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BILINGUAL CHILDREN

For the degree of ___Master of Arts___

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THE DEVELOPMENT OF DIFFERENTIAL OBJECT MARKING IN SPANISH-

ENGLISH BILINGUAL CHILDREN

A Thesis

Submitted to the Faculty

of

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Mariluz Ortiz Vergara

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A la memoria de mi madre

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ABSTRACT

Ortiz Vergara. Mariluz M.A., Purdue University, May 2013. The Development of Differential Object Marking in Spanish-English Bilingual Children. Major Professor: Alejandro Cuza-Blanco.

In monolingual development, the acquisition of differential object marking (DOM) is completed by three years of age (Rodríguez- Mondoñedo, 2008). However, among bilingual speakers, the development and use of the marker at a young age is less predictable. Spanish marks animate and specific direct objects with the preposition-*a;* English in contrast does not. Based on previous studies documenting transfer in areas where Spanish and English differ, it was predicted that bilingual children would experience difficulties with the use of the preposition both in matrix and left dislocated sentences (CLLD) (Montrul, 2004, Montrul & Bowles, 2009). This study tested 14 simultaneous Spanish-English bilingual children divided into a younger (6;04-7;09) and an older group (8;06-10;10) as part of a larger study. Six parents participated as a baseline to control for the possible acquisition of a variety in which the personal-*a* is not used (Rothman, 2007). The use of DOM was elicited in animate and inanimate specific contexts through a question and answer task for matrix sentences (Thornton, 1990) and a sentence completion task for CLLD sentences (e.g., Cuza, Pérez-Leroux & Sánchez, 2012). The results show that older children have some knowledge of

the use of the marker in matrix sentences, but the younger group showed more difficulties. In CLLD sentences both groups had significant difficulties in the production of personal-*a*. In contexts where DOM is not required, both groups showed ceiling performance. There were significant differences between the group of children and the parents, who, in general, performed target-like. This supports the claim that bilingual children's difficulties stem from transfer and are not the representation of a contact variety. Patterns of language used at home and input factors also account for the differences found.

CHAPTER 1
INTRODUCTION

1.1. Goals and motivations of the study

Differential Object Marking (DOM) is a phenomenon present in a large variety of languages (Bossong, 1991). In Spanish DOM is represented by the preposition *a*, which marks animate-specific direct objects (Leonetti, 2004). Inanimate direct objects specific or non-specific, however, are not marked. DOM is commonly used for matrix structures, and clitic left dislocated (CLLD) contexts. In English, direct objects are not marked in any context. This study assesses the development of DOM among Spanish-English bilingual children in matrix and CLLD structures.

Studies on monolingual children show that children master the marker by age 3;0 (Rodríguez-Mondoñedo, 2008). In bilingual acquisition, however, recent research shows divergent results. In regards to heritage speakers, Montrul (2004) and Montrul & Bowles (2009) have found high rates of omission with animate, specific direct objects, where the personal-*a* is required. Part of the argument is that non-core properties of language at the syntax-semantic interface are not acquired as solidly as core syntax is (Montrul, 2008; Sorace, 2005). Guijarro-Fuentes & Marinis (2007), in contrast, show evidence that DOM is in fact acquirable in the least complex condition, regardless of interface-related issues

Although previous studies give relevant accounts of difficulties of DOM use in heritage speakers and L2 learners, the acquisition of the personal-*a* has not been examined in bilingual children and the use of the marker in adult bilinguals has only been evaluated through acceptability judgment tasks, written sentence completion tasks and spontaneous production (oral narratives).

The questions that remain are whether Spanish bilingual children acquire target knowledge of the semantic properties constraining the distribution of DOM in Spanish and if they don't, what process could better account for the differences they show? It also remains to be seen whether there are differences in the level of difficulties related to age and the complexity of the structure. Recent approaches also relate speaker's variability to the acquisition of a contact language variety. Therefore, it is also important to know if their state of knowledge of DOM is a result of the missing structure in parental input (Rothman, 2009).

This cross-sectional study contributes to the knowledge and discussion of DOM by examining the target elicited production of the marker in a group of 14 Spanish-English bilingual children aged 6;04 to 10;10 enrolled in English-only schools in the American Midwest. The use of DOM is elicited in animate and inanimate specific contexts within matrix and left dislocated sentences through a question and answer task and a sentence completion task that were presented in Power Point slides with images to help the participants complete the task. Participants were divided into two groups based on their age at time of testing: younger children (6;04-7;09) and older children (8;06-10;10). All children were born and raised in the US and were of Mexican background.

Parents completed a language history questionnaire and reported on patterns of language use at home (Pérez- Leroux, Cuza & Thomas, 2011).

This project will provide relevant insights and clearer knowledge of the patterns followed by bilinguals throughout the development of DOM. The methodology allows for the examination of the marker in two different structures at different ages of development. The data is discussed in terms of cross-linguistic influence effects, patterns of language use at home, and input conditions.

1.2. Outline of the thesis

This study is structured as follows. Chapter 2 presents the semantics of the differential object marker in Spanish. I discuss the constraints that determine the use of the marker along with dialectal variation. Chapter 3 presents a general discussion of previous research on child bilingual development. I further expand on the acquisition of direct object marking in L1, bilingual and L2 speakers. The chapter ends with the presentation of the research questions and hypotheses. Chapter 4 discusses the methodology of the present study, including the participants and tasks, as well as results, which are related back to the hypothesis. Chapter 5 presents a summary of the goals, the findings and the main conclusions of the study. Finally, limitations and ideas for future research are presented.

CHAPTER 2
THE SEMANICS OF DIFERENTIAL OBJECT MARKING IN SPANISH

2.1. Introduction

This chapter presents information regarding the semantic constraints that regulate the presence of Differential Object Marking (DOM) personal-*a* in Spanish (Aissen, 2003; Bossong, 1991; Torrego, 1998). The description allows a general view of the properties that regulate the use of the marker in Spanish and their respective differences with English. In section 2.2 a definition of DOM is presented. It is followed by a description of several constraints related to its use in Spanish such as animacy, specificity, the aspectual class of the predicate and the position of the marker in the sentence. Then, I present the semantic conditions taken into account in the present study. Section 2.3 discusses current studies on DOM dialectal variation.

2.2. Differential Object Marking in Spanish

Differential Object Marking (DOM) is a phenomenon present in several languages including Sinhalese, Hebrew, Romanian, Hindi, Turkish and Finnish (Bossong, 1991; Naess, 2004). In Spanish the Differential Object Marking takes the preposition *a* to mark the direct object in a sentence. Previous research gives relevance to two main properties: animacy   and   specificity,   which   are   said   to   constrain   the

presence of DOM (e.g., Alfaraz, 2011; Rodríguez-Mondoñedo, 2008; Tippets, 2011). However, animacy more than specificity, has also been pointed out to be the main trigger (Leonetti, 2004). Specificity is a property related to the marker since direct objects that are marked with DOM are interpreted as specific, as shown in (1a) and (1b) (Torrego, 1998).

(1a)   *Busco   a   un   médico*   [+specific]

I am looking for   DOM   a   doctor

"I am looking for a doctor"

(b)   *Busco   un   médico*   [-specific]

I am looking for   a   doctor

"I am looking for a doctor"

Both sentences are grammatical. The first one refers to a specific doctor that the speaker knows, and the second sentence refers to any doctor. However, there are exceptional cases that don't fall under this generalization. These are called "donkey sentences" and indefinite DPs with subordinate clause presented by Leonetti (2004) as in (2) and (3).

(2)   *Toda persona   que   contrata   a   un   inmigrante...*   [-specific]

Every   person   that   hires   DOM   an   immigrant   worker….

"Every person that hires an immigrant worker…" (Leonetti, 2004, p. 83).

(3)   *Conoces   a   muchas   personas para llevar aquí tan poco tiempo*
[-specific]

You know   DOM too many   persons   to be   here   so   few   time

"You know a lot of people considering you haven't been here for long" (Leonetti, 2004, p. 83).

In the previous example both sentences are referring to non-specific objects even though DOM is present. This kind of sentences are the ground for Leonetti to reject *a* as a specificity marker and give more relevance to animacy.

In relation to animacy, researchers agree that this constraint is strongly related to the use of *a* (e.g., Leonetti, 2004; Torrego, 2008). Animate direct objects are marked, but inanimate direct objects are not marked independently if they are specific or not as observed in examples (4) and (5).

(4) *Visité a mi papá*   [+animate]   (5) *Visité el museo*   [-animate]

I visited DOM my father   I visited the museum

"I visited my father"   "I visited the museum"

There are cases, however, when the direct object is inanimate and the marker is used as shown in (6).

(6) *Buscan al pueblo de Numania*

They are looking for DOM the town of Numania

"They are looking for the town of Numancia"   (Torrego, 1998, p. 67)

Torrego argues that *el pueblo de Numancia* can be interpreted as the people or as the town. Therefore, if the marker is present, it is interpreted as people, but if the marker is absent, the noun is interpreted as the town itself. In this sense, the marker continuous being a marker of animacy.

In general terms and leaving aside exceptional and optional cases Rodríguez-

Mondoñedo (2008) propose the following scenario of constraints based on animacy and specificity of the direct object.

Table 1: Distribution of Differential Object Marking in Spanish

MARKED OBJECT		UNMARKED OBJECT	
[+animate]	[+animate]	[-animate]	[-animate]
[+specific]	[-specific]	[+specific]	[-specific]

Following the two previous constraints, Aissen (2003) discusses the use of DOM in different languages using an Optimality Theory (OT) framework. This theory is a general model of how grammars are structured (McCarthy, 2007)[1]. It explains the relationships and the interaction of universal constraints no only in phonology, but also in syntax. Aissen (2003) uses the model to explain DOM by combining two scales (called harmonic alignment (HA)): animacy and definiteness scales. In Aissen's terms, "definiteness is subject to familiarity requirement, meaning that the value is determined by previous discourse" (p.444), it must be identifiable to the hearer. Specificity can refer to a particular entity known to the speaker therefore a specific indefinite referent can be identifiable by the speaker, but not to the hearer (Lyons, 1999).

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[1] This model in general proposes that the grammar of a language is a constraint hierarchy where some elements have priority and dominance over the others. The most optimal element in a hierarchy is selected for an output, (McCarthy, 2007) e.g., in the following scale the most optional object to be marked with *a*-marker is the first in the list of constraints, the last one is not marked *Oj/Pro>>*Oj/PN>>*OJ/DEF>>*OJ/SPEC>>*OJ/NSPEC (Aissen, 2003).

