Language Acquisition and Contact in the Iberian Peninsula

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Bilingualism as a first language: language dominance and crosslinguistic influence

Abstract: Even though research on bilingual first language acquisition (2L1) could be conceptualized as monolingual acquisition (L1) of two individual languages, the fact that in 2L1 acquisition there is exposure to input from two languages has consequences in terms of how the two language systems interact in the mind of the bilingual. This century has seen two important developments in this respect. First, a consensus seems to have been reached on the idea that the two systems are differentiated from the early stages (e.g. Genesee 1989; De Houwer 1990; Genesee, Nicoladis & Paradis 1995; Köppe & Meisel 1995; Genesee 2003). The second development is related to how the 2L1 language faculty compares to the L1 language faculty and the consideration that the grammatical processes and operations in both bilingual and monolingual speech must be accounted for in the same terms (MacSwan 2000; Liceras, Spradlin & Fernández Fuertes 2005; Liceras et al. 2008, among others). However, while it is unquestionable that L1 and 2L1 acquisition share similar mechanisms and processes, there are core issues such as language dominance, crosslinguistic influence and code-mixing that are specific to simultaneous bilingual acquisition.

In this chapter, we address these three language contact phenomena by analyzing spontaneous and experimental data from the simultaneous bilingual acquisition of English and Spanish by two identical twins in Spain (FerFuLice corpus in CHILDES) as it compares to data from other 2L1 and L2 children and adults. We conceptualize language dominance in terms of the computational value of grammatical features in a given language. And so, the dominant language is the one that provides the functional category whenever that category is highly grammaticized. Crosslinguistic influence between the two languages of a bilingual is analyzed in the case of sentential subjects and copula predicates and we propose that the occurrence as well as the directionality of influence is linked to lexical specialization. Therefore, the presence of two sets of subjects (i.e. overt and null) and two sets of copulas (i.e. *ser* and *estar*) in Spanish leads to a lack of negative influence from English into Spanish. However, a facilitation effect appears in bilingual English as seen in bilinguals' lower copula omission rates and lower null subject rate. In terms of code-mixing patterns between

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Determiners and Nouns, child and adult spontaneous production data differ from experimental data in that while the former show a preference for the Spanish Determiner (the category which is more grammaticized), the latter prefer the English Determiner.

We propose constructs such as the Grammatical Features Spell-Out Hypothesis or the Analogical Criterion to account for these patterns. The analysis of these language contact phenomena provides an insight on how language properties shape bilingual production.

1 Introduction

While the mechanisms and processes that shape bilingual first language acquisition (2L1) should, in principle, resemble those of monolingual acquisition (L1) in the case of each of the languages involved, the fact that in 2L1 acquisition there is exposure to input from two languages forces us to confront two fundamental research questions: whether and how the two language systems interact in the mind of the bilingual and what the outcomes of this interaction may be. Consequently, the main objective of this chapter is to discuss specific ways in which these research questions have been approached in the acquisition literature.

The very title of the chapter makes it clear that we will be dealing with simultaneous bilingual acquisition, namely with children who are exposed to the two languages from birth, rather than so-called sequential (or consecutive) bilingual acquisition which deals with children who are exposed to the second language after being exposed to the first language for at least two or three years (Baker 2011; De Houwer 2009; Silva-Corvalán 2014, among others). When the acquisition of a second language occurs past three years of age, it is usually referred to as child second language acquisition (cL2) rather than sequential bilingual acquisition (Meisel 2008).

Some of the most salient outcomes of 2L1 acquisition are language dominance, crosslinguistic influence, and language mixing. Language dominance has been defined in terms of relative proficiency (Grosjean 1982, among others) or relative speed of development (Wapole 2000) and it has been measured in relation to language production and to language processing. While there is not a unified definition of language dominance in young bilinguals, an inventory of linguistic diagnostics, along with other types of diagnostics, has been proposed to identify the dominant language. A first objective of this chapter is to propose a definition of language dominance that is not necessarily equated to proficiency but to the grammaticalization of features in the various languages.

As for crosslinguistic influence (i.e. Döpke 2000; Genesee, Nicoladis & Paradis 1995; Liceras, Fernández Fuertes & Alba de la Fuente 2012; Müller 1998; Nicoladis 2002; Yip & Matthews 2000), it is important to point out that, within the view of the bilingual mind that we maintain, and even if the two language systems share a single computational component, the realization of universal principles is to be mediated by the existence of two lexicons and two phonological components. This implies that the combinations of features present in the functional categories (i.e. pronouns, determiners, auxiliaries, complementizers ...) and the lexical or substantive categories (i.e. nouns, lexical verbs, adjectives ...) in the two languages may differ and, therefore, may result in crosslinguistic influence. It may also be the case that a feature or a set of features be realized as one lexical item in one language but as two lexical items in the other language. A case in point is the values of copula *be* in English that are realized as two different lexical items – *ser* and *estar* – in Spanish. The obligatory use of overt subjects in English but not in Spanish and the systematic availability of null subjects in Spanish but not in English have also been discussed as relevant *loci* for crosslinguistic influence. Thus, a second objective of this chapter is not only to discuss some potential *loci* for crosslinguistic influence in 2L1 acquisition but also to show that, while crosslinguistic influence can cause interference, it can also have a facilitating effect.

Finally, code-mixing or code-switching has also been investigated as an outcome of 2L1 acquisition, both as a diagnostic for language dominance as well as a reflection of how the properties of the two language systems may interact. We will use code-mixing and code-switching interchangeably even though the first term has been used to refer to mixing that occurs before children have incorporated the functional categories of the two languages (Köppe & Meisel 1995).

