent pattern of language attrition that primarily affects predicates selecting non-obligatory (i.e. polarity) subjunctive (Montrul, 2007, 2009; Perez-Cortes, 2014), where mood alternation is semantically relevant. However, as attested in the studies reviewed in the previous section, loss of subjunctive morphology (or of morphological distinctions between subjunctive and indicative) do not necessarily involve a lack of representation of semantic contrasts. This is an issue that I will explore in the present work, and that was first examined by Montrul (2007). In her study on the interpretation of mood distinctions in obligatory and non-obligatory contexts, she collected data from 20 adult English-Spanish bilinguals and presented them with two tasks: 1) a morphological recognition exercise, targeting the identification of subjunctive in obligatory contexts, and 2) a sentence conjunction judgment task, focused on indicative/subjunctive selection in variable contexts. In the first task, participants were given a short passage and were prompted to choose between one of the two forms of a

given verb (indicative or subjunctive). Overall results from the recognition task showed that HS performed quite accurately (78.9%) in lexically-selected contexts, and that within-group differences were a function of language proficiency (7 out of the 9 advanced participants scored above 80%, but only 2 out of 11 in the lower proficiency group reached that percentage). Results from the sentence conjunction task included performance rates in three different types of target sentences: adverbial clauses introduced by *cuando* (“when”) and *de manera que* (“so that”), and relative clauses.

The analysis of the results obtained in both tasks led Montrul to suggest that subjunctive morphology in non-obligatory contexts is more prone to attrition/incomplete acquisition and variability, and that consequently, HS’ interpretation of mood contrasts seems to be rather weak, which is in line with the predictions outlined in Sorace’s Interface Hypothesis, IH (2000, 2011). Montrul (2009) complements her previous data on comprehension by incorporating an oral elicitation task, “designed to elicit opinions in extended discourse” (p. 256). Results from this new production task, which featured the participation of advanced ($N=29$), intermediate ($N=21$) and low HS ($N=15$), confirmed proficiency to be a determining factor in the accurate use of subjunctive, as seen in the following table:

Table 5.
Accuracy in production of mood morphology as a function of proficiency

Proficiency level	Indicative	Subjunctive
Advanced HS	95.9%	74%
Intermediate HS	85.5%	73%
Low HS	97.8%	37.2%

When interpreting these results in Table 5, it is important to take into account the spontaneous and unconstrained nature of the task. Although participants were instructed to use verbs and expressions targeting obligatory and variable uses of subjunctive such as

busco (“I’m looking for”), *tal vez* (“maybe”), *es necesario que* (“it is necessary that”), *es importante que* (“it’s important that”), *creo que* (“I think that”), *prefiero que* (I prefer that”) or *dudo que* (“I doubt that”), responses were not counterbalanced according to sentence type. Nevertheless, it is clear that proficiency seems to have modulated HS’ degree of accuracy: the lower the mastery of the minority language, the higher the error rate in subjunctive use. Interestingly, the use of indicative was fairly stable across groups.

Results from the morphological recognition task testing obligatory mood selection (where the verb of the matrix clause triggered either indicative or subjunctive) also showed an effect of proficiency in the subjunctive condition (advanced: 86.2%; intermediate: 60.9%; and low: 38.6%). Following the pattern observed in production, the selection of indicative was very similar (and highly accurate: 97.6%-79.3%; mean: 91%) across groups. This tendency was also observed in the Sentence Conjunction task reported in this last (2009) study, where only highly proficient participants seemed to discriminate between both moods, albeit to a much lesser extent than controls. Montrul’s (2007, 2009) studies on the acquisition of Spanish mood revealed proficiency to be a determining factor in the accurate use of subjunctive and indicative forms. In addition to this variable, HS’ performance also seemed to be dependent on the obligatory/variable nature of the mood selection under examination²⁵, obtaining higher scores in constructions where mood was lexically-selected than in those where mood selection was determined by semantic/pragmatic factors.

²⁵ It is worth noting that these two types of mood selection were measured employing two different types of tasks. While recognition of lexically-selected (intensional) subjunctive was analyzed using a Morphology Recognition Task, the interpretation of polarity subjunctive was examined by means of a Sentence Conjunction Judgment task. Intensional and polarity subjunctive were also tested in production, however, responses were not counterbalanced according to sentence type. These factors make comparisons between obligatory and variable mood selection rather fragmentary.

Perez-Cortes (2014) examined heritage speakers' comprehension and production of mood alternations in a more controlled setting. This project interviewed a total of 20 heritage speakers of Spanish who had acquired both Spanish and English either simultaneously ($N=11$), or sequentially ($N=9$). Their proficiency scores²⁶ spanned from 57% to 77% (average score: 70%), placing them in the low-intermediate range. The tasks presented were aimed at targeting comprehension and production of indicative and subjunctive in one of the structures examined in this dissertation: communication verbs such as *decir* ("to say") and *contestar* ("to answer/reply") in an assertive context –using indicative- or in a directive one –targeting subjunctive-. Given the importance of frequency of activation of the minority language in HS' performance (Putnam & Sánchez, 2013), it was determined that all embedded verbs would be controlled for relative frequency. In order to test whether lexical frequency also had an effect on participants' accuracy rates, two types of matrix verbs were included in the study: a highly frequent verb such as *decir*, with a relative frequency value of 376,60; and a verb like *contestar*, with a much lower index of frequency (24,69)²⁷. It was hypothesized that the higher the frequency of a particular construction in the input, the more likely it would be for participants to identify the target feature value of the embedded verbs (either [+subjunctive] or [-subjunctive]).

In the comprehension task, consisting of a Truth-Value Judgment (Crain & McKee, 1985), participants had to read a situation involving several characters interacting with each other, and then decide whether the sentence read described the

²⁶ Linguistic proficiency was measured by administering an adapted version of the Diploma de Español como Lengua Extranjera (DELE), (Montrul, 2008).

²⁷ Relative frequency captures the frequency of occurrence of the word in parts per million, and was calculated following (Guasch, M., Boada, R., Ferré, P., & Sánchez-Casas, R., 2012) database.

situation they had just observed. The production task was a sentence completion exercise where participants saw a picture accompanied by a written context describing 2 types of situations: a) a character urging another to comply with a task (subjunctive); or b) a character describing an action being performed by somebody else (indicative).

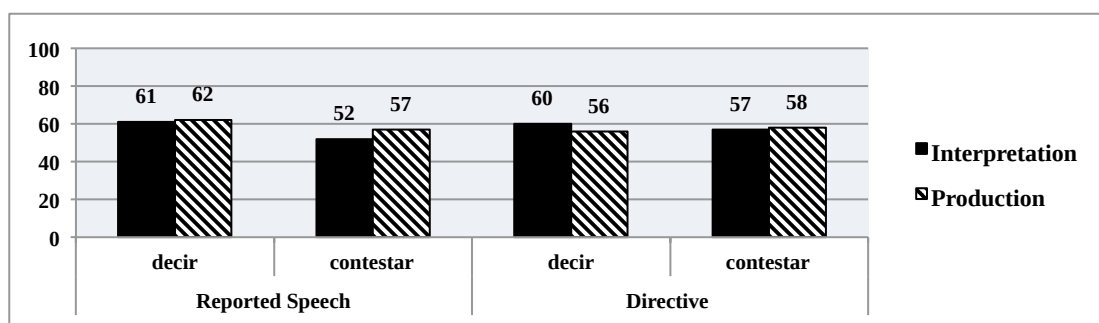


Figure 4. Overall results as a function of context and frequency of the matrix verb.

As it can be observed in Figure 4, an initial analysis of the data indicated overall low performance in both assertive and directive contexts, regardless of the matrix verb heading the construction (frequent vs. infrequent) or the type of task (interpretation vs. production). Although these results indicate a very basic knowledge of mood constraints by Spanish heritage speakers of Spanish, it is essential to take into account that the language proficiency of the participants interviewed (average 70%; low-intermediate) could have affected their overall performance, as seen in previous work (Montrul, 2007).

In an attempt to examine additional factors that may have modulated participants' performance, it was decided that age of onset of bilingualism effects would be investigated. Statistical analyses pointed to significant multiple interactions between the type of predicate (assertive vs. directive), the type of task (interpretation vs. production) and the age of onset of bilingualism (simultaneous vs. sequential) of the participants.

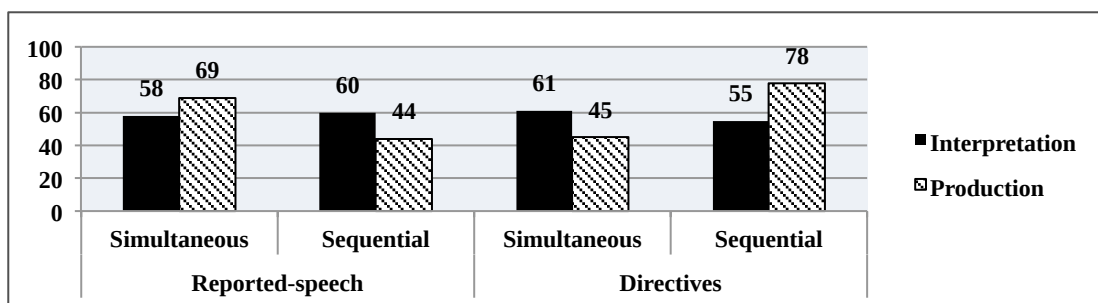


Figure 5. Accuracy as a function of context and age of onset of bilingualism

Figure 5 shows that although simultaneous and sequential HS seem to understand the difference between assertive and directives contexts to the same degree (albeit, a very low one), they differ notably in production. While the former overextend indicative morphology to all settings (reported assertions and directives), the latter exhibit the opposite tendency. It was hypothesized that age differences in production could be a reflection of different patterns of language activation and inhibition across time. The examples below illustrated the types of divergences observed in simultaneous (55) and sequential (56) bilinguals:

(55) (in the context of an indirect command):

Maria le dice a su madre que *sale más
 Mary CL[3sgDT] says to her mother that *go out[3psgIND] more
 “Mary tells her mom that she goes out more”

(56) (when reporting an assertion):

La mujer les dice que *compre mucho
 The woman CL[3plDT] says that *buy[3pplSUBJ] much
 “The woman told them to buy a lot”

As presented in Chapter 2 (see §2.2.2.1 for more details), when participants were faced with a sentence such as (55), they were expected to produce subjunctive (*salga*)

instead of indicative (*sale*)²⁸. In the case of (56), on the other hand, they were supposed to report an event (a woman saying that someone buys a lot) by using indicative (*compran*) and not subjunctive (*compren*). Although results failed to confirm whether early-acquired constructions such as the ones examined in this dissertation yielded more accurate results than other contexts (epistemic and epistemological) in adult heritage speakers, they were very informative regarding the potential effects of language proficiency and age of onset of bilingualism in the acquisition of mood selection. As it will be argued in upcoming sections, by testing more proficient bilingual populations I may be able to disentangle proficiency from age of acquisition effects.

There are two more studies dedicated to the analysis of mood selection in HS that target desiderative predicates (Pascual y Cabo, Rothman & Lingwall, 2012, and Rothman, Pascual y Cabo and Lingwall, ms). In their work, the authors compared the performance of 47 HS with different levels of proficiency (advanced: 13; intermediate: 16; and low: 18) in structures triggering either obligatory (desideratives) or variable mood selection (negated epistemics) in a morphological multiple-choice and a felicitousness judgment task.

²⁸ In addition to being controlled for type/token frequency, the target verbs used were also controlled for (ir)regularity. Across tasks, half of the items presented were examples of regular verbs, while the other half were irregular. Statistical analyses, however, did not reveal any significant differences in performance based on the regularity/irregularity of the verb.

Table 6.*HS results as a function of mood selection (adapted from Pascual y Cabo et al. 2012)*

Proficiency	Lexically-selected mood		Variable mood selection			
	Co-referential	Disjoint ref. (volitionals)	Subj. + tampoco	Subj. + pero	*Ind. + tampoco	Ind. + pero
Advanced	92.3%	96.1%	76.6%	87.2%	16.4%	85.6%
Intermediate	97.9%	82.3%	73.8%	74.6%	37.6%	60.2%
Low	90.7%	52.8%	-	-	-	-
Controls	-	-	73.3%	88.6%	61%	47.6%

For the sake of brevity, Table 6 only includes the results that are relevant for this dissertation, that is, HS' performance on co-referential desideratives, in volitional constructions where different matrix verbs (*querer*, “want”, *pedir* “ask” and *recomendar* “recommend”) triggered the presence of subjunctive morphology in the embedded clause, and the acceptability of indicative and subjunctive use in mood alternations. In the first task, participants were asked to choose the form that best fit within a given sentence (the options given included present and past forms in indicative and subjunctive). As it can be observed in Table 6, HS did not seem to have any difficulties regarding infinitive selection in co-referential desideratives²⁹. Accuracy rates on subjunctive selection in volitionals, however, appeared to be highly correlated with HS' proficiency scores (both advanced and intermediate HS performed better than low proficiency HS). In the second task, where participants were asked to judge the acceptability of sentences allowing for mood alternations in 3 out of 4 contexts, results were much lower than in the previous task. Notwithstanding, when HSs' performance was compared to that of controls, they

²⁹ It is possible that high accuracy in this condition was partially driven by the lack of complementizer (*que*, “that”) in the target sentence, which would have only allowed for a non-inflected form. Thus, we cannot draw any conclusions about participants' control of the semantics/pragmatics behind co-referentiality in desideratives.

only differed in the indicative condition, suggesting target-like acquisition of subjunctive in variable contexts.

Despite the informativeness of Pascual y Cabo et al. (2012), the comparison of different types of mood selection (obligatory vs. variable) within structures belonging to different types of modality (deontic in the case of desideratives and epistemological in the case of negated attitude predicates) could have affected the overall results of the study. Given the role played by modality in the monolingual and bilingual acquisition of subjunctive (Blake, 1983; Merino, 1983; Pérez-Leroux, 1998; Silva-Corvalán, 2003, 2014), comparisons between participants' command of lexically selected subjunctive in deontic predicates and variable mood selection in epistemic or epistemological constructions might not be entirely equivalent. The present dissertation will tackle this issue by comparing obligatory and variable selection within the same type of modality (deontic).

In spite of their common interest in heritage language acquisition, the studies summarized in this section do not always address two of the factors that have been widely reported to affect heritage grammars: decreased activation of the weaker language (Spanish) and differences in input exposure. The next subsection will provide a brief review of studies on bilingual acquisition that have specifically tackled this issue.

3.3.3.1. Effects of decreased activation and input in heritage grammars

There is a considerably body of research in early bilingual acquisition documenting the impact of language use and frequency of input on the maintenance of HS' weaker language, as summarized in the following table:

Table 7.
Summary of studies with language activation as a factor.

Authors	Population	Linguistic property	Observations
Anderson (2001)	Bilingual children EN/SP	Person, Number, Aspect/Tense	Less experience with the language, increased the likelihood of L1 attrition (comprehension and production)
Bolonyai (1998)	Bilingual children Hungarian/English	Overall linguistic abilities	Changes in language activation (as a result of traveling, prolonged contact) have consequences in the matrix language in code-switching.
Cuza (2010)	Long-term immigrants in the US (L1 Spanish)	Present simple/progressive	Language use regulated production and interpretation of features associated with the two tenses.
Gürel (2004)	Long-term immigrants in the US (L1 Turkish)	Pronominal system	Extensive contact with the L2 accompanied by prolonged disuse of L1 give way to attrition in comprehension
De Houwer (2007)	Bilingual children (different language combinations)	Overall linguistic skills	Differences in parental input patterns correlated with differences in child minority language use.
Hulsen (2000)	Adult heritage speakers (Dutch/English)	Overall language proficiency (processing)	High frequency words recognized faster, shorter RTs in the matching task than in the production task due to inactive use of the heritage language.
Serratrice et al. (2009)	Bilingual children EN/IT in Italy and the UK	Definite and bare NPs	Language of the community affected their performance (+ activation, + accurate)

As seen in Table 7, and in some of the evidence that has been summarized thus far (Cuevas de Jesús, 2011, Silva-Corvalán, 2003, 2014) the higher the activation of the minority language for comprehension and production purposes, the less likely it is for this

system to undergo attrition. As mentioned earlier in the chapter (§ 3.2) the importance of frequent language use for comprehension and production purposes has been examined in depth by Paradis (1985, 1993). In the case of HS, the ATH would predict that frequent the activation of the minority language, facilitates the access to its lexical items and corresponding functional features. Furthermore, Paradis' ATH also posits that in the mind of a bilingual, the activation of one language entails the inhibition of the other (and the subsequent raising of its activation threshold), and that recognition and reconstruction (comprehension) require a lower activation threshold than self-activation (production). This hypothesis predicts some of the comprehension/production asymmetries observed in adult HS, and it introduces another important consideration in the study of heritage grammars: the specific nature of the areas affected by high levels of inhibition. Putnam & Sanchez (2013) address this issue by hypothesizing divergent feature mappings on the basis of more/less "frequency of activation of lexical items in [a given] language" (p.494). In their work, they go one step further by arguing that simple exposure to input in the weaker language is not enough to acquire and maintain a stable grammar. Instead, the authors propose that the *processing* of said input for comprehension and production purposes and its subsequent manipulation (also known as *intake*) are the factors that play a central role in the development of the heritage language.

Following Putnam & Sánchez (2013) as well as De Carli et al. (2015) and Gollan et al. (2008, 2012, 2014), the present work will assume that the frequency by which the weaker language of a bilingual is activated, and not necessarily the amount of input received, will affect their proficiency, and in turn, their overall linguistic performance. The effects of language use in learners' proficiency and morphological processing have

also been widely examined in the L2 literature (Collentine, 2004; Dekeyser, 2014; Grey, Cox, Serafini & Sanz, 2015; Perani, Abutalebi, Paulescu, Brambati, Scifo, Cappa & Fazio, 2003, amongst many others), including work on mood selection (Villegas, Dussias, Demestre & Dussias, 2013). In the following section, I will analyze the effects of these and other factors in the acquisition of mood by L2 learners of Spanish who have English as their L1.

3.4. Late Language Acquisition: L2 Spanish learners

L2 Spanish learners' use of mood morphology has been examined in a wide range of contexts (adverbial clauses: Ahearn, Amenos-Pons & Guijarro Fuentes, 2014; Cameron, 2013; Gudmestad, 2013; Kanwit & Geeslin, 2014; Montrul, 2009; adjectival constructions: Borgonovo, Bruhn de Garavito & Prévost, 2008, 2014; Restorik Elordi, 2012; and nominal clauses: Iverson et al., 2008; Lubbers-Quesada, 1998; Mikulski, 2006; Mikulski & Elola, 2013; Massery & Fuentes, 2014, amongst many others). Although most of this research has focused on learners' production of indicative and subjunctive in obligatory and variable contexts (Collentine, 1995; Correa, 2011), other authors have chosen to probe L2ers' interpretation of these morphological markers (Cameron, 2011). Despite the methodological variability, the majority of the studies agree on one significant finding: although it may be difficult for L2 learners to successfully master Spanish mood morphology, the presence of particular semantic schemas (either implying futurity, desire or volition) seem to foster the use of the subjunctive (Gudmestad, 2013; Kaufmann, 2011; Lubbers-Quesada, 1998). This would be the case of the structures analyzed in this dissertation, since both desideratives and directives present the same underlying semantic schema [+volitive].

These findings, however, do not make any specific predictions about the likelihood of acquiring SDR readings in desideratives given the interface nature (syntax-semantics) of this constraint. Furthermore, they do not provide any hypotheses about the impact of having directives such as the ones introduced by communication verbs (*decir*) co-existing with assertive readings, where the presence of indicative or subjunctive are the only indicators of the speakers communicative intent. These cases, which are generally considered to be at the syntax-semantics-pragmatics interface, have been reported to be particularly prone to optionality, even in highly proficiency populations (Sorace, 2000, 2003).

I will now proceed to summarize four studies that have tackled some of the issues outlined above in one of the structures examined in this dissertation: desideratives introduced by the verb *querer* (“want”). The pioneering work by Bruhn de Garavito (1997) investigated whether advanced L2 learners of Spanish ($N=27$) were able to interpret constructions exhibiting SDR effects following control-like patterns. All participants completed an acceptability judgment task that exposed them to two types of sentences: structures where the subject of the matrix and that of the embedded clause were co-referential (57), and constructions with disjoint reference (58). Results showed that participants obtained an average of 55.4% in this task, indicating a remarkable lack of SDR constraints in advanced L2 populations):

- (57) Saúl está muy emocionado por ver la película, por eso está un poco nervioso.
 (Sául is very excited to see the movie, that’s why he’s a bit nervous)
 Saúl_i quiere (pro_{i/*j}) ir al cine
 Saúl_i wants (pro_{i/*j}) go[inf.] to the cinema
 “Saúl wants to go to the cinema”

- (58) A Saúl no le gusta el cine, pero sabe que a Vanesa sí, y él la quiere mucho.
 (Saúl doesn't like the cinema, but he knows that Vanesa does and he loves
 very much)
 Saúl_i quiere que (pro_{*i/j}) vaya al cine
 Saúl_i wants that (pro_{*i/j}) go[3psgSUBJ] to the cinema
 "Saúl wants her to go to the cinema"

Mikulski's work (2006), which also tested HS and L2 learners' understanding of subjunctive morphology and SDR constraints in volitionals, is particularly influential for the present study. This author examined potential differences between HS and L2 learners' recognition of native/non-native uses of subjunctive in volitional constructions (her work included desideratives such as *querer*, *desear*, *preferir* and *esperar*, and directives like *exigir* and *requerir*, although no differentiation or counterbalancing was made between them). The study reported interviewing a total of 54 participants (HS=32, L2 learners=22) who completed two tasks targeting mood preference and interpretation: a grammaticality judgment task and an editing exercise. Results concerning participants' mastery of SDR effects showed more accurate responses in comparison to what had been reported in Bruhn de Garavito (1997), and revealed differences based on bilinguals' age of onset of bilingualism. While heritage speakers scored an average of 81% in this task, L2 learners performed at a much lower rate (around 60%). Statistical analyses confirmed that HS' scores were significantly higher than those of L2 learners, pointing to a slight HS advantage in performance potentially due to the early acquisition and prolonged activation of these structures.

Iverson et al.'s (2008) study was very similar to Pascual y Cabo et al. (2012) and Rothman et al.'s (ms) work on HS, aimed at examining the acquisition of Spanish subjunctive complements in obligatory (volitional) and non-obligatory (negated epistemic) constructions. Results from a Grammaticality Judgment Task showed that,

contra Sorace's (2000) predictions of optionality at the syntax-pragmatics interface, advanced L2 learners were generally able to acquire indicative/subjunctive distinctions (83%). Furthermore, when these participants were tested on intensional subjunctive (i.e. desideratives), they seemed to obtain overall high scores (98%). Like HS in Pascual y Cabo et al. (2012), the higher the proficiency, the more accurate they were in all conditions, as seen in the table below:

Table 8.

Overall results for GJT as a function of context and proficiency.

Proficiency	Lexically-selected mood	Variable mood selection
Advanced	98.2%	83%
Intermediate	89%	46%
Spanish Controls	97.6%	84%

The results observed in Table 8 confirm two tendencies that had been previously observed in the literature. First, the selection of obligatory subjunctive yields higher accuracy scores than mood selection in variable contexts, in line with Sorace's IH. However, the scores obtained by L2 learners are very similar to those seen in Spanish controls (83% vs. 84%), preventing us from drawing any definitive conclusions about the applicability of the IH in these particular constructions. On the other hand, these results reinforce the claim that proficiency plays an important role in participants' accuracy, having a special incidence in contexts that allow for mood alternations.

I would like to conclude this section by reviewing the work of Massery & Fuentes (2014), which tested L2ers' identification and use of mood selection in deontic as well as epistemic and epistemological predicates. A total of 150 participants enrolled in 5 different courses were asked to complete a mood conjugation task, where they had to inflect the form of a given verb and indicate whether they would choose an indicative or a subjunctive form. Results from obligatory subjunctive selection in deontic environments,

featuring structures headed by the verbs *querer* (“want”), *exigir* (“demand”) and *desear* (“want/hope”), yielded high scores across groups, ranging from 73.2% in participants enrolled in Beginning Spanish II to 91.6% for those in Advanced Composition and Syntax courses. In line with previous studies, contexts allowing for mood alternations generated lower scores across groups (ranging from 32.6% to 55.4%). The lack of contextual information in some of the sentences belonging to this group, however, puts into question the validity of the results, which obscures further comparisons with previous studies. In general, it seems that L2 learners obtain higher scores when mood is lexically selected by the matrix verb, although they are also able to master variable mood selection at higher levels of proficiency.

3.5. General conclusions

In this chapter I have provided a summary of the most relevant studies on early and late acquisition of mood selection. Studies on monolingual populations (Blake, 1983; Gallo Valdevieso, 1994; Pérez-Leroux, 1998) have shown that the acquisition of subjunctive is gradual and highly dependent on the type of modality where mood selection takes place. While subjunctive in deontic predicates seems to be acquired rather early (2;5-3;0), predicates involving the evaluation of complex notions such as presupposition and veridicality (epistemic and epistemological modality) exhibit variability until much later (7;0-9;0). Data on bilingual children also point towards an early acquisition of obviation in desiderative and directive contexts (Echeverría, 1975, 1978; Padilla, 1990), especially in the case of constructions headed by the matrix verb *querer* (“want”). Studies on Spanish/English bilingual children support the data reported in monolingual acquisition, and bring forth an important topic in bilingual development:

prolonged exposure and activation of the minority language (Spanish) positively affect mood selection across contexts (Cuevas de Jesús, 2011; Silva-Corvalán, 2003, 2014). In addition to language activation, high proficiency in the home language seems to determine the degree of erosion of mood selection in adult HS (Montrul, 2007, 2009), which is considerably more stable in contexts where subjunctive is lexically-selected than in predicates allowing for mood variation. The processing of obviation is reported to be rather high in this population (81%), especially when compared to late bilinguals, who score around 50-60% (Mikulski, 2006). This last group follows the same trends reported in HSs, albeit exhibiting slightly lower scores (Iverson et al. 2008; Massery & Fuentes, 2014). Some of the differences between HS and L2 learners have been attributed to age of acquisition and prolonged exposure to Spanish (Mikulski, 2006; Iverson et al. 2008). However, there are some studies that report a HS advantage when the task's metalinguistic demands are minimized (Correa, 2011; Mikulski & Elola, 2013; Montrul & Perpiñán, 2011; Potowski, Jegerski & Morgan-Short, 2009). Despite the informativeness of the previous studies, it is extremely difficult to draw general conclusions for both groups given the use of different methodologies (Geeslin, 2008) as well as different type of propositional modality to evaluate bilinguals' mastery of obligatory and variable mood selection. Taking into account the previous findings, the following chapter reviews the research questions and hypotheses driving this study. Chapter 4 also includes a summary of the methodology hereby implemented, providing a thorough examination of participants' sociolinguistic profiles, as well as a detailed description of the four experimental tasks used to test early and late bilinguals' performance in predicates featuring obligatory and variable mood selection.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

The methodology of the present study was designed to test the acquisition of obligatory and variable mood selection in early and late bilinguals. To do so, I proposed to study the representation of desiderative predicates and reported directives and assertions in Spanish/English bilinguals. As we saw in chapter 2 (§2.2.2.1) the lexical semantics of desiderative predicates trigger the presence of subjunctive in the embedded proposition, while in structures headed by a verb of communication, the choice between indicative/subjunctive mood is based on the communicative intent of the speaker -to report an assertion or a command- (Kempchinsky, 2009; Palmer, 2001; Quer, 1998). As it has been argued throughout this dissertation, the study of these linguistic properties at the interface between syntactic, morphological and pragmatic domains provides the opportunity of examining the effects of age, proficiency and CLI in bilingual language development.

Previous research on the acquisition of mood by Spanish/English bilinguals has employed a wide variety of instruments to assess participants' performance, ranging from fairly open designs probing production through oral interviews (Gudmestad, 2012, 2013; Lynch, 2008, Mikulski & Elola, 2013; Montrul, 2007) and sentence completion exercises (Gudmestad, 2006; Kaufman, 2011; Potowski et al. 2009), to highly constrained tasks evaluating comprehension in sentence-matching exercises (Montrul, 2009), grammaticality judgments (Martínez Mira, 2006; Mikulski, 2010) and editing tasks (Montrul, 2007; Mikulski, 2006). However, a point often overlooked in language acquisition studies is that different experimental tasks tap into different types of

knowledge. Thus, the decision to implement one task over another to examine a linguistic phenomenon may have the effect of generating between and within-group differences derived from the cognitive and linguistic demands derived from the implementation of a specific elicitation measure (Collentine, 2010; Geeslin, 2010). In this respect, the present study provides valuable insight into the nature of HS and L2 learners' command of Spanish mood selection by triangulating data from multiple tasks: examining participants' interpretation, production and grammatical intuitions regarding this particular linguistic property. Furthermore, it is suggested that the incorporation of different types of tasks will increase our understanding of how factors such as age, language use and proficiency modulate linguistic performance at various levels.

This chapter provides a detailed description of the methodology employed in the present study, including a review of the research questions and hypotheses guiding the investigation, as well as a thorough examination of the linguistic characteristics of the participating sample (sociolinguistic background, preferences of language use in different environments and Spanish and English proficiency). The following sections will also describe the procedures followed during data collection, providing an in-depth analysis of the four experimental tasks used in this investigation.

4.2. Research questions and hypotheses

Thus far, the majority of research examining HS and L2 learners' acquisition of mood in Spanish has been focused on structures exhibiting variable mood selection in contexts acquired rather late by monolinguals, such as epistemic predicates (Borgonovo et al. 2008; 2014; Montrul, 2007, 2009, 2011) and epistemological constructions (Kauffman, 2011; Iverson et al. 2008; Massery & Fuentes, 2012). These studies have

generally investigated participants' production and grammatical preferences rather than their interpretation, scarcely touching upon such critical issues as the role of frequent language use or the effects of propositional modality (i.e. deontic, epistemic or epistemological) in the acquisition of mood selection by bilinguals. Since these factors have been reported to exert a considerable influence on HS and L2ers' linguistic development (see chapter 3 for a detailed analysis), this study is focused on answering the following research questions:

1. Are structures with mood alternations based on semantic/pragmatic constraints more prone to attrition/optionality and crosslinguistic influence than those where mood is lexically selected?

The potential effects of interface vulnerability in the acquisition of the two structures hereby examined have been extensively discussed in the previous chapter (see sections §3.2- §3.4 for additional details). Although it has been reported that purely syntactic operations can also be vulnerable to language attrition/optionality and cross-linguistic influence (Cuza & Frank, 2011; Cuza, 2012), it is widely accepted that properties at the syntax-pragmatics interface are particularly susceptible to morphological erosion and transfer (Belletti, Bennati & Sorace, 2007; Sorace 2000; Tsimpli & Sorace, 2006, among others). These observations predict that reported directives and assertions headed by the verb of communication *decir* ("to say") are more likely to exhibit lower rates of accuracy when compared to desideratives, where mood is lexically selected. However, there are several considerations specific to these structures that actually point towards the opposite direction, as we have argued in §2.3.

On the one hand, the lack of modal contrast in desideratives could weaken the activation of the feature value [+subjunctive] in this type of predicates, which is less

semantically motivated than the one featured in reported directives. Although both morphological instantiations of subjunctive signal a shift in the model of interpretation of the embedded clause (as proposed by Quer, 1997, 2001), in the case of desideratives, the interpretive/semantic weight is mostly carried by the matrix verb, responsible for triggering subjunctive mood selection. This dependence on the semantics of the main verb is not available in reported directives, since the meaning of *decir* (“to say”) does not disambiguate between an assertive and a jussive meaning.

On the other hand, the presence of several linguistic alternatives to convey modality in Spanish (i.e. adverbs, modal verbs, indicative/subjunctive mood morphology), allows for the co-existence of subjunctive morphology (59a) and periphrases of obligation (59b) to express the notion of indirect command in reported directives. As it can be observed in the examples below, a similar alternation is also present in English:

- (59) a. Angus le dijo a su hijo que se enfrentara a sus demonios
 Angus CL told[3sg] to his son that face[3sgSUBJ] to his demons
 “Angus told his son to face his demons”
 b. Angus le dijo a su hijo que tenía que enfrentarse a sus demonios
 Angus CL told[3sg] to his son that had to[3sg] face[inf.] to his demons
 “Angus told his son that he had to face his demons”
- (60) a. Angus told his son to face his demons.
 b. Angus told his son that he had to face his demons.

Following Hulk & Müller (2000) and Müller & Hulk (2001), I suggest that the likelihood of CLI increases when a particular structure exhibits a certain degree of overlap in the two languages of a bilingual. In this case, the fact that both Spanish and English allow for the use of modal verbs to express the notion of indirect command in reported directives, could positively affect participants performance in these contexts. The choice of this type

of periphrases over subjunctive would eliminate the need to map an interpretable feature to a specific morphological item that is not present in the linguistic repertoire of the bilinguals' dominant language, facilitating crosslinguistic activation and potentially increasing accuracy in production³⁰. It is important to note that the interpretation of subjunctive morphology in variable contexts might still be affected by the lack of morphological instantiation of modal contrasts in English. The second research question tackles precisely this issue:

2. How do HS and L2 learners of Spanish represent variable and obligatory mood selection in deontic predicates?

Previous studies have found the acquisition of these two types of mood selection to be particularly troublesome for HS and L2 learners of Spanish (Collentine, 1993, 2010; Martinez-Mira, 2006, 2009a, 2009b; Montrul, 2007, 2009, 2011; Silva-Corvalán, 1994, 2003, 2014). As it has been discussed in Chapter 2 (see § 2.2.2.1 for an in-depth contrastive analysis), it is possible that the lack of modal contrasts and low productivity of subjunctive in English could have affected the degree to which Spanish/English bilinguals are able to remap FFs to new morphological items (as observed by Iverson et al. 2008, Pascual y Cabo et al. 2012, *inter alia*)³¹.

The majority of investigations indicate that these factors do not seem to affect the performance of highly proficiency HS and L2ers, who obtain control-like scores in tasks targeting their representation of mood selection in obligatory and variable contexts

³⁰ Given the particular design of the experimental measures (see §4.4. for more information), the use of periphrases of obligation was only allowed in the two production tasks.

³¹ As indicated in Chapter 2 (§2.3), English/Spanish bilinguals also had to detect the lack of ECM configurations and prepositional complementizers in disjoint reference contexts (desideratives and reported directives).

(Borgonovo et al. 2014; Massery & Fuentes, 2012, 2014; Montrul 2007). The examination of indicative/subjunctive use, however, points to divergent feature mappings at all levels, suggesting an asymmetry between their representational and productive abilities, following Hendriks & Koster (2010) and Sherkina et al. (2011)'s predictions regarding bilingual populations.

Differences between proficiency-matched HS and L2 learners appear to emerge in tasks heavily dependent on participants' metalinguistic abilities (such as grammaticality or acceptability judgment tasks). These methods of elicitation seem to favor L2 learners over HS, given the increased instructional experience of the former while acquiring the language (Correa, 2011; Mikulski & Elola, 2013; Montrul & Perpiñán, 2011; and Potowski, Jegerski & Morgan-Short, 2009).

With these observations in mind, it is expected that the adoption of a particular set of experimental tasks is likely to affect participants' linguistic performance based on the nature of the information required (interpretation vs. production) and their experience with the language (Geeslin, 2010; Geeslin & Gudmestad, 2008). This dissertation intends to take these results into account by testing obligatory and variable mood selection in three types of tasks: an acceptability judgment task examining HS and L2ers' grammatical preferences, a truth-value judgment task targeting interpretation and two elicited production activities focused on their use of indicative/subjunctive mood. It is hypothesized that the use of a wide variety of tasks targeting several linguistic domains (representation and production) will facilitate a more nuanced analysis of bilinguals' acquisition of obligatory and variable mood selection.

Although this research question addresses bilinguals' use of indicative/subjunctive in obligatory and variable mood selection, the lack of mood contrasts in desiderative predicates prevents the comparison between obligatory and variable mood selection in interpretation. Notwithstanding, the presence (or absence) of subjunctive morphology in desiderative predicates acts as a morphological cue regarding the binding properties of the subject in the complement clause, informing about its co-reference or disjoint reference with respect to the subject of the main proposition (Kempchinsky, 1987, 1995, 2009; Sánchez-Naranjo, 2010, 2014). The following research question tackles this issue by analyzing this particular semantic effect:

3. In the case of desiderative constructions, how do early and late bilinguals represent the syntactic/semantic constraints that modulate obviation effects triggered by the use of the subjunctive?

With the exception of a very small number of studies (Massery & Fuentes, 2012; Mikulski, 2006, 2010), the acquisition of subjunctive disjoint reference (SDR) in this type of predicates has been generally absent from the analysis of obligatory mood selection in bilinguals. In light of the findings of this dissertation (Chapter 5), I would like to hypothesize that the study of obviation in desideratives can provide valuable information about bilinguals' representation of morphosyntactic items that are not present in their dominant language.

In Spanish, desideratives present a semantic contrast inherently related to the presence of subjunctive morphology in the embedded clause (Kempchinsky, 1987, 2009). In these predicates, the presence (or lack thereof) of subjunctive morphology is associated with a disjoint reference effect, illustrated in the examples below:

- (61) a. El pescador_i quiere que (pro_{*i/j/g}) nade con los tiburones
 The fisherman wants[3ps] that (pro) swim[1/3psSUBJ] with the sharks
 “The fisherman wants me/him/her to swim with the sharks”
 b. El pescador_i quiere (pro_{i/*j/*g}) nadar con los tiburones
 The fisherman wants[3ps] (pro)_i swim[inf] with the sharks
 “The fisherman wants to swim with the sharks”

In (61a), the choice of subjunctive over infinitive in the embedded clause prevents the subject of the matrix verb (*el pescador*) from being interpreted as the agent of the event reported in the subordinate proposition. In this case, the null subject (pro_{*i/j/g}) –ambiguous between a first and third person referent- is the only possible actor of the verb *nade* (“swim”). Subject co-referentiality, as observed in (61b), can be conveyed by the presence of an infinitival form in the subordinate clause.

As it has been shown in the previous example (61), Spanish desideratives, unlike their English equivalents, alternate subjunctive and infinitive based on the binding properties of the complement clause (Gielau, 2015; Kempchinsky, 1987, 2009). Thus, it is possible that Spanish/English bilinguals will experience competition between these two morphological forms (subjunctive and infinitive) during crosslinguistic activation, which could potentially affect their interpretation and use of co-referential and SDR desideratives. If this were the case, we would expect an overgeneralization of infinitival forms to disjoint reference contexts in Spanish, following English patterns.

As discussed in Chapter 3, young Spanish/English bilinguals and adult HS seem to acquire the distinction between co-referential and disjoint readings rather early in desiderative predicates (Mikulski, 2006; Silva-Corvalán, 2014). According to these authors, prolonged activation of the minority language (Spanish) and high levels of proficiency are likely to be responsible for higher rates of accuracy in these two

conditions. The last research question is dedicated to analyzing the effects of some of these variables in the acquisition of mood:

4. To what extent do extra-linguistic factors such as proficiency in the weaker language/L2, frequency of language use and age of onset of bilingualism modulate bilinguals' performance in variable and obligatory mood selection?

The majority of the studies dedicated to mood selection in bilinguals indicate that participants with high levels of proficiency in the L2/weaker language are more accurate when interpreting and producing mood morphology in obligatory and variable contexts (Gudmestad, 2006; Iverson et al. 2008; Montrul, 2007, 2009; *inter alia*). Segalowicz and collaborators have explained these advantages as a by-product of enhanced automaticity (Favreau & Segalowicz, 1983; Segalowicz & Gatbonton, 1995; Segalowicz, Segalowicz & Wood, 1997, *inter alia*). According to these researchers, highly proficient bilinguals are more likely to successfully identify and reassemble the specific feature configurations involved in morphosyntactic properties, such as gender, aspect or mood. Automaticity seems to promote facilitation and appropriate levels of inhibition when processing a particular structure (Segalowicz & Hulstijn, 2005: 374). As presented in Chapter 1 (§1.4), these findings would predict that bilinguals with higher levels of proficiency in Spanish should be more likely to: 1) inhibit any competing structures from their dominant language that may have been activated along with their Spanish equivalents; and 2) select the appropriate feature specifications involved in obligatory and variable mood selection in Spanish.

Easier access and retrieval of lexical items and FFs has also been associated with increased activation of the weaker language/L2 for comprehension and production purposes (Paradis, 1985, 1993; Putnam & Sánchez, 2013). Although there is a

considerably body of research reporting the impact of this variable in the maintenance of morphosyntactic properties such as aspect, tense, gender or mood in early bilinguals (Anderson, 2001; Bolonyai, 1998; Cuza, 2010; Gürel, 2004, Rothman & Iverson, 2010; Serratrice et al. 2009, *inter alia*), it still needs to be further operationalized in the literature. The present dissertation addresses this limitation by incorporating a self-reported measure within the language background questionnaire where participants were asked to indicate their percentage of language use in a wide variety of situations and social circles. Following Putnam & Sánchez (2013), it is hypothesized that the degree of language activation will determine bilinguals' availability and productivity of FFs "for the generation of morphosyntactic structures (as well as) the gradual replacement of the FFs attributed to the L1 by those found in the L2"(p. 483). Consequently, I would like to argue that the higher the activation of the weaker language/L2 for comprehension and production purposes, the less likely it is for this system to exhibit attrition/optionality.

In addition to the variables of proficiency and frequency of language activation, several studies have suggested that age of onset of bilingualism also plays an important role in the productivity of lexically selected subjunctive and indicative/subjunctive mood contrasts (Mikulski, 2006, 2010; Montrul, 2011). Although several researchers have documented an advantage of HS over L2ers because of their early and prolonged exposure to the minority language, HS' initial advantage does not necessarily imply the maintenance of accurate mood selection later in life (Silva-Corvalán, 1994; Montrul, 2009; Perez-Cortes, 2014; Putnam & Sánchez, 2013). As it will be argued in the next chapter, the results obtained in this dissertation suggest a three-way interaction between age of onset, proficiency and language activation, where early bilinguals with and

prolonged levels of language activation for comprehension and production purposes outperform proficiency-matched L2ers.

The research questions and hypotheses discussed in this section guided the design of the experimental components of the present study, and were a key component to account for all the potential factors that could affect participants' outcomes. The following section provides a thorough description of the procedures and materials employed in this dissertation.

4.3. Participants

With the previous research questions and hypotheses in mind, it was deemed necessary to compare the performance of two groups of bilinguals (heritage speakers and second language learners) to examine of how age, proficiency and language activation may have affected their acquisition of obligatory and variable mood selection. In order to establish a baseline for the data obtained by these participants, an additional group of Spanish-dominant controls was recruited for the study. Out of the 162 participants interviewed in this dissertation, 137 belonged to the experimental group, formed by 69 heritage speakers of Spanish (15 males and 54 females; mean age: 22; $SD=2.6$), and 68 Spanish L2 learners (13 males and 55 females; mean age: 23; $SD=4.9$). The control group included 25 Spanish-dominant speakers (4 males, 21 females; mean age: 26;8; $SD=4.8$) who were further subdivided in two groups: those who had been living in the US for less than 10 years ($N=15$; mean length of residence: 5 years, 4 months; $SD= 3.08$), and a second group of people who had resided in the country for 10 years or more ($N=10$; mean length of residence: 14 years, 3 months; $SD= 4.7$). Participants were recruited from five different sites located in the northeast of the United States, and they were compensated

for their participation. In what follows, I will describe each of the groups in detail, including information about their sociolinguistic background, experience with and literacy in Spanish and level of proficiency in this language.

4.3.1. Demographic information

All participants were asked to complete a language background questionnaire (see Appendix 2) partially adapted from the Adult Multilingual Questionnaire (Blume, Courtney, Urzúa, Yang & Lust, 2010), Unsworth's (2012) Utrecht Bilingual Language Exposure Calculator (UBiLEC) and Marian, Blumenfeld & Kaushanskaya's (2007) Language Experience and Proficiency Questionnaire (LEAP-Q). This instrument provided more information about participants' linguistic histories, including –but not limited to- their parents' L1, linguistic preferences in different environments (at home and at work, with family and friends), self-reported proficiency and dominance in comprehension and production as well as information about their age of onset of bilingualism and level of education in Spanish. For the sake of brevity, this section only includes a brief summary of the most relevant information obtained from the language questionnaire. For a complete report of participants' demographics, please refer to the tables provided in Appendices 4 (heritage speakers), 5 (L2 learners) and 6 (Spanish-dominant controls).

Participants from the heritage speaker group ($N=69$) were either born in the United States ($N=53$), or had moved to the country before age 6;0 ($N=17$, mean age: 5;3, $SD=2.8$). Given the importance of age in bilingual morphological acquisition (see Unsworth et al., 2012 for a detailed review), HS were also classified according to their age of onset of bilingualism following Blom & Unsworth's criteria (2010: 237). While

58% of the sample had been exposed to Spanish and English almost simultaneously (birth-3 years old, mean age: 1;0, $SD=1.3$), 42% had done so sequentially (after 3 years old, mean age: 5;3, $SD=1.6$). The origin and configuration of their families reflected the wide variety of the Hispanic population residing in the area of study: 19% of the participants' parents emigrated from Ecuador, 10% from Colombia, followed close by Mexico (8%) and the Dominican Republic (7%). The remaining families (with percentages ranging from 5.7%-1.4%) were from Puerto Rico, Peru, El Salvador, Uruguay, Cuba, Spain, Chile and Guatemala. Interestingly, 30% of the sample was comprised of families with "mixed ethnicity"³², which have been reported to feature a certain degree of dialectal leveling, very characteristic of urban populations in the US with a high percentage of Hispanic groups.

The information obtained on participants' preferences of language use indicated that the chosen sample of HS clearly favored the use of English over Spanish in their everyday life, as seen in Table 9 below:

Table 9.

HS' reported language preference (%) as a function of environment and interlocutor.

Environment	Language preference		
	Only Spanish	Only English	Both
Parents	43%	22%	33%
Siblings	3%	72%	23%
Partner	8%	82%	9%
Work	6%	77%	17%
School	9%	76%	13%
Reading	9%	78%	12%
Watching TV	4%	63%	31%
In the community	6%	72%	21%
Average	11%	68%	20%

³² This term is used by Potowski (2009) and refers to families formed by members from different countries.

While it is worth noting that a considerable percentage of HS still prefers to speak to their parents only in Spanish (42%), the vast majority of them use English exclusively to communicate with their siblings (72%), their partners (77%), and also at work (72%), at school (74%) and in the community (70%). Despite their preference for English, there is considerable activation of both languages with family members and friends, as illustrated in Table 9 (under the column “both”) and also by the high percentage of word and phrase switches reported in these environments (82%, 55% and 62% respectively)³³. Their preference for the majority language is likely to have increased during their schooling years: approximately, a third of the sample (29%) had never been enrolled in a Spanish class (i.e. they only received instruction in English). The rest of the participants had either taken language classes since elementary school (38%), high school (19%) or had just started formal instruction in Spanish during college (14%).

In contrast with the HS interviewed in this study, all L2 learners had been born in the US to a majority of monolingual English parents. Given the cultural, linguistic and ethnic diversity of the two states where the data was collected³⁴, there were a 29% (N=23) of families with one or more members who spoke a language other than English. Despite these high numbers, only 13 out of 23 samples belonged to L2 learners who had actively been exposed to the family’s heritage language since childhood. As a result, it was decided that data from participants who were also heritage speakers of languages that instantiated subjunctive mood morphology would be discarded from the final analysis.

³³ All participants were asked to report whether they normally code-switched (Spanish↔English) with their parents, siblings, partner, friends, and in the community and whether it was at a word or at the phrase level (or both).

³⁴ According to the latest data provided by the US Census Bureau (2013), the percentage of population who speaks a language other than English in New Jersey and Pennsylvania oscillates between 21.5% and 30%.

This criterion excluded a total of 10 samples, reducing the number of interviews from 78 to 68³⁵. Unlike the HS group, none of the L2 learners had been exposed to Spanish before age 7;0 (mean age: 12;3, $SD= 3.3$), and as illustrated by the figure below (Figure 6), all of them had received formal instruction in Spanish, generally starting during middle school (40%):

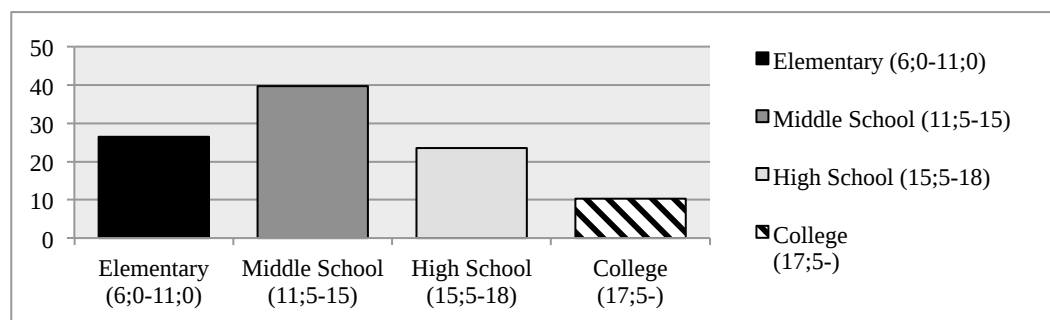


Figure 6. Distribution (%) of L2ers as a function of first formal exposure to Spanish.

When L2 learners were asked about their preferences in language use, only a small percentage of participants reported to use Spanish exclusively in in their everyday lives (2%), as summarized in the following table (Table 10):

Table 10.

L2's reported language preference (%) as a function of environment and interlocutor.

Environment	Language preference		
	Only Spanish	Only English	Both
Parents	0%	100%	0%
Siblings	0%	100%	0%
Partner	9%	83%	9%
Work	2%	78%	19%
School	5%	69%	23%
Reading	0%	83%	14%
Watching TV	3%	83%	9%
In the community	0%	89%	8%
Average	2%	88%	10%

³⁵ Although there were 13 participants who were bilingual in English and another language, only 10 of them spoke languages with subjunctive mood morphology. These heritage languages were: Farsi, Gujarati, Hindi, Marati, Polish, Portuguese and Urdu.

