Functional-lexical code-mixing patterns as evidence for language dominance in young bilingual children: A Minimalist approach*

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1. Introduction

In this paper we address the issue of how language is represented in the bilingual mind. We specifically investigate functional-lexical mixed utterances of the type Det + N as produced by young English/Spanish bilingual children. Functional-lexical mixings are defined here as constituents formed by a functional morpheme (either free or bound) from one language and a lexical (referential) morpheme from the other. Examples of English/Spanish Det + N mixings are given in (1) and (2).

(1) la house
(2) the casa

Availing ourselves of acquisition data from three longitudinal studies on young English/Spanish bilinguals (Deuchar and Quay 2000; Fantini 1985; Fernández et al. 2000 – 2005), we will show that these data reflect a clear preference for the Spanish Det + English N pattern versus the English Det + Spanish N pattern in these types of mixings. This preference, we will argue, may be accounted for by adopting a feature-based approach to language alternation by young bilinguals. Specifically, we will offer a reinterpretation of the Dominant Language Hypothesis (Petersen 1988) which is situated within the Minimalist Program (Chomsky 1995, 1998). Under this approach, the child's selection of the Det from one or the other of the two languages in a functional-lexical mixing will be informed by his or her specification of abstract features from the input in the process of acquisition.

There has been a long and intensive debate in the literature on the simultaneous acquisition of two languages concerning whether the mind of the young bilingual child contains one language system (Lindholm and Padilla 1978; Volterra and Taeschner 1978; Redlinger and Park 1980; Vihman 1985) or two different language systems (Genesee 1989; De Houwer 1990; Genesee, Nicoladis and Paradis 1995; Köppe and Meisel 1995; Genesee in press). MacSwan (2000), on the other hand, takes the position that the grammatical processes and operations in both bilingual and monolingual speech must be accounted for in the same terms, and proposes a structure for the bilingual language faculty whereby the bilingual child may be thought to possess two lexicons and a single computational system for human language.

With regard to the 'one-system-or-two' debate, the advantage to the approach taken by MacSwan (2000) is that it provides us with a theoretical framework in which the bilingual and monolingual language faculties are now defined in the same terms. Following MacSwan (2000) then, we can assume that the single computational system is responsible for the selection of abstract features, which may differ depending on the languages in question. A selection of two different sets of features will materialize as two different realizations of the computational system. With this as our basis for reviewing the concept of language dominance, we hypothesize that the preponderance of cases such as (1) in the data, where Spanish provides the Det to a mixed DP, reflects a preference that is unrelated to

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proficiency as Petersen (1988) has defined language dominance, but rather may be due to the fact that it is the salient morphemes of the Spanish Determiner system that lead to the selection of the uninterpretable Gender feature which characterizes this language.

2. Functional-lexical mixings in bilingual children

Instances of functional-lexical mixings are rather pervasive in the acquisition data from bilingual children. For instance, Köppe and Meisel (1995) discuss data from two bilingual French/German children (Ivar and Annika) and propose two different stages in the production of mixed utterances: a first stage, which they call early mixing, and a second stage referred to as code-mixing. These stages are divided by the onset of syntax (+/- 2;00). In the first stage, (before 2;00), mixings of functional words are abundant. The authors refer to these as early mixings and consider the possibility that we are dealing with a proto-language (a language without functional categories).[1] Syntax does not constrain this production and there is no obvious pragmatic motivation for it. Ivar's early mixings contain instances of deictics + N as in (3) and (4) and word internal code-switching as in (5).

(3)	ça ça sonne [this this sun]	(Ivar 1;11,17)	[Köppe & Meisel (1995]
(4)	das bateau [this ship]	(Ivar 2;00,02)	[Köppe & Meisel (1995]
(5)	deddy rësucht [teddy bear seeks again]	(Ivar 2:00)	[Köppe & Meisel (1995]
		[From Köppe & Meisel (1995: 291) quoting Veh (1990)]	

In the second stage, INFL and other functional projections become part of the grammar. The authors refer to these utterances as instances of code-mixing and argue that code-mixing observes grammatical constraints but violates the constraints of the adult code-switching grammar. In fact, after 2;5 most of Ivar's functional-lexical mixings are reduced to instances of Det + N, as in (6).