In order to discuss the above-mentioned outcomes, we will use data from the simultaneous bilingual acquisition of English and Spanish in Spain. We will specifically discuss 2L1 data from the bilingual twins in the FerFuLice corpus in CHILDES (MacWhinney 2000; Fernández Fuertes & Liceras 2010) in relation to L1 monolingual acquisition of both Spanish and English and paying special attention to copula omission and null and overt subject production, two constructions that have received a great deal of attention in the 2L1 acquisition literature (i.e. Paradis & Navarro 2003; Silva-Corvalán 2014). This will contribute to the understanding of individual bilingualism which can then be used as a point of comparison with societal bilingualism (Bathia & Ritchie 2012).[1] In our specific case, we will be discussing a case of individual rather than societal bilingualism

1 The type of contact that has been mainly studied is the one in which the language that may eventually become non-dominant, and here we are using the term as the equivalent of proficiency

and a situation where Spanish is the majority language while English is the minority language. Nonetheless, we want to address language dominance, crosslinguistic influence and code-mixing as outcomes of bilingualism that can be investigated across the board, as determined by the mere contact between two different language systems and, in principle, abstracting from the specific setting as such or the specific amount of input.

2 The characterization of bilingual first language acquisition

As Baker (2011), referring to Grosjean (1995, 2008) and Jesnner (2008), points out, two contrasting views of individual bilinguals have been argued for in the literature: the view of the bilingual as "two monolinguals in one person" (the "fractional" view) and the view of the bilingual as having a unique linguistic profile which is not the sum of two monolinguals (the "holistic" view). While the conceptualization of the problem is different because it pertains only to the initial stages of acquisition, the availability of two language systems is also at the core of the debate between those who argue that the mind of the young bilingual child contains a single language system (Lindholm & Padilla 1978; Redlinger & Park 1980; Vihman 1985; Volterra & Taeschner 1978) and those who defend that the two language systems are differentiated from the early stages (De Houwer 1990; Genesee 1989, 2003; Genesee et al. 1995; Köppe & Meisel 1995). This debate seems to have been won by the latter. However, we would like to frame the fractional/holistic debate as well as the single/two different language system view within the Minimalist framework, as argued by MacSwan (2000, 2014), where the grammatical processes and operations in both bilingual and monolingual speech must be accounted for by the same universal mechanisms. This is so because the bilingual language faculty is made up of two lexicons and two phonological components but a single language-specific computational system: the only one available for human language.[2] That is, under Minimalist premises, this view of the bilingual

(e.g. Spanish as minority / heritage language in the US), may have a facilitating effect in the acquisition of the dominant language (e.g. English as majority language in the US).

2 Even though the two lexicons proposal is intrinsic to MacSwan's model, a distributed morphology account can dispense with the two lexicons requirement, as was timidly suggested in Liceras, Fernández Fuertes, Perales, Pérez-Tattam, and Spradlin (2008, footnote 8) and recently argued for by Burkholder (2018).

language faculty offers a universal framework within which feature activation will proceed depending on the specific language, as well as feature valuation and the outcomes of the operations MOVE, MERGE, and AGREE. Therefore, this view provides us with the framework needed to discuss the outcomes that are specific to 2L1 acquisition but are, at the same time, shaped by the mechanisms and processes that pertain to L1 acquisition. It also implies that Universal Grammar is a central component of the Language Acquisition Device (LAD) and that linguistic structures reflect mentally represented knowledge (Meisel 2011, among others).

Even though in terms of ability, the field of bilingualism differentiates between active and passive bilinguals, we will only be discussing the acquisition of two languages that leads to active (comprehension and production) bilingualism. It is a fact that ability is a dimension of a continuum (Valdés Kroff et al. 2011) and that in the course of development the bilinguals whose data we will be discussing might become passive bilinguals in one of the two languages, but discussing this potential developing outcome is out of the scope of this chapter.

Active bilingualism may not necessarily imply that the receptive and productive competence in the two languages is "balanced" and this is why language dominance has been systematically discussed in the bilingual literature in general and in the 2L1 acquisition literature in particular.

Petersen (1988) lists prevalence of overall functional words from one of the two languages as a diagnostic internal to the linguistic system and parents' perception and amount of exposure as diagnostics external to the linguistic system. Nicoladis and Secco (1998) define language dominance in terms of relative vocabulary size in each of the two languages while for Genesee et al. (1995) or for Yip and Matthews (2006) the dominant language is the one for which the child has a higher Mean Length of Utterance (MLU).

We agree with Baker (2011) that balance and dominance tests are dependent upon language proficiency and performance and can only partially access the bilingual's language capacity and language ability. Also, dominance need not coincide with balance and, as Baker (2011) puts it, "it is possible to be approximately equally proficient in two languages, yet one may be dominant" and so, for instance, "speed of processing may provide evidence about balance but not about dominance in actual language use" (p. 35). In fact, language dominance can change overtime and it may be easier to identify at the lexical and phonological levels than at the morphosyntactic level, a difference that has been systematically pointed out in the case of language transfer.

As for transfer, while it may not be possible to differentiate transfer from crosslinguistic influence, some researchers (i.e. Silva-Corvalán 2003, 2014) argue that they are different because the effect of crosslinguistic or interlinguistic influence is quantitative rather than qualitative. For instance, the presence of more

overt subjects in the Spanish of English-Spanish bilinguals (Silva-Corvalán 2014) than in monolingual Spanish, or the lower omission of copula *be* in the English of English-Spanish bilinguals (Fernández Fuertes & Liceras 2010; Liceras et al. 2012) would be identified as an instance of crosslinguistic influence. However, the use of an expression such as *dame una mano* in Spanish for "give me a hand" would be an instance of transfer since the Spanish expression is *échame una mano* ("throw me a hand"). We adopt this distinction and follow a quantitative approach to crosslinguistic influence in subsequent sections.

Crosslinguistic influence has been said to be pervasive at the interfaces between internal and external modules of language, such as the syntax-pragmatics interface (i.e. Tsimpli & Sorace 2006). However, many researchers have challenged this view of the so-called Interface Hypothesis both as a *locus* for crosslinguistic influence or for learning difficulty (for an overview of the Interface Hypothesis see Sorace (2011) and commentaries). We should also point out that there are not many studies that use data from the early stages of 2L1 acquisition to test whether crosslinguistic influence plays a relevant role at the interfaces. As we have indicated above, we will discuss crosslinguistic influence as having a facilitating or an interfering effect in 2L1 development and will argue, as in the case of language dominance, that the features and combinations of features that make up the functional and lexical categories of the language pair constitute a valuable tool for both predicting and accounting not only for the type of influence (facilitating or interfering) but also for its directionality (i.e. which language will be the source or *locus* of influence and which one the target of influence).