The scales presented are as follows:

(a) Definiteness scale {personal pronoun > proper name > definite NP > indefinite specific NP > non-specific NP}

(b) Animacy scale {Animacy: Human > animate > inanimate} (Comrie 1989)

(This is subject to pragmatic dimensions since people can give animate qualities to inanimate objects).

The scales show that not all the direct objects are equally marked. The hierarchy organization shows that the DO with the properties that are on the left part of the scales tend to be obligatorily marked; then, there is less probability that the objects that follow the following features are marked, and finally the DO with features at the end of the scale tend to be unmarked.

According to the author DOM is obligatory for a high prominence object, but optional to a lower one. Her OT proposal leads to assume that in the acquisition stage of DOM there would be multiple options to use Spanish *a*-marking. Rodríguez-Mondoñedo (2008) questions Aissen's proposal and argues that children do not entertain different grammars in their stage of acquisition of DOM, but have practically errorless performance (see Chapter 3, for more details).

In addition to animacy and specificity constraints, Torrego (1998) mentions another property that is related to the use of the marker: the aspectual aspect of the predicate. This is also related to animacy of the subject as well as the object. The author argues that the telicity of the verb influence the marking of the object. It means that accomplishment and achievement verbs that are classified as telic (verbs that have an

endpoint) like *encarcelar* "jail", *emborrachar* "make-drunk", require DOM to mark animate indefinite objects, when the subject is animate or inanimate as examples (6) and (7) show. However, state and activity verbs like sentir "feel" and conocer "know" are classified as atelic (do not have an endpoint) and do not require *a* to mark the animate indefinite objects when the subject is non-animate as shown by example (8).

(6)　　*El　　soldado　　　emborrachó　a　　　varios　　　　colegas*

　　　　The soldier　　　　made drunk DOM　several　　　　　friends

　　　　"The soldier got several friends drunk"

(7)　　*El　　vino　emborrachó　　a　varios　invitados*

　　　　The　wine　made drunk　　DOM several　guests

　　　　"The wine made several guests drunk" (Torrego, 1998, p. 30)

(8)　　*La opera conoce (*a)　muchos　aficionados*

　　　　Opera　knows DOM　many　　fans

　　　　"Opera has many fans" (Torrego, 1998, p. 30)

In contrast, in sentence (9) the subject is animate therefore it takes *a*-marking

(9)　　*Inés　conoce　(a)　varios artistas*

　　　　Inés knows DOM various artists

　　　　"Inés knows various artists"

The proposed constraints by Torrego are presented from a descriptive perspective. Other studies, presented in the following section (e.g., Tippets, 2011), have looked at the variation of the marker in monolingual speakers regarding animacy, specificity and definiteness constraints, but not taking into account the aspectual class of the predicate.

The last relevant aspect of DOM in Spanish is its position in the sentence. A-marker is not only used in matrix structures like (9), but it can also appear at the beginning in clitic left dislocated sentences (CLLD) even when in matrix sentences it is optionally marked as shown in (10) and (11) (Leonetti, 2004, p. 86).

(10) *A muchos*   *estudiantes,*   *ya*   *los*   *conocía*

DOM many   students,   already them I-knew

"Many students I already knew"

(11) *Ya*   *conocía*   ***(a)***   *muchos*   *estudiantes*

already   knew   DOM   many   students

"I already knew many students"

According to Leonetti, this position of the marker imposes strong interpretation on DPs which supports the idea that DOM is a topic marker.

To summarize, animacy, specificity and aspectual class of the predicate are properties strongly linked to the presence and absence of Spanish DOM. However, there are optional cases and counterexamples like (6) and (11) that limit the generalization of a single property. Due to the fact that animacy and specificity of the object are the only constraints studied in monolingual children acquisition (Rodríguez-Mondoñedo, 2008) and taking into account that these two properties have an undeniable link to the presence of *a*-marker, I will base the present research on these two basic constraints. From this perspective, I present the difference of the use of this structure from English in Table 2.

Table 2: Distribution of Differential Object Marking in Spanish and English

Constrain	DOM In Spanish	DOM In English
[+animate +specific]	√	X
[+animate-specific]	X	X
[-animate +specific]	X	X
[-animate -specific]	X	X

2.3. Dialectal variation of Differential Object Marking

The dialectal variation in the use of DOM in Spanish is a topic that has not been widely studied. Only recently, there has been an interest in the study of DOM dialectal variation. Alfaraz, (2011) examined the possible variation that exists in spoken Cuban Spanish. Based on previous findings of studies of Dominican dialects, the author examined the use of DOM in the Cuban dialect. The study focused on *a*-marking in human objects from two time periods: the 1960s and the 1990s and a possible trajectory of change in the definiteness dimension constraints in relation to two generational cohorts.

After a comparison of data obtained from spontaneous recordings of recent Cuban immigrants to Miami in two time periods, the author found that there were differences with a decrease of object marking in the 1990s and no change in one generational cohort at both times. In relation to the definiteness scale, there was evidence of an increase of *a*-marking as the definiteness of the NP increased. The author identified a regression phenomenon of *a*-marking more similar to Old Spanish than to Modern Spanish. In other

words, she found a tendency toward the absence of *a*-marking in definite and indefinite specific NP in the second group.

Tippets (2011) performed a variationist investigation of DOM. She wanted to quantify the potential motivating factor of DOM in the dialects of Madrid, Mexico and Buenos Aires. The constraints taken into account were animacy and specificity of the DO, form of the DO (proper noun, lexical noun), number of DO (plural, singular), relative animacy (Aissen, 2003; Comrie, 1989) and discourse status of DO (if referent associated with a definite expression in the discourse). The data that was used came from transcribed oral interviews. After the study, the authors found remarkable similarity across these dialects in relation to the relative ordering of factor groups selected as significant. Specifically, there was similarity in properties like animacy, relative animacy and form of the DO in the three dialects and specificity in two of the dialects of Mexico and Buenos Aires. The author concludes that animacy, noun form and specificity are significant factors to mark DOM, but number and discourse information status are not. However, the author recognizes that is difficult to quantify discourse pragmatic factors.

More control studies examining dialectal variability in the different constraints exposed here are needed. Nonetheless, these two studies give relevant information of the use of personal *a* in different dialects.

The bilingual children of the present study are born to Mexican parents who lived for a long term in their origin country and then moved to USA during their adulthood. Based on the previous research by Tippets (2011), participants of Mexican dialect would use personal-*a* and follow the constraints of animacy and specificity. Having information about the dialectal variability is significant because this tell us that any omission that the

children of this study might have, would not be related to the Spanish input variety the children were exposed to, because this variety does use the personal-*a* with animate specific direct objects. In order to test this assumption and have a direct knowledge of the kind of input children of this study received, I controlled the information related to dialect variation by testing the children's parents with the same tasks the bilingual children developed. Results of this contrast help support conclusions about the children's performance. The findings are presented in unit 5.

In the next chapter I present studies focused on general conceptions of bilingual language development, as well as first and bilingual acquisition of DOM.

CHAPTER 3
THE BILINGUAL ACQUISITION OF DIRECT OBJECT MARKING IN SPANISH

3.1. Introduction

In chapter 2, I discussed the properties that characterize the use of DOM. Research shows

that there are different constraints including animacy, specificity and aspectual class of

the predicate that determine *a*-marking. In relation to dialectal variability, studies

demonstrate that there are differences in the use of the marker in Caribbean dialects, but

similarities in the use of DOM in the language of speakers from Madrid, Mexico and

Buenos Aires. There are few studies regarding variation of DOM in other dialects,

therefore more studies are needed since this information is relevant in order to identify

the kind of input that children are exposed to and to know if their performance is

characterized by the kind of input they have received.

   In this chapter, in section 3.2, I discuss studies that explain the interaction and

processes that language systems have in the bilingual brain. I start with the proposal that

the representation of language is independent and not unitary (Meisel, 1989, 2001;

Paradis & Genesee, 1996; Volterra & Taeschber, 1978). I discuss the issue of transfer,

how it has been explained in relation to *interfaces* (Hulk & Müller, 2000; Sorace &

Filiaci, 2006) and how it has been recently questioned (Bohnacker, 2007; Cuza, 2012;

Pérez-Leroux, Cuza & Thomas, 2011). I end this section with current proposals on the

processes that account for bilingual's language development like incomplete acquisition,

attrition and the *Missing-Input Competence Divergence Hypothesis* (Cuza, 2010, 2012; Cuza & Pérez-Tattam, 2012; Cuza et al., forthcoming; Montrul, 2002; Montrul & Potowski, 2007; Montrul & Bowles, 2009; Polinsky, 2011; Rothman, 2007; Silva-Corvalán, 2003).

In section 3.3 I present the L1 and bilingual acquisition of differential object marking in Spanish. I discuss studies that show complete acquisition of DOM in monolinguals, but incomplete acquisition of the marker in bilinguals. Section 3.4 is related to L2 acquisition of differential object marking in Spanish. Finally, in the last section 3.5 I present my research questions and hypothesis.

3.2. Previous research on child bilingual development

Second generation speakers who are born in the host country or that arrive at the host country at a young age, have been of great interest for several studies in bilingualism. Usually, the literature considers children exposed to both languages before the age of three as simultaneous bilinguals and the ones exposed to second language after four as sequential bilinguals (e.g., De Houwer, 1994; Grosjean, 1989; Meisel, 2001; Montrul, 2008).

Research on simultaneous bilingualism or bilingual first language acquisition (BFLA) has focused on the mental representation and the relation of the languages in the process of acquisition. Previous observations argue that in an early stage the two systems of the languages are unified (Volterra & Taeschber, 1978). This view supported the Unitary System Hypothesis (USH), which intends to explain the three first stages of acquisition. According to the authors, the child at the beginning has one lexical system,

then s/he starts to distinguish words from both languages and in the last stage the child ends up differentiating both languages. However, for more than two decades researchers observed that in early bilingualism, children can differentiate between the two languages and that the patterns of development are similar to monolingual children in the respective languages (e.g., Meisel, 1989, 2001; Paradis & Genesee, 1996). Paradis & Genesee (1996) refer to interdependent development in which there is influence of the grammar of one language on the grammar of the other. According to the authors, this interdependent development can reinforce and accelerate the learning of certain aspects of the language, or in other cases, it can delay the development. Some examples show that, in the case of a child learning Spanish and English, there can be a delay in the obligatory use of subjects in English because of the influence of Spanish, due to the fact that in Spanish there is flexibility in the use of the subjects. Or in an opposite way, there can be an accelerated acquisition of a language feature like in the case of earlier acquisition of finiteness in French-English bilinguals compared to English monolinguals.

