CROSS-LINGUISTIC INFLUENCE EVIDENCED IN POSSESSIVE CONSTRUCTIONS: A STUDY WITH AN ENGLISH-SPANISH SIMULTANEOUS BILINGUAL CHILD

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ABSTRACT

This study reports evidence of cross-linguistic influence in possessive constructions in the speech of an English-Spanish simultaneous bilingual child between ages 2;3 and 5;6. Although in English possessives might be prenominal ('-s), they might also be post-nominal (*of* possessives); the latter realization of the possessive is restricted to certain semantic contexts. In contrast, possession is always post-nominal in Spanish. Unlike the monolingual child English data and the English parental speech which revealed mostly instances of the pre-nominal possessive (only 3% in the child data), the bilingual child produced post-nominal possessives in 33% of his English possessives. Similarly, though the monolingual child Spanish data revealed no non-target-like forms, the bilingual child produced a significant number of pre-nominal possessives (e.g.'de las cabritas mamá'), which is never grammatical in Spanish. The non-target-like forms found in the bilingual child data strongly suggest evidence of influence of Spanish onto English as well as influence of English onto Spanish.

Key Words: possessive constructions, cross-linguistic influence, simultaneous bilingualism, English-Spanish bilingualism, child language.

RESUMEN

Este estudio reporta evidencia de influencia cros-lingüística en construcciones posesivas en el lenguaje de un niño bilingüe simultáneo entre los 2;3 y los 5;6 años de edad. Aunque en inglés el posesivo puede ser pre-nominal ('s) o post-nominal (of), esta última realización del posesivo se restringe a ciertos contextos semánticos. En español la posesión siempre es post-nominal. A diferencia de los datos de los niños y niñas monolingües del inglés y de los datos paternos/maternos en inglés analizados, los cuales revelaron principalmente ejemplos de posesivos prenominales (solamente 3% en los datos de los niños-as), el niño bilingüe produjo posesivos post-nominales en el 33% de sus construcciones posesivas. Asimismo, aunque los niños y niñas monolingües del español nunca produjeron posesivos incorrectos, el niño bilingüe produjo un número significativo de posesivos pre-nominales (Ej., de las cabritas mamá), forma nunca gramatical en español. Las construcciones que difieren de aquellas encontradas en los datos monolingües fuertemente sugieren evidencia de influencia del español sobre el inglés así como del inglés sobre el español.

Palabras clave: construcciones posesivas, influencia cros-lingüística, bilingüismo simultáneo, bilingüismo inglésespañol, lenguaje de niños.

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1. Introduction

Cross-linguistic influence, a term used to refer to the common non-target-like structures found in simultaneous bilingual child speech and which evidence the child's use of a syntactic structure from one of his/her languages in the other language when expressing a given semantic target (Genesee, Paradis, & Crago, 2004), has been the main focus of studies in child bilingualism during the last decade. Thus far, researchers have reported evidence for and against crosslinguistic influence in various language pairs, though this subject is relatively new and much more evidence needs to be analyzed before the reasons why it occurs as well as the structures in which it is most likely to be evidenced are clearly established. By and large, the studies that have reported evidence of cross-linguistic influence find it in constructions that overlap across the bilingual child's two languages; in other words, in semantic targets that might be realized in two or more ways in one language and that are realized in one of those ways in the other language. Given that the child is presented with different ways of syntactically realizing a given semantic target, say possession, the child often applies the wrong syntactic form in one language by transferring the wrong form for his/her other language.

Only one of the studies conducted so far on cross-linguistic influence has involved English-Spanish bilingualism, namely Paradis and Navarro (2003). They found possible evidence of cross-linguistic influence in the use of subject pronouns: the simultaneous bilingual children used a higher rate of overt subjects in their Spanish constructions than reported for Spanish monolingual children.

This article is the third from a series of studies that look for evidence of cross-linguistic influence in three syntactic domains that overlap across English and Spanish. The first study (Vásquez Carranza, 2008a) showed crosslinguistic influence in extraction constructions involving the object of a preposition and which are realized in English either via pied-piping or preposition stranding, whereas in Spanish they are realized through pied-piping only. The bilingual child data, which is the same used for this article, evidenced non-target-like constructions in both English and Spanish as a result of cross-linguistic influence. The second study (Vásquez Carranza, 2008b) provides evidence of influence from English onto Spanish in the child's generic noun phrases, as he used bare generics in ungrammatical contexts in Spanish. In this article, I analyze cross-linguistic influence in possessive constructions.

2. Possessives in English and Spanish

Possessive constructions overlap across English and Spanish, just as do the two syntactic domains previously analyzed. In particular, English has two ways of expressing nominal possession: Saxon genitives, which are realized pre-nominally with the 's marker (e.g., 'John's house'), and the prepositional possessive, which is post-nominal and is realized with the preposition of (e.g., 'the father of the bride'). Henceforth, these two syntactic realizations of the possessive are referred to as the 's possessive and the of possessive. In contrast, in Spanish only one syntactic realization is possible, namely the postnominal prepositional possessive with de (e.g., la casa de Juan). Pre-nominal possessives are illicit in Spanish (e.g., *María casa 'Mary house'), except in the case of pronominal possession (e.g., su casa 'her house'), which will not be under study here. In other words, both languages realize nominal possessive constructions through post-nominal prepositional constructions with of/de, and English also allows pre-nominal 's constructions.¹ Given this feature, cross-linguistic influence is anticipated in this syntactic domain in the speech of the English-Spanish bilingual child, given the hypothesis under study in this series of articles.

2.a. The syntactic/semantic structure of nominal 's and of/de possessives

Expressing possession involves complex semantic and syntactic properties. In semantics,

possessive constructions can be used to refer to a wide variety of relationships between the possessor and possessum, some of which do not necessarily express possession in the sense of ownership (Anschutz, 1997; Anttila & Fong, 2004; Francis, 2000; Postma, 1997; Storto, 2003). The possessum here is used to refer to the thing which either belongs to or is an intrinsic part of a given nominal whereas the possessor is used to refer to the entity that is the owner (e.g., in 'John's house', the nominal 'John' is the possessor whereas the nominal 'house' is the possessum; based on Storto, 2003). The semantic relationships between possessor and possessum which will be examined in this study are: ownership (i.e., the possessor owns the possessum but was not born with it), kinship (i.e., the possessor and the possessum are related through some social or generic bond), inalienable possession (i.e., the possessum is an intrinsic part of the possessor), and part-whole relationships (i.e., the possessum

represents a fraction or portion of the possessor). These definitions are based on Anschutz (1997).