Language dominance is directly related to whether the outcome of bilingualism consists of a balanced or an unbalanced bilingual. However, this outcome cannot be taken as categorical but rather as a continuum when it comes to comparing individuals. Overall, input and social factors seem to play an important role in the degree of proficiency as measured by monolingual standards achieved by any given bilingual in the minority language (the one that does not have an official status in the country). In the case of the two English-Spanish bilingual brothers whose recordings were analyzed by Silva-Corvalán (2014), at the age of six, the older brother had achieved a higher degree of proficiency than his younger sibling in some specific Spanish structures, a situation that according to this author is to be explained as a result of the greater amount of Spanish input received by the older sibling. Nonetheless, Silva-Corvalán (2014) argues that when compared to monolinguals, these bilinguals' English was not negatively affected by Spanish. On the contrary, the rich morphology of Spanish had a facilitating effect in that the bilinguals acquired the English obligatory subject requirement and the English verb morphology earlier than their monolingual counterparts. Thus, crosslinguistic influence is one of the specific outcomes of 2L1 acquisition that we will discuss in this chapter.

3 The FerFuLice corpus: simultaneous acquisition of English-Spanish by two identical twins

In order to discuss language dominance and crosslinguistic influence, we use spontaneous and experimental data from the simultaneous bilingual acquisition of English and Spanish by two identical twins who were born and grew up in Spain and we compare these data with available data from other bilinguals and monolinguals.

The twins, Simon and Leo, were born in Salamanca (Spain) from an English-speaking mother from the US and a Spanish-speaking father from Spain. The parents have always used the so-called rule of Grammont, the one parent-one language strategy, and so the father always speaks to the children in Spanish and the mother always addresses them in English. According to an extensive and a comprehensive parental questionnaire, this practice was followed from the moment the twins were born. The parents generally speak Spanish with each other, except during the summer when they travel to the United States for approximately two 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 & Ritchie 2004).

The spontaneous data from Simon and Leo come from the FerFuLice corpus available through the CHILDES project (MacWhinney 2000). The data cover the age range of 1;01 to 6;11. A total of 178 sessions were recorded on videotape and DVD, of which 117 were in an English context (i.e. with an English interlocutor such as the interviewer or their mother) and 61 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 to 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.

As in Fernández Fuertes and Liceras (2010: Table 2), a comparison of the twins' MLUs in both languages with the corresponding MLUs of two age-matched Spanish monolinguals and two English monolinguals yields very similar results[3].

3 The MLU (Mean Length of Utterance) is derived from two totals: the total number of utterances and the total number of either morphemes (standard MLU) or words (MLUw) for each

As argued by Hickey (1991) and Miller and Chapman (1981), among many others, MLU has consistently been found to be the most stable measure of comparison between children.

Taking into account the information gathered both in a parental questionnaire and in an extensive vocabulary check-list, as well as the corresponding MLUs with age-matched monolingual English and monolingual Spanish children, Fernández Fuertes and Liceras (2010) conclude that the twins' proficiency in English and Spanish is quite balanced between the two languages and relatively equal to their respective monolinguals in both languages.

The experimental data from the twins that we discuss in this chapter come from a code-mixing acceptability judgment task that we describe below. We compare the twins' data to data from other 2L1 bilingual children and adults.

4 Language dominance in bilingual first language acquisition

The notional definition of language dominance that constituted the point of departure for more theoretically grounded research refers to the situation where one of the languages of the bilingual is at a more advanced stage and develops faster than the other, a definition that is, in principle, dependent on measuring the proficiency in each of the languages of the bilingual. For Yip and Matthews (2006) language dominance is a property of the bilingual mind which is assessed by comparing the MLU in the child's two languages. The language with the higher MLU is the dominant language. They argue that the directionality of transfer goes from the language with higher MLU to the language with lower MLU and that there is a correlation between the MLU difference and the pervasiveness of cross-linguistic influence.[4] These authors specifically show that in the English of English-Cantonese bilinguals who are Cantonese-dominant, null objects – which are

speaker and in each file/transcript. MLU calculations for the twins were based on word measures (MLUw), while those of the English monolingual children were measured on morphemes (standard MLU). When comparing standard MLU and MLUw values, Malakoff, Mayes, Schottenfeld, and Howell (1999) found that MLU correlates with MLUw at .97 for English, and Aguado (1988) found a correlation of .99 for Spanish (see MacWhinney, 2009, p. 103).

4 Yip and Matthews (2006) use the term syntactic transfer to refer to the type of influence that takes place between the two languages of bilinguals, an influence, they argue, that takes place at the level of competence (p. 101).

illicit in standard English – are used more frequently by those with a larger MLU differential use than by those with a lower MLU differential use.

According to Petersen's (1988) version of the Dominant Language Hypothesis, in an English-Danish bilingual system where the dominant language is Danish, (1) but not (2) may be a code-mixed utterance, whereas, the opposite would be true if English were the dominant language.

(1) **Hendes** dolly
[her dolly]

(2) **Her** duke
[her dolly]

Thus, the dominant language provides the functional category of the switched DP (Determiner Phrase) – Danish in (1) and English in (2).

Liceras, Spradlin, and Fernández Fuertes (2005) and Liceras, Fernández Fuertes, Perales, Pérez-Tattam, and Spradlin (2008) propose a reinterpretation of the concept of language dominance using the theoretical framework provided by the Minimalist Program (Chomsky, 1995, 1998, 1999), and in the spirit of MacSwan (2000). They formulate the Grammatical Features Spell-Out Hypothesis (GFSH) according to which, in the process of activating the features of the two grammars, the child makes choices in terms of the language that will provide the functional vocabulary to a given functional-lexical mixing. These choices are dependent on how these features are 'grammaticized' in the two grammars, namely their degree of 'saliency' and their 'computational value'. This implies that in the case of English-Spanish child acquisition data, mixed utterances such as (3) will prevail over (4) because the Spanish Determiner but not the English Determiner carries a Gender feature.