(6)	moi je va à la küche [me I goes to the kitchen]	(Ivar 2;5)	[Köppe & Meisel (1995]

What is interesting, according to Meisel (1990), is that this second stage corresponds to the time at which INFL appears in Ivar's grammar in both languages.

As for Annika, her production offers a different picture in terms of timing and overall production. She only produces instances of code-mixing up to 2;00 but she produces them constantly (as opposed to Ivar's occasional production of them), and continues producing violations of adult code-switching up to the age of 4;00, as shown in (7) and (8). Also, although she does not produce her first Det + N mix until 2;6, this type of mixing will become the most frequent one.

(7)	il a gewonnen [he has won]	(Annika 4;03,24)	[Köppe & Meisel (1995]
(8)	ça c'est Daniels [this is Daniel's]	(Annika 3;07,02)	[Köppe & Meisel (1995]

These mixings constitute a problem for Köppe and Meisel's (1995) proposal because the claim cannot be made that Annika's grammar lacks functional projections. The authors provide a pragmatic explanation for this: the strict 'one person one language' policy at home may lead Annika to use these mixings as a communication strategy.[2]

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[1] Köppe and Meisel (1995) do not think that these mixings are instances of 'fusion' (Volterra and Taeschner 1978; Redlinger and Park 1980) but realizations of a grammar without functional projections.

[2] This explanation might lead one to interpret these utterances as instances of what Poplack and Sankoff (1988) have labeled *flagged mixing* (intentional mixings which coincide with changes in grammatical development and which are accompanied by laughter, self-corrections and awareness of the fact that constraints are being violated or that words from a different language are being used). However, there is no indication that examples such as (7) and (8) are instances of *flagged mixings*.

Myers-Scotton (1993, 1995) discusses data from Swahili/English bilingual children and argues that in a functional-lexical mixing, as in (9) and (10), it is the matrix language that will provide the functional category.[3]

(9) movements yake zote
[Ø-movements Cl.9-her Cl10-all]
[all her movements]

(10) anakula plate mbili
[he-eat plate two]
[he eats two plates]

In (9) the possessive adjective yake (her) and the quantifier zote (all) are words from Swahili while the Noun movements is an English word. In (10), the English noun plate is followed by the Swahili modifier mbili (two).

We do not intend here to discuss the implications of the matrix language frame model of code switching since it does not address the issue of how the two languages are represented in the bilingual mind but rather the way in which elements from each of the two languages are realized in a stretch of bilingual discourse. What the above data do show, however, is that functional-lexical mixings are a fact of bilingual L1 acquisition and thus, we would argue, must be explained by principles of grammar.

3. Language dominance

Language dominance has been defined in a variety of ways, including relative proficiency (Grosjean 1982), the language that is developing more rapidly than the other (Wapole 2000), and/or relative vocabulary size in each of the two languages (Nicoladis and Secco 1998). Genesee, Nicoladis and Paradis (1995), on the other hand, propose four indices of relative dominance, including MLU and upper bound, multimorphemic utterances, and word types.

Proponents of the dominant language hypothesis (Petersen 1988) argue that the specific patterns of early language mixing may be explained in terms of language dominance, dominance understood as being the language in which the child is generally considered to be more proficient. According to this hypothesis, it is the dominant language that provides the functional category to a functional-lexical mixing. Thus, in a child whose dominant language was Danish, type 4 in (11) (Danish Det hendes + English Noun dolly) would be possible whereas type 2 (English Det her + Danish Noun dukke) would not.[4]

(11)

1.	Functional—D + Lexical—D	HER DOLLY
2.	Functional—D + Lexical—ND	HER dukke
3.	Functional—ND + Lexical—ND	hendes duje
4.	Functional—ND + Lexical—D	hendes DOLLY

In contrast, type 2 (and not type 4) would be the expected pattern if the dominant language were English. Petersen claims that her data do not contain instances of type 4. This she takes as evidence for Thea's (the child in the study) dominance in English.[5]

Under the dominant language hypothesis, the only constraint on language alternation is the proficiency level of the speaker/learner. Nothing is prohibited from entering into a switch other than a functional morpheme from the non-dominant language. As an explanatory approach to language mixing based on principles of grammar, it is clearly lacking. In order to provide the concept of

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[3] Myers-Scotton (1993, 1995) refers to 'system morphemes' rather than functional categories. However, she includes among system morphemes morphological inflections and most function words.

