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**Subject omission/production in child
bilingual English and child bilingual
Spanish: the view from linguistic theory**

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Abstract: In bilingual child language acquisition research, a recurrent learnability issue has been to investigate whether and how cross-linguistic influence would interact with the non-adult patterns of omission/production of functional categories. In this paper, we analyze the omission/production of subject pronouns in the earliest stage English grammar and the earliest stage Spanish grammar of two English–Spanish simultaneous bilingual children (FerFuLice corpus in CHILDES). We base this analysis on Holmberg’s (2005, Is there a little pro? Evidence from Finnish. *Linguistic Inquiry* 36. 533–564) and Sheehan’s (2006, *The EPP and null subjects in Romance*. Newcastle: Newcastle University PhD dissertation) formulation of the null subject parameter and on Licerás et al.’s (2012, Overt subjects and copula omission in the Spanish and the English grammar of English-Spanish bilinguals: On the locus and directionality of inter-linguistic influence. *First Language* 32(1–2). 88–115) assumptions concerning the role of lexical specialization in cross-linguistic influence. We have conducted a comparative analysis of the patterns of production/omission of English and Spanish overt and null subjects in two bilingual children, on the one hand, versus the patterns of production/omission of one monolingual English child and one monolingual Spanish child, on the other. The results show that while there is no conclusive evidence as to whether or not English influences the higher production of overt subjects in child bilingual Spanish, the presence of null subjects in Spanish has a positive influence in the eradication of non-adult null subjects in bilingual English. We argue that in a bilingual situation, as compared to a monolingual one, lexical specialization in one of the languages of the bilinguals (the availability of an overt and a null realization of the subject in Spanish) facilitates the acquisition of the other language.

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1 Introduction

One of the most investigated issues in child language has been the status of subject omission and production in both (–null subject) and (+null subject) languages (Hyams 1986, 1996; Frazier and De Villiers 1990; Valian 1990, 1991; Wang et al. 1992; Weissenborn 1992; Rizzi 1993/1994; Valian and Eisenberg 1996; Bel 2001; Guasti 2002, among many others). The presence of null subjects has been documented in both types of languages, as shown in (1) versus (2), in spite of the fact that null subjects with inflected verbs are ungrammatical in the adult versions of (–null subject) languages such as English.

- (1) English
- | | |
|------------------------|---|
| a. <i>Broke this.</i> | [Peter, 2;0.1 (Pierce 1992:116)] |
| b. <i>Feel better.</i> | [Naomi, 1;11 (Sachs, CHILDES, MacWhinney 2000)] |
- (2) Spanish
- | | |
|--------------------------|---|
| a. <i>Horita viene.</i> | [LV II: 78 –2.0- (González 1970:10)] |
| ‘(he/she) now comes.’ | |
| b. <i>Tengo un pelo.</i> | [María, 2;00 (López-Ornat, CHILDES, MacWhinney 2000)] |
| ‘(I) have a hair.’ | |

More recently, the status of subject omission and production in child bilingual grammars (2L1) has also been investigated (Deuchar and Quay 2000; Paradis and Navarro 2003; Licerias et al. 2008, 2012, among others). Here too, null subjects appear in both (–null subject) and (+null subject) languages, as shown in (3) and (4), respectively.

- (3) English
- | | |
|---------------------------|---|
| a. <i>Roars.</i> | [Simon, 2;05 (FerFuLice, CHILDES, MacWhinney 2000)] |
| b. <i>Falled [=fell].</i> | [Simon, 2;06 (FerFuLice, CHILDES, MacWhinney 2000)] |
| c. <i>Ride it.</i> | [Manuela, 1;09 (Deuchar, CHILDES, MacWhinney 2000)] |
- (4) Spanish
- | | |
|-------------------------------|---|
| a. <i>No puedo subir.</i> | [Leo, 2;05 (FerFuLice, CHILDES, MacWhinney 2000)] |
| ‘(I) cannot go upstairs.’ | |
| b. <i>Ahora hacemos esto.</i> | [Simon, 3;00 (FerFuLice, CHILDES, MacWhinney 2000)] |
| ‘now (we) do that.’ | |

- c. *Tengo más.* [Manuela, 1;11 (Deuchar, CHILDES, MacWhinney
'(I) have more.' 2000)]

While both the presence of null subjects in monolingual English (or other [-null subject] languages) and the status of the empty category which realizes them have been widely debated (Hyams 1986, 1996; Frazier and De Villiers 1990; Valian 1990, 1991; Wang et al. 1992; Weissenborn 1992; Rizzi 1993/1994; Valian and Eisenberg 1996; Bel 2001, among others), it is the possible overgeneralization of overt subjects in (+null subject) languages in child bilingual grammars that have received special attention. Namely, some researchers have argued (e. g. Paradis and Navarro 2003) that English–Spanish bilingual children may use more overt subject pronouns in their Spanish than monolingual children because subjects are obligatory in English. This has been accounted for as the outcome of cross-linguistic influence from English, the (–null subject) language.

Cross-linguistic influence has been identified in the phonological, the morphological and the syntactic domains as well as at the syntax–pragmatics and the syntax–lexicon/syntax–semantics interfaces (Müller 1998; Döpke 2000; Yip and Mathews 2000; Hulk and Müller 2000; Paradis 2001; Nicoladis 2002; Paradis and Navarro 2003; Zwanziger et al. 2005; Serratrice et al. 2009; Fernández Fuertes and Licerias 2010; Licerias et al. 2010, 2012, among others). This influence has been accounted for in terms of linguistic theory (i. e. interfaces, core syntax), language dominance or input factors (Paradis and Navarro 2003; Serratrice et al. 2004; Cantone et al. 2008; Argyri and Sorace 2007; Paradis 2001; Fernández Fuertes and Licerias 2010; Licerias et al. 2010, 2012; Unsworth et al. 2011; Argyri et al. 2010; Sorace 2011, among others).

Cross-linguistic influence can have an interfering effect, as would be the case with the overproduction of overt subjects in Spanish, which would result in the bilingual producing less adult-like forms along the acquisition process and a later attainment of the adult grammar, when compared to the monolingual. However, cross-linguistic influence can be facilitating in that bilingual children will produce more adult-like forms along the acquisition process and they will project the adult grammar earlier than their monolingual counterparts.

In this paper, we investigate the effects of cross-linguistic influence between English and Spanish in relation to sentential subjects. We specifically aim at determining: (i) whether the obligatory presence of overt subjects in English has an effect in the distribution of overt/null subjects in the Spanish of English–Spanish bilingual children and (ii) whether the existence of both null and overt subjects in Spanish has an effect in the distribution of

overt/null subjects in the English of English–Spanish bilingual children. In the next section of the paper, we deal with recent approaches to the so-called pro-drop or null subject parameter that differentiates English and Spanish in relation to the realization of null and overt subjects. In Section 3, we take this framework as a point of departure to formulate hypotheses related to the facilitating and interfering effects that English can have in the Spanish of English–Spanish bilinguals and Spanish in the English of these same bilinguals. Section 4 is devoted to the description of the study that we have carried out. It consists of a presentation of the methodology: subjects and data used in the study, data classification and codification and data analysis. We conclude, in Section 5, with a discussion of the results at the light of the Minimalist accounts of the null subject parameter that underlie our study.

2 Linguistic theory and the analysis of sentential subjects

This century has witnessed important changes in the way the null subject parameter has been depicted in the Minimalist Program (Holmberg 2005; Sheehan 2006). A relevant development in dealing with null subject languages was Rohrbacher's (1992) generalization, taken up by Speas (1994), according to which "strong morphemes have individual lexical entries in the numeration while weak morphemes do not" (Speas 1994: 185). Speas argues that null determiner phrases (DPs) are distributed in terms of economy principles so that a given head is projected only if it has semantic and phonological content. This leads to a reformulation of the pre-Minimalist accounts of the null subject parameter (i. e. Rizzi 1982, 1986). In this reformulation advanced by Alexiadou and Anagnostopoulou (1998), the null subject parameter is defined in relation to extended projection principle (EPP) checking. Namely, how the EPP feature is checked will determine whether a language is a pro-drop (+null subject) or a non-pro-drop (–null subject) language.