(3) **El**$_{(masc.)}$ book
[the book]

(4) **The** libro$_{(masc.)}$
[the book]

Evidence for the GFSH is provided by data produced by Mario (Fantini 1985), Manuela (Deuchar & Quay 2000), Simon and Leo (Liceras et al. 2008), and five children studied by Lindholm and Padilla (1978). In the data from these nine English-Spanish bilingual children, instances of utterances such as the ones in (3) account for almost all cases of mixed Determiner+Noun utterances, as depicted in Table 1, adapted from Liceras et al. (2008).

Table 1: Child bilingual D-N mixings: Spanish/English, French/English and Italian/German.

	Manuela [Deuchar CHILDES]	**Mario [Fantini 1985]**	**Leo [Fernánd. et al. 2002–2005]**	**Simon [Fernánd. et al. 2002–2005]**	**5 children [Lindholm & Padilla 1978]**	**Michael [Swain 1972]**	**Lisa [Taeschner 1983]**	**Giulia [Taeschner 1983]**
Language pair	Sp / Eng	Sp / Eng	Sp / Eng	Sp / Eng	Sp / Eng	Fre / Eng	It / Ger	It / Ger
Def Art 'the'	1 –	18 –	1 –	3 –	7 2	1 –	10 4	5 6
Ind Art 'a/n'	4 –	16 –	3 –	1 –	5 1	2 –	1 6	1 8
Dem. 'this'	– 2	2 –	– –	– –	6 –	– –	1 –	8 1
Indef. 'another'	11 –	1 –	17 –	– –	– –	– –	– 5	– –
Poss. 'my'	– –	6 –	1 –	1 –	– –	3 2	1 1	3 2
Total	**16 / 2**	**43 / –**	**22 / –**	**5 / –**	**18 / 3**	**6 / 2**	**13 / 16**	**17 / 17**

Child bilinguals systematically choose the Spanish Determiner because they have to specify the features that will make the computational component of the Spanish system work, and this computational component happens to require this type of AGREE operation. In fact, it follows from the GFSH that the free morphemes which encode highly grammaticized features are especially important for the requirements of the computational system and, therefore, for L1 acquisition. This preference for the Determiner which is marked for gender also shows in the case of the French-English bilingual (Swain, 1972) in Table 1 (column 7) since, although there are only eight DPs in total, six have a French Determiner and only two, an English Determiner. The GFSH also predicts that, in a language pair where gender is equally grammaticized in both Determiners, no preference for either Determiner will appear because the bilingual will have to activate both features in the two languages. As Table 1 shows (columns 8 and 9), the code-mixed utterances produced by Lisa and Giulia (Taeschner 1983) support this prediction.

According to Ong and Zhang (2010), the GFSH is also supported by the fact that their English-Mandarin bilinguals overwhelmingly prefer the use of Chinese Determiner + English Noun switches. What these authors argue is that, due to the fact that Mandarin Nouns do not inflect for number, the reported preference is triggered by the lexical category, the English Noun, rather than the functional category. This is so because the English Noun has the added feature [Number]. So as per the GFSH, the preference goes in favor of the language whose features are more relevant for the computational component, which in this case happens to be the English Noun, thus making the Chinese Determiner + English Noun switches the favored option.

Further evidence for the GFSH comes from the DPs produced by the English-German bilinguals in Jorschick, Endesfelder Quick, Glässer, Lieven and Tomasello (2011), since, regardless of the dominance, these children use significantly more mixed DPs with German Determiners and English Nouns than English Determiners which German Nouns, which is expected, given the fact that German Determiners but not English Determiners bear the Gender feature.

In summary, and even though more analyses of naturalistic and experimental data are needed, what the bilingual mixed DPs evidence is that language dominance can be defined in relation to how children activate the formal features of language, which in turn determines how features are represented in the mind of the bilingual.

5 Crosslinguistic influence in bilingual first language acquisition

Even if the two languages are differentiated from the early stages of acquisition, as stated in the Language Differentiation Hypothesis, 2L1 research has been

concerned with how the simultaneous development of the two L1s of the bilingual proceeds. In particular, bilinguals' two L1s have been said to develop either autonomously, and, therefore, in a similar way to their monolingual counterparts; or interdependently, and so phenomena such as crosslinguistic influence appear, which make bilingual development different from monolingual development. Some studies comparing bilinguals and monolinguals have found no differences in their developmental paths (e.g. De Houwer 1990; Nicoladis 1994; Paradis & Genesee 1996) and this has been so in several areas of grammar: functional elements such as verb finiteness, negation, and weak and strong pronominal subjects (Paradis & Genesee 1996), root infinitives (Unsworth 2003), pronominal objects (Paradis, Crago & Genesee 2005/2006), subjects and objects (Serratrice 2002; Serratrice, Sorace & Paoli 2004) and, in the case of Spanish, null and overt subjects (Liceras et al. 2012; Liceras, Fernández Fuertes & Pérez Tattam 2008).

Other studies have found differences between monolinguals and bilinguals attributed to crosslinguistic influence, that is, to the transferring of properties from one L1 to the other L1. Crosslinguistic influence has also been attested in different studies (e.g. Döpke 2000; Fernández Fuertes & Liceras 2010; Hulk & Müller 2000; Liceras & Fernández Fuertes 2018; Liceras et al. 2012; Müller 1998; Paradis & Navarro 2003; Yip & Mathews 2000) and in different grammatical areas (e.g. phonological, morphological, and syntactic) as well as in different interfaces (e.g. the syntax-pragmatics and the syntax-lexicon/syntax-semantics).

In summary, the characterization of crosslinguistic influence has been linked to linguistic theory, language dominance or input and there are two factors that have centered most attention in this respect: the effect of crosslinguistic influence (i.e. facilitating or interfering) and the directionality of crosslinguistic influence.