[4] D stands for *dominant* and ND *for non-dominant*. The grammatical categories examined included the following (hypothetical examples of ungrammatical utterances are provided for the purpose of clarification, though these were not produced by the child): (1) verb stems + verb affixes; (2) articles + noun stems; (3) possessive pronouns + nouns; (4) demonstratives + nouns; (5) noun stems + plurals; (6) infinitive markers + verb stems; (7) auxiliaries/modals + verb stems. Of a total of 289 utterances from among the above seven categories, 196 belonged to word type 1, 111 to type 2, 80 to word type 3 and 2 to word type 4. No instances of word types 5, 6 or 7 were found in the data.

[5] To avoid circularity, Petersen provides four diagnostics for language dominance that can be classified as external to the linguistic system or as internal to the linguistic system.

language dominance with more explanatory power, we propose that, within a given constituent, the bilingual child will favour the functional morpheme which has a more explicit realization of uninterpretable features. For a young English/Spanish bilingual, then, this hypothesis would imply that the child would favor the Spanish Determiner—and specifically, the Article—over the English one in a switch between Det and N since the former encodes both Gender and Number features while the latter encodes only Number.

4. Mixed utterances or code-switching patterns

With this hypothesis in mind, we have analyzed data from three developmental case studies: 1) Fantini's (1985) study of his son Mario's acquisition of Spanish and English; 2) Deuchar and Quay's (2000) study of the simultaneous acquisition of Spanish and English by Deuchar's daughter, Manuela; and 3) our own ongoing study on the acquisition of Spanish and English by the twins Simon and Leo (Fernández, Liceras and Spradlin 2000-2005; Liceras 2001; Spradlin in progress).

4.1 Fantini (1985)

Fantini followed his son Mario's acquisition of Spanish and English from 'birth' (Fantini 1985: 5) through his eleventh birthday. According to the author, the data were obtained through diary notations based on direct observation and—during the first year—monthly recorded sessions. The author states that the data were collected with 'considerable regularity' (6) through age 6 and less regularly thereafter. The mixed utterances we analyze appear in an appendix of excerpts from the speech diary, as well as two different tables which present what Fantini calls 'lexical borrowings' (147) and 'grammatical borrowings' (169). Since the data included in the appendix are not exhaustive, it is not clear whether the tables and appendix include all of the mixed utterances that Mario produced or only a sample thereof.

Mario's mother was a native speaker of Bolivian Spanish; the father was a native speaker of American English who chose to speak Spanish in the household except when monolingual English speakers were present. Thus, although the family's country of residence was the United States, Mario's primary language contact was with Spanish at least through age 2;6. Additional contact with Spanish was provided by several Spanish-speaking nursemaids and a number of trips to Mexico and South America.

Fantini attributes examples of language mixing prior to age 2;8 to the child's inability to differentiate between his two languages (i.e, the unitary system hypothesis, as Genesee (1989) refers to it) and suggests that examples of later mixing were due to interference. He further claims, based on a word count of the child's vocabulary at the age of 3;0 which comprised 445 Spanish words, 48 English words and 8 Italian words (the paternal grandparents were Italian), that Mario was Spanish-dominant. We would argue that, in the case of Mario, it may not make sense to speak of a unitary language system in which the child was unable to differentiate between Spanish and English given that he did not produce his first English word until the age of 2;6.[6]

4.2 Deuchar and Quay (2000)

Deuchar and Quay (2000) followed a bilingual English-Spanish child, Manuela, from the age of 6 months to 7 years. Diary records were kept by the mother from when the child was about 6 months old to when she was over 7 years old. Daily diary records were kept until age 2;10, at which point only novel utterances were recorded. Audiovideo recordings were made on a regular basis from age 1;3 to age 3;2. Two sessions per week were recorded, one with an English-speaking interlocutor and one