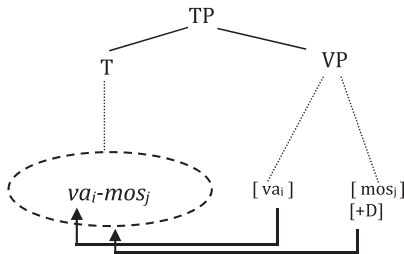
The two sets of pronouns (null and overt) available in null subject languages such as Spanish have been traditionally differentiated both by syntacticians (Fernández Soriano 1989; Ordoñez 1997; Kato 1999) and also when dealing with acquisition data (Licerias 1988, 1989; Paradis and Navarro 2003; Serratrice et al. 2004; Montrul and Rodríguez-Louro 2006). Namely, in the acquisition of Spanish, the syntactic availability of null subjects was differentiated from the stylistic conventions that regulate the distribution of overt subjects. In this

paper, we take upon new formal accounts of this differentiation to investigate cross-linguistic influence in child bilingualism.

There are two Minimalist accounts of the null subject parameter that make different predictions with respect to the syntax of the null and overt subjects available in (+null subject) languages. On the one hand, we have Alexiadou and Anagnostopoulou’s (1998) account, based on Speas’ (1994) depiction of strong morphemes and, on the other, Holmberg’s (2005) and Sheehan’s (2006) micro-parametric account.

In Alexiadou and Anagnostopoulou’s (1998) account, Spanish pronominal markers contrast with English pronominal subjects in how they check the EPP feature. In the case of Spanish, checking of the EPP feature occurs by merging the verb with the DP morpheme (X^0 movement), as depicted in the tree structure in (5).

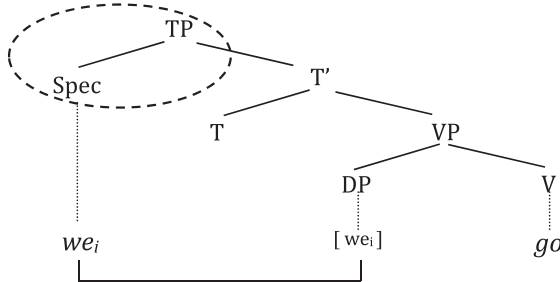
- (5) Spanish
Vamos.
 go-PRS.1PL
 ‘We go.’



The rationale behind this proposal is that Spanish verbal agreement affixes are considered pronominal elements that have a categorial feature (+D) listed in the numeration along with the verbal root. These Spanish-bound morphemes or affixal personal markers that appear post-verbally (e. g. *-mos* in [5]) have semantic content and are, therefore, (+interpretable).

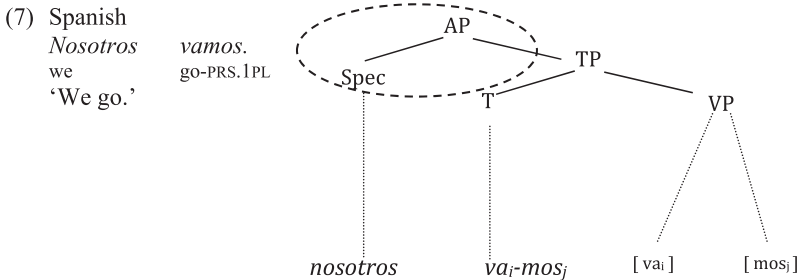
In the case of English, checking of the EPP feature takes place by merging an overt pronominal element with the Specifier position of Tense Phrase (Spec TP) where the DP moves (X-phrasal (XP) movement), as shown in the tree structure in (6).

- (6) English
We go.



In this account, the two categories, English overt subjects and Spanish pronominal affixes, occupy a different position: Spanish agreement markers merge with the verb root in tense while English pronominal subjects occupy Spec TP position, as in (5) versus (6). Since agreement affixes are considered to be part of the numeration, as English pronouns are, this implies that these agreement markers are the Spanish equivalent of English weak pronouns in relation to how the null subject parameter is defined.

As for Spanish overt pronominal subjects, which have been said to always convey a semantic or pragmatic value, they have been analyzed as occupying a focus position (Fernández Soriano 1989; Ordoñez 1997; Kato 1999). Thus, Spanish pronoun *nosotros* ‘we’ is not moved from the Spec VP position to the Spec TP position as the English pronoun *we* in (6) but is rather merged to that focus position, as the tree structure in (7) shows.¹



According to this proposal, the Spanish overt pronoun *nosotros* ‘we’ is not moved but rather generated in an adjunct phrase (AP) focus position. Under this analysis, English has overt pronouns that check the EPP feature on Spec TP and Spanish has agreement markers that check the EPP feature via merge with the verb root on T.

The Minimalist account of the null subject parameter that we adopt here is the one proposed by Holmberg (2005), Sheehan (2006) or Martínez (2011). In this account, the null subject parameter is split into the three micro-parameters listed in (8).

- (8) A micro-parametric approach to the null subject parameter
- (i) The rich agreement parameter
 T lacks/bears an [uD] feature.
 - (ii) The phonological form (PF)-interpretability parameter
 T lacks/bears a *, where * requires the specifier of T to be spelled out at PF.

¹ Kato (1999) refers to this focus position as A(djunct).

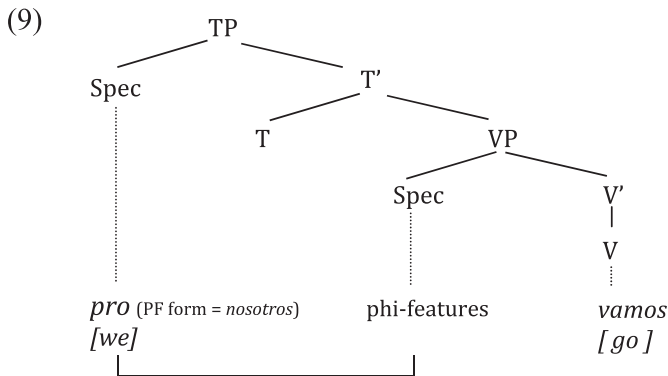
(iii) The weak/strong nominative Case parameter

Nominative Case feature [uI] lacks/bears *, where * requires movement to Spec TP.

*means that Spec TP must be spelled out at PF (adapted from Martínez 2011: 85)

Under this account, the presence of overt and null subject pronouns in Spanish and overt subject pronouns in English is regulated by the following facts:

1. The possibility of having a zero pronoun is a PF matter, which is possible in Spanish.
2. In Spanish, EPP checking proceeds as in English-type languages (Holmberg 2005), and the subject pronoun is not spelled out.
3. In Spanish, EPP checking proceeds in three steps. First, the null subject needs to rise to Spec TP because, even if it bears phi-features, it lacks the deictic/referential [D] feature; this null subject has the option of being overtly realized in Spanish. This, we argue in this paper, is crucial for understanding the use of overt pronouns in both adult and child Spanish. Second, the V + morphological agreement moves to T. Finally, feature valuation between the uninterpretable features in T and the interpretable ones in V takes place, as shown in (9).



If overt pronominal subjects are used, the interpretable case features of V (in T) will value the uninterpretable ones in the PF-realized pronominal subject (*nosotros* 'we'). This agree relationship results in feature identity between the specifier (i. e. the subject in Spec TP) and its head (i. e. the verb in T).