As expected, none of the second language learners used Spanish with their parents or siblings. However, almost a 20% of the L2ers reported to use either Spanish or Spanish and English with their partners, in their interactions at work (21%) and at school (28%). Despite these initial reports, the number of L2 learners who productively switched between languages (21.5%) was considerably low when compared to the results obtained with HS (45%), confirming a difference in Spanish exposure and use between the two experimental groups.

Following Pascual y Cabo & Rothman (2012), Hopp & Schmid (2013) and Schmid & Hopp (2014), I decided that the most appropriate control group for this study should be one formed by adult Spanish-English bilinguals dominant in Spanish. As indicated by these researchers, the comparison between HS and L2 learners and a monolingual baseline might not be able to capture the true nature of their linguistic system, particularly when analyzing bilinguals at high levels of proficiency. Furthermore, “the variability found in the first generation immigrant control data seems to be, at least partially, responsible for some HS linguistic outcomes” (Pascual y Cabo & Rothman, 2012: 452), and in the majority of the cases, it is the only input received by the second language learners while they are being schooled in the US.

This study included two types of Spanish-dominant controls with the objective of maximizing the comparability with previous studies that had only used monolingual speakers as their baseline. The first group was formed by participants who had been living in the US for less than 10 years ($N=15$; mean length of residence: 5 years, 4 months; $SD=3.08$), and whose language competence was hypothesized to be highly comparable to that of Spanish monolinguals'. The second group included Spanish

dominant bilinguals who had resided in the US for 10 years or more ($N=10$; mean length of residence: 14 years, 3 months; $SD= 4.7$), and who may be undergoing L1 attrition as a result of decreased language use (as seen in Schmid, 2011). The incorporation of two different controls intended to facilitate a more accurate comparison between groups, taking into account the potential effects of extended language contact in their grammar.

In order to neutralize any potential dialectal differences across groups, Spanish controls were selected based on the regional and linguistic background of the HS' families. As a result, a 20% of the sample originated from the Dominican Republic and Mexico, a 16% from Colombia, 12% from Peru, and the remaining participants had emigrated from Ecuador, Cuba, Uruguay, Argentina, Spain, Puerto Rico and Nicaragua (with percentages ranging from 8%-4%). As expected, their linguistic preferences were very different from the ones observed in HS and L2 learners. Table 11 documents the patterns of language use in the two control groups: group 1 (recent immigrants) and group 2 (potential attriters):

Table 11.
SDCs language preference (%) as a function of environment and interlocutor.

Environment	Language preference					
	Only Spanish		Only English		Both	
	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2
Parents	100%	89%	0%	0%	0%	11%
Siblings	75%	44%	0%	22%	25%	33%
Partner	44%	22%	31%	56%	25%	22%
Work	38%	11%	56%	56%	6%	33%
School	31%	11%	13%	11%	56%	78%
Reading	47%	33%	7%	22%	47%	44%
Watching TV	40%	22%	27%	44%	33%	33%
In the community	31%	11%	25%	67%	44%	22%
Average	51%	30%	20%	35%	30%	35%

Even though both groups prefer to use Spanish significantly more than HS and L2 learners, recent immigrants favored this language in a wider variety of situations (51% vs. 30% in long-term immigrants), especially with their relatives (parents: 100% and siblings: 75%) and when interacting with their partners (44%). In the case of the second group, the percentages in these categories were much lower (89%, 44% and 22%), reflecting changes in their linguistic and cultural backgrounds (Schmid, 2011). The majority of long-term immigrants had siblings and/or offspring who had been born in the US; consequently, the presence of English in their everyday lives, either as their only language of communication (35%) or in combination with Spanish (35%) was stronger than the one reported in recent immigrants (English-only: 20%; Both languages: 30%). These two groups also differed in their language mixing patterns: long-term immigrants are likely to code-switch with their friends, family and neighboring community more than recent newcomers (62% vs. 45%). Although these differences were calculated based on self-reports, it is important to take them into account when considering the effects of contact-induced changes in HS' performance (and to a lesser degree in L2ers), as they might have already been present in the Spanish of long-term immigrants. In the following section, I will explore this possibility by providing a detailed analysis of participants' proficiency in Spanish.

4.3.2. Language proficiency

Spanish language proficiency was evaluated by implementing two different types of assessment: a standardized Spanish language test targeting participants' grammar and lexical knowledge, and a series of self-ratings focused on their oral and written skills. The first instrument was an adapted version of the *Diploma de Español como Lengua*

Extranjera (DELE), widely used in generative language acquisition studies to assess participants' lexical knowledge and mastery of nominal and verbal inflection (Appendix 3). This version was divided in two sections. The first one consisted of a multiple-choice test assessing the pragmatic and semantic adequacy of 30 vocabulary items. The second one was a cloze test where participants had to choose the option that best fit the 20 blank spaces that appeared in a written text. Figure 7 gives a general overview of the average scores obtained by both experimental groups (available in Appendices 7-9):

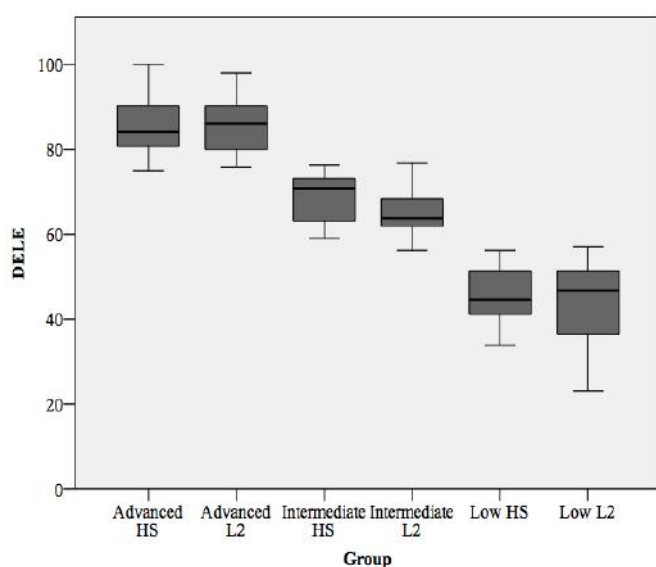


Figure 7. Average DELE scores based on experimental group and proficiency level

As illustrated by Figure 7, both experimental groups were classified according to their DELE scores³⁶. As a result, 45% of the HS fell into the advanced range ($N=31$; mean score: 85%; $SD=6.6$), 33% into the intermediate range ($N=23$; mean score: 68%; $SD=5.4$), and the remaining 22% into the low range ($N=15$, mean score: 47%; $SD=6.7$).

The results obtained by the L2 learners were not found to be significantly different from

³⁶ As it is customary, participants were considered advanced if they scored between 100-80% in the DELE, intermediate if they obtained between 79-60% and low if they scored between 59-0%.

those observed in the HS groups³⁷. A 40% of the L2 learners were classified as advanced ($N=27$; mean score: 86%; $SD=6.6$), 34% as intermediate ($N=23$; mean score: 65%; $SD=5.9$) and 26% as low ($N=18$; mean score: 44%; $SD=9.9$). In the case of Spanish-dominant controls, all participants -recent immigrants ($N=15$; mean score: 90%; $SD=7.6$) and long-term residents ($N=10$; mean score: 89%; $SD=6.1$)- reached comparable scores that placed them within the advanced range. No statistical differences were found when these scores were compared to each other and to those obtained by the advanced HS and L2 groups.

In addition to this test, the language background questionnaire completed by all participants included a series of 4 questions inquiring after their Spanish and English comprehension and production skills in a wide variety of situations (see Appendix 2 for more details). The table below (Table 12) presents a summary of the average self-reported scores across groups. For a detailed description of all results, check Appendices 4 (HS), 5 (L2ers) and 6 (Controls):

Table 12.

Overall self-reported scores across groups as a function of language and skill.

Group	Spanish					English				
	Production		Comprehension		Avg (%)	Production		Comprehension		Avg (%)
	Oral	Written	Oral	Written		Oral	Written	Oral	Written	
HS	72%	69%	87%	82%	77.5	99%	98%	99%	99%	98.8
L2ers	67%	76%	63%	69%	68.8	97%	100%	100%	100%	99.3
Controls	99%	95%	98%	98%	97.5	85%	84%	91%	88%	87

Table 12 shows that Spanish-dominant controls gave themselves higher scores for production and comprehension in Spanish ($M=97.5\%$) than in English ($M=87\%$), differing from HS and L2ers, who indicated feeling more comfortable with the latter (at

³⁷ A series of paired-sampled *t*-tests confirmed that there were no statistical differences between the advanced, intermediate or low HS and L2 groups.

98.8% and 99.3% respectively). In line with previous studies documenting comprehension/production asymmetries in HS (see Montrul, 2012 for a thorough review), this group reported a higher degree of Spanish proficiency when understanding written and oral communication ($M = 84.5\%$ vs. 66% in L2 learners). Second language learners, on the other hand, appeared to be more confident about their productive abilities in Spanish, especially in writing (76%).

Pearson's correlations were computed to explore the role of frequency of activation in Spanish in HS and L2ers' overall performance (as discussed in §3.3.2). In the case of HS, significant negative correlations were found for percentage of English use and DELE scores ($r = -.3378$, $N = 69$, $p < .01$), suggesting that an increased preference for English negatively affects Spanish proficiency scores in this population. The correlations computed in the case of L2 learners did not yield any significant effects between their language use and proficiency scores ($r = -.1978$, $N = 68$, $p = .10$). These results seem to indicate that HS are more vulnerable to language activation effects than L2 learners. Therefore, it is possible that HS' increased activation of English -and subsequent inhibition of Spanish- might have negatively affected mood selection, in line with Paradis (1985) and Putnam & Sánchez' (2013) predictions. These issues will be further explored in the next chapter (Chapter 5), dedicated to the analysis and discussion of results. In the following section I will provide a detailed summary of the experimental materials used in this study as well as the procedures followed during data collection.

4.4. Materials and procedure

Data collection took place during the Spring semester of 2015, and it involved the participation of five different sites located in the Northeast region of the US. The

majority of participants were recruited from Spanish language classes ($N=104$). The remaining subjects were approached through personal contacts of the researcher ($N=28$) or using the psychology subject pool available in one of the participating institutions ($N=30$).

Prior to the beginning of the session, all participants were asked to read and sign a previously approved IRB consent form (see Appendix 1), and to fill out a language background questionnaire (see Appendix 2). The experimental part of the study consisted on the completion of three untimed tasks using an animated Powerpoint presentation displayed on an iPad 2 or a MacBook Air laptop. The session, which lasted approximately 45-60 minutes, concluded with the administration of the DELE proficiency test. At the end of the first interview, participants were invited to take part in a second session with the aim of completing a brief elicited production task (7-10 minutes long) involving the narration of a children's story. A 42% of the original HS group ($N=29$; 6 advanced, 12 intermediate and 11 low) and a 36% of the controls ($N=9$; 4 long term residents and 5 recent immigrants) agreed to complete this additional task. Unfortunately, the low numbers obtained in the L2 learner group (7% of the total; $N=5$) were not sufficient to include them in the final analysis.

To ensure the validity of the experimental tasks before data collection, all instruments were piloted with 3 Spanish-dominant controls, 4 L2 learners (2 advanced, 1 intermediate, 1 low) and 2 HS (2 intermediate). Preliminary results confirmed the adequacy of the tasks and revealed interesting effects between groups. In the case of mood alternations (present in reported assertions and directives headed by communication verbs) both experimental groups obtained significantly different scores

from the Spanish-dominant controls. Although HS and L2 learners did not seem to find the interpretation of co-reference in desideratives particularly challenging, the association between the presence of subjunctive and disjoint reference in desideratives was unexpectedly troublesome across experimental groups. This tendency was even more visible in production, where obligatory mood selection appeared to elicit more optionality than contexts allowing for mood variation. These initial observations motivated some of the hypotheses summarized in this chapter, such as the increased likelihood of CLI in contexts where there is a certain degree of overlap between English and Spanish (i.e. reported directives), higher accuracy in mood selection in non-obligatory contexts, and the potential for comprehension/production asymmetries across groups.

The following sections will describe each of the experimental tasks individually, including examples of all the conditions examined in each of the target structures. Tasks focused on bilinguals' elicited and spontaneous production as well as their offline acceptability judgments were designed to provide information about the potential effects of interface vulnerability in mood selection (RQ#1). In these tasks, the accuracy of subjunctive use in obligatory mood selection was compared with that of indicative/subjunctive use in contexts that allowed for mood alternations with the objective of identifying potential instances of morphological optionality.

Interpretation and production asymmetries in bilinguals' performance (RQ#2), as well as their mastery of obviation effects in Spanish desideratives in these two areas of language (RQ#3) were explored by comparing the results obtained in the Truth-Value Judgment Task and the two production exercises. The comparison of bilinguals with different ages of onset and varying levels of language proficiency and use was

hypothesized to provide the evidence needed to analyze the effects of these three extralinguistic variables in bilinguals' mastery of obligatory and variable mood selection (RQ#4).

4.4.1. Task 1: Acceptability Judgment Task (AJT)

This experimental task consisted of an untimed Acceptability Judgment Task (AJT) designed with the objective of documenting participants' grammatical preferences regarding the distribution of mood in variable contexts (62), and in obligatory ones (63)³⁸ (consult Appendix 10 for a sample of the target tokens and conditions).

- (62) María necesita ayuda en la cocina, por eso
 María needs help in the kitchen, for that
 a. les dice a sus hijas que trabajen con ella
 CL[3pDT] says to her daughters that work[3pplSUBJ] with her
 b. les dice a sus hijas que #trabajan con ella.
 CL[3pDT] says to her daughters that #work[3pplIND] with her
 “María needs help in the kitchen, that’s why she tells her daughters to work”

- (63) No entiendo a tu hija.
 Not understand to your daughter.
 a. Ahora quiere que vaya a su fiesta
 Now wants that go[3psgSUBJ] to her party
 b. Ahora quiere que *va a su fiesta
 Now wants that *go[3psgIND] to her party
 “I don’t understand your daughter. Now she wants me to go to her party”.

Both (62b) and (63b) represent examples of ungrammatical/unacceptable sentences. In the case of the former, the use of indicative is sanctioned in assertive contexts, but it is not pragmatically adequate in a directive situation such as the one exemplified in (62). In (63b), the use of indicative is also ungrammatical, but unlike (62), these types of constructions never allow for mood alternations. As observed in previous sections, the

³⁸ Although the following examples include both types of conditions (grammatical/acceptable and ungrammatical/unacceptable), participants were only exposed to one of them.

only grammatical alternative for (63) would involve the use of an infinitival form in a co-referential context, such as the one illustrated in (64):

- (64) No entiendo a tu hija. Ahora quiere ir a su fiesta
 Not understand to your daughter. Now wants[3sg] to go to her party
 “I don’t understand your daughter. Now she wants to go to her party”.

Of the 44 test items presented, 24 were target sentences focused on the two structures hereby examined ($k=6$ per condition), and the rest were fillers to distract participants from the main objective of the task. All subjects were asked to read the sentences provided and decide whether they sounded *bien* (“good”) or *raro* (“odd”). If they chose the latter, they were instructed to write a correction. As in all the other tasks, participants were only shown one condition at the same time:

Table 13.*Target conditions in the Acceptability Judgment Task.*

Matrix verb	Condition	Context
<i>decir</i> ("to say")	Indicative Grammatical	David Beckham y su hijo son muy extrovertidos, por eso Victoria les dice que <u>saludan</u> demasiado a la gente.
	Subjunctive Grammatical	David Beckham y su hijo son muy tímidos, por eso Victoria les dice que <u>saluden</u> más a la gente.
	Indicative ungrammatical	David Beckham y su hijo son muy tímidos, por eso Victoria les dice que <u>saludan</u> más a la gente.
	Subjunctive ungrammatical	David Beckham y su hijo son muy extrovertidos, por eso Victoria les dice que <u>saluden</u> demasiado a la gente.
<i>querer</i> ³⁹ ("want")	Subjunctive Grammatical	La abuelita se siente sola y quiere que mis padres <u>hablen</u> más con ella
	Infinitive Grammatical	La abuelita se siente sola y quiere <u>hablar</u> más con mis padres
	Indicative ungrammatical	La abuelita se siente sola y quiere que mis padres <u>hablan</u> más con ella
	Infinitive ungrammatical ⁴⁰	La abuelita se siente sola y quiere mis padres <u>hablar</u> más con ella

4.4.2. Task 2: Truth-value Judgment Task (TVJT)

As argued in the previous section, this task was designed to obtain information about participants' interpretation of indicative/subjunctive morphology in contexts that exhibit variable mood selection, as well as their knowledge of the

³⁹ In order to preserve the Latin square design of the task, desideratives sentences were also evaluated according to their grammatical and ungrammatical use of infinitive. While the first condition was used as a control, the second one provided more information about potential cases of CLI.

⁴⁰ It was decided not to include the complementizer *que* ("that") in this ungrammatical condition in order to examine whether participants' would adopt an English syntax (as discussed in § 2.2.2.2 and reported in Massery & Fuentes, 2012).

syntactic/morphological constraints governing obviation effects in desideratives (Appendix 11). The task contained a total of 44 tokens divided as follows: of the 24 target contexts, half were dedicated to indicative/subjunctive contrasts in structures headed by the communication verb *decir* (“to say”), and another 12 targeted obviation effects in desideratives. The remaining contexts ($N=20$) acted as fillers, and analyzed genericity/specificity effects in different types of emotive-factive predicates.

In this task, participants followed a Powerpoint presentation featuring situations where several characters interacted with each other. After reading the dialogues provided, they were instructed to press the space bar in their keyboards and decide if Kermit’s summary of the conversation accurately described the situation they had just witnessed. The following table (Table 14) illustrates the four conditions tested in the analysis of mood selection in variable contexts ($N=12$). All experimental items were randomized and counterbalanced, and participants only saw one instance of each condition on the screen⁴¹:

⁴¹ As indicated in Chapter 2, the use of indicative in structures headed by verbs of communication has the peculiarity of being able to generate co-reference between the subject of the matrix and the embedded clauses (see the example below).

(i) Juana_j le dice a su amiga_j que pro_{j/k/l} se levanta temprano
 Juana_j CL tells to her friend_j that pro_{j/k/l} wakes up[3sgIND] early.
 “Juana tells her friend that she (Juana/her friend/someone else) wakes up early

In order to minimize the complexity of these constructions, embedded verbs only appeared in reference to a third person plural (as seen in Table 13).

Table 14.*TVJT Main conditions (reported assertions and commands)*

Condition	Context	Target sentence
Reported assertion (Indicative true; $k=3$)	<u>Alumnos</u> : Mire cuánto estudiamos profesor. <u>Profesor</u> : Están muy responsables. ¡Qué alegría verlos estudiar tanto para el examen!	<i>En ese momento, el profesor les dice a los alumnos que <u>estudian</u> mucho</i>
Indirect command (Indicative false, $k=3$)	<u>Alumnos</u> : Profesor, ¡ya llegan las vacaciones! <u>Profesor</u> : Muy bien, pero ahora tienen que estudiar mucho para el examen	<i>En ese momento, el profesor les dice a los alumnos que <u>estudian</u> mucho</i>
Indirect command (Subjunctive true; $k=3$)	<u>Alumnos</u> : Profesor, ¡ya llegan las vacaciones! <u>Profesor</u> : Muy bien, pero ahora tienen que estudiar mucho para el examen	<i>En ese momento, el profesor les dice a los alumnos que <u>estudien</u> mucho</i>
Reported assertion (Subjunctive false; $k=3$)	<u>Alumnos</u> : Mire cuánto estudiamos profesor. <u>Profesor</u> : Están muy responsables. ¡Qué alegría verlos estudiar tanto para el examen!	<i>En ese momento, el profesor les dice a los alumnos que <u>estudien</u> mucho</i>

The type of constructions provided in Table 14 -reproduced below in (65)- allowed for “double mood selection” (Quer, 1997) depending on the meaning of the predicate:

- (65) a. El profesor les dice a los alumnos que estudien mucho
 The teacher CL says[3sg] to the students that study[3plSUBJ] a lot
 “The teacher tells the students to study a lot”
 b. El profesor les dice a los alumnos que estudian mucho
 The teacher CL says[3sg] to the students that study[3plIND] a lot
 “The teacher tells the students that they study a lot”

While a sentence like (65a) could only be appropriate in the context of a reported command (i.e. condition 3), the example in (65b) could only fit in a scenario where the teacher had affirmed that the students were studying a lot, such as the context presented in condition 1. Previous work on variable mood selection reports that morphological distinctions based on semantic/pragmatic grounds are particularly troublesome for HS and L2 learners (Montrul, 2007, 2009; Pascual y Cabo et al., 2012, and Rothman et al.,

submitted). However, unlike the present study, none of the aforementioned studies focused their analysis on the interpretation of modal alternations within deontic predicates.

This task also tested the interpretation of obviation effects in connection to the use of subjunctive in desideratives ($N= 12$). Although this property may appear tangential to mood selection, the particular configuration of these constructions in English could potentially affect the way Spanish/English bilinguals handle desideratives with disjoint referents (i.e. expressed by the use of subjunctive), given that both interpretations -co-referential and disjoint in reference- are generally expressed by means of non-finite clauses in English:

- (66) a. Alyssa_i wants (pro)_{i/*j} to walk under the rain
 b. Alyssa_i wants you _{*i/j} to walk under the rain

Following the same procedure described at the beginning of the section, participants were exposed to the conditions illustrated in Table 15:

Table 15
TVJT Main conditions (obviation effects in desideratives)

Condition	Context	Target sentence
Condition 1: Disjoint reading, (Subjunctive true; $k=3$)	<u>Dora</u> : Yo estoy cansada y vuelvo a casa, pero tú quédate a jugar un poco más. <u>Boots</u> : ¡De acuerdo! Gracias Dora.	<i>Dora quiere que siga jugando</i>
Condition 2: Co-referential, (Subjunctive false; $k=3$)	<u>Dora</u> : Tú vuelve a casa porque estás cansado, pero yo me quedo a jugar un poco más. <u>Boots</u> : ¡De acuerdo! Gracias Dora.	<i>Dora quiere que siga jugando</i>
Condition 3: Co-referential, (Infinitive true; $k=3$)	<u>Dora</u> : Tú vuelve a casa porque estás cansado, pero yo me quedo a jugar un poco más. <u>Boots</u> : ¡De acuerdo! Gracias Dora.	<i>Dora quiere seguir jugando</i>
Condition 4: Co-referential, (Infinitive false; ($k=3$))	<u>Dora</u> : Yo estoy cansada y vuelvo a casa, pero tú quédate a jugar un poco más. <u>Boots</u> : ¡De acuerdo! Gracias Dora.	<i>Dora quiere seguir jugando</i>

As observed in Table 15, the use of subjunctive in desiderative predicates is only sanctioned when the subject of the matrix clause is not co-referential with that of the subordinate clause, as in the sentence *Dora quiere que siga jugando* (“Dora wants (pro_[=Boots]) to keep playing”). Co-referentiality, on the other hand, is expressed by an infinitival form, as in the example *Dora quiere seguir jugando* (“Dora wants to keep playing”).

In addition to the methodological considerations described thus far, it was determined that all subordinate verbs across tasks would be controlled for relative frequency⁴² (including only high frequency items), and for form regularity (all

⁴² Relative frequency is defined as the frequency of occurrence of a particular word in parts per million as reported by Guasch, Boada, Ferré, & Sánchez-Casas’ (2013) NIM database (based on Sebastián-Gallés, Martí, Carreiras & Cuetos’ (2000) *Léxico Informatizado del Español* (LEXESP).

instruments presented an equal amount of regular and irregular verbal forms)⁴³. This decision was based on Gudmestad's (2012, 2014) observations that high frequency of use and regularity of form have been shown to facilitate accurate mood selection in native and non-native populations.

4.4.3. Task 3: Elicited Production Task

As it has been discussed in previous sections, early and late bilinguals tend to obtain higher scores in interpretation than in production. In an attempt to obtain more information about this potential asymmetry (research question #2), participants were also asked to complete a production task focused on the elicitation of indicative/subjunctive morphology in constructions headed by verbs of communication, and infinitive/subjunctive forms in desideratives (Appendix 12).

This task included a total of 40 items (20 target scenarios and 20 fillers) that appeared on an animated Powerpoint presentation. Each scenario involved a two-step process illustrated in Figure 8. First, participants were asked to read a short context accompanied by the picture of an animated character, and to press the space bar when they had finished doing so. Then, they were prompted to answer the question that appeared on the screen by completing the sentence provided using the verb between the brackets. It is important to note that all participants were encouraged to use as many words as they considered necessary (as long as one of them was the target verb provided).

⁴³ The decision of using both regular and irregular forms across tasks is based on the conflicting results obtained regarding the effects of form regularity on mood selection (Geeslin & Gudmestad, 2008; Gudmestad, 2012, 2014). Despite the fact that all studies agree that form (ir)regularity is a defining factor in subjunctive use, task type and proficiency level modulate the extent and nature of the interaction (see Gudmestad, 2012 for a more detailed review).

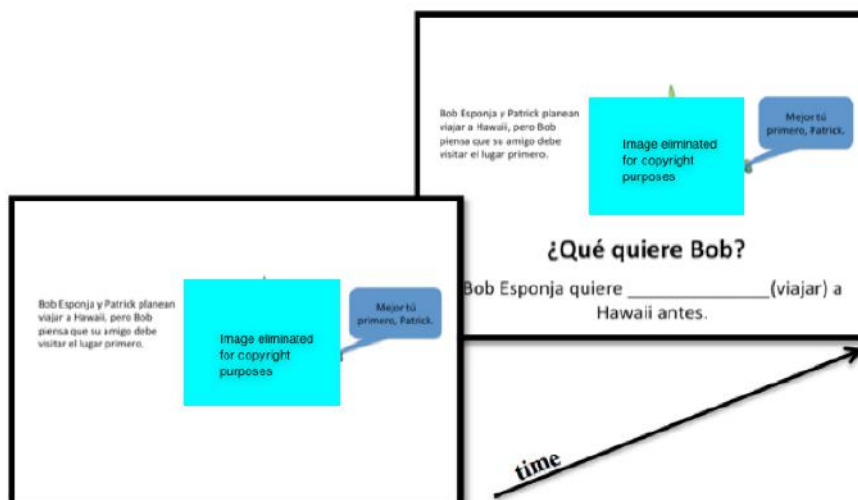


Figure 8. Sample of a target context in the production task.

As shown in Figure 8, the task was designed to elicit one specific reading (either assertive/directive or co-referential/disjoint in reference). In this case, for example, participants were prompted to use the verb *viajar* (“to work”) in the context of a disjoint reading, where a subjunctive form (*viaje*) should be expected. One of the advantages of using a sentence completion setting to test production is that it offered a certain degree of control over participants’ responses. In the case of desideratives, for example, it was decided not to include the complementizer *que* (“that”) in either one of the prompted conditions (co-referential/disjoint reading) in order to allow for a wider -and more informative- range of responses. The target answer of the example in Figure 8, for example, would be: “Bob Esponja quiere que (Patrick) viaje [subjunctive] a Hawaii antes”. The lack of complementizer in the prompt provided allowed for the detection of interesting divergences such as “Bob Esponja quiere (*viajar/*Patrick a viajar/*que Patrick viaja) in the context of a disjoint reading.

Based on the results of the pilot, it was expected that reported directives headed by a communication verb would elicit two types of responses: either subjunctive or a modal verb such as *tener que* + *infinitive* (“have to”), *deber* + *infinitive* (“must”) or

necesitar + *infinitive* (“need to”), which are all grammatical in Spanish. This was not the case of assertions, where the only grammatical option possible was the use of indicative.

Table 16 includes examples of all the conditions tested in this task:

Table 16.

Target conditions in the Elicited Production task.

Matrix verb	Condition	Context	Target answer
<i>decir</i> (“to say”)	Directive reading (subjunctive/ modal verb)	En la tienda de Pedro hay mucho ruido y no puede oír lo que quieren los clientes. <u>Pedro</u> : ¡Más alto, por favor!	Question: ¿Qué dice el vendedor? Answer: El vendedor les dice a los clientes que <u>hablen/tienen que hablar</u> bien alto.
	Assertive reading (indicative)	En la tienda de Pedro hay mucho ruido, pero los clientes se han acostumbrado y han encontrado una solución. <u>Pedro</u> : ¡Qué voz más fuerte! ¡Estupendo!	Question: ¿Qué dice el vendedor? Answer: El vendedor les dice a los clientes que <u>hablan</u> bien alto.
<i>querer</i> (“want”)	Co-referential reading (infinitive)	Bob Esponja y Patrick planean viajar a Hawaii, pero Bob piensa que debe visitar el lugar antes que su amigo. Bob: ¡Yo primero!	Question: ¿Qué quiere Bob Esponja? Answer: Bob Esponja quiere <u>viajar</u> a Hawaii antes.
	Disjoint reference reading (subjunctive)	Bob Esponja y Patrick planean viajar a Hawaii, pero Bob piensa que su amigo debe visitar el lugar primero. Bob: ¡Mejor tú primero, Patrick!	Question: ¿Qué quiere Bob Esponja? Answer: Bob Esponja quiere <u>que (Patrick) viaje</u> a Hawaii antes.

The results obtained in this task were initially coded according to the following variables: type of predicate/reference (assertive, directive, co-referential, disjoint in reference) and form of the embedded verb (indicative, subjunctive, infinitive). The

flexibility of the task, however, revealed multiple divergences across constructions that were further classified into more specific categories (see Chapter 5 for a detailed analysis).

4.4.4. Task 4: *Spontaneous Elicited Production*

In addition to the experimental tasks summarized thus far, participants were also invited to take part in a second session to further examine their control of mood selection in production. As reported at the beginning of this section, only a 42% of the original HS group ($N=29$; 6 advanced, 12 intermediate and 11 low) and a 36% of the controls ($N=9$; 4 long term residents and 5 recent immigrants) agreed to participate in this task⁴⁴. The objective of this task was to inform about the spontaneous use of desideratives and directives in a setting that went beyond the sentence-level. This type of analysis provided a deeper understanding of the discourse factors behind mood selection in highly contextualized environments, and in some cases, it informed about competing linguistic alternatives that had not been previously considered.

The task involved the use of the picture book *Frog goes to dinner* (Mayer, 1975), which depicts the tale of a boy whose frog wreaks havoc after following him and his family to a restaurant. The book contained a total of 30 images without text, and it was specifically chosen for this task because of its potential to elicit reported dialogue, including assertions, commands and wishes. To start, participants were given two minutes to look at the story and get to know the characters and the events involved. Then, they were asked to use their own words to narrate the story in Spanish, avoiding any instances of code-switching and interactions with the investigator, who was recording the

⁴⁴ Since only 5 L2 learners (7% of the total sample) ended up completing this task, it was decided that their results would not be included in the final analysis.

session. Once they finished the narration (which typically lasted from 3-5 minutes), they were given a one-minute break after which they were instructed to re-tell the same story in English. Having access to the same narrative in two languages was particularly relevant for the present study, as it allowed for the possibility of establishing crosslinguistic comparisons based on the same situational context. Instances of reported assertions, indirect commands and desideratives were identified in the narratives and classified based on the type of structure and grammaticality.

4.5. Summary of the chapter

In the first sections of this chapter, I have reviewed the research questions and hypotheses driving this investigation, taking into account previous work on mood selection as well as the preliminary results obtained in a pilot study deployed before data collection. Subsequent sections have provided a detailed summary of the demographic and sociolinguistic profiles of the 162 participants interviewed in this study, who were classified into the following groups based on their Spanish language proficiency:

Table 17.

Summary of the experimental groups as a function of proficiency

Groups	Proficiency (N - %)			Total (N)
	Advanced	Intermediate	Low	
Spanish-dominant controls	25 (100%)	-	-	25
Heritage Speakers	31 (45%)	23 (33%)	15 (22%)	69
L2 learners	27(40%)	23 (34%)	18 (26%)	68

This chapter also provided a description of the procedures followed during data collection, focused on the analysis of Spanish mood selection in obligatory and variable contexts. The methodology employed in this dissertation was specifically designed to tackle the research questions and hypotheses previously mentioned in this chapter (§ 4.2).

On the one hand, the comparison between lexically selected and variable mood selection across tasks facilitated the analysis of the effects of interface vulnerability in bilinguals' performance. The comparison of the results obtained in the Truth-Value Judgment task and the two types of elicited production used in this study, also allowed for the analysis of comprehension/production asymmetries as well as the acquisition of obviation effects in Spanish desideratives.

In addition to these methodological considerations, the present dissertation included two groups of bilinguals with different ages of onset, and varying degrees of proficiency and language activation. The incorporation of such a diverse group of individuals is expected to provide further information about the effects of these three extra-linguistic variables in bilinguals' mastery of obligatory and variable mood selection.

In the following chapter, I will proceed to analyze the results obtained in the four experimental tasks. Each section will present the descriptive results first, followed by the statistical analysis and a preliminary interpretation of the results. An analysis of how these findings relate to the research questions guiding this dissertation will be offered in Chapter 6.

CHAPTER 5: RESULTS AND ANALYSIS

5.1. Introduction

This chapter examines the results of the four experimental tasks (described in sections §4.4.1-4.4.4) completed by 3 participant groups: heritage speakers and L2 learners of Spanish, and a group of Spanish-dominant controls. As discussed in the previous chapter, the objective of these tasks was to examine early and late bilinguals' representation of mood through their mastery of Spanish obligatory and variable subjunctive selection in deontic predicates. By comparing HS to second language learners with different levels of Spanish proficiency and language experience in each of the experimental tasks, I intend to explore the extent to which age of onset of bilingualism, proficiency in the weaker/second language and language activation play a role in these groups' linguistic performance. Additionally, the contrast between constructions that exhibit different types of mood selection -lexically-triggered in the case of desideratives, and pragmatically-motivated in structures headed by a verb of communication- contributes to the debate about increased vulnerability to morphological erosion in the acquisition of external interface-conditioned properties (Hulk & Müller, 2000; Müller & Hulk, 2001; Sorace, 2011).

In addition to presenting a descriptive examination of the data, the general analysis involves the use of mixed ANOVAs with Bonferroni post-hoc tests across tasks. These measures allow for initial comparisons between groups, and provide information about significant main effects and intergroup interactions. Additional one and two-way ANOVAs and Pearson correlations are also run to analyze each experimental condition in more detail. These statistical analyses inform about the role of task type, proficiency,

language activation and age across groups and contexts, addressing the research questions discussed in the previous chapter.

In the following sections, I present a brief summary of the four experimental tasks used in this investigation, along with their corresponding descriptive and inferential statistics. Each segment includes two parts: one dedicated to the description and discussion of structures that allow for mood alternations (i.e. reported assertions and directives), and another focused on obligatory mood selection and obviation effects in desideratives. After analyzing the data sets obtained in each experimental condition, I provide an interim summary where I discuss the preliminary implications of the results in relation to the research questions examined in this dissertation.

5.2. Task 1: Acceptability Judgment Task (AJT)

This task consisted of an untimed Acceptability Judgment Task (AJT) designed to document participants' grammatical intuitions regarding two linguistic properties: 1) the distribution of indicative and subjunctive in reported assertions and directives introduced by a verb of communication; and 2) the obligatoriness of subjunctive in desiderative predicates. All groups were asked to read the sentences that appeared on the screen and decide whether they sounded ok or not. If they chose the latter, they were asked to rewrite the sentence making as many changes as they considered necessary. All participants were given the possibility of reading the sentences out loud while completing the task to facilitate the detection of any potential sources of ungrammaticality.

Although there have been a considerable number of studies interested in HS' and L2ers' judgments on mood selection (Iverson et al. 2008; Massery & Fuentes, 2012; Mikulski, 2006; Pascual y Cabo et al. 2012; Potowski et al. 2009; *inter alia*), none of

them have compared obligatory and variable mood selection within the same propositional modality⁴⁵. As I have argued in previous chapters, the acquisition of mood selection seems to be highly influenced by the degree of inference involved in the evaluation of the predicates. Consequently, the comparison of constructions belonging to epistemological and epistemic modalities (which entail the computation of complex notions such as presupposition, factuality and commitment to the truth-value of the proposition) with those subscribed to a deontic modality (connected to semantically ‘transparent’ notions, generally dependent on the completion of speech acts) is rather asymmetrical. The present task addressed the limitations observed in previous studies by comparing bilinguals’ mastery of obligatory and non-obligatory mood selection in deontic predicates.

Most of the investigations that have included early and late bilinguals in grammaticality judgment tasks report an advantage of L2 learners over HS when metalinguistic demands are prioritized (Correa, 2011; Mikulski & Elola, 2013; Montrul & Perpiñán, 2011; Potowski, Jegerski & Morgan-Short, 2009). The majority of the studies point to academic instruction in the target language (or lack thereof) as a driving factor behind these differences in performance. While L2 learners’ academic histories are “homogeneously delineated within a specific progression of courses that begins at zero and goes through a well-defined experience”(Correa, 2011), HS are likely to have received little to no instruction in the target language, minimizing their exposure to tasks that enhance metalinguistic knowledge. As a result, it is hypothesized that in this

⁴⁵ The majority of studies have examined bilinguals’ mastery of obligatory and variable mood selection comparing desideratives (deontic modality) with relative and adverbial clauses or expressions of advice and opinions (belonging to epistemic and epistemological modalities).

particular task second language learners are more likely to obtain higher levels of accuracy than heritage speakers due to the aforementioned considerations. Additional predictions for each of the conditions (variable and obligatory subjunctive selection) will be presented in the following subsections.

5.2.1. *Judging the acceptability of reported assertions and directives*

The acceptability judgment task (AJT) included 12 tokens that tested participants' preferences in the distribution of indicative and subjunctive morphology in constructions headed by the communication verb *decir* ("to say"). These items were equally distributed in 2 conditions, presenting participants with acceptable examples of reported directives (67a) or assertions (68a), or unacceptable instances of the two (67b and 68b). Although the sentences provided below feature both conditions, participants were only shown one (either a or b) at the same time:

(67) Las niñas han terminado la sopa demasiado rápido, por eso la abuela
 The girls have finished the soup too fast for that the grandma
 "The girls have finished eating too fast, that's why their grandma"

- a. les dice que coman lento
 CL says that eat[3plSUBJ] slow
 "tells (them) to eat slowly "
- b. les dice a las niñas que #comen lento
 CL says to the girls that eat[3plIND] slow
 "tells (them) that they eat slowly "

(68) Las niñas no han terminado la sopa, por eso la abuela
 The girls no have finished the soup for that the grandma
 "The girls haven't finished eating yet, that's why their grandma"

- a. les dice que comen lento
 CL says that eat[3plIND] slow
 "tells (them) that they eat slowly "
- b. les dice que #coman lento
 CL says that eat[3plSUBJ] slow
 "tells (them) to eat slowly"

In (67), for example, the context given in the first sentence (“The girls have finished their soup *too quickly*”) leads to the interpretation of the second one (“Their grandma tells them to eat *slowly*”) as a directive, since an assertive reading (“Their grandma tells them that they eat slowly”) would be pragmatically infelicitous. As it has been discussed throughout this dissertation, the type of directive interpretations that appear in indirect commands are conveyed by means of subjunctive mood (67a) and not by indicative (67b), hence the inadequacy of accepting the latter as a felicitous option. The opposite reading (assertive) is targeted in the case of (68), where the use of subjunctive would be considered infelicitous based on the context provided in the first sentence. The following table presents a summary of the overall scores obtained in this task:

Table 18.

Accuracy in reported assertions and directives as a function of condition and group

Groups		Context					
		Assertive			Directive		
		Ind. Accep.	Subj. Unacc.	Total	Subj. Accep.	Ind. Unacc.	Total
Controls	Recent immigrants	95.6%	73.3%	84.4%	100%	93.3%	96.7%
	Long-term immigrants	96.3%	74.1%	85.2%	100%	88.9%	94.4%
Heritage Speakers	Advanced	81.9%	60.6%	71.2%	96.2%	80%	88%
	Intermediate	83.3%	43.3%	63.3%	100%	40%	70%
	Low	100%	7.1%	53.6%	88.1%	4.8%	46.4%
L2 learners	Advanced	86.3%	74.5%	80.4%	98%	91.2%	94.6%
	Intermediate	97.6%	33.3%	65.5%	94%	32.1%	63%
	Low	97.2%	22.2%	59.7%	88.9%	8.3%	48.6%
Average		70.4%			75.2%		

A preliminary analysis of the data indicates that participants were generally more accurate in the directive condition (i.e. identification of felicitous uses of subjunctive and infelicitous instances of indicative), where they obtained an average score of 75.2%. The results of a three-way repeated measures ANOVA with a 2 (context) x 2 (acceptability) x

8 (group) factorial design confirmed these initial observations, revealing significant main effects for acceptability ($F(1,110)=283.464, p=.000$), group ($F(7,110)=19.876, p=.000$), and a three-way interaction between these two factors and context ($p=.004$).

The first effect indicated that ‘Acceptable’⁴⁶ contexts yielded higher rates of accuracy than ‘Unacceptable’ ones, a pattern that has been observed in similar tasks implemented in language acquisition research, such as grammaticality judgment tasks and magnitude estimation tasks (Birdsong, 1989). According to Birdsong, participants tend to accept all the sentences that are presented to them, regardless of their acceptability. The interaction between this factor and group in the present dissertation complements previous findings by showing that the tendency to accept all items (felicitous and infelicitous) depends on the proficiency of the participants, as illustrated by the figure below (Figure 9):

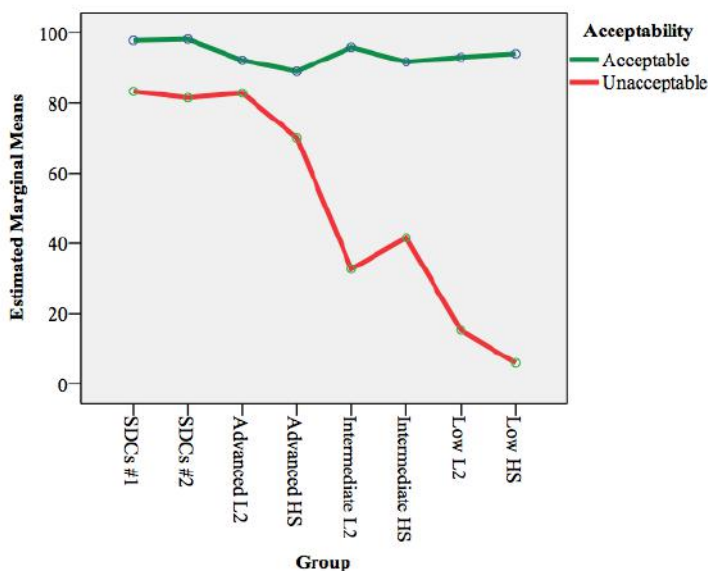


Figure 9. Mean accuracy in acceptable and unacceptable conditions.

⁴⁶ The terms ‘acceptable’ and ‘pragmatically felicitous’ (as well as their counterparts ‘unacceptable’ and ‘infelicitous’) will be used interchangeably when describing the results of this task.

As it can be observed in Figure 9, acceptability biases seemed to be more prominent in intermediate and low HS and L2 learners, who were seldom able to identify unacceptable uses of indicative/subjunctive mood morphology. These results indicate that the over-acceptance of infelicitous sentences is more likely to emerge in bilinguals with lower levels of proficiency, suggesting that their representation of mood morphology in contexts that allow for mood alternations does not entail the computation of different semantic/pragmatic interpretations (namely indirect commands and reported assertions).

A series of One-way ANOVAs were conducted in an attempt to further examine the three-way interaction between context, acceptability and group in this particular condition. As it had been previously observed in this section, all participants (SDCs, HS and L2 learners) obtained statistically comparable scores in the acceptable condition (reported assertions and directives), irrespective of their level of Spanish proficiency ($p > 0.5$). Differences between these three groups emerged in the unacceptable condition. In the case of unacceptable instances of reported assertions (as in 1b), only advanced HS and L2ers ($M_{HS}=80\%$, $SD=27.2$; $M_{L2}=91.2\%$, $SD=20.5$) scored at the same level as Spanish dominant controls (SDCs)⁴⁷ ($M_{Group1}=93.3\%$, $SD=13.8$; $M_{Group2}=89\%$, $SD=16.7$), as it can be observed in the following figure (Figure 10):

⁴⁷ Recall that two groups of Spanish-dominant controls (SDC) were included in this investigation. **Group 1** was formed by Spanish-English bilinguals who had lived in the US for less than 10 years ($N=15$, mean length of residence: 5 years, 4 months), and **Group 2** by long-term immigrants who had resided in the country for more than 10 years ($N=10$, mean length of residence: 14 years, 3 months).

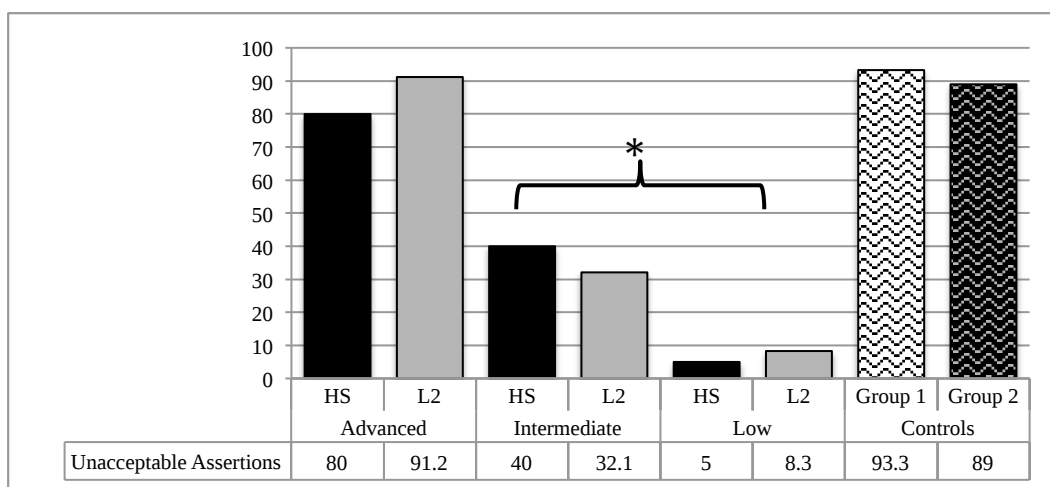


Figure 10. Percentage of rejection of unacceptable reported assertions.

Further analyses showed that despite the small variations observed in early and late bilinguals, their performance was not significantly different in this condition. Although age of onset of bilingualism did not seem to affect participants' scores, a series of Pearson correlations showed that frequency of Spanish use did. More specifically, it was observed that increased use of Spanish⁴⁸ in a wide variety of academic and social environments was positively correlated with HS and L2ers' ability to identify (and correct) unacceptable uses of indicative morphology as a marker of a reported commands.

In the case of unacceptable directives (68b), where indicative would have been expected, results from a One-way ANOVA showed that advanced participants ($M_{HS}=61\%$, $SD=36$; $M_{L2}=74.5\%$, $SD=38$) and intermediate HS ($M=43.3$, $SD=36.6$) obtained scores comparable to those achieved by SDCs ($M_{Group1}=73.3\%$, $SD=32$; $M_{Group2}=74\%$, $SD=22$). As I proposed in the case of unacceptable assertions, proficiency seemed to play a very important role in the identification of infelicitous uses of

⁴⁸ As discussed in the previous chapter (§4.4.1), information about participants' language preferences and use was obtained from their answers to a particular section in the Language Background Questionnaire.

subjunctive, where bilinguals with better mastery of Spanish were better at detecting pragmatically odd instances of this particular mood morphology. In contrast with the results reported in the previous condition, age of onset also generated differences between early and late bilinguals. While advanced second language learners obtained much higher scores ($M=74.5\%$, $SD=38$) than their heritage counterparts ($M=61\%$, $SD=36$), this tendency was reversed at intermediate levels of proficiency, where HS scored higher ($M=43.3$, $SD=36.6$) than proficiency-matched L2ers ($M=33.3\%$, $SD=37$). In this last case, however, the performance of both groups was still at chance. These contrasts in accuracy modulated by participants' age of onset of bilingualism will be further analyzed in §5.2.4.

In general, it is worth noting that there were certain aspects of the task's design that could have potentially affected participants' rates of rejection of unacceptable uses of subjunctive to convey the report of assertions. This is the case of 2 out of the 12 master sentences (16.7% of the total items) created for this task, where the infelicitous use of subjunctive was not always clearly ruled out by the preceding context:

- (69) Los alumnos estudian mucho hoy y la profesora está muy contenta
 The students study much today and the teacher is very happy
 “The students study a lot today, and the teacher is very happy”
- a. por eso les dice que hacen un trabajo excelente
 for that CL says that do[3plIND] a work excellent
 “that’s why (she) tells (them) that they do an excellent job”
 - b. por eso les dice que #hagan un trabajo excelente
 for that CL says that do[3plSUBJ] a work excellent
 “that's why (she) tells (them) to do an excellent job”

Although the presence of an indirect command would not be initially expected in an example like (69b) -especially after the use of *muy contenta* (“very happy”) and the

resultative *por eso* (“that’s why”)- it is still possible to construe a context where it would be acceptable to use it. This flaw in the design caused some variation in the participants’ responses, including those of the Spanish dominant controls’. The over-acceptance of infelicitous uses of subjunctive seemed to ultimately affect the scores obtained in the assertive condition, as seen in the figure below:

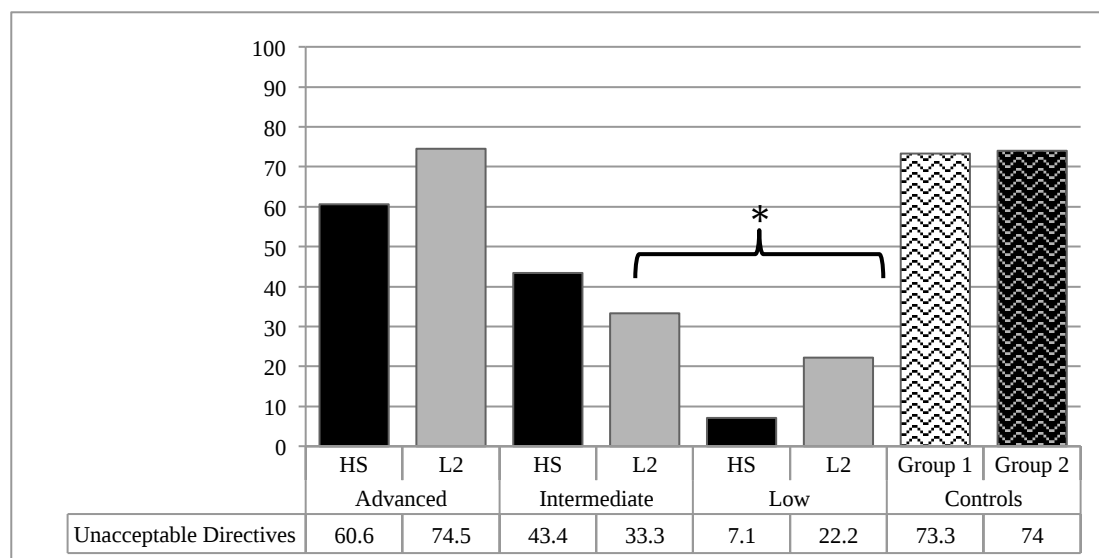


Figure 11. Percentage of rejection of unacceptable reported directives.