The effect of crosslinguistic influence in 2L1 acquisition

When the properties of one of the L1s (language A) are transferred into the other L1 (language B), in other words, when there is crosslinguistic influence, two possible outcomes appear: delay and acceleration (Paradis & Genesee 1996). This is seen in the attainment of the adult grammar properties as well as in the amount of non-adult-like cases that characterizes child grammars. If delay appears, the influence from language A to language B leads bilinguals to acquire the properties of the adult B grammar later and to produce a higher rate of non-adult-like constructions if compared to their monolingual peers. Crosslinguistic influence, thus, has an interfering effect. If acceleration appears, bilinguals acquire the adult grammar earlier than monolinguals and this would be so because some grammatical properties are acquired earlier in some languages. Therefore, if a

property is already acquired in language A, it could be transferred to language B making bilinguals produce the adult structures in language B sooner than would be the norm in monolinguals. Crosslinguistic influence, in this case, has a facilitating effect.

In the case of the copula, it has been shown that Spanish children seldom omit the verb in these constructions (Bel 2001; Sera 1992). However, Becker (2000) showed that English children go over an initial omission stage in which they omit the copula as in (5).

(5) a. I _ (am) in the kitchen [Nina 2;01] (Suppes 1974, CHILDES)
b. Patsy _ (is) a girl [Peter 2;03] (L. Bloom 1970, CHILDES)

Becker (2000) argues that, while omission is higher in the case of predicates denoting temporal properties (5a), it is significantly lower in copula predicates denoting permanent properties (5b). In the case of Spanish-English bilinguals, Fernández Fuertes and Liceras (2010) found very low copula omission rates both in the Spanish and in the English production of the children and for both predicate types. The comparative results of these studies appear summarized in Table 2, adapted from Becker's (2004) Table 1 (p. 159) and from Fernández Fuertes and Liceras (2010).

Table 2: Explicit copula in Spanish-English bilinguals and monolinguals.

		Copula with permanent properties	Copula with temporal properties
English monolinguals (Becker 2000)	% of explicit copula [EN]	76.3%	18.8%
Spanish monolinguals (Bel 2001)	% of explicit copula [SP]	99.5%	
Spanish-English bilinguals (Fernández Fuertes & Liceras 2010)	% of explicit copula [EN]	91.2%	88.6%
	% of explicit copula [SP]	96.7%	

In particular, while no differences appear between monolingual and bilingual Spanish (Bel, 2001; Gaulin, 2008) where percentages of overtness are above 95%, bilingual English is different from monolingual English in this particular area of grammar. Given that the adult grammar (i.e. the use of the copula) is acquired earlier in Spanish than in English, Fernández Fuertes and Liceras (2010) explain the low rates of copula omission in the English of these bilinguals as a sign of positive crosslinguistic influence from Spanish into English. That is, bilinguals

transfer into English the properties they have already acquired in Spanish and, as a result, less non-adult-like cases are produced and the adult grammar is acquired earlier than in English monolinguals. This facilitating role of Spanish is triggered by the presence of two copulas in Spanish (*ser* and *estar*) and the division of labor they have: *ser* depicts individual-level predicates and *estar* stage-level predicates (as in Carlson 1977; Schmitt & Miller 2007). As opposed to the saliency of Spanish in the use of the two copulas for the two predicate types, in English, both types of predicates are depicted by copula *be*.

In the case of sentential subjects, children acquiring Spanish and English produce cases of subject omission, as in (6), in spite of the fact that null subjects are possible in adult Spanish but not in adult English.

(6) a. (it) Roars [Simon 2;05] (FerFuLice corpus)
b. (yo) Tengo más [Manuela 1;11] (Deuchar corpus)
[(I) have more]

The patterns of subject production/omission have been the focus of attention when comparing the monolingual and bilingual acquisition of Spanish and English. If crosslinguistic influence occurs from English into Spanish, this could be reflected in the overproduction of subjects in Spanish; if it goes from Spanish into English, the English of the bilinguals could contain more null subjects than those characterizing the production of English monolinguals. Liceras et al. (2012) and Liceras and Fernández Fuertes (2018) have carried out a comparative analysis of Spanish and English subjects by analyzing the spontaneous production of monolinguals and bilinguals. The results appear in Table 3.

Table 3: Sentential subjects in Spanish-English bilinguals and monolinguals.

Child		Spanish		English	
		null	pronoun	null	pronoun
Simon	[EN/SP]	86.6%	13.4%	18.7%	81.3%
Leo	[EN/SP]	85.8%	14.2%	20.1%	79.9%
María	[SP]	90.9%	16.7%	–	
Naomi	[EN]	–		37.9%	62.1%

Table 3 shows that, in the Spanish spontaneous production, the rate of null *versus* overt pronominal subjects produced by the bilingual children and the monolingual child reflects the implementation of adult Spanish concerning sentential subjects: the preference for null subjects *versus* pronominal ones. The pattern of the monolingual child (María) is very similar to that of the bilingual children

which points to the lack of crosslinguistic influence from English into Spanish in the bilinguals' Spanish production.

However, when comparing null and pronominal subjects in the English production of the three children, data show that the monolingual child (Naomi) produces a significantly higher number of non-adult null subjects than the bilinguals. Liceras and Fernández Fuertes (2018) attribute this lower production of null subjects by the two bilinguals to Spanish playing a facilitating role. As in the case of the copula, Spanish has two different realizations of the subject: null, licensed by a rich verbal inflection, and overt. This makes bilingual children realize earlier than monolinguals that the null subject is not an option for English verbs. Therefore, crosslinguistic influence from Spanish into English makes bilinguals reach the adult grammar earlier than monolinguals.

Silva-Corvalán (2014) in her study on the spontaneous production of two Spanish-English bilinguals finds different patterns from those in Liceras and Fernández Fuertes (2018). By analyzing the data longitudinally (from age 1;06 to 5;11), she attested an increase of pragmatically inadequate pronominal subjects in Spanish, which she attributed to crosslinguistic influence from English and, in particular, from the English [subject pronoun + verb] string (pp. 163–4). This influence, which has an interfering effect, is the reflection of Spanish being the non-dominant language as it is the language in which the children receive less input. In the case of the copulas *ser*, *estar* and *be*, no influence from Spanish into English or from English into Spanish is attested as the bilinguals behave similarly to the monolinguals. In fact, the few errors in the children's Spanish copula production are not omission errors (as those reported by Liceras & Fernández Fuertes 2018) but commission errors (e.g. uses of *ser* in *estar*-contexts or the reverse) and are always produced by Brennan, the child who deviates from the Spanish adult target more notably as he has had less exposure to Spanish (pp. 44–45 and 53). Silva-Corvalán argues that crosslinguistic influence is determined by the dominant language and the two siblings in her study were clearly English dominant. Our interpretation of these results when compared to those of the two bilinguals in Liceras and Fernández Fuertes' (2018) study is that there must be a threshold, a minimum competence for crosslinguistic influence to take place and so, while the twins are rather balanced, Brennan's Spanish is quite weak and, therefore, does not trigger influence.