Under this analysis, Spanish agreement markers and English pronominal subjects have a different status in that Spanish agreement markers are not involved in EPP checking and it is Spanish weak pronominal subjects that have the same status as English pronominal subjects. Thus, we believe that Holmberg's (2005)

and Sheehan's (2006) depiction of the null subject parameter has advantages over Alexiadou and Anagnostopoulou's (1998). In the first place, it does not lead to the creation of two different structural positions, one for *-mos* and another one for *we*, as in (5) and (6), respectively. Second, it deals with Spanish weak overt pronouns, which were not dealt with in previous proposals. In fact, Spanish overt pronouns were considered to always have pragmatic value. And last but not least, English only represents one option of the parameter, the one that has a PF realization of the subject pronoun. This implies that English is clearly depicted as a subset of Spanish, which has two options: a PF realization (i. e. the overt subject) or a non-PF realization (i. e. the null subject). Thus, this analysis allows us to define the null subject parameter in terms of the subset principle, something that was not possible under the pre-Minimalist analyses (Licerias 1988) and is not possible under Alexiadou and Anagnostopoulou's (1998) analysis. However, it comes with what may be considered a complication: the subset option (the PF realization of subject pronouns) happens to be the marked option in Spanish. In the traditional view of the subset principle or the subset condition (Berwick 1985; Atkinson 1992), the subset option is normally considered the unmarked option.² However, in this specific case, null pronouns are also considered to be less marked than phonetically realized weak pronouns. Thus, within the two options which are possible in Spanish, we adopt Holmberg's (2005) and Sheehan's (2006) proposal according to which the null option is the less marked. This means that influence from English leading to a preference for overt pronouns should not be strong because the unmarked option will have more weight.

3 Hypotheses and predictions for the analysis of English–Spanish bilingual data

For English–Spanish bilinguals, both their languages may exercise cross-linguistic influence on each other with respect to the production of null and overt subject pronouns.³ Consequently, we will formulate and test the hypotheses in relation to both the English and the Spanish of these bilinguals.

² While it would be interesting to further discuss and test the subset principle and markedness proposals as such, it is out of the scope of this paper to take on this rather complex and controversial topic.

³ An anonymous reviewer refers to the term *production of null subjects* as a contradiction in terms. Although we agree that there seems to be an intrinsic contradiction in using the terms *production* and *null subjects* together, the use of these apparent contradictory terms is quite

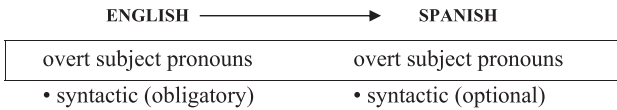
3.1 Cross-linguistic influence from English into Spanish

The possible overproduction of subject pronouns in child bilingual Spanish due to influence from the obligatory realization of subject pronouns in English has been and continues to be investigated. To this date, there is no agreement as to whether there is actual overproduction and, if there is, whether it is due to cross-linguistic influence from English or to input from a variety of Spanish (Cuban Spanish) and from non-native Spanish (Paradis and Navarro 2003; Liceras et al. 2008, 2012; Nussbaum and Grinstead 2013).⁴

Thus, if there is cross-linguistic influence from English into Spanish, we would like to formulate hypothesis 1 as in (10).

(10) HYPOTHESIS #1.

INTERFERENCE: OVERPRODUCTION OF SUBJECT PRONOUNS IN CHILD BILINGUAL SPANISH



According to this interference hypothesis, the Spanish of bilingual children would contain more overt subjects than the Spanish of monolingual children because of influence from their other L1, English.

However, if we adopt Holmberg's (2005) and Sheehan's (2006) proposal according to which Spanish has weak overt pronouns which are the phonetic realization of null pronouns and happen to be marked, we do not expect that the obligatory realization of overt pronouns in English will lead to overproduction of subject pronouns in bilingual Spanish when compared to monolingual

widespread in the acquisition literature (e. g. the presence of null categories, the content of empty categories). In fact, the conceptualization of empty categories in the theory as being real linguistic entities which carry features and are involved in AGREE, MOVE, etc. eliminates the apparent contradiction.

4 It is important to state that the acquisition and the possible cross-linguistic influence related to Spanish strong pronouns (the ones that have a pragmatic value) should be investigated in relation to English strong pronouns, be them non-nominative or the emphatic version of nominative pronouns. This is something that we will not take up in this paper. Furthermore, it is logically possible to hypothesize that the Spanish of both the bilingual and the monolingual children may have illicit null subjects (null subjects that would carry pragmatic value as it is the case with the strong overt Spanish pronouns or English strong pronouns). This has in fact been discussed in the case of heritage and L2 Spanish (Montrul 2004; Montrul and Rodríguez-Louro 2006) and also native Spanish (Liceras et al. 2010). This is out of the scope of this paper too.

Spanish. In fact, this is not to be expected because in Spanish the non-PF realization option is preferred under Minimalist economy assumptions (it is the unmarked option). Thus, we would like to formulate hypothesis 2 as in (11).

(11) HYPOTHESIS #2.

NO INTERFERENCE: NO OVERPRODUCTION OF SUBJECT PRONOUNS IN CHILD BILINGUAL SPANISH

ENGLISH▶	SPANISH
overt subject pronouns • syntactic (obligatory)	weak overt subject pronouns • syntactic (non-pragmatic) (optional)	

Thus, what this hypothesis states is that cross-linguistic influence should not favor the reinforcement of the marked option (weak overt pronouns) in Spanish.

3.2 Cross-linguistic influence from Spanish into English

In the case of bilingual English, we will contemplate two scenarios: one where Spanish null subjects may cause *interference* and one where they may cause *facilitation*. As shown in (12), if Spanish null subjects (AGR markers, a grammatical option in Spanish) are transferred into English (an ungrammatical option in English) and, therefore, cross-linguistic influence has an interfering effect, we hypothesize (hypothesis 3) that English–Spanish bilingual children will produce more null subjects and for a longer period than English monolingual children.

(12) HYPOTHESIS #3.

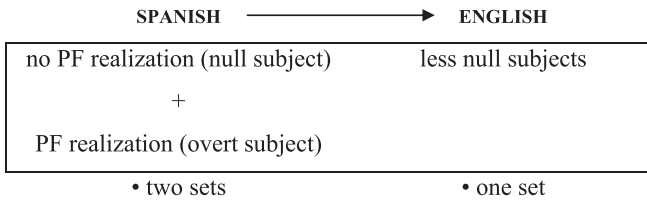
INTERFERENCE: MORE OMISSION OF SUBJECT PRONOUNS IN CHILD BILINGUAL ENGLISH

SPANISH	————▶	ENGLISH
null subjects (AGR markers)	null subjects	
• grammatical option		• ungrammatical option

This assumption is based on the fact that the more economic option of the PF-interpretability micro-parameter (i. e. pronouns with no PF realization as described in (ii) in [8]) would be transferred. However, Spanish also has the PF realized option (the marked one), which leads us to formulate hypothesis 4 in (13).

(13) HYPOTHESIS #4.

FACILITATION: LESS OMISSION OF SUBJECT PRONOUNS IN CHILD BILINGUAL ENGLISH



What this hypothesis implies is that English–Spanish bilinguals will produce less null subjects in English than monolingual children because cross-linguistic influence from Spanish will have a facilitating effect. This is to be expected because Spanish, being the superset language also provides the PF realized option with overt subject pronouns. This option reinforces the overt value of English subjects – the only option in English – so that the null subject stage is shorter. We rely here on the fact that overt pronouns in Spanish need not have a pragmatic value. As a consequence of this facilitating cross-linguistic influence, the so-called Optional or Root Infinitival Stage (Rizzi 1993/1994; Wexler 1994, 1998) should be shorter – and may have a lower incidence – in bilingual than in monolingual English.

4 The study

To test the hypotheses formulated in Section 3, we analyzed English data from two bilingual children and one monolingual child, and Spanish data from two bilingual children and one monolingual child. We carried out a classification of the data and analyzed the omission and production of subject pronouns in the first recordings available and for a period of 1 year.