Hulk (1998) and Hulk & Müller (2000) followed the hypothesis that the development of the two systems is separated. Nonetheless, they affirm that it does not exclude cross-linguistic influence. Transfer or cross-linguistic influence has been defined as "the influence resulting from the similarities and differences between the target language and any other language that has been previously and perhaps imperfectly acquired" (Odlin, 1989, p.27).

In an interest for proposing possible patterns of cross-linguistic influence, Hulk & Müller (2000) argued that it can occur if we find two conditions: (1) an interface level between two modules of grammar, specifically, in the interface between syntax and

pragmatics is involved and (2) two languages overlap at the surface level. It means that one of the languages has two syntactic interpretations and the other just one. To prove this statement the authors examined the acquisition of two structures: Root Infinitives (RIs)[2] and object drop in two bilingual children (Dutch-French/German-Italian). They hypothesized that in the use of RIs, there is no cross-linguistic influence due to the fact that RIs meet just one of the conditions mentioned and not both. However, they argue that since object omission satisfied both conditions cross-linguistic influence can occur. From this study the authors confirmed the hypothesis; object drop was susceptible to cross-linguistic influence, but RIs were not. Researchers concluded that cross-linguistic influence stems from language internal factors and not to external factors, like language dominance proposed by other researchers (e.g., Genesee, Nicoladis & Paradis, 1995). Hulk & Müller's proposal has been questioned because according to some researchers more arguments are needed in order to explain the phenomenon of transfer (e.g., Bohnacker, 2007; Nicoladis, 2002; Unsworth, 2003).

Unsworth (2003) tested Hulk & Müller's proposal and suggested a revision of it. She argues that neither qualitative nor quantitative cross-linguistic influence was found in her analysis made to the data of a bilingual German/English child on root infinitives, even though the two conditions to have cross-linguistic influence were met. Additionally, the author mentions that a complete definition of structural overlap is needed. According to the author, the extent to which the model makes testable predictions is not clear; therefore she suggests that the model needs to be redefined. Nonetheless, Unsworth's

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[2] Root infinitives (RIs) are default verb forms that the child uses. Therefore the Root infinitive stage refers to the period in which children use finite or non-finite verbs in the clause (Hulk & Müller, 2000).

study also needs to be taken with caution since the data studied is based on just one subject that could present individual differences to the majority of the children. Bohnacker (2007) studied the spoken and written language production of German and Sweden L2 learners. The author showed that structures at the CP level, like V2, were not necessarily the most difficult structures to learn. Structures at the VP level, like nonfinite verb object complement placement and transitive particle verb constructions, which belong to a lower level, can be difficult for L2 learners to acquire.

Sorace (2004) proposes the *Interface Hypothesis* that states that narrow syntax is acquirable, but interface properties that are related to syntax and other cognitive domains may not be completely acquired and are more permeable to transfer. This hypothesis intends to explain the divergences that bilinguals present from monolinguals on interface-related structures (Sorace, 2002, 2005; Tsimpli & Sorace, 2006). Nonetheless, the interface hypothesis has been currently challenged by research documenting that divergences between bilinguals and monolinguals cannot only be explained through interface-related issues (e.g., Bohnacker, 2007; Cuza, 2012; Pérez-Leroux, Cuza & Thomas, 2011)

Pérez-Leroux et al., (2011) studied transfer effects on clitic placement in Spanish-English bilingual children. After an elicited imitation task conducted on twenty-three sequential and simultaneous bilingual children, the authors found that the two groups reposition preverbal clitics to postverbal positions. Moreover, the researchers found that the less Spanish proficient children had more difficulties. The authors noticed that one cause of such difference was the age of onset of exposure to English, and suggest that it can be due to the influence of word order in English. They conclude that transfer cannot

only affect word order in pragmatic phenomena, but also in sentences in which word order is not related to interpretable features. The authors demonstrated through this that proposals about modular interfaces need to be revised.

These studies allow us to conclude that establishing patterns of transfer and identifying the modules in which transfer is more susceptible to happen, is still an area that has to be investigated further. So far, as it was discussed previously, the modular proposals that intend to identify selectivity of transfer do not provide a stable model for all the structures.

Other studies on cross-linguistic manifestations have focused their attention to the analysis of specific grammatical features such us: grammatical gender, phrasal word order, tense and aspect, relative clauses, differential object marking to determine if they are incompletely acquired or if they have suffered attrition (e.g., Cuza, 2010; Cuza and Pérez-Tattam, 2012; Montrul, 2002; Montrul & Bowles, 2009; Montrul & Potowski, 2007; Silva-Corvalán, 1994, 2003). These two processes are different. On one hand, incomplete acquisition entails the lack of complete knowledge of features of the language, which could be due to insufficient input during childhood (Montrul & Bowles, 2009). In heritage speakers, a featured that is incompletely acquired can be identified "if a child and an adult deviate from the baseline in the same way" (Polinsky, 2011, p.306). It means that in a comparison among the groups of children, teenagers and adult heritage speakers must differ from a native group. On the other hand, attrition is defined as the erosion of a grammatical feature that would have been developed completely (Cuza, 2008; Montrul, 2002).

Silva-Corvalán (1994) argues that when two languages are in the process of development, they can be characterized by a simplification process along with rule generalization, direct and indirect transfer. The outcome of this phenomenon may be, not only the reduction, but also the lost of forms. Following this argument, Silva-Corvalán (2003) examined the development of the verbal system of Spanish-English bilinguals. In the study, the author concludes that simplification of Spanish tense-mood and aspect in Spanish-English bilingual adults is due to incomplete acquisition of Spanish, influenced by social environment, school and media. The author points out that variability in the language system is determined by; quality of input, frequency of production, and complexity of elements of the system.

Incomplete development has also been suggested as an explanation for divergences in studies with different ages of bilingual children and L2 learners (Montrul, 2002; Montrul & Potowski, 2007). Montrul & Potowski (2007) performed a cross-sectional study with simultaneous, sequential bilinguals and L2 learners in which there was evidence of incomplete acquisition of gender. In the study, there was not evidence of a decrease in the performance of children as their age increase, which discard cases of attrition. According to the authors, one cause related to incomplete acquisition is the shift in language use from Spanish to English that can occur not only in the school, but also at home as family and children socialize with the community.

More recently, Cuza & Pérez-Tattam (2012) studied the language production of simultaneous English-bilingual children of different ages. The researchers examined the acquisition of grammatical gender assignment and agreement as well as noun adjective word order. After collecting data with a picture-naming task to three different group ages,

the authors found an increase of errors of gender assignment and agreement in the older groups. The older groups also had problems with noun adjective word order. In contrast to previous research, the study suggests that the difficulties stem from cross-linguistic influence from English and child L1 attrition rather than incomplete acquisition.

Polinsky (2011) pose the question whether structures like relative clauses suffer degradation or if it is incompletely acquired by heritage speakers (HS)[3] of Russian. The study with children and adult HS in comparison with native controls demonstrated that children have complete knowledge of relative clauses, but that adults do not. This suggests that the incomplete knowledge of adult HS is not due to incomplete development and mastering of relative clauses; instead it is a product of erosion due to the lack of use or influence of English in the lifespan. This study, in contrast to incomplete acquisition proposals, shows that not all structures are susceptible to fossilization from childhood. Therefore, studies with other structures are needed in order to identify grammar features that are difficult to acquire in childhood, or that are completely acquired, but that are susceptible to attrition.

Recently, Cuza, Pérez-Tattam, Barajas, Miller & Sadowski (forthcoming) examined the oral production of preterit vs. imperfect distinctions among Spanish-English bilingual children, adult heritage speakers and monolingual counterparts. The researchers wanted to know how consistent was the production of past tense aspectual morphology and if there was variation in the participant's production in relation to age. The results of the study showed that the older bilingual children prefer to use the preterit

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[3] Heritage speaker is the individual who is raised in a home where a minority language is spoken, therefore he/she speaks the heritage language to certain extend, and to some degree is bilingual in the majority language and the heritage language (Váldes, 2000, p.1).

instead of imperfect in past situations. In lower percentage, the same group preferred the use of present tense while monolinguals counterparts preferred imperfect vs. preterit according to the context. In contrast to the older bilingual children group, "adult heritage speakers used the preterit and the present tense almost equally" (Cuza et al., forthcoming, p. 28). Monolinguals, however, demonstrated a more balanced production of the verbal tenses. These results allow the researchers to conclude that there is incomplete acquisition of imperfect tense, but also attrition, since there is preference by the older for the use of the preterit compared to younger children and adults. The study concludes that both processes are possible to occur in heritage language development.

Besides these two processes described, researchers propose to analyze the kind of input HS have contact with, since it can be an explanation for the differences that they show compared to their monolingual counterparts (e.g., Pires & Rothman, 2009; Rothman, 2007). Regarding this source of difference, Rothman (2007) points out the importance of looking at the variability of input of a non-literate group and a literate group. According to the author, literacy affects grammatical representations. The input of an academic setting contains grammatical features that are not typically present in the input of a dialect. In his study with literate native speakers, advanced adult L2 learners and heritage speakers of Brazilian Portuguese (BP), the author found that vernacular BP has lost inflected infinitives. Therefore, HS who were not formally educated received the same kind of input since childhood, which suggests that attrition or incomplete acquisition were not the causes of their competence differences.

Following previous findings, Pires & Rothman (2009) introduce the term *Missing Input Competence Divergence* to differentiate true incomplete acquisition and lack of

input of a standard dialect. Their study with European Portuguese and Brazilian Portuguese HS, support the same argument: neither true incomplete acquisition nor attrition account for the observed divergence between monolingual BP or EP speakers and BP or EP heritage speakers in the acquisition of inflected infinitives. Instead, their differential outcome is the result of the complete acquisition of the variety of language they had contact with. The study was not extended to structures other than inflected infinitives. Nonetheless, the proposal adds an important role to literacy and specifically suggests that the kind of input in the variability of grammatical properties is a new variable to take into account when studying distinctions in heritage speaker's language.

3.3. The L1 and Bilingual Acquisition of Differential Object Marking in Spanish

The only known research regarding Spanish DOM acquisition in monolingual children is presented by Rodríguez-Mondoñedo (2008). The author questions Aissen's Optimality Theory (OT)[4] proposal by examining the production of DOM in six monolingual Spanish-speaking children. As it was mentioned in the previous section, in Aissen's theory there are two hierarchies or scales involved in the distribution of DOM; which are animacy and definiteness scales described in chapter two. These two scales are combined in order to establish constraints pertinent to DOM which leaves optionality in some constructions of DOM. In regards to this model, Rodríguez-Mondoñedo affirms that it leads to the assumption that a child does not have an established grammar, but that the child will entertain different grammars during their first period of language production.