A detailed analysis of the results plotted in Figure 11 confirmed that this effect (over-acceptance of infelicitous cases of subjunctive) is likely to have influenced the performance of SDCs and advanced HS and L2ers. As suggested in the previous example (69) it is hypothesized that participants construed alternative interpretations where the use of subjunctive morphology could have been acceptable. This methodological limitation could also explain the difference between participants’ performance in assertive and directive contexts. Despite these observations, no additional effects of age of onset or frequency of language use were detected in any of the groups with regards to this

condition⁴⁹.

The following section provides a summary of the results obtained in the analysis of mood alternations headed by a verb of communication.

5.2.2. *Interim summary: AJT of reported directives and assertions*

Statistical analyses confirmed that all groups (SDCs, HS and L2 learners) showed a bias towards the acceptance of reported assertions and directives regardless of their felicitousness. This tendency was more visible in groups ranging from intermediate to low levels of proficiency, irrespective of their age of onset of bilingualism. Differences in proficiency and age also emerged in the analysis of unacceptable uses of indicative and subjunctive morphology. Advanced HS and second language learners followed SDC patterns in their identification of infelicitous indicative and subjunctive use in contexts where the opposite mood would be expected (67-68). In fact, the performance of these two groups was similarly affected by a flaw in the tasks' design, which allowed for the reconstruction of a small percentage (16.7%) of assertive contexts into directive ones (so that they could accommodate the use of subjunctive). Age effects were observed in both conditions, where advanced L2ers obtained higher scores than their HS counterparts in when identifying infelicitous uses of indicative (M_{L2} : 91.2%; M_{HS} : 80%) and subjunctive (M_{L2} : 74.5%; M_{HS} : 60.6%). As it will be proposed in the general discussion for this task (§5.2.5), it is possible that second language learners outperformed HS because of their academic and highly metalinguistic experience with the language (Correa, 2011; Potowski et al. 2009).

⁴⁹ Although the effects of frequent language use were not replicated in this condition, Pearson correlations showed that there was a marginal positive effect of this variable on HS' ability to detect infelicitous uses of subjunctive in reported assertions ($p = .06$).

In addition to these factors, increased exposure to Spanish appeared to improve both early and late bilinguals' ability to detect pragmatically infelicitous uses of indicative mood in the report of directives.

5.2.3. *Grammatical preferences in obligatory mood selection: the case of desideratives.*

The AJT task also included 12 items that tested obligatory mood selection in desiderative predicates, which trigger the presence of subjunctive morphology in disjoint reference contexts (SDR). To preserve the Latin square design of the task, sentences were evaluated according to four conditions: grammatical use of infinitive to express subject co-reference (70a), subjunctive selection in SDR contexts (70b), and ungrammatical instances of indicative (70c) and infinitive use (70d) in SDR readings. As in the previous cases, participants were only exposed to one of the following conditions:

- (70) El gato tiene hambre y quiere...
 The cat has hunger and wants
 "The cat is hungry and wants..."
- a. comer muchos ratones
 eat [INF] many mice
 "...to eat many mice"
 - b. que los ratones salgan del agujero
 that the mice leave[3plSUBJ] of the hole
 "...the mice to leave the hole"
 - c. que los ratones *salen del agujero
 that the mice leave[3plIND] of the hole
 "...the mice to leave the hole"
 - d. que los ratones *salir del agujero
 that the mice leave[3plINF] of the hole
 "...the mice to leave the hole"

While the first two conditions (70a-b) were used as controls, ensuring that participants had a basic understanding of obviation effects in Spanish, the remaining two (70c-d) provided information about different types of divergences that may emerge in the

bilinguals' representation of obligatory subjunctive selection. Based on previous studies on obligatory mood selection (Massery & Fuentes, 2012; Mikulski, 2006), it was predicted that proficiency would modulate participants' identification (and correction) of ungrammatical uses of indicative and infinitive forms in SDR contexts. More specifically, it was hypothesized that participants with higher levels of proficiency would be more likely to detect the need for an inflected form in the embedded clause of desideratives. Although this awareness could result in the rejection of ungrammatical infinitival constructions, it would not necessarily entail the correction of ungrammatical uses of indicative morphology in SDR contexts. In these cases, it was predicted that participants who used Spanish more frequently would be able to determine that these types of structures obligatorily select subjunctive mood.

Table 19 provides a summary of the average means achieved in disjoint reference contexts, based on grammaticality (grammatical vs. ungrammatical) and group:

Table 19.

Overall accuracy obtained in SDR contexts as a function of grammaticality and group

		Context		
		Grammatical (subjunctive)	Ungrammatical (Indicative)	Ungrammatical (Infinitive)
Controls	Recent immigrants	98%	90.5%	90.5%
	Long-term immigrants	100%	96.3%	100%
Heritage Speakers	Advanced	100%	83%	91%
	Intermediate	87%	53.3%	60%
	Low	77%	10.3%	3%
L2 learners	Advanced	100%	90.2%	84.3%
	Intermediate	88%	40.5%	52.4%
	Low	86.1%	11.1%	14%
Average		92.5%	61.4%	64.1%

In line with the results obtained in the previous condition, participants seemed to be significantly more inclined to accept grammatical sentences ($M=92.5\%$, $SD=18.6$) than to reject ungrammatical ones ($M_{indicative}=61.4\%$, $SD=42.3$; $M_{infinitive}=64.1\%$,

$SD=42.8$). This observation was confirmed by a two-way repeated measures ANOVA with a 3 (grammaticality) x 8 (group) factorial design, which also revealed main effects for group ($F(7,108)=24.339, p=.000$), and a significant interaction between this factor and grammaticality ($F(14, 216)=9.877, p=.000$). These results indicate that with the exception of advanced HS ($M=91.2\%$, $SD=4.2$) and L2 learners ($M=91.5\%$, $SD=4.8$), the remaining groups' composite scores differed significantly from those obtained by SDCs (Group 1: $M=93\%$, $SD=5.3$; Group 2: $M=99\%$, $SD=6.6$).

A series of One-way ANOVAs were calculated to obtain more details about the aforementioned intergroup contrasts. As it can be observed in figure below (Figure 12), there were no statistical differences between groups in the grammatical condition, although participants with lower levels of proficiency exhibited a less accurate performance in this particular setting.

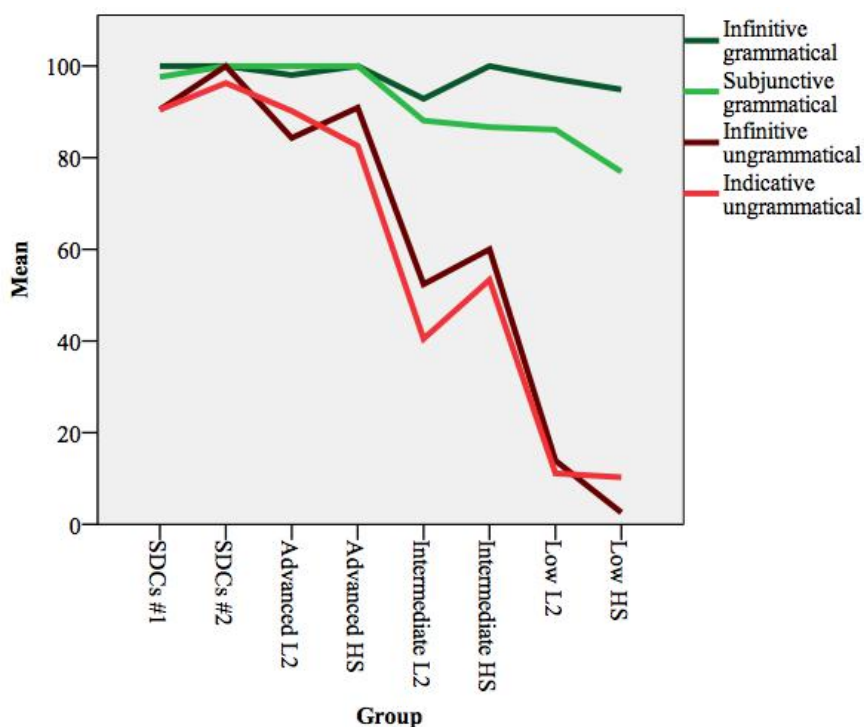


Figure 12. Mean accuracy across groups in the desiderative condition.

The most significant differences across groups were observed in the two ungrammatical conditions. In the case of items like (71), where indicative was used instead of subjunctive, only advanced participants ($M_{HS}=83\%$, $SD=27.4$; $M_{L2}=90.2\%$, $SD=22.8$) were able to match SDCs' scores ($p > .05$).

(71) El niño está aburrido y quiere que las navidades *pasan deprisa
 The boy is bored and wants that the Christmas pass[3plIND] quickly
 “The boy is bored and wants Christmas to pass by quickly”

These results were replicated in the identification and correction of ungrammatical sentences featuring infinitival constructions (72), where advanced participants ($M_{HS}=91\%$, $SD=25.5$; $M_{L2}=84.3\%$, $SD=23.9$) and controls also obtained statistically comparable results ($p > .05$).

(72) El jefe quiere que sus trabajadores *llegar temprano al trabajo
 The boss wants that his workers arrive[INF]early to+the work
 “The boss wants his workers to get to work early”

Although participants at intermediate levels of Spanish proficiency seemed to struggle with this particular condition, heritage speakers in this group were reported to significantly outperform proficiency-matched second language learners when rejecting ungrammatical uses of infinitive in SDR contexts ($M_{HS}=60\%$, $SD=42.2$ vs. $M_{L2}=52.4\%$, $SD=42.8$). It is interesting to note that this pattern had also been reported in the acceptability of indicative/subjunctive use in mood alternations (see §5.2.2 for more details). In this case, the contrast between early and late bilinguals seems to suggest that HS were more aware of the need for an inflected form in the embedded clause of these predicates than L2ers, exhibiting a better capacity to inhibit potential instances of CLI

from English⁵⁰. Although much less noticeably, this tendency was also reported in participants with advanced levels of proficiency. Whereas HS obtained higher scores when they were asked to identify and correct ungrammatical uses of infinitive in desideratives than when they were asked to do the same with ungrammatical instances of indicative use ($M_{Infinitive}=91\%$; $M_{Indicative}=83\%$), the opposite tendency was documented in L2ers ($M_{Infinitive}=84.3\%$; $M_{Indicative}=90.2\%$), as observed in the figure below:

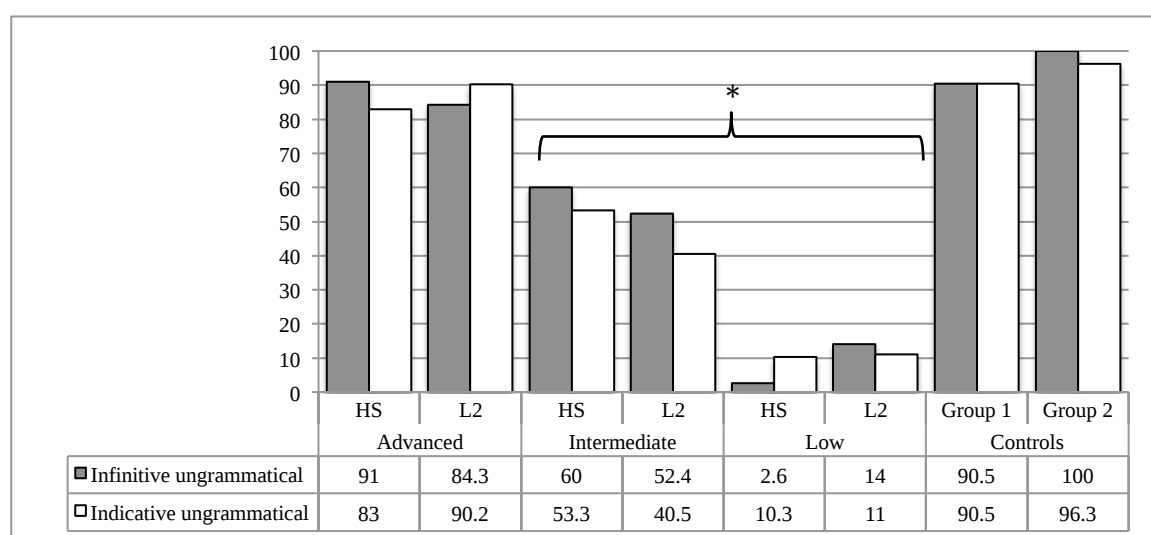


Figure 13. Mean accuracy across groups in the ungrammatical indicative and infinitive conditions.

Increased rates of Spanish activation appeared to be the main factor driving the differences across age groups plotted in Figure 13. Heritage speakers with higher percentage of Spanish use were more likely to identify ungrammatical uses of indicative ($r=.405$, $p=.004$) and infinitive ($r=.390$, $p=.006$) in SDR contexts. Furthermore, increased use of English was reported to negatively affect rates of accuracy in these two

⁵⁰ As discussed in previous chapters (§2.2.2.2), although it is possible for English to grammaticalize modality by means of subjunctive mood, the use of infinitival constructions is much more productive. As a result, Spanish-English bilinguals need to be able to shift their attention from uninflected constructions to morphologically rich ones to successfully master these expressions in Spanish.

conditions (Indicative: $r=-.266$, $p=.06$; Infinitive: $r=-.286$, $p=.047$), reinforcing the hypothesis that maintenance of subjunctive morphology seems to be heavily dependent on participants' frequency of Spanish use. These effects were not replicated in second language learners, whose variations in performance appeared to be induced by differences in proficiency.

5.2.4. Assessing intensional and polarity subjunctive through acceptability judgments

One of the research questions driving this dissertation is focused on the investigation of whether structures with mood alternations based on semantic/pragmatic constraints are more prone to attrition/optionality and crosslinguistic influence than those where mood is lexically-selected. Previous studies have found that polarity subjunctive, that is, the type that co-exists with indicative in variable contexts is more likely to be eroded than the intensional type such as the one featured in desideratives (Borgonovo et al. 2003, 2008; Iverson et al. 2008; Montrul, 2007, 2009, 2011, *inter alia*). A series of paired sample t-tests comparing the results obtained in the AJT task showed that both groups of bilinguals achieved statistically similar scores across both types of constructions ($p > .05$). These observations, however, are based on participants' composite scores, that is, on their overall rates of accuracy resulting from the average of grammatical and ungrammatical instances of a particular structure⁵¹. Given participants' generalized bias to accept all grammatical conditions (as reported in §5.2.1), it was decided that intergroup comparisons would be more representative if they only included instances of successful identification and correction of ungrammatical/unacceptable uses of indicative or infinitive *in lieu* of subjunctive:

⁵¹ In the case of reported directives, for example, this score included grammatical uses of subjunctive as well as the identification of ungrammatical uses of indicative.

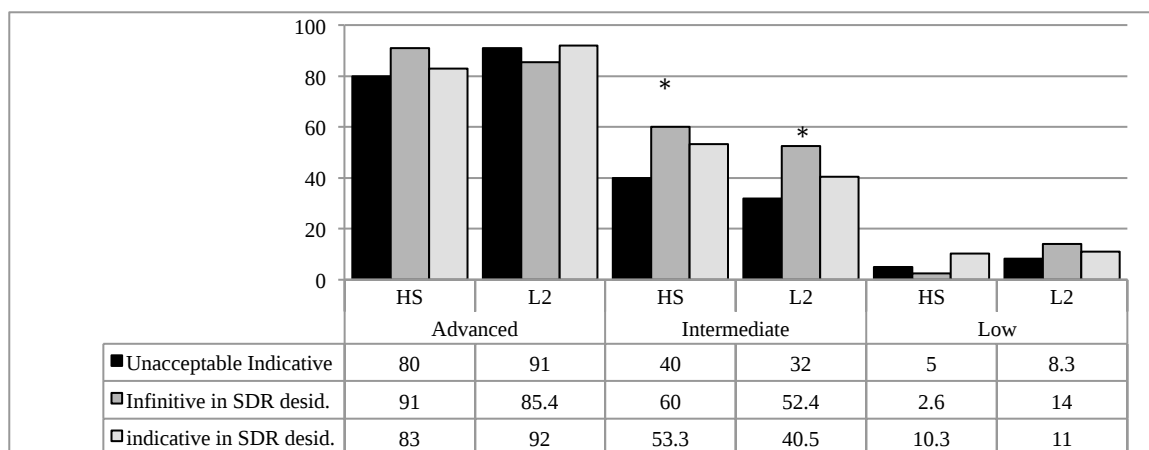


Figure 14. Percentage of rejections of unacceptable Indicatives in reported directives and ungrammatical Indicatives/Infinitives in SDR desideratives.

As illustrated in Figure 14, with the exception of intermediate HS and L2ers, who showed a significant advantage in the identification (and correction) of ungrammatical uses of infinitive in SDR desideratives, all other groups obtained statistically comparable scores regardless of the nature (obligatory and variable) of subjunctive selection ($p > .05$). However, it is worth noting that the majority of participants appeared to obtain slightly lower scores in the directive (variable) condition. It is possible that the metalinguistic focus of this task could have affected participants' performance in these contexts, where accuracy was dependent on the existence of semantic/pragmatic cues to identify the propositional content of the embedded clause (assertive or jussive). If that were the case, the syncretic nature of acceptability judgment tasks could have prevented participants from fully evaluating the context surrounding the utterance under analysis. This limitation would be particularly problematic for the examination of mood alternations, where the discursive need triggers the use of indicative (to report assertions) or subjunctive (for indirect commands) in the embedded clause.

As I discussed in previous sections, other studies had found that L2 learners were more likely to obtain higher scores than HS in this type of metalinguistic tasks because of

the academic nature of their experience with the language (Correa, 2011; Potowski et al. 2009). Although this tendency was present in this particular data set, additional t-tests did not reveal any significant differences between these groups' performance and HS ($p > .05$).

5.2.5. General discussion of Task 1

The objective of this task was to document participants' grammatical intuitions with regards to mood selection in obligatory and variable contexts. Statistical analyses showed that proficiency and age modulated HS and L2ers' performance. Advanced HS and L2 learners followed control-like patterns across all experimental conditions, identifying infelicitous instances of indicative and subjunctive use in reported assertions and directives, as well as ungrammatical instances of infinitive and indicative in desideratives. Age effects were primarily observed in contexts that involved the correction of unacceptable uses of indicative and infinitive in conditions where subjunctive would have been expected (i.e. reported directives and disjoint reading contexts in desideratives). In those cases, intermediate HS outperformed their L2 counterparts, successfully detecting and amending ungrammatical forms.

Higher levels of accuracy in these conditions were also associated with increased exposure to Spanish. Although activation effects also improved second language learners' performance, early bilinguals' use of Spanish and English was much more influential in their ability to identify unacceptable uses of indicative and infinitive in directives and desideratives (in SDR contexts). In contrast with previous studies (Correa, 2011; Mikulski & Elola, 2013), L2ers did not obtain significantly higher scores than HS, despite the metalinguistic nature of the task. Notwithstanding, HS's overall accuracy was

visibly lower, especially when it involved the rejection of indicative mood in reported directive contexts. The following task will complement the findings obtained in this section by examining HS and L2ers' representation of obligatory and variable mood selection in a much more contextualized setting.

5.3. Task 2: Truth-value Judgment Task (TVJT)

The goal of the Truth-Value Judgment Task (TVJT) was twofold: on the one hand, it analyzed participants' interpretation of variable mood selection in subordinate clauses headed by the communication verb *decir* ("to say"), which could either convey the report of an assertion or an indirect command. On the other hand, it examined the acquisition of obviation effects present in desiderative constructions, differentiating between co-referential and disjoint reference contexts. In order to analyze these two structures, participants were asked to read a series of interactions among different characters and decide whether the summary provided at the end of the conversation accurately expressed what had just taken place in the scene (check §4.4.1 for additional methodological details).

Based on previous research on variable mood selection in adjectival and adverbial clauses (Borgonovo et al. 2008, 2014; Iverson et al., 2008; Montrul, 2007; Pascual y Cabo et al. 2012, *inter alia*), it was predicted that proficiency was likely to influence participants' performance. With regards to obviation effects, it was expected that advanced HS would potentially exhibit a slight advantage over proficiency-matched L2 learners in co-referential and disjoint reference contexts, due to the early acquisition and prolonged activation of these structures as proposed by Mikulski (2006) and Bruhn de

Garavito (1995, 1997). In what follows, I will present an analysis of the results obtained across conditions, including descriptive and statistical analyses for all the contexts tested.

5.3.1. *Interpreting reported assertions and directives*

The objective of this task was to inform about participants' ability to distinguish between assertions and directives in reported-speech contexts headed by the communication verb *decir* ("to say"). The only available cue to distinguish between these two interpretations was the morphological instantiation of either indicative or subjunctive in the target sentences' subordinate verb, as illustrated in (73). All subjects were exposed to 12 scenarios equally distributed among 4 conditions, half of which had an expected 'False' answer (a), and the other half a 'True' one (b). As indicated in previous chapters (§4.4.2), participants only saw one sentence at the time:

- (73) Girls: "*Nadie quiere ser nuestro amigo. Todo el mundo va con Carlota*"
 ("Nobody wants to be our friend. Everybody sides with Carlota")
 Father: "*No me extraña. Es que tienen que ser más amables*"
 ("I'm not surprised. You have to be nicer")
 a. Kermit: "*El padre les dice a las niñas que **son** más amables*" (False)
 ("The father tells her daughters that they are nicer")
 b. Kermit: "*El padre les dice a las niñas que **sean** más amables*" (True)
 ("The father tells her daughters to be nicer")

The scenario provided in (73) was designed to evoke a directive context, where the father urges the girls to be kinder. The only possible summary for this situation is the one given in (73b), where the subjunctive form *sean* ("to be") conveys a jussive interpretation. The opposite reading (73a) would be appropriate in a context where the father was simply attesting his daughters' kindness (not provided in this example). The table below (Table 20) includes the overall scores obtained by all groups in assertive and directive contexts:

Table 20.*Overall accuracy in directive and assertive contexts as a function of group*

Groups		Context	
		Directive (subjunctive)	Assertive (indicative)
Controls	Recent immigrants	91.1%	80.7%
	Long-term immigrants	88.9%	83.3%
Heritage Speakers	Advanced	85.6%	80.3%
	Intermediate	66.7%	65.6%
	Low	70%	59%
L2 learners	Advanced	88.3%	83.6%
	Intermediate	64.5 %	55%
	Low	59.7%	55%
Average		76.8%	70.5%

A preliminary analysis of these scores indicates the presence of intergroup differences based on participants' level of proficiency in Spanish and also on the type of context that was being analyzed. A three-way repeated measures ANOVA with a 2 (context) x 2 (truth-value) x 8 (group) factorial design showed that the type of context (assertive or directive) ($F(1, 153) = 38.313, p < .01$) and the truth-value of the statement ($F(1, 153) = 41.403, p < 0.01$) seemed to have a significant effect on participants' performance. As seen in Table 20, all participant groups were more accurate in the directive condition (directives: 76.8%; assertions: 70.5%); and higher scores were achieved when the target sentences presented matched the scenario given (i.e. 'True' statements), as illustrated in the figure below (Figure 15):

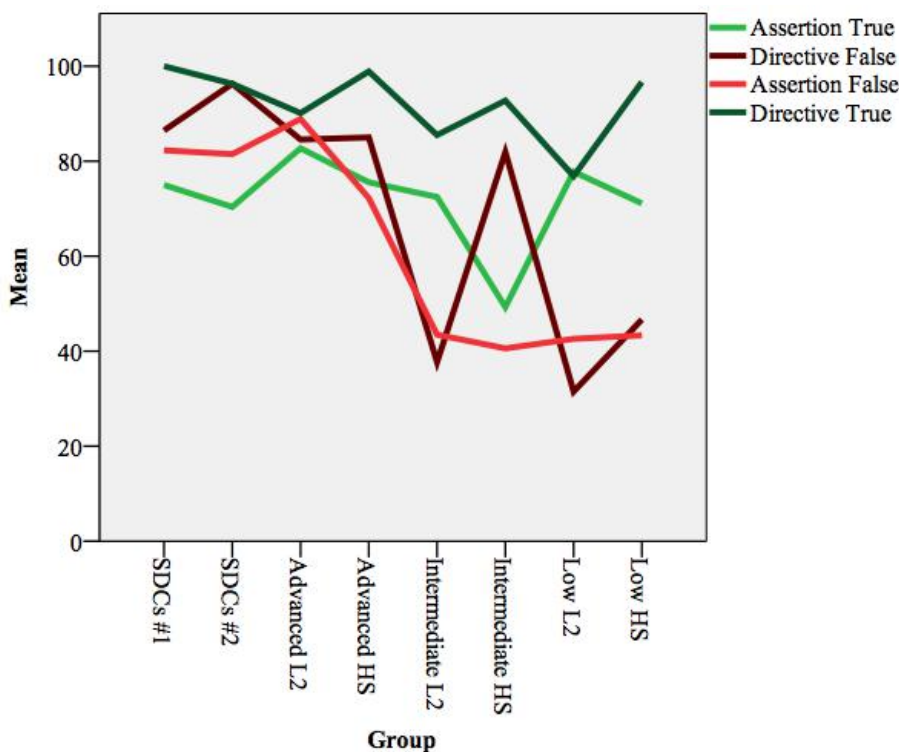


Figure 15. TVJT group means as a function of context and truth-value.

With the exception of advanced L2 learners, who achieved high scores in all experimental conditions, the remaining participants exhibited two different types of response patterns when interpreting reported assertions and directives. On the one hand, the scores of advanced and intermediate HS -like those of Spanish-dominant controls- appeared to be influenced by the type of context. Thus, statements belonging to the directive condition (regardless of their truth-value) yielded higher levels of accuracy than assertive ones. On the other hand, the scores of intermediate second language learners and all low-proficiency participants seemed to be driven by the truth-value of the statement. In these groups, ‘True’ sentences (assertions and directives) reached higher levels of accuracy. In fact, statistical analyses revealed significant main effects for group ($F(7,153)=16.691, p < 0.01$), and two-way interactions between group*context ($F(7,153)=.241, p < 0.01$), and group*truth-value ($F(7,153)=.243, p < 0.01$), confirming that HS, L2 learners and controls did not perform equally across conditions. When

additional tests were performed to examine the nature of these intergroup divergences in more detail, it was observed that L2 learners' scores did not vary significantly from one context to the another (differences between assertive and directive contexts ranged from 2-6%). Conversely, SDCs and HS exhibited a bigger asymmetry between contexts, achieving between 15-45% higher scores in directives than in assertions (as seen in Table 19). Differences in accuracy grew larger in the case of second language learners when the truth-value of the statement was taken into account:

Table 21.

Accuracy in directive and assertive contexts as a function of group and truth-value

Groups		Truth-value	
		True	False
Controls	Recent immigrants	87.5%	84%
	Long-term immigrants	83.3%	89%
Heritage Speakers	Advanced	87.2%	79%
	Intermediate	71%	61.2%
	Low	84%	45%
L2 learners	Advanced	86.4%	87%
	Intermediate	79%	40.6%
	Low	77.3%	37%

While advanced early and late bilinguals and intermediate HS were able to identify 'True' and 'False' statements following SDCs' patterns, intermediate L2 learners and participants with low levels of proficiency had significant difficulties detecting infelicitous uses of subjunctive/indicative mood. These patterns suggest that higher levels of proficiency –and to some extent age of onset- facilitated a more effective identification of infelicitous mood use. The lack of a three-way interaction between group*context*truth-value ($p > .05$) indicates that the presence of a particular mood (indicative or subjunctive) did not affect the likelihood of acceptance or rejection of the statement provided at the end of the scenario.

A series of one-way ANOVAS were calculated in an attempt to reveal further differences across groups within a particular condition. Figure 16 summarizes the scores obtained by all participants in assertive contexts:

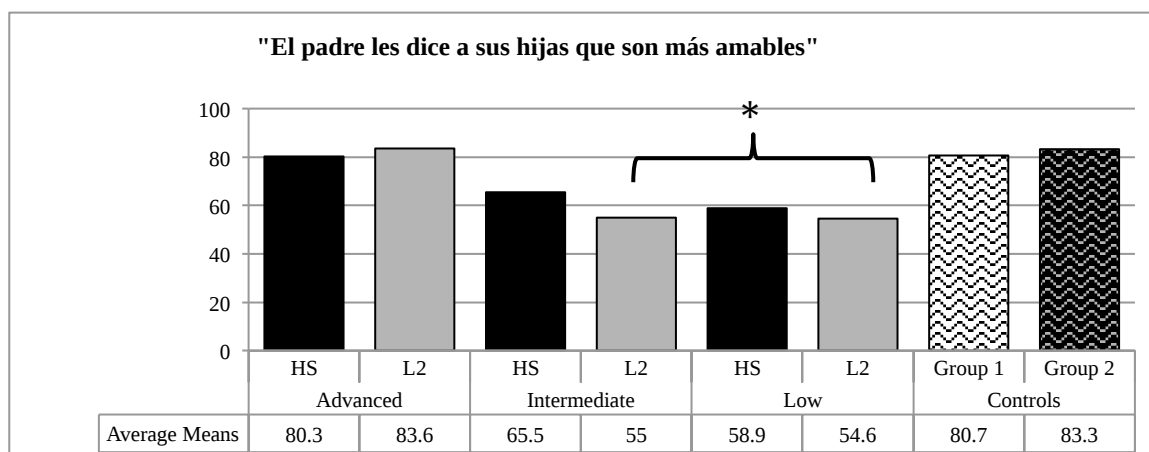


Figure 16. TVJT accuracy across groups in the assertive condition.

In the case of assertions, results showed that there were significant differences between all groups ($F(7, 153)=10.760, p < 0.01$). Post-hoc tests with Bonferroni adjustment revealed that only advanced participants ($M_{HS}=80.3\%$; $SD=14.5$; $M_{L2}=83.6\%$; $SD=18.7$) and intermediate HS ($M=65.6\%$; $SD=16.5$) obtained statistically comparable scores to those achieved by SDCs ($M_{Group1}=80.7\%$; $SD=13.51$ and $M_{Group2}=83.3\%$; $SD=18.6$; $p < 0.5$). A more detailed examination of participants' responses provided additional information about the age of onset differences detected between HS and proficiency-matched L2ers'. More specifically, it was documented that intermediate HS were more likely to detect infelicitous uses of subjunctive in assertive contexts (Directive 'False' condition) than their L2 counterparts. This statistically significant difference ($p=.000$) is illustrated in the figure below:

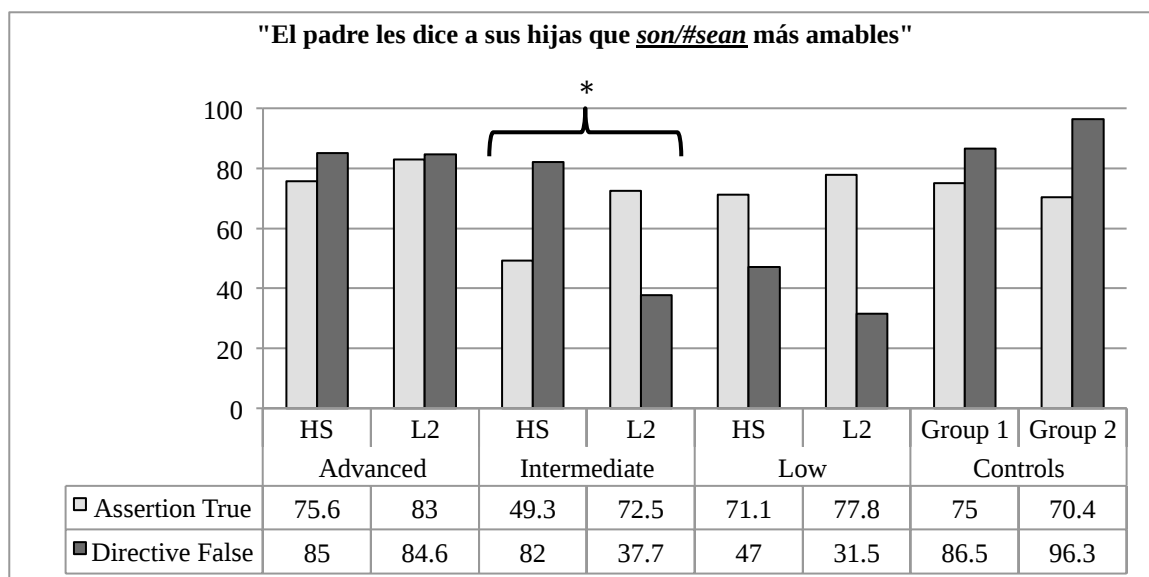


Figure 17. Accuracy across groups in the assertive condition as a function of truth-value

The distribution of ‘True’ and ‘False’ responses in this condition also revealed that participants appeared to have an easier time identifying the infelicity of subjunctive (directive false condition) than the felicitous use of indicative. This tendency was particularly prevalent in intermediate HS, whose identification of unacceptable uses of subjunctive seemed to operate at the expense of their accuracy in the ‘True’ assertive condition:

(74) *Kids*: ¿Por qué estás enfadado abuelo?

Why are angry grandpa?

“Why are you angry, grandpa?”

Grandpa: Porque sus bolsas no pesan nada. ¡Parece que no van a la escuela!

Because your bags not weight nothing. Seems that not go to the school

“Because your bags are very light. It looks like you don’t go to school!”

Kermit:

a. El abuelo les dice a sus nietos que llevan poco en las bolsas.

The grandpa Cl says to his g.sons that carry[3ppIND] little in the bags

“The grandpa tells his grandsons that they do not carry much in their bags”

b. #El abuelo les dice a sus nietos que lleven poco en la bolsa.

The grandpa Cl says to his g.sons that carry[3ppSUB] little in the bag

“The grandpa tells his grandsons not to carry much in their bags”

In an example like (74), the context provided in the conversation was designed to prompt participants to agree with Kermit's assessment in the case of (74a) but not in (74b). The grandfather tells his grandchildren that he is upset because their backpacks seem to be empty. While (74a) summarizes this observation by using the indicative form *llevan poco en las bolsas* ("they) do not carry much in their bags") in the embedded clause, the subjunctive *lleven* in (74b) would imply that the grandfather was commanding rather than asserting the information.

An exhaustive examination of the contexts used to test these conditions revealed that two of the 'True' assertive scenarios (16.6% of the total) could have prompted a 'False' answer due to inconsistencies in the details that appeared in the text. In the case of (74), for example, the grandfather does not say that the children *llevan poco en las bolsas* ("do not to carry much in their bags") like Kermit says, but rather *sus bolsas no pesan nada* ("your -the grandchildren's- bags are very light"). Since Kermit's summary is an implied statement of what the grandfather actually meant, it is possible that some of the participants considered his statement as inaccurate, consequently labeling it as 'False'. This methodological limitation is likely to have motivated some of the low rates of accuracy in 'True' assertions. Although this seemed to affect SDCs and early bilinguals with advanced and intermediate levels of proficiency the most, these groups were still able to identify that the dialogue reproduced in (74) could not be summarized by the indirect command in (74b). These results seem to indicate that both groups understood that the use of subjunctive morphology in the embedded clause of a verb of communication conveyed a reported directive and not an assertion.

The effect of age on onset of bilingualism detected during the preliminary analysis was further examined by comparing the scores of simultaneous and sequential HS to those obtained by SDCs:

Table 22.

Mean accuracy across SDC and HS as a function of proficiency and age of onset.

Group	Assertive condition		
	Advanced	Intermediate	Low
Controls	81.66% (N=25)	-	-
Sequential	84.7% (N=12)	68.2% (N=11)	41.7%* (N=4)
Simultaneous	77.3% (N=18)	63.2%* (N=12)	65.1%* (N=11)

* Mean difference is significant at the 0.05 level.

While age differences did not seem to significantly affect the performance of highly-proficient HS ($F(2,52) = .966, p = .387$), they certainly had an effect on participants with intermediate and lower levels of proficiency. In the first group, only HS who had been exposed to both Spanish and English sequentially marginally showed control-like patterns ($p = .06$). HS with low levels of proficiency, however, differed from SDCs regardless of their age of onset of bilingualism (simultaneous: $p = .014$; sequential: $p = .000$). These results suggest that at higher levels of proficiency, age of onset differences within HS do not affect their interpretation of indicative mood morphology. As proficiency decreases, differences start to arise: only affecting simultaneous HS at intermediate levels and both groups of bilinguals in lower levels of proficiency. Although these comparisons provide relevant information about the effects of age of onset within HS across different levels of proficiency, the low number of subjects within each category is a notable limitation that needs to be taken into consideration.

A series of Pearson correlations were computed across groups to assess the relationship between Spanish and English language use and participants' performance. Although results indicated that increased frequency of Spanish use was positively

associated with higher overall scores in this condition ($r=.253$, $p=.038$), this factor did not directly improve the likelihood of successful identification of unacceptable subjunctive use in assertive contexts ($p > .168$). None of these interactions were observed in L2 learners ($p > .271$), suggesting that –although minimal- the effects derived from more frequent use of Spanish are more likely to affect early bilinguals given their previous experience dealing with variable levels of exposure and use, as proposed by Putnam & Sánchez (2013).

Whereas participants seemed to have a hard time accepting ‘True Assertions’, the interpretation of subjunctive as a marker for reported directives yielded high scores across groups, as seen in the average means represented in the figure below (Figure 18):

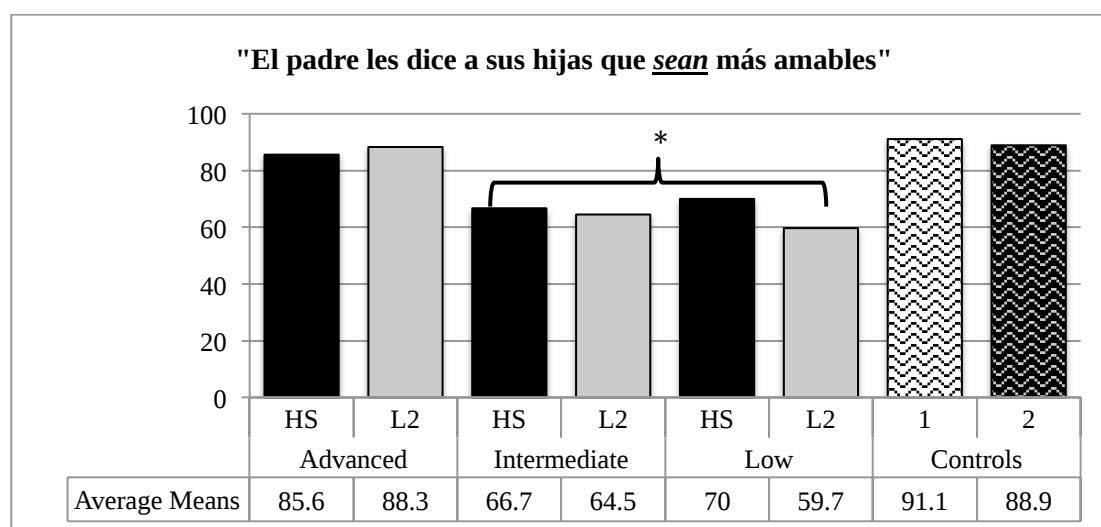


Figure 18. TVJT accuracy across groups in the directive condition

The results of a One-way ANOVA revealed differences between the performance of HS, L2 learners and SDCs ($F(7, 153)=8.087$, $p=.000$). When early and late bilinguals were compared to recently-emigrated controls ($M=91.1\%$; $SD=11.1$), intermediate ($M_{HS}=66.7\%$; $SD=19$; $M_{L2}=88.3\%$; $SD=18.8$) and low proficiency participants ($M_{HS}=70\%$; $SD=19$; $M_{L2}=59.7\%$; $SD=18$) achieved significantly lower scores in this experimental

condition. However, further comparisons with long-term immigrants showed that only second language learners' with low levels of proficiency differed considerably from controls ($p < .05$). Despite the small variations detected within SDCs, a more detailed examination of their response patterns showed that the differences between these two groups were minimal ($p=1$), and that they originated from long-term residents' lower rates of rejection of 'False' assertive contexts. According to Otheguy & Zentella (2012) and Schmid (2011) it is possible that this group might have started a process of L1 attrition or slow language change as a result of prolonged contact with English, where subjunctive mood is not as productive as it is in Spanish.

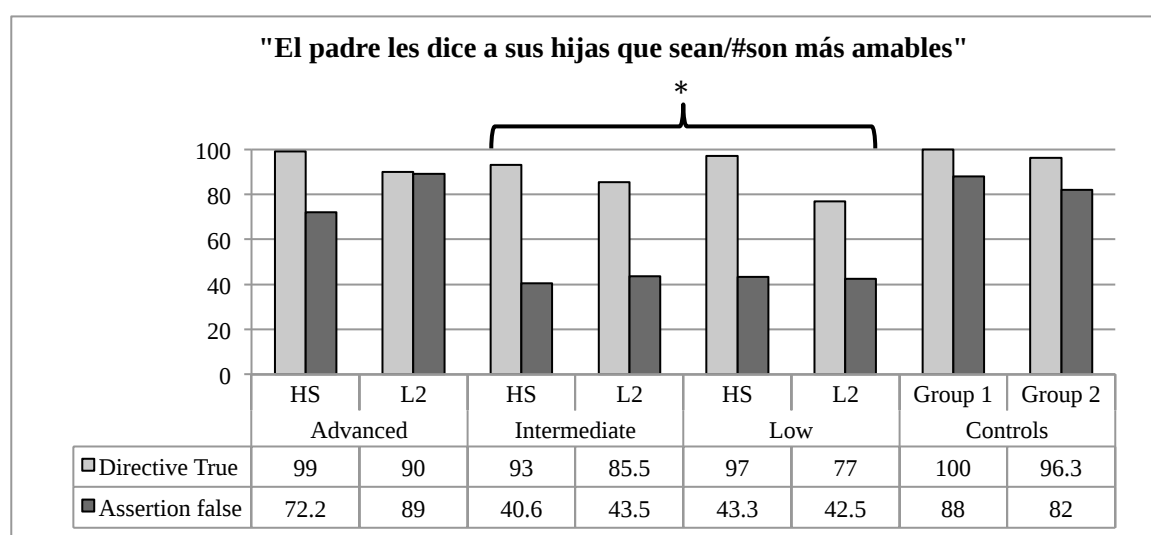


Figure 19. Accuracy across groups in the directive condition as a function of truth-value

Although a preliminary examination of the results revealed significant similarities between advanced and intermediate HS and SDCs, additional analyses showed that HS' acceptance of indicative in contexts that conveyed a reported command was much more extended, especially in the case of the intermediate HS group. The scenario reproduced in (75) provides the example of a context that should have elicited the acceptance of

Kermit's report of an indirect command (75a) and the rejection of a summary that featured a reported assertion (75b):

(75) *Students*: Profesor, ya llegan las vacaciones.

Teacher already arrive the holidays

"Teacher, the holidays are coming!"

Teacher: Muy bien, pero ahora tienen que estudiar mucho para el examen

Very well but now have to that study a lot for the exam

"Very well, but now you have to study for the exam"

Kermit:

a. En ese momento, el profesor les dice a los alumnos que estudien mucho

In that moment the teacher Cl says to the students that study[3ppSUB] a lot

"At that moment, the teacher tells the students to study a lot"

b. #En ese momento, el profesor les dice a los alumnos que estudian mucho

In that moment the teacher Cl says to the students that study[3ppIND] a lot

"At that moment, the teacher tells the students that they study a lot"

The most appropriate summary of the conversation in (75) would be (75a), since the teacher reacts to his students' comments by saying that "they should study a lot for the exam". The fact that participants with intermediate and lower levels of proficiency had a harder time rejecting cases like (75b) seems to point to the potential loss of the morphological distinction between indicative and subjunctive in constructions headed by a verb of communication. As a result, subjunctive forms are allowed to co-exist with indicative in certain contexts (reported directives) and to be overgeneralized in others (assertions). The implications of these results will be explored in more detail in the next chapter (Chapter 6).

Post-hoc tests confirmed that HS and L2 learners did not differ from each other ($p=1$) when they were matched for proficiency. Differences in age of onset of bilingualism, however, did emerge within the HS group, as illustrated in the table below:

Table 23.*Mean accuracy across SDC and HS as a function of proficiency and age of onset.*

Group	Directive condition		
	Advanced	Intermediate	Low
Controls	90.3% (N=25)	-	-
Sequential	86.1% (N=12)	67.4%* (N=11)	81.3%(N=4)
Simultaneous	85.2% (N=18)	66%* (N=12)	66%*(N=11)

* Mean difference is significant at the 0.05 level.

As reported in Table 23, sequential and simultaneous HS presented considerably lower scores than controls at intermediate levels ($p < .001$), a tendency that was also observed in simultaneous HS with low proficiency in Spanish ($p=.000$). These results are in line with those obtained in the previous condition, confirming that age of onset differences within HS only affect their interpretation of modal distinctions as proficiency in Spanish decreases. In this respect, the case of sequential HS with lower levels of proficiency is particularly puzzling, given their high scores in this condition. Although it is possible that the small sample size could have affected the results, a detailed analysis of the language background of these participants pointed to frequency of Spanish use as a potential explanation for their high levels of accuracy.

In contrast with the with the findings reported in the previous condition, the analysis of the effects derived from frequent language use in early and late bilinguals' performance revealed several moderate correlations between language use and overall accuracy. In the case of HS, increased use of Spanish was positively associated with higher scores in the interpretation of directives ($R=.337$, $p=0.05$). Conversely, preference for English use resulted in a moderate negative correlation with respect to accuracy levels in this condition ($R=-.372$, $p=.002$). Additional calculations indicated that these general associations also extended to HS' ability to detect unacceptable uses of indicative ($p < .01$), confirming the role of frequent language activation in the identification of

infelicitous mood choice, and more importantly, dissociating it from their level of language proficiency:

Table 24.

Mean accuracy across within HS as a function of proficiency and age of onset.

Group	Proficiency level		
	Advanced	Intermediate	Low
Sequential	50% (<i>N</i> =12)	28% (<i>N</i> =11)	44% (<i>N</i> =4)
Simultaneous	41% (<i>N</i> =18)	12% (<i>N</i> =12)	8% (<i>N</i> =11)

As observed in Table 24, while the percentage of Spanish use decreases along with proficiency in simultaneous HS, sequential bilinguals present a much more nuanced distribution. In their case, participants with advanced and low proficiency in Spanish appeared to use this language much more frequently than those at intermediate levels of proficiency. This finding explains why both groups of sequential HS (advanced and low) obtained overall higher scores in this condition. Once again, fluctuations in language use did not seem to affect L2 learners' scores ($p=.114$).

5.3.2. Reporting assertions and commands: Interim summary

Up to this point, I have reported higher rates of accuracy across groups when participants were prompted to interpret reported directives, especially when the statement under evaluation was true in relation to the context provided. Proficiency also played an important role when interpreting indirect commands and assertions; in both contexts, advanced HS and L2 learners followed control-like patterns, demonstrating a fairly good command of this type of mood alternations. Intermediate and low HS and second language learners, however, differed from SDCs in various ways. While both groups of L2ers (with intermediate and low proficiency) consistently obtained lower scores than controls, the performance of proficiency-matched HS was generally more accurate, especially in the directive (subjunctive) condition. These age of onset differences were

only significant when HS and L2 learners were compared to long-term immigrants. As it will be further explored in the next chapter (Chapter 6), it is possible that controls who have been living in the US for an extended period of time might be undergoing a process of L1 attrition, whereby indicative morphology is progressively overextended to reported directive contexts.

The first exploratory analyses comparing the performance of simultaneous and sequential HS indicate that age of onset plays a more significant role as proficiency in Spanish decreases. However, the impact of language use observed in some of the correlations performed across experimental groups appeared to offset some of the aforementioned effects. While L2 learners did not seem to be affected by increased use of Spanish, HS' scores were moderately correlated with frequent activation of Spanish in the case of directives, especially in the case of advanced and low sequential HS. Interestingly, the increased use of English, a language where subjunctive has a very low productivity, is documented to negatively impact early bilinguals' interpretation of directives, conveyed by means of subjunctive morphology in Spanish.

This section has analyzed HS and L2 learners' interpretation of mood alternations in clauses headed by communication verb. The following segment (§5.3.3) will be focused on participants' acquisition of the syntactic and semantic constraints associated with obviation effects in desiderative predicates.

5.3.3. SDR effects in desiderative constructions

The remaining items of this task featured desiderative constructions exhibiting either subject co-reference or subjunctive disjoint reference (SDR) between the matrix and the embedded clause ($N=12$). Following the procedure discussed in the previous

section, sentences were distributed across 4 conditions based on the truth-value of the statement. The objective of this task was to examine whether HS and L2 learners would be able to identify that the presence of the complementizer *que* (“that”) along with an inflected (subjunctive) form in the embedded clause of desiderative predicates barred subject-to-subject co-reference, as seen in the following example:

- (76) *Mom*: Aquí tienes tu postre favorito. ¡Pastel de chocolate!
 Here have your dessert favorite Cake of chocolate
 “Here you have your favorite dessert. Chocolate cake!”
Girl: ¡No lo toques! ¡Todo para mí!
 Not cl touch everything for me
 “Don’t touch it! It’s all for me!”