4.1 Participants and data selection

The participants in this study come from the CHILDES database (MacWhinney 2000). They are as follows: (i) two child bilingual twins (Simon and Leo) from the FerFuLice corpus and the adults who interact with them; (ii) one Spanish monolingual child (María) from the López-Ornat corpus; and (iii) one English monolingual child (Naomi) from the Sachs corpus.⁵

⁵ An anonymous reviewer indicates that it would have been important to match the bilinguals and the monolinguals for sex. However, matching for sex is not an option because we made the selection on the basis of the comparable data available on CHILDES. Furthermore, and to the

The two bilingual twins were born in Salamanca (Spain) where they presently live (Fernández Fuertes and Licerias 2010; Licerias et al. 2012). The father is a native speaker of Castilian Spanish, and the mother is a native speaker of American English. The father always speaks to the children in Spanish, and the mother always addresses them in English (the so-called “rule of Grammont”, the *one parent one language* strategy [Grammont 1902]). According to an extensive and a comprehensive parental questionnaire, this practice was followed from the moment the twins were born and it has been so since. The parents generally speak Spanish with each other, except during the summer when they travel to the USA for approximately 2 months or when a monolingual English speaker is present. Therefore, this is a case of bilingual English–Spanish first-language acquisition in a monolingual-Spanish social context, a type of bilingualism which is referred to in the literature as individual bilingualism (Bhatia and Ritchie 2004). During the first year, the mother was the primary caretaker of the twins. The father was present all day on weekends and less on weekdays. Through age 1;00 there was also a cleaning woman who spent approximately 4 h per day in the home and provided additional exposure to Spanish. At age 1;10 the twins began attending daycare for 3 h a day on weekdays, where the language of the staff and other children was Spanish. Apart from the mother, additional contact with English was provided by once-a-month meetings with other English–Spanish bilingual children living in Salamanca, as well as visits by the maternal grandparents at least twice a year and by the already mentioned lengthy visits of about 2 months each to the USA every summer. The data collected cover the age range of 1;01–6;11. A total of 304 sessions were recorded on videotape and DVD, of which 187 were in an English context (i. e. with an English interlocutor such as the interviewer or their mother) and 117 in a Spanish context (i. e. with a Spanish interlocutor such as the interviewer or their father). The Spanish recordings were made at intervals of 2–3 weeks until age 3;00 (with some interruptions during the summer holidays), and then once a month after that. The English recordings were sometimes made more frequently, but the sessions were usually much shorter and recorded on consecutive days. The children were recorded in naturalistic settings, usually at home, and appeared together in the majority of the sessions. They were mostly engaged in normal play activities with the interlocutor.

best of our knowledge, the available studies which discuss null and overt subject production do not match the children in terms of sex (i. e. Becker 2000, 2004; Paradis and Navarro 2003; Serratrice et al. 2004; Berger-Morales et al. 2005; Grinstead, to appear, among others).

María, the Spanish monolingual child, is an only child who was born and lives in Madrid (Spain). She was videotaped from ages 1;07 to 4;00, every fortnight in sessions of about 30 minutes. Those took place at home during bath, play or feeding interactions with her parents, who belong to a Spanish middle-class professional family.

Naomi, the English monolingual child, was born in the USA and the transcripts cover the time from age 1;1 to 5;1.

The data selection for the study is described in Table 1. It shows that the bilingual children (Simon and Leo) were three/quarter months older than the monolingual children (María and Naomi) when the recordings begun. It also shows that the MLUw (MLU measured in words) is a little higher in the case of the monolingual children, but still within a very comparable range.

Table 1: Data selection.

Child	Age range	MLUw range [Spanish]	MLUw range [English]	Corpus [CHILDES]
Simon [EN/SP]	1;10–2;11	1.070–3.705	1.000–2.765	FerFuLice
Leo [EN/SP]	1;10–2;11	1.143–3.438	1.000–3.018	FerFuLice
María [SP]	1;07–2;06	1.481–4.647	–	López-Ornat
Naomi [EN]	1;06–2;07	–	1.058–3.689	Sachs

The number of verbal utterances that appear in the data selection and that are included into the analysis is depicted in Table 2.

Table 2: Number of verbal utterances.

Child	No. verbal utterances [Spanish]	No. verbal utterances [English]
Simon [EN/SP]	304	302
Leo [EN/SP]	379	419
María [SP]	761	–
Naomi [EN]	–	1,248

Because we wanted to cover approximately the same number of months, the total number of utterances included varies somehow, both between the two bilinguals and between the bilinguals and the two monolinguals. We should also point out that this difference between the amount of verbal utterances considered for the monolinguals and the bilinguals both in English and in Spanish is part of the idiosyncratic production of each child.⁶

⁶ An anonymous reviewer mentions that it would be advisable to try to match the children for age, MLU and number of verbal utterances. However, we would like to point out that this is virtually impossible.

4.2 Data classification and codification

Besides analyzing the children's production, we also analyzed the adults' production. The rationale behind this was to determine whether and how input could shape the omission and production of subject pronouns by these children.

In the case of the Spanish data, we analyzed all the agreement markers for 1st, 2nd and 3rd person singular and plural as well as 2nd person singular formal and informal (*tú* 'you-SG-informal' and *usted* 'you-SG-formal') and second person plural formal and informal (*vosotros* 'you-PL-informal' and *ustedes* 'you-PL-formal'). When the referent of a null subject was not obvious, it was codified as such (i. e. unclear referent).

We classified as Root Infinitives (RIs) the Spanish forms that cannot carry agreement markers, namely infinitives as in (14a), gerunds as in (14b) and participles as in (14c).

(14) Spanish

- | | | | |
|----|----------------------------|------------|---|
| a. | <i>poner</i>
put-INF | instead of | <i>pongo</i>
put-PRS.1SG |
| b. | <i>cantando</i>
singing | instead of | <i>estoy cantando</i>
(I) am singing |
| c. | <i>venido</i>
come-PTCP | instead of | <i>han venido</i>
(they) have come |

We also identified all person-number mismatches in verbal morphology, in other words, the mismatches between the forms produced versus the actual referent, as shown in (15) for null subjects, and in (16) for pronominal subjects.

(15) Spanish

- | | | | |
|----|----------------------------|------------|----------------------------|
| a. | <i>ves</i>
see-PRS.2SG | instead of | <i>veo</i>
see-PRS.1SG |
| b. | <i>come</i>
eat-PRS.3SG | instead of | <i>como</i>
eat-PRS.1SG |

(16) Spanish

- | | | | |
|----|--|------------|---|
| a. | <i>Los niños viene.</i>
the boys come-PRS.3SG | instead of | <i>Los niños vienen.</i>
the boys come-PRS.3PL |
| b. | <i>El niño como.</i>
the boy eat-PRS.1SG | instead of | <i>El niño come.</i>
the boy eat-PRS.3SG |
| c. | <i>Pedro vas.</i>
Pedro go-PRS.2SG | instead of | <i>Pedro va.</i>
Pedro go-PRS.3SG |

Overt subjects were classified as follows: personal pronouns (*yo* ‘I’, *tu* ‘you-sg’...), DPs (*la niña* ‘the girl’, *un tren* ‘a train’...), CPs (*el león que tiene hambre* ‘the lion that is hungry’), quantifiers (*muchos* ‘many’...), demonstratives (*estas* ‘these ones’...), coordinated subjects (*el perrito y yo* ‘the doggy and me’) and RI subjects. Some examples appear in (17).

- (17) Spanish
- | | | |
|-------------------------------------|--------------|---------------------------------|
| a. <i>Yo quiero.</i> | [Leo 1;10] | overt: personal pronoun |
| ‘I want.’ | | |
| b. (La) <i>bota no está.</i> | [María 1;07] | overt: DP |
| ‘(the) boot is not (here)’ | | |
| c. <i>Ese roto eso.</i> | [Leo 2;05] | overt: demonstrative |
| ‘this one (has) broken this other.’ | | |
| d. <i>Yo poner.</i> | [Leo 2;05] | overt: personal
pronoun + RI |
| ‘I to put.’ | | |

We have also included post-verbal subjects with experiencer verbs, as in (18), as well as with transitive verbs, unaccusative verbs, state verbs, etc., as in (19).