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[4] Optimality Theory (OT) model was originally proposed by Prince & Smolensky (1993) of interaction of constraints. According to the model, realizations in the surface of the language reflect resolutions of conflicts between competing constraints (Kager, 1999:11). Aissen (2003) based his proposal on this model (See chapter 2).

To test this assumption, the author analyzed DOM in grammatical and ungrammatical cases, specifically in the grammatical context of [+animate+specific], and ungrammatical contexts [+animate-specific], [-animate, +specific] and [-animate-specific]. The optional contexts pointed by Aissen were left out. The data obtained from children under three years old were analyzed. The first subject (S1) from Spain was observed for 15th months. She marked the DO for the first time at 1; 9. From a total of 441 produced objects, they made only two mistakes of omission and two ungrammatical uses of *a*-marker. S2 from México was recorded for 16 months and produced 335 objects from which seven were mistakes of omission and commission of *a*-marking. S3 from Spain was observed from 0;09 to 2;09. He made one mistake out of 45 produced objects. And S4 observed from 0;11 to 2;11 of age produced 169 objects with four mistakes in total. The last two subjects didn't produce sentences in which DOM was used. However, they did produced instances in which objects are not marked with null production of mistakes. The author clarifies, however, that it could be due to the short time they were recorded.

All these longitudinal corpora let the author draw the conclusion that the OT framework proposed by Aissen (2003) would not explain the acquisition of DOM, since according to the theory; children would use different options of the marker before setting the actual constraints of DOM in the target language. Thus, from his results, that is not the case, due to the fact that children acquire the differential object marking at a very young age –before the age of 3- and they use it "virtually without mistake" with animate objects. The study clearly explains that few errors of DOM found in the data are mostly related to pronunciation or other external influence, but not to the lack of grammatical knowledge of the children about when to mark it or not. The findings are a representative

contribution to understand acquisition of DOM in children before they are three, and raise questions regarding the reasons behind the children's perfect management of the constraints of the use of this marker. Therefore, more studies are needed in order to support these findings, to answer this question and to see if individual differences are found.

In regards to heritage speakers, Montrul (2004) studied the acquisition of personal-*a* in intermediate and advanced bilinguals. Based on the assumption that there are structures that are part of the language that belong to syntax-related interfaces and which are permeable to language loss, the author hypothesized that HS would show control of null subjects and object clitics, but they would have problems with pragmatic features of null vs. overt subjects, use of DOM in animate direct objects and dative clitic-doubling that require semantic interpretations. The study included monolinguals from different Spanish speaking countries (except from Caribbean origins) and speakers from Mexican-American origin. After an oral production task in which *Little Red Ridding Hood* story was elicited and analyzed, the researchers confirmed the hypothesis. With subtle differences among the groups, HS produced overt and null subject pronouns and demonstrated control of accusative and dative clitics. However, they performed significantly different to monolinguals in the pragmatic distribution of null and overt subjects. Regarding DOM, there was a noticeable influence from English to omit the marker with animate direct objects and avoidance in the use of dative-clitic doubling. These results show, as expected by the author, that structures related to syntax proper are not susceptible to attrition, but pragmatic-semantic interface-related properties are. Therefore, the morphosyntactic areas of the two languages tend to converge. As

mentioned, the study was based on a production task in intermediate and advanced levels, which motivates the author to expand the research questions in a future study (presented in the following paragraph) with lower levels of proficiency and a grammatical judgment task (GJT). In addition, since the author did not observe semantic verb basis for omissions of DOM, she suggested a specific control experiment to identify any possible pattern of omission related to aspectual class of verb.

Montrul & Bowles (2009) studied the competence that a group of heritage speakers raised in the US has of DOM. The authors expanded the previous study using higher number of participants and including low levels of HS proficiency. Through a comparison between 22 monolingual speakers of Spanish and 67 heritage speakers (HS), the authors analyzed whether low, intermediate and advanced heritage speakers had incomplete knowledge on instances of DOM and double object constructions. An oral production task and an acceptability judgment task with 90 grammatical and ungrammatical sentences were part of the data collection instruments. The results of the judgment task indicated that the knowledge of DOM in heritage speakers, especially the ones in the low proficiency group, differed significantly from the monolingual ones. Heritage Speakers tended to mark DOM and double object construction as grammatical when they were not. In the oral narrative task, the production of 20 native speakers was compared to the production of 59 HS and once again, the authors noticed an overall omission error of 29.1% in the HS compared to monolinguals who virtually didn't have errors. As the results indicated, HS of all levels not only have incomplete linguistic knowledge of DOM, but also omit it in oral production.

In a second experiment of the same study the authors studied DOM in

grammatical and ungrammatical sentences including animate and inanimate objects. They also wanted to investigate if the problem of DOM generalized to other structural inherent dative cases, like use of *gustar* 'like' and psychological type verbs *(e.g., A Juan le gusta Patricia* "Juan likes Patricia") and indirect objects. After examining 69 heritage speakers through a judgment task, the authors found that HS have considerable knowledge of indirect objects, but at the same time presented incomplete linguistic knowledge of *gustar*-type psych verbs.

The results of the two experiments confirmed the findings of Montrul (2004) and showed that when there is a reduction of L1 input and influence of other language, in this case English, speakers retain functional structures, but have problems with non-core categories. Therefore, structures like DOM, which are semantically and syntactically more complex and that are in the syntax semantic interface, are more difficult to acquire than *a*-marking in dative case which is obligatorily marked in all instances. There is still not certain knowledge if the groups evaluated, incompletely acquired DOM before the age of three, or if it was acquired and then lost due to reduced input, dialectal variation and influence of English. Regarding dialectal variation the authors clarify that the monolingual groups were recruited from Peninsular and Latin American varieties of Spanish and their judgment in the use of DOM with animate and inanimate objects were categorical. However, the results in monolinguals are limited to a reduced number of monolinguals (N=13) compared to the number of bilingual participants in the study.

The acquisition or reacquisition of DOM in HS has also been studied in relation to the effects of instruction. Montrul & Bowles (2008) made a preliminary study of the benefits that formal instruction brings to Spanish HS. Specifically, the authors examined

the effects of explicit feedback and negative evidence instruction on the students' rapid (re) acquisition of DOM. Thirteen heritage speakers and 12 monolingual speakers participated in the study. A GJT of 75 sentences was used as a pretest. It included 20 sentences related to DOM, 10 grammatical and 10 ungrammatical sentences with animate and inanimate objects. Following the pretest, there was an instructional intervention. The treatment included computerized explicit grammatical explanation of the use of DOM, cases in which it should and shouldn't be used, and online practice of 20 items that included explicit positive and negative feedback. The practice was immediately followed by the post-test within the second week.

Comparing the pre-test and post-test results, the researchers found evidence of a significant improvement on the knowledge of personal-*a*. Looking at individualized changes, 92% of the subjects made a positive change. The indicated increase in acceptability from pre-test and post-test was .79 in the grammatical sentences with animate specific direct objects, and of .23 in the ungrammatical sentences of the same type. Although there was not improvement in the ungrammatical sentences, the overall findings in all sentence types suggest that explicit feedback, including negative evidence, does have positive influence on the (re) acquisition of the marker constraints.

The study presents valuable information regarding immediate instruction of DOM, however there were some shortcomings. The researchers presented immediate results of the instruction intervention and there was not a delay post-test, which leave unanswered questions like for instance; to what extent was there retention of the structure and effective (re) acquisition. The experiment lasted two weeks and the time of the post-test was too close to the intervention and the long lasting effects of this method of

instruction might not represent the same gains.

3.4. The L2 acquisition of Differential Object Marking in Spanish

The L2 acquisition of DOM has been analyzed from a syntax-semantic interface perspective. These postulates indicate that the structures that are at the interface level of pragmatic, syntax and semantics, like the subjunctive mood, overt and null pronominal subjects, object drops and topicalizations, are permeable to indeterminacy and grammatical optionality (Müller & Hulk, 2001; Sorace, 2004; Sorace & Filiaci 2006). Although, as it was previously mentioned, recent research refutes these findings (Bohnacker, 2007; Cuza, 2012; Pérez-Leroux, Cuza & Thomas, 2011).

Guijarro-Fuentes & Marinis (2009) argue that syntax-semantics and syntax-pragmatics/discourse interface phenomena are related to the presence or absence of DOM. Definiteness is related to semantics, while specificity can be related to discourse context. Similar to Tsimpli & Sorace (2006), Guijarro agrees that structures related to pragmatic/discourse interface phenomenon, are more difficult to acquire than the ones that are involved in syntax-semantics interface phenomenon, especially for basic and intermediate levels.

Under the interface analysis, Guijarro & Marinis (2007) studied the acquisition of DOM in English speaking L2 learners of Spanish. They investigated whether there was a difference in the use of personal-*a* between L2 Spanish learner of different proficiency levels and monolingual speakers. At the same time they wanted to know whether there were differences between the contexts in which these groups used DOM. Three of the properties of personal-*a* exposed by Torrego (1998) were taken into account in this study:

specificity of NP, animacy agentivity of the subject, and verbal semantics. The characteristics were examined in terms of complexity. Not using "a" with [-animate] is not too complex, but the use of [+ animate] is more complex because it also takes [+\-specific] property. The most complex constraint to acquire would be knowledge about the aspectual class of the predicate and role of the subject. If differences in complexity affect acquisition, the author predicted that L2 participants would perform better in the less complex sentences.

The participants were 33 L2 learners and 14 monolingual speakers from Spain. After two placement tasks, the L2 learners were classified in three groups: low and high intermediate and advanced level. Six conditions were evaluated through a judgment task (1)[+animate, +specific], (2)[-animate, +/-specific], (3)[+animate, -specific], (4)[stative/activity verb, +human subject], (5)[stative/activity verb, -human subject], (6)[accomplishment, achievement verb, +/-human subject]. Following these conditions, the students had to rate the acceptability of 42 sentences in a scale from 1 to 4.