[6] Fantini (1985) presents a highly detailed account of Mario's exposure to English and Spanish in the early years of his life. Though the primary language in the home was Spanish until he was 4;11, there were a number of points at which he had a greater amount of contact with English. These include lengthy visits by English-speaking relatives, several periods in nursery schools in Vermont and Texas where only English was spoken, and several trips to Philadelphia and Hawaii where the child lived primarily in English. At 5;0, Mario began kindergarten in Vermont, which provided "the most significant English contact to date" (31). Though the exposure patterns are impossible to summarize here, Fantini claims that by 5;0, his son was "bilingual and bicultural" and that by 10;0 he was "fully bilingual" (29), having been educated in the United States in an English context.

with a Spanish-speaking interlocutor. Some high-quality audio recordings were also made for the purposes of phonological analysis.

Manuela was living in Brighton, England, at the time the data were collected. Her father was a native speaker of Cuban Spanish who was educated in Cuba and Panama; her mother was a native speaker of British English. The father and mother, who were the primary caregivers, spoke Spanish with each other and with the child when they were together; English was used when the mother and child were alone or when there was a monolingual English speaker present. Deuchar and Quay estimate exposure to English input at 71% from birth to age 1;0 versus 29% for Spanish. From age 1;0 to age 2;0 they estimate exposure to English and Spanish input at 48% and 52% respectively. Spanish was the main language in the home; Manuela was exposed to Spanish for about 4 hours a day on weekdays and all day on weekends. From the age of 0;4, she spent about eight hours a day in daycare, where the language was English.

The data we analyze here come from Deuchar and Quay's (2000) book and from the transcriptions they have made available in the CHILDES database (MacWhinney 2000). The data from the book appear in an appendix of multi-word utterances from age 1;6.25 to age 1;8.24 and in a table of multi-word mixed utterances for the same age range. The language context for each utterance is given in the appendix. The 19 transcriptions in the CHILDES database cover the age range 1;3.8 to 2;6.2. Of these, 10 are in an English context and 9 are in a Spanish context. According to the authors, over 200 recordings were made, so that the corpus available in the CHILDES system is only a representative sample of the data they collected.

Deuchar and Quay do not take up the issue of language dominance because of their reservations about the variety of ways in which the term 'dominance' has come to be used; they specifically cite a tendency in recent literature to refer to both production and non-production factors when discussing the issue, and to confuse the causes of language dominance with its effects. Further, they propose that instances of language mixing in their data may be explained in terms of the child's need to fill lexical gaps, since Manuela generally made contextually appropriate choices where she had equivalents in the two languages available.

We would like to point out that the claim that children code-mix in order to fill lexical gaps is not inconsistent with the claim that, in code-mixings involving a functional and a lexical category, it may be the dominant language which informs the selection of the former and that patterns in the code-mixing data may reflect this, particularly in cases where it can be shown that translation equivalents exist in the child's two lexicons.

4.3 Simon and Leo

Finally, we have analyzed data taken from our own ongoing study on the bilingual acquisition of Spanish and English by twins. The twins, whom we shall call Simon and Leo, live with their parents in Spain. The father is a native speaker of Peninsular Spanish and the mother is a native speaker of American English. Both parents are university educated and work in an academic setting. The parents practice a strict 'one person one language' strategy of communication with the twins; the father always speaks to the children in Spanish and the mother always addresses them in English. According to a parental questionnaire, this practice was followed from the moment the twins were born. The parents generally speak Spanish with each other, except on occasional trips to the United States or when a monolingual English speaker is present.

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;0, there was also a cleaning woman who spent approximately 4 hours per day in the home and provided additional exposure to Spanish. At age 1;10, the twins began attending daycare for 3 hours 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 occasional visits by the maternal grandfather and by 2 lengthy visits of about two months each to the United States.