- (18) Spanish
- | | |
|----------------------------|--------------|
| a. <i>Dolía esta pupa.</i> | [María 1;07] |
| hurted this sore | |
| ‘This sore hurts.’ | |
| b. <i>Se asusta eso.</i> | [Simon 2;07] |
| frightens this | |
| ‘This is frightened.’ | |
- (19) Spanish
- | | |
|-------------------------------|--------------|
| a. <i>No están las botas.</i> | [María 1;07] |
| not are the boots | |
| ‘The boots are not (here).’ | |
| b. <i>No está mu mu.</i> | [Leo 2;00] |
| not is mu mu | |
| ‘The cow is not (here).’ | |

In the case of the English data, null subjects were also classified depending on the referent (1st, 2nd, 3rd person singular and plural) or the unclear referent (the null subject cannot be identified). We also codified non-adult-like uninflected forms such as the bare forms (RIs) in (20a), the gerunds in (20b) or the participles in (20c), as well as with tensed verbs in the present, past or with a modal (the examples in 21).

(20) English

- | | | | |
|---------------------|------------|-------------------------|--------------|
| a. <i>Bite me.</i> | instead of | <i>He bites me.</i> | [Simon 2;11] |
| b. <i>Sleeping.</i> | instead of | <i>He is sleeping.</i> | [Simon 1;10] |
| c. <i>Finished.</i> | instead of | <i>I have finished.</i> | [Leo 2;11] |

(21) English

- | | | | |
|-----------------------------|------------|----------------------------|--------------|
| a. <i>Make a big house.</i> | instead of | <i>I make a big house.</i> | [Leo 2;11] |
| b. <i>Got some too.</i> | instead of | <i>I got some too.</i> | [Naomi 1;11] |
| c. <i>Can eat it.</i> | instead of | <i>I can eat it.</i> | [Naomi 1;11] |

For overt subjects, we isolated the same categories as in Spanish, namely, personal pronouns, DPs, CPs, indefinites, demonstratives, coordinated subjects and non-nominative subjects as in (22).

(22) English

- | | | | |
|---------------------|------------|--------------------|--------------|
| <i>Me read you.</i> | instead of | <i>I read you.</i> | [Naomi 2;00] |
|---------------------|------------|--------------------|--------------|

We also identified non-adult-like uninflected forms such as the bare RIs in (23a), the bare gerunds in (23b) and the bare participles in (23c).

(23) English

- | | | | |
|------------------------------|------------|----------------------------|--------------|
| a. <i>A wolf eat Fergie.</i> | instead of | <i>A wolf eats Fergie.</i> | [Leo 2;11] |
| b. <i>I eating.</i> | instead of | <i>I am eating.</i> | [Naomi 1;11] |
| c. <i>All gone.</i> | instead of | <i>All is/has gone.</i> | [Naomi 1;08] |

As for tense, we isolated the production of overt subjects with present, past and modal tenses, as shown in (24).

(24) English

- | | |
|----------------------------|--------------|
| a. <i>I find.</i> | [Naomi 1;11] |
| b. <i>I did it.</i> | [Naomi 1;11] |
| <i>I got it.</i> | [Simon 2;11] |
| c. <i>I can't open it.</i> | [Naomi 2;06] |

We also codified post-verbal subjects, as in (25), and predicates where the copula is omitted, as in (26).

(25) English

- | | |
|-----------------------------|--------------|
| <i>Pop goes the weasel.</i> | [Naomi 2;07] |
|-----------------------------|--------------|

(26) English

- | | |
|-----------------------|--------------|
| <i>He _ a pottie.</i> | [Naomi 1;06] |
| <i>I _ hungry.</i> | [Leo 2;11] |

We excluded from our codification, for both the Spanish and the English data, imperatives, adult infinitives, existentials, impersonals, interrogatives, exclamatives involving a *wh*-word, subject relatives (e. g. *the ball that is blue is here*), unproductive forms (e. g. *no veas; es que; that's right*) or vocatives.

4.3 Data analysis: omission and production of subject pronouns

Table 3 shows the distribution of null, overt pronominal and non-pronominal overt subjects in the bilinguals' and the monolingual's production.

Table 3: General distribution of subject types across participants.

Child	Spanish			Total Spanish	English			Total English
	Null	Pronoun	Overt		Null	Pronoun	Overt	
Simon [EN/SP]	74.6 % (227)	11.4 % (35)	14 % (42)	100 % (304)	22.5 % (68)	63.3 % (191)	14.2 % (43)	100 % (302)
Leo [EN/SP]	72 % (273)	12 % (45)	16 % (61)	100 % (379)	25 % (105)	63 % (263)	12 % (51)	100 % (419)
María [SP]	70 % (527)	6 % (50)	24 % (184)	100 % (761)				–
Naomi [EN]	–				35.4 % (442)	44.4 % (554)	20.2 % (252)	100 % (1,248)

The percentages corresponding to the production of the 4 children show that they are rather balanced in that (i) in Spanish, null subjects are the ones used the most (around 70 % for the bilinguals and the monolingual alike) over pronominal subjects and other overt subjects (i. e. DPs, CPs, etc. as in [17] above); and (ii) in English, pronominal subjects are the ones being favored (between 44 % and 63 %) over null subjects and other overt subjects (when comparing between children's preferences for English pronominal subjects, a contrast of proportions shows that the bilinguals significantly differ from the monolingual; $p=0$ for both Simon and Leo). Furthermore, a chi-square analysis comparing the distribution of the three subject types in the Spanish of the three participants and in the English of the three participants shows significant differences (both $p=0$).

In what follows, we offer a closer look at these results. We will first discuss the patterns of omission and production of Spanish subjects in Simon and Leo's data, the two English–Spanish bilingual children from the FerFuLice corpus, and those in María's, the Spanish monolingual child from the López-Ornat corpus. We will then

proceed with the discussion of the patterns of omission and production of English subjects in Simon and Leo's data and those in Naomi's, the English monolingual child from the Sachs corpus.

When analyzing the data, we have carried out contrasts of proportions in order to detect whether differences were significant or not. Where indicated, chi-square tests were also used when the focus was on the distribution of different forms across participants.

4.3.1 Patterns of omission/production of Spanish subjects by two English-Spanish bilingual children and one Spanish monolingual child

The classification of Spanish subjects produced by the three children appears in Table 4 (for null subjects), Table 5 (for overt pronominal subjects), Table 6 (for a comparison between null and pronominal subjects), Table 7 (for other overt subjects) and Table 8 (for RIs).⁷

As shown in Table 4, the two bilingual children produced mainly first person and third person singular verbal forms (agreement markers or null subjects).

Table 4: Null subjects in bilingual and monolingual Spanish.

	1st ps	2nd ps a	2nd ps b	3rd ps	1st pp	2nd pp a	2nd pp b	3rd pp	Total
Bilingual Spanish									
Simon	27 % (61)	0.4 % (1)	(0)	65.6 % (149)	5.3 % (12)	(0)	0.4 % (1)	1.3 % (3)	100 % (227)
Leo	36 % (98)	2.2 % (6)	0.3 % (1)	56.8 % (155)	1.1 % (3)	0.3 % (1)	(0)	3.3 % (9)	100 % (273)
Adults	14.2 % (281)	18.5 % (366)	(0)	32 % (630)	22 % (438)	5 % (101)	0.1 % (3)	8.2 % (162)	100 % (1,981)
Monolingual Spanish									
María	52.8 % (264)	4.2 % (21)	0.2 % (1)	33.4 % (167)	4.4 % (22)	(0)	1.2 % (6)	3.8 % (19)	100 % (500) ⁸
Adults	28.2 % (247)	27.2 % (241)	(0)	32.2 % (283)	12 % (101)	0.4 % (3)	(0)	(0)	100 % (911)

2nd ps a = informal (*tú* 'you-SG'); 2nd ps b = formal (*usted* 'you-SG').

2nd pp a = informal (*vosotros* 'you-PL'); 2nd pp b = formal (*ustedes* 'you-PL').

⁷ We have used the term RI as the umbrella term for all non-adult non-inflected forms, i. e. infinitives or bare forms, gerunds and participles.

⁸ Although María produced 527 verbal utterances with a null subject in Spanish (Table 3), 27 of these cases corresponded to cases in which the context did not make it possible to recover the

Even though the adults produced a higher number of null subjects overall, the pattern is similar in the case of first and third person singular forms, since both were favored by both the children and the adults. However, the pattern is rather different in that only the adults produce a high number of second person singular forms and third person plural forms. A chi-square comparing the distribution of null subjects across the six grammatical persons in the three children yields significant differences ($p = 0$).