The results showed significant differences in performance between L1 and L2 groups, being the monolinguals' performance accurate and L2 performance probabilistic. Regarding the performance of the conditions 1-6, monolinguals differed from L2 learners. In the analysis of conditions, the authors found significant differences in the judgments of L1 intermediate, high intermediate and advanced participants while the low intermediate level did not show significant differences among conditions. This indicates that L2 proficiency levels present differences and difficulty in the process of acquisition of syntax-semantic interface structures. From the author's point of view, this confirms Sorace's (2004) analysis, which states that it is more complex to acquire structures at the

syntax/ semantics interface than narrow syntax. Since DOM is a structure at the interface level, it is more difficult to acquire. However, it does not mean that properties like [–animate] are not acquirable, as it was shown by the study that the advanced L2 participants do show sensitivity to [-animate] features. Nonetheless, as it was mentioned before, the proposal by Sorace (2004) has been contradicted. It explains how the end state of L2 knowledge of DOM is, but it does not give explanation about the relevance of the process of acquisition of the marker. The study leaves questions for future research about how different would be the results from a production task. It is not completely clear if advanced students who showed sensitivity to one of the conditions would be orally accurate in the use of DOM or not. Therefore, the researchers point out that more studies are needed including also near-native speakers.

In a more recent study, Guijarro & Marinis (2009) investigated whether there was residual optionality in the acquisition of DOM in Catalan-Spanish and English-Spanish bilinguals and the significance of language exposure. They predicted that Catalan-Spanish participants would perform better than the English-Spanish participants due to the similarities that exist between Catalan and Spanish (internal factors) and the quantity and quality of exposure of the participant to the language (external factors). The authors tested 18 Catalan-Spanish bilinguals, 16 English-Spanish bilinguals and 16 monolingual Spanish adults. The Catalan-Spanish bilinguals were living in Barcelona and the Spanish-English bilinguals in UK. The conditions tested were mainly the same six that Guijarro & Marinis (2007) tested. There was a fill in the gaps activity of 48 sentences. In their results, as expected, monolinguals performed accurately, but the L2 groups demonstrated residual optionality in the acquisition of personal-*a* and differences between the two

groups performance. These results were similar to the previous study, also showing differences in performance in relation to the complexity of conditions. In relation to the influence of external factors the Catalan-Spanish bilinguals performed better than the English-Spanish bilinguals, however, the difference was low. An interesting finding was that the first group made more errors of commission while the second group more errors of omission. Based on this, the authors tentatively conclude that the external factor as language exposure is not significant in the process of acquisition of DOM. However, they clarify that there were factors that were out of the control of the researchers that could have influenced the results (e.g., maturational factors and context of acquisition). In addition, expanding the research with not only meta-linguistic tasks, but also production tasks could give information about the differences of the performance of DOM in L2 learners.

The acquisition of DOM has also been of interest from an instructional and Processability Theory perspective. From the processability framework (Pienemann, 1998; Johnston's 1995) the acquisition of *a*-marker would be in stage four, which means that other structures must be acquired first, before the acquisition of DOM constraints. From an instructional point of view, Farley & McCollam (2004) tested interface between type of instruction and stages of development in the acquisition of DOM and subjunctive. The authors hypothesized, according to Pienemann's theory, that students would acquire DOM only if they were in the appropriate stage to do it. Based on the results of an instructional intervention focused on Processing Instruction (PI), the authors concluded that their study does not support Processability Theory because students in different stages showed improvement in the acquisition of the target structures. It would have been

interesting however, to know in detail the constraints that the experimenters followed to measure the learners' knowledge of DOM.

3.5. Chapter summary, research questions and hypotheses

The previous studies show great interest in understanding and describing the representation and processes of the development of language in bilingual children. The debate of whether bilingual children start with a unified or an autonomous structural system has been concluded. Currently, authors agree that bilingual children produce language specific structures from the beginning (Meisel, 1989; 2001; Paradis & Genesee, 1996). In addition, it has also been pointed out that despite the fact that bilingual children have independent systems, there is cross-linguistic interference during their development of the language (Hulk & Müller, 2000), and research now focuses on the relation of the two languages in development. Several reasons have been given to account for transfer. Among the internal factors is Hulk & Müller's (2000) proposal that cross-linguistic influence can occur at an interface level between two modules of grammar, if two languages overlap at the surface level. However, the proposals related to interfaces have been questioned (Bohnacker, 2007; Unsworth, 2003; Cuza, 2012; Pérez-Leroux et al.; 2011). Other external factors have been mentioned to account for transfer like language kind of variety HS are exposed to (Rothman, 2007).

From this general perspective of interdependent development, researchers try to explain the differences found in the bilingual language system and focus their attention on explaining the processes that can account for such divergence. Specifically, researchers focus on structures that may be incompletely acquired (e.g., Montrul &

Potowski, 2007; Montrul, 2002; Montrul & Bowles, 2009; Silva-Corvalan, 2003), or completely acquired but then attrited (e.g., Cuza, 2010; Cuza, 2012; Cuza & Pérez-Tattam, 2012; Polinsky, 2011) or both (Cuza et al., forthcoming).

Studies of DOM in L2 learners document the acquisition of this marker and explain the difference of outcomes from a syntax/semantic interface perspective. The comparison between bilingual and L2 learners shows residual optionality in both groups. Maturational constraints and the relation of the personal-*a* to interface domains, help to explain the differences found (Guijarro & Marinis, 2007; Guijarro & Marinis, 2009).

Studies with heritage speakers document acquisition patterns of DOM among bilinguals at different levels of proficiency. The conclusion is that HS present difficulties in the acquisition of target knowledge of DOM because of reduction of input, influence from English and semantic complexity (Montrul, 2004, Montrul & Bowles, 2009). These studies were conducted with adult participants and they have focused on heritage speaker's acceptability judgments and their spontaneous production. Therefore, there is no clear knowledge of the characterization of DOM at a young age and their performance under a controlled elicitation task. Additionally, there is no knowledge of the kind of input that adult HS were exposed to at home; therefore it is relevant to know what kind of input children receive at home in order to control the possible causes of their performance.

The present study aims to document the acquisition that bilingual children have of the semantic constraints that govern Differential Object Marking (DOM) and to explain the factors that influence the outcome at different points of development during early childhood. Specifically, the present study examines the extent to which Spanish bilingual

children acquire target knowledge of the semantic properties constraining the distribution of DOM in Spanish. If acquisition is not complete, I discuss four dimensions in the acquisition process: a) cross-linguistic influence from English, b) age of onset of bilingualism, c) structure complexity and d) the acquisition of a contact variety

As discussed earlier, research shows that adult heritage speakers of Spanish display morphosyntactic convergence with English in the use of properties like DOM (Montrul, 2004; Montrul & Bowles, 2009). Similar results have been found with bilingual children, as regards to syntactic and syntax-semantic interface related structures including gender assignment and agreement (Cuza & Pérez-Tattam, 2012; Montrul & Potowski, 2007) subject-verb inversion (Cuza & Strik, 2012) and tense and aspect (Cuza et al., forthcoming; Silva-Corvalán, 1994) It is possible that similar difficulties will be found with DOM. Based on this previous research, and the existing differences between English and Spanish in regards to DOM, I present the following hypotheses:

i.   Bilingual children will display difficulties in the acquisition of target knowledge of the semantic properties constraining the distribution of DOM in Spanish. The difficulties will be evidenced in the omission of personal-*a* in matrix (a) and CLLD (b) sentences in [+animate, +specific] contexts where *a*-marker is required in Spanish. E.g.,

(a) *_Juan saludó Santa Claus_ [+animate, +specific] [*a*-marker required]

"John greeted Santa Claus"

(b) *_Diego nunca juega con chicas de su escuela, pero Rosa siempre la invita a jugar_ "Diego never plays with girls from her school, but he always invites Rosa to play" [+animate, +specific]. [*a*-marker required].

ii.   Bilingual children will have more difficulties with CLLD structures than with matrix sentences. The bilingual children will have more difficulties with this kind of structure due to its complexity.

iii.   Parents will show target-like knowledge of DOM with matrix and CLLD sentences. The potential errors children might have won't be a replication of their parent's input. The process of language learning of the children differs from their parents who learn English as adults. Therefore, I expect their performance in the use of personal-*a* to be different.

I assume that the difficulties children are going to present stem from factors such as transfer from English into Spanish. English is the less complex option since direct objects are not marked in any context, but in Spanish DOs are marked in some contexts but not in others. Also, input factors might have effects in their performance since children start to receive more input in English and less in Spanish due to social environment, [-L1 SPAN + L2 ENG]. Finally, patterns of language use at home compounded with age can be factors influencing the children's performance. The participants might show individual differences according to specific circumstances and contact with the L2. First born children or children without siblings, might have had more exposure to Spanish through parent's communication at home. In contrast, younger siblings can be more exposed to English from home due to influence of older brothers. Different individual circumstances of acquisition can be reflected in children knowledge of DOM.

In order to answer the previous questions and test the above hypotheses, I conduct a cross-sectional study as part of a longer study and examine the elicited production of 14

Spanish-English simultaneous bilingual children. The study includes also a parental component. The study design, methodology and results are presented in the next chapter.

CHAPTER 4
THE STUDY

4.1. Introduction

In chapter 3 I discussed previous studies on child bilingual development, L1 and bilingual acquisition of differential object marking in Spanish. I also introduced my research questions and hypotheses. In this chapter, I discuss the participants, the conditions under examination and I explain the tasks and the results.

4.2. Participants

A total of twenty participants took part in the present study as part of a larger study examining the morphosyntactic development of Spanish during early childhood. The participants consisted of a main group of children (n=14) and a parental component of six parents who were used as a baseline in the analysis. All the children were born to Mexican parents in the USA and were enrolled in an English-only school in the American Midwest. They are considered simultaneous bilingual since they were born in an English speaking country and have been exposed to both English and Spanish since birth via television, communication with siblings and babysitters during their early years (e.g., De Houwer, 1994; Grosjean, 1989; Meisel, 2001; Montrul, 2008). All the information pertinent to the children was collected through a child language background

questionnaire and an adult language background questionnaire that their parents completed (from Pérez-Lerux, Cuza, & Thomas, 2011). This group of children was further divided into two groups based on their age at time of testing, younger children (6;02-7;07 n=8; mean, 7;0, SD, 0.60) and older children (8;05-10;8 n=6; mean, 9;5, SD, 0.79). The procedure used was the following: first the children had to agree to participate in the study and be recorded. Then, they were asked to complete the elicitation tasks. The children are currently participating in a longer research project where they are exposed to one hour of instruction in Spanish per week. By the time of testing they had already received seven hours of instruction.

The third group of participants consisted of some of the children's parents who completed the same tasks as their children. The parents are Spanish native speakers from different parts of Mexico such as Oaxaca, Jalisco, Cuernavaca and Veracruz. They currently live in the US in the American Midwest. Their mean length of residence in the US is 13;1 years. Table 3 shows a summary of the groups and the subsequent information in Tables 4, 5, 6 show the self-ratings of patterns of language used by the participants. This information was obtained from the Child Language Background Questionnaire and Adult Language Background Questionnaire that parents completed before developing the tasks (from Pérez-Lerux, Cuza, & Thomas, 2011).