In English, pre-nominal possessors must always bear the genitive Case, which is assigned by D to Spec,DP (de Villiers et al., 1997; Kayne, 1993, 1994). As a result, English pre-nominal possessors are always in the highest position in the nominal, even though they are base generated in Spec,NP (Anderson, 1983; Chomsky, 1986; Storto, 2003). In post-nominal *of* possessives, the possessor remains in Spec,NP (Kayne, 1993, 1994).

In languages such as Italian and Spanish, the possessive can arise without the aid of genitive Case. The preposition di / de assigns case to the possessor noun and hence post-nominal possession is licit (Abney, 1987, Storto, 2003; de Villiers et al, 1997).

Several accounts have been proposed for when the English post-nominal *of* possessive is selected over the pre-nominal 's form. For example, Quirk (1972) appeals to a gender scale:

He proposes that the 's possessive is favored when the possessor noun is high on the gender scale.

Hawkins (1981) however, argues that it is not simply the humanness of the possessor what determines the choice of constructions; instead, it is a comparison of the animacy of the possessor and the possessum. He proposes that human nouns have linear precedence over non-human nouns; if one of the nominals in the possessive NP is human and the other is not, "the surface form corresponding to the structure in which the human noun comes first will be more acceptable than the surface form corresponding to the structure in which the human noun comes second" (p.257). Hawkins supports his argument with two examples:

- (1) a. Mary's car
 - b. ?the car of Mary
- (2) a. The foot of the mountain
 - b. ?the mountain's foot

Example (1b) is marginal because an inanimate precedes a human, whereas (2b) is marginal because an inanimate precedes a human attribute. Hawkins proposes a simpler animacy hierarchy:

[human < [human attribute]] < [non-human animate] < [non-human inanimate] Mary foot rabbit table

Anschutz (1997) argues that these hierarchies should be interpreted as tendencies rather than rules. Based on a total of 500 noun phrases found in data from three different genres: magazines, personal letters, and naturally occurring conversations, Anschutz found that rank of the possessor on the animacy hierarchy alone cannot determine whether the 's or the of possessive is more appropriate. In her data, only 66% of the possessive constructions involving a human possessor took the 's form; the remaining took the of form. She proposes an account in which the main factor that determines when a possessive phrase will be realized through the 's possessive form is the information status of the NPs involved in the possessive construction. Specifically, if the possessor is the topic of the possessive phrase (i.e., old information) and the possessum is new information, then the possessive phrase will be realized with the 's possessor. When the possessor represents new information and the possessum represents old information, the possessive noun phrase will be realized with the of construction. In instances where the two nominals within the possessive phrase contain either old or new information, the 's form is rarely used with inanimate possessors and it is frequently used with animate possessors. Notice that this account refers to preference of one possessive form over the other. Anschutz additionally argues that certain semantic notions cannot be realized through the 's possessive form; the possessive nominal has a different meaning depending on which construction is used and the speaker has to choose the possessive construction that best conveys the intended meaning. For example, according to Anschutz, 'the pain of the son imprisoned' refers to the pain one experiences as a result of having a son in prison, whereas 'the son imprisoned's pain' refers to the pain that a son in prison experiences.⁴ Here, determining which realization of the possessive to use depends on grammaticality. Anschutz proposes that whenever the possessive phrase must have a specific meaning, only one realization of the possessive is grammatical (as illustrated in the two examples just presented). For possessive constructions in which the possessor and the possessum have different information statuses. the choice between the two syntactic realizations of the possessive depends on preference.⁵

As far as I know, there is no formal account regarding the syntactic structure of prepositional possessives in Spanish. I hence adopt the account for Italian prepositional possessives (which parallel Spanish prepositional possessives) proposed in Storto (2003) and extend it to Spanish *de* possessives. According to that account, the possessor is the complement of the preposition *de* forming a PP predicate that modifies the NP projected by the possessum noun. In turn, the NP (*perro de Juan* in *el perro de Juan* 'the dog of John') is selected by a determiner to form a possessive DP. Based on Storto's account, the surface structure of possessive DPs is isomorphic to their base structure; hence no movement is required in Spanish or Italian prepositional possessives, unlike in English 's possessives.

2.b. Acquisition of nominal and prepositional possessives in child English and Spanish

It has been shown thus far that both English and Spanish use the prepositional possessive, which is post-nominal in both languages, and that English also uses the pre-nominal possessive 's. Four studies have reported on the use and acquisition of nominal possessives in child English: Brown (1973), de Villiers et al. (1997), Golinkoff and Markessini (1980), and Radford and Galasso (1998), whereas no studies have looked at the distribution of 's and of possessives in child English speech. Similarly, no studies to date have looked at the acquisition of prepositional possessives in child Spanish. Next is a review of the studies on the use and comprehension of 's and of possessives in English in order to determine possible problems in the acquisition of both forms. Then it makes predictions regarding the course of acquisition of de possessives in child Spanish.

In his longitudinal study of the acquisition of English by three monolingual children, Brown (1973) reported that the three children produced pre-nominal possessives from age 2;0, although the inflection 's was missing (e.g., 'daddy chair'). The same observation was reported by Radford and Galasso (1998) based on longitudinal data from one English monolingual child between ages 2;3 and 3;6. Before age 3;0, the child omitted the possessive marker in 100% of her nominal possessive constructions (118), although the correct pre-nominal word order was maintained. Between ages 3;2 and 3;6, however, she omitted the nominal possessive marker only 23% of the time (in 14 of 60 nominal possessive constructions). Neither Brown nor Radford and Galasso, however, discuss whether the children made use of the post-nominal *of* prepositional possessive form.

Golinkoff and Markessini (1980) found, in a study that included 30 children with MLUs ranging between 1.0 and 4.0, that even the children with the lowest MLU comprehend which objects are likely to be possessed based on knowledge of the world (i.e., knowledge that inanimate objects are more likely to be possessed than animate objects and vice versa). It is not clear whether the children use syntactic knowledge (e.g., that the possessor precedes the possessum in 's possessive constructions) in such comprehension, however, because knowledge of the world takes priority in their responses.