*Kermit*⁵²:

- a. La niña quiere comer pastel de chocolate” (True)
 The girl wants eat[inf] cake of chocolate
 “The little girl wants to eat chocolate cake”
- b. La niña quiere que coma pastel de chocolate (False)
 The girl wants that eat[3psSUB] cake of chocolate
 “The little girl wants (her mom) to eat chocolate cake”

The scenario provided in (76) was designed to rule-out target sentences exhibiting disjoint reference (76b) based on the premise that the little girl stated that she wanted to be the only one allowed to eat from the cake. This contextual constraint was only compatible with sentences exhibiting subject co-reference, such as the one provided in (76a). The opposite reading would have been favored if the girl had answered her mother by saying the following:

- (77) *Mom*: Aquí tienes tu postre favorito. ¡Pastel de chocolate!
 Here have your dessert favorite Cake of chocolate
 “Here you have your favorite dessert. Chocolate cake!”

⁵² Despite there being two target sentences in this example (76a) and (76b), it is important to recall that participants were only exposed to one condition at a time.

Girl: Yo no tengo hambre, cómelo tú
 I not have hunger eat CL you
 “I’m not hungry, eat it yourself!”

Kermit:

- a. “La niña quiere que coma pastel de chocolate” (True)
 The girl wants that eat[3psSUB] cake of chocolate
 “The little girl wants (her mom) to eat chocolate cake”
- b. La niña quiere comer pastel de chocolate” (False)
 The girl wants eat[inf] cake of chocolate
 “The little girl wants to eat chocolate cake”

In this case, subject-to-subject co-reference would have been blocked by the presence of an additional (null) subject in the context. In (77b), it is the mother –not the daughter– who performs the action described in the verb in the embedded clause (“The girl wants (her mom) to eat chocolate cake”). The following table provides a summary of participants’ obviation scores, obtained by calculating participants’ mean accuracy in the co-referential and disjoint reference conditions:

Table 25.

TVJT obviation effects (composite score of co-referential and disjoint reference contexts)

Groups		Obviation total
Controls	Recent immigrants	85%
	Long-term immigrants	89%
	Advanced	80.4%
Heritage Speakers	Intermediate	77.5%
	Low	59.4%
	Advanced	82.4%
L2 learners	Intermediate	62.5%
	Low	58%
Average		74.3%

A preliminary examination of the scores in Table 25 showed that the HS and L2 learners interviewed in this study exhibited slightly different scores than the ones reported in previous investigations⁵³. While participants with advanced and low levels of

⁵³As discussed in chapter 3 (§3.3.3. and 3.4) Bruhn de Garavito (1995, 1997) documented a very low command of obviation effects in L2 learners, who scored around 50-60% in a series of experimental tasks

proficiency obtained similar rates of accuracy in this task, intermediate HS (77.5%) significantly outperformed their L2 counterparts (62.5%).

A three-way repeated measures ANOVA with a 2 (reference) x 2 (truth-value) x 8 (group) factorial design revealed significant main effects of reference ($F(1,153)=123.555$, $p=.000$), but no effects of truth-value ($F(1,153)= 460.510$, $p>.05$). Contrary to what happened in the previous conditions (reported assertions and directives), participants' performance was markedly modulated by the type of reference given but not the truth-value of the statement. In particular, all groups seem to achieve higher scores when prompted to accept or reject target sentences featuring subject co-referentiality:

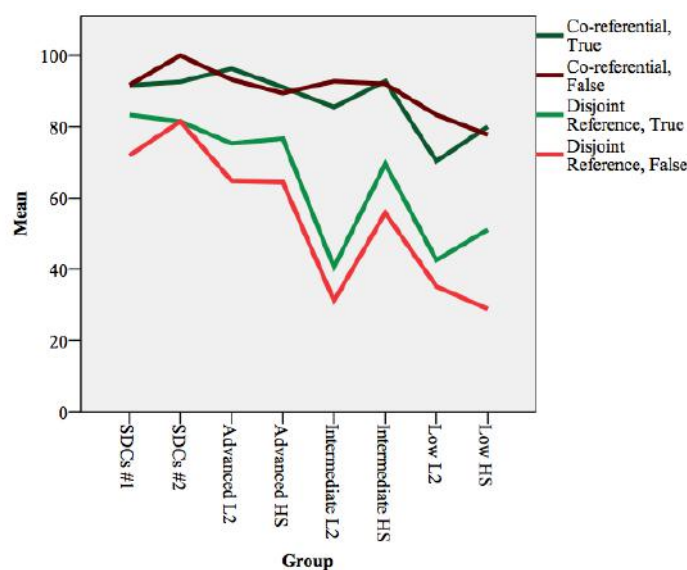


Figure 20. TVJT desiderative group means as a function of context and truth-value.

As illustrated in Figure 20, when participants were presented with contexts expected to elicit a disjoint reference reading (12), they had a significantly easier time rejecting subject co-reference (12b) than accepting the target SDR alternative (12a):

focused on comprehension. Mikulski (2006) confirmed these findings and compared early and late bilinguals' performance in this particular domain. Her study revealed an advantage of HS (81%) over L2ers (60%).

(78) *Marcos*: Compañero, ¿qué limpio ahora?

Friend what clean now
 “Friend, what should I clean now?”

Juan: El baño, que está muy sucio. Pero yo no pienso tocarlo
 The bathroom that is very dirty but I not think touchCLit
 “The bathroom, which is very dirty. But I’m not going to touch it”

- Kermit*:
- a. Juan quiere que limpie el baño por sí solo (True)
 Juan wants that clean[3psSUB] the bathroom for his own
 “Juan wants (Marcos) to clean the bathroom on his own”
 - b. Juan quiere limpiar el baño por sí solo (False)
 Juan wants to clean[inf] the bathroom for his own
 “Juan wants to clean the bathroom on his own”

In principle, the scenario presented in (78) should overrule the possibility of subject-to-subject co-reference, especially since Juan does not seem to be particularly inclined to clean the bathroom on his own. Notwithstanding, several sociolinguistic studies (Gallego & Alonso-Marchs, 2014b; Morales, 1989; Serrano, 2004) have documented that Spanish monolinguals exhibit a certain degree of optionality in these types of sentences. While Gallego & Alonso-Marchs (2014b) report that there is a slight percentage of monolinguals who tend to hypercorrect subjunctive forms in SDR contexts by overextending infinitival forms, Morales (1989) and later on Serrano (2004) document instances of the opposite trend in verbs that express volition. Although this pattern could explain the results obtained in Spanish-dominant controls, it does not necessarily account for HS and L2 learners’ responses. In their case, Silva-Corvalán (2014) argues that child bilinguals acquire co-referential contexts very early on, but that they often favor simpler structures such as the absence of a complex form (79), the use of an infinitival complement (80) or an indicative/imperative form (81) over the most complex one (complementizer + subjunctive) when dealing with disjoint reference in desiderative predicates (p.73-75):

(79) *Bibi quiero un cuento a mí
 Bibi want[1psg] a story to me
 “Bibi (I) want you to read me a story”

(80) Yo quiero tú saltar arriba del agua
 I want[1psg] you jump up of the water
 “I want you to jump over the water”

(81) Yo quiero da leche
 I want[1psg] give[2psg] milk
 “I want you to give me milk”

The co-existence of this wide range of alternatives in bilinguals’ development is hypothesized to have affected their representation (and production) of subjunctive in SDR contexts. These effects were not distributed equally across groups, as noted by the significant main effects for group ($F(7,153)=11.352, p=.000$) and the interaction between group*reference ($F(7,153)=3.657, p=.001$). Post-hoc tests revealed that L2 learners and HS with intermediate and low levels of proficiency exhibited the largest differences across contexts, obtaining scores for co-referential contexts (both true and false) that were up to 50% higher than those featuring disjoint reference.

Additional statistical analyses were performed with the objective of examining further differences across groups within a particular category. In the co-reference condition, the results of a One-way ANOVA (plotted in Figure 21) confirmed that proficiency partially modulated group results ($F(7, 153)=7.344, p=.000$):

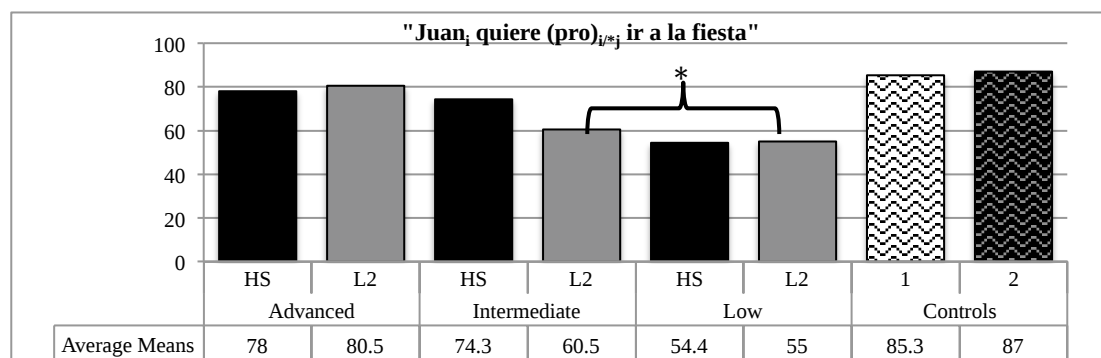


Figure 21. TVJT accuracy across groups in the subject co-reference condition.

In this particular setting, intermediate L2ers ($M=60.5\%$; $SD=21.9$) and participants with low levels of proficiency ($M_{HS}=54.4\%$; $SD=16.3$; $M_{L2}=55\%$; $SD=22.7$) obtained significantly lower scores than SDCs ($p < .05$). As it can be observed in the figure below, these three groups tended to identify ‘False’ SDR contexts as being ‘True’, affecting their overall rates of accuracy in the co-referential condition:

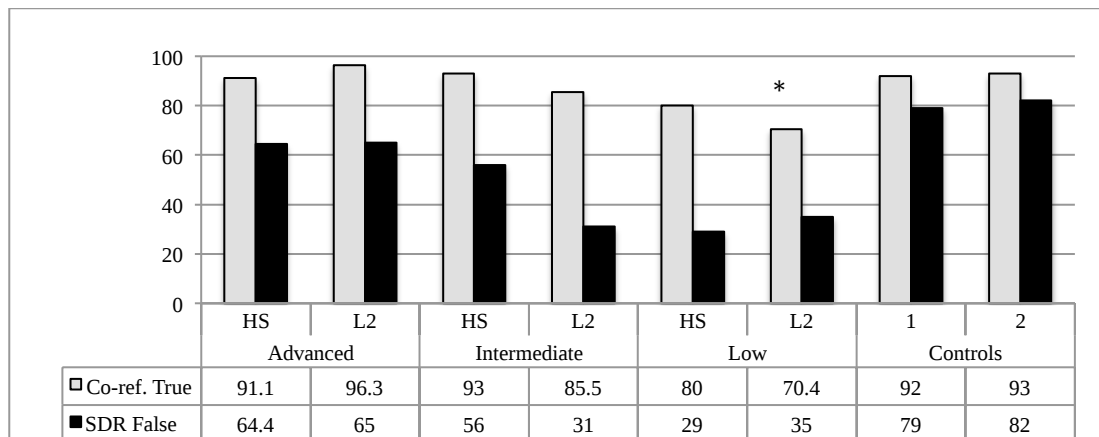


Figure 22. Accuracy in the subject co-reference condition as a function of truth-value.

With the exception of L2 learners with low levels of proficiency ($M=70.4\%$; $SD=27.7$), who scored significantly lower than the rest of the groups, all other participants obtained statistically comparable results in the ‘True’ co-referential condition. Despite the consistent identification of co-referential contexts, all experimental groups (and to a certain extent controls) seemed to have a harder time rejecting sentences featuring disjoint reference in scenarios that had been designed to elicit subject co-reference. In the case of SDCs, it is possible that the optionality in volitional and purpose clauses documented in previous studies (Gallego & Alonso-Marchs, 2014b; Morales, 1989; Serrano, 2004) could have affected their scores in the SDR condition. The performance of intermediate and low-proficiency early and late bilinguals, however,

could suggest a lack of control of the subjunctive form used to indicate disjoint reference in Spanish desideratives.

The analysis of the SDR condition suggested a similar pattern of responses, where differences in proficiency also determined group results ($F(7, 153)=6.571, p=.000$):

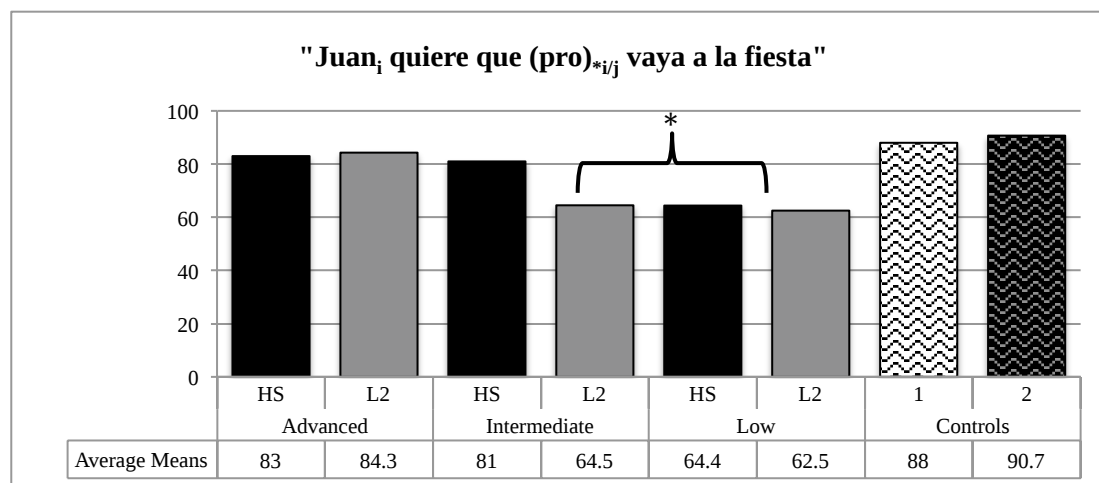


Figure 23. TVJT accuracy across groups in the disjoint reference condition.

As shown in Figure 23, intermediate HS ($M=81\%$; $SD=16.9$) outperformed their L2 counterparts ($M=64.5\%$; $SD=19.1$), who along with participants with lower levels of proficiency ($M_{HS}=64.4\%$; $SD=28.7$; $M_{L2}=62.5\%$; $SD=18.1$) obtained statistically different scores from both groups of SDCs ($p > .05$). A more detailed analysis of the response patterns documented in this condition showed that when participants had to identify a 'False' co-referential context, they tended to score within similar ranges of accuracy ($p > .05$), suggesting that they were able to recognize infinitival forms as markers of co-referentiality.

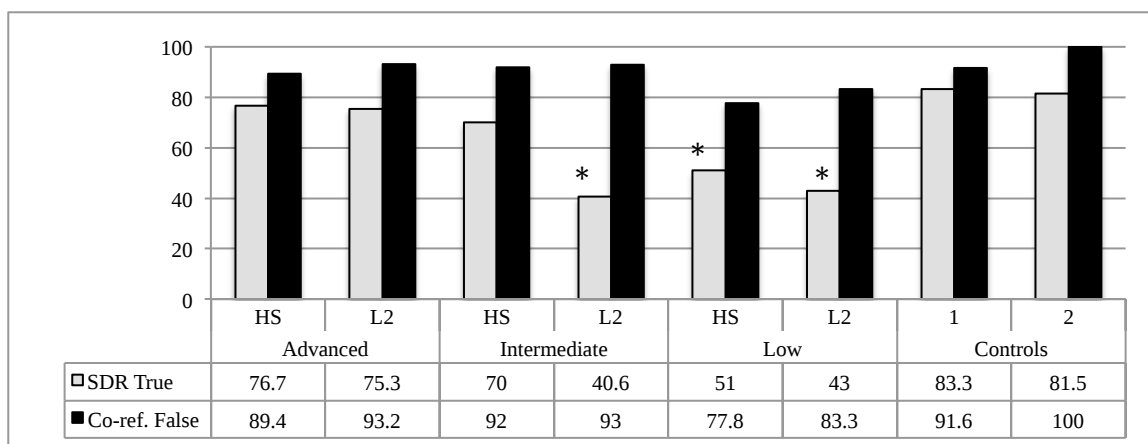


Figure 24. Accuracy in the SDR condition as a function of truth-value.

As it can be observed in Figure 24, ‘True’ SDR contexts, however, triggered a wider range of responses among participants. While advanced and intermediate HS obtained control-like scores in this condition, intermediate L2 learners ($M=40.6\%$; $SD=34.7$) and low-proficiency L2ers and HS ($M_{L2}=43\%$; $SD=33.9$; $M_{HS}=51\%$; $SD=43.4$) exhibited statistically lower rates of accuracy.

Comparisons between sequential and simultaneous HS and SDCs yielded several disparities in performance. These differences were visible in both conditions (co-referential and disjoint reference), as illustrated by the table below (Table 26):

Table 26.

Mean accuracy across SDC and HS as a function of proficiency and age of onset.

Group	Co-referential condition			Disjoint reference condition		
	Adv.	Interm.	Low	Adv.	Interm.	Low
Controls	86% (<i>N</i> =25)	-	-	88.7% (<i>N</i> =25)	-	-
Sequential	76% (<i>N</i> =12)	81% (<i>N</i> =11)	56.2%* (<i>N</i> =4)	82.6% (<i>N</i> =12)	86.4% (<i>N</i> =11)	75%* (<i>N</i> =4)
Simultaneous	79.2% (<i>N</i> =12)	68%* (<i>N</i> =11)	54%* (<i>N</i> =4)	83.3% (<i>N</i> =12)	74%* (<i>N</i> =11)	60.6%* (<i>N</i> =4)

* Mean difference is significant at the 0.05 level.

Based on the results reported in Table 26, sequential HS tended to outperform their simultaneous counterparts at almost all levels of proficiency. However, age of onset

differences only played a significant role in these groups' performance at intermediate levels of proficiency, where sequential HS and SDCs obtained statistically comparable scores. Although sequential HS with low levels of proficiency also present higher scores than proficiency-matched simultaneous bilinguals, both groups performed significantly lower than SDCs. In line with the results obtained in previous tasks, it is hypothesized that age of onset of bilingualism plays an important role in early bilinguals' performance as proficiency in Spanish decreases.

Pearson correlations were also calculated to confirm whether the frequency of Spanish and English use would affect HS and L2ers' overall scores. In the case of HS, increased use of Spanish was positively correlated with higher scores in the disjoint reference condition ($r=.275$, $p=.024$), a trend that was also found in second language learners ($r=.254$, $p=.031$). These results are in line with previous observations regarding the positive influence of frequent Spanish use (for comprehension and production) in bilinguals' grammatical performance, as proposed in Putnam & Sánchez (2013).

5.3.4. General summary and interpretation of Task 2

The results analyzed in this section were focused on the examination of early and late bilinguals' interpretation of reported assertions and directives, as well as in their mastery of obviation effects in desiderative predicates. All data sets revealed several interactions between participants' accuracy and their level of proficiency, age of onset of bilingualism and frequency of Spanish/English activation. SDCs and advanced HS and L2ers performed similarly across all experimental conditions, suggesting that higher levels of proficiency seem to facilitate the interpretation of variable mood selection and obviation effects in deontic predicates. The case of intermediate and low HS and L2

learners appeared to be more complex. While early bilinguals at intermediate levels of proficiency exhibited control-like patterns when dealing with the interpretation of reported assertions as well as with the identification of co-referential and SDR contexts, they differed from SDCs and advanced participants in their identification of the morphological markers signaling directive contexts (i.e. subjunctive morphology). Low HS and L2 learners, on the other consistently obtained lower scores in all experimental conditions.

Despite the contrast between HS and L2 learners, no significant differences were found between the two when they were matched for proficiency. Although these results do not confirm the effects of age on onset on participants' overall performance statistically, they document a general advantage of HS over L2 learners. Age differences, however, revealed significant interactions within the HS group. In particular, results from the TVJT indicated that differences between simultaneous and sequential HS were limited to certain conditions (assertions, directives and disjoint reference), and that they only emerged as proficiency in Spanish decreased.

In addition to being affected by proficiency and age of onset, participants' accuracy also seemed to be strongly correlated with high levels of Spanish activation. In the case of HS, increased use of Spanish was associated with higher scores across all the conditions tested. L2 learners, on the other hand, only displayed language activation effects when interpreting SDR effects in desideratives, a structure that clearly differs from the one available in their dominant language (see §2.2.2.1. for more details). In the same way that increased Spanish use was connected to higher scores, frequent activation of English was found to affect HS in their interpretation of directives, essentially

dependent upon the identification of subjunctive morphology as a marker of volition. These results appear to support the hypothesis that in addition to proficiency, regular activation of Spanish positively affects the maintenance of morphological distinctions in the minority language.

In order to achieve a complete picture of how mood selection and SDR effects operate on HS and L2 learners, it is essential to investigate how these participants performed in production. The following section will be devoted to the analysis and discussion of the results obtained in a picture-based elicited production task. By comparing the data gathered in comprehension and production, we will be able to detect whether these structures are susceptible to some of the asymmetries previously attested in early and late bilinguals (see the work by Hendriks & Koster (2010) and Sherkina-Lieber et al. (2011) for more information on this topic).

5.4. Task 3: Picture-based Elicited Production Task

The goal of this task was to examine HS and second language learners' production of mood alternations in constructions headed by verbs of communication, in addition to their productive knowledge of co-referential and SDR contexts in desideratives. Since these two structures exhibit different types of mood selection (variable and obligatory) their analysis is expected to shed some light on the issue of interface vulnerability in bilingual language acquisition. The Interface Hypothesis (Sorace, 2000, 2006, 2011) predicts polarity (variable) subjunctive, used to express volition in reported directives, to be more prone to optionality than the type of intensional (lexically-selected) subjunctive present in desideratives. Notwithstanding, I propose that the lack of informative content of the matrix verb in the first type of structures -which

does not disambiguate between an assertion or a command- along with the possibility of positive CLI from English could, in fact, predict the opposite outcome. If this were the case, we would expect higher levels of accuracy in reported directive contexts, which can be conveyed by means of polarity subjunctive morphology or by a periphrasis of obligation (check §2.3 for an extensive discussion of these hypotheses). In addition to potential differences between polarity and intensional subjunctive, it is also hypothesized that there could be a certain degree of asymmetry between the scores obtained in production and the ones documented in interpretation. Specifically, we would expect the former to be lower than the latter, as reported in previous work by Hendriks & Koster (2010) and Sherkina et al. (2011).

In this task, participants were asked to read a short context that accompanied the picture of an animated character. After this step, they were prompted to press the space bar and answer a question based on the information that had just been presented. In order to ensure a maximally comparable production across groups, all participants were provided with an incomplete answer that had to be filled using the verb between brackets. The following sections include a detailed analysis of the results obtained in each of the experimental conditions, paying particular attention to the comparison between the expression of subjunctive in reported directives and in desiderative predicates exhibiting disjoint reference.

5.4.1. Variable mood selection: reporting assertions and directives

The elicited production task included 10 tokens and focused on the analysis of mood alternations in constructions headed by verb of communication. These items were

equally divided across 2 conditions, prompting participants to produce either directive (82a) or assertive predicates (82b):

(82) *Context:*

a. *Los alumnos de la clase están muy cansados y no trabajan nada.*

La profesora está bastante enojada con ellos.

(“The students in the class are very tired and they’re not working at all.
The teacher is quite angry at them”)

Teacher: “¡A trabajar ahora mismo!”

(“(Go) to work, now!”)

b. *Los alumnos de la clase estaban muy cansados ayer, pero hoy la profesora observa un cambio positivo.*

(“The students in the class were very tired yesterday, but today their teacher sees a positive change in them”)

Teacher: ¡Estoy muy contenta! Su trabajo de hoy está siendo excelente.

(“I’m very happy! Your work today is excellent!”)

Question: ¿Qué dice la profesora?

(“What does the teacher say?”)

Answer: La profesora les dice a los alumnos que....(comenzar) a trabajar bien.

(“The teacher tells the students (that) (start) working well”).

As it can be observed in examples (82a) and (82b), the elicitation of reported assertions and directives was dependent on the context provided as well as the characters’ reaction to a given setting. For instance, the scenario in (82a) presented a situation where there needed to be a change in the attitude of the students, a fact that is confirmed by the teacher’s command at the end of the context (*¡A trabajar ahora mismo!*). As it has been discussed in previous chapters (see §2.2 and §2.3 for more information), there are two grammatical manifestations of indirect commands in Spanish that could potentially be used to describe this context: polarity subjunctive morphology (*comiencen*) or a periphrasis of obligation (*tienen que comenzar, deben/necesitan comenzar*). In (82b), however, the teacher’s intervention was based on a mere observation of what was already taking place (i.e. students had started to work more effectively). Thus, the intended target

answer in this context was an assertion, expected to be conveyed by means of an indicative form (*comienzan*). Table 27 includes a summary of the scores obtained in the assertive and directive conditions.

Table 27.

Overall accuracy in directive and assertive contexts as a function of group

Groups		Context	
		Directive (subjunctive/periphrasis)	Assertive (indicative)
Controls	Recent immigrants	100%	73.8%
	Long-term immigrants	100%	83%
Heritage Speakers	Advanced	97.3%	67.8%
	Intermediate	77.4%	70.1%
	Low	42.7%	81.3%
L2 learners	Advanced	96.3%	83%
	Intermediate	62.4%	73.3%
	Low	55.3%	64.4%
Average		80%	73.8%

A preliminary analysis of the data showed that a considerable number of groups (with the exception of low HS and intermediate and low L2ers) obtained higher scores when prompted to produce reported directives. This tendency had been partially replicated in interpretation, and it seemed to point towards a certain degree of overextension of subjunctive morphology in groups exhibiting high levels of Spanish proficiency and language exposure. A two-way repeated measures ANOVA with a 2 (context) x 8 (group) factorial design confirmed these observations, revealing significant main effects for group ($F(7,153)=12.532, p=.000$) and an interaction between this condition and type of context ($F(7,153)=6.247, p=.000$).

These results indicated that groups differed in their overall composite scores⁵⁴, based on the level of proficiency and age of onset: only advanced early and late

⁵⁴ These scores were automatically generated by SPSS to analyze main effects. They were calculated by averaging the scores obtained in both conditions.

bilinguals ($M_{HS}=82.5\%$, $SD=4.6$; $M_{L2}=89.6\%$, $SD=4.7$) and intermediate HS ($M=77.4\%$, $SD=4.8$) obtained statistically comparable results to both groups of SDCs (Group 1: $M=87\%$, $SD=6.2$; Group 2: $M=91.5\%$, $SD=6.2$). The figure below provides a graphic illustration of the estimated average means obtained in the directive and assertive conditions across proficiency groups:

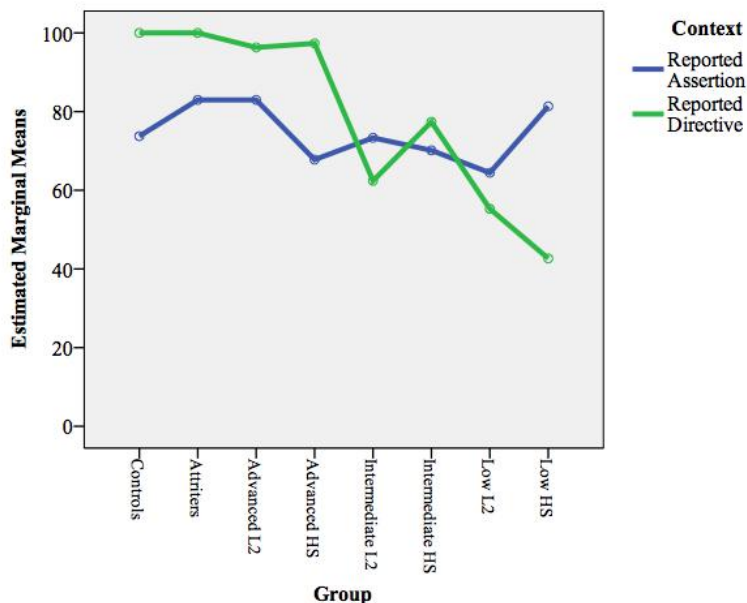


Figure 25. Production means as a function of context and group.

As can be observed in Figure 25, the production of indicative mood in assertive conditions was lower than initially expected across groups, replicating the tendency documented in interpretation. Results from a One-way ANOVA confirmed that there were no statistical differences in the performance of any of the experimental groups with respect to SDCs ($F(7,153)=1.397$, $p=.211$) in this context. Given the minimal variations in performance, no effects involving age of onset differences between simultaneous and sequential HS or higher levels of accuracy as a result of increased activation of Spanish were replicated in this task.

The analysis of subjunctive production in directive contexts revealed much more intricate interactions between accuracy and factors such as proficiency, age of onset and frequency of Spanish/English activation. Results from a One-way ANOVA showed that there were statistically significant differences between groups ($F(7,153)=18.542$, $p=.000$). In particular, only advanced HS and L2ers ($M_{HS}=97.3\%$, $SD=6.9$; $M_{L2}=96.3\%$, $SD=7.3$) and intermediate HS ($M=77.4\%$, $SD=7.3$) scored within the same range as SDCs (Group 1: $M=100\%$, $SD=0$; Group 2: $M=100\%$, $SD=0$).

The initial age of onset differences that emerged when the composite scores of early and late bilinguals were compared to SDCs, were not replicated when HS and L2ers were matched for proficiency in this experimental condition ($p > .05$). Age effects were not detected in the analysis of sequential and simultaneous HS' performance either, suggesting that age of onset differences did not seem to visibly modulate HS or L2ers' production of polarity subjunctive. Increased use of Spanish, however, appeared to be positively correlated with higher levels of accuracy in the directive condition in the case of L2 learners ($r=.218$, $p=.012$) and HS ($r=.257$, $p=.036$). This last effect confirmed the positive influence of frequent activation of Spanish in the identification and production of subjunctive morphology and alternative linguistic expressions (subjunctive morphology and/or periphrases of obligation) to convey a jussive interpretation.

The results analyzed in this section conflated all possible grammatical realizations of indirect command expression, including the use of subjunctive morphology (83a) and periphrases of obligation (83b).

- (83) a. Elmo les dice a Grover y a Oscar que salgan mucho de casa
 Elmo CL says to Grover and to Oscar that leave[3plSUBJ] a lot of house
 "Elmo tells Grover and Oscar to leave the house a lot"

- b. Elmo les dice a Grover y a Oscar que tienen que salir mucho de casa
 Elmo CL says to Grover and to Oscar that have to leave a lot of house
 “Elmo tells Grover and Oscar that (they) have to leave the house a lot”

Earlier in this section, it was hypothesized that CLI from English could have positively affected participants’ scores in this condition, because like Spanish, this language also resorts to the use of periphrasis of obligation to report directives (check §2.2.2.2 and §2.3 for additional information on this topic). In order to examine this possibility, the percentage of periphrasis use was subtracted from both groups’ overall accuracy scores, resulting in the following distribution:

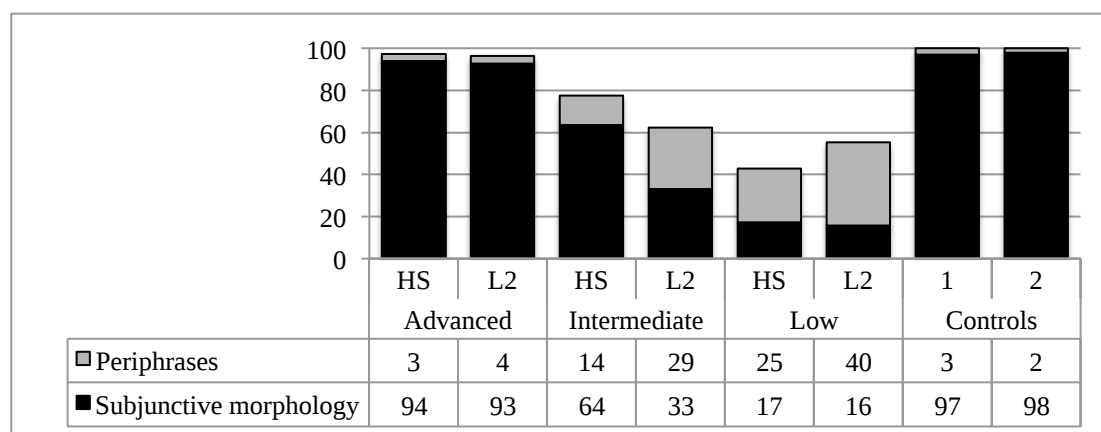


Figure 26. Distribution of periphrasis and subjunctive use (%) in directives.

As it can be observed in Figure 26, HS and L2 learners’ accuracy in reported directives increased notably when they resorted to the use of periphrases of obligation. In particular, the lower the proficiency of the participants, the higher the preference for these structures, as documented in the results of a One-way ANOVA ($F(7,153)=7.284$, $p=.000$). Although comparisons between the scores obtained by proficiency-matched L2 and HS were not deemed statistically significant ($p > .05$), the use of periphrases was visibly higher in the first group, especially at lower and intermediate levels of proficiency.

While statistical analyses confirmed that age of onset did not extensively affect the distribution of periphrasis across directive contexts, Pearson correlations showed that in the case of HS, increased activation of Spanish was negatively correlated with their use ($r = -.296$, $p = 0.15$). Furthermore, higher rates of Spanish use in this group were strongly associated with accurate use of subjunctive morphology ($r = .402$, $p = .001$). These results point to an interesting interaction between language activation, subjunctive accuracy and periphrases productivity, by which an increased use of Spanish leads to higher levels of accurate subjunctive production and less reliance in alternative means of expression (i.e. periphrases of obligation). Although these observations did not necessarily attribute the presence of periphrastic constructions to positive CLI from English, it is remarkable that L2ers, along with HS with lower levels of Spanish proficiency and activation, exhibited the highest percentage of periphrasis use (see Figure 26).

Thus far, this section has focused on the grammatical utterances observed in the data. In what follows, I will analyze the different types of divergences found across the two experimental groups with the aim of establishing patterns of ungrammatical mood selection.

5.4.1.1. Divergent patterns in the report of assertions and directives

In general, HS and L2 learners displayed different instances of ungrammatical realizations in each of the target contexts, as illustrated by the figure below (Figure 27):

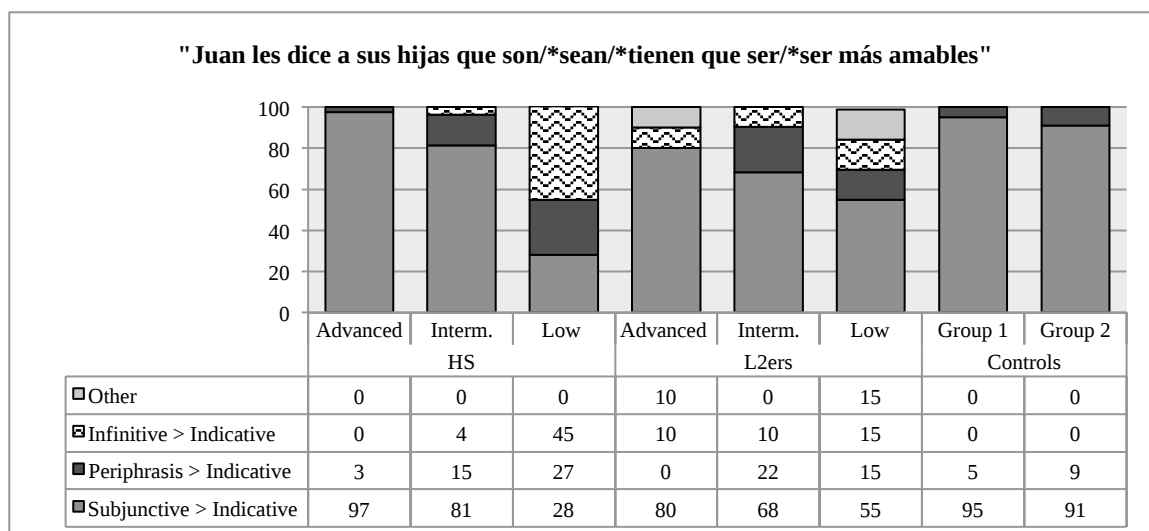


Figure 27. Distribution of ungrammatical utterances in the assertive condition as a function of type of divergence and group.

Figure 27 shows the distribution of different types of divergences documented in assertive contexts across groups. In the case of advanced and intermediate HS, the most common response pattern consisted on the overextension of subjunctive morphology (97% and 81% of the total) and periphrases of obligation (3% and 15%) to contexts that should have elicited an indicative form. The presence of alternative means of expression such as infinitival forms in the embedded clause of these constructions appeared to increase as proficiency in the weaker language/L2 declined, as seen in the low HS group (where it represented a 45% of the divergences). Advanced L2 learners also showed a widespread use of subjunctive (and periphrases) to report assertions (80%), however, they also resorted to the use of infinitive (84) –albeit to a much lesser degree than other groups- and other alternative forms, such as conditionals (85) or imperatives (86) in these contexts. The following examples were randomly selected from participants' responses to illustrate each of the aforementioned divergences:

(in the context of an assertion:)

(84) La entrenadora les dice a los jugadores que *ir al gimnasio
 The coach CL says to the players that go[INF] to+the gym
 “The coach says that the players go to the gym”

(85) El vendedor les dice a los clientes que *hablarían más alto
 The seller CL says to the customers that speak[3plCOND] more loud
 “The seller tells his customers that they speak louder”

(86) Papá Noel les dice a sus elfos que *levántense rápido
 Father Christmas CL says to his elves that get up[IMP] fast
 “Santa tells his elves that they get up fast”

Despite the wide variety of forms used in assertive contexts, the majority of groups opted for the overextension of subjunctive morphology (or other related forms) in these settings, especially in the case of SDCs and advanced and intermediate HS and L2ers. As it will be discussed in subsequent chapters, these results complement previous findings obtained in tasks targeting bilinguals’ interpretation of mood alternations (as seen in §5.2.1 and §5.3.1), where early and late bilinguals favored the overextension of subjunctive to assertive contexts. The types of divergences observed in directive settings also suggest differences between HS and L2 learners⁵⁵, as seen in Figure 28:

⁵⁵ This figure does not include SDCs because they performed at ceiling in this condition.

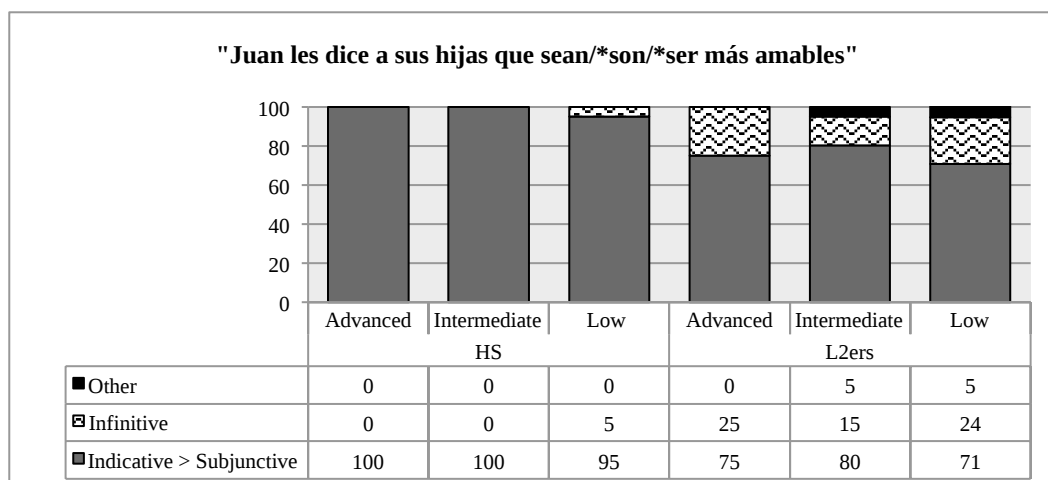


Figure 28. Distribution of ungrammatical utterances in the directive condition as a function of type and group.

While advanced, intermediate and low HS resorted to the use of indicative in the absence of target-like forms to report indirect commands (subjunctive or periphrases of obligation) as seen in example (87), L2 learners also exhibited a tendency to use infinitival forms (88):

(87) El policía les dice a los ladrones que **dejan* de meterse en problemas
 The policeman CL says to the thieves that leave[ind] of putting in problems
 “The policeman tells the thieves to stop getting into trouble”

(88) El médico les dice a sus pacientes que **hacer* más ejercicio.
 The doctor CL says to his patients that do[inf] more exercise
 “The doctor tells the patients to exercise more”

In these cases, the small contrasts observed between HS and L2 learners could be attributed to differences in feature reassembly. Given the lack of infinitive use in advanced and intermediate HS, it could be argued that English directives, generally non-inflected, are reanalyzed as needing to be inflected in Spanish by early bilinguals. However, the influence of decreased frequency of Spanish activation in this group -as seen in previous sections and theorized by Putnam & Sánchez (2013)-, appeared to modulate their access to subjunctive morphology. Consequently, these forms are argued

to alternate with indicative based on participants' frequency of Spanish use, as illustrated in Figure 29 below:

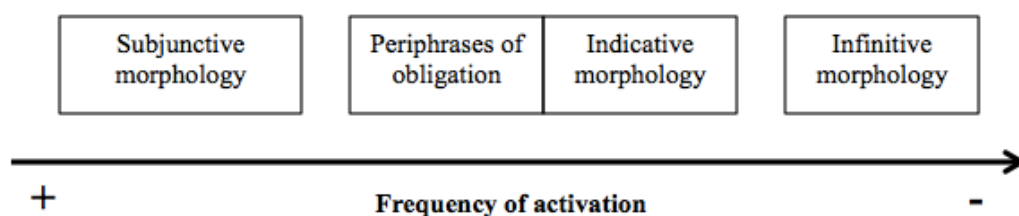


Figure 29. Production of directives based on language activation

Although low proficiency HS and all groups of second language learners also recognized the need for an inflected form in Spanish (as seen in their use of indicative), they also allowed for the presence of English-like infinites as the one seen in (88). These groups, highly dominant in English and with lower percentages of Spanish use, seemed to be more likely to rely on uninflected morphology to express indirect commands, possibly as a by-product of CLI from English.

This section has focused on the analysis of the different types of divergences found in HS and L2 learners with the aim of establishing patterns of ungrammatical mood selection. In the following, I will provide a summary of the results obtained thus far regarding participants' production of reported assertions and indirect commands.

5.4.2. Production of assertions and commands: Interim summary

Based on the results examined in the previous section, the elicitation of reported assertions appeared to yield highly comparable results across age and proficiency groups. In fact, statistical analyses revealed that HS and L2 learners followed the same control-like pattern, which consisted in the overextension of subjunctive and periphrastic constructions to assertive contexts. The production of reported directives revealed several differences across groups, mostly modulated by the proficiency and age of onset of the

participants. While advanced groups (HS and L2ers) and intermediate HS obtained control-like scores, the performance of intermediate second language learners and low-proficiency early bilinguals differed significantly from SDCs. Language proficiency also determined the range of alternative forms participants used in production. HS and L2ers with higher levels of proficiency seemed to be aware of the need for an inflected form in the embedded clause of reported directives. Their difficulties to retrieve subjunctive morphology, however, induced the alternation of these forms with periphrases of obligation and indicative. In contrast, low HS and L2 learners also considered non-inflected forms to report commands, seemingly following English-like patterns.

Correlations across the two experimental groups also documented the effects of frequent Spanish/English use in participants' performance. While L2 learners did not seem to be affected by increased Spanish use, HS' scores were positively correlated with frequent activation of Spanish in the case of reported assertions and directives. Interestingly, increased use of Spanish led to higher levels of accurate subjunctive production and less reliance in alternative means of expression.

This section was dedicated to the analysis of HS and L2 learners' production of mood alternations in clauses headed by a communication verb. The following segment will be focused on participants' acquisition of the syntactic and semantic constraints associated with obviation effects present in desideratives.

5.4.3. Co-reference and obligatory mood selection in desideratives

The elicited production task also included 10 items focused on the analysis of obviation effects and obligatory mood selection in desiderative predicates. Situations

were distributed into 2 different conditions, eliciting either subject co-reference (89a) or disjoint readings (89b).

(89) *Context:*

a. *El rey tiene noticias urgentes y los príncipes lo escuchan con mucha atención.*

(“The king has urgent news and the princes are carefully listening to him”)

King: “¡A ver, ahora hablo yo!”

(“Let’s see, now I will speak!”)

b. *Los príncipes tienen noticias urgentes y el rey los escucha con mucha atención.*

(“The princes have urgent news and the king is carefully listening to them”)

King: “¡Por favor, príncipes, su anuncio!”

(“Please, princes, (tell me) your news!”)

Question: ¿Qué quiere el rey?

(“What does the king want?”)

Answer: El rey quiere(decir) las noticias importantes.

(“The king wants (say) the important news”).

Participants’ answers were elicited following the procedure described in the previous section, where the context given prompted them to produce either an infinitival form (89a) or intensional subjunctive (89b). In the case of (89a), the context presented the king as the sole agent of the event described, conveying co-reference between the subject of the matrix clause and the one in the embedded proposition: *El rey_i quiere (pro)_{i/*j} decir las noticias importantes* (“The king_i wants (pro)_{i/*j} to say the important news”). In (89b), however, the princes are the ones with the important news, and they are urged by the king to reveal them as soon as possible. In this case, the situation indicates that the monarch - subject of the matrix clause- wants the princes –subjects of the embedded clause- to comply with his request. The only construction that could convey this type of disjoint reference consisted in the use of the complementizer (*que*) and the subjunctive form of

the verb *decir*, as in *El rey quiere que (los príncipes) digan las noticias importantes* (“The king wants (the princes) to say the important news”).

To my knowledge, there are no previous studies focused on the production of obviation effects and mood selection within the same experimental task. Based on the results obtained in the TVJT reported in this dissertation, it is possible that participants’ lack of mastery of obviation effects could have affected their overall rates of (intensional) subjunctive selection. In particular, HS and L2 learners seemed to be prone to overextend co-referential readings to disjoint reference contexts, producing infinitival structures like (89a) to contexts where subjunctive would be expected. Previous work on the use of subjunctive mood in SDR desideratives also predicted that both experimental groups would be likely to resort to the use of unspecified forms –either indicative (90) or infinitival (91)- in substitution of subjunctive morphology.

(90) El rey quiere que (ellos) *dicen las noticias importantes
 The king wants that (they) say[3plIND] the news important
 “The king wants them to say the important news”

(91) El rey quiere que (ellos) *decir las noticias importantes
 The king wants that (they) say[3plINF] the news important
 “The king wants them to say the important news”

Despite the tendency to simplify the structure of disjoint reference contexts using the structures illustrated in (90) and (91), these studies predicted that the production of intensional subjunctive in obligatory contexts would still yield higher scores than those exhibiting polarity subjunctive (Montrul, 2007, 2011). As it has been argued in previous chapters (§2.3), I hypothesized that the chances of positive CLI from English in the case of reported directives might favor the opposite outcome. Table 28 summarizes the scores obtained across groups in both conditions:

Table 28.*Overall accuracy in co-referential and SDR contexts as a function of group*

		Context	
		Co-referential (infinitive)	SDR (subjunctive)
Controls	Recent immigrants	90.6%	87.5%
	Long-term immigrants	91.1%	84.4%
Heritage Speakers	Advanced	94.3%	84.7%
	Intermediate	87.8%	55.7%
	Low	81.3%	18.7%
L2 learners	Advanced	94.4%	94%
	Intermediate	87%	58.3%
	Low	74.4%	16.7%
Average		88.4%	65%

Following the trends documented in interpretation, participants obtained much higher scores in the co-referential condition than in contexts eliciting disjoint reference. A two-way repeated measures ANOVA with a 2 (context) x 8 (group) factorial design confirmed these observations, revealing main effects for context ($F(1,153)=163.801$, $p=.000$) and group ($F(7,153)=19.890$, $p=.000$), and an interaction of these two factors ($F(7,153)=16.948$, $p=.000$). These results indicate that despite achieving higher levels of accuracy in the co-referential condition, groups differed in their overall composite scores as a function of proficiency. Specifically, only low HS and L2 learners obtained significantly different scores from recent and long-term immigrants ($p=.000$) across conditions.

A series of One-way ANOVAs were calculated in an attempt to examine each of the experimental conditions in more detail. The majority of participants obtained a similar range of scores in the co-referential condition, however, statistical analyses detected significant differences between the performance of low L2ers ($M=74.4\%$; $SD=20.64$) and the rest of the groups ($F(7,153)=4.629$, $p=.000$) in this particular condition (as illustrated in Figure 30).

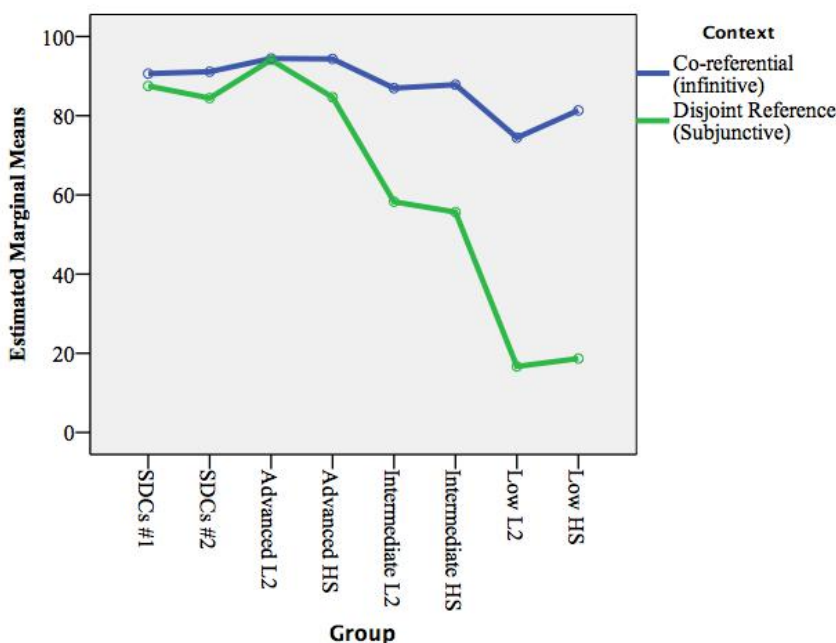


Figure 30. Production means as a function of context and group.

In contrast with the patterns observed in the interpretation of these predicates, no additional effects of age, group or language use were documented in this condition, suggesting that the production of infinitive in co-referential desideratives is rather stable across participants. Interestingly, the advantage documented in intermediate HS' interpretation of co-referential contexts, did not extend to their production. These results are in line with the findings reported in other cases of bilingual language development, where speakers tend to have better receptive than productive skills (Polinsky & Kagan, 2007; Sherkina-Lieber et al. 2011).