Table 3: Participants' background information

Group	Age	Number
Younger children	6;04-7;09	8
Older children	8;06-10;10	6
Parents	20+	6
TOTAL		20

Table 4: Parents English fluency rating

Parent	Rate
Younger children's mother	1.25
Younger children's father	1.37
Older children's mother	0.16
Older children's father	1.4
Average	1.04

Note: The rate scale is 1-4 (1=no fluid, 2= in some way fluid, 3= very fluid, 4= completely fluid).

Table 5: Bilingual children Spanish and English fluency rating

Group	Spanish	English
Younger children	2.75	2.37
Older children	1.8	2.83

Note: The rate scale is 1-4 (1=no fluid, 2= in some way fluid, 3 very fluid, 4= completely fluid)

Table 6: Percentage of language used at home with the children

	Spanish	English	Both	N/A
Younger children's mother	62.50%	12.50%	25%	0%
Younger children's father	37.5%	25.0%	25.0%	12.50%
Older children's mother	83.3%	0%	16.6%	0%
Older children's father	16.60%	0%	50%	33%

4.3. Conditions under examination

To analyze the acquisition of DOM in simultaneous bilingual children I chose two types of sentences in which the personal-*a* can be found. These are matrix and CLLD. Each type of sentence was analyzed under two conditions: Objects that are [+animate +specific] where personal-*a* is used (required contexts) and objects that are [-animate, +specific] where personal-*a* is not used (non-required contexts). Table 7 summarizes the conditions under examination for the present study[5]:

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[5] The condition [+animate, -specific] was not included in the study because the interpretation of specificity also depends on pragmatic/discourse context (Torrego, 1998), therefore it would be more difficult to know if a child gives a specific or a non-specific interpretation to an indefinite direct object e.g., (a) *Busco a una profesora* "I am looking for a (specific) teacher" vrs. *Busco una profesora* "I am looking for (any) teacher. Probably the child could take (b) as specific. This is not the case for [+animate, +specific] contexts because personal pronouns and proper names can be used to indicate clearly specific objects.

Table 7: Conditions under examination

Sentence type		Contexts
Matrix	[+ animate, +specific] a√	*Juan saludó a Santa*
		"John greeted Santa"
	[-animate, +specific] a*	*Vicente está buscando (*a) sus llaves*
		"Vicente is looking for his keys"
CLLD	[+ animate + specific] a√	*...a su mamá siempre la llama*
		"his mom, he always calls"
	[-animate +specific] a*	*...(*a) su diccionario lo lleva en la maleta*
		"his dictionary, he brings it in the bag"

4.4. Tasks

Besides completing the Child Language Background Questionnaire and Adult Language Background Questionnaire (from Pérez-Lerux, Cuza, & Thomas, 2011) the parents as well as the children were asked to respond to an elicitation task with 20 tokens and four training slides. Ten of the slides were a question and answer task for matrix sentences (Thornton, 1999) and the other ten were a sentence completion task for CLLD sentences following previous research (e.g., Cuza, Pérez-Leroux & Sánchez, 2012). The slides of both tasks were randomized and presented to the participants in one sitting.

The children were interviewed and recorded in the school setting. All the sentences were read aloud with the aid of a Power Point, which had the sentences written and corresponding images so that participants could answer or complete the sentences based on the image.

The aim of the question and answer task (Thornton, 1990) was to analyze the target production of the personal-*a* in matrix sentences with [+animate, +specific] objects and, in other contexts, the null production of personal-*a* in matrix sentences with [-animate, +specific] objects. An example for matrix sentences in each context is represented below:

(a) Matrix [+animate, +specific]

Juan está muy feliz hoy

John is very happy today.

- *¿Por qué está tan feliz?*

- Why is he so happy?

- *(saludó)*

- (greet)

Expected Response: porque saludó a Santa

"because he greeted Santa"

(b) Matrix [-animate +specific]

A mi perro le gusta jugar con todas mis cosas. Hoy cuando llegué estaba haciendo algo…

- *¿Qué estaba haciendo?*

- *(estaba mordiendo)*

My dog likes to play with all my things.

Today when I arrived he was doing something

- What was he doing?

- (was chewing)

A mi perro le gusta jugar con todas mis cosas. Hoy cuando llegué estaba haciendo algo... ¿Qué estaba haciendo?

Mi perro _____ (estaba mordiendo)

Expected Response: mi perro estaba mordiendo los zapatos

  "my dog was chewing my shoes"

The purpose of the completion task for CLLD sentences was to examine the overt production of personal-*a* with [+animate, +specific] objects and null production with [-animate +specific] objects in CLLD contexts. An example of this task in each context is presented below:

(c) CLLD [+animate, +specific]

Hoy los periodistas no hicieron entrevistas,

pero _____ sí lo entrevistaron

- *(Pablo)*

Today the journalists did not do interviews,

  but _____ they did interview him.

Hoy los periodistas **no** hicieron entrevistas,

(Pablo)

pero_____ sí lo entrevistaron

- (Pablo)

Expected Response:

<u>*A   Pablo   sí   lo entrevistaron*</u>

DOM Pablo yes him-CL interviewed

"Pablo was interviewed"

(d) CLLD [-animate, +specific]

Pilar tiene sus libros en la mano,

pero _____lo lleva en la maleta

- *(diccionario)*

Pilar has her books in her hand,

but _____brings it in the bag

- (dictionary)

Expected Response:

Pero el diccionario lo lleva en la maleta

But the dictionary it-CL brings in the bag

"But the dictionary she brings it in the bag"

4.5. Results

This section presents the results of the two elicitation tasks. First I present the results of the question and answer tasks for the matrix sentences. In this section, I include the percentage of target responses presented in Table 8. Second, I introduce the results of the sentence completion task for CLLD sentences. Following each task, the results of the children's performance is compared to the results of the parental group to determine if there is a relation between the performance of the children and the performance of their parents. Finally, I present a summary.

 4.5.1. The question and answer task for matrix sentences

In this task (as in the following 4.5.2) the answers were recorded and transcribed to an Excel document. The production of DOM in any context grammatical [+animate, +specific] or ungrammatical [-animate, +specific] (DOM in non-required contexts) was transcribed as 1 and the omission of DOM (grammatical or ungrammatical) was transcribed as 0. If the participants did not produce overt or null marker in the structure expected, the response was not taken into account for the statistical analysis, e.g., cases in which the participant changed the structure of a CLLD sentence to a matrix sentence. The following table shows the percentage of responses taken into account to calculate the participants' use of the marker:

Table: 8 Percentage of target responses

	Type of Sentence and contexts			
Group	Matrix a √	Matrix *	CLLD a √	CLLD *a
younger	95%	97.50%	29.1%	42.50%
older	96.60%	100%	88.80%	83.30%
Parents	100%	100	77%	100%

For the present research, it was hypothesized that bilingual children would display difficulties in the target knowledge of the properties constraining the distribution of DOM and that the difficulties would be evidenced with the omission of the *a*-marker. Figure 1 shows the mean percentage for DOM use in grammatical and ungrammatical contexts for matrix sentences across the three groups.
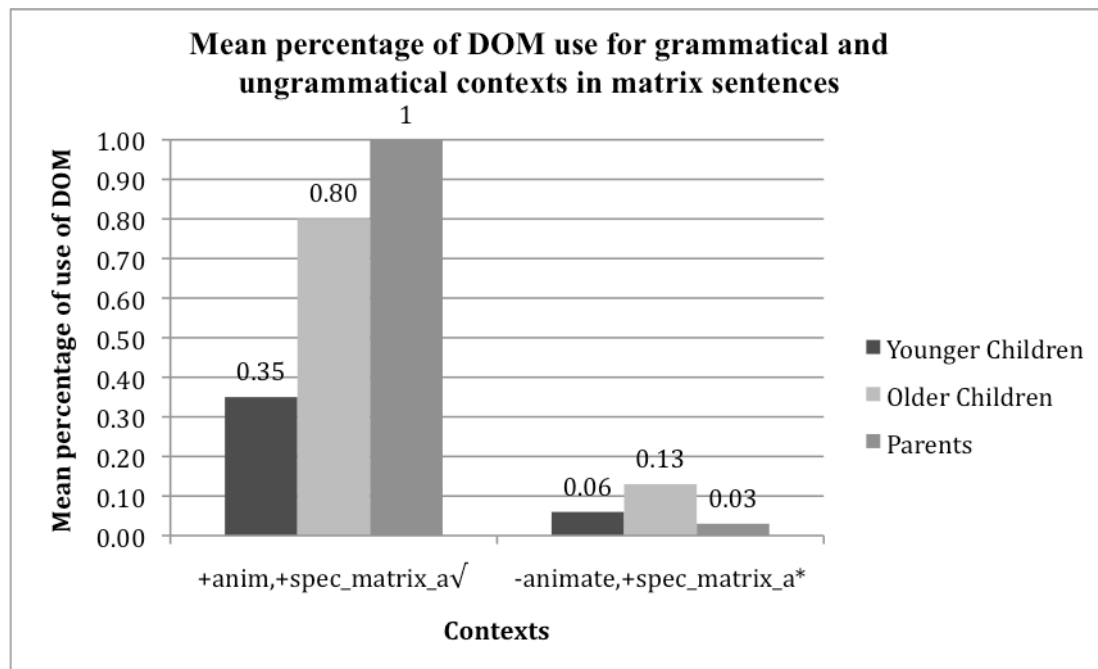

Figure 1: Mean percentage for DOM use for grammatical and ungrammatical contexts in matrix sentences across all the groups.

The results from matrix sentences show non-target levels of DOM use among the younger children (35%)[6]. In the older group of children the target proportion of DOM use increases (80%). The hypothesis claiming that children would show non-target levels of production of the marker was confirmed. The results also show limited overextension of personal-*a* to non-required contexts. To determine the significance between sentence type & grammaticality in relation to the groups, results were submitted to an ANOVA test with repeated measures for sentence type and grammaticality (matrix and CLLD sentences in contexts where the production is grammatical and ungrammatical) with group (younger children, older children and parents) as within subject factors. The results show that the interaction is significant, $F(6,45) = 12.69$, $p < .001$). A t-test performed on the results between the two groups of children in the condition [+ animate, + specific] show significant differences in their use of the personal-*a* $t(12) = -2.959$, $p < .012$. This means that the older children are overcoming the transfer effects and are more sensitive to [+animate, +specific] restrictions in matrix sentences. In [-animate, +specific] contexts, there was no significant difference between the two groups, $t(12) = -0.935$, $p < .423$. The outcome was target-like, which can be explained by the fact that, in this context, DOM is not required just like in English, and, therefore, it is easier for children to omit it.