The Spanish monolingual child, María, produces a higher number of null subjects than the two bilingual children (although, as in Table 3 above, if compared to her overall Spanish production, the bilinguals produce a significantly higher rate).⁹ In fact, in the case of first person singular, she even produces more null subjects than the adults ($p = 0$). Nonetheless, in spite of the total numbers, the pattern is very similar to that of the bilingual children.

In the case of the bilingual children as well as the monolingual one, the overall production of overt pronouns (Table 5) is lower for all persons but for the first person singular. This is also the case for the adults. The comparison of the two tables may lead us to infer that the very low number of subject pronouns produced by the children does not only speak to the fact that they are learning a

Table 5: Subject personal pronouns in bilingual and monolingual Spanish.

	1st ps	2nd ps a	2nd ps b	3rd ps	1st pp	2nd pp a	2nd pp b	3rd pp	Total
Bilingual Spanish									
Simon	88.6 % (31)	8.6 % (3)	(0)	2.8 % (1)	(0)	(0)	(0)	(0)	100 % (35)
Leo	69 % (31)	13.3 % (6)	(0)	17.7 % (8)	(0)	(0)	(0)	(0)	100 % (45)
Adults	63 % (249)	23 % (91)	(0)	7.8 % (31)	2.5 % (10)	0.7 % (3)	(0)	3 % (12)	100 % (396)
Monolingual Spanish									
María	64 % (32)	26 % (13)	(0)	6 % (3)	(0)	(0)	(0)	4 % (2)	100 % (50)
Adults	47.5 % (48)	43.5 % (44)	2 % (2)	6 % (6)	1 % (1)	(0)	(0)	(0)	100 % (101)

referent for the null subject. We have classified these as unclear cases. None were found in the bilinguals' production. Out of the 28 unclear cases in the monolingual data, 1 was produced by the adult and the others by María.

⁹ The three children produced 3 cases of mismatches (1 corresponds to the bilingual child Simon and 2 to the monolingual child, María).

null subject language but also to the fact that they are in the process of learning the vocabulary items.

It is important to note that María produces almost the same number of overt subject pronouns as the bilingual children. However, the comparison of the overall production of null subjects versus overt pronominal subjects in the case of the bilingual and monolingual children (Table 6) shows that the monolinguals produce a higher proportion of null subjects, but the tendency is the same for both the monolingual child and the adults. Furthermore, when comparing between children's preferences for Spanish null subjects, however, a contrast of proportions shows that significant differences appear between Simon and María ($p = 0.03$) but not between Leo and María ($p = 0.1$).

Table 6: Null versus overt pronominal subjects in bilingual and monolingual Spanish.

	Null	Pronominal
Bilingual Spanish		
Simon	86.6 % (227/262)	13.4 % (35/262)
Leo	85.8 % (273/318)	14.2 % (45/318)
Adults	83.3 % (1,981/2,377)	16.7 % (396/2,377)
Monolingual Spanish		
María	90.9 % (500/550)	9.1 % (50/550)
Adults	90 % (911/1,012)	10 % (101/1,012)

Therefore, it does not seem to be the case that the rate of null versus overt pronominal subjects produced by the children is a vocabulary issue but rather a clear-cut reflection of the implementation of the null subject parameter in child Spanish.

As for the relationship between María's production of null versus overt subjects, it is as expected, and it is almost the same as in the case of the adults (chi-square $p = 0.5$). We should point out that the bilingual children produce a higher percentage of overt subject pronouns than María ($p = 0.01$ in the case of Leo and $p = 0.03$ in the case of Simon). However, it is interesting to note that the adults who provide input to the bilingual children also produce a higher percentage of subject pronouns than the adults who provide input to the monolingual child ($p = 0$).

When it comes to the production of other overt subjects (i. e. proper names, full DPs, CPs, indefinites, demonstratives, coordinated subjects and post-verbal subjects with experiencer verbs and other verbs, as in examples [17], [18] and [19] above; and mismatching cases, as in examples [15] and [16] above), the child and the adult patterns are also similar and once more point to the fact, as shown in Table 7, that, at this stage, children seldom produce plural forms.

Table 7: Other overt subjects in bilingual and monolingual Spanish.

	PN		DP		CP	Indef.		Dem.		Co.	Verb-Subject		MMT	Total
	SG	PL	PL	PL	SG	PL	SG	PL	PL	Exp.	Other			
Bilingual Spanish														
Simon	33 % (22)	6 % (4)	(0)	1.5 % (1)	22.4 % (15)	(0)	(0)	(0)	1.5 % (1)	4.5 % (3)	31.1 % (21)	100 % (67)		
Leo	5.6 % (5)	2.2 % (2)	(0)	2.2 % (2)	40.5 % (36)	(0)	(0)	(0)	1.1 % (1)	3.4 % (3)	27 % (24)	100 % (89)		
Adults	11.1 % (118)	3.8 % (39)	(29)	0.5 % (5)	35.6 % (376)	2.4 % (25)	0.6 % (7)	0.9 % (10)	0.1 % (1)	22 % (230)	100 % (1,059)			
Monolingual Spanish														
María	28 % (82)	4.7 % (14)	(2)	2 % (6)	12.3 % (36)	0.3 % (1)	(0)	(0)	3.4 % (10)	1.7 % (5)	32.3 % (95)	100 % (294)		
Adults	5.2 % (28)	7 % (37)	(48)	0.4 % (2)	17.1 % (92)	0.4 % (2)	0.2 % (1)	1.8 % (10)	0.2 % (1)	25.6 % (137)	100 % (535)			

PN, proper noun; DP, determiner phrase; CP, complementizer phrase; Indef., indefinite; Dem., demonstrative; Co., coordinated subject; MMT, mismatches; SG, singular; PL, Plural; Exp., experimenter verb.

Table 7 also shows that this monolingual child also produces very few instances of plural subjects. What she produces is a higher number of post-verbal subjects than the bilingual children even though these adults produce less inverted subjects overall than the adults who provided the input to the bilingual children.

As for RIs with null subjects, the three children produced a very low number, as Table 8 shows and as expected for a Romance language (e.g. Licerias et al. 2006). María produces more cases but not so in terms of percentages considering the overall production (i.e. all instances of null subjects produced, both agreement markers as well as the null subjects which had an unclear referent). As expected, the adults did not produce any RI.

Table 8: RIs with null and overt subjects in bilingual and monolingual Spanish.

	Infinitives	Gerunds	Participles	Total
	Null/overt	Null/overt	Null/overt	
Bilingual Spanish				
Simon	3/1	0/0	2/2	2.2% (5/227)/3.8% (3/77)
Leo	0/1	0/1	7/3	2.5% (7/273)/4.7% (5/106)
Monolingual Spanish				
María	35/3	3/0	2/0	7.5% (40/527)/1.2% (3/235)

Table 8 also depicts the cases of RIs with overt subjects produced by the three children. Again, when compared to all the cases of overt subjects (i.e. personal pronouns as well as DPs, proper names, demonstratives and indefinites), the percentage of RIs stays within the range expected for a Romance language (Licerias et al. 2006).

We should point out that the differences between RIs with null versus RIs with overt subjects are not significant ($p = 0.2$; $p = 0.1$) in the case of the bilingual twins, but it is significant for the monolingual child ($p = 0$). Some instances of the RIs found in the data are shown in (27).