Conversely, the results of a second test confirmed that participants' performance in SDR contexts was strongly modulated by their proficiency in Spanish, even more so than in the previous condition ($F(7,153)=20.817, p=.000$). The figure below (Figure 31) shows the scores achieved in this experimental condition:

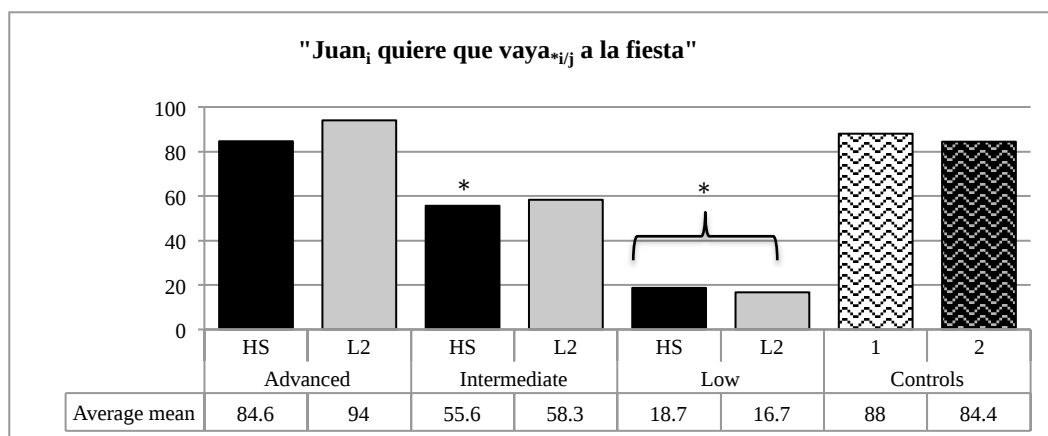


Figure 31. Average means in SDR condition as a function of proficiency and group.

When HS and L2 learners' production of subjunctive was compared to that of controls' it was observed that only advanced participants ($M_{HS}=84.7\%$, $SD=25.56$; $M_{L2}=94\%$, $SD=20.61$) and intermediate second language learners ($M=58.3\%$, $SD=42.60$) obtained statistically similar scores. Despite the small variations between experimental groups, statistical analyses confirmed that there were no significant differences between proficiency-matched L2ers and HS in this condition. Early bilinguals' production of desideratives (in co-referential and SDR contexts), however, was notably more affected than that of L2ers' in production, as seen by the lack of HS advantage in any of these conditions.

Age of onset differences did play a role within the HS group: once again, sequential bilinguals at intermediate levels of proficiency ($M=60\%$, $SD=34.6$) outscored their simultaneous counterparts ($M=51.7\%$, $SD=39.5$) when producing subjunctive in SDR contexts. Following previous reports in interpretation, the performance of HS with low levels of proficiency differed greatly from SDCs, regardless of their age of onset of bilingualism (sequentials: 10%; simultaneous: 21.8%).

Pearson correlations also documented that increased frequency of Spanish use was strongly associated with the production of accurate intensional subjunctive in SDR contexts in the case of HS ($r=.390$, $p=.001$) but not in L2 learners ($p > .05$). Additional correlations within the HS group also revealed that English use negatively affected their accuracy rates in this condition ($r=-.252$, $p=.040$). These observations support the hypothesis that frequent language activation reinforces the mapping of certain features -in this case [+volition]- into specific morphological forms (intensional subjunctive). This argument will be further developed in the next chapter (Chapter 6).

Although accuracy scores provide crucial information about participants' ability to differentiate between co-referential and SDR contexts, they need to be complemented by a descriptive analysis of the types of divergences reported in each of the conditions. The following section is focused on this particular topic.

5.4.3.1. Divergent patterns in the production of co-reference and SDR in desideratives

As it has been mentioned in the previous section, the examination of participants' divergences across the two experimental conditions allows for the exploration of different aspects: 1) whether HS and L2ers were affected by CLI from their dominant language (English) to the same extent; 2) if proficiency determined the emergence of certain types of constructions; and 3) whether the same divergences appeared in different types of mood selection (obligatory vs. variable).

In the case of co-referential contexts, participants' level of proficiency seemed to modulate the nature of the divergences found in their responses. Like SDCs, who overextended the use of subjunctive to co-referential contexts, advanced and intermediate

HS and L2 learners also resorted to the production of subjunctive -albeit to a lesser degree-, as seen in Figure 32:

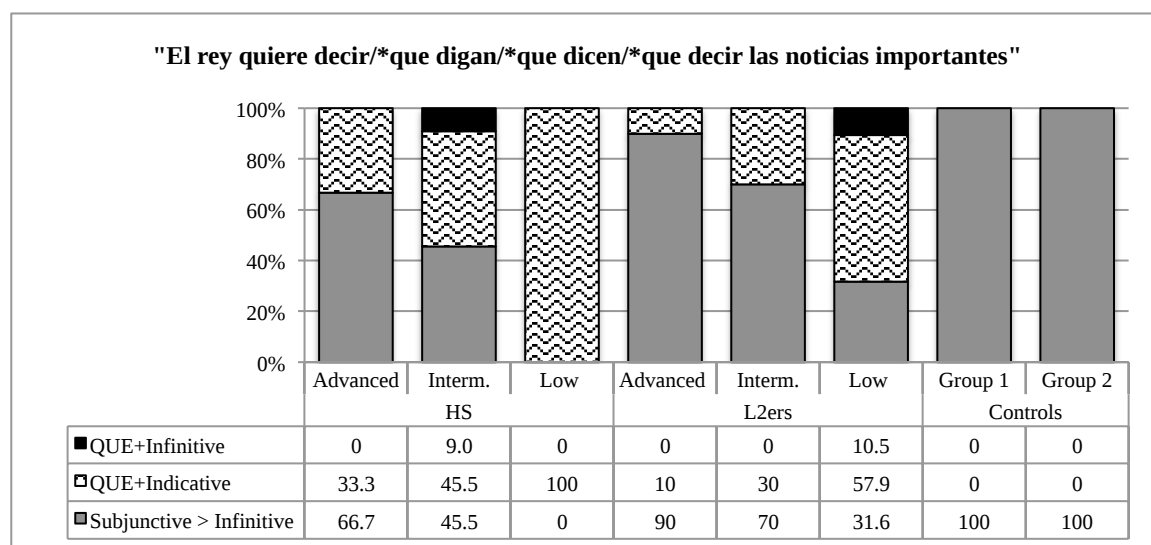


Figure 32. Distribution of ungrammatical utterances in the co-referential condition as a function of type and group.

Based on the distributions illustrated in Figure 32, there seemed to be a crucial difference between SDCs and the two experimental groups (especially at intermediate and low levels of proficiency). Whereas the former did not appear to have difficulties retrieving subjunctive forms in production to express disjoint reference (in fact they seemed to overextend these forms to co-referential contexts), intermediate and low HS and L2ers (and to some extent, advanced) generally preferred the use either indicative (92) or infinitival forms (93) in the embedded clause of these constructions, a tendency that grew exponentially as proficiency in Spanish decreased.

(92) Arthur quiere que le *enseña a ser más responsable
 Arthur wants that CL teach[3sgIND] to be more responsible
 "Arthur wants (her) to teach him to be more responsible"

(93) Snooky quiere que su amiga *a tener un novio más guapo
 Snooky wants that her friend to have[INF] a boyfriend more handsome
 "Snooky wants her friend to have a more handsome boyfriend"

These two types of divergences are very informative about the extent to which HS and L2ers were able to access subjunctive morphology in co-referential contexts. The use of the complementizer /*que*/ and indicative in the subordinate proposition of these constructions (92) suggests that participants were aware of the need for an inflected form in disjoint reference clauses, but were unable to retrieve the expected subjunctive form. The same is believed to apply to structures like (93), where participants opted to use the complementizer *que* followed by a non-finite construction. In this case, however, the type of unspecified form used, is more similar to the one present in the dominant language.

Although HS and L2 learners displayed the same type of divergences, they presented slightly different distributions. Second language learners seemed to favor the use of subjunctive over indicative or a non-finite form at advanced levels of proficiency. This pattern was also reported in HS, although this group of bilinguals tended to use indicative forms more often than L2ers, particularly at lower levels of proficiency. As it will be discussed in the next chapter, HS and L2 learners' distinct patterns of mood selection were likely to be a reflection of their underlying availability to access and retrieve subjunctive morphology in different types of constructions.

The examination of the different types of divergences observed in the production of SDR contexts also provided additional information about participants' preferences in interpretation. As discussed in previous sections (§5.4.3), all groups achieved rather low accuracy rates in the interpretation of SDR contexts. These rates were similarly replicated in production, where advanced participants overextended infinitive to SDR contexts, as seen in Figure 33:

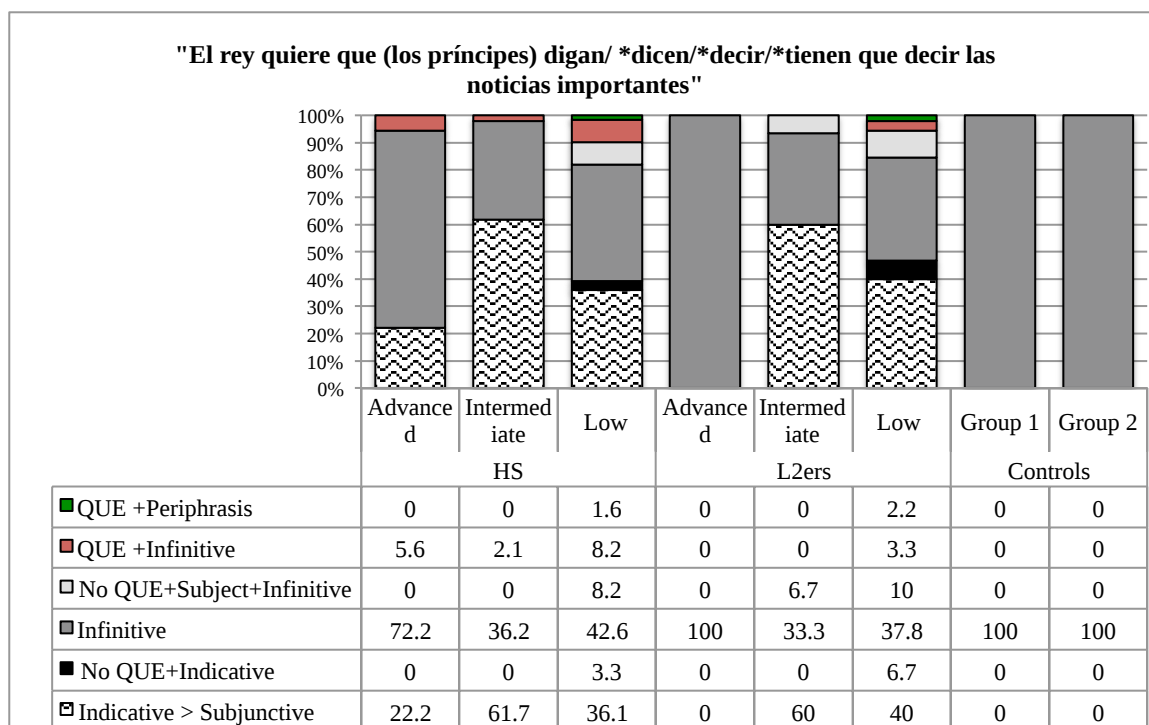


Figure 33. Distribution of ungrammatical utterances in the SDR condition as a function of type and group.

These results contrast with Otheguy (2013) and Bookhamer (2013) work on subjunctive selection in the Spanish spoken in NYC. According to these authors, first generation Latin American newcomers (i.e. referred as long-term immigrants in this study) already exhibit a certain degree of variation in the use of subjunctive in obligatory contexts, which is reported to alternate with indicative. This is not the case of the control groups interviewed in this dissertation, whose decreased use of subjunctive in SDR contexts is not a by-product of indicative overextension, but of a potential contextual reinterpretation (SDR > co-referential) that would allow for infinitive/subjunctive optionality (Gallego & Alonso-Marchs, 2014b).⁵⁶

⁵⁶ An alternative explanation for this tendency is that bilinguals (SDCs and both experimental groups) have started to eliminate the mapping between subjunctive and disjoint-reference and infinitive and co-reference. Notwithstanding, the results obtained in interpretation (TVJT) point to a reinterpretation rather than a restructuring of these constructions.

However, it is interesting to note that not all first generation immigrants exhibited the same type of variation. In the present study, long-term residents, who may be undergoing L1 attrition as a result of decreased language use and interlanguage contact (as documented in Otheguy & Zentella, 2012 or Schmid, 2011) presented considerably different trends in their interpretation of subjunctive morphology in reported directives. These data could indicate that some of the tendencies observed in HS are in fact a consequence of extended language contact, as seen in the results of long-term residents.

The overextension of infinitive to disjoint reference contexts was also observed in HS and L2 learners, although these groups alternated this type of forms with other structures as their proficiency in Spanish decreased. With the exception of advanced HS, who differed from their L2 counterparts in their use of indicative and infinitival constructions, the remaining groups exhibited a very similar distribution of divergent SDR structures regardless of their age of onset. After the use of infinitive (94), one of the most frequent alternatives to intensional subjunctive was the production of indicative (95):

(in an SDR context)

- (94) El tutor de ciencias quiere *ir a ver la película
 The tutor of sciences wants to go[INF] to see the movie
 “The science tutor wants (his students) to go see the movie”

- (95) La abuela quiere que la nieta le *cierra las ventanas
 The grandmother wants that the g.daughter CL close[3psIND] the windows
 “The grandmother wants her granddaughter to close the windows”

This last option was particularly popular among intermediate L2ers and HS, who seemed to have more difficulty in retrieving the appropriate finite forms. These groups also exhibited the production of structures like the one illustrated in (96) very much

influenced by the syntax of English *for-to* infinitival constructions documented in Chapter 2:

- (96) El tutor de ciencias quiere *a sus estudiantes que ven la película
 The tutor of sciences wants for his students that see[3plIND] the movie
 “The science tutor wants for his students to see the movie”

However, in the case of early bilinguals (and low proficiency L2ers), this possibility also co-existed with the presence of infinitival constructions headed by a complementizer, suggesting that they were minimally aware of the syntactic contrasts in English and Spanish:

- (97) Bob Esponja quiere que Patrick *se viajar a Hawaii antes
 Bob Esponja wants that Patrick CL travel to Hawaii before
 “Bob esponja wants (for) Patrick to travel to Hawaii before”

Although these structures featured the inclusion of *que* (“that”) crucial in the formation of SDR embedded clauses in Spanish, it also involved the use of an uninflected form, which is considered ungrammatical in this language. Curiously, only low proficiency HS resorted to the use of a very similar structure based on the English equivalent (98). Intermediate and low L2 learners also adopted this form in a small percentage of the cases, producing slight variations (99) that were not present in the utterances elicited by their HS peers:

- (98) El jefe quiere *María poner canciones más modernas
 The boss wants María put[INF] songs more modern
 “The boss wants María to put more modern songs”

- (99) El cocinero quiere sus clientes *a escoger todos los ingredientes
 The cook wants his clients to choose[INF] all the ingredients
 “The cook wants his clients to choose all ingredients”

Participants with low levels of proficiency also exhibited a variation of (98) in the form of an embedded clause lacking the presence of the complementizer, where the subordinate verb appeared in the indicative form:

- (100) La señora Rojas quiere los hijos comen más sano
 The lady Rojas wants the sons eat[3plIND] more healthy
 “Mrs. Rojas wants her sons to eat healthier”

Although it may be difficult to detect at a first glance, these structures can be classified based on their resemblance to the target form (*querer que* + subjunctive). The table below (Table 29) provides a summary of the wide array of divergent constructions that emerged from this task, taking into account their occurrence across different proficiency and age groups.

Table 29.
Distribution of divergent SDR constructions as a function of type and group

		Type of divergence					
		Infinitive (co-referent)	Compl.+ periphrasis	Compl.+ indicative	Compl+ infinitive	-Compl+ indicative	-Compl.+ infinitive
HS	Adv.	✓		✓	✓		
	Interm.	✓		✓	✓		
	Low	✓	✓	✓	✓	✓	✓
L2	Adv.	✓			✓		
	Interm.	✓		✓	✓		✓
	Low	✓	✓	✓	✓	✓	✓

In addition to favoring the overextension of infinitival constructions to SDR contexts (as seen in 94), participants tended to produce two different types of constructions. The first one included the presence of the complementizer *que* (“that”) followed by a subordinate verb, which was either inflected (as a periphrasis of obligation or in the indicative) or uninflected (infinitive). While the first group of constructions took into account the need for an inflected form in the embedded clause, the second was closer

to the type of structures found in English. The other set of examples documented in HS and L2ers' productions lacked the presence of the complementizer *que* ("that") and featured the alternation of either an inflected form (indicative) or an infinitival construction. In summary, one could say that with the exception of advanced participants, both experimental groups resorted to the same type of divergent forms with similar frequency.

Sections §5.4.1- 5.4.3 have analyzed participants' production of indicative and subjunctive in structures that allowed for mood alternations as well as their mastery of obviation effects in desideratives. The following section will compare HS and L2 learners' accuracy in contexts featuring polarity subjunctive (reported commands) with those that trigger intensional subjunctive (disjoint reference in desideratives) with the objective of examining whether one is more vulnerable to erosion than the other.

5.4.4. Comparing the production of polarity and intensional subjunctive

As it has been pointed out in previous sections, one of the main goals of this dissertation is to determine whether mood alternations based on semantic/pragmatic constraints are more prone to optionality and CLI than those where mood is lexically selected. With this goal in mind, I performed a series of paired sample t-tests to assess L2 and HS' accuracy in production across different types of subjunctive (polarity and intensional). The following table (Table 30) summarizes these groups' scores in the elicited production task, taking into account two important factors: in the case of reported directives, accuracy was divided into: 1) participants' use of (polarity) subjunctive morphology and, 2) a combined score that included the use of these forms and periphrases of obligation, which could also convey a jussive interpretation.

Given the large percentage of SDR tokens that featured the overextension of infinitive, the analysis of these contexts was limited to scores featuring the original means obtained in the SDR condition, and an adjusted score that excluded divergences based on the overextension of infinitive⁵⁷.

Table 30.

Average means in polarity and intensional subjunctive production

Group		Type of subjunctive			
		Polarity		Intensional	
		<i>(Juan les dice a sus hijas que coman/tienen que comer)</i>		<i>(Bob Esponja quiere que Patricio viaje a Hawaii antes)</i>	
		Including periphrases	Not includ. periphrases	Original [+infinitive]	Adjusted [-infinitive]
HS	Advanced	97.3%	93.7%	88.9%	93.8%
	Intermediate	77.4%	62.7%	59%	62.7%
	Low	48.3%	16.6%	21.6%	32%
L2	Advanced	95.5%	91.8%	94%	96%
	Intermediate	63.9%	35.8%	58.3%	59%
	Low	57.5%	18.8%	16.7%	32.8%

Statistical analyses obtained from a series of paired sample t-tests revealed that all HS groups achieved higher scores in the production of reported directives ($M=81\%$, $SD=28.6$) than in the use of subjunctive in SDR contexts ($M_{original}=65.7\%$, $SD=35.8$; $M_{adjusted}=71\%$, $SD=36$). These differences, however, were only statistically significant when periphrases of obligation were included in the results. This seems to suggest that polarity subjunctive within deontic predicates does not appear to be more prone to erosion than its intensional counterpart. In contrast, second language learners were more accurate when they used obligatory subjunctive forms in SDR contexts -either before ($M=64.3$, $SD=41.1$) or after ($M=68.3$, $SD=42.3$) the score adjustment- than when they were prompted to produce polarity subjunctive ($M=53.3$, $SD=44.9$) in reported

⁵⁷ This additional score was calculated to prevent the incursion of any potential effects derived from semantic reinterpretations of SDR contexts.

directives. In contrast with the HS group, these differences only emerged when periphrases of obligation were not included in the final scores. When these forms were taken into account, reported directives elicited higher scores than disjoint reference desideratives ($t(68)=3.356, p=.025$).

Additional tests were implemented in an attempt to discern whether proficiency played a role in the comparison between directive and desiderative SDR contexts. The results are plotted in the following figure (Figure 34):

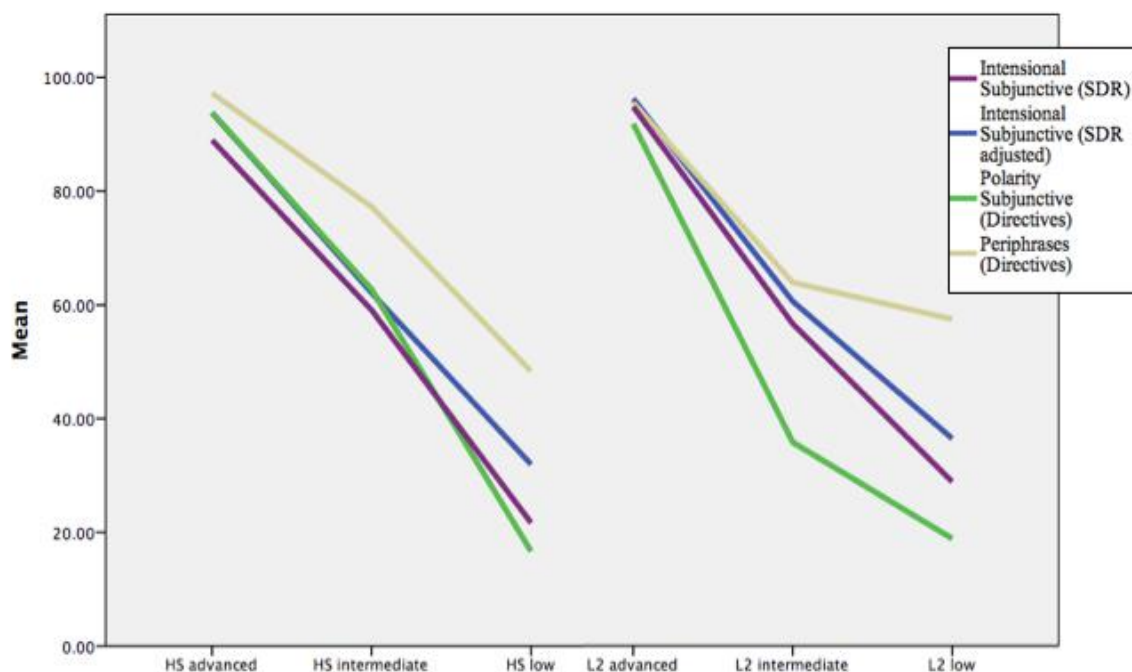


Figure 34. Average means of subjunctive and periphrases use in production as a function of context and proficiency.

Whereas advanced L2 learners performed at the same level of accuracy across conditions, their HS counterparts obtained significantly better scores when reporting indirect commands, but only when the use of periphrases of obligation was included in the final score. Despite these small differences, both groups seemed to be equally able to

access obligatory and non-obligatory subjunctive forms. This pattern was also documented in intermediate and low HS, who did not seem to favor lexically selected (intensional) subjunctive over the semantically motivated (polarity) one. Proficiency-matched L2ers, however, performed significantly better when they were prompted to use obligatory rather than variable subjunctive, as seen in Figure 25.

In general, the results from this elicited production task documented differences regarding mood selection based on the obligatoriness of the form, the proficiency of the participants and their age of onset of bilingualism. The following section provides a summary of the aforementioned results.

5.4.5. General discussion of Task 3

The goal of this task was to analyze participants' production of mood alternations in constructions headed by a verb of communication (i.e. assertions and directives), as well as their productive knowledge of co-referential and SDR contexts in desideratives. Results showed that none of the groups exhibited any notable difficulties in the selection of indicative mood to report assertive predicates, or when expressing co-reference in desiderative constructions. In the case of obligatory and variable subjunctive production, participants' performance appeared to be driven by three factors: proficiency, frequency of activation of Spanish, and to a certain extent, age of onset of bilingualism. The analysis of reported directives revealed that both L2ers and HS resorted to the use of periphrases of obligation to avoid the production of subjunctive morphology. This strategy was modulated by frequency of language use and proficiency: the use of alternative structures to avoid morphological instantiations of mood increased as participants' mastery and activation of Spanish decreased.

Proficiency also determined the type of divergences that emerged in reported directive contexts, where uninflected constructions (featuring infinitival forms) were preferred to inflected ones (with indicative) as participants' mastery in the language diminished. This pattern was also documented in desideratives with disjoint reference, where subjunctive mood is lexically selected by the matrix verb. In this case, the use of subjunctive alternated with a wide variety of forms, ranging from more control-like (using the complementizer *que* to introduce the subordinate clause plus an embedded inflected form), to more English-like, as seen in examples (96-100).

The distribution of these alternative constructions was also modulated by proficiency and frequent language activation: advanced participants who used Spanish more frequently exhibited more control-like patterns in this condition than those with lower levels of proficiency and decreased language activation. Interestingly, the similarities between SDCs and the experimental groups were not limited to accurate uses of subjunctive mood. Like controls, advanced and intermediate HS and L2 learners also opted for the overextension of infinitive to SDR contexts (as seen in 94). This peculiarity reinforces the hypothesis that SDCs (and to some extent HS and L2 learners) were likely to have reinterpreted disjoint reference scenarios as being co-referential.

The following section will analyze participants' production of obligatory and variable mood selection in a more spontaneous setting. Specifically, it will describe HS and controls' use of desideratives as well as expressions headed by a verb of communication in the context of an elicited narration.

5. Task 4: Spontaneous Elicited Production

Several studies have underlined the importance of including spontaneous production tasks in the analysis of bilinguals' use of mood morphology (Geeslin & Gudmestad, 2008; Geeslin, 2010, Polinsky, 2008). According to these investigations, the use of a wide variety of elicitation methods –ranging from highly constrained to more spontaneous – are able to provide researchers with a better opportunity to study participants' consistency across tasks as well as their potential “predictors of choice of a given variant” (Geeslin & Gudmestad, 2008:74). The objective of this particular task was to inform about the spontaneous use of co-referential and SDR desideratives as well as reported directives and assertions in a setting that went beyond the sentence-level. Since the task was completed in both English and Spanish, it also sought to explore participants' preferred options in their dominant language. The analysis of HS and L2 learners' performance in English and Spanish was expected to provide additional information about potential locus of CLI due to the increased frequency of certain structures in their preferred language.

As reported in Chapter 4, all participants were invited to return for an additional session to complete this production task. Unfortunately, the rate of attrition was considerably high, especially in the L2 group⁵⁸. Notwithstanding a 42% of the original HS group ($N=29$; 6 advanced, 12 intermediate and 11 low), and a 36% of the controls ($N=9$; 4 long-term residents and 5 recent immigrants) agreed to participate in this task. This last group (SDCs), however, only produced a total of 5 of the structures examined in

⁵⁸ Only 5 L2 learners (7% of the total sample) completed this task. Given the low number of participants in this group, it was decided that their results would not be included in the final analysis.

this dissertation. This number was also deemed insufficient to make statistically significant comparisons between this group and HS.

Despite the limitations and exclusions in the data, the results obtained within the HS group contributed to confirm and complement some of the information gathered in the previous task, providing spontaneous examples of mood selection and obviation effects in a context where participants were much less constrained in their production. In an attempt to examine the acquisition of obligatory mood selection and obviation effects in more depth, it was determined that participants' production of co-referential and disjoint reference purpose clauses would also be included in the analysis, following the study presented in §3.2.2 (Table 4). In the preliminary exploration of early subjunctive use in young bilinguals examined in Chapter 3, a total of 178 Spanish/English bilingual children (age range: 4;1-11;5) were prompted to narrate one of Mercer Mayer's *Frog Stories* (1974). The youngest group of children was interviewed by Austin et al. (in prep.) in Union City, NJ, while data from older bilinguals had been previously collected by Zurer-Pearson (2002) in Miami, FL.

Results from both groups revealed that reported directives headed by the verb of communication *decir* ("to say") and co-referential purpose clauses (*para* + infinitive) were the most frequently used structures out of the three that were taken into consideration (purpose clauses, reportatives and desideratives). Conversely, constructions with lexically-selected subjunctive, such as disjoint reference desideratives (*querer que* + subjunctive) and purpose clauses (*para que* + subjunctive) were the most uncommon in the narrations of these children, following the data presented by Silva-Corvalán (2014). This distribution, which pointed to a more frequent use of polarity than intensional

subjunctive, could have affected children's accuracy rates across time. The younger group of bilinguals (4;0-6;0) had no apparent problems producing co-referential expressions (purpose clauses and desideratives), although they seemed to exhibit some optionality in contexts where subjunctive (either obligatory or variable) was expected. Older children resolved some of this variability in certain lexically-selected contexts (purpose clauses); however, the scarcity of SDR desideratives prevented any further predictions for this type of mood selection.

The divergences observed in the data of young bilinguals were very similar to the ones reported in HS adults in the elicited production task implemented in the present study (see §5.4.1.1 and §5.4.3.1 for more details). Both young and adult bilinguals who had experienced periods of increased activation of Spanish (because of a recent language switch from Spanish to English or more frequent use of the former) still recognized the need for an inflected form in the subordinate clause of reported directives, although subjunctive mood was substituted by indicative. In contrast, older groups who had been exposed to the majority language (English) for a prolonged period of time appeared to be more prone to use English-like infinitival forms in directives and SDR desideratives, mirroring the pattern reported in low proficiency HS adults. Table 30 summarizes the results obtained by the 29 Spanish heritage adults interviewed in this task (Advanced=15; Intermediate=48, Low=22), who produced a total of 85 tokens of the targeted structures. Participants' scores were classified based on their levels of proficiency and the type of structure analyzed (purpose clauses, reported assertions/directives, desideratives):

Table 31.

Number of tokens and accuracy rates (%) based on type of structure and proficiency.

	Purpose		Desideratives		Reports with ‘Decir’	
	Same subject	Different subject	Same subject	Different subject	Reported assertions	Reported directives
Advanced	100% (1/1)	100% (1/1)	100% (6/6)	-	100% (3/3)	100% (4/4)
Intermediate	100% (14/14)	100% (1/1)	78% (7/9)	-	100% (11/11)	77% (10/13)
Low	100% (2/2)	-	75% (3/4)	0% (1/1)	100% (4/4)	63.3% (7/11)

Preliminary analyses revealed several differences between previously examined data from young bilinguals and this group of adult HS. Despite the small number of tokens in some of the conditions, adult HS did not exhibit any difficulties producing co-referential and disjoint reference purpose clauses headed by *para* (“for”).

- (101) a. [...] la [*] muchacho está poniendo la ropa para *salir* # <a la> [/] a la [/] con su familia (HS007, intermediate)⁵⁹
 “the boy is getting dressed to go out with his family”
 b. [...] y su padre le manda a su cuarto para que *esté* con su tortuga (HS051, advanced)
 “[...] and his father sends him to his room so that he can be with his turtle”

Unfortunately, the only structure that could provide additional information about HS’ mastery of obligatory mood selection in other contexts (SDR desideratives) was limited to one (ungrammatical) example obtained from a HS with low levels of Spanish proficiency. This participant resorted to the use of an infinitival clause to express this type of predicate:

- (102) Entonces el muchacho del band [:i=banda] fue enojado y uh # &que quería que um la rana <quitar [/] quitar> del restaurante (HS019, low)
 “Then the boy of the band was angry and wanted the frog [inf.] to get out of the restaurant”

⁵⁹ Each of the examples provide the identification of the participant (HS+number) followed by their level of Spanish proficiency.

As argued in previous sections, it is possible that the selection of infinitive *in lieu* of subjunctive was induced the speaker's inability to retrieve an inflected form –more specifically subjunctive- in that context, which could have been influenced by the syntactic structure of his/her dominant language (English). This influence, however, did not derive in wholesale transfer, as the speaker still showed some awareness regarding the need for Spanish SDR constructions to be introduced by the complementizer *que* ("that"). The presence of this element in the desiderative predicate suggests that the infinitival form might not have been used following the English equivalent, but rather as a relief strategy due to difficulties in lexical access. In fact, this particular speaker (HS019) exhibited a considerable degree of variability in the production of verbal morphology (person, tense and aspect), oftentimes considering more than one possible option within a sentence:

- (103) a. y *miron # ellos *miró # *miré # miraban # miraron
 and look[?] they look[3sPrt] looked[1sPrt] looked[3pImp] looked[3pPrt]
 "And they looked"
 b. [...] y la rana uh *corró # *corrié # corr(i)ó uh un otra mesa
 [...] and the frog uh ran[?Prt] ran[?Prt] ran[3sPret] uh an other table
 "and the frog ran to another table"

These examples could shed some light on the results obtained in the previous task (see §5.4.3.1, Table 29 for more information). The production of a wide range of divergences, fluctuating from more to less target-like, could have been induced by varying degrees of lexical access, modulated by the levels of activation of bilinguals' minority language (or lack thereof).

Co-referential desideratives, much more frequent in HS' narratives, were not an issue for advanced HS, although their intermediate and low counterparts seemed to struggle with a slight percentage of them, as seen in the previous production task. In the

majority of the cases, these utterances consisted in the production of an inflected form after the matrix verb:

- (104) [...] y cuando la jefa está poniendo [=cogiendo] la frog [:i= rana],
quería **sacando* a fuera de la restaurante (HS007, intermediate)
“and when the boss was catching (caught) the frog, she wanted to take it
out[gerund] of the restaurant”.
- (105) [...] y el mesero Don Julio quiere **maté* el sapito. (HS013, low)
“and the waiter Don Julio wanted to kill[pret.] the frog”.

While the first example could have been the result of an incorrect phonetic realization of the form *sacarlo* (“to take him out”), the second one involves the use of a fully inflected preterite form. Other divergences in this condition included the use of the complementizer *que* (“that”) and infinitive to introduce the subordinate clause, partially mirroring the structure found in English SDR contexts:

- (106) Entonces el mesero quiere [/] *quería *que cachar* [=atrapar] el [/] la rana
(HS019, low)
“then the waiter wanted to catch the frog”

In this case, it is possible that the participant used the complementizer as a placeholder for the space that would be occupied by the preposition *to* in English, streamlining the production of complex structures in a decreasingly used language (see Odlin (1989) and Kormos (2011) for similar examples).

In contrast with desideratives, the production of reported assertions did not seem to be an issue for any of the participating speakers, although the use of indirect commands –featuring polarity subjunctive– prompted a notable degree of optionality as proficiency in Spanish decreased. The most frequent divergence at intermediate and low levels involved the substitution of indicative for subjunctive (intermediate HS: 100% of the cases; low HS: 50%), as illustrated in the following examples:

(107) [...] el dueño les dice que se **largan* del restaurante (HS004, intermediate)
 “the boss tells them to leave [ind.] the restaurant”

(108) [...] todo el mundo es mad [=enojado] con el niño y le dice que **va* a su cuarto (HS020, low)
 “everybody was angry at the boy and they tell him to go[ind.] to his room”

As it was argued in the previous task, the lack of English-like infinitives in these structures, particularly in the case of intermediate HS, could be associated with increased levels of activation of Spanish, where the report of directives involves the use of fully conjugated forms. This morphological requirement could have driven some low-proficiency HS to overproduce inflected forms in directive contexts, as seen in the examples below:

(109) [...] y don Julio dice que la familia necesita [/] **necesite* &vol # *exité* [=salir] del restaurante (HS013, low)
 “and Don Julio says that the family needs [pret?]to leave the restaurant”

(110) El niño quería la rana y ah el mesero estaba enojada [=enojado] y dijo que la familia *necesita va* de ahí (HS019, low)
 “the boy wanted the frog and the waiter was angry and said that the family had [ind.]to leave that place”

The use of a periphrastic form instead of a syncretic one (subjunctive) in these participants seems to indicate that they might have had difficulties accessing subjunctive morphology in online production. The representation of these contexts, however, is intact, seeing as they rely on forms expressing obligation to convey the directive component present in indirect commands. In fact, periphrases were frequently used by low proficiency HS, accounting for an 86% of their accuracy in this condition. In contrast, only one of the intermediate HS (and none of the advanced) opted for this alternative form of expression over subjunctive, following the patterns reported in the previous task (see Figure 26).

One of the most striking similarities between young and adult HS in this type of task, is that the two groups presented an almost identical distribution of tokens across the three constructions examined, as illustrated by the figure below:

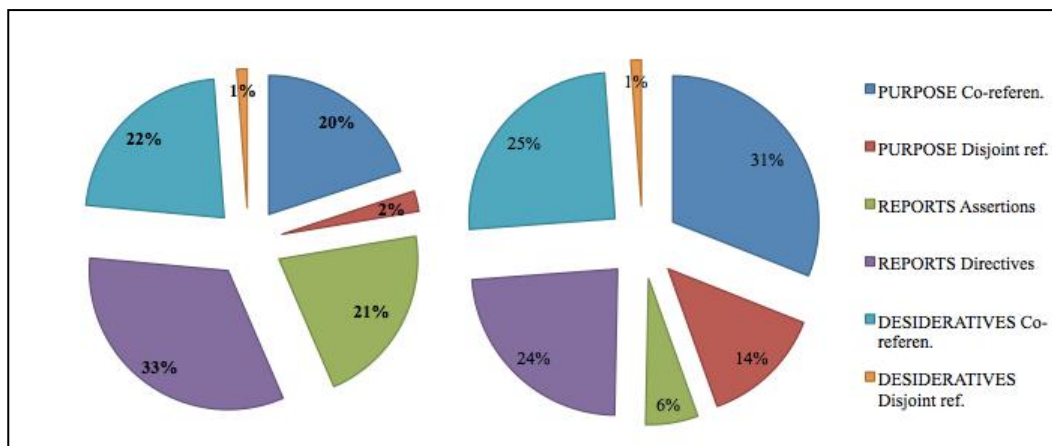


Figure 35. Distribution of tokens in the adults (right) and children (left) data as a function of type of context.

Figure 35 shows that with the exception of SDR purpose clauses headed by *para* (“for”) and reported assertions, both groups of HS (children and adults) used the remaining constructions involving mood selection with similar frequency. Taking into consideration the limited amount of tokens analyzed in this task, one could argue that frequency of occurrence in participants’ output could have affected the degree of maintenance of subjunctive morphology in structures requiring this form. Previous research on word recognition (Dahan, Magnuson & Tanenhaus, 2001; Gaskell, 2007; Kittredge, Dell, Verkuilen & Schwartz, 2008) has documented that relative frequency of a particular construction “affects the speed and accuracy of response in a timed task such as lexical decision” (Gaskell, 2007:138), influencing lexical access and decision-bias. Consequently, it is possible that despite the high degree of optionality present in reported directives across ages and groups, it should be easier to access –and retrieve- subjunctive as well as periphrastic forms in these structures than in the less commonly used SDR

desideratives. This type of frequency effects could potentially connect lack of activation in production to increased CLI, especially in low-proficiency participants, and would also provide an explanation as to why HS obtained higher scores in the production of reported directives.

Data from the English narratives supplied additional information about HS' preferences in their dominant language, particularly in the case of reported assertions and directives. These expressions were used more frequently than desideratives, which only constituted a 10% of the total sample of tokens analyzed (N=32). Following the distribution of occurrences observed in Spanish, the use of desiderative predicates appeared to be limited to three contexts, all of which conveyed subject co-referentiality by means of an infinitival clause:

- (111) [...] his [/] his dog and his turtle *wanted to come* along but he had explained that they were n(o)t allowed (HS016, intermediate)

In the case of directives, participants displayed the use of various alternatives offered by English to convey volition. One of the most frequent expressions involved the use of infinitival constructions (112), although HS also used different types of periphrases of obligation (113), and even the less common choice of subjunctive morphology (114) to report indirect commands:

- (112) [...] and then his dad tells him *to go* to his room with his frog [/] to be with his turtle and his dog <in his> [/] in his room (HS051, advanced)

- (113) The manager was very upset and told the family that they *had to leave* the restaurant (HS014, low)

- (114) [...] the manager # enraged # said that the family *leave* and never return # with that frog (HS004, intermediate)

Interestingly, participants who preferred the use of periphrases of obligation to subjunctive morphology in Spanish also presented a higher number of instances of this construction in their dominant language. Given the constant activation of both languages in bilinguals as reported in Bartolotti & Marian (2012), and Marian & Spivey (2003), it is possible that HS opted for periphrastic forms, available in Spanish and English, over alternative language-specific ones (i.e. infinitivals and/or subjunctive) to facilitate language switching and encourage more efficient processing of the two languages.

The following section provides a summary of the results reported in this task, placing a particular emphasis on its contributions to the interpretation of previous findings.

5.5.1. General discussion of Task 4

The results from this task complement previous findings discussed in this dissertation in two distinct ways. First, the analysis of mood selection in a more spontaneous setting confirmed that accuracy appeared to be generally dependent on participants' level of proficiency in Spanish. While advanced HS exhibited no difficulties producing any of the target structures, their intermediate and low-proficiency counterparts seemed to be more prone to optionality in certain contexts (except in the case of purpose clauses). Although limited, this dataset also provides several hypotheses that could explain some of the patterns observed in the previous task (§5.4). For example, HS' advantage in the production of polarity over intensional subjunctive might be connected to the frequency of occurrence of these constructions in their output. Since the former are much more frequent in participants' production than the latter (even in the case of young bilinguals), it is possible that the strength of the feature values involved in

this type of mood alternatives [$\pm$ subjunctive] may have been reinforced by prolonged activation in production.

The incorporation of a task that examined bilinguals' both languages gave additional insight –albeit indirect- on their mechanisms of lexical access and language processing. In this case, the existence of a structure that is shared by both English and Spanish (i.e. use of periphrases in reported directives) seemed to trigger a certain degree of (positive) bidirectional transfer, where similar structures were favored over unique ones to encourage more effective processing in real time. All the hypotheses introduced in this section will be further developed in the following chapter (Chapter 6), focused on the discussion of the results in light of the research questions investigated in this dissertation. The fifth and final section of this chapter includes a summary of the findings regarding participants' command of obligatory and variable mood selection across the experimental tasks.

5.6. Obligatory and variable mood selection across tasks: concluding remarks

As it has been reported throughout this chapter, proficiency and age of acquisition appeared to modulate most of the distinct patterns that emerged in the groups examined. This trend is illustrated in the following figure, which includes participants' average scores across experimental tasks⁶⁰:

⁶⁰ This figure does not include the results obtained in spontaneous production given the lack of significant data collected in the L2 group. Although reported in this graphic, the scores achieved in the TVJT for disjoint reference desideratives will not be discussed in this section, restricted to the contrast of different types of mood selection.

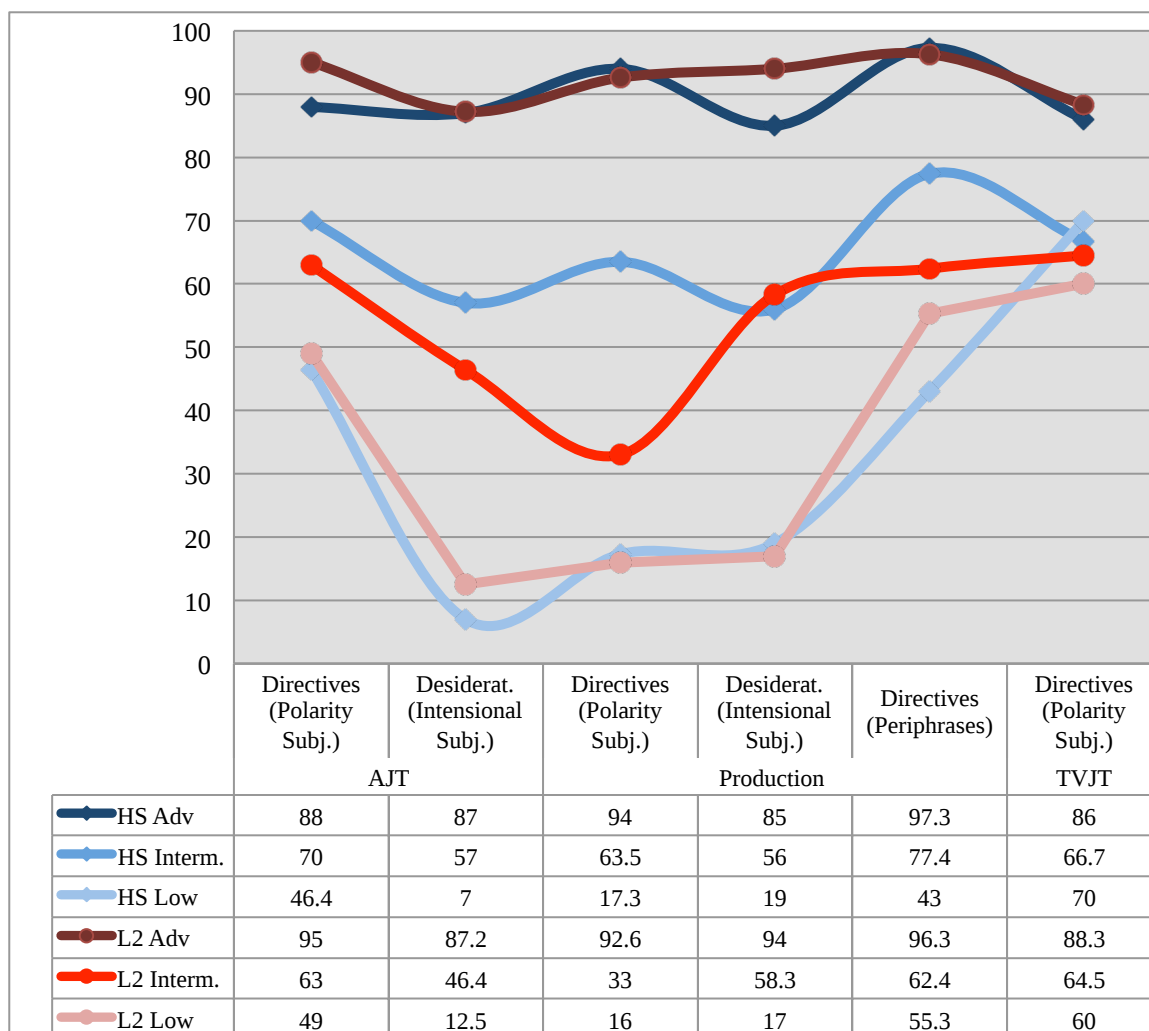


Figure 36. Mean accuracies across conditions, tasks and group.

One of the first aspects that stands out from Figure 36 is that advanced participants (HS and L2 learners) achieved high rates of accuracy across tasks, while early and late bilinguals with lower levels of proficiency exhibited a much more asymmetric performance, especially between productive and interpretive tasks. As it will be argued in Chapter 6, residual optionality in the domain of production is likely to be the result of unsuccessful form-feature mappings caused by decreased activation of the minority language. Despite the similarities between advanced L2 learners and HS, the performance of these two groups differed in significant ways. HS's scores in production, for example,

showed an advantage accessing and producing subjunctive morphology in cases where mood selection is not obligatory (polarity subjunctive: 94% vs. intensional: 85%). The contrast between these two types of constructions is nearly non-existent in late bilinguals (polarity subjunctive: 92.6% vs. intensional: 94%), who achieved comparable scores in both conditions. In the case of HS, however, the initial disadvantage in the production of intensional subjunctive was found to be a by-product of the overextension of infinitive to disjoint reference contexts, where subjunctive would have been expected (115):

(in the context of an SDR desiderative predicate)

- (115) El tutor de ciencias quiere *ir a ver la película
 The tutor of sciences wants to go[INF] to see the movie
 “The science tutor wants his students to go see the movie”

In fact, when HS’ scores were adjusted to disregard this type of divergences, there were no differences in this group’s production of polarity (94%) and intensional (93.9%) subjunctive. Although advanced HS outperformed proficiency-matched L2 learners in elicited production, this last group obtained slightly higher scores than their heritage counterparts in the AJT task.

In contrast with the aforementioned groups, participants with intermediate levels of Spanish proficiency exhibited significant asymmetries in their command of mood selection. The most striking contrast was found in the performance of intermediate L2ers, whose production of polarity subjunctive in directive contexts (33%) was much lower than their interpretation of this morphological form as a marker of indirect command (64.5%). While production/comprehension asymmetries were not as significant in the case of proficiency-matched HS, this group displayed much more variability in their knowledge of intensional subjunctive (AJT: 57%, production: 56%), which appeared to

be at chance level, than in their control of polarity subjunctive (AJT: 70%, production: 63.5%; TVJT: 66.7%).

In general, low proficiency early and late bilinguals displayed very low rates of accuracy across tasks. The only experimental condition where both of these groups exhibited a good command of Spanish mood was the interpretation of reported directives (M_{HS} : 70%; M_{L2} : 60%), suggesting that low rates of accuracy in other contexts are likely to be the result of weaker connections between lexical items and their corresponding semantic/syntactic features, which eventually lead to feature reassembly and grammatical restructuring (Putnam & Arnbjörnsdóttir, 2015; Van Hell & Tanner, 2012). The effects of proficiency and frequency of use of the minority language in bilinguals' performance will be analyzed in more detail in Chapter 6 (§6.2.4-6.2.6).

This chapter has examined the results obtained in the four experimental tasks completed by heritage speakers, L2 learners and Spanish-dominant controls. The analysis of this body of data has confirmed that proficiency in Spanish, frequency of language activation and age of onset of bilingualism significantly modulate these groups' performance across tasks. The following chapter will present a more elaborate discussion and analysis of these results, addressing some of the crucial factors that appear to determine early and late bilinguals' acquisition of variable and obligatory mood selection.

CHAPTER 6: DISCUSSION OF THE RESULTS

6.1. Introduction

In the previous chapter, I reported the results obtained in four experimental tasks completed by three groups of participants (heritage speakers, L2 learners of Spanish, and Spanish-dominant controls). In this chapter, I provide a detailed discussion of these findings, specifically addressing the research questions and hypotheses that guided the present investigation. The first section analyzes the potential effects of interface vulnerability in HS and L2 learners' mastery of obligatory and variable mood selection in deontic predicates. After reviewing how these groups of participants handled these two types of mood selection, I examine bilinguals' control of the syntactic/semantic constraints that modulate obviation effects in disjoint reference desiderative predicates. Finally, I take into consideration the effects of extra-linguistic factors, such as proficiency, age of onset of bilingualism and frequency of language activation in early and late bilinguals' overall performance.