The study included three main types of possessive relationships: alienable possession (i.e., the owned object can easily be removed from the possessor), intrinsic possessives, also referred to as inalienable possessives (i.e., the noun is obligatorily possessed), and reciprocal possessives (i.e., capture relationships which have a reciprocal quality in that either nominal could be the possessor; e.g., 'the mommy's baby' / 'the baby's mommy'). It was hypothesized that the children's accurate comprehension of alienable and intrinsic possessives would evidence semantic and world knowledge, whereas their comprehension of reciprocal possessives would demonstrate access to these two components as well as to syntactic knowledge (i.e., reciprocals require attention to word order to correctly distinguish 'the baby's mommy' from 'the mommy's baby'). The children were asked to point to the possessed object in response to questions based on picture cards (each card contained two pictures). For example, one stimulus item from the reciprocal constructions showed a picture of a woman holding a baby and a picture of a man holding a baby. The child was asked 'where's the mommy's baby?'.⁶ The results revealed that, except for the youngest group, the children provided correct responses in 75% of the

trials; in the youngest group, more than half the children provided an incorrect response (3 out of the 5 children). The results were interpreted as evidence that these children had a basic notion of possessive relationships, even the two youngest groups whose MLU was only between 1.3 and 1.7. Golinkoff and Markessini argued that the subjects were able to differentiate between the types of possessive relationships, as they evidenced more problems with the reciprocal possessives than with the intrinsic and alienable possessives; intrinsic and alienable possessives were of comparable difficulty. They surmised that the children had difficulty comprehending reciprocals because these possessive constructions contain two animate beings, both of which are likely to be possessed (i.e., they are semantically complex), and the word order can be reversed (i.e., they involve syntactic knowledge). However, as pointed out in Foot note 6, it is hard to determine if the results might have simply reflected the use of world knowledge rather than syntax or semantics. Golinkoff and Markessini additionally investigated whether the children's reciprocals were truly reciprocal for the children. They found that for these children, reciprocal relations where the parent possessed the child were considerably easier to comprehend than those where the child owned the parent; they tended to select the adult as the possessor and the child as the possessum. Perhaps more reliable results would have been found if the test had involved constructions such as 'the kitty's doggie' which are possible and symmetrical in a child's' world (i.e., a kitty might possess a doggy and a doggy might possess a kitty), and which do not involve the asymmetric adult/child relationship. Such constructions would more clearly reveal whether the children comprehended the reciprocity involved.

The study also included anomalous possessives in which strange possessive relationships such as 'the hair's girl' were created. These were used to determine if the children were simply selecting the last item mentioned for the acceptable constructions (the possessives included were always pre-nominal) and to evaluate the word order component against the world knowledge component. For example, children typically responded 'ball' in response to a question like 'where is the mommy's ball?' If they were selecting the possessed item simply because it appeared last in the acceptable construction, then in the anomalous constructions they should choose the last nominal, as well (i.e., 'the girl' in 'the hair's girl'). But if their responses were based on their knowledge of animacy (world knowledge), the children would select the first noun, which would ordinarily be the possessum (i.e., they would select 'the hair' in 'the hair's girl' because normally 'girls' possess 'hair' and not the other way around). Except for the oldest group, the children responded based on event probability (i.e., they selected the first nominal in the phrase). For example, they pointed to 'the flower' in 'which one is the flower's boy?' and ignored the word order (i.e., the syntactic knowledge). The older children correctly pointed to 'the boy' (i.e., they relied on syntactic knowledge). Golinkoff and Markessini postulated that it was possible that the older children had "acquired the ability to override their knowledge of the world and attend to language qua language" (p.130). In the study on anomalous possessives, the children's responses suggested a hierarchy for the acceptability of possessor-possessum relationships: adults were the most likely to be chosen as possessors, followed in order by children, inanimate objects, and body parts.

In a series of studies on the acquisition of nominal possessives by several English monolingual children between ages 3 and 6 approximately, de Villiers et al. (1997) argued that the pre-nominal possessives produced by English monolingual children differ syntactically from those in adult English because children allow the possessor noun to remain in Spec,NP without raising to Spec,DP, as required in adult English.

In one of their studies, which included fourteen 4- to 5-year old children, each child was presented with a set of pictured stories, one at a time. After each story they were asked a question involving a potentially ambiguous *of* phrase. For example, in one of the stories the main character, Crystal, owned a bowl made from plastic. The children were then asked to point to 'the bowl of Crystal' (a possessive reading); a second referent was a bowl made of crystal (a substance reading). Whereas the adult English monolingual speakers correctly rejected a possessive reading in all the constructions in favor of the substance reading, every child gave at least one (out of five questions) possessive reading (the children produced 42 substance readings and 26 possessive readings). In other words, the children accepted both substance and possessive readings of the post-nominal *of* phrase.⁷

Given that the children alternated between the possessive reading and the substance reading across trials, a subsequent experiment was designed to test the possibility that the children's answers reflected random chance and to check that they really had the substance reading. Eight 3- to 4-year-olds were presented with novel objects that were either containers or were created out of an unusual substance (e.g., a shoe full of pennies / a shoe made of tin-foil). Each child was prompted with "look, what's this, it's a shoe of _?". The reasoning was that if a child lacked the substance reading he might say 'a shoe of nothing' when presented with the empty tin-foil shoe. However, all the children produced substance of-phrases as well as containment of-phrases without any problems. According to de Villiers et al., the fact that the children in the previous study had opted in favor of possessives so frequently suggests that both possessive and substance readings were possible options in their grammar.

de Villiers et al. designed two additional studies to explore whether pre-nominal possessives have a different syntax for the children than for the adults (i.e., the children allow post-nominal possessives whereas adults normally only use pre-nominal possessives). In the first study, eight 3- to 4-year-olds were asked to point to Crystal's bowl rather than to 'the bowl of crystal'. Whereas the adult controls provided possessive readings always, 7 of the children provided substance readings in 12 out of a total 40 possible responses (i.e., in 30% of the cases, they pointed to the bowl made from crystal instead of pointing to the bowl owned by Crystal). This was taken as evidence that the interpretation of the genitive in those forms resembles pronominal modifiers (as in 'the ladies room') more than possessives.