(27) Spanish

- a. *No tener café.* [Simon 2;07]
 not have-INF coffee
- b. *Caier (=caer) todas.* [Simon 2;00]
 fall-INF all
- c. *Yo corriendo.* [Leo 2;05]
 I running

- d. Yo poner entonces. [Leo 2;08]
 I put-INF then
- e. Mamá tapar. [María 1;07]
 Mummy cover-INF

These Spanish data show that the distribution of null and overt subjects in Spanish is the same for the bilingual children and the monolingual child, and they also show that the three children's output patterns with their respective adult input. Therefore, we conclude that in the case of Simon and Leo, there is no actual overproduction of subject pronouns but a higher number of subject pronouns, which is also present in the case of the adults. Thus, while it could be argued that hypothesis 1 is confirmed just on the basis of that higher production, we would like to argue that a higher percentage of overt subjects does not necessarily speak of actual overproduction because it is the case that many native speakers of Spanish from varieties other than the Caribbean varieties where production of subject pronouns is comparatively extremely high (i. e. Martínez 2011, among many others) produce high percentages of overt pronouns. This is why, we argue that Holmberg's (2005) and Sheehan's (2006) proposal according to which Spanish has weak overt pronouns is on the right track because it explains why native speakers from all varieties of Spanish alternate between null and weak overt subjects in contexts where there is no switch of reference, contrast or ambiguity. Furthermore, in anaphora resolution, native speakers of Spanish treat overt and null subjects similarly in anaphora resolution with ambiguous sentences such as (28),

(28) Spanish

- Juan_i saludó a Pablo_j mientras Ø_i/él_j [H] tocaba la guitarra
 Juan_i greeted Pablo_j while Ø_i/he_j [H] played the guitar

The pronominal subject *él* (he) in (28) can refer to the subject of the main clause as null subjects do (Licerias and Alba de la Fuente 2014, among others). This contrasts with Italian (Filiaci 2011; Filiaci et al. 2014) where there is a more clear-cut division of labor in that the overt pronoun seldom refers to the subject antecedent. This, we argue, provides evidence for the fact that Spanish overt pronouns can have a weak value.

We would like to point out that, as we have indicated in Section 4.1 (Participants and data selection), the twins' parents adopted the *one parent one language* communication strategy, which means that the twins were exposed to the same direct input in Spanish as the monolingual child, María, did because their father is a native speaker of Castilian Spanish too. This implies that we

cannot attribute the higher production of overt subjects by the twins to dialectal variation. However, it may be the case that the bilingual environment as such – not English *per se* – led to a higher use of overt subjects in both adult and child Spanish. That is, the higher production of overt subjects in Spanish is not to be interpreted as a sign of cross-linguistic influence since (i) there is no overproduction as such, as we have argued above; and (ii) in Spanish, the non-PF realization option is still preferred and thus complies with Minimalist economy assumptions (hypothesis 1 versus hypothesis 2). Furthermore, not only the child data but also the adult data show this higher production (see Table 6 and the analysis that follows). Therefore, the bilingual environment could be playing a role in this respect.

We would also like to point out that there are monolingual Spanish (and Catalan) children who produce more overt subjects than the twins, as shown in Tables 7–10 in Liceras et al.'s (2012) – where the age range makes the data clearly comparable.

Table 9: Children, age ranges, data sources and language*.

Child	Language	Data source	Age range
Julia	Catalan	Bel (2001)	1;7.19–2;6.25
Pep	Catalan	Serra-Solé (CHILDES)	1;6.23–3;0.27
Gisela	Catalan	Serra-Solé (CHILDES)	1;7.14–3;0.29
María	Spanish	López-Ornat (1994)	1;7–2;6
Emilio	Spanish	Vila (1984)	1;8.13–2;11.24
Juan	Spanish	Linaza (CHILDES)	1;7.2–2;10.21

*Adapted from Bel's (2001: 77) Tables 1 and 2.

Table 10: Production of null and overt subjects*.

Catalan children	Total No. of sentences	Null	%	Overt	%
Gisela	492	337	68.5	153	31.5
Julia	379	255	67.3	124	32.7
Pep	853	576	67.5	277	32.5
Total	1,724	1,168	67.7	554	32.3
María	1,545	1,027	66.4	518	33.6
Emilio	671	484	72.1	187	27.9
Juan	204	119	58.3	85	41.7
Total	2,420	1,630	67.3	790	32.7

*Adapted from Bel's (2001: 295) Table 5.

In summary, while we would like to argue that hypothesis 2 is confirmed, we acknowledge that given the fact that overt Spanish weak pronouns and English pronouns have the same syntactic value, it is not possible to determine to which extent English plays a role in “softening” the marked value of Spanish overt weak pronouns.

4.3.2 Patterns of omission/production of English subjects by two English–Spanish bilingual children and one English monolingual child

The classification of English subjects produced by the 3 children is shown in Table 11 (for null subjects), Table 12 (for overt pronominal subjects), Table 13 (for a comparison between null and pronominal subjects), Table 14 (for other overt subjects) and Table 15 (for RIs).

Table 11: Null subjects in bilingual and monolingual English.

	1st ps	2nd ps	3rd ps	1st pp	2nd pp	3rd pp	Total
Bilingual English							
Simon	27.3 % (12)	2.3 % (1)	59 % (26)	4.5 % (2)	(0)	6.9 % (3)	100 % (44)
Leo	17.6 % (16)	11 % (10)	40.6 % (37)	15.4 % (14)	1.1 % (1)	14.3 % (13)	100 % (91)
Adults	26.7 % (8)	6.6 % (2)	66.7 % (20)	(0)	(0)	(0)	100 % (30)
Monolingual English							
Naomi	86.4 % (280)	1 % (3)	11.1 % (36)	0.3 % (1)	(0)	1.2 % (4)	100 % (324)
Adults	15 % (3)	35 % (7)	45 % (9)	5 % (1)	(0)	(0)	100 % (20)

Both bilingual children produced null subjects with inflected verbs in English, as Table 11 shows for the bilinguals and the monolingual respectively.

A chi-square comparing the distribution of English null subjects across the six grammatical persons in the three children yields significant differences ($p = 0.01$). While null subjects tend to refer to singular grammatical persons, mainly 1st and 3rd person, in the three children, Naomi’s use of 1st person is significantly higher than Simon’s ($p = 0$) and Leo’s ($p = 0$), although no difference between the bilinguals appears ($p = 0.09$); whereas in the case of the 3rd person, Simon’s and Leo’s production is significantly higher than the monolingual’s ($p = 1$ for both children). In this case, the difference between the bilinguals is significant ($p = 0.02$).

Table 12: Subject personal pronouns in bilingual and monolingual English.

	Personal pronouns						Non-nominative	Total
	1st ps	2nd ps	3rd ps	1st pp	2nd pp	3rd pp		
Bilingual English								
Simon	75.3 % (144)	6.8 % (13)	15.8 % (30)	0.5 % (1)		1.6 % (3)	(0)	100 % (191)
Leo	80.2 % (291)	1.4 % (5)	13.5 % (49)	1.6 % (6)		3 % (11)	0.3 % (1)	100 % (363)
Adults	25.6 % (884)	30.4 % (1,048)	21 % (726)	18.5 % (640)	1.2 % (41)	3.3 % (113)	(0)	100 % (3,452)
Monolingual English								
Naomi	63.2 % (350)	15.5 % (86)	12 % (66)	0.2 % (1)		5 % (28)	4.1 % (23)	100 % (554)
Adults	25.1 % (183)	39 % (284)	26.5 % (193)	5.6 % (41)	0.1 % (1)	3.7 % (27)	0	100 % (729)

Table 13: Null versus overt subjects in bilingual and monolingual English.

	Null	Pronominal
Bilingual English		
Simon	18.7 % (44/235)	81.3 % (191/235)
Leo	20.1 % (91/453)	79.9 % (362/453)
Adults	0.9 % (30/3,482)	99.1 % (3,452/3,482)
Monolingual English		
Naomi	37.9 % (324/855)	62.1 % (531/855)
Adults	2.7 % (20/749)	97.3 % (729/749)

The adults also produced some null subjects especially with 1st and 3rd person singular referent, which was not expected but is not unusual in an informal dialogue. Examples of these null subjects produced by the adults appear in (29).

(29) English

- a. *Riding the horsie.* [FerFuLice corpus]
- b. *Gone.* [FerFuLice corpus]
- c. *Make you feel better.* [Sachs corpus]

In the analysis of null subjects produced by the three children, there was a total of 158 cases where we were not able to identify the referent for the English null subject (classified as unclear referent instances). Out of these cases, 24

Table 14: Other overt subjects in bilingual and monolingual English.