6.2. Mood selection and interface vulnerability

A considerable number of studies have documented that instances of crosslinguistic transfer (CLI) in bilinguals are more likely to emerge in properties at the interface between syntax/semantics/pragmatics (Belletti, Bennati & Sorace, 2007; Sorace 2000, 2011; Sorace & Filiaci, 2006; Tsimpli & Sorace, 2006, among others). In fact, one of the research questions posed in this dissertation -reproduced below for the readers' convenience-, tackled precisely this issue:

1. Are structures with mood alternations based on semantic/pragmatic constraints more prone to attrition/optionality and crosslinguistic influence than those where mood is lexically-selected?

Previous work on the acquisition of mood by early and late bilinguals seemed to sustain this hypothesis, as seen in the recurrent patterns of attrition reported in predicates selecting polarity subjunctive and the considerable stability of those involving lexical selection (Borgonovo et al. 2003, 2008; Iverson et al. 2008; Montrul, 2007, 2009, 2011, *inter alia*). Most of these studies, however, do not agree on the extent of the optionality in non-obligatory contexts -such as relative or adverbial clauses-. While some claim that morphological variability does not necessarily involve the lack of semantic contrasts between indicative and subjunctive (Mikuslki, 2006; Pascual y Cabo et al., 2012; Villegas et al. 2013, a.o.); others document much more extensive effects at the level of representation (Montrul, 2007, 2009), especially in participants with lower levels of proficiency.

Based on the aforementioned observations, one would anticipate reported directives introduced by a verb of communication to be more likely to exhibit indicative/subjunctive optionality and lower rates of accuracy than SDR desideratives, where the selection of subjunctive is triggered by the matrix verb. However, the present dissertation identified two factors that could potentially affect the predictions put forth by other studies. On the one hand, Spanish and English exhibit a partial overlap in their use of periphrases of obligation to formulate commands in reported speech contexts, as seen in the following examples:

(116) Julieta tells her friends that they have to sing louder

(117) Julieta les dice a sus amigas que tienen que cantar más fuerte
 Julieta CL says to her friends that have to[3ppl] sing more loud
 “Julieta tells her friends that they have to sing louder”

According to the work of Müller & Hulk (2001) and Hulk & Müller (2000), this situation would increase the likelihood of CLI in Spanish/English bilinguals, facilitating an instance of “positive” transfer in the production of reported directives⁶¹. The choice of this type of expressions over subjunctive mood would eliminate the need to map an interpretable feature to a specific morphological item that is not present in the linguistic repertoire of the bilinguals’ dominant language, potentially increasing rates of accuracy in this particular condition. On the other hand, it has also been reported that the L1/L2 acquisition of mood is highly dependent on the modality of the predicate where the indicative/subjunctive selection takes place (Blake, 1983; Gudmestad, 2013; Kaufmann, 2011; Lubbers-Quesada, 1998; Pérez-Leroux, 1998). The majority of these studies have shown that subjunctive in deontic predicates is acquired much earlier than the one found in other types of modalities (epistemic and epistemological). As a result, it was also hypothesized that the optionality predicted to emerge in mood alternations of the type analyzed in this dissertation might have been reduced based on the aforementioned factors (CLI from the dominant language and type of propositional modality).

Comparisons between obligatory and variable mood selection were examined at the level of representation -by means of an Acceptability Judgment Task (AJT)-, and in production -using a Picture-based sentence completion and an Elicited production task-. The first set of results reported participants’ grammatical preferences regarding the obligatoriness of intensional subjunctive in SDR desideratives, and polarity subjunctive in reported directives. Following the design of previously implemented AJT (Bruhn de

⁶¹ Since neither the AJT nor the TVJT included instances of reported directives featuring periphrases of obligation, it was predicted that this potential “advantage” would only affect participants’ production, where the flexibility of the task allowed for the presence of alternative means of expression.

Garavito, 1997; De las Cuevas, 2011; Montrul, 2007; Pascual y Cabo et al. 2012, *inter alia*), early and late bilinguals were exposed to acceptable or unacceptable⁶² uses of indicative/subjunctive mood in the two target constructions analyzed in the present study. Since all participants –regardless of their level of Spanish proficiency- performed close to ceiling in all the acceptable conditions (range scores: 100-77%; see §5.2.1 for more details), potential cases of morphological optionality were examined by focusing on their ability to identify (and correct) unacceptable instances of mood selection. In SDR desiderative constructions, this process involved the detection of ungrammatical uses of indicative (118a) or infinitival forms (118b); whereas in reported directives, it entailed the identification and subsequent amendment of indicative (119) to express indirect commands, as illustrated in the examples below:

- (118) a. *Las vecinas quieren que nosotros *limpiamos* mejor las escaleras
 The neighbors want[3p] that we clean[IND] better the stairs
 “The neighbors wants us to clean the stairs better”
 b. *Las vecinas quieren que nosotros *limpiar* mejor las escaleras
 The neighbors want[3pp] that we clean[inf] better the stairs
 “The neighbors wants us to clean the stairs better”
- (119) #Luisa está enojada, por eso les dice a sus sobrinos que estudian más
 Luisa is angry for that CL say to her nephews that study[IND] more
 “Luisa is angry that’s why she tells her nephews to study more”

The following table (Table 32) summarizes the results obtained in these three experimental conditions:

⁶² Recall that in the case of reported speech contexts, unacceptability of indicative/subjunctive is tied to the notion of felicitousness (whether it is pragmatically appropriate to use an assertion or an indirect command). In SDR desideratives, however, unacceptability of indicative/infinitive use is connected to grammaticality, since none of these options are valid forms of expression of disjoint reference contexts.

Table 32.*% of rejections of unacceptable mood selections in reported directives and desideratives.*

Group		*Querer que + ind	*Querer que + inf	#Decir que + indicative
Heritage speakers	Advanced	83%	91%	80%
	Intermediate	53.3%	60%	40%
	Low	10.3%	2.6%	5%
L2 learners	Advanced	92%	85.4%	91%
	Intermediate	40.5%	52.4%	32%
	Low	11%	14%	8.3%

A series of paired sample t-tests confirmed that the majority of participants achieved statistically comparable scores regardless of the nature (obligatory vs. variable) of subjunctive selection ($p > .05$). These results suggest that the potential effects of morphological optionality expected to emerge in structures involving linguistic computations at the interface between syntax/semantics/pragmatics (i.e. reported directives) appear to be minimized –if not neutralized- when the target constructions belong to the same type of propositional modality (deontic). The only exceptions to this pattern were reported in intermediate HS and L2ers, who showed a significant advantage ($p < .05$) in the identification and correction of ungrammatical uses of infinitive in SDR desideratives, featuring obligatory subjunctive selection (M_{HS} : 60%, SD : 42.1; M_{L2} : 52.4%, SD : 42.7). This advantage, however, was mitigated when these groups were asked to correct ungrammatical uses of indicative in the same type of predicates (M_{HS} : 53.5%, SD : 41.4; M_{L2} : 40.5%, SD : 41.7), which would imply that differences between obligatory and variable mood selection were a by-product of participants' sensitivity to the need for an inflected form in the embedded clause, rather than enhanced maintenance of intensional subjunctive in these predicates. This hypothesis suggests that, despite being able to detect that Spanish is a morphologically rich language where subordinate verbs are generally inflected, intermediate HS and L2 learners of Spanish still exhibit a high

rate of indicative/subjunctive optionality in SDR desideratives. This set of results provides a stark contrast to the responses documented in low-proficiency bilinguals (both HS and L2ers), where morphological variability involved the co-existence of infinitival constructions along with indicative and subjunctive forms.

The results reported in this task provide invaluable information about the effects of interface vulnerability in the acquisition of Spanish mood selection. In contrast with previous studies, this investigation suggests that when the modality of the predicate under analysis is controlled (i.e. all structures belong to the same type of propositional modality), the integration of syntactic information with elements from other modules of the grammar does not appear to increase the likelihood of morphological erosion and CLI. Despite the lack of significant differences between obligatory and variable contexts, there was a visible tendency to obtain slightly lower scores in structures that allowed for mood alternations (reported assertions and directives), especially at lower levels of Spanish proficiency⁶³. Notwithstanding, early and late bilinguals' overall ability to reject unacceptable uses of mood morphology in these contexts was notably higher than in previously reported studies (Pascual y Cabo et al. 2012; Massery & fuentes, 2012, 2014; Mikulski, 2006; Montrul, 2007, 2009; Montrul & Perpiñán, 2011; Rothman et al., ms; Silva-Corvalán, 1994, 2003, *inter alia*). The table below (Table 33) provides a comparative analysis of four different investigations that examined obligatory and variable mood selection using highly metalinguistic tasks similar to the one presented in this section, including grammaticality judgments (Iverson et al. 2008), sentence conjunction tasks (Montrul, 2009; Montrul & Perpiñán, 2011) and morphology

⁶³ It is worth noting that at intermediate and low levels of proficiency, performance in both obligatory and variable contexts was at chance level or below.

recognition activities (Montrul, 2007, 2009; Rothman et al. ms):

Table 33.

Distribution of rejections of unacceptable mood selections across obligatory and variable contexts in previous studies on mood selection

		Obligatory mood selection in SDR desideratives (HS: Rothman et al., ms; L2ers: Iverson et al., 2008)		Variable mood selection in relative adverbial and nominal clauses (HS: Montrul, 2009; L2ers: Iverson et al. 2008; Montrul & Perpiñán, 2011)		
		<i>*Querer que+ ind</i>	<i>*Querer que + inf</i>	<i>#RC+ind. (not presupposed)</i>	<i>#De manera que+ ind. (not presupposed)</i>	<i>#No creer que+ ind. (no commitment)</i>
Group						
HS	Adv.	92.3%	96.1%	0% (0.33/-2)	53% (-1.06/-2)	-
	Interm.	97.9%	90.6%	0% (1.31/-2)	9.5% (-0.19/-2)	-
	Low	90.7%	83.3%	0% (1.33/-2)	23% (-0.41/-2)	-
L2	Adv.	67% (1.65/5)	-	75% (-1.5/-2)	67.5% (-1.3/-2)	67% (1.67/5)
	Interm.	43% (2.86/5)	-	0% (0.82/-2)	47% (-0.94/-2)	46% (2.7/5)
	Low	-	-	0% (0.73/-2)	30.5% (-0.6/-2)	-

As observed in Table 33, mood alternations in deontic predicates appear to be much less prone to morphological erosion than those present in contexts that belong to epistemic (relative and adverbial clauses) and epistemological modalities (negated attitude predicates). As suggested in previous chapters (see Figure 2 in Chapter 3 for more details), it is hypothesized that this effect could be linked to the modality-based developmental sequence of subjunctive mood documented in Spanish monolingual and Spanish/English bilingual populations (Blake, 1983; López-Ornat, 1994; Pérez-Leroux, 1998; Silva-Corvalán, 2014). According to these studies, the order of acquisition of subjunctive mood in Spanish is not determined by the obligatoriness of the selection (lexically selected vs. variable) but by the complexity of the semantic schemas involved in the computation of different types of propositional modality. Consequently, polarity subjunctive within epistemic and epistemological predicates, which take into account the speakers' attitude in the evaluation of the subordinate clause, would be more prone to

optionality and interface vulnerability than the one present in deontic constructions, inherently connected to the completion of directive speech acts (Zagona, 2013). Since both desideratives and reported directives are considered deontic predicates, it is postulated that differences between these contexts might have been mitigated. As it will be argued in more detail later in this section, the present study complements previous research by showing that the potential effects of interface vulnerability might be secondary to the influence of propositional modality in the acquisition of mood selection in Spanish, following the work of Lozano (1995) and Pérez-Leroux (1998).

The second set of data that provided more information about whether mood alternations were more prone to optionality and crosslinguistic influence (CLI) than those where mood is lexically-selected was obtained from two experimental tasks focused on production⁶⁴. A series of Paired-sample t-tests comparing the results of a Picture-based Sentence completion task (check §5.4.1. for more information on the task) revealed that reported directives did not appear to be more vulnerable to morphological erosion than SDR desideratives. In fact, as illustrated in the graph below (Figure 37), both early and late bilinguals achieved much higher scores in the reported directive condition when the use of periphrases of obligation such as *tener que* or *deber* (“have to”) was included in the analysis⁶⁵:

⁶⁴ Given the lack of L2 participants in Task 4, this chapter only includes the report of Task 3.

⁶⁵ It is important to recall that due to the large percentage of potential reinterpretations of SDR contexts in desiderative predicates -substituting the use of intensional subjunctive morphology for infinitive as seen in (ii)-, I generated two scores for this condition: 1) the original means obtained in the task (including infelicitous infinitive use); and 2) an adjusted mean without these forms.

(ii) Bob Esponja quiere viajar a Hawaii antes
 Bob Sponge wants[3psg] travel[inf] to Hawaii before
 “Sponge Bob wants Patricio to travel to Hawaii first”

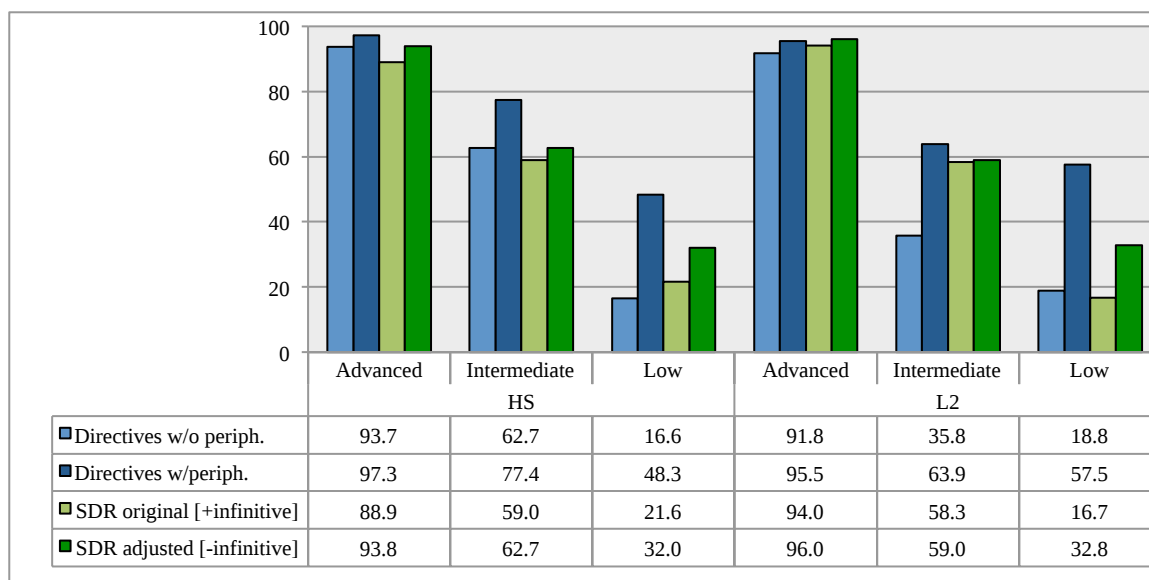


Figure 37. Average means in the production of reported directives and desideratives.

Following our predictions, the availability of alternative means of expression common to both Spanish and English to convey the notion of command increased the accuracy of HS and second language learners considerably. Although both groups of participants appeared to have benefited from the use of periphrastic constructions in reported directives, L2 learners relied on them to a higher extent than HS, especially at lower levels of Spanish proficiency (see §6.4 for a more detailed analysis on the effects of proficiency in early and late bilinguals' overall performance and Chapter 5 §5.4.1 (Figure 26) for the specific percentages of periphrasis use across proficiency groups).

The advantage found in the production of reported directives (in comparison to SDR desideratives) disappeared when morphological instances of polarity subjunctive were the only responses taken into account. In the case of all HS groups, there were no statistical differences between their command of polarity and intensional subjunctive ($p > .05$), discarding the possibility of increased levels of attrition/optionality in interface properties. Advanced second language learners exhibited similar response patterns

(polarity: $M=91.8\%$, $SD=18.6$; intensional: $M=96\%$, $SD=19.2$); however, L2ers at intermediate and low levels of proficiency were significantly more successful at producing intensional subjunctive (intermediate L2: $M=58.3\%$, $SD=42.7$; low L2: $M=16.7\%$, $SD=40.8$) than its polarity counterpart (intermediate L2: $M=35.8\%$, $SD=43.7$; low L2: $M=18.8\%$, $SD=30.3$).

The results analyzed in this section suggest that there is no conclusive evidence to support the hypothesis that structures featuring mood alternations are more prone to attrition than those where mood is lexically selected. Notwithstanding, following Müller & Hulk's (2001) predictions, the partial overlap between Spanish and English in their licensing of periphrastic constructions in reported speech contexts favored participants' use of an alternative (grammatical) expression from their dominant language to Spanish. While CLI (understood here as the use of periphrastic expressions)⁶⁶ increased participants' overall accuracy in the present study –allowing them to avoid an increasingly unproductive form in English (subjunctive morphology)-, previous work on variable mood selection in relative clauses, adverbial constructions or negated epistemics suggests that transfer from the dominant language is not generally as effective when dealing with other structures (Borgonovo et al. 2008, 2014; Kanwitt & Geeslin, 2014; Kaufman, 2011; Gudmestad, 2006, 2012, 2013, 2014, *inter alia*). In the majority of the cases reported in these investigations, the lack of grammatical equivalents in both languages resulted in the use of unspecified forms ungrammatical in Spanish, such as the

⁶⁶ Although the preference to use periphrases of obligation over subjunctive morphology in reported directives could have also stemmed from the avoidance of a linguistic construction (mood morphology) rarely used in English -the dominant language of the Spanish/English bilinguals interviewed in this study-, the fact that it was hardly used in other structures that also selected subjunctive morphology like SDR desideratives (where it only represented the 0-2.2% of participants' responses) suggests that this strategy was only employed when it was also available in the dominant language, hence the use of CLI.

use of non-finite forms *in lieu of* polarity subjunctive to express non-presupposition or lack of commitment in the embedded clause. In fact, this tendency was also documented in the low proficiency bilinguals interviewed in this dissertation, who transferred English-like structures (i.e. non-finite constructions headed by a prepositional complementizer) to Spanish when dealing with SDR desideratives.

Despite the positive effects of CLI in the production of reported directives, participants' command of polarity subjunctive was much more stable than previously attested (see Table 33). As hypothesized in previous chapters (Chapter 3, §3.3.1) and earlier in this section, I argue that differences in accuracy depend on the effects of propositional modality in language acquisition. Research on first language development shows that children acquire properties linked to deontic modality such as periphrases of obligation (*have to*, *ought to*, *should*) or directives earlier than those connected to epistemic and epistemological meanings, such as mood alternations in relative and adverbial clauses (Ahern & Torrens, 2006; Papafragou, 1998; Pérez-Leroux, 1998, 2001; Stephany, 1993, 1995). The majority of studies suggest that this crosslinguistic tendency emerges from children's (in)ability to "perform deductive operations on highly abstract propositions" (Papafragou, 1998: 373). Consequently, mood selection within deontic predicates, which involves the contrast between the actual world and a future or desired one, would be considered easier to grasp than modal choices in predicates demanding the consideration of the speaker's point of view and their comments of the validity of the statement (Stephany, 1995: 117).

Given their age and previous experience acquiring another language, the performance of adult bilinguals may not be subject to the same maturational constraints

identified in L1 acquisition. Notwithstanding, second language learners are reported to exhibit similar developmental patterns in the acquisition of mood selection, suggesting that the semantic complexity entailed by different types of modality also plays a significant role in their performance (Stephany, 1995). In the case of low proficiency bilinguals, for example, speakers “seem to strive for clarity in the domain of deontic modality [...] while in the domain of epistemic modality they try to maintain good intersubjectivity relations by prudently qualifying their assertions (lexically)” (114). These observations imply that during the earlier stages of L2 acquisition, subjunctive forms within deontic predicates are grammaticalized sooner than those in epistemic and epistemological constructions, where bilinguals are likely to resort to the use of adverbs or modal verbs to express the same semantic notions. This hypothesis is able to explain why participants appear to have a better command of polarity subjunctive in the present study in contrast with previous investigations. Unlike the research summarized in Table 3, which focused on mood alternations in epistemic and epistemological constructions, this dissertation examines variable subjunctive selection within deontic predicates, reportedly easier for bilingual children and adults.

Up to this point, the discussion of the results has been focused on the analysis of the potential effects of interface vulnerability in early and late bilinguals’ mastery of polarity and intensional subjunctive, placing a particular emphasis on the role of propositional modality in morphological optionality/erosion. In order to obtain more information about heritage speakers and second language learners’ interpretive and productive preferences regarding mood selection, the next section will be dedicated to

examining their performance in two different contexts: reported speech and desideratives constructions.

6.3. Acquiring obligatory and variable mood selection

As indicated in the previous section, the analysis of early and late bilinguals' mastery of mood selection in variable and obligatory contexts provides researchers with the perfect opportunity to study the acquisition of linguistic properties prone to morphological attrition/optionality and CLI. Indeed, the second research question presented below tackled precisely this issue:

2. How do HS and L2 learners of Spanish represent obligatory and variable mood selection in deontic predicates?

Prior to data collection, it was hypothesized that the acquisition of mood selection in Spanish was likely to be significantly affected in both contexts and populations, due to the lack of mood contrasts in English, and the low productivity of subjunctive morphology in this language. In light of the evidence presented in previous studies (Borgonovo et al. 2014; Iverson et al. 2008; Montrul, 2009, 2011; Pascual y Cabo et al. 2012) it was also anticipated that bilinguals' interpretation of indicative/subjunctive mood would be more stable than their production, suggesting an asymmetric development of these two linguistic domains in adult bilingual language acquisition as reported in Sherkina-Lieber, Pérez-Leroux & Johns (2011) and Hendriks & Koster (2010). The adoption of a wide range of experimental tasks probing at different aspects of mood selection (participants' morphological preferences as well as their underlying interpretation and productive use within sentential and discursive contexts) allowed for

the exploration of the aforementioned predictions, providing invaluable information about HS and L2 learners' command of modal contrasts and obligatory mood selection.

6.3.1. Mood alternations in reported speech contexts

As hypothesized in the previous section, the results obtained in this condition showed that the scores achieved by early and late bilinguals varied greatly based on the nature of the task. The table below summarizes participants' accuracy across experimental conditions⁶⁷:

Table 34.
Average means in reported speech contexts (assertions and directives).

Groups		Experimental task					
		AJT		TVJT		Production	
		Ind. Unacc.	Subj. Unacc.	Assertions	Directives	Assertions	Directives
Controls	Group 1	93.3%	73.3%	80.7%	91.2%	73.3%	100%
	Group 2	88.9%	74.1%	83.3%	88.9%	83%	100%
HS		47.4%	40.9%	70.6%	75.7%	71.6%	78.5%
L2 learners		48.8%	46.5%	66.3%	72.7%	74.8%	74%

If we based our analysis solely on early and late bilinguals' overall performance on the Acceptability Judgment task (AJT), we would assume that, in general, neither HS nor second language learners seem to have a good control of mood alternations in reported speech contexts. However, a more detailed examination of the results reveals that these responses vary considerably based on the proficiency of the participants. While advanced bilinguals and SDCs obtained statistically comparable scores (unacceptable indicative: M_{HS} : 80%, SD = 41.6; M_{L2} : 91.2%, SD = 43.7; unacceptable subjunctive: M_{HS} : 60.6%, SD = 38.9; M_{L2} : 74.5%, SD = 40.5), the average scores of intermediate and low

⁶⁷ The results in Figure 2 illustrate the overall means obtained by HS, second language learners regardless of their level of Spanish proficiency.

participants were at chance level or below⁶⁸, suggesting a lack of semantic contrasts between indicative/subjunctive forms in these types of mood alternations in the grammars of these learners.

Despite achieving high levels of accuracy, advanced bilinguals and Spanish-dominant controls also exhibited a significant rate of morphological optionality in this task, in particular when they were asked to identify (and correct) unacceptable uses of subjunctive in reported assertions. As we argued in Chapter 5 (§5.2.1), certain aspects of the task's design could have driven participants to reconstruct assertive contexts into directives ones, motivating the overextension of subjunctive morphology to a wider range of scenarios.

The results obtained by intermediate and low proficiency bilinguals in the AJT point to the loss of the indicative/subjunctive contrast in reported speech contexts. However, an analysis of their overall performance across tasks, suggests that, on its own, the data reported in the AJT does not provide a complete picture of their command of mood alternations. In fact, the scores obtained in the TVJT indicate that HS and L2 learners' representation of these structures is much more accurate than originally hypothesized, as illustrated in the figure below (Figure 38):

⁶⁸ Scores obtained by participants at intermediate levels of Spanish proficiency (unacc. indicative: M_{HS} : **40%**, $SD=36$; M_{L2} : **32.1%**, $SD=36$; unacc subjunctive: M_{HS} : **43.3%**, $SD=36.6$; M_{L2} : **33.3%**, $SD=36.9$) and low proficiency bilinguals (unacc indicative: M_{HS} : **4.8%**, $SD=17.8$; M_{L2} : **8.3%**, $SD=15$; unacc subjunctive: M_{HS} : **7.1%**, $SD=19$; M_{L2} : **22.2%**, $SD=21$).

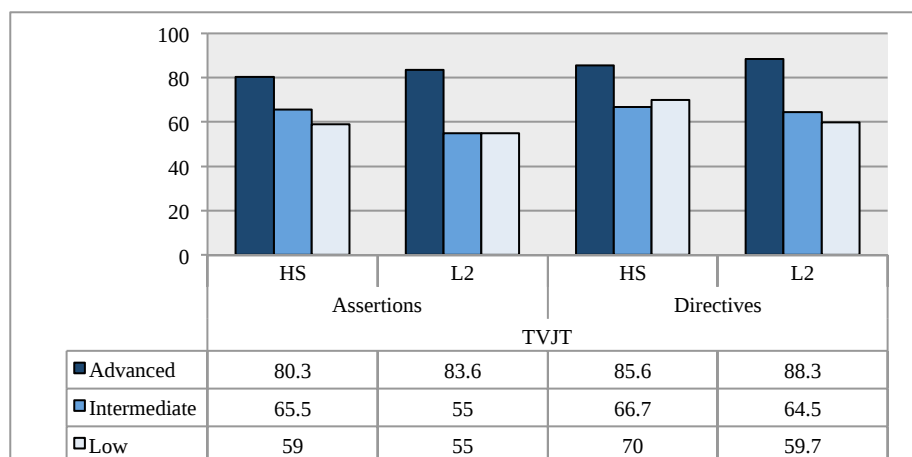


Figure 38. Average means in the interpretation of reported speech contexts (assertions and directives) as a function of proficiency and group.

In the case of reported assertions, advanced HS and L2ers obtained statistically comparable results to SDCs (M_{Group1} : 80.7%, SD = 13.5; M_{Group2} : 83.3%, SD = 18.6), demonstrating successful associations between indicative morphology and assertive readings. Intermediate HS outperformed their second language learners' counterparts as well as low-proficiency participants, who showed chance level performance in this condition. In general, early and late bilinguals appeared to be able to interpret subjunctive as a marker of directive force, although their overall performance was still significantly lower than that of SDCs' (M_{Group1} : 80.7%, SD = 13.5; M_{Group2} : M =91.1%; SD =11.1). Despite these differences, all groups exhibited a common tendency to overextend subjunctive to assertive contexts, mirroring the pattern observed in the AJT. As argued in the previous task, it is possible that some of these divergences were a by-product of methodological limitations of the experimental design, which allowed for the possibility of contextual reanalysis in a small percentage of the target scenarios (16.6% of the total). In the case of participants with lower levels of proficiency, however, it is perhaps more plausible to consider that this type of morphological variability was due to the lack of

semantic contrasts in mood alternations. This hypothesis will be revisited in the following sections of this chapter (§6.4-6.6).

On the whole, the combination of the scores reported in both tasks revealed that HS and second language learners' control of modal contrasts within deontic predicates was relatively stable, especially when these findings are compared to similar ones reported in previous studies (see table 33 and the work by Ahern et al., 2014; Martinez-Mira, 2006, 2009; Montrul, 2007, 2009; Montrul & Perpiñán, 2011; Van Osch, Alberse, Hulk & Sleeman, 2015 for some examples). The differences in performance observed in these two tasks (AJT and TVJT) also supported Geeslin (2010) and Geeslin & Gudmestad's (2008) claims regarding the impact of task effects in the analysis of certain linguistic structures. In particular, it was observed that bilinguals' command of properties dependent on contextual constraints (i.e. variable mood selection) significantly benefited from the use of experimental techniques that included a highly contextualized setting.

In production, all participants performed within the same range of scores in the assertive condition. Interestingly, not all groups displayed the same type of divergences, While advanced and intermediate HS and L2 learners' consistently overextended instances of subjunctive and periphrases of obligation to assertive contexts (as reported in the AJT and TVJT), low proficiency participants resorted a wider variety of alternatives (not always grammatical in the target language) such as infinitival forms or conditionals (see Chapter 5, Figure 27 for a more detailed distribution and examples). These results provide invaluable insight regarding the origin of the morphological variability documented in the majority of the experimental groups. In this case, they seem to point to

a contextual reanalysis (assertion → directive) in the case of advanced and intermediate bilinguals, and a lack of semantic contrasts in low proficiency HS and L2 learners.

The greatest differences across groups were documented in the production of reported directives. With the exception of advanced participants and SDCs, all the remaining groups displayed considerable difficulties producing (polarity) subjunctive morphology to report this type of predicates. As shown in Figure 39, contrasts in performance decreased when the use of periphrases of obligation were also included in the analysis:

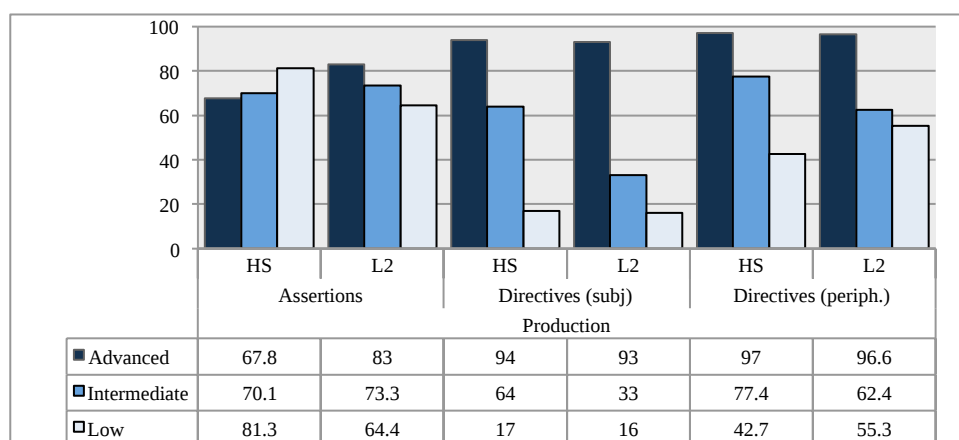
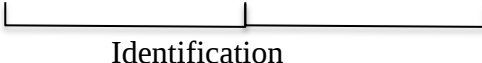


Figure 39. Average means obtained in the production of directives.

It is hypothesized that, in the case of advanced and intermediate bilinguals, the instances of morphological optionality detected in this condition are conceivably due to difficulties in the remapping of functional features (FFs) onto their corresponding morphological forms during production, but not necessarily due to the loss of semantic contrasts in these type of mood alternations. In fact, participants' relatively high rates of accuracy in the TVJT, in addition to their ability to convey indirect commands by means of alternative constructions (i.e. periphrases of obligation), would appear to support this hypothesis. Thus, it is proposed that residual optionality in the production of inflectional

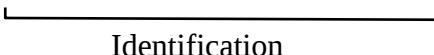
morphology at advanced and intermediate levels of proficiency is likely to emerge as a consequence of divergent feature configurations in English and Spanish, as illustrated in the following examples:

- (120) The father tells his daughters to be nice⁶⁹

$$V \left[CP \left[ForceP \left[Force[W] \right] \left[FinP \left[TP \left[MoodP \left[W \right] \left[TP \left[ModalP \text{ to } [W] \dots \right] \right] \right] \right] \right] \right] \right]$$


Identification

- (121) El padre les dice a sus hijas que sean amables
 The father CL tells to his daughters that be[3ppSUBJ] nice
 “The father tells his daughters to be nice”

- $$V \left[CP \left[ForceP \left[Force[W] \right] \left[FinP \left[TP \left(DP \right) \left[MoodP \left[V+T+M_{[W]} \dots \right] \right] \right] \right] \right] \right]$$


Identification

A contrastive analysis of the previous examples shows that, in order to successfully master reported directives in Spanish, HS and L2 learners are required to remap the interpretable feature hosted by the modal preposition *to* onto an inflected form (subjunctive) located in the head of MoodP, as well as detecting the need for an overt complementizer (121). The results obtained in production show that participants exhibited two different patterns of divergences when completing this task (check Figure 28 in §5.4.1.1 for more details on the distribution across proficiency groups). On the one hand, there were a considerable percentage of second language learners that, despite producing the complementizer *que* in these types of constructions, they opted for the use of non-finite verb forms in the embedded clause of reported directives (122):

⁶⁹ We adopt Ojea’s (2005, 2008) proposal whereby the complements of infinitival clauses of verbs like *say*, *report*, *think* -which allow for both assertive and non-assertive readings based on the communicative intent- do not display the same underlying structure as verbs like *request* or *want*, where the matrix verb introduces a set of possible/future worlds (Chapter 2, §2.2.2.2.).

- (122) El padre les dice a sus hijas que *ser amables
 The father CL tells to his daughters that be[inf] nice
 “The father tells his daughters to be nice”

While cases like (122) represented up to a 25% of the divergences reported in L2 learners (range of occurrence: 15-25%), the most frequent responses among early and late bilinguals involved the substitution of indicative for subjunctive (range of occurrence in HS 95-100% and in L2ers: 71%-80%):

- (123) Elmo les dice a Grover y a Oscar que #salen más de casa
 Elmo CL says to Grover and to Oscar that leave[3plIND] more of house
 “Elmo tells Grover and Oscar to leave the house more”

The adoption of unspecified forms in these contexts (122-123), along with periphrases of obligation at lower levels of proficiency, suggests that a large percentage of participants might have experienced difficulties accessing and retrieving subjunctive morphology in online production⁷⁰. Crucially, as evidenced in the results displayed in Figure 38, these preferences do not necessarily reflect a deficit in representation, especially in the case of advanced early and late bilinguals and intermediate HS. The hypothesis that morphological variability in bilingual acquisition does not necessarily imply the existence of incomplete syntactic representations was initially postulated by Haznedar & Schwartz (1997) and Prévost & White (2000) in the *Missing Surface Inflection Hypothesis* (MSIH), later expanded by Haznedar (2003) and McCarthy (2006, 2007, 2008, 2012)⁷¹. Based on the principles of Distributed Morphology (Halle & Marantz, 1993), it is proposed that L2

⁷⁰ In fact, data from Task 4 (Elicited production through the retelling of a story) also point to this possibility (check Chapter 5, section §5.5. for more information and examples).

⁷¹ Slabakova (2008) also addresses this issue in her *Bottleneck Hypothesis*, claiming that L2ers’ difficulties largely emerge from unsuccessful mappings between semantics and overt morphology. Polinsky (2011), Montrul (2011) and Mikaylova (2012) have argued that this proposal could also explain morphological optionality in HS of Russian and Spanish, although, in their case, prolonged variability in production could extend to the restructuring of grammatical representations.

learners “acquire the grammatical features of the terminal node in the syntax via L1, UG or L2 input, but they might not have fully acquired feature specifications of the associated lexical items” (Haznedar, 2003: 141)⁷². Thus, the emergence of morphological optionality in bilinguals is considered a result of unsuccessful mappings from abstract syntactic features onto their corresponding surface manifestations. This, in turn, results into the occurrence of unspecified forms that alternate with their ‘target’ counterparts. According to the MSIH (Prévost & White, 2000), instances of default morphology within the domain of verbal inflection are limited to non-finite forms (i.e. use of infinitival constructions in the embedded clause of reported directives); however, these are not the only instances of morphological variability observed in the data (see example 123). In her work, McCarthy (2004, 2006) complements previous investigations by expanding the range of linguistic candidates that may surface as potential unspecified forms in L2 morphological variability (to include cases like 123). Since the occurrence of infinitive and indicative in production is significantly modulated by participants’ frequency of activation of the weaker language/L2 (see §5.4.1.1. for more details), I argue that bilinguals’ adoption of these divergent forms is likely to be a consequence of varying degrees of lexical access based on their experience with Spanish. Interestingly, this factor also determined participants’ rate of periphrasis use in production *in lieu* of subjunctive in the report of indirect commands. In particular, early and late bilinguals who activated Spanish less frequently seemed to have a preference for periphrastic forms (i.e. periphrases of obligation) over syncretic ones (i.e. subjunctive morphology). This pattern

⁷² Given the frequent occurrence of morphological optionality in heritage populations, often referred to as ‘simplifications’ (Silva-Corvalán, 2003), it will be assumed that the claims made for second language learners can also be extended to this group of bilinguals.

had been previously documented in the development of early and late bilinguals of other language pairings and in L1 attriters, pointing to a crosslinguistic tendency among these populations to favor the use of lexical means of expression over morphological forms (Kortmann, 2004; Obler and Mahecha, 1991; Polinsky, 2008). As it will be discussed further along in this chapter (§6.2.7), participants' degree of experience with the minority language (Spanish) predicted the extent to which these forms (periphrases of obligation and polarity subjunctive) were successfully accessed during production.

While this hypothesis would account for the presence of periphrastic and well as infinitival and indicative forms in the embedded clause of reported directives, it is not clear how it would reconcile the overextension of subjunctive in assertive contexts, as reported in the TVJT and production tasks. One of the proposals introduced in the previous chapter (§5.3.1) considered the possibility that participants could have construed the assertive contexts provided as directives, therefore permitting the use of subjunctive. An examination of the situations used in both experimental tasks determined that a 16.6% of the scenarios could have potentially undergone a reinterpretation (from assertive → directive). Additionally, the presence of periphrases of obligation alongside subjunctive forms in this condition reinforced the possibility of semantic reanalysis. These contexts, however, do not explain all instances of subjunctive overextension, since only a reduced number of situations allowed for that possibility. According to Fábregas (2014), these instances of subjunctive “overuse” could also be considered as default materializations of mood⁷³, where “being indicative means projecting some fairly high heads that carry assertive force or informativeness (and) being subjunctive might be interpreted as lacking

⁷³ For more information, please refer back to Chapter 2, section §2.2.2, where this proposal was analyzed in more detail.

these projections” (p.26). If subjunctive were indeed considered a “default” form, additional semantic “layers” of volition, influence or futurity could provide this hypothetical underspecified form with a particular meaning, as illustrated in Figure 40:

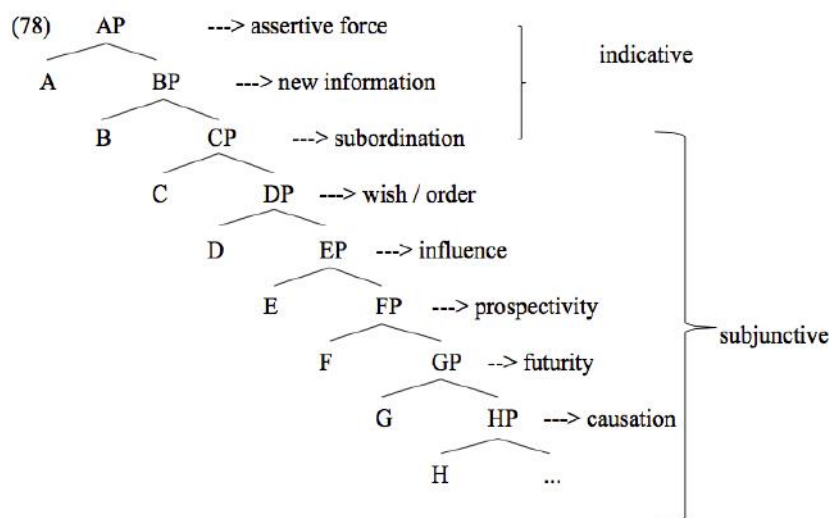


Figure 40. Fábregas (2014) proposal to explain the semantic composition of mood.

This hypothesis would explain why subjunctive forms were overextended to assertive contexts (in its default form), but could still be used correctly in the production and interpretation of reported directives.

In this section, we have observed that despite the degree of morphological optionality reported in production and interpretation, early and late bilinguals exhibited a rather stable command of mood alternations. Additional analysis determined that differences between these two groups were largely modulated by participants’ level of proficiency in the weaker/L2 and their frequency of activation of said linguistic system, discussed in more detail in later sections of this chapter. In order to obtain more information about Spanish/English bilinguals’ mastery of mood selection, the following

segment will be dedicated to the examination of their command of obligatory subjunctive in desiderative constructions.

6.3.2. Selecting subjunctive in disjoint-reference desideratives

Previous studies focused on the acquisition of obligatory mood selection in Spanish/English bilinguals report that deontic predicates such as subjunctive disjoint reference (SDR) desideratives appear to be less prone to morphological attrition/optionality than other types of constructions (Gudmestad, 2006; Massery & Fuentes, 2012; Mikulski, 2006; Montrul, 2007, 2009). According to these investigations, the semantics of the matrix verb (*querer*, “to want”) reinforces the notion of irrealis and futurity inherent to subjunctive mood, promoting the use of this form in the embedded clause (Kempchinsky, 1995). In the present dissertation, HS and L2 learners’ command of obligatory mood selection was examined by exposing these two populations to grammatical and ungrammatical instances of SDR desideratives, testing their preference for subjunctive, infinitive and indicative use, and by analyzing their production.

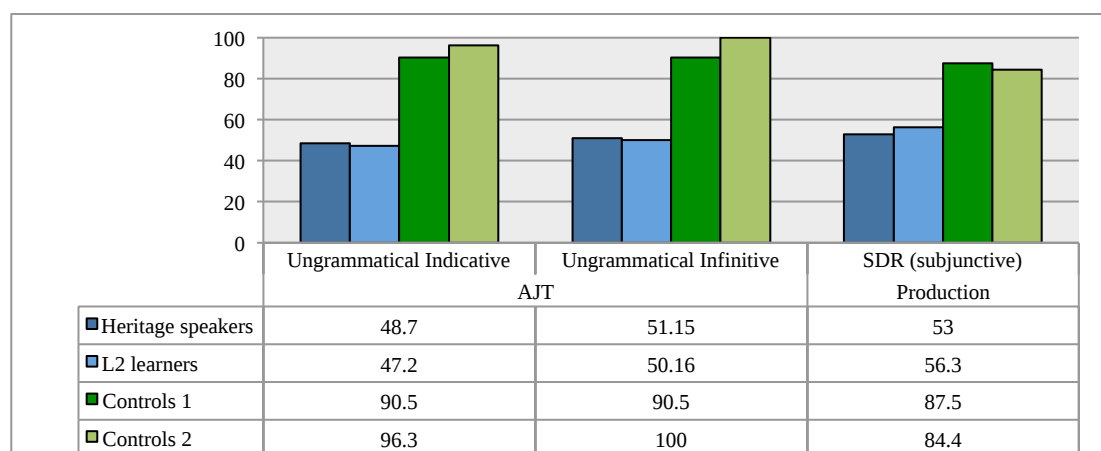


Figure 41. Average means in SDR desideratives as a function of group.

The results summarized in Figure 41 pointed to an equally low command of obligatory (intensional) subjunctive selection by early and late bilinguals. As it had been

observed in reported speech contexts, participants struggled to reject ungrammatical instances of disjoint reference (SDR) desideratives, consisting in morphological simplifications featuring the use of indicative or infinitive. Rates of accuracy were once more modulated by language proficiency. Advanced HS and L2 learners (ungramm. indicative: M_{HS} : 82.6%, SD = 27.4; M_{L2} : 90.2%, SD = 22.8; infinitive: M_{HS} : 91%, SD = 25.6; M_{L2} : 84.3%, SD = 23.9) obtained comparable scores to both groups of SDCs, while bilinguals with intermediate and low levels of Spanish proficiency were not able to consistently identify ungrammatical uses of indicative (124) and infinitive (125) in contexts that selected subjunctive⁷⁴.

(124) El gato tiene hambre y quiere que los ratones *salen del agujero
 The cat has hunger and wants that the mice leave[3ppIND] the hole
 “The cat is hungry and wants the mice to leave the hole”

(125) El gato tiene hambre y quiere que los ratones *salir del agujero
 The cat has hunger and wants that the mice leave[inf.] the hole
 “The cat is hungry and wants the mice to leave the hole”

These results indicate that participants allowed for the co-existence of a wide variety of verbal forms (both inflected and non-inflected) in the embedded clause of SDR desideratives, and that the availability of these morphological alternatives was determined by the participants’ age of onset of bilingualism⁷⁵ as well as their level of proficiency and frequency of Spanish activation, following the progression suggested below:

⁷⁴ Scores obtained by participants at intermediate levels of Spanish proficiency (ungramm. indicative: M_{HS} : **53.3%**, SD = 41.4; M_{L2} : **40.5%**, SD = 41.7; infinitive: M_{HS} : **60%**, SD = 42.1; M_{L2} : **52.4%**, SD = 42.7) and low proficiency bilinguals (ungramm. indicative: M_{HS} : **10.3%**, SD =16; M_{L2} : **11.1%**, SD =29.5; infinitive: M_{HS} : **2.5%**, SD = 9.2; M_{L2} : **13.8%**, SD =30).

⁷⁵ As it will be explained in subsequent sections, the effects of age of onset of bilingualism (between early and late bilinguals and within HS) were particularly influential at intermediate levels of proficiency.

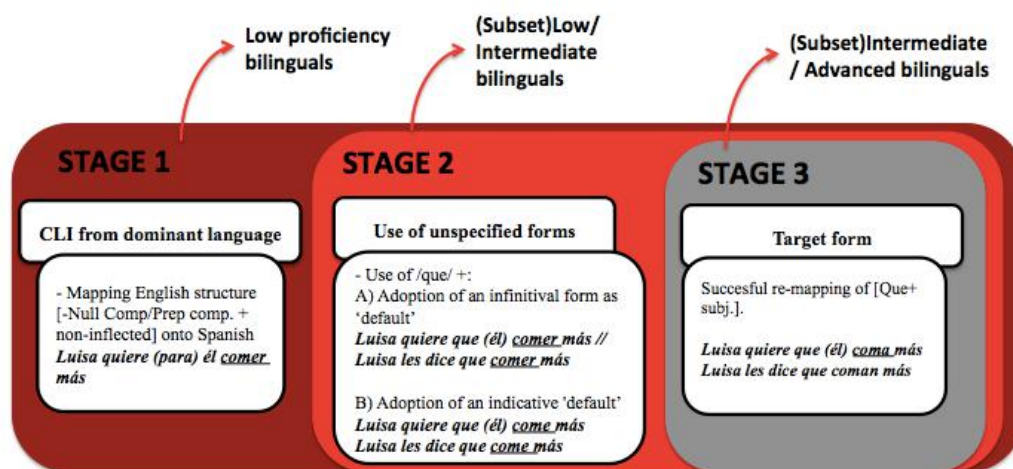


Figure 42. Acquisitional sequence of Spanish/English bilinguals wrt SDR desideratives

The proposal outlined in Figure 42 is able to predict the forms that are likely to surface in HS and L2 learners' performance. In the AJT and production tasks, a subset of low proficiency bilinguals exhibited traits of Stage 1, systematically accepting sentences like the one provided in the figure (*Luisa quiere (para) él comer más*), following English-like models. At Stage 2, early and late bilinguals have started to detect the need for an overt complementizer (*que*) to introduce the embedded proposition of SDR desideratives, although the subordinate verb forms used in these constructions still diverged from the expected outcomes (intensional subjunctive). Participants adopted one of two specified forms based on their level of proficiency. A subset of low and intermediate proficiency bilinguals resorted to the use of non-finite forms (*Luisa quiere que él comer más* "Luisa wants him to eat more" or *Luisa les dice que comer más* "Luisa tells them to eat more"), while the remaining group of intermediate bilinguals (and to a certain extent, advanced HS and L2ers) opted for the use of unspecified forms featuring indicative mood (*Luisa quiere que él come más* or *Luisa les dice que come más* "Luisa tells them to eat more"). The majority of advanced participants consistently detected ungrammatical instances of

infinitive and indicative, successfully remapping the English structure onto the Spanish one (Stage 3).

As hypothesized in the previous section, it is proposed that these unspecified forms (finite and non-finite) increase as participants' frequency of Spanish and proficiency activation decreases. The effects of these variables –along with age of acquisition- will be further explored in sections §6.2.5 - §6.2.7). In addition to finding infinitive and indicative forms preceding the complementizer *que* in the subordinate clause of SDR desideratives, the production task also revealed an overextension of infinitival constructions to these contexts, following the structure found in the co-referential condition:

- (126) El tutor de ciencias quiere *ir a ver la película
 The tutor of sciences wants to go[INF] to see the movie
 “The science tutor wants (his students) to go see the movie”

The emergence of this and other divergent forms was triggered by the lack of complementizer (*que*) in the written prompt given to participants during the elicited production task⁷⁶. As hypothesized in Chapter 4 (§4.4.3), this type of design allowed for a wider -and more informative- range of responses, while still offering a certain degree of control over participants' production. To my knowledge, loss of intensional subjunctive in SDR desideratives has never been connected to the overextension of infinitival expressions found in co-referential structures. Notwithstanding, there is evidence in the literature that native speakers of Spanish from Spain and Latin America (Aponte-Alequín & Ortiz, 2015; Gallego & Alonso-Marchs, 2014b; Morales, 1989; Serrano, 2004) and

⁷⁶ To access a full inventory of the occurrences recorded in production, check Table 28 in Chapter 5, section §5.4.3.1.

Spanish/English bilingual children living in the US (Silva-Corvalán, 2014) resort to the overuse of infinitives (as in 126) to avoid the morphological complexity of SDR structures, featuring subjunctive mood. These results contrast with Bookhamer's (2013) and Otheguy's (2013) New York City corpora, where it is postulated that early bilinguals' loss of subjunctive in SDR desideratives stems from the existence of indicative/subjunctive alternations in the first generation of Latin American newcomers. Although in the present dissertation newcomers (Group 1) and long-term immigrants (Group 2) do exhibit variability in SDR contexts, it consists of producing infinitival constructions (but crucially not indicative) in place of intensional subjunctive.