Regarding the parents, results show that in matrix sentences for [+animate, +specific] context, this group had target knowledge of DOM. The t-test analysis

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[6] For this specific structure and project, target like corresponds to 90% of accuracy in the mean percentage of the responses. This percentage is close to the performance of monolinguals in previous studies e.g., Guijarro-Fuentes & Marinis (2007) in which monolinguals had a mean of target performance of 91.6 in the [+animate+specific] condition and 95.2 in [–animate+specific] contexts.

conducted among the parent group and younger group of children showed that there was significant difference in their treatment of matrix sentences in grammatical contexts [+animate, +specific], t(12) = -8.306, $p < .001$. This shows that younger children are not replicating what their parents say, since parent's performance was target like in this context, but children, in contrast, showed difficulties. However, in matrix non-required context [-animate, +specific] there were no significant differences between the same groups (t(12) = .444, $p < .665$. The performance of younger children and parents in required contexts support hypothesis iii that predicted that parents would have target like knowledge of DOM with matrix and CLLD sentences and that the findings with children wouldn't be a replication of their parents input.

The comparison between the older group and the parents shows that, in grammatical contexts for matrix sentences, there was a significant difference between their results, t(5.000)= -3.018, $p < .029$. Nonetheless, as explained before, older children have a high level of sensitivity (80%) to [+animate +specific] context in matrix sentences (80%). As per non-required contexts for matrix sentences, there was not significant differences t(10) = 1.114, $p < .291$.

4.5.2. Sentence completion task for CLLD sentences

To examine this task, I followed the same procedure as for the previous task: 0 counts as omission of DOM and 1 as production[7]. To examine if the target proportion of DOM use among groups per condition was significant, I conducted an independent samples t-test

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[7] The present analysis is presented without two tokens removed from the completion task which contained animals as animate instead of human objects. Counting these two animal objects would produce variability in the results. The percentage of total target responses taken into account for the analysis in CLLD task were presented in Table 8.

regarding [+animate, +specific] contexts. The t-test indicates no significant difference between younger and older children for this specific context, t(5.000) = -1.581, $p < .175$. Figure 2 shows the mean percentage for each of the groups
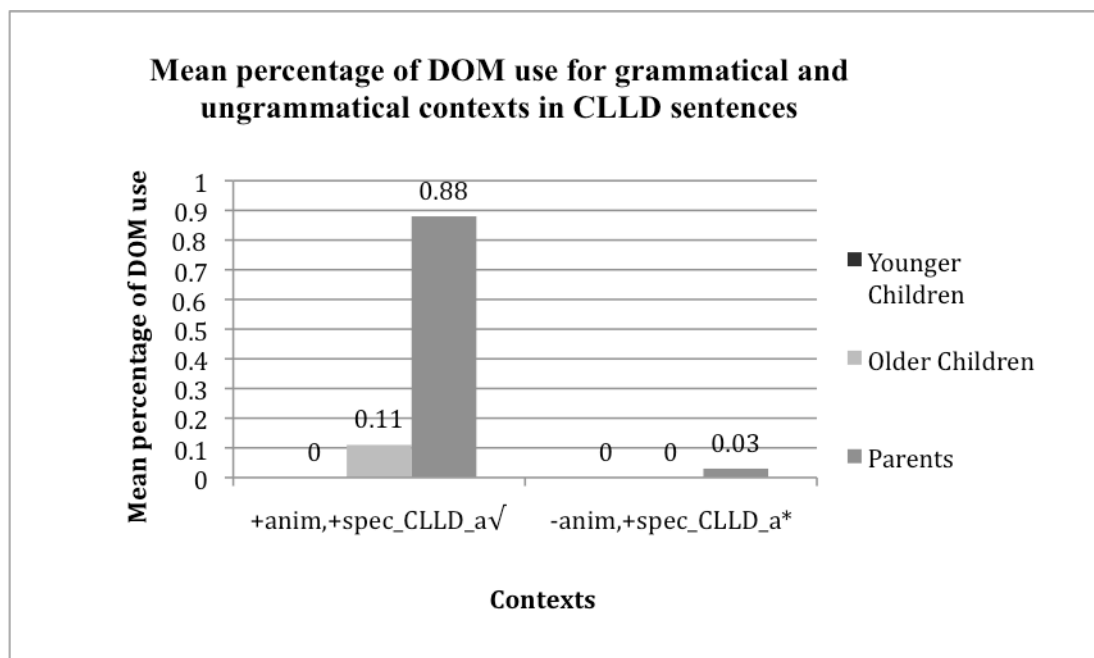

Figure 2: Mean percentage of DOM use in grammatical and ungrammatical contexts in CLLD sentences across all the groups.

Figure 2 also shows that for CLLD sentences there is non-target level of DOM use among both, the younger children (0%) and the older children (0.11%) in [+animate, +specific] contexts. Nevertheless, in this task, there was no overproduction of the *a*-marker in non-required contexts. Therefore, the mean percentage was 0% for the older as well as the younger children. These results also support hypothesis i which predicted that bilingual children would display difficulties in the acquisition of target knowledge of the semantic properties constraining the distribution of DOM in Spanish.

Regarding parents performance in CLLD, results show that they were close to a target performance (88%). On the other hand, in contexts were the use of DOM is ungrammatical there was limited over-extension of the use of *a*, e.g., *pero **al** tren lo detuvo superman* "but superman stopped DOM the train". This overgeneralization of the marker occurs with the combination "a+el= al". The difference between "al" vrs. "él" is not as salient as the difference between "a la" vrs. "la", therefore the use of the marker in this context could be due to either task effects or mispronunciation. The first reason might be also the case for the omissions found. Parents had 12% of omission because they would just read the CLLD sentences as they found it and complete it without paying attention to the sense of the sentence. A comparison between the older group and the parents shows a significant difference in required contexts, $t(10) = -4.037$ $p < .002$ since the older group had difficulties producing the personal-*a* with [+animate+specific] objects. In non-required contexts the difference was insignificant $t(10) = -1.000$ $p < .341$. Again, the performance in the context [-animate, +specific], where the production of DOM is ungrammatical, is the most target-like for bilinguals because it is the option bilinguals have in English. The comparison between the parents and the younger children in grammatical contexts [+animate, + specific] shows a significant difference, $t(5.000) = -4.543$, $p < .006$. For the use of personal-*a* in non-required CLLD contexts [-animate +specific], there was no significant difference, $t(5.000) = -1.000$, $p < .363$.

The lack of sensitivity to required contexts [+animate, +specific] in matrix and CLLD sentences, but the perfect performance in [+animate, +specific] in non-required contexts in matrix and CLLD contexts, suggests that children omit DOM in non-required

context not because they have sensitivity to [-animate, +specific] constraints, but because they are transferring the option from English.

Regarding Hypothesis ii, it was predicted that bilingual children would show more difficulties with CLLD structures than with matrix sentences. The results are represented in Figure 3.
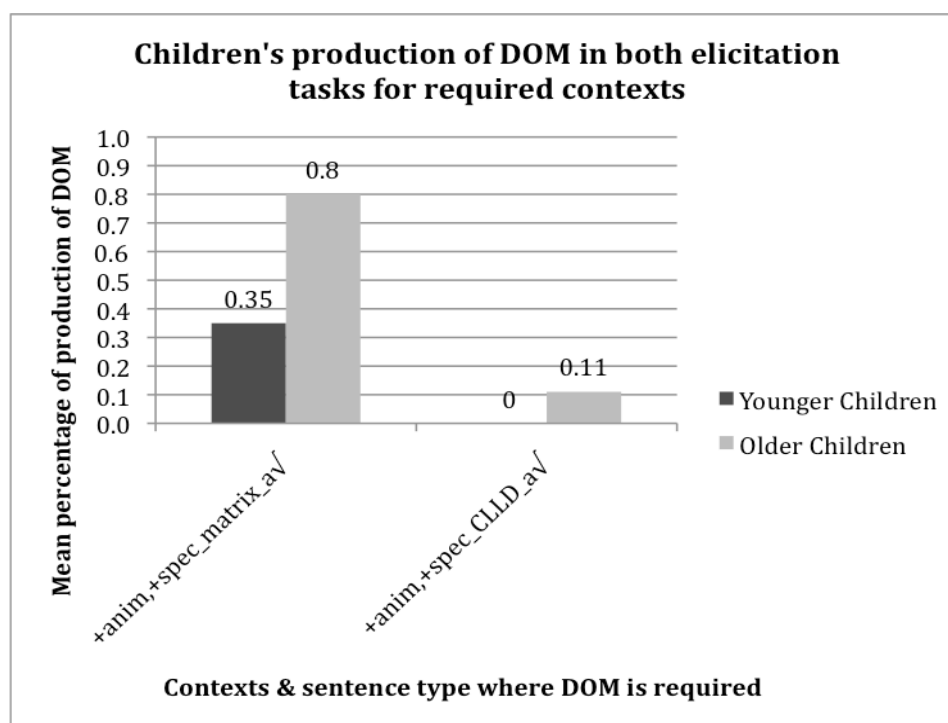
Figure 3: Mean percentage for DOM use in grammatical contexts for matrix and CLLD sentences across the two children groups**.**

The major difference of the treatment of the two tasks is found in the older group that had a high production of DOM in matrix sentences (80%), but low production of the marker in CLLD (0.11%). Younger children had difficulties in the production of DOM in both kinds of tasks with null production of DOM in CLLD sentences. Results of task two

confirm hypothesis ii. In general, children had more difficulties with CLLD structures than with matrix sentences.

4.5.3 Summary of the results

Results from the question and answer task for matrix sentences showed that children's use of personal-*a* is not target-like. However, older children had a higher command of the use of personal-*a* than the younger children. At the same time, there was some limited overgeneralization by the children's group. The parents showed 100% accuracy in required contexts. These results show that the children's production of the *a*-marker is not a replication of their parents' input. In other words, the children's omission of personal-*a* in required contexts for matrix sentences is not a representation of a contact variety. It seems then that children, specifically the younger ones, have difficulties with matrix sentences that stem from transfer from English to Spanish. In English the only available option is not to mark the object in any context and that is the option they are generalizing.