Paradis and Navarro (2003) investigate crosslinguistic influence from English into Spanish in the subject production of a bilingual child exposed to Cuban Spanish. Given the fact that the use of subject pronouns is more abundant in Caribbean Spanish than in other varieties of Spanish, Paradis and Navarro (2003) cannot conclude whether it is this specific type of input or rather crosslinguistic influence that accounts for Manuela's larger production of overt subjects when compared to the monolingual children. In fact, Liceras et al. (2012) and Liceras

and Fernández Fuertes (2018) have shown no indication of explicit subject overuse in the production of the two bilingual children they analyze (Table 3 above). Since these children were exposed to peninsular Spanish, it may well be the case that Manuela's overuse of overt subjects be a consequence of the type of input to which she was exposed, rather than of influence from English.

The directionality of crosslinguistic influence in 2L1 acquisition

Crosslinguistic influence between the two L1s of the bilingual can go in the direction of language A to language B or the reverse. As we have indicated above, while some researchers relate the directionality of crosslinguistic influence to dominance so that influence goes from the dominant to the non-dominant language (e.g. Silva-Corvalán 2014), other researchers argue that the nature of grammatical properties can also dictate the directionality of crosslinguistic influence. Namely, if a language presents a lexical-syntactic distinction that is absent in the other language (null and overt subjects or *ser* and *estar* copulas in Spanish), this language may be a good candidate as the source of influence (Liceras et al. 2012). This implies that in the case of Spanish-English bilinguals, crosslinguistic influence will go from Spanish into English and not in the reverse direction, and this would be so regardless of dominance. However, as we indicated above, we believe that for crosslinguistic influence to occur, a certain degree of competence in Spanish, in this case, is necessary. If the level of Spanish is too low, it would behave as an L2 and, in that case, influence will not take place.

Hulk and Müller's (2000) proposal also takes the linguistic specifications of each language as a determinant factor when predicting directionality of influence. These authors propose that two conditions are required for crosslinguistic influence to take place: (i) that the structure in question be located at an interface and (ii) that the language which is influenced contain structures that children may mis-analyze as mirroring those of the influencing language. Specifically, Hulk and Müller (2000) propose that object omission occurs at a high rate in the French of child French-German bilinguals because (i) omission in German is governed at the syntax-pragmatics interface and (ii) because French clitic constructions could be analyzed as instances of object omission by the bilingual child, given that the post-verbal position is empty because the object clitic pronoun is placed before the verb. The conditions proposed by Hulk and Müller (2000) are put to the test by Liceras et al. (2012) as predictors of the directionality of crosslinguistic influence between English and Spanish in the case of sentential subjects and copula constructions. As for subjects, crosslinguistic influence from English into Spanish leading to an overproduction of pronominal subjects in bilingual Spanish is not expected to occur since (i) English

pronominal subjects are a pure syntactic phenomenon and are, therefore, not located at an interface; and (ii) as null subjects in Spanish are a robust phenomenon, children would not mis-analyze the Spanish input in terms of the obligatory presence of English pronouns. In fact, as Table 3 above shows, no overproduction of pronominals occurs in the Spanish production of these bilinguals.

If crosslinguistic influence from Spanish into English takes place, it would result in the overproduction of null subjects in English. If so, crosslinguistic influence would have an interfering effect. However, this is not expected either since (i), although pronominal subjects in Spanish are governed at the syntax-pragmatics interface, null subjects, i.e. the transferred property, are a pure syntactic phenomenon; and (ii) it is far from clear that English would provide robust superficial input which could be mis-analyzed as mirroring the Spanish structures where null subjects are licensed, since, in English, null subjects with inflected verbs only occur with coordinated structures. As seen in Table 3 regarding the effect of crosslinguistic influence and as predicted under this view of crosslinguistic influence directionality, no overproduction of null subjects in the English of these bilinguals occurs.

6 Code-mixing

Code-mixing or code-switching has also been investigated as an outcome of 2L1 acquisition. Zentella (1981, 2000) defines code-mixing as alternating languages in unchanged speech situations. Cantone and Müller (2008, p. 811) consider code-mixing (CM) as the ability of a bilingual speaker to use both languages within a discourse (inter-sentential CM, as in 7), or within an utterance (intra-sentential CM, as in 1 to 4 above), according to grammatical and socio-linguistic constraints.

(7) Sometimes I'll start a sentence in Spanish *y termino en español*
(Poplack 1980)
[sometimes I'll start a sentence in Spanish and I finish in Spanish]

CM constraints have been related to language dominance as discussed in Section 3. Linguistic constraints such as the equivalence constraint (Poplack 1980), the functional head constraint (Belazi et al. 1994) or the matrix language frame (Azuma 1993; Myers-Scotton 1995) share the assumption that CM is constrained by rules different from those of the languages intervening in the mixing, that is, by a grammar of its own (the so-called third grammar); and the fact that they are too general in that, for example, these constraints disallow mixes at boundaries where CM actually happens in the spontaneous production of bilinguals.

MacSwan (1999, 2000), however, proposes that only the grammars of the two languages involved constrain language mixing so that no additional constraints are required. MacSwan (2000: 45), taking the Minimalist Program (MP) as a framework, defines code-switching "as the simple consequence of mixing two lexicons in the course of a derivation" which emphasizes the role of the lexicon (and the features it encodes) when accounting for CM. The MP also guides the analysis carried out by Liceras et al. (2005), Liceras et al. (2008) and Liceras, Fernández Fuertes, and Klassen (2016). These authors carry out an analysis of Spanish-English CM in the spontaneous production of child and adult 2L1 bilinguals as well as in the experimental data of child 2L1 bilinguals. They focus on the specific CM Determiner + Noun, in (1), (2), (3), (4), and as in the examples in (8).