So far, evidence from the wide range of experimental tasks used in this study suggests that early and late bilinguals exhibited a similar representation of obligatory and variable mood selection in deontic predicates. In particular, participants' accuracy in contexts that select subjunctive (i.e. reported directives and SDR desideratives) was eminently modulated by their level of proficiency in Spanish, which determined the degree (and nature) of the variability present in their performance. Additionally, and in contrast with previous studies on mood acquisition (Borgonovo et al. 2008, 2014; Gudmestad, 2006, 2014; Kanwitt & Geeslin, 2014; Iverson, Kempchinsky & Iverson, 2008; Massery & Fuentes, 2012; Mikulski, 2006; Montrul, 2007, 2009, *inter alia*), intensional subjunctive was found to be as vulnerable to morphological attrition/optionality as its polarity counterpart⁷⁷. Based on the data sets discussed in this section, it is hypothesized that the acquisition of obligatory subjunctive selection in SDR

⁷⁷ The only exception to this pattern were intermediate L2 learners, who obtained higher rates of accuracy in their production of intensional subjunctive in SDR desideratives (58.3%) than in their use of polarity subjunctive in reported directives (33%).

desideratives by Spanish/English bilinguals could be partially dependent on their knowledge of the syntactic/semantic constraints that govern the binding dependencies operative in these structures. If these groups did not associate the presence of subjunctive in the embedded clause of desideratives with disjoint reference (and infinitive with co-referentiality), it is possible that they may have allowed for an alternation of these forms in both contexts. In the next section, I will focus on this issue by discussing HS and L2 learners' mastery of obviation effects and co-reference in desiderative predicates.

6.3.3. Obviation in desideratives: the effects of structural complexity on obligatory mood selection

While there are a considerable number of studies dedicated to the analysis of intensional mood selection in SDR desideratives (Gudmestad, 2006, 2014; Massery & Fuentes, 2012; Iverson et al. 2008; Mikulski, 2006, 2010; Montrul, 2007, 2009; Pascual y Cabo et al. 2012), only a small percentage provide information about participants' command of obviation effects and co-reference within these structures (Bruhn de Garavito, 1995; 1997; Massery & Fuentes, 2012; Mikulski, 2006; Romero Mérida, 2013). The present dissertation was aimed at bridging this gap on the literature by investigating the following research question:

3. In the case of desiderative constructions, how do early and late bilinguals represent the syntactic/semantic constraints that modulate obviation effects triggered by the use of the subjunctive?

Thus far, research on the acquisition of obviation in desiderative predicates has been limited to the examination of bilinguals' interpretation (in Truth-Value tasks and Grammaticality Judgments) to analyze the potential effects of CLI from the dominant

language. English and Spanish desideratives differ both structurally and morphologically, as seen in the examples provided below⁷⁸:

- (127) a. [_{TP}John_i [_{VP} [_V wants [_{CP} [_C [_{TP} me_j [_T to [_{VP} tidy up the room]]]]]]]]]
 b. [_{TP}John_i [_{VP} [_V quiere [_{CP} [_C que [_{TP} pro_{*i/j} [_{VP} recoja la habitación]]]]]]]]]
 (128) a. [_{TP}John_i [_{VP} [_V wants [_{CP} [_C [_{TP} [_T to [_{VP} tidy up the room]]]]]]]]]
 b. [_{TP}John_i [_{VP} [_V quiere [_{CP} [_C [_{TP} pro_{i/*j} [_{VP} recoger la habitación]]]]]]]]]

Two of the most significant difference between these two languages is the lack of an overt complementizer in English in SDR contexts, and the use of subjunctive morphology to mark this type of reference. In Spanish, the use of subjunctive in structures like (127b) is only possible when the subject of the matrix clause (*John_i*) is not co-referential with that of the subordinate clause (pro_{*i/j/g}). Subject co-referentiality, on the other hand, is expressed by means of an infinitival form (128b), which indicates that the subject of the matrix clause (*John_i*) is also the agent of the action expressed in the embedded proposition (*recoger la habitación*, “tidy up the room”).

Thus, in order to successfully acquire subjunctive disjoint reference (SDR) in Spanish desideratives, bilinguals are required to: 1) detect the need for the complementizer *que* introducing the subordinate clause; and 2) remap the modal feature hosted in the prepositions (*for/to*) in FinP onto the corresponding subjunctive forms in MoodP (see Chapter 2, §2.3 for a more detailed description).

Previous work on this topic showed that advanced and intermediate L1 English L2 learners of Spanish exhibited a significant lack control of subjunctive disjoint

⁷⁸ The syntactic representations in English (127a) and (128a) are based on Radford’s (2004) and Pérez-Tattam’s (2006, 2007) accounts, whereby the verbs like *want* are assumed to select the preposition *for*, which can be overt or null. This preposition is said to be the head of CP (for alternative proposals see Black, 1998 or Massery & Fuentes, 2012).

reference, obtaining an average score of 55.4% (Bruhn de Garavito, 1997). L2 learners with multilingual backgrounds (French, Greek, German, Polish and Hungarian), on the other hand, achieved much higher scores (84.5%), suggesting that CLI from their dominant language is highly influential in the acquisition of this linguistic property. In Mikulski (2006, 2010), heritage speakers⁷⁹ outperformed L2 learners in a grammaticality judgment task and an editing exercise (M_{HS} : 81%; M_{L2} : 60%)⁸⁰. These results point to a slight HS advantage in performance potentially due to the early acquisition and prolonged activation of subjunctive in SDR contexts. In the present dissertation, HS and L2 learners' interpretation and production of SDR and co-referential desideratives was considerably higher than previously documented, as illustrated in the figure below:

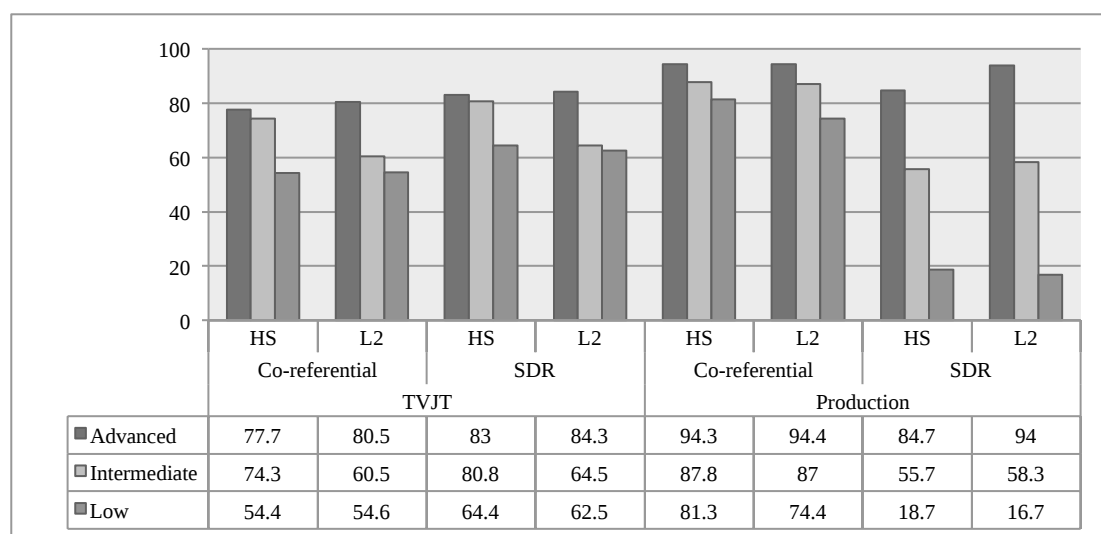


Figure 43. Average means in co-referential and SDR desideratives as a function of proficiency.

⁷⁹ Unfortunately, Mikulski (2006, 2010) does not provide a complete background of the participants in her study, which prevents us from making any claims about the role of proficiency in their performance.

⁸⁰ Average scores for both tasks.

The data provided in Figure 43 shows that, with the exception of low HS and L2 learners, all the remaining participants exhibited a rather stable command of obviation effects in Spanish. Rates of accuracy were notably high in intermediate HS (co-referential: *M*: 74.3%; SDR: *M*: 80.8%), who significantly outperformed their L2 counterparts (co-referential: *M*: 60.5%; SDR: *M*: 64.5%) in interpretation, especially when they were prompted to interpret disjoint reference contexts featuring intensional subjunctive. This contrast was not present in production, where early and late bilinguals –regardless of their proficiency- obtained very high scores in the co-referential condition, but rather low results in their use of subjunctive. Contrary to what had been hypothesized in previous sections, general performance in this task suggests that variability in the production of intensional subjunctive is not necessarily triggered by divergent representations of these contexts, particularly in the case of advanced and intermediate participants. Both of these groups demonstrated a good control of the syntactic/semantic constraints that modulate obviation and co-reference effects in interpretation, in addition to an accurate use of infinitival forms in production. As previously discussed, it is postulated that in these participants, subjunctive variability is the result of a preference to simplify structures in order to avoid the use of morphologically complex constructions. This trend promotes the first stages of syntactic restructuring in an area of language where recently emigrated immigrants and long-term residents also exhibit a certain degree of variability, pointing towards a potential case of language change (Flores, 2015; Guijarro Fuentes, 2015; Rinke & Flores, 2014).

As attested in reported speech contexts, proficiency in the L2/weaker language and frequency of language activation for comprehension and production purposes

modulated the response patterns of intermediate and low proficiency HS and L2ers (check Figures 32 and 33 in Chapter 5, §5.4.3.1. for more details). Those with a higher command of Spanish resorted to the use of unspecified forms (indicative), while participants with less experience with this language produced utterances heavily influenced by English (their dominant language):

(129) El jefe quiere *María poner canciones más modernas
 The boss wants María put[INF] songs more modern
 “The boss wants María to put more modern songs”

(130) Bob Esponja quiere que Patrick *se viajar a Hawaii antes
 Bob Esponja wants that Patrick CL travel to Hawaii before
 “Bob esponja wants (for) Patrick to travel to Hawaii before”

The results presented in this section attest that advanced and intermediate HS and L2 learners possessed a rather stable command of the syntactic/semantic constraints that govern disjoint reference and co-referentiality in Spanish desideratives. Instances of morphological variability documented in the data alluded to the important role of proficiency and frequency of Spanish activation on participants’ morphosyntactic acquisition. The co-existence of non-finite and indicative forms along with subjunctive in SDR contexts suggested difficulties remapping the [+ subjunctive] selected by the matrix verb feature onto the corresponding morphology. Additionally, the patterns detected in advanced bilinguals and SDCs, featuring the overextension of infinitival constructions to SDR contexts, allowed us to theorize about the role of structural complexity in the restructuring of certain linguistic constructions.

Given the incidence of factors such as age of onset of bilingualism, proficiency, and frequency of language activation on the acquisition of Spanish mood selection, the

following sections will be dedicated to answering the research question reproduced below:

4. To what extent do extra-linguistic factors such as proficiency in the weaker language/L2, frequency of language use and age of onset of bilingualism modulate bilinguals' performance in obligatory and variable mood selection?

6.4. The effects of proficiency in the acquisition of obligatory and variable mood selection

Previous studies on the acquisition of morphosyntactic properties have shown that early and late bilinguals' linguistic performance seems to be heavily influenced by their level of proficiency in the weaker language/L2 (Albirini, 2014; Lardiere, 1998, 2009; Montrul, 2004; Sagarra & Herschensohn, 2010). Thus, participants with better mastery of the target language are more likely to reinforce form-feature mappings across languages, improving their overall rates of accuracy and decreasing the chance of undergoing morphological attrition/optionality (Van Hell & Tanner, 2012). This trend is also present in the acquisition of mood selection by Spanish/English bilinguals (Gudmestad, 2006; Iverson et al. 2008; Montrul, 2007, 2009; Pascual y Cabo et al. 2012; Rothman et al. 2012; *inter alia*). In the domains of interpretation and production, advanced and intermediate participants exhibited less variability in their responses, and their command of mood morphology in obligatory and variable contexts was very much like SDCs'. The advantages derived from increased levels of proficiency in the weaker language/L2 have been widely investigated in the field of psycholinguistics (Kroll & Stewart, 1994; Kroll, Van Hell, Tokowicz, & Green, 2010; Sagarra & Herschensohn, 2010; Segalowicz & Hulstijn, 2005; Van Hell & Tanner, 2012; Van Hell & Tokowicz, 2010; *inter alia*). According to these studies, differences in L2 proficiency modulate bilinguals' ability to establish successful form-feature mappings in their second language. Weaker connections

between lexical items and their corresponding semantic/syntactic features are postulated to slow down their access and retrieval in online processing and production (Van Hell & Tanner, 2012: 150), triggering potential instances of CLI from the dominant language (Segalowicz & Hulstijn, 2005). It is worth noting that recent work on the effects of cognitive functions and language experience have shown that proficiency can predict the outcome of bilingual language production, but working memory and inhibitory control are more likely to modulate interpretation (Litcofsky, Tanner & van Hell, 2015).

Based on these findings, one would expect HS and L2 learners with higher levels of proficiency to: 1) be able to access and retrieve the appropriate feature specifications involved in Spanish mood selection that would otherwise remain unspecified; and 2) perform significantly better than intermediate and low proficiency bilinguals in tasks focused on production. These last two groups, on the other hand, would be more likely to exhibit transfer from their dominant language and variability in their overall performance, possibly adopting morphological defaults to manage the added cognitive load derived from weaker lexical connections.

In the present study, accuracy was extensively modulated by participants' level of proficiency, except in the production of indicative mood in reported assertions and infinitive in co-referential desideratives, where all groups (HS, L2ers and SDCs) achieved similar scores⁸¹. In the remaining conditions, advanced early and late bilinguals exhibited a very strong command of obligatory and variable mood selection in both production and interpretation. These groups also displayed a stable knowledge of the

⁸¹ It is worth mentioning that these two contexts are very similar in English and Spanish, where both languages share the same syntactic representations and morphological forms.

syntactic and semantic constraints modulating co-reference and obviation in desiderative constructions, as analyzed in the previous section. Following the predictions outlined in Van Hell & Tanner (2015), as proficiency in Spanish decreased, so did bilinguals' control of the appropriate form-feature mappings involved in subjunctive mood selection. Thus, many intermediate and low proficiency HS and L2ers exhibited higher rates of variability in their responses, resorting to the use of unspecified forms and allowing for a wide range of non-target like constructions based on the form-feature mappings present in their dominant language. In this respect, the effects of proficiency in the production of reported directives are particularly interesting. As reported in Chapter 5 (§5.4.1.), this condition allowed for the use of two linguistic alternatives: polarity subjunctive (131) and/or periphrases of obligation (132):

(131) La entrenadora les dice a los jugadores que vayan al gimnasio
 The coach CL says to the players that go[3pSUBJ] to+the gym
 “The coach tells the players to go to the gym”

(132) La entrenadora les dice a los jugadores que tienen que ir al gimnasio
 The coach CL says to the players that have to go to+the gym
 “The coach tells the players that they have to go to the gym”

While both strategies can be used to convey a jussive interpretation in constructions headed by a verb of communication, participants with lower Spanish proficiency preferred periphrases of obligation (132) over subjunctive morphology (131) for this purpose. These results are aligned with the proposals of Stephany (1995) and Giancalone Ramat (1992), who report that second language learners with low levels of proficiency usually start communicating modality by means of lexical expressions, such as modal verbs or adverbs that state beliefs and attitudes (i.e. *obviously*, *maybe*, *allegedly*). As their command in the L2 improves, so does their ability to grammaticalize

modality in the target language. It is at this stage that inflectional instances of modality, such as indicative and subjunctive morphological forms start to emerge in bilinguals' linguistic repertoire.

Notwithstanding, the results obtained across experimental tasks also indicate that while proficiency was a strong predictor of participants' ability to identify and correct ungrammatical/ unacceptable forms in the AJT and their accuracy in the production of polarity and intensional subjunctive, it did not fully account for the results obtained in interpretation. These findings support Litcofsky et al's (2015) predictions regarding the effects of extra-linguistic factors on bilinguals' performance, which imply that production and interpretation are "possibly shaped by different demands throughout L2 development and use" (p.13). A detailed analysis of the TVJT data suggested that other factors, such as age of onset and frequency of Spanish use could have modulated participants' scores more significantly. In particular, the performance of intermediate HS tended to be much more accurate than that of proficiency-matched second language learners, as illustrated in the figure below:

	Assertions	Directives	Coreferentiality	SDR
Heritage speakers	Advan. (80.3%)	Advan. (85.6%)	Advan. (77.7%)	Advan. (83%)
	Interm. (65.5%)	Interm. (66.7%)	Interm. (74.3%)	Interm. (80.8%)
	Low (59%)	Low (70%)	Low (54.4%)	Low (64.4%)
L2 learners	Advan.(83.6%)	Advan.(88.3%)	Advan.(80.5%)	Advan.(84.3%)
	Interm. (55%)	Interm.(64.5%)	Interm.(60.5%)	Interm.(64.5%)
	Low (55%)	Low (59.7%)	Low (54.6%)	Low (62.5%)

Figure 44. Distribution of scores by age/proficiency group in interpretation.

As summarized Figure 44, the performance of intermediate HS in interpretation was significantly more control-like than the one exhibited by their L2 counterparts, who generally displayed the same range of mean scores as low proficiency bilinguals⁸². These response patterns, which were also observed in the two tasks targeting production point to the interplay between proficiency and age of onset of bilingualism in bilingual's acquisition of mood selection, particularly when integrating information at the syntax/pragmatics interface, where HS appear to have an advantage over their L2 counterparts. The next section will be dedicated to compare early and late bilinguals' scores to discuss the role of age of onset in their overall performance.

6.5. The role of age of onset of bilingualism in the acquisition of mood

Previous research on L2 acquisition of morphosyntactic properties suggests that age of onset of bilingualism is a very good predictor of bilinguals' learning outcomes (Birdsong, 2014; DeKeyser, 2000; Johnson & Newport, 1989; Montrul & Foote, 2012). According to these authors, later exposure to the L2 decreases the likelihood of native-like results due to the possibility that "the linguistic and cognitive mechanisms involved in language learning in childhood are no longer operative or available" (Montrul, Davidson, De la Fuente, Foot, 2014: 119). The postulation of a critical period in the acquisition of morphosyntax (Meisel, 2013; Lenneberg, 1967), predicts crucial differences between HS and L2ers with respect to their degree of attainment and patterns of language processing in this area of language. Crucially, it is assumed that because of their earlier exposure to the minority language, HS will have an advantage over late

⁸² The only exception to this distribution is found in HS' interpretation of reported directives. In this condition, intermediate and low HS differed significantly from their advanced counterparts. However, it is worth noting that low proficiency bilinguals achieved a rather high level of accuracy in this condition.

bilinguals, who come in contact with this language during or beyond puberty (Montrul, 2007)⁸³.

Despite the important role of age in the acquisition of morphosyntactic properties, there are very few studies that have compared HS and L2 learners with respect to their knowledge of Spanish mood selection (Correa, 2001; Lynch, 2003; Mikulski, 2006, 2010; Mikulski & Elola, 2013; Montrul, 2009, 2011; Montrul & Perpiñán, 2011; Potowski et al. 2009). Of those, only two (Correa, 2011 and Montrul, 2011) examined early and late bilinguals' performance across different types of tasks, including interpretation, production and grammaticality judgments. In spite of these limitations, comparisons between these two groups of bilinguals have shown that HS usually outperform L2 learners in tasks targeting oral production (Montrul, 2009, 2011) and interpretation (Mikulski, 2006, 2010; Mikulski & Elola, 2013). This initial advantage disappears in tasks heavily dependent on participants' metalinguistic abilities (such as grammaticality or acceptability judgment tasks), where L2 learners obtain higher scores than HS, given their increased instructional experience while acquiring the language (Correa, 2011; Montrul & Perpiñán, 2011; and Potowski et al., 2009).

These observations were partially confirmed by the results obtained in the present dissertation, where intermediate HS usually outperformed proficiency-matched second language learners in several conditions/tasks. Despite this general tendency, late bilinguals were more accurate than HS in tasks subject to metalinguistic considerations (AJT):

⁸³ The assumption that age of first exposure determines differences in linguistic outcomes will be revised in the following section.

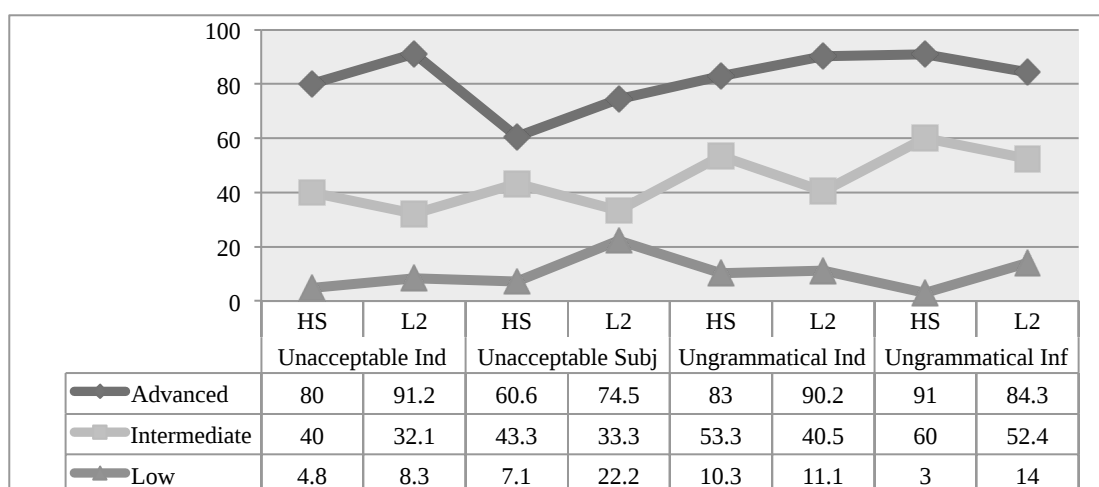


Figure 45. Distribution of average scores in the AJT across proficiency groups and conditions.

As illustrated in Figure 45, this “L2 advantage” is only present at advanced levels of proficiency, where it is argued that late bilinguals achieved higher scores than HS because of their academic experience with the second language. Acceptability and grammaticality judgments are tasks that rely on participants’ linguistic perceptions and grammatical preferences regarding specific aspects of language, two abilities that are generally acquired during language instruction (Alderson, Clapham & Steel, 1997; Ellis, 2006). While second language learners’ experience with the L2 is mostly classroom-based, HS’ acquisition of Spanish is predominantly naturalistic, and often involves the “relearning” of the minority language in later stages of development (Montrul, 2012). Although the aforementioned differences in exposure and instructional background explain why advanced L2 learners exhibited an advantage over HS in the AJT, they are still not able to account for the results observed at intermediate levels of proficiency, where the opposite trend is observed. Since participants’ proficiency in Spanish was equivalent in both groups of bilinguals, it is postulated that HS’ earlier onset of acquisition is likely to have favored the attainment of control-like patterns regardless of the nature of the task. This hypothesis would account for the differences observed

between early and late bilinguals, as well as the contrasts in performance reported in simultaneous and sequential HS, which are only statistically significant at this level of proficiency.

Previous work on the analysis of age of onset effects within early bilinguals has shown that simultaneous HS are more vulnerable to morphological optionality/attrition and CLI from the dominant language than their sequential counterparts (Benmamoun, Montrul & Polinsky, 2013; Hyltenstam & Abrahamsson, 2003; Montrul, 2008).

According to Montrul (2008), “time/length of exposure and language use both contribute to solidify linguistic competence at a young age” (193); consequently, simultaneous bilinguals, who may have experienced reduced input/exposure to the LA (Spanish) due to their ongoing acquisition of the LB (English), are likely to show more signs of grammatical restructuring in the weaker language (Spanish) than sequential bilinguals. Several investigations have confirmed the effects of age in the acquisition of morphology (Montrul, 2002), phonology (Kehoe, Lleó & Rakow, 2004) and syntax (Hulk & Müller, 2000; Müller & Hulk, 2001; Lee, 2011, 2013). Interestingly, the most striking contrasts between simultaneous and sequential HS and Spanish-dominant controls detected in the aforementioned studies appeared at intermediate levels of proficiency (Kim, Montrul & Yoon, 2010; Kwondo-Brown, 2005; Lee, 2011). In contrast, differences between these groups (simultaneous and sequential) became much less noticeable as their proficiency in the heritage language decreased (Lee, 2013). This pattern was also observed in the present study, where facilitative effects connected to age of onset of bilingualism only emerged in intermediate sequential bilinguals. For these participants, prolonged contact with the L1 (Spanish) before being exposed to the dominant language favored their

interpretation of variable and obligatory mood selection, obviation effects in desideratives and the production of intensional subjunctive in disjoint reference contexts.

So far, the results discussed in the last two sections suggest that bilinguals' level of proficiency in the weaker language/L2 modulates their degree of successful feature reassembly in tasks focused on grammaticality judgments and production regarding Spanish mood selection. Differences in age of onset between HS and L2 learners, however, also seemed to determine their accuracy in interpretation and production, predicting more control-like responses in bilinguals who have been actively exposed to Spanish for longer (HS > L2ers' sequential HS > simultaneous HS). The final section of this chapter will be focused on the discussion of the potential effects of frequent language use in the performance of early and late bilinguals with respect to Spanish mood selection.

6.6. Frequency of language activation effects in mood selection

The effects of frequency of activation on bilingual language acquisition have been documented in a wide range of studies, including work on children's morphological and syntactic development (Anderson, 2001; Bolonyai, 1998; Cuevas de Jesús, 2011; De Houwer, 2007; Serratrice et al. 2009, *inter alia*) and heritage speakers and L2 learners' overall grammatical competence (Albirini, 2014; Cuza, 2010; Montrul, Davidson, De la Fuente & Foote, 2013, a.o.)⁸⁴. The aforementioned investigations coincide in reporting that frequent activation of the weaker/minority language is consistently correlated with higher levels of linguistic proficiency and decreased instances of morphological optionality and attrition. Recent studies in the field of psycholinguistics also propose that

⁸⁴ Check Chapter 3, §3.3.3.1 (Table 6) for a more detailed summary of this body of research.

this factor is a very strong predictor of language loss and morphological optionality in L1 attriters and HS (Gürel, 2004; Hulsen, 2000; Keijzer, 2010; Köpke, 2007; Schmid & Jarvis, 2007; Schmid, Köpke & de Bot, 2012). In these populations, reduced activation of the L1 is believed to affect the strength of the connections between linguistic forms and their specific FFs, resulting in difficulties in lexical retrieval, CLI from the dominant language or the emergence of unspecified forms (Hulsen, 2000).

The connection between language use and lexical access has been thoroughly examined by Paradis (1985, 1993). According to his Activation Threshold Hypothesis (henceforth ATH), “every time a trace is activated, its activation threshold is lowered. (Thus), the more frequently a trace is used [...] the easier it is to activate again” (p.138). In the case of HS and L2 learners, the ATH would predict that frequent activation of the weaker language/L2, would entail easier access to lexical items and functional features, resulting into successful instances of feature reassembly (Lardiere, 1998, 2009). Conversely, decreased use of Spanish in comprehension and/or production would be likely to induce higher rates of unspecified forms and CLI, following the sequence illustrated in Figure 5 (McCarthy, 2006, 2008, 2012; Putnam & Sánchez, 2013).

In the present study, HS' accuracy⁸⁵ across experimental conditions was strongly connected to higher levels of Spanish activation for comprehension and production purposes, although these correlations were only statistically significant when all participants were analyzed as a group. A *post hoc* descriptive examination of the results revealed that increased use of the weaker language also modulated HS' response patterns

⁸⁵ As reported in Chapter 5, frequent language use did not appear to modulate L2 learners' responses, which were only determined by their level of Spanish proficiency.

within specific proficiency groups. In order to examine these effects, the performance of advanced, intermediate and low HS was classified into two groups: participants with the highest and the lowest rates of Spanish activation. In the case of advanced HS, for example, the scores of the most active users of Spanish (range of use: 75-100%; mean use: 87.5%) were contrasted with those of a group that exhibited very low use of this language (range of use: 0-12.5%; mean use: 9.3%):

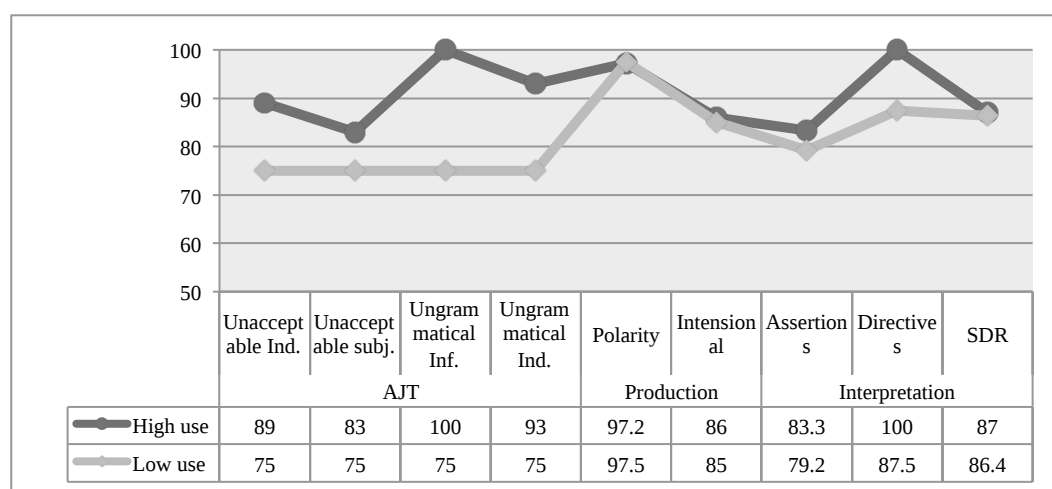


Figure 46. Advanced HS' means of accuracy as a function of language use.

The results illustrated in Figure 46 indicate that, although scarce, differences in accuracy between advanced bilinguals that used Spanish more frequently and those who did not do so as often were indeed present. The most significant contrast between these two groups was observed in the AJT, where participants were prompted to identify (and successfully correct) unacceptable uses of indicative/subjunctive mood in reported speech contexts and ungrammatical instances of indicative and infinitive in the embedded clause of SDR desideratives. Specifically, frequent use of the minority language appeared to be correlated with decreased rates of morphological optionality. Following Paradis' ATH (1985, 1993), it is argued that target-like selection of indicative/subjunctive mood in

these contexts was reinforced by constant activation of the minority language, improving HS' ability to detect ungrammatical patterns in the input.

These effects were even more noticeable in intermediate HS (*high use group*: range of use: 37.5-60%; mean use: 43.7%; *low use group*: range of use: 0%; mean use: 0%), whose performance is summarized in the figure below:

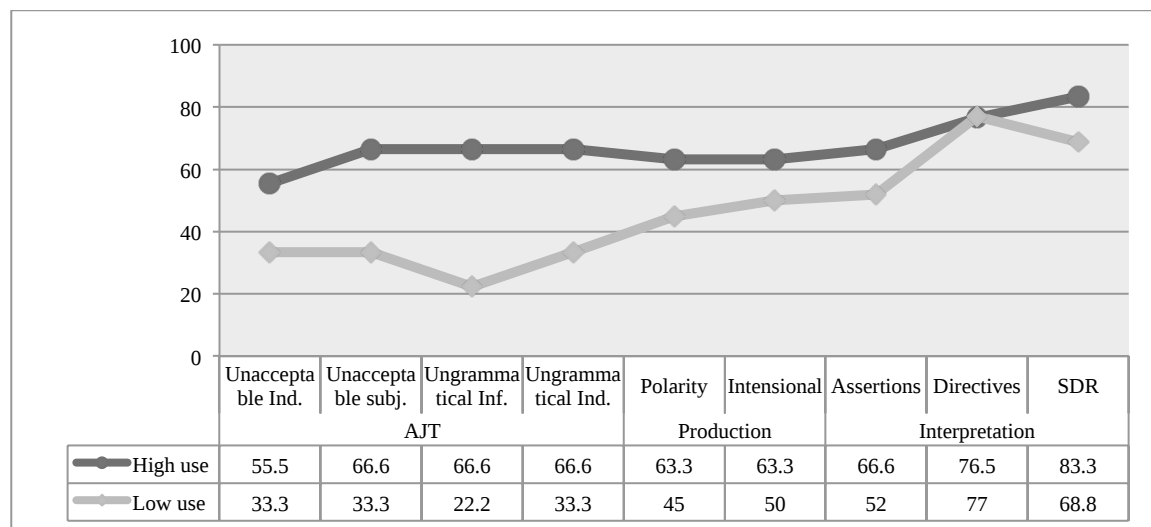


Figure 47. Intermediate HS' means of accuracy as a function of language use.

The distribution observed in Figure 47 reveals that participants who used Spanish more frequently (“high use” group) obtained better rates of accuracy across experimental tasks, especially in those that required detecting ungrammaticalities and morphological production. Once again, these observations support the hypothesis that, in addition to proficiency, HS' regular activation of Spanish positively affects their maintenance of morphological distinctions in this language, improving the access to features that would otherwise remain unspecified (McCarthy, 2006, 2008, 2012). In the case of intermediate HS, for example, active use of the minority language incremented their command of mood selection in comprehension and production, and increased their grammatical sensitivity (AJT) dramatically.

The effects of frequent language use, however, did not seem to affect the performance of low proficiency HS. As discussed in previous chapters, this group of bilinguals exhibited a very limited command of Spanish mood selection as well as extremely low rates of Spanish use (range: 0-37.5%, mean use: 17.5%). In the following section, I utilize the information gathered thus far to provide empirical evidence in favor of Putnam & Sánchez's (2013) model of grammatical competence in HS, highlighting the role of language proficiency and frequency of language activation throughout the different stages of linguistic development.

6.6.1. Language activation effects in HS: Extending Putnam & Sánchez (2013)

Putnam & Sánchez (2013) challenged the notion of incomplete acquisition in heritage languages by proposing a theoretical model that explicitly connected language activation to HS' grammatical development. From Putnam & Sánchez's perspective, changes in the linguistic system of HS are interpreted as instances of feature reassembly triggered by decreased activation of certain feature values in the minority language (488). Based on these assumptions, the authors postulate 4 possible scenarios in the grammatical development of HS:

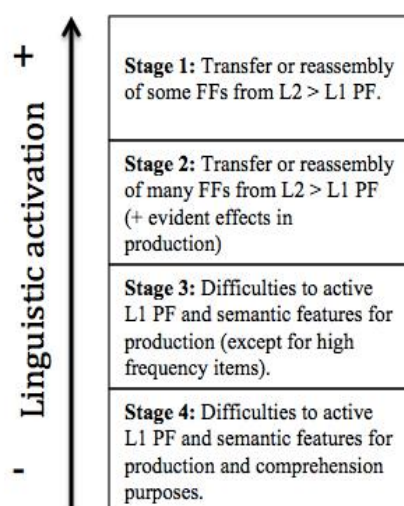


Figure 48. Graphic representation of Putnam & Sánchez (2013) model.

The stages represented in Figure 48 are proposed as a result of different levels of activation of the FFs in the minority language, and seek to offer a systematic explanation to the variability attested in heritage populations. According to these scenarios, frequent use of the L1/LA decreases the likelihood of feature reassembly and transfer from the dominant language. Given the interplay between proficiency, age of onset of bilingualism and frequency of language use in the findings discussed throughout this chapter, I propose the incorporation of an additional variable to Putnam & Sánchez's (2013) model. As we have observed in previous sections, HS at intermediate levels of proficiency exhibited varying degrees of language activation, which significantly influenced their overall performance across tasks (Figure 48). Furthermore, this is the only group of participants whose accuracy also appeared to be determined by age of onset of bilingualism: sequential HS were more control-like than their simultaneous counterparts. Consequently, I argue that differences based in this particular factor are likely to emerge at intermediate stages of development (Stages 2 and 3), modulating feature reassembly/rebundling and CLI from the dominant language.

The performance of HS in the present dissertation can be easily systematized following Putnam & Sánchez's (2013) expanded model. Advanced HS, for example, exhibited characteristics of Stage 1, given their minimal rates feature reassembly or CLI triggered by the dominant language (English). In general, this group displayed a strong command of obligatory and variable mood selection in comprehension and production, and a good understanding of the syntactic/semantic constraints that modulate obviation in desiderative constructions. At this stage, it is also postulated that high activation of Spanish prevented differences in age of onset from affecting participants' accuracy.

Intermediate HS's performance, on the other hand, is expected to fluctuate between Stages 2 and 3 based on their use of Spanish and age of onset of bilingualism. The first level (Stage 2) predicts that participants with more frequent exposure to the minority language are likely to transfer massive sets of FF from the L2 to the L1's PF and semantic features (490); affecting accuracy rates in production. In the present study, HS at this stage presented difficulties retrieving subjunctive morphology in lexically selected and variable contexts. This form was increasingly replaced by indicative morphology, and a small percentage of infinitival constructions, based on the structure of English. In the case of reported directives, participants also showed a preference for the use of periphrases of obligation instead of subjunctive to express indirect commands. This last tendency was even more popular among intermediate HS with decreased levels of Spanish use (Stage 3) who experienced complications activating certain PF features associated with syntactic/pragmatic conditions. As a result, participants at this stage exhibited the overextension of infinitival forms in the embedded clause of reported directives and desideratives in production, and the preference for periphrastic expressions to subjunctive morphology (following English-like models). In interpretation, participants started to display a partial loss of mood contrasts in reported speech contexts, as well as a steep decline in their mastery of obviation effects in desiderative predicates. The effects of age of onset of bilingualism are also predicted to emerge during these last two stages. Specifically, it is posited that sequential bilinguals' prolonged exposure to the L1 during childhood (in comparison to simultaneous HS) was likely to have reinforced the connection between lexical items and FFs in this language. This scenario was also documented in the present study, where sequential HS at intermediate levels of

proficiency generally outperformed their simultaneous counterparts in interpretation and production.

The competence of low proficiency HS would fluctuate between Stages 3 and 4, depending on their overall command of the minority language. This group of bilinguals is characterized by exhibiting striking production/interpretation asymmetries, primarily due to complications activating PF and semantic features from the L1. The group of low HS interviewed in this dissertation showed precisely this pattern, where their command of mood selection in production was much more affected than their abilities in interpretation. Although this is not the case of our group of bilinguals, difficulties in lexical access during Stage 4 are generally assumed to entail a loss of semantic contrasts in interpretation. The table below (Table 35) summarizes the observations discussed in this section, and provides a schematic representation of HS' control of Spanish mood selection based on the stages proposed in Putnam & Sánchez (2013):

Table 54.
Stages in HS' command of Spanish mood selection based on Putnam & Sánchez (2013)

		Stage 1	Stage 2	Stage 3	Stage 4
Variable contexts (reported speech)	<u>Inter.</u>	<i>Assertion:</i>	<i>Assertion:</i>	<i>Assertion:</i>	<i>Assertion:</i>
		Indicative	Indicative	Indicative	Indicative
		<i>Directive:</i> subjunctive	<i>Directive:</i> subjunctive	<i>Directive:</i> indic./subj.	<i>Directive:</i> indic./subj.
	<u>Prod.</u>	<i>Assertion:</i> Indicative <i>Directive:</i> subjunctive	<i>Assertion:</i> Indicative <i>Directive:</i> subjunctive > periphrases.	<i>Assertion:</i> Indicative <i>Directive:</i> subjunctive = periphrases, indic.	<i>Assertion:</i> Indicative <i>Directive:</i> periphrases, indicative, infinitive.
Obligatory contexts (desider.)	<u>Inter.</u>	<i>Disjoint</i>	<i>Disjoint</i>	<i>Disjoint</i>	<i>Disjoint</i>
		<i>Reference:</i> subjunctive in the embedded clause	<i>Reference:</i> subjunctive in the embedded clause	<i>Reference:</i> subjunctive in the embedded clause	<i>reference and</i> <i>Co-reference:</i> subj./infinitive
		<i>Co-reference:</i> infinitive	<i>Co-reference:</i> infinitive	<i>Co-reference:</i> infinitive	
	<u>Prod.</u>	Intensional subjunctive in the embedded clause	Intensional subjunctive > Indicative in the embedded clause	Indicative in the embedded clause	Indicative/ Infinitive in the embedded clause

6.7. Concluding remarks

In this chapter, I have discussed the empirical findings reported in Chapter 5 with the objective of addressing the research questions that motivated and guided the present investigation. After providing a brief description of the linguistic structures under examination, I argued that early and late bilinguals' command of obligatory and variable mood selection in deontic predicates is much more stable than in other types of propositional modalities, such as epistemic and epistemological constructions (see Chapter 3 for a review of the literature). A detailed analysis of the data indicated that the only factors that appeared to significantly modulate participants' rates of accuracy were

proficiency, age of onset of bilingualism and frequency of language activation. In response to these results, I proposed a series of models (Figures 42 and 48 and Table 34) to systematize HS and L2 learners' performance across the different experimental tasks.

In the next chapter I address the most relevant theoretical and methodological contributions of this dissertation. To conclude, Chapter 7 also discusses the limitations of this study and presents several suggestions for future research in the area of bilingual language acquisition.

CHAPTER 7: CONCLUSIONS

7.1. Introduction

This dissertation has examined HS and L2 learners' mastery of Spanish mood selection in two types of predicates: reported speech constructions, which alternate between indicative and subjunctive in the subordinate clause depending on the pragmatic function of their complements (assertions or indirect commands), and desideratives, which obligatory select subjunctive. The analysis of these particular contexts was expected to contribute to the study of the potential effects of crosslinguistic influence in structures that not only instantiate different feature specifications in English and Spanish, but that also involve the mastery of morphosyntactic properties at different interface domains (syntax/semantics/discourse). The present study also intended to shed some light on the role of extra-linguistic factors such as proficiency, age of onset of bilingualism and frequency of language use in early and late bilinguals' performance across 4 experimental tasks.

This chapter will explore the major findings of the study while introducing some of the most relevant implications with regards to the investigation of mood selection in Spanish. The following sections will also discuss the limitations of this study, as well as suggestions for future research based on the results presented throughout this dissertation.

7.2. Summary of major findings and implications for the study of mood

The results obtained in this study indicate that the acquisition of mood by early and late Spanish/English bilinguals is modulated by a wide variety of linguistic and extra-linguistic factors. Their performance in obligatory and variable mood selection, for example, suggests that the potential effects of interface vulnerability expected to emerge

in mood alternations, appear to be minimized when the structures under analysis belong to the same type of propositional modality (in this case deontic). As discussed in previous chapters (see §6.3 for a detailed review of this topic), these findings have important implications for the study of mood acquisition in bilingual populations: while previous work on this topic had claimed that polarity subjunctive (i.e. the type of subjunctive featured in mood alternations) is more prone to attrition/vulnerability than its intensional –lexically selected- counterpart (Montrul, 2007, 2009, 2011), data from the present study indicate that morphological optionality is based on the semantic complexity of the predicates under evaluation rather than on the obligatoriness of the indicative/subjunctive selection. This proposal is similar to those of Giancalone Ramat (1992), Lozano (1995) and Pérez-Leroux (1998, 2010), who argued that monolingual and bilingual populations tend to acquire mood selection (obligatory and variable) in deontic predicates much earlier than in epistemic and epistemological contexts. These findings would explain why HS and L2 learners are more accurate in their interpretation and use of mood in deontic predicates (such as directives and desideratives) than in epistemic and epistemological contexts tested in previous studies, including temporal clauses (Kanwitt & Geeslin, 2014; Montrul, 2007, 2009), factive-emotives (Cuevas de Jesús, 2010), conditionals (Ahearn et al. 2014) or attitude predicates (Iverson et al. 2008; Pascual y Cabo et al. 2012).

In addition to being affected by the type of propositional modality, the results from this study also revealed that early and late bilinguals' mastery of mood is largely dependent on the interplay between several extra-linguistic factors, such as level of proficiency in the weaker language/L2, age of onset of bilingualism and frequency of Spanish use (the later only in the case of heritage speakers). In general, participants with

better command of Spanish tended to be more accurate in their interpretation and production of indicative/subjunctive mood in reported speech contexts and desideratives, while those with lower levels of proficiency displayed much more variability in their responses. It is interesting to note that the effects of proficiency were much more prominent in production than in interpretation, implying that this factor plays a very important role in the selection and retrieval of lexical items and their corresponding functional features (FFs), as postulated in Litcofsky et al. (2015). Overall, these findings seem to connect high proficiency in the weaker language/L2 with the ability to establish successful form-feature mappings in this language, reducing the likelihood of morphological attrition/optionality and CLI from the dominant language.

Despite being similarly susceptible to the effects of proficiency, differences in age of exposure and frequency of activation of Spanish appeared to motivate several contrasts between HS and second language learners. These asymmetries were particularly striking at intermediate levels of proficiency⁸⁶, where early bilinguals consistently outperformed their L2 peers in the interpretation and production of polarity subjunctive in reported speech contexts and obviation effects in disjoint reference desideratives. As discussed in Chapter 6 (see §6.6 for more details), it is argued that HS' earlier onset of acquisition of Spanish favored their attainment of control-like patterns across experimental conditions. Interestingly, this trend was also observed in sequential HS with intermediate proficiency in Spanish, but not in their simultaneous counterparts, suggesting that reduced input in the weaker language (in both simultaneous and late bilinguals) is likely to affect the maintenance of control-like form-feature mappings at this level of proficiency.

⁸⁶ Based on the scores obtained in the adapted version of the *Diploma de español como lengua extranjera* (DELE) created by Montrol (2008) and included in the appendices of this dissertation (Appendix #3).

As hypothesized by Putnam & Sánchez (2013), HS' frequency of use of the minority language (Spanish) was also found to influence the overall performance of this population across tasks. An analysis of the data confirmed that early bilinguals' frequent activation of Spanish was inversely correlated with the presence morphological variability and CLI from the dominant language; thus, high rates of Spanish use appear to consistently favor the maintenance of mood distinctions as well as obligatory subjunctive selection in deontic predicates (refer to §6.7 for an elaborate discussion of this topic).

The results summarized thus far indicate that the combination of high proficiency, prolonged exposure and active use of the weaker/second language seem to facilitate HS and L2ers' control of Spanish obligatory and variable mood selection. Lower levels of proficiency and use of Spanish, however, are associated to weaker form-feature mappings in this language, increasing the likelihood of default forms and non-target like instances of mood selection in their responses. In the case of disjoint reference desideratives, low proficiency and limited use of Spanish appear to be connected to the presence of morphological optionality and CLI from the dominant language, which ultimately affected HS and L2 learners' obligatory selection of subjunctive in the embedded clause of these predicates. A similar effect was observed in mood alternations within reported speech contexts, where low proficiency and decreased activation of Spanish restricted early and late bilinguals' control of indicative/subjunctive semantic contrasts.

As the previous results suggest, the data presented in this dissertation contributes to the fields of L2 and heritage language acquisition in numerous ways. On the one hand, they inform about the role of extra-linguistic factors such as of language proficiency and frequency of L2/weaker language use when charting the development of morphosyntactic

properties in both second language learners and heritage speakers of Spanish.

Propositional modality also proved to be a determining factor in L2 and HS' overall performance in the case of Spanish mood selection, furthering our understanding of how semantic complexity can potentially modulate bilinguals' linguistic outcomes. Similarly, the comparison of proficiency-matched early and late bilinguals also revealed several contrasts in their interpretive and productive abilities –especially at intermediate levels of proficiency- argued to be triggered by differences in age of onset of bilingualism and prolonged (and crucially active) exposure to the weaker/second language (see §6.4-6.6 for more detailed information).

In addition to complementing to the growing body of research dedicated to the acquisition of Spanish by early and late Spanish/English bilinguals, the present study also addressed important methodological considerations regarding the examination of these bilingual populations. In particular, the complexity of the linguistic properties examined and the variation displayed by early and late bilinguals alike emphasized the need to triangulate experimental data using a wide range of elicitation techniques. In this dissertation, the combination of different tasks targeting bilinguals' interpretation and production of indicative/subjunctive mood revealed interesting asymmetries between these two linguistic domains that would have otherwise remained undetected. In addition to these observations, the results obtained in the present study also suggest that the implementation of techniques that usually limit the contextual information provided to the participants (i.e. Acceptability Judgment task) tend to elicit more variability than

those where mood selection appears in a much more naturalistic and spontaneous setting⁸⁷.

Finally, the incorporation of different types of tasks also allowed for a more nuanced understanding of how the extra-linguistic factors mentioned above (proficiency, age and language use) modulated the linguistic performance of bilinguals in different experimental settings (see §6.4-6.6 for more information). While these findings provided further insight about heritage speakers and second language learners' command of Spanish mood selection, the present work also had several limitations. The following section discusses some of the issues identified in the design and implementation of the tasks employed in this study.

7.3. Limitations of the study

This dissertation presented a series of practical and theoretical shortcomings. One of the first methodological issues that became apparent during data collection involved the educational background of HS and second language learners. Although it was determined that these two groups were highly comparable based on their level of proficiency, they differed significantly in their academic experience with the minority language (see §4.3.1 for more details). While these divergences were acknowledged in Chapter 4, they were not considered during the process of data analysis. According to the work of several researchers (Correa, 2011; Mikulski & Elola, 2013; Montrul & Bowles, 2010; Montrul & Perpiñán, 2011; Potwoski et al. 2009), the advantages reported in the case of unschooled HS -derived from early and prolonged contact with the minority language- may have been offset by L2 learners' formal experience in the foreign language

⁸⁷ See Geeslin (2010) and Geeslin and Gudmestad (2008) for a review of task effects in L2 acquisition.

classroom. Notwithstanding, there are several issues where the previous studies present mixed results: 1) degree to which second language learners' instruction in the L2 was able to help them across experimental tasks; and 2) the likelihood of long-term effects in HS' linguistic performance after having received formal exposure in Spanish. Despite not taking participants' educational history into consideration, the results obtained in this study provided indirect evidence about some of the unresolved concerns posed in the previously mentioned investigations. L2 learners' formal experience with Spanish, for instance, seemed to be favorable in tasks that replicated some of the abilities acquired in class, such as acceptability/grammaticality judgments. This initial advantage, however, was not as noticeable in highly contextualized and naturalistic tasks, where HS tended to be more accurate. In the case of this group, it would be plausible to consider that additional practice with the minority language in the form of language instruction could have positive effects on their grammatical representation of Spanish, especially given the role of active language use in the maintenance of morphological and semantic distinctions in this population. Consequently, it is recommended that further research comparing early and late bilinguals take this factor into consideration.