In sum, the studies reported on here show that pre-nominal possessives occur amongst English monolingual children's first two-wordutterances and that they are widely found in their speech thereafter. These children correctly place the possessor before the possessum even though the possessive marker is regularly omitted (Brown, 1973; Golinkoff & Markessini, 1980; Radford & Galasso, 1998). Additionally, English monolingual children show comprehension of basic possessive relationships by relying on real-world knowledge regarding the semantic properties of nominals (i.e., that animate nominals are more likely to possess inanimate nominals for instance). Nonetheless, these children have difficulty comprehending possessive constructions that require syntactic knowledge in addition to real-world knowledge, as in the case of reciprocal possessives (Golinkoff & Markessini, 1980). Furthermore, according to the study by de Villiers et al. (1997), English monolingual children incorrectly interpret postnominal constructions with of as possessives even if the relationship between the two nominals is not one of possession but one of substance (indicating the material that a given nominal is made of).

Overall, the studies suggest that prenominal possessives are likely to be present in naturalistic speech. Furthermore, based on the results in Golinkoff and Markessini (1980), it is unlikely that these children would produce non-target-like forms that violate the syntactic form of possessives. It is unlikely that they would produce an utterance such as 'the hair's girl' to express a semantic relationship in which 'the hair' belongs to 'the girl'. Finally, based on the results from de Villiers et al., one might predict that monolingual children probably produce postnominal of possessives alongside pre-nominal 's possessives, given their propensity to interpret both 'the bowl of Crystal' and 'the bowl of crystal' as possessives. This last prediction is important regarding the patterns that can be anticipated in the speech of an English-Spanish bilingual child. A child acquiring these two languages simultaneously might produce more of possessives than his English monolingual peers because possessive constructions with of/ de are always grammatical in Spanish, and thus the Spanish input will provide ample support for that option in English (under the hypothesis that the Spanish input can be used to influence the English grammar and/or preference for a bilingual child).

Although the results in de Villiers et al. suggest that *of* possessives will occur together with 's possessives in child English speech, no studies to date have looked at the distribution of pre-nominal and post-nominal possessives in child English. Regarding adult English, Anschutz (1997) reports that 66% of the possessive constructions involving a human possessor in her data consisted of the 's form. Similarly, as far as I know, no studies to date have reported on the acquisition or on the comprehension of prepositional possessives in Spanish, although no problems are expected in the acquisition of *de* possessives by this monolingual group because only the post-nominal possessive is grammatical.

The analysis presented in section 4 attempts to fill this existing gap by analyzing child English monolingual data in order to determine the frequency with which the 's possessive occurs in naturally occurring speech as compared to the of possessive. The adult English monolingual data are also analyzed to establish the extent to which the children's use of possessive 's and of are target-like. Secondly, the study analyzes data from Spanish monolingual adults and children in order to establish the frequency with which de possessives are used. Finally, the patterns in the child bilingual data regarding the use of 's and of possessives are compared with those found in the monolingual data.

3. The study

3.1. Data and Procedures

Just as in the previous two studies, the main data for this study comes from longitudinal audio-recordings of the naturalistic development of English and Spanish in a simultaneous bilingual child during a period of three years and three months (between ages of 2;3 and 5;6.The child's father was a native English speaker whereas the mother was a Spanish native speaker and she spoke English as her second language often as the family resided in the United States.

The study thoroughly examines non-targetlike syntactic possessive structures in this child's speech that appear to result from influence of one language on the other. The non-target-like forms in the bilingual child's speech are compared to those found in the speech of monolingual children of comparable ages from each of the two languages. Additionally, the child's non-targetlike constructions are compared to the patterns in the parental speech.

The monolingual data used for the comparative analysis is the same as that used in the two previous studies, and which was accessed through the Child Language Data Exchange System (CHILDES; MacWhinny, 2000). The analysis of both the monolingual and the bilingual data included the child speech as well as the parental speech in order to determine the extent to which non-target-like forms in both the child monolingual and the bilingual child's speech resulted from ambiguity in the input.

4. **Results from the analysis**

4.1. The English monolingual data

The first part of the analysis of the English monolingual data focused on the parental speech in order to determine the rate of overlap between the pre-nominal 's possessive and the postnominal of possessive. The second part examined the distribution of the 's possessive and the of possessives in the child data and establishes how it compared to the parental data. Possible non-targetlike forms in the child data were analyzed, as well.

A preliminary look at the child monolingual data showed that these children used the following semantic relationships of the possessive: ownership (e.g., 'Susan's toys' / 'John's house'⁸), kinship (e.g., and you're Rachel's mother'), and inalienable possession (i.e., 'the baby's nose' / 'my mommy's name'⁹). Very few examples referred to either part-whole relationships or to other relationships; they were therefore included under the category 'other' (e.g., 'somebody's shadow' / 'mommy's birthday'). The possessive constructions in the child data were divided into these four categories in order to investigate whether the semantics of the possessive relationship made any difference in the syntactic form used.

As in the previous two studies, 20% of the monolingual adult files were analyzed (a total of 2733 utterances). Only 37 pre-nominal 's possessives and two (2) post-nominal of possessives ('see the corner of the window?' and 'okay who's gonna be the mommy of this little baby?; in Ross's and Naomi's databases respectively) were found. These 39 possessive constructions constituted only 1.4% of the total number of utterances analyzed. In other words, the children's input contained only a few instances of nominal possessives of any type, and particularly few instances of the of possessive. As a result, of possessives were not anticipated in the child monolingual data. Nonetheless, recall that the results from de Villiers et al (1997) suggested that these children might produce prepositional possessives frequently, unlike monolingual adults, given their tendency to interpret as possessive constructions with of that denoted a substance reading.

The analysis of the child monolingual data also revealed a very small number of possessive constructions (only 0.63% of the overall number of utterances in the child data). Most of the children's possessive constructions were prenominal possessives, although four post-nominal prepositional possessive constructions were found as well. Table 1 shows the total number of prenominal possessive constructions found in the child data, categorized according to semantic type.

Table 1 shows that most of these children's pre-nominal possessives involved a relationship of ownership. The second most common 's possessives were constructions expressing inalienable possession, followed in frequency by kinship possessives. The last type referred to constructions that did not fit into any of these three categories.

The fact that only four *of* possessives were found in the child data refutes the expectation, based on the results from the de Villiers et al.