	PN		DP		CP		Indef.		Dem.		Co.	V-S	Null copula	Total
	SG	PL	SG	PL	SG	PL	SG	PL	SG	PL				
Bilingual English														
Simon	14% (6)	20% (9)	2.3% (1)	(0)	(0)	(0)	60% (26)	2.3% (1)	(0)	2.3% (1)	(0)	2.3% (1)	(0)	100% (44)
Leo	9.1% (5)	32.8% (18)	5.4% (3)	(0)	1.8% (1)	(0)	43.7% (24)	(0)	(0)	3.6% (2)	(0)	3.6% (2)	3.6% (2)	100% (55)
Adults	21.2% (203)	30.6% (294)	4% (39)	0.1% (1)	2.4% (23)	(0)	34% (324)	2.6% (25)	(0)	1.5% (15)	(0)	3% (29)	0.6% (6)	100% (959)
Monolingual English														
Naomi	10.2% (32)	33.1% (104)	1.3% (4)	(0)	6% (19)	(0)	38.2% (120)	1.6% (5)	(0)	3.2% (10)	(0)	3.2% (10)	6.4% (20)	100% (314)
Adults	9.5% (43)	38% (172)	3.5% (16)	0.2% (1)	2.4% (11)	0.2% (1)	43.4% (197)	2.4% (11)	0.2% (1)	0.2% (1)	(0)	0.2% (1)	(0)	100% (454)

Table 15: RIs with null and overt subjects in bilingual and monolingual English.

	<u>Infinitives</u>	<u>Gerunds</u>	<u>Participles</u>	<u>Total</u>
	<u>Null/overt</u>	<u>Null/overt</u>	<u>Null/overt</u>	<u>Null/overt</u>
Bilingual English				
Simon	25/5	10/2	23/2	85 % (58/68)/3.8 % (9/234)
Leo	37/11	22/10	19/2	74 % (78/105)/5.5 % (23/414)
Monolingual English				
Naomi	71/44	68/58	4/5	32 % (143/442)/12.7 % (107/838)

corresponded to Leo, 14 to Simon, 118 to Naomi and 2 to the adults in the FerFuLice corpus.

As for subject personal pronouns, the number is obviously much higher than it was in Spanish although children produce very few instances of plural pronouns here, too, as it is shown in Table 12.

When comparing overt and null subjects in the production of the three children (Table 13), the data show that Naomi produces a higher number of null subjects than Simon ($p = 0$) and Leo ($p = 0$) (while no significant differences appear between the two bilingual children, $p = 0.3$).

This lower production of null subjects by the two bilinguals when compared to Naomi, the monolingual child, confirms hypothesis 4 (versus hypothesis 3) which states that Spanish facilitates the implementation of the obligatory presence of overt subject pronouns in the English of the English–Spanish bilingual children. These same data lead us to reject hypothesis 3 since it shows that the bilingual children do not omit more subject pronouns than the monolingual child as a result of interference from Spanish.

When it comes to the production of other overt subjects (i. e. proper names, full DPs, CPs, indefinites, demonstratives, coordinated subjects, post-verbal subjects and instances of copula omission), the child and the adult patterns are also similar and once more point to the fact that, at this stage, children seldom produce plural forms, as shown in Table 14.

As Table 14 shows, bilinguals produce very few cases of post-verbal subjects in English and of null copula when compared to the monolingual, although the rates are very low for the three children.

The proportion of RIs with null and overt subjects is shown in Table 15, considering the overall production (i. e. all instances of null subjects produced, including those null subjects which had an unclear referent and all overt subject types including personal pronouns as well as DPs, proper names, demonstratives and indefinites).

A contrast of proportions between RIs with null and overt subjects in English yields a significant result for both the bilinguals and the monolinguals (all $p = 0$). These percentages for the use of RIs with null and overt subjects in English show that, when the subject is overt, a fully inflected verb is typically used, that is, the adult requirement for overt subjects is linked to the presence of inflected verbs, especially for the bilingual children who show a higher use of RIs with null subjects.

What stands out as very different from Spanish (Table 8) is the number of English null subjects with uninflected forms produced by the children (Table 15). This is what has been systematically reported for monolingual English, and it is what we see in the case of Naomi who produces more null subjects with uninflected forms.

Thus, the facilitating effect from Spanish that we see with the bilingual production of null subjects with inflected forms does not show in the case of RIs, at least at this stage and with null subjects. This implies that the bilingual children realize earlier that the non-PF realization (the superset option) is not an option for English inflected verbs. However, this seems to be independent of the syntactic mechanisms that lead to the abandonment of the RI stage.

5 Conclusions: linguistic theory and cross-linguistic influence

We have shown that, even if the bilingual children produce a higher percentage of subject pronouns than the monolingual child, there is no actual overproduction of subject pronouns in child bilingual Spanish, at least in the case of these two bilingual children. We have argued that Spanish bilingual children behave like Spanish monolingual children in this respect because the Spanish non-PF realization option is favored over the Spanish PF realization option. We have further shown that there is not more omission of subject pronouns in child bilingual English than in child monolingual English. In fact, we have also shown that there is less omission of subject pronouns in child bilingual English. We attribute this to cross-linguistic influence with a facilitating effect. Namely, the English of bilingual children contains less null subjects than the English of monolingual children because of influence from their other L1, Spanish. This can also be accounted for by the fact that Spanish also has a PF realization option of the parameter. This option, albeit marked in Spanish, reinforces the similar option available in English, which happens to be the subset option with respect to Spanish.

Based on the above, the approach to the null subject parameter that we have adopted allows us to account for the data as follows: Spanish represents the superset option because it allows a PF and a non-PF realization of subjects while English represents the subset option because it only allows the PF realization. The PF realization, even if it is the subset option because it is shared by the two languages, is considered the marked option because null pronouns are less marked than overt pronouns. Thus, the superset option (by definition marked option but *unmarked* in this specific instance due to the nature of null pronouns) from Spanish (i. e. the non-PF realization) is stronger than the potential effect of the non-PF realization which is only possible in Spanish and which would be marked in a canonical interpretation of the subset principle. Therefore, the subset option does not cause cross-linguistic influence from English into Spanish (i. e. there is no overproduction of overt subject pronouns in the Spanish of the bilingual children) but does have a facilitating cross-linguistic effect in that it speeds the obligatory production of overt subject pronouns in bilingual English. This latter case resembles the situation depicted in the case of the availability of two lexical items *ser* and *estar* to realize copula *be* in English. These lexical saliency has been said to be responsible for the significantly lower rate of omission of copula *be* by bilingual than by monolingual children (Becker 2000, 2004; Fernández Fuertes and Liceras 2010; Liceras et al. 2012). We would like to argue that there is a parallelism linked to the lexical realization of subjects in Spanish (null subjects identified by agreement markers and weak overt pronominals) and the lexical differentiation of stage level versus individual level predicates (both realized as *be* in English but realized as *estar* and *ser* respectively in Spanish). In other words, what we would like to propose is that in a bilingual situation, as compared to a monolingual one, lexical specialization (saliency) in one of the languages of the bilingual would facilitate the acquisition of the other language. In this specific case, lexical specialization consists of implementing a null or an overt lexical realization of the subject for EPP checking: the non-PF realization for Spanish and the PF realization for both English (this being the only option) and Spanish. This lexical specialization is independent of the mechanisms that contribute to overriding the RI stage.

We would like to conclude by saying that our data reflect the effects of cross-linguistic influence at the onset of bilingual acquisition. While we believe that the same patterns of facilitation and interference should hold for later stages, input effects that may skew the dominance relationship between the two languages of these simultaneous bilinguals might alter these patterns, an issue that should be investigated but is outside the scope of this paper.

Note: These data have been presented and discussed at the seventh International Conference on Language Acquisition (AEAL 2013, Bilbao) and the nineteenth International Congress of Linguistics (ICL 2013, Geneva).

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