In addition to this limitation, the nature of some of the experimental techniques employed in the study were found to affect participants' responses, especially in their consideration of indicative/subjunctive mood alternations. As noted by Prévost (2011) "it is extremely difficult to prevent participants from entertaining undesired interpretations" (80), particularly in tasks that are focused on the evaluation of complex semantic notions,

as in the case of the acceptability and truth-value judgments implemented in this study⁸⁸. It is precisely in these tasks where certain aspects of the scenarios provided appeared to affect participants' responses. As discussed in Chapter 5 (see sections §5.2.4 and §5.3.1), some of the contexts presented in the acceptability and truth-value judgments did not exclude the possibility of alternative interpretations where the use of subjunctive morphology could have been acceptable (i.e. indirect commands). Consequently, the presence of this flaw in the stimuli had a negative impact on participants' overall rates of accuracy in assertive predicates. It is worth noting that this apparent limitation in the design influenced the responses of all subjects, including those of Spanish-dominant controls. In this respect, the results obtained in the present study still informed about the extent to which early and late bilinguals differed from SDCs. In fact, this consideration ultimately revealed that controls and advanced and intermediate HS were more likely to extend subjunctive to other contexts than proficiency-matched L2ers.

To conclude, the analysis of the data would have also benefited from a larger pool of simultaneous and sequential HS with varying degrees of proficiency to provide further insight regarding the effects of age of onset of bilingualism within early bilinguals. This addition would have been particularly advantageous at low levels of proficiency, especially in the group of sequential HS -which included a very low number of participants (N=4)-.

Despite these limitations, the data discussed in the present study was still able to capture representative trends in early and late bilinguals. In the following segment, I

⁸⁸ This methodological limitation also had a slight impact on participants' production of reported assertions. In their case, HS and SDCs tended to construe alternative interpretations (assertions > directives) that triggered the use of subjunctive.

conclude this chapter by proposing suggestions to explore some of the findings obtained in this investigation in more detail with the objective of improving our knowledge on bilingual morphosyntactic development.

7.4. Suggestions for future research and concluding remarks

The topics discussed throughout this dissertation open the possibility to future investigations regarding the mastery of Spanish mood by early and late bilinguals. One of the most relevant contributions of the present work is the proposal that the L1/L2 acquisition of mood is highly dependent on the modality of the predicate where the indicative/subjunctive selection takes place –deontic, epistemic and epistemological-, as reported in monolingual and bilingual children (Blake, 1983; Pérez-Leroux, 1998; Silva-Corvalán, 2014) as well as in adult second language learners and HS (Gudmestad, 2013; Kaufmann, 2011; Lozano, 1995; Lubbers-Quesada, 1998; Stephany, 1995). In order to confirm the potential effects of this factor in the acquisition of Spanish mood, the next logical step should involve the testing of obligatory and variable instances of indicative and subjunctive selection in epistemic and epistemological contexts using the same type of interpretive and productive tasks employed in this study. By implementing this type of analysis it would be possible to determine with more certainty whether bilinguals' source of morphological variability lies in the obligatoriness of the indicative/subjunctive selection (as argued by Montrul, 2007, 2009 and Kempchinsky, 1995), or in the type of modality expressed by the predicate under evaluation.

Future investigations should also explore the effects of age of onset of bilingualism and frequency of language use in heritage speakers and second language learners in more detail, not only in relation to the acquisition of mood, but also in regard

to other linguistic properties prone to optionality and erosion, such as verbal aspect, differential object marking or gender assignment and agreement. Additionally, it would also be interesting to examine whether the advantage in performance detected in intermediate HS (especially in the group of sequential HS) is limited to this level of proficiency -as attested in the present study- or if it extends beyond this stage depending on the nature of the structure under analysis. Further information about this extra-linguistic variable would contribute to the study of the role of quantity of input, as well as timing and age of first exposure to the minority language in the development of bilingual grammars. Similarly, the inclusion of supplementary measures targeting the evaluation of heritage speakers' frequency of Spanish use, such as verbal fluency tasks or picture-naming exercises, would also shed some light on the potential factors that influence HS' linguistic performance.

Although the results obtained in this study have provided invaluable information about how HS and second language learners tackle obligatory and variable mood selection in Spanish, they have also raised a considerable number of questions regarding the effects of linguistic and extra-linguistic factors such as the ones presented in this section. While the scope of this dissertation limited the exploration of all the aforementioned variables, addressing them in future research would broaden our understanding of how early and late bilinguals master certain properties of Spanish mood selection.

APPENDIX 1

(English version)

CONSENT FORM

You have been invited to participate in a research study on the acquisition of Spanish morphosyntactic properties conducted by Silvia Perez-Cortes, a PhD student from Rutgers University. It is requested that you to read this form carefully, and ask any questions before agreeing to participate in this study.

Objectives: The purpose of this study is to understand how speakers acquire certain properties of language, and to examine what are the factors that intervene in this course of development (language internal/external elements). This study will take place from February 2015 until September 2015, and will interview a total of 210 people.

Description of the project: If you agree to take part in this study, you will be asked to:

- 1) Carefully read and sign the consent form
- 2) Fill out a questionnaire regarding your language habits (patterns of use, knowledge of other languages...).

Provided that you agree to participate, you will be interviewed twice, and each session will last for approximately 30-45 minutes. During the meetings, you will be asked to complete a brief proficiency test in Spanish, and then you will be invited to participate in four additional tasks (duration of +/- 15 minutes each). In this study, responses will be recorded both electronically and on paper and they will be kept confidential at all times.

Risks and benefits: There are no foreseeable risks to participating in the study. You will be granted extra credit if you decide to complete this study. While your linguistic skills are not likely to improve from taking part in this research, your responses will provide us with valuable data about the process of language acquisition and development.

Confidentiality: All the records of this study will be kept private. It will be impossible to identify participants by name, as they will be assigned a random code. The consent forms will be stored in a secure place for three years after the completion of this study, and after that period of time, they will be destroyed. The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated, unless you have agreed otherwise.

Freedom of participation: Your decision to participate in this study will not affect your current or future relationship with Rutgers University. If you decide to participate, you have the right to withdraw from the study at any time.

Initials _____

If you have any questions about the research, you may contact me, Silvia Perez-Cortes at the following address: Carpenter Hall, Rutgers University, 105 George Street, New Brunswick, NJ 08901 (USA). My cell phone number is (413) 559-7734, but you can also contact me by e-mail at: silvia.perezcortes@rutgers.edu.

For further information, you may also contact Dr. Liliana Sánchez at: Department of Spanish and Portuguese, Rutgers University, 105 George Street, New Brunswick, NJ, 08904, Tel: (732) 932-9412 ext. 18. E-mail: lsanchez@spanport.rutgers.edu.

Please don't hesitate to contact us with any questions you may have. If you have additional queries, you may contact the IRB Administrator at Rutgers University at:

Institutional Review Board
Rutgers University, the State University of New Jersey
Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Phone: 732-235-9806
Email: humansubjects@orsp.rutgers.edu

You will be given a copy of this consent form for your records. If you allow to participate in this study, please sign and date below:

Name: _____

Signature: _____

Date: _____

Principal Investigator Signature _____ Date: _____
(Silvia Perez-Cortes)

Additionally, if you would like to receive a copy of the results of the study, you can provide your e-mail address below:

____ No, I am not interested in receiving a report of the study.

____ Yes, I want to receive a report of the study.

E-mail address:

Initials _____

(Spanish version)

CONSENTIMIENTO

Usted ha sido invitado a participar en un estudio sobre la adquisición del español llevado a cabo por Silvia Perez-Cortes, estudiante de doctorado de la Universidad de Rutgers (EE.UU.). Le rogamos lea este formulario cuidadosamente y haga cualquier pregunta antes de decidir participar en este estudio.

Objetivos: El objetivo de este estudio es examinar cómo los hablantes de varias lenguas adquieren ciertas propiedades lingüísticas y determinar cuáles son los factores que intervienen en este proceso de desarrollo (elementos internos/ externos a la lengua). Este estudio se llevará a cabo entre los meses de febrero de 2015 y septiembre de 2015, y tiene previsto entrevistar a un total de 210 personas.

Descripción del proyecto: Si decide participar en este estudio, se le pedirá que:

- 1) lea cuidadosamente este consentimiento y lo firme
- 2) rellene un cuestionario acerca de sus hábitos lingüísticos, incluyendo información sobre su dominio de otras lenguas.

Si decide participar en este estudio, se le entrevistará dos veces (cada sesión tendrá una duración de aproximadamente 30-45 minutos). Durante estas reuniones se le pedirá que complete un breve test de competencia lingüística en español, y luego se le invitará a participar en cuatro tareas adicionales (de una duración aproximada de 15 minutos cada una). En este estudio sus respuestas serán tomadas de manera electrónica y por escrito y se mantendrán de manera confidencial.

Riesgos y beneficios: No se prevé ningún riesgo por participar en este estudio. Si decide participar en el estudio, se le dará crédito extra en clase. A pesar de que sus destrezas lingüísticas no mejoren por haber participado en este estudio, sus respuestas nos proporcionarán datos muy valiosos acerca del desarrollo cognitivo y de los procesos de adquisición de lenguas.

Confidencialidad: Todos los datos recogidos en este estudio serán confidenciales. No será posible identificar a los participantes por su nombre, ya que se les asignará un código aleatorio a todos ellos. Los formularios de consentimiento se guardarán en un lugar seguro durante tres años, y después de ese período, serán destruidos. Los investigadores y el comité de ética (*Institutional Review Board*) de la Universidad de Rutgers son los únicos que tendrán acceso a los datos, a menos que estos sean requeridos por ley. Si se llegara a publicar algún informe de este estudio, o sus resultados se presentaran en una conferencia, no se presentarán resultados que pueden ser vinculados a un individuo concreto.

Libertad de participación: La decisión de acceder a participar en este estudio no afectará su relación (presente o futura) con la Universidad de Rutgers. Si accede a formar parte del estudio, le recordamos que puede cambiar su decisión en cualquier momento del proceso.

Iniciales _____

Si tiene alguna pregunta acerca de la investigación puede ponerse en contacto conmigo, Silvia Perez-Cortes, en: Carpender Hall, Rutgers University, 105 George Street, New

Brunswick, NJ 08901 (EE.UU.), por teléfono: (413) 559-7734 o correo electrónico: silvia.perezcortes@rutgers.edu.

Para más información, también puede comunicarse con la Dra. Liliana Sánchez en: Departamento de español y portugués, Rutgers University, 105 George Street, New Brunswick, NJ, 08904, Tel: (732) 932-9412 ext. 18. E-mail: lsanchez@spanport.rutgers.edu.

Por favor, no dude en ponerse en contacto con nosotros si le surge cualquier pregunta. Para cuestiones adicionales puede comunicarse con el administrador del IRB de la Universidad Rutgers en:

Institutional Review Board
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Liberty Plaza / Suite 3200
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New Brunswick, NJ 08901
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Email: humansubjects@orps.rutgers.edu

Una vez haya firmado, se le entregará una copia de este formulario de consentimiento. Si decide participar en este estudio, le rogamos complete los datos que aparecen a continuación:

Nombre: _____ Firma: _____

Fecha: _____

Firma del Investigador Principal _____ Fecha: _____
(Silvia Perez-Cortes)

Asimismo, si usted desea puede acceder a recibir una copia de los resultados del estudio si nos proporciona su dirección de correo electrónico:

_____ No estoy interesado en recibir un informe sobre el estudio.

_____ Sí estoy interesado en recibir un informe sobre el estudio.

Correo electrónico:

Iniciales _____

APPENDIX 2

Participant # _____

ALL INFORMATION WILL REMAIN CONFIDENTIAL

Instructions:

Please answer the following questions about your language habits. In some cases you may be asked to circle your response, while in other cases you may respond with a short answer. If there are questions that do not pertain to you, please leave them blank.

Personal information:

1. Name: _____
2. Birth date: _____
3. Place of birth: _____
4. Have you always lived there? (list countries and length of stay) _____

Information about the family:

5. Languages spoken by the mother/tutor: _____
6. Languages spoken by the father/tutor: _____
7. Languages spoken among the siblings: _____
8. Languages spoken by the grandparents: _____

Information about your linguistic competence:

9. Languages spoken or understood. For language(s) that you learned from birth, please write "0" (zero) under "age of acquisition/first exposure":

	Language	Age of acquisition/first exposure	Any formal education in it?
Language 1			
Language 2			
Language 3			

10. Language proficiency. Rate the following based on a 0-10 scale, where (0= not at all, 10= excellent).

a. Rate your ability to speak in these different situations:

	Spanish	English
Conversing with friends		
Talking on the phone		
At work		
Making a formal complaint		

b. Rate your ability to understand someone else speaking in these different situations:

	Spanish	English
At work		
Movies/TV without subtitles		
Conversations with friends		
In a store/bank/restaurant		

c. Rate your ability to write the following:

	Spanish	English
Letter/e-mail to friends/family		
Letter/e-mail to a boss, a complaint		
Paper/project summary/composition		

d. Rate your understanding of these written materials:

	Spanish	English
Newspapers/magazines/Internet		
Books/textbooks		
Letters/e-mail		

Language choice: Mark the percentage of language use for Spanish and English in each of these contexts:

	Preferred language	
	Spanish	English
With your parents		
With your siblings		
With your partner		
At work		
At School/university		
Reading		
Watching TV		
At shops/banks		

Language switching: Mark your choice with a cross (X):

Examples: **Word switch:** If you go to the store can you bring back some *huevos*.

Sentence switch: I'm going to watch TV *en el cuarto de mi mama*.

Do you change from one language to the other when you speak with the following people?				
	Yes	No	Word switch	Phrase switch
Parents				
Languages mixed:				
Siblings				
Languages mixed:				
Partner				
Languages mixed:				
Friends/peers				
Languages mixed:				
Community				
Languages mixed:				

APPENDIX 3

Nombre (print): _____ E-mail _____

GRAMÁTICA

Write the correct letter (A, B, C or D) for each sentence. "Ø" means nothing is necessary to complete the sentence.

BLOQUE A

- ___ 1. _____ edificio alto es la Torre Sears.
A. Eso B. La C. Aquel D. Ø
- ___ 2. Los autos que chocaron en el accidente iban _____ el oeste.
A. dentro B. hacia C. fuera D. Ø
- ___ 3. Los novios pasaron unas vacaciones fantásticas _____ fueron a Hawai.
A. cuando B. que C. donde D. Ø
- ___ 4. –¿Van a invitar al profesor y a su esposa a la reunión? –Sí, vamos a invitar _____.
A. ellos B. sus C. los D. Ø
- ___ 5. Si no puedes usar tu bicicleta usa _____.
A. nuestra B. de él C. la mía D. Ø
- ___ 6. A Juana no _____ gustan las películas de ciencia ficción.
A. le B. se C. la D. Ø
- ___ 7. En nuestro barrio hay muchas casas bonitas, pero _____ Juan es la más bonita.
A. su B. de la C. la de D. Ø
- ___ 8. –¿Conoces _____ hombre de la camisa verde? –¿Es muy guapo verdad?
A. un B. al C. esto D. Ø
- ___ 9. Óscar no va a graduarse este semestre, ni yo _____.
A. tampoco B. ningún C. además D. Ø
- ___ 10. –¿Con quién saliste al bar anoche? –No salí con _____; fui sola.
A. tú B. alguien C. nadie D. Ø
- ___ 11. Estamos comprando _____ pan francés para la cena de mañana.
A. la B. hay C. algo D. Ø
- ___ 12. La palabra 'venir' viene _____ latín.
A. por B. en C. del D. Ø

BLOQUE B

- ___ 1. Por favor, _____ llegues a Madrid, me llamas.
A. desde que B. antes de C. cuando D. después de
- ___ 2. –¿Hasta qué hora estuvo Lorenzo en la consulta?
–Pues no sé, no lo vi. Cuando yo llegué, a las 12, ya se _____.
A. iba B. ha ido C. fue D. había ido

- ___ 3. Hoy invito yo _____ todos al café, que es mi cumpleaños.
A. para B. de C. a D. sobre
- ___ 4. ¿_____ has pedido ya a tus padres?
A. Se te B. Se lo C. Se les D. Se le
- ___ 5. Manuel, como no _____ más fruta, no tendremos suficiente.
A. compres B. compras C. compraras D. comprarás
- ___ 6. ¿Que te vas a París? ¡Quién _____ tú!
A. es B. sea C. sería D. fuera
- ___ 7. Sinceramente, yo que tú _____ un mapa antes de viajar.
A. compraré B. compro C. compraría D. comprara
- ___ 8. La música de los vecinos está muy alta. Estoy _____ llamar a la policía.
A. a B. por C. entre D. tras
- ___ 9. El médico me dijo que _____ que volver mañana.
A. había tenido B. tuve C. tenía D. he tenido
- ___ 10. Por favor, en cuanto _____ a Lucía, dile que me llame.
A. verás B. veas C. ves D. vieras
- ___ 11. El regalo que _____ he comprado a Andrés es muy bonito.
A. lo B. se C. la D. le
- ___ 12. El profesor me pidió que _____ a sus horas de oficina.
A. iré B. vaya C. iría D. iba

BLOQUE C

- ___ 1. Ellos estaban dispuestos a que _____ nosotros en el coche y ellos andando.
A. íbamos B. fuimos C. iríamos D. fuéramos
- ___ 2. _____ como se enteraron de lo sucedido fueron a visitar a la familia.
A. Tan pronto B. No bien C. En cuanto D. Nada más
- ___ 3. Elisa llegó a la estación cuando el tren _____ de salir, ¡qué rabia!
A. acabó B. acaba C. acabaría D. acababa
- ___ 4. En cuanto deje la maleta en la habitación del hotel _____ meterme en la piscina, ¡qué calor!
A. creo B. debo C. pienso D. siento
- ___ 5. Carolina y Luis se casaron muy jóvenes, _____ cumplieron los 20 años.
A. al B. apenas C. de D. pronto
- ___ 6. El perrito de María es muy gracioso, tan pronto salta _____ se tumba.
A. que B. de C. y D. como
- ___ 7. El jefe no se ha enfadado porque María _____ llegado tarde, sino porque no se había preparado bien.
A. ha B. haya C. había D. hubiera

- ___8. Al abuelo le encantaba que Juanito ___ a verle todos los días.
A. haya ido B. iba C. fuera D. iría
- ___9. Pedro va a hablar con el director, pero no quiere que ___ vaya con él.
A. algún B. alguien C. nadie D. todos
- ___10. Aunque ___ muy tarde, iré a verte al hospital, te lo prometo.
A. llegue B. llegara C. llegaría D. llegué
- ___11. Le dieron todo lo que pidió, ___ estuviera feliz y se quedara allí.
A. a saber B. por eso C. de ahí que D. por consiguiente
- ___12. Está ___ nevar, así que abrígate bien.
A. por B. en C. si D. entre

COMPRENSIÓN ESCRITA

Write the correct letter (A, B, C or D) for each sentence.

Las bicicletas también son para el otoño

El ciclismo está considerado por los especialistas como uno de los deportes más completos. Fortalece el cuerpo y también la mente, y a él puede ___1___ cualquier persona porque no tiene ___2___ de edad. La bicicleta es uno de los mejores deportes, sobre todo para la gente ___3___ no puede hacer ejercicios de contacto con el suelo, como correr. ___4___ estemos ante un deporte muy beneficioso, ya que no solo mejora nuestra condición física, sino que nos hace más resistentes; ___5___ tiene unos efectos anímicos extraordinarios. Elimina el estrés y hace que ___6___ más eufóricos y enérgicos, ___7___ supone encontrarnos mejor. Por último, la práctica de este deporte facilita el contacto con la naturaleza.

Para practicar este deporte, debemos ___8___ en cuenta algunos aspectos. El tiempo es una de las dificultades con ___9___ que se cuenta si se vive en la ciudad. Hay que intentar sacar tiempo de ___10___ sea para poder practicar nuestro deporte preferido. En el caso de la bicicleta, lo ideal es salir todos los días aunque sólo ___11___ un cuarto de hora, si bien se recomienda pedalear ___12___ 40 y 45 minutos. También se pueden realizar tres sesiones a la semana ___13___ a los 60 minutos, y los fines de semana ___14___ de entrenar un poco más porque tenemos más tiempo libre. La distancia a recorrer dependerá ___15___ la velocidad y el ritmo que ___16___, aunque no hay que obsesionarse con los kilómetros. Otro elemento ___17___ importante es la elección de la bicicleta que hagamos: de carretera para los más deportivos, de montaña para los ___18___ de la naturaleza, y las híbridas, que valen para todo.

Con la bicicleta ya escogida, solo ___19___ resta equiparnos adecuadamente. En el atuendo no debe ___20___ un buen *culotte*, un *maillot*, un chubasquero por si llueve, y un casco.

- | | | |
|----------------------|---------------|--------------|
| ___1. A) acceder | B) practicar | C) ejecutar |
| ___2. A) límite | B) término | C) frontera |
| ___3. A) quien | B) quienes | C) que |
| ___4. A) De modo que | B) De ahí que | C) Así que |
| ___5. A) pero | B) sino | C) también |
| ___6. A) estamos | B) estemos | C) estaremos |

- | | | |
|----------------------|----------------|----------------|
| ___ 7. A) lo que | B) el cual | C) cuyo |
| ___ 8. A) tener | B) considerar | C) darnos |
| ___ 9. A) lo | B) las | C) la |
| ___ 10. A) donde | B) como | C) cuando |
| ___ 11. A) sería | B) es | C) sea |
| ___ 12. A) entre | B) hacia | C) de |
| ___ 13. A) alrededor | B) en torno | C) cerca |
| ___ 14. A) tratar | B) intentar | C) esforzarse |
| ___ 15. A) en | B) de | C) a |
| ___ 16. A) corramos | B) vayamos | C) llevemos |
| ___ 17. A) más | B) tan | C) muy |
| ___ 18. A) amantes | B) aficionados | C) interesados |
| ___ 19. A) se | B) nos | C) le |
| ___ 20. A) faltar | B) sobrar | C) quedar |

APPENDIX 4

Table I.

Complete demographic information obtained from Spanish Heritage Speakers (N=69)

#ID	Age	Origin of family (mother/father)	Education (start)	% Language use ⁸⁹		% code- switching ⁹⁰	Age of onset SP/EN
				SPAN	ENG		
HS001	30	PR/PR	College	0	100	20	0/0
HS002	22	Mexico/Mexico	High school	12.5	87.5	20	0/3
HS003	21	Colombia/Colombia	High school	12.5	87.5	40	0/3
HS004	21	Mexico/Mexico	Elementary	50	75	60	0/2
HS005	23	DR/DR	Elementary	87.5	75	60	0/9
HS006	23	Colombia/Colombia	Elementary	62.5	62.5	20	0/5
HS007	20	Peru/Peru	None	12.5	87.5	20	0/0
HS008	20	Cuba/PR	Elementary	0	100	0	0/0
HS009	20	Ecuador/Ecuador	None	37.5	75	0	0/0
HS010	22	El Salvador/ El Salvador	None	12.5	87.5	40	0/3
HS011	21	Peru/Peru	High school	37.5	100	60	0/0
HS012	20	DR/USA	None	25	100	80	0/3
HS013	24	PR/PR	College	37.5	87.5	80	0/4
HS014	20	DR/PR	College	0	100	80	0/0
HS015	21	Colombia/Colombia	College	0	100	80	0/0
HS016	21	DR/DR	College	25	100	60	0/3
HS017	21	Ecuador/Ecuador	Elementary	0	100	20	0/0
HS018	20	USA/Spain	Elementary	0	100	60	0/0
HS019	20	Guatemala/ Guatemala	High school	37.5	100	40	0/5
HS020	21	PR/PR	Elementary	25	100	60	0/0
HS021	22	Ecuador/Ecuador	Elementary	12.5	100	0	0/0
HS022	20	Colombia/Colombia	Elementary	12.5	87.5	40	0/3
HS023	19	Cuba/ Cuba	High school	0	100	0	0/1
HS024	22	Peru/Peru	College	62.5	75	20	0/6
HS025	20	Peru/PR	None	0	100	0	0/0
HS026	20	Ecuador/Ecuador	Elementary	37.5	100	40	0/5
HS027	22	Spain/PR	Elementary	87.5	100	0	0/9
HS028	23	DR/DR	Elementary	87.5	62.5	80	0/2
HS029	26	Colombia/Colombia	High school	75	25	40	0/4
HS030	22	Cuba/Spain	Elementary	50	50	100	0/5
HS031	21	DR/Uruguay	None	12.5	87.5	40	0/0
HS032	23	Colombia/Ecuador	College	0	100	0	0/6
HS033	27	Mexico/Mexico	None	12.5	87.5	20	0/0

⁸⁹ The percentage of language use was calculated out of the 8 possible situations presented (with parents, siblings, partner, work, school, reading, TV and in the community). Data on each language also includes cases where participants chose the option “both languages are used”.

⁹⁰ The overall percentage of code-switching includes phrase/word switches in five different situations (with parents, siblings, partner, friends and in the community).

HS034	23	DR/Peru	None	0	100	60	0/0
HS035	24	Spain/Spain	College	37.5	100	100	0/4
HS036	21	Ecuador/Ecuador	None	12.5	87.5	40	0/4
HS037	22	Chile/Peru	None	37.5	87.5	80	0/4;5
HS038	25	Mexico/Mexico	High school	12.5	100	60	0/7
HS039	25	Ecuador/Ecuador	Elementary	50	75	60	0/4
HS040	21	Ecuador/Cuba	Elementary	37.5	87.5	40	0/2
HS041	24	Cuba/Cuba	None	25	75	60	0/8
HS042	34	DR/Mexico	None	12.5	87.5	60	0/4
HS043	21	Mexico/Mexico	College	62.5	75	60	0/5
HS044	21	Colombia/Colombia	None	12.5	87.5	60	0/5
HS045	21	Colombia/Colombia	Elementary	50	62.5	80	0/3;5
HS046	22	Honduras/DR	High school	62.5	87.5	60	0/3
HS047	21	PR/PR	College	87.5	87.5	80	0/5
HS048	18	Ecuador/Ecuador	Elementary	50	100	60	0/3
HS049	22	Mexico/Mexico	High school	37.5	87.5	40	0/5
HS050	22	El Salvador/ El Salvador	Elementary	12.5	87.5	0	0/1
HS051	22	Ecuador/Ecuador	Elementary	37.5	87.5	40	0/3
HS052	19	DR/DR	Elementary	37.5	100	80	0/3
HS053	21	Ecuador/Ecuador	Elementary	50	100	60	0/4;5
HS054	20	Guatemala/ El Salvador	Elementary	100	25	60	0/0
HS055	23	Chile/ Chile	High School	25	87.5	40	0/0
HS056	21	Spain/Spain	Elementary	50	100	40	0/0
HS057	20	Uruguay/ Uruguay	None	50	87.5	60	0/3;5
HS058	24	Ecuador/Ecuador	None	87.5	100	100	0/8
HS059	23	Ecuador/Ecuador	None	37.5	87.5	80	0/6
HS060	22	PR/DR	High school	12.5	100	40	0/5;5
HS061	19	Ecuador/Ecuador	None	12.5	87.5	0	0/0
HS062	20	DR/DR	Elementary	37.5	87.5	40	0/3;5
HS063	21	Ecuador/Ecuador	None	25	100	20	0/5
HS064	21	DR/PR	Elementary	75	75	60	0/0
HS065	23	DR/PR	Elementary	0	87.5	20	0/3
HS066	28	Peru/USA	None	12.5	87.5	40	0/0
HS067	27	Cuba/Venezuela	None	12.5	100	20	0/0
HS068	20	Peru/USA	High school	0	100	40	0/0
HS069	24	PR/PR	High school	75	100	0	0/0

APPENDIX 5

Table II.*Complete demographic information obtained from L2 Speakers of Spanish (N=68)*

#ID	Age	Origin of family (mother/father)	Other langs.	Education (start)	% Lang. use		% code-switch.	Age onset L2
					SPAN	ENG		
L2001	25	USA/USA	-	High school	14.3	100	0	16
L2002	29	USA/USA	-	Middle school	42.8	57	40	11
L2003	21	USA/USA	-	Elementary	14.3	85.7	20	7
L2004	22	USA/Scotland	-	Middle school	0	100	0	14
L2006	23	USA/USA	-	Middle school	0	100	0	13
L2009	21	USA/USA	-	High school	0	100	0	15
L2010	22	China/China	Mandarin	Middle school	0	85.7	20	12
L2011	21	Jamaica/USA	-	Middle school	14.3	85.7	0	13
L2012	21	USA/USA	-	College	50	100	40	-
L2013	20	Russia/USA	-	College	14.3	100	100	-
L2014	21	USA/USA	-	Middle school	0	100	0	12
L2015	21	USA/USA	-	Elementary	0	100	20	10
L2016	20	USA/USA	-	Elementary	14.3	85.7	0	10
L2017	20	USA/USA	-	High school	0	100	0	15
L2019	21	South Korea/ South Korea	Korean	High school	0	100	40	17
L2020	20	Iceland/USA		Elementary	0	100	20	10
L2021	27	USA/USA	-	Middle school	0	100	40	14
L2022	20	USA/USA	-	High school	0	100	0	15
L2023	20	USA/USA	-	Middle school	0	100	0	12
L2025	23	USA/USA	-	High school	0	100	0	-
L2026	20	Grenada/USA	-	Elementary	0	100	0	8;5
L2027	21	USA/USA	-	Middle school	0	100	20	12
L2028	32	USA/USA	-	High school	0	71.4	60	17
L2029	21	USA/USA	-	Elementary	28.5	100	0	10;5
L2030	19	USA/USA	-	Middle school	0	100	40	12
L2031	19	USA/USA	-	Elementary	57.1	100	20	8
L2034	20	USA/USA	-	Elementary	0	100	0	10
L2035	22	USA/USA	-	College	0	100	40	17;5
L2036	20	India/USA		Elementary	0	100	0	7
L2038	21	USA/USA	-	Middle school	42.8	100	60	11;5

L2039	20	Philippines/ USA	-	High school	42.8	100	80	18
L2040	28	USA/Jamaica	-	High school	0	100	0	-
L2041	18	India/India	Konkani	Middle school	0	100	20	11
L2042	22	USA/India	-	College	0	100	0	19
L2043	22	USA/USA	-	High school	0	100	0	-
L2044	19	USA/USA	-	Middle school	0	100	40	11
L2045	19	US/Cyprus	-	Middle school	28.5	85.7	40	11
L2047	19	USA/USA	-	College	0	100	20	18
L2049	22	USA/USA	-	Elementary	50.4	57.1	60	8
L2050	23	USA/USA	-	Elementary	14.3	100	20	8
L2051	22	USA/USA	-	Elementary	0	100	0	9
L2052	22	USA/Pakistan	-	Middle school	0	100	0	12
L2053	22	USA/USA	-	Elementary	0	100	20	7
L2055	35	USA/Japan	-	Elementary	0	100	0	-
L2056	28	USA/USA	-	High school	42.8	100	40	15
L2057	28	USA/USA	-	Middle school	42.8	100	40	12
L2058	27	USA/USA	-	Middle school	0	100	20	14
L2059	30	USA/USA	-	Middle school	28.5	100	60	12
L2060	37	USA/USA	-	Middle school	0	100	20	12
L2061	35	USA/USA	-	Middle school	42.8	85.7	40	12
L2062	28	USA/USA	-	Middle school	0	100	40	12
L2063	25	Korea/USA	-	Elementary	0	85.7	40	7
L2064	33	USA/USA	-	High school	0	28.5	0	-
L2065	28	Canada/Canada	-	High school	28.5	100	0	15
L2066	23	South Africa/USA	-	Elementary	57.1	100	0	9
L2067	25	USA/Greece	-	Middle school	14.3	85.7	20	12
L2069	21	USA/USA	-	High school	28.5	85.7	80	16
L2070	34	USA/USA	-	Middle school	0	85.7	0	14
L2071	25	USA/USA	-	Middle school	0	100	80	11
L2072	20	USA/USA	-	Elementary	0	100	40	9
L2073	38	USA/USA	-	High school	0	28.5	0	-
L2074	32	USA/USA	-	Middle school	14.3	100	60	13
L2075	21	USA/USA	-	College	42.8	100	100	17

L2076	20	USA/USA	-	Middle school	14.3	100	40	11
L2077	30	USA/USA	-	College	57.1	85.7	20	20
L2078	28	USA/USA	-	Elementary	14.3	100	40	7
L2079	27	USA/USA	-	Middle school	0	100	0	12
L2080	33	USA/USA	-	High school	57.1	85.7	60	-

APPENDIX 6

Table III.

Complete demographic information obtained from dominant speakers of Spanish (N=25)

#ID	Age	Origin of family (mother/father)	Years in US	Education in Spanish	% Lang. use		% code- switch.	AoO L2
					SPAN	ENG		
C001	32	Colombia/Colombia	14	Elementary- college	50	75	60	11
C002	28	Nicaragua/ Nicaragua	8	Elementary - college	87.5	25	40	18
C003	35	Spain/Spain	8	Elementary - college	100	12.5	0	15
C004	22	Cuba/Cuba	8	Primary-HS	75	75	80	14
C005	27	Ecuador/Ecuador	16	Elementary - Middle school	75	87.5	100	11
C006	35	DR/PR	20	Elementary - HS	75	100	100	16
C007	29	Uruguay/Uruguay	15	Elementary - HS	37.5	75	20	14
C008	25	Mexico/Mexico	12	Elementary - HS	75	37.5	100	15;5
C009	25	Peru/Peru	8	Elementary - HS	100	75	100	15
C010	22	DR/DR	7	Elementary	75	75	20	10
C011	23	Colombia/Colombia	10	Elementary - HS	62.5	62.5	80	12
C012	21	PR/PR	10	Elementary - HS	75	12.5	0	5
C013	23	DR/DR	6	Elementary - HS	62.5	87.5	80	11
C014	34	DR/DR	2	Elementary - HS	62.5	87.5	60	6
C015	26	Peru/Peru	10	Elementary - HS	37.5	62.5	100	12
C016	22	Colombia/-	12	Elementary	25	87.5	80	10
C017	24	Argentina/ Argentina	1	Elementary - college	100	62.5	100	6
C018	24	DR/DR	3	Elementary - HS	62.5	75	20	18
C019	20	DR/DR	9	Elementary - Middle school	75	37.5	20	11
C020	28	Colombia/Colombia	4	Elementary - HS	100	0	0	5
C021	24	Peru/Peru	6	Elementary - HS	62.5	87.5	40	6
C022	36	Mexico/Mexico	24	Elementary - HS	100	0	0	14
C023	23	Mexico/Mexico	9	Elementary -	87.5	87.5	80	14

				HS				
C024	32	Mexico/Mexico	1	Elementary - college	87.5	12.5	0	12
C025	30	Ecuador/Ecuador	1	Elementary - college	100	0	0	26

APPENDIX 7

Table IV.

Spanish proficiency levels (self-reported and official DELE scores) for HS (N=69)

	Spanish					English			
	Production		Comprehension		DELE	Production		Comprehension	
	oral	written	oral	written		oral	written	oral	written
HS001	60	73	90	80	69	100	100	100	100
HS002	30	53	87	70	61	100	100	100	100
HS003	100	15	93	67	71	100	100	100	100
HS004	77	73	100	93	66	90	90	100	97
HS005	100	100	100	100	80	100	100	100	100
HS006	90	80	100	90	92	100	100	100	100
HS007	40	60	80	70	75	100	100	100	100
HS008	37	17	70	47	38	100	100	100	100
HS009	67	70	67	67	73	100	100	100	100
HS010	100	70	100	100	71	100	100	100	100
HS011	67	78	88	93	43	100	100	100	100
HS012	50	67	83	80	34	80	90	93	83
HS013	43	63	80	70	41	100	100	100	100
HS014	73	90	73	87	41	100	100	100	100
HS015	47	70	77	60	73	93	97	100	90
HS016	57	50	80	67	59	100	100	100	100
HS017	33	50	67	50	49	100	100	100	100
HS018	83	90	100	93	75	100	100	100	100
HS019	53	40	60	43	48	97	93	100	100
HS020	33	67	47	50	36	90	80	100	90
HS021	93	83	93	90	73	100	100	100	100
HS022	17	73	33	93	64	93	87	93	100
HS023	37	67	50	73	45	100	100	100	100
HS024	73	63	77	70	52	87	80	87	80
HS025	40	60	77	82	43	100	100	100	100
HS026	87	90	97	90	76	100	100	100	100
HS027	45	36	50	45	54	100	100	100	100
HS028	100	90	100	100	78	95	100	100	100
HS029	100	100	100	83	75	100	100	100	100
HS030	100	100	100	100	96	100	100	100	100
HS031	73	63	80	80	60	97	80	100	100
HS032	0	80	100	90	84	100	100	100	100
HS033	70	60	70	60	72	100	100	100	100
HS034	67	30	97	70	51	100	100	100	100

HS035	100	100	100	100	75	100	100	100	100
HS036	90	70	90	70	76	100	100	100	100
HS037	93	70	87	80	51	100	100	100	100
HS038	50	52	100	100	65	100	100	100	100
HS039	87	25	100	73	83	90	100	100	100
HS040	63	50	100	90	71	100	100	100	100
HS041	63	67	83	80	83	100	100	100	100
HS042	93	73	93	80	80	100	93	100	100
HS043	90	77	100	80	81	100	100	100	100
HS044	97	77	97	83	71	100	100	100	100
HS045	80	87	100	100	76	100	100	100	100
HS046	73	53	87	55	56	100	100	100	100
HS047	77	70	93	90	86	100	100	100	100
HS048	43	65	97	73	76	100	100	100	100
HS049	70	80	100	97	91	100	100	67	100
HS050	100	100	100	100	92	100	100	100	100
HS051	93	85	100	90	100	100	100	100	100
HS052	93	63	100	100	81	100	100	100	100
HS053	87	80	90	100	90	100	100	100	100
HS054	90	60	100	100	90	100	100	100	100
HS055	87	80	93	90	90	100	100	100	100
HS056	75	83	100	100	84	100	100	100	100
HS057	93	83	100	100	72	100	100	100	100
HS058	90	83	95	93	85	90	100	100	100
HS059	83	67	100	90	86	100	100	100	100
HS060	83	57	100	100	62	100	100	100	100
HS061	100	73	100	100	81	100	100	100	100
HS062	83	73	93	83	62	100	100	100	100
HS063	77	70	70	70	62	100	100	100	100
HS064	90	83	97	90	90	100	100	100	100
HS065	53	60	97	70	52	100	100	100	100
HS066	83	83	87	87	85	100	100	100	100
HS067	70	63	100	97	82	100	100	100	100
HS068	70	73	37	43	95	100	100	100	100
HS069	83	83	87	87	90	100	100	100	100
Means	72%	69%	87%	82%	71%	99%	98%	99%	99%

APPENDIX 8

Table V.

Spanish proficiency levels (self-reported and official DELE scores) for L2ers (N=68)

	Spanish					English			
	Production		Comprehension		DELE	Production		Comprehension	
	oral	written	oral	written		oral	written	oral	written
L2001	75	80	85	90	80	100	100	100	100
L2002	83	70	90	83	86	100	100	100	100
L2003	40	63	47	63	47	100	100	100	100
L2004	60	60	60	70	57	100	100	100	100
L2006	60	73	67	85	36	100	100	100	100
L2009	47	57	67	100	63	100	100	100	100
L2010	43	87	70	83	68	100	100	100	100
L2011	60	83	50	70	24	100	100	100	100
L2012	47	60	60	70	34	100	100	100	100
L2013	47	77	60	73	49	100	100	100	100
L2014	47	60	57	63	46	80	100	100	100
L2015	67	73	67	80	63	100	100	100	100
L2016	58	67	72	68	41	100	100	100	100
L2017	67	70	65	63	41	100	100	100	100
L2019	63	90	63	57	51	100	100	100	100
L2020	53	83	53	90	46	100	100	100	100
L2021	43	50	40	50	56	100	100	100	100
L2022	50	57	43	60	37	97	100	100	100
L2023	33	40	40	53	50	100	100	100	100
L2025	0	0	0	0	90	0	100	100	100
L2026	30	30	50	23	23	100	100	100	100
L2027	60	75	72	78	65	100	100	100	100
L2028	73	17	95	100	67	100	100	100	100
L2029	72	90	72	83	57	100	100	100	100
L2030	77	93	77	100	62	100	100	100	100
L2031	33	67	43	70	48	100	100	100	100
L2034	57	57	60	63	85	100	100	100	100
L2035	75	77	80	68	57	100	100	100	100
L2036	63	88	63	85	73	100	100	100	100
L2038	60	88	68	73	57	100	100	100	100
L2039	77	93	50	93	55	100	100	100	100
L2040	95	90	100	95	90	0	100	100	100
L2041	70	87	78	90	72	100	100	100	100
L2042	67	90	67	83	76	97	100	100	100

L2043	77	87	83	85	62	100	100	100	100
L2044	77	87	93	100	57	100	100	100	100
L2045	47	57	60	60	57	100	100	100	100
L2047	47	60	53	70	67	100	100	100	100
L2049	85	100	97	100	71	100	100	100	100
L2050	67	88	60	87	76	100	100	100	100
L2051	77	77	77	70	76	100	100	100	100
L2052	47	73	57	67	68	100	100	100	100
L2053	55	73	85	75	62	100	100	100	100
L2055	67	88	60	87	60	100	100	100	100
L2056	90	100	60	60	96	100	100	100	100
L2057	80	93	63	63	88	100	100	100	100
L2058	77	97	57	67	93	100	100	100	100
L2059	100	100	63	67	90	100	100	100	100
L2060	100	97	63	57	83	100	100	100	100
L2061	97	100	67	67	80	100	100	100	100
L2062	77	87	60	63	79	100	100	100	100
L2063	90	70	47	47	77	100	100	100	100
L2064	90	100	85	100	92	100	100	100	100
L2065	80	90	67	67	95	100	100	100	100
L2066	90	100	50	63	94	100	100	100	100
L2067	90	73	67	57	81	100	100	100	100
L2069	67	77	50	40	82	100	100	100	100
L2070	83	83	57	60	90	100	100	100	100
L2071	77	77	57	53	64	100	100	100	100
L2072	70	73	37	43	64	100	100	100	100
L2073	0	0	0	0	98	100	100	100	100
L2074	87	90	57	57	73	100	100	100	100
L2075	93	100	63	63	76	100	100	100	100
L2076	80	70	57	57	55	100	100	100	100
L2077	97	97	60	60	88	100	100	100	100
L2078	73	90	63	60	86	100	100	100	100
L2079	60	80	47	50	85	100	100	100	100
L2080	90	85	100	90	90	100	100	100	100
Means	67%	76%	63%	69%	68%	97%	100%	100%	100%

APPENDIX 9

Table VI.

Spanish proficiency levels (self-reported and official DELE scores) for controls (N=25)

	Spanish					English			
	Production		Comprehension		DELE	Production		Comprehension	
	oral	written	oral	written		oral	written	oral	written
C001	100	100	100	100	96	83	83	93	93
C002	100	100	100	100	92	77	73	83	83
C003	100	100	100	100	100	90	100	90	100
C004	100	100	100	100	98	100	100	100	100
C005	100	90	100	100	83	100	100	100	100
C006	100	100	100	100	100	100	93	100	100
C007	100	83	100	90	88	100	83	100	90
C008	100	100	100	100	90	85	90	90	90
C009	100	100	100	100	90	83	90	100	100
C010	97	80	100	80	78	90	70	87	70
C011	90	90	97	87	88	80	80	80	80
C012	100	100	100	100	77	100	93	100	90
C013	100	90	70	100	77	83	80	80	80
C014	100	97	100	100	81	83	80	90	80
C015	100	87	100	97	80	90	90	93	93
C016	100	83	97	90	82	90	90	90	90
C017	100	100	100	100	98	80	87	98	100
C018	100	100	100	100	95	67	77	80	80
C019	100	100	100	100	80	80	80	93	80
C020	100	100	100	100	95	83	80	90	80
C021	93	70	97	100	88	93	90	97	100
C022	100	100	100	100	90	80	80	93	80
C023	100	100	100	100	89	82	85	85	88
C024	100	100	100	100	100	82	85	85	88
C025	100	100	100	100	100	55	35	65	75
Means	99%	95%	98%	98%	89%	85%	84%	91%	88%

APPENDIX 10

Stimuli in the Acceptability Judgment Task:

Reported speech contexts

A. Indicative acceptable

- La hijas de María siempre ayudan en casa, por eso María les dice que la ayudan mucho.
- Los niños tienen mucho sueño, por eso le dicen a su padre que se van a dormir.
- Beyonce llegó tarde a ver a sus fans, y ella les dice que tienen mucha paciencia.

B. Indicative unacceptable

- El hombre está molesto con sus trabajos por eso les dice que son más amables.
- Los jugadores perdieron el partido, por eso el entrenador les dice que se esfuerzan.
- El film ha terminado, por eso el director les dice a los actores que buscan otro empleo.

C. Subjunctive acceptable

- La chica vuelve a casa tarde, por eso sus padres le dicen que llegue más pronto otro día.
- Miley se siente nerviosa por el concierto, por eso su manager le dice que se relaje.
- Liliana cenará con sus amigos, por eso les dice a sus padres que coman los dos solos.

D. Subjunctive unacceptable

- David Beckham y su hijo son muy extrovertidos por eso Victoria les dice que saluden demasiao a la gente.
- Estos estudiantes son buenos, por eso la profesora les dice que hagan un buen trabajo.
- Las niñas no han terminado de comer, por eso la abuela les dice que coman muy lento.

Desideratives

A. Subjunctive grammatical

- El escritor quiere que los periodistas digan cosas buenas de él.
- El niño está aburrido y quiere que las navidades pasen deprisa
- Los policas de este aeropuerto quieren que mostremos nuestros pasaportes

B. Infinitive grammatical

- La abuelita se siente sola y quiere hablar más con mis padres
- Mi novia quiere comprar ese vestido tan feo para ir a la fiesta
- Los profesores están enojados y quieren hablar con nuestros padres.

C. Indicative ungrammatical

- Los padres de Rubén quieren que su hijo va de vacaciones pronto
- Los políticos del mundo no quieren que la gente ve la televisión.
- El gato tiene hambre y quiere que los ratones salen del agujero.

D. Infinitive ungrammatical

- Los científicos quieren para los jóvenes dejar de comer azúcar
- La jefa no quiere para sus trabajadores llegar tarde al trabajo.
- Tu madre odia los pasteles por eso quiere para tú preparar galletas.

APPENDIX 11

For the sake of brevity, this list only presents the target sentences shown to the students in the TVJT. For a complete list of the stimuli (including contextual information and pictures), please contact the author or check Tables 14 and 15 in Chapter 4.

Reported Speech contexts:

A. Reported Assertion (Indicative, True)

- Mona les dice a las chicas que llegan temprano a casa.
- El maestro les dice a sus estudiantes que son muy trabajadores.
- La madre les dice a sus hijas que ayudan mucho a sus amigos.

B. Indirect Command (Indicative, False)

- Ana les dice a Luis y a Jonás que hacen mucho deporte
- El abuelo les dice a sus nietos que llevan poco en las bolsas
- El director les dice a los padres que los alumnos comienzan a las 8

C. Indirect Command (Subjunctive, True)

- En ese momento, el profesor les dice a los alumnos que estudien mucho.
- El padre les dice a sus hijas que sean más amables.
- El camarero les dice a los clientes que vengan más tarde

D. Reported Assertion (Subjunctive, False)

- El papá les dice a las niñas que miren si hay coches
- Manuel les dice a las vecinas que nunca hablen mal de nadie.
- El guía les dice a los turistas que pasen por el puente

Obviation effects in desideratives:

A. Disjoint reading (Subjunctive, True)

- El hombre quiere que vaya a la fiesta.
- David quiere que hable primero
- El niño quiere que tenga mejores notas

B. Co-referential reading (Subjunctive, False)

- Marcos quiere que fume menos cigarrillos.
- Elisa quiere que cante en el concierto de la escuela.
- El acusado quiere que encuentre una solución solo

C. Co-referential reading (Infinitive, True)

- Juan quiere limpiar el baño por sí solo.
- Toni quiere ver menos la television.
- Lisa quiere hacer la tarea ahora.

D. Disjoint reading (Infinitive, False)

- El doctor quiere trabajar menos
- La niña quiere comer chocolate

APPENDIX 12

Like in the previous appendix, this list only presents the target sentences shown to the students in the elicited production task. For a complete list of the stimuli (including contextual information and pictures), please contact the author or check Table 16 in Chapter 4 for more details on the implementation of this task.

Reported speech contexts

A. Directive reading (polarity subjunctive expected)

- Papá Noel les dice a sus elfos que (levantarse) _____ rápidamente.
- Dora les dice a sus monos que (caminar) _____ rápido.
- La profesora les dice a los alumnos que (comenzar) _____ a trabajar bien.
- Sofía les dice a sus hijos que (preparar) _____ la mesa antes de cenar.
- El policía les dice a los ladrones que (dejar) _____ robar a la gente.
- El entrenador les dice a los jugadores que (ir) _____ al gimnasio frecuentemente.

B. Assertive reading (indicative expected)

- El vendedor dice que los clientes (hablar) _____ más alto.
- Los Pérez les dicen a sus vecinos que (ayudar) _____ con las luces.
- Sofía dice que sus hijos (preparar) _____ la mesa antes de cenar.
- Elmo dice que Grover y Oscar (salir) _____ mucho de casa.
- El médico dice que sus pacientes (hacer) _____ ejercicio los fines de semana

Desideratives

C. Co-referential reading (infinitive expected)

- El rey quiere _____ (decir) las noticias importantes.
- Snooky quiere _____ (tener) un novio más guapo.
- El jefe quiere _____ (poner) canciones más modernas
- La Sra. Rojas quiere _____ (comer) más sano.
- Arthur quiere _____ (ser) más responsable.

D. Disjoint reference reading (intensional subjunctive expected)

- Bob Esponja quiere _____ (viajar) a Hawaii antes.
- Jesús quiere _____ (tomar) un café porque manejará de noche.
- La abuela quiere _____ (cerrar) la ventana.
- El profesor de ciencias quiere _____ (ver) la película.
- El cocinero quiere _____ (escoger) los ingredientes.

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