Age range	Number of utterances analyzed	Ownership	Inalienable possession	Kinship	Other	Total
2;0-3;0	6184	41	5	0	1	46
3;0-4;0	8411	38	14	4	2	58
4;0 - 5;0	5132	17	4	1	0	22
5;0 →	1496	2	0	0	1	3
Total	21223	98	23	5	4	13010

 Table 1

 Number of pre-nominal possessives in the child English monolingual data grouped by age range and semantic category

study that English monolingual children would produce *of* possessive constructions often.

Although most of the possessives were target-like, several non-target-like forms were also produced. The children often omitted the 's marker with the pre-nominal possessives, although the word order was always correct, just as reported for monolingual children. Two other non-target-like forms were identified. First, one child produced the possessive marker 's with the first noun but not with the second in an utterance containing two possessors (e.g., 'to Richard's and Robin'; Sarah; 4;9.4). Second, one child used both 's and a preposition for in a double possessive 'what's the brother's name for Jaimey?' 'what's Jaimey's brother's name?' [Ross; 2;11.00]. The four of possessive constructions found in the child data were grammatical.

4.2. The Spanish monolingual data

The analysis of the Spanish monolingual data first established the rate of post-nominal

de possessives in both the adult data and the child data. Then, it examined the child data for possible non-target-like forms; non-targetlike forms could not originate from syntactic ambiguity regarding this structure, however, as only one syntactic form is allowed. The children's possessive constructions were also classified according to the types of semantic relationships specified earlier for the child English data.

The analysis of the parental data in 20% of the monolingual files, which yielded a total of 4192 utterances, revealed only 33 *de* possessive constructions (i.e., only 0.79% of the total number of utterances analyzed). The child data also revealed relatively few *de* possessive constructions, namely 82 (i.e., 0.68% of the total number of utterances analyzed), as shown in Table 2.

Just as in the English child data, the most common possessives were those denoting an ownership relationship, followed in frequency by constructions of inalienable possession and kinship constructions.

Two non-target-like possessives were identified in the entire child monolingual data.

Number of pos	st-nominal possessives in the	e child Spanish m	onolingual data gr	couped by age ra	ange and seman	ntic category
Age range	Number of utterances analyzed	Ownership	Inalienable possession	Kinship	Other	Total

Table 2

Age range	Number of utterances analyzed	Ownership	Inalienable possession	Kinship	Other	Total
2;0-3;0	4722	22	3	0	0	25
3;0-4;0	4232	23	8	1	4	36
4;0 - 5;0	2324	15	0	2	1	18
5;0 →	817	1	0	2	0	3
Total	12095	61	11	5	5	8211

One of the children (Koki) produced the following two examples in the same transcript:

(3) porque está dibujando su mano de él.
'why are you drawing his hand of his?'
(4) qué le está haciendo él a su cola de él?
'what is he doing to his tail of his?'
[Koki; 2:7.10]

The child used a possessive pronoun (su) together with the possessive marker de, which is ungrammatical in adult Spanish. Nonetheless, this child also produced 13 de possessives that were target-like. Overall, the Spanish monolingual children did not evidence major difficulties in their use of possessive constructions, as had been predicted.

To summarize, the analysis revealed that the adult English monolingual input virtually only contained pre-nominal 's possessives, as only two examples of the post-nominal of possessive form were found (5% of the total number of possessive constructions). The child English monolingual data showed a comparable pattern (97% of their possessive constructions consisted of the 's possessive whereas only 3% consisted of the of possessive). As reported in previous studies, the children normally omitted the possessive marker during the early stages of acquisition, although the appropriate pre-nominal word order was maintained. The analysis of the child Spanish data revealed that most of the children made use of post-nominal de possessives (except for two). Furthermore, there were no major problems with this construction as only two non-target-like forms were identified; both came from the speech of a single child, who produced target-like forms most of the time.

4.3. The bilingual data

The child bilingual input was expected to have at least some overlap, given that the analysis of the monolingual data revealed that English-speaking adults use both the pre-nominal 's possessive and the post-nominal of possessive, although the second form was found only occasionally. Spanish monolingual adults only use the post-nominal possessive form *de* (except in the case of pronominal possessives, which, as previously stated, were not included in the analysis).

The first part of the analysis focused on examining the bilingual child's input to determine whether the degree of overlap across the two languages regarding possessive constructions differed from that of the monolingual children. Specifically, given that the parents were both bilingual, it was possible that the father's English might contain significantly more instances of *of* possessives due to influence from Spanish. Furthermore, it was possible that the child's mother might use *of* possessives in English often, given that that is the only grammatical form of expressing possession in Spanish (at least regarding the types of possessive relationships under study in this chapter).

The second stage of the analysis examined the bilingual child's data. Once the degree of ambiguity in his input was determined, the child's speech was thoroughly analyzed for nontarget-like possessive constructions in the two languages that might suggest cross-linguistic influence (e.g., a significantly higher rate of postnominal possessives in English, or pre-nominal possessives in Spanish).

The analysis of the 4982 utterances in the father's speech revealed 20 possessive constructions (0.40% of the total number of utterances analyzed). As in the English monolingual adult data, most of the possessive constructions identified in the father's data consisted of 's possessives (18), whereas two (2) of the possessive constructions were of possessives ('and what's the name of this baby lion?' / 'the head of a giant'). The percentage of of possessives in the father's speech was twice as high as that of the English monolingual adults (5% for the possessive constructions in the adult monolingual data were of possessives, whereas 10% of those in the father's speech were). Nonetheless, the overall number of post-nominal possessives was very small, and hence it is unlikely that this reflected influence of Spanish onto the father's English.

Similarly, the 122 English utterances produced by the child's mother only contained

one possessive construction, which was realized as an 's possessive 'that's candy from B's party'. There is no evidence in either the transcripts nor in a diary kept by the mother to suggest that the mother's speech in English showed transfer from Spanish in this syntactic domain (i.e., she did not overuse post-nominal possessives in English).

Overall, the evidence that *of* possessives are grammatical in English was very limited in the bilingual child's input. However, according to the prediction under investigation, the child was likely to overuse the post-nominal *of* form in English because that form was most likely reinforced in his Spanish input.

Regarding the child's Spanish input, the mother produced 94 possessive constructions (1.2% of the total 7867 utterances analyzed). All of the prepositional possessives in the maternal speech were grammatical, as they all contained the preposition de and the possessor always preceded the possessum. Thus, her input mirrored that of the monolingual caregivers analyzed earlier. According to the prediction under investigation, no instances of pre-nominal possessives were

anticipated in the bilingual child's Spanish because this was never a grammatical option in adult Spanish (this syntactic form was not reinforced across the two languages like was the post-nominal form).