(8) a. los rockets [Mario 3;08] (Fantini 1985)
[the rockets]
b. el cake [Manuela 2;02] (Deuchar, CHILDES)
[the cake]
c. la rock [Leo 3;05] (FerFuLice, CHILDES)
[the rock]
d. the vaca (Lindholm & Padilla 1978)
[the cow]
e. the piscina [Simon 4;04] (FerFuLice, CHILDES)
[the swimming-pool]

These authors were concerned with the prevalence of one functional category over the other (Spanish Determiner, as in 8a-8c, or English Determiner, as in 8d and 8e) and, in the case of the Spanish Determiner, with gender agreement (the so-called analogical criterion where the Spanish Determiner agrees with the English Noun as if the English Noun 'inherits' the gender features of the Spanish translation equivalent Noun). Under the analogical criterion (AC; a term initially proposed by Otheguy & Lapidus 2005), a contrast is established between the Spanish Determiner mixes in (9).

(9) a. $el_{masc.}$ $book_{=libro\ (masc.)}$ [+AC]
[the book]
b. $la_{fem.}$ $book_{=libro\ (masc.)}$ [-AC]
[the book]

In (9a) the Spanish masculine Determiner agrees in gender with the English Noun as the English Noun (*book*) bears the corresponding masculine feature of

the Spanish translation equivalent (*libro*). In contrast, in (9b) there is a mismatch of gender features between the feminine feature of the Spanish Determiner and the masculine feature that the English Noun inherits from its Spanish translation equivalent. This idea of imposing gender on the English Noun makes it possible that the valuation of gender features in the CM phrase proceeds as in the Spanish monolingual DP.

What Liceras et al. (2005, 2008) show is that, regardless of dominance, as defined by Petersen (1998), Spanish-English 2L1 bilinguals (both children and adults) have a very similar behavior in the spontaneous production of mixed Determiner-Noun sequences. In fact, as shown in Table 4, Spanish Determiners are clearly favored in Determiner+Noun mixes by both child and adult 2L1 bilinguals, and this is so regardless of whether they are rather balanced (as in the FerFuLice corpus) or whether Spanish is their dominant language or not (as in the Deuchar corpus).

Table 4: Code-mixed Det-N sequences: the spontaneous production of 2L1 bilinguals.

		SP Det + EN N	EN Det + SP N
Children	Deuchar (CHILDES)	16	2
	Fantini (1985)	4	–
	FerFuLice (CHILDES)	7	–
	Lindholm & Padilla (1978)	18	3
Adults	Myers-Scotton & Jake (2001)	810	14
	Jake, Myers-Scotton & Gross (2002)	161	0
	Moyer (1993), Moro (2001, 2014)	213	2

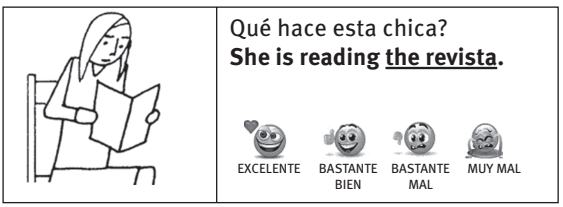
To account for these preferences, Liceras et al. (2008) formulate the substitute this for GFSH (Section 3) and formalize the AC as the Gender Double-Feature Valuation Mechanism in order to capture the strength of linguistic features and, in particular, of gender features that leads to (i) the preference for the functional category which is more grammaticized (i.e. the Spanish Determiner) as it encodes gender features; and (ii) the need to enforce gender agreement between the Spanish Determiner and the English Noun as a linguistic operation rooted in the mind of Spanish dominant Spanish-English bilinguals.

This preference for the Spanish Determiner in production is not seen, however, in the case of the experimental data these authors analyze. In their case, the experimental data are elicited via an acceptability judgment task where participants have to rate a sentence containing CM between Determiner and Noun, as in (10), using a judgment scale with emoticon faces, as in (11). The 2L1 bilingual children tested range between the ages of 6 and 12 years and include the two

children in the FerFuLice corpus as well as a group of 2L1 bilingual children with a similar linguistic profile (i.e. they also live in Spain and come from families where each of the parents is a native speaker of one of the two languages and where the one parent-one language strategy of communication is used with the children).

(10) a. El niño está en *el plane* Spanish Det, [+AC], MM
[the child is in the$_{masc}$ plane$_{Spanish\ masc}$]
b. El señor está mirando por *el window* Spanish Det, [-AC], MF
[the man is looking through the$_{masc}$ window$_{Spanish\ fem}$]
c. The man is falling to *the suelo* English Det, Spanish masc N
[the man is falling to the floor$_{Spanish\ masc}$]

(11)



The results of the judgment task (Figure 1) show that the 2L1 children significantly prefer sequences with an English Determiner (the two rightmost columns) over sequences with a Spanish Determiner (remaining columns to the left) (p=.013). This is, in a way, to be expected as this CM structure has less processing costs given that no gender valuation operation needs to be implemented as the English Determiner carries no gender features.

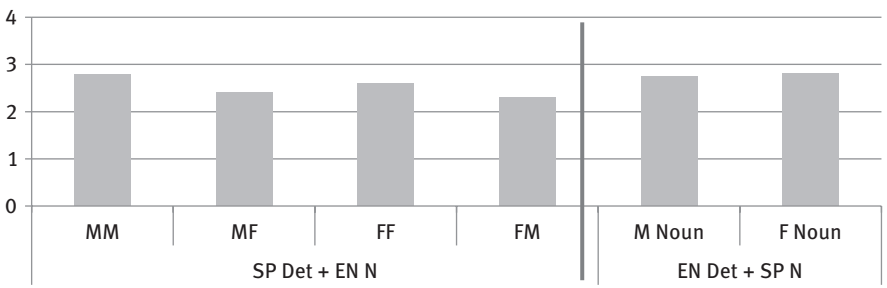


Figure 1: Code-mixed Det-N sequences: the experimental judgments of 2L1 bilinguals.