Results for the completion task, which elicited production of the personal-*a* in CLLD sentences, show that both the younger as well as the older children had significant difficulty with the production of the personal-*a* with this type of sentences in required contexts. Parents showed a high level of production of DOM in required contexts. In CLLD sentences where the *a*-marker was not required, there was target-like performance among all groups. The fact that the children omit the marker in required and non-required contexts, in these specific sentences, leads to think once again that they are transferring their knowledge of English into Spanish.

CHAPTER 5
CONCLUSIONS

5.1. Introduction and discussion

Previous work on the acquisition of DOM in heritage Spanish bilinguals and L2 learners reports difficulties in its acquisition (Guijarro & Marinis, 2007; Guijarro & Marinis, 2009; Montrul, 2004, Montrul & Bowles, 2009). Interesting concerns have been raised in relation to incomplete acquisition and attrition. This project expands on knowledge about the development of this feature in children and contributes to the field by examining the acquisition of DOM in simultaneous bilingual children of different ages through specific methodology of elicitation tasks.

The participants are children exposed to both Spanish English from birth; Spanish at home and English at school and in other special situations. Specifically, I wanted to investigate whether these participants were sensitive to the semantic constraints regulating DOM distribution in Spanish (animacy/ specificity) in matrix and CLLD sentences and determine the causes of any difficulties that may exist. The two types of sentences were elicited through two elicitation tasks: 1) A question and answer task to elicit the personal-*a* distribution in matrix sentences and 2) a sentence completion task to elicit the personal-*a* in CLLD contexts. The bilingual children were divided into two groups. The first consisted of younger children ages 6;04-7;09 (n= 8) and the second of

older children (8;06-10;10), (n=6). There was also a third group formed by some of the children's parents who served as a baseline for comparison (n=6).

Previous research has shown that input reduction, frequency, structural ambiguity and complexity of a structure are all factors that contribute to transfer effects (Cuza, 2012; Cuza & Pérez-Tattam, 2012; Meisel, 2001; Montrul, 2004; Montrul & Bowles, 2009). Based on previous research, I predicted that children would display difficulties with the use of DOM due to cross-linguistic transfer and input factors.

The results did indeed revealed difficulties with the use of the personal-*a* in Spanish among these bilingual children, confirming hypothesis i. Independent samples t-tests showed significant differences between parents and children; while parents performed at ceiling in task one and in task two had 88% of rate of use of DOM in required contexts, children's performance revealed difficulties with the personal-*a* distribution in the majority of the tokens, especially in task two with a production rate of just 11% and 0%. It seems that the difficulties the children experience stem from the influence of English on Spanish since the option that bilingual children have in English is less complex than the one they have in Spanish. In English, speakers do not consider the semantic aspect of the objects, while in Spanish there are two options: use of the personal-*a* with [+animate, +specific] objects and omission in [-animate, +specific] contexts.

Other language effects are evidenced in the children's performance in [-animate, +specific] contexts for both types of tasks. The children's results were relevant since there was a substantial percentage of grammatical omissions. T-tests also showed that there was not a significant difference between parents and children in these contexts due

to the fact that parents performed target-like as was expected. The fact that children had difficulties in the production of the personal-*a* in required contexts, but not in non-required contexts, suggests that target-like performance stems from transfer, not because they are sensitive to [+animate, -specific] contexts.

The effect of cross-linguistic influence is amplified by the fact that there is an increase of English input during their years of schooling. Children receive more input in English and less in Spanish, an inevitable situation since children are living in an English speaking country and are educated in an English only school. This reduction in input affects a structure like DOM because DO are not always marked by the preposition and, as was previously mentioned, this overlaps with the grammatical omission in English. In addition, I agree with what Montrul & Bowles (2009) point out in relation to the salience of the marker. The authors mention the fact that the *a*-marker /a/ is just a single vowel and acoustically is not very salient, especially when the ending of the verb is /a/ (e.g., *el llama a María* "he calls María"). Thus, the *a*-marker is harder to perceive, which may contribute to reduce the input and increase the probability of transfer[8].

Despite the fact that children did not perform at ceiling levels, there is something relevant from the children results which is the fact that, despite difficulties, the mean percentage of correct responses in the required contexts in matrix sentences in the older group was high (80%) in contrast to younger children (35%). The question that remains is why did older children performed significantly better than younger children with a significant difference (p = 0.012)? A possible explanation is related to the changes that

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[8] The use of verbs ending in /a/ was controlled in the tasks of this study, so that participants never had a context in which they had to produce a verb ending in /a/ previous to a production of personal-*a*.

younger children are facing in their first years of schooling. It was reported in their questionnaire that parents have a limited knowledge of their L2 English and that the language that they mostly use at home is Spanish. Thus, when children start school there is a drastic shift of input from Spanish to English. It may be that this change to a richer environment of opportunities to speak English affected the performance of younger children more than the performance of the older children. The older group seems to have less difficulty, probably because they not only continue receiving Spanish input at home, but also because they have already gone through the drastic shift in input conditions. These children are probably stabilizing both languages and perhaps getting more sensitivity to identify the semantic differences of features like DOM in Spanish.

There are other individual factors that must not be disregarded, including the fact that some of these older children are older siblings, first-born children or only children. These children have had more exposure to Spanish through their parent's communication at home, while younger siblings would use more English at home with their brothers, as it was reported in the questionnaires (only 28% of all the children would speak only Spanish with their siblings and the rest would speak English or both). The fact that the older children had more input over time with their parents could have also contributed to a more complete acquisition of DOM. The results of the older children suggest that, as children get older, difficulties with DOM can be to a certain extent overcome. However, more data is necessary to confirm this pattern.

Another interesting question raised from the data is related to the pattern of development that these bilinguals followed when acquiring DOM. Recall that Rodríguez-Mondoñedo's (2008) study argues that monolingual children acquire DOM before the

age of three, but there is no information about Spanish-English bilinguals of the same age. This data indicates that young bilingual children (6;04-7;09) omit the *a*-marker in required contexts, which could leads us to think that there is incomplete acquisition at this age and that it could be the case that it was never completely acquired in earlier years. More studies with younger bilinguals of 3;0-5;0 years old are needed in order to support incomplete acquisition at those specific ages. These findings would complement previous research that argues that incomplete acquisition of other features such as gender is a phenomenon found in child bilingual language development (e.g., Montrul & Potowski, 2007).

The results of both tasks support the hypothesis ii, which stated that children would have more difficulties with CLLD than with matrix sentences. It was the case that in many contexts, children didn't produce the sentence expected or would switch to matrix sentences in order to complete the task. CLLD sentences are constructions that are colloquially common (López, 2009); however, the higher rate of omissions with CLLD structures can be explained by the fact that these sentences seem to have a more complex structure (Slabakova, Kempchinsky & Rothman, 2012). These CLLD sentences involve movement of the marker and the DO to the beginning of the sentence. At the same time a clitic must be used, however, to facilitate the task, the clitic was given to the students and they had to complete the sentence only with the marker and the noun, therefore there was no doubt that the object was specific as the contexts indicated so. Additionally, it is also relevant that English does not have clitic left dislocations, so this structure is even more challenging for bilinguals to make the movement and think of the first argument as the theme and not as the subject. These findings add to previous research that suggests that

bilinguals have difficulties with the acquisition of CLLD structures (e.g. Cuza, Pérez-Leroux & Sánchez, 2012; Montrul, 2012), even though these studies were more focused on the use of clitics in this type of sentences than on the use of the accusative *a,* it is related to the marker of specificity.

Overall, the results partially confirmed hypothesis iii and, for this reason support the idea that bilingual children are transferring from English. On one hand, part of the assumption in the hypothesis was that parents would have a ceiling performance in both tasks. This was true for matrix sentences, but not completely for CLLD since they omitted DOM in some of the required contexts. A possibility of transfer from English to Spanish is discarded due to the fact that parents have a limited English fluency rating (average 1.04 in a scale of 1 to 4, 4 being completely fluid) and their process of learning English has been different from the one children have undergone. Interestingly, an individual analysis of the specific tokens in which parents omitted the *a*-marker, reveals that parents consistently omitted the marker in contexts where the objects were animals and not human as animate objects (e.g., **(a) la gata la encontraron en el parque* "they found the cat in the park). Recall that Comrie (1989) proposed a scale that divided human objects from animate objects by this meaning that they were treated different human>animal>inanimate. Therefore, the omissions found could be because the adult participants are making the distinction. In order to unify the conditions, the results were presented without the two tokens that include animal objects.

On the other hand, it was predicted that children would not replicate the parental input and thus, would not acquire a variety in which the *a*-marker is omitted in [+animate, +specific] contexts. This prediction was confirmed as parents all of Mexican

background did use the *a*-marker in the majority of the cases. In contrast, children, specifically the younger group, had significant omissions in both types of sentences. This shows once again that transfer from English is affecting their performance, and their performance is not a replication of a contact variety. Therefore the *Missing Input Competence Divergence Hypothesis* proposed by Pires & Rothman (2009) is not supported by the results.

5.2. Future research

The acquisition of DOM among early Spanish-English bilingual children has remained so far unexplored. Therefore, a significant contribution to the knowledge of DOM in Spanish can be made if data of early bilingual children at different points of development (before the age 4;0) are examined and compared to adolescent and adult heritage speakers. Future projects of this kind would provide insight into the developmental patterns of DOM. It would be as well interesting to relate the findings of L2 acquisition of DOM to the development of teaching methodologies of personal-*a* in the classroom.

Future research should also investigate other aspects related to DOM since it is a wide area to study. Some areas to take into account would be: (a) the levels of animacy to determine if there is any distinction between the types animate objects speakers usually mark; (b) The relation between the type of verbs and *a*-marking (Torrego, 1998). According to Torrego (1998), the aspectual class of the predicate and the θ role of the subject are other factors that determine the use of the *a*-marker, and future studies with bilingual children should control for these properties; (c) The use of the personal-*a* in other contexts of specificity such us [+animate, -specificity]. This context was not

examined in the present study and it would be interesting to know if any variation exists in this context.

In addition, future projects should consider developing an interpretation task. A task of this kind would provide information as to the Spanish bilinguals' competence with DOM and, with the results; establish if there is any difference compared to their performance in the production tasks.

5.3. Limitations of the study

The limitations of this study correspond with future research. Relevant characteristics of the acquisition of DOM in younger and older bilingual children (6;04-10;10) were found. Nonetheless, future research can add to the present research by taking a larger number of participants with a wider age range including 0;2 to 5;11-year-old. In this way, conclusions can be extended to a greater population.

Finally, it would have been beneficial to divide animate and human contexts instead of having just one category 'animate' that includes both types. Future studies can focus on the distinction of these two levels.

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