The analysis of the English data in the bilingual child's speech showed very few possessive constructions, most of which were prenominal 's possessives; the numbers are presented in Table 3. The rate of 's possessive constructions in the bilingual child data was smaller than that in the child English monolingual data. Specifically whereas 0.63% of the monolingual children's utterances were examples of 's possessives, only 0.18% of this child's were. The small number of possessive constructions found in the child bilingual data is surprising given that he produced many long complex utterances throughout the data collection period. Nonetheless, the low percentage of the child's possessive constructions does not necessarily reflect that the child was avoiding such constructions; it most likely simply reflects the contexts included in the English recording sessions.

Age range	Number of utterances analyzed	Ownership	Inalienable possession	Kinship	Other	Total
2;0-3;0	1468	0	0	1	0	1
3;0-4;0	2512	2	0	0	0	2
4;0 - 5;0	1343	6	0	0	0	6
5;0 →	1258	0	2	0	1	3
Total	6581	8	2	1	1	1212

Table 3 Number of pre-nominal possessives in bilingual child English data grouped according to age range and semantic category

Additionally, most of the child's 's possessives were used to express an ownership relationship, followed in frequency by constructions of inalienable possession and kinship relationships, as shown in Table 3. This distributional pattern of the various types of prenominal possessive constructions is comparable to that found in the child English monolingual

data. All the possessive constructions found in the bilingual child's English data are listed in Appendix A.

In addition to the pre-nominal constructions, six *of* prepositional possessives were found in the bilingual child's speech, namely those presented in (5) through (10). All the constructions were grammatical.

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(5)	that's the friend of Steve . \rightarrow kinship	[3;3.30]
(6)	look papi, this is the sword of this guy . \rightarrow ownership	[5;2.22]
` ´		2 / 3
(7)	and look, this is the best Pokemon of Misty . \rightarrow ownership	[5;4.29]
(8)	is that the real color of doctor Octopus ? \rightarrow inalienable	[5;5.30]
(9)	papi, did you see the nose of this guy? \rightarrow inalienable possession	[5;2.22]
(10)	something about the muscles of Superman. \rightarrow inalienable possession	[5;3.21]

These post-nominal of possessive constructions amount to .09% of the child's total number of utterances. The percentage of pre-nominal possessives constituted 66% of the overall number of possessive constructions found in the child's speech, 33% of them were postnominal of possessives. Although the overall number of examples in the data is small, if we compare it to the percentage of post-nominal of possessives in the child English monolingual data, we see a substantial quantitative difference. Specifically, the post-nominal prepositional possessives in the child English monolingual data only amounted to 3% of the overall number of possessive constructions (as compared to 33% in the bilingual child's data). In addition to the of prepositional possessives found in the transcripts, diary records kept by the mother revealed many examples where the child used post-nominal possessives. The high rate of postnominal of possessives in the child's speech strongly suggests influence from Spanish where the post-nominal possessive form is the only

grammatical option. This type of influence was predicted: the English data contained evidence for more than one syntactic realization of the nominal possessive and Spanish reinforced one of the two forms; the child used the evidence from the language that reflected no ambiguity and applied it onto the language that reflected ambiguity for this syntactic structure.

The post-nominal possessives found in the child English monolingual data consisted of ownership, kinship, and inalienable possessives; the inalienable possessives only included a person's name and never a body part. The bilingual child's *of* possessives also consisted of ownership, kinship, and inalienable possession. In addition, he used the *of* possessive form with inalienable possessives that involved a body partpossessor relationship.

The analysis of the Spanish data revealed more possessive constructions than the English data. A total of 52 post-nominal *de* possessives were found in the child's data; these are classified according to semantic type in Table 4 below.

Age range	Number of utterances analyzed	Ownership	Inalienable possession	Kinship	Other	Total
2;0-3;0	2534	12	0	2	0	14
3;0-4;0	2309	1	4	3	2	10
4;0 - 5;0	1668	2	1	9	0	12
5;0 →	1228	13	1	2	0	16
Total	7739	28	6	16	2	52 ¹³

Table 4

Number of post-nominal prepositional possessives in the bilingual child Spanish data grouped according to age range and semantic category

Just as in the child Spanish monolingual data, most of the bilingual child's possessive constructions consisted of ownership relationships. Unlike the child Spanish monolingual data, however, he produced more kinship possessives than possessives expressing inalienable possession.

Although Spanish never allows prenominal possessives and the bilingual

child's input never contained pre-nominal possessives, the bilingual child produced a non-negligible number of pre-nominal possessives in Spanish, namely eight (8). These were certainly non-target-like and differed qualitatively from the possessives produced by the mother as well as from those produced by the monolingual children. Although the child produced target-like postnominal prepositional possessives in 87% of his possessive constructions, non-target-like possessive forms constituted 13% of the total number of possessive constructions.

The non-target-like possessive constructions are presented in the following examples:

(5)	that's the friend of Steve . → kinship	[3;3.30]
(11)	ta epando papi beca [% estoy reparando papi bicicleta].	
· /	'I am fixing papi bike'	[2;3.02]
(12)	pano mami cama [% reparando mami cama].	
	'fixing mami bed'	[2;3.02]
(13)	apano papi libo [% reparando papi libro].	
	'fixing papi book'	[2;3.02]
(14)	apano papi chilla [% reparando papi silla].	[2;3.02]
(15)	I found Ato libo [% I found Arthur libro].	
	'I found Arthur book'	[2;4.04]
(16)	I found Ato libo [% I found Arthur libro].	[2;4.04]
(17)	de las cabritas mamá.	
	'of the little goats mom'	[3;0.28]
(18)	Liam ahora se convirtió en Jack's amiguito.	
	'Liam now became Jack's friend'	[4;8.24]

As can be seen, except for the last example, the non-target-like possessive constructions did not contain a possessive marker (neither the English 's nor the Spanish de). This might suggest that the child was treating these possessive constructions as a type of compound noun, although if that were the case, the constructions would still be non-target-like because in Spanish compound nouns the word order would be the same as that in possessive constructions. Additionally, it might suggest that the child was aware that he was using the English form in a Spanish context.