In the case of the Spanish Determiner CM structures, there is a preference for [+AC] options that is almost statistically significant (p=.068). That is, this group of 2L1 bilingual children rate CM in (10a) more favorably than that in (10b). This preference for the matching option seems to suggest that Spanish gender features have a high representational value in the mind of these bilinguals in that they need to implement this valuation procedure between the gender features of the Spanish Determiner and those of the Spanish translation equivalent of the English Noun.

Studies like Liceras et al. (2008, 2016) point to, at least, two issues that have often been discussed in the analysis of CM in 2L1 bilingual acquisition research: the role of language dominance and the social status of CM. With respect to dominance, and given the results presented above, the GFSH captures a view of dominance based on the features encoded in the lexicon of a particular language and on the saliency these features have in this language. Therefore, the dominant language would be the one whose features are most grammaticized because they are the ones that would guide how structures are generated, regardless of whether this particular language is the one in which the bilingual is most proficient or to which he has been more exposed.

The social status of CM has to do with whether CM is part of the speech of the community and, therefore, a common practice, or rather a more *ad hoc* phenomenon. And this is linked to the social context in which the 2L1 bilingual is immersed. As seen in Section 1 above, there are different 2L1 acquisition contexts, so that, while some are more restricted to the family context (as in individual bilingualism), others are part of a broader social context (as in societal bilingualism). Some authors have suggested that the study of CM should be limited to those 2L1 bilinguals who actually use CM on a daily basis, that is, to code-switchers (e.g. Guzzardo Tamargo, Valdés Kroff & Dussias 2016; Valdés Kroff, Dussias, Gerfen, Perrotti & Bajo 2016).[5] However, potentially all 2L1 bilinguals can code-switch and have intuitions about code-switched structures.[6] Besides, as shown in

5 These authors specifically argue that bilinguals who code-switch at the societal level may produce code-switches that differ from those produced and processed by other bilinguals (i.e. non-code-switchers) (e.g. Beatty-Martínez & Dussias 2017; Guzzardo Tamargo et al. 2016; Valdés Kroff 2016; Valdés Kroff et al. 2016). Although the populations in these studies do not involve children in Spain, as it is our case, their Spanish-English bilinguals mostly prefer Spanish-masculine Determiner – English Noun CM structures. And this seems to be so for both US east coast bilinguals (who arguably may now be more English dominant) but also for Spanish dominant Puerto Ricans.

6 The information that is obtained on the representation of language in the mind of the bilingual and on language competence through the analysis of experimental data complements that

Table 4, children who are immersed in an individual bilingualism context (Spain in the case of the FerFuLice corpus, or the UK in the case of the Deuchar corpus), also produce instances of CM. Furthermore, and in the case of experimental data, what is being tested is the internal knowledge speakers have of their two grammars and how these grammars interact. The fact that the judgments, as shown in Figure 1, are around the mid value 2 could be accounted for in this respect: these speakers are not used to code-switching. However, as the statistical analyses show, these speakers do not treat all CM in (10) in the same way: unlike in production, in the grammaticality judgment task they prefer English Det mixes where no gender agreement features are involved because processing this DP is less costly. However, if gender features appear (i.e. in Spanish Det mixes), they show a clear preference for the enforcement of the gender agreement mechanism, that is, for the implementation of the AC.

7 Conclusions and future directions

In this chapter, we have provided an analysis of data from two English-Spanish 2L1 bilinguals growing up in Spain as compared to data from other bilinguals and monolinguals. We have focused on two core issues that are specific to 2L1 acquisition: language dominance and crosslinguistic influence. Our analysis has pointed to how language properties shape the directionality and the effect of crosslinguistic influence. In particular, Spanish lexical specialization explains that, in the early stages of English-Spanish 2L1 acquisition, Spanish be the language that constitutes the *locus* of influence and that influence has a facilitating effect. This is reflected in how the adult grammatical requirement in both copula constructions and sentential subjects emerges earlier in the spontaneous production of these English-Spanish bilinguals as compared to that of English and Spanish monolinguals. Differences with other bilinguals (e.g. Paradis & Navarro 2003) could rather be attributed to input differences or a rather weak command of one of the two languages (Silva-Corvalán 2014) and not so much to negative influence from Spanish into English or to lack of crosslinguistic influence.

Language properties and, in particular, Spanish highly grammaticized features, are also behind the CM preferences that appear in the spontaneous and experimental data of these bilingual children as well as in that of other bilingual

obtained from naturalistic data. That is, experimental data allow us to gather different and complementary information.

children and adults. As captured under the GFSH and the Gender Double-Feature Valuation Mechanism, the strength of Spanish gender features makes these bilinguals prefer the Spanish Determiner in switched DPs and enforce gender agreement between the Spanish Determiner and the Spanish translation equivalent of the (ungendered) English Noun. Although a contrast is seen in spontaneous *versus* acceptability judgment data, the strength of Spanish gender features is seen not only in the preference for the Spanish Determiner (spontaneous data) but also in the preference for the [+AC] Spanish Determiner (judgment data; examples 10a *versus* 10b).

While many future directions may be taken to investigate the outcomes of 2L1 acquisition, we would like to mention four that are relevant to the outcomes that we have discussed. First, both the *locus* and directionality of crosslinguistic influence as well as language dominance should be investigated with other language pairs where the semantic values (i.e. *be versus ser*/*estar*) take different realizations. Second, it would be important to carry out analyses of both experimental and spontaneous data from other language pairs to determine whether constructs such as the GFSH or the Analogical Criterion hold across the board and whether other constructs have to be proposed to deal with alternative scenarios. For instance, what is the spontaneous output and what are the preferences when mixing a language with a three gender value DP and a language without grammatical gender or with a two gender value DP (German vs. English or Spanish as in Klassen 2016)? Third, in order to complement the results obtained from the analysis of spontaneous data and off-line experimental data, the outputs and preferences of 2L1 representation and processing should be investigated using on-line tasks, eye-tracking, ERPs or neuroimaging (as in Dussias, Valdés Kroff, Guzzardo Tamargo & Gerfen 2013). Fourth, language dominance, crosslinguistic influence and code-switching should be investigated in both contexts of 2L1 individual bilingualism and 2L1 societal bilingualism.

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