This child produced both target-like and non-target-like forms with the same semantic interpretations. For example, within the same session, the child produced examples (13) and (14) as well as the target-like possessive *palano a silla e papi* [*reparando la silla de papi*] 'fixing the chair of papi'; both constructions expressed a semantic relationship whereby 'papi' owned the possessed item. Interestingly, none of the child's non-targetlike forms involved inalienable possession in either the transcripts or in the diary records.

These constructions strongly suggest evidence of cross-linguistic influence in which the child applied the English pre-nominal possessive form. Except for the last two examples (kinship), the rest were all possessives expressing ownership.

Finally, the non-target-like forms were mostly evidenced before age 3;0, decreasing significantly thereafter. This is supported in the diary records where multiple examples of non-target-like forms, all of which involved an ownership relationship of possession, were recorded before age 3;0 but only a few after that age. By the end of the fourth year, the child had stopped producing the non-targetlike forms.

5. General summary and conclusions

According to the description of English possessive constructions presented in section 2, although there are restrictions regarding when the 's possessive form is more appropriate than the of form, both realizations of the possessive are grammatical. In Spanish, on the other hand, the *de* possessive form is the only grammatical option.

The analysis of adult monolingual input data from native speakers of English and Spanish revealed that, whereas pre-nominal 's possessives are frequent in adult English, post-nominal of possessives seldom occur. In other words, there is little overlap across English and Spanish regarding possessive constructions.

With regard to the use of possessive constructions in child English, the studies reviewed reported that English monolingual children make productive use of pre-nominal possessives from early on. The results in the study by de Villiers et al. (1997) suggested that perhaps English monolingual children might produce illicit *of* possessive constructions; nonetheless, the analysis of the data from English monolingual children did not support this possibility. The analysis of the child Spanish data revealed no problems in the acquisition of *de* possessives, as none of the children produced pre-nominal possessives.

The analysis of the parental speech in the bilingual data revealed the same patterns as those in the adult monolingual data: the father produced very few of possessive constructions in English whereas the mother only used prenominal possessive constructions in English. In Spanish, the mother always produced target-like post-nominal de possessives. In other words, the bilingual child's input in each language paralleled that of the monolingual children's input. Nonetheless, the bilingual child received input from both English and Spanish, and this meant that he was exposed to both pre- and post-nominal possessives. Even though postnominal of possessives were infrequent in the child's English input, it was hypothesized that the Spanish input would reinforce the use of

post-nominal possessives and the bilingual child would then produce a higher number of post-nominal possessives in English than his monolingual peers. This is exactly what the analysis of the bilingual child's speech revealed: he produced a high percentage of post-nominal of prepositional possessive constructions in English, which contrasts quantitatively with the patterns found in the monolingual English child data. Surprisingly, the bilingual child also produced a substantial number of non-target-like prenominal possessives in Spanish. This had not been predicted given the lack of ambiguity in the Spanish input. Nonetheless, the child was exposed to pre-nominal possessive constructions in English and this seems to have influenced him to use that syntactic form in his Spanish.

Overall, the considerable quantitative difference between the bilingual child's possessive constructions in English and that of his English monolingual peers as well as to that in his parental input, strongly suggests influence from Spanish. Likewise, the qualitative difference between the bilingual child's Spanish possessive constructions and those of his Spanish monolingual peers, as well to those of his mother, also strongly suggests influence from English. The child adopted both syntactic realizations of the possessive form, the pre-nominal and the post-nominal forms, and he applied them in the two languages.

6. Implications and recommendations for further research

This series of studies have shown clear evidence of cross-linguistic influence, as the studies have analyzed three different syntactic domains. In the first study, the data evidenced non-target-like constructions in both English (frequent use of pied-piping; e.g., in what hand do you think it is?') and Spanish (stranding of prepositions; e.g., 'eso qué es para'). The second study revealed non-target-like constructions in Spanish, as the child produced bare generic nouns such as 'a mi me gusta yogurt'. In this final study, the child produced non-target-like constructions in both languages, just as in the first study. The study thoroughly analyzed the parental speech to establish whether the child's parental input might have contained non-target-like constructions, as the two parents were bilingual in English and Spanish. If this had been the case, non-target-like constructions in the child speech could not have been explained in terms of crosslinguistic influence. Given that no non-target-like constructions were not found in the parental input, the most likely account for the non-targetlike forms in the child data is cross-linguistic influence.

Additionally, this series of studies is significant not only because it established clear evidence of cross-linguistic influence, but because it showed the developmental path along which the child started and stopped producing the non-target-like forms.

Despite the relevance of these studies, however, additional studies that compare the same syntactic structures in other simultaneous bilingual children, as well as studies that look at other syntactic domains that might overlap across English and Spanish are called for in order to more reliably establish that cross-linguistic influence is a phenomenon that particularly characterizes simultaneous bilingual development. Furthermore, evidence of cross-linguistic influence in domains that do not overlap across a bilingual child's two languages would certainly be interesting, as other accounts regarding why cross-linguistic influence might occur would greatly contribute to this debate.

7. Notes

- 1. 'Dual' here refers to nouns that include both the male and the female gender, as in 'doctor'.
- Quirk does not explain what 'higher organisms' refers to.
- 3. Another possible reason for the obligatoriness of the pre-nominal 's possessive might be that the pre-nominal possessor has to be the kind of referent that can actually possess something. So, for example, whereas 'John's foot' is grammatical, 'the mountain's foot' is ungrammatical because 'the mountain' cannot possess something. The post-

nominal form might be used with a nominal that can possess something (e.g., 'the father of the bride'), whereas the choice is not optional with regard to the pre-nominal form (e.g., 'the top of the table' is grammatical whereas 'the table's top' is not).

- 4. Anschutz proposed the following hierarchy which she referred to as the Possessive Construction Creation Hierarchy: meaning > determiner on possession > information status > animacy (p.27), but this hierarchy does not differentiate between grammatical and ungrammatical options of the possessive; instead, it combines both grammatical options and preference.
- 5. In this example, however, the child might have chosen the picture of the woman holding the baby solely on the basis of gender ('the mommy' could not possibly refer to 'the man') and not because he comprehended that 'the baby' belonged to 'the mother' instead of 'the mother' belonging to 'the baby'. In other words, the child's 's structure might not necessarily reveal the extent to which he comprehended the reciprocity involved in the construction. Comparable methodological problems applied to the rest of the reciprocal constructions used in the experiment (e.g., 'daddy's girl' \rightarrow a picture of a man and a girl and a picture of a woman and a girl, 'baby's mommy' \rightarrow a picture of a woman and a baby and a picture of a girl and a baby).
- 6. But note that *of* possessives are grammatical in adult English (e.g., 'the top of the table'); it is possible that the children's non-target-like forms simply reflected the confusion due to ambiguity in their input in which *of* possessives are grammatical, just like 's possessives.
- 7. Regarding constructions such as these, it is relevant to point out that whereas in English a pre-nominal possessive construction is generally used, in Spanish most of the time instead of using the possessive form, as in *fuimos a la casa de abuelito* 'we went to the house of grandpa', a construction that does not involve possession is used, namely *fuimos (a) donde abuelito* 'we went to where grandpa [lives]'.
- 8. This type of possessive constructions was classified as inalienable under the premise that every person has a name; this decision was mostly an arbitrary decision, but as will be shown, it does not affect the results.
- Two of these monolingual children's utterances contained two possessive phrases, as in "it's Marky's and Ross's. [% balloons]." These possessive phrases were counted separately in the quantitative analysis.

- 10. Two of the children's possessive constructions contained two possessives, as in example 101 below; in these instances the two possessive phrases were counted separately for the quantitative analysis.
- None of the utterances found in the bilingual child's English data contained more than one possessive phrase.
- One of the child's Spanish utterances contained two possessive phrases, *el restaurante de la mamá de Nancy* 'the restaurant of the mom of Nancy'.

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Appendix A Possessive constructions in the child bilingual data

A. The English data

Age: 2;0 - 3;0

<u>Kinship:</u>

That's mommy's. [% that's Kim's mommy]

Age: 3;0 - 4;0

Ownership:

you broke daddy car. with Alex's stuff.

Post-nominal possessives: that's the friend of Steve. \rightarrow kinship

Age: 4;0 – 5;0

Ownership:

and then we went to a woman's house. and then we went to this woman's house. no, that s the police's car. that s the fire truck's one. [% the fire fighters' one (truck)] and this is the spooky guy's one. [% car] I'm gonna go into the monster's room.

Age: 5;0 – 5;6

Inalienable possession:

not like another person on someone's else's feet. (counted as 1 possessive) Tocapi saw an electric Pokemon and then they made Tocapi's eyes go round and round.

Other:

they were going to find another Pokemon's touch.

Post-nominal prepositional possessives:

look papi, this is the sword of this guy. \rightarrow ownership and look, this is the best Pokemon of Misty. \rightarrow ownership papi, did you see the nose of this guy? \rightarrow inalienable possession something about the muscles of Superman. \rightarrow inalienable possession is that the real color of doctor Octopus? \rightarrow other

B. The Spanish data Age: 2;0 – 3;0 Target-like forms VÁSQUEZ: Cross-linguistic influence evidenced in possessive constructions...

Ownership: moto (de) Freddy. de B. [% la familia] palano a silla e papi [% reparando la silla de papi]. apano cose papi [% reparando el closet de papi]. no belo e la mamá [% el sombrero de la mamá]. de keno [% (la mamá) del conejo]. la casa Lilly [% la casa del Lilly]. qué cheno pelo Ato [% qué está haciendo el perro de Arthur]? el carro abuelito. ese es de Alex. [% pajarito de barro] vea casa pelo [%casa del perro]. hola, soy el muequito (de) tu papi.

Kinship: mamá gato [% la mamá del gato]. esa es la mamá de la chiquita.

Non-target-like forms

Ownership: ta epando papi beca [% estoy reparando papi bicicleta]. pano mami cama [% reparando mami cama]. apano papi libo [% reparando papi libro]. apano papi chilla [% reparando papi silla]. I found Ato libo [% I found Arthur libro]. → MIX¹ I found Ato libo [% I found Arthur libro]. → MIX

Age: 3;0 – 4;0

Target-like forms <u>Ownership:</u> mami, casita de abuelita fea.

Inalienable possession:

y agarró la cabeza del chiquito feo que cocina. para y yo pongó algo para corte el dedo de señores feos. y después el pájaro da con un martillo y haci eso a la cabeza del lobo. de el oso. [% las patas]

Kinship:

todos los amiguitos de este hipoptamo van a ayudar. la mamá de los chanchitos y hació. la mamá de el chiquito puede ser una doctora porque policías yo no sé qué hacen.

¹

These two examples were clear mixes, but given that they were intra-sentential and appeared in an otherwise Spanish context, they were counted as instances of non-target-like possessives.

<u>Other:</u> el día de los papás. y siempre pasan sin permiso del papá.

Non-target-like forms

<u>Kinship:</u> de las cabritas mamá.

Age: 4;0 – 5;0

Target-like forms Ownership:

a la casa de grandma. con el abanico de este.

Inalienable possession: es que no puedo ver la carita del verde.

Kinship:

es el amigo de Buzz Lightyear pero se hizo en un feo. el amigo de Buzz Light pero que se hace en un feo. y este es Zurg y el de Buzz [% amigo] y este es el amigo de Buzz otra vez. vea, todos los amiguitos del dinosaurio están llegando. yo pensó que ese era el bebé del otro. no, yo vivía qui y yo era el papá de los esos. este era el papá de este. cree que, si usted me diga qué vas a hacer con la mamá de John.

Non-target-like forms

Kinship:

Liam ahora se convirtió en Jack's amiguito.

Age: 5;0 – 5;6

Target-like forms

Ownership: y se fue a la casa del otro hermanito. y se fueron a la casa del hermanito. y después se fueron corriendo a la casa del otro. del hermanito. [% la casa] cuando vamos a Costa Rica vamos a ir a la casa de Roy. es de Randal. [% la casa] a la casa de nadie. el restaurante de la mamá de Nancy. digo, de tío Koki. [% el restaurante] porque es muy largo la casa de auntie Julie. de Andrew. [% el super héroe]

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mami, es de Andrew. [% el super héroe] y después me salté de la cama de Andrew y aqui me dolió.

Inalienable possession: no sé el nombre de Freezeman. <u>Kinship:</u> nosotros nunca podemos ir y sólo la abuelita de Kenny y papi pueden ir y nosotros nos tenemos que quedar en la casa. el restaurante de la mamá de Nancy.

Non-target-like forms: NONE