The data we have collected to this point cover the age range of 1;1 to 2;8. A total of 58 sessions have been recorded on videotape, of which 33 are in an English context (i.e., with an English interlocutor) and 25 in a Spanish context. The recordings were made at intervals of 2-3 weeks, and were interrupted for approximately 2 months in the summer of 2000 when the family traveled to the United States. The family again traveled to the U.S. in the summer of 2001, during which time the mother took charge of recording the twins. A total of 10 sessions—9 in English and 1 in Spanish—were recorded during that time.

Code-mixing first appeared in our data at age 2;7. This is later than is reported in Deuchar and Quay, but given that twins in general seem to lag behind their singleton counterparts in language development (Dale et al. 1998, among others), however, we do not consider this to be anomalous. The paucity of code-mixing in our data prior to this point led us to attempt a repetition task, which consisted of a series of functional-lexical mixings which had appeared in the studies by Fantini and Deuchar and Quay as well as our own invented ones (see Appendix). Our hypothesis was that the twins would either accept or reject certain items, and that this might corroborate our definition of language dominance. The first attempt, carried out by one of the researchers, was unsuccessful; the twins seemed distracted and uninterested and refused to repeat any of the items. The second attempt, carried out by the mother, was more successful in that the twins repeated quite a few of the items, until they became bored with what they seemed to view as a game.

4.4. The data

Like bilingual children in other studies, Mario produces instances of functional-lexical mixings as in (12) – (18). The total production of DetP mixings for Mario is shown in Table 1.

(12) I'm saking my nose (Mario 3;6)
[Spanish root sak- + English morpheme -ing]
(13) can you desentie this? (Mario 5;1)
[Spanish morphemes des-en- + English root -tie]
(14) yo voy a lokar (Mario 6;3)
[English root lok- + Spanish morpheme -ar]
(15) un [a] rabbit (Mario 3;5)
(16) los [the] rockets (Mario 3;8)
(17) el [the] curtain (Mario 8;11)
(18) al [to the] waterfall (Mario 10;2)

Table 1. DetP mixings: Spanish/English. Mario (Fantini 1985)

Definite article [the]	Indefinite article [a / an]	Demonstratives [that]	Indefinites [another]	Possessives
el baby (3;6)	un rabbit (3;5)	ese dump truck (5;8)	otro haunted house (10;6)	mis [my] snakes (3;6)x2
lo(s) babies (3;6)	un rocket (3;5)			
la [fem.] outside (3;6)	un hospital (3;8)			su [his/her] nose (3;8)
lo(s) steps (3;7)	un helicopter (3;8)	ese egg (6;0)		
lo squirrels (3;8)	un squirrel (3;8)			mi [my] kite (5;7)
los rockets (3;8)	un baby (3;8)			
los aligators (4;5)	un bottle de leche (3;8)			su [his/her] partner (5;7)
el livestock show (5;7)	un ball (3;8)			
los rides (5;7)	un Indian corn (5;1)			mi [my] school-bus (5;7)
el sidewalk (5;8)	un song (5;1)			
el merry go-round (5;8)	un drink (5;1)			
el puppet (5;8)	un stop sign (5;7)			
el jet (5;8)	un stick (5;8)			
el glitter (6;4)	un gate (7;1)			
el curtain (8;11)	un lobster (7;3)			
los spectators (8;11)	un heart attack (9;3)			
al waterfall (10;2)				
la [fem.] cathedral (10;9)				
18	16	2	1	6
TOTAL: 43 Spanish Det + English N				

Manuela also produces a substantial number of functional-lexical mixings as in (19) - (21).

(19) un [a] woof (Language: Spanish) (Manuela 1;7.8)
(20) otra [another] picture (Language: English) (Manuela 1;9.9)
(21) in un [a] bus (Language: Spanish) (Manuela 2;5.5)

The total production of Det + N mixings for Manuela is shown in Table 2.

Table 2. DetP mixings: Spanish/English. Manuela (Deuchar, CHILDES)

Language context: English		Language context: Spanish	
Demonstratives [this]	Indefinites [another]	Definite article [the]	Indefinite article [a / an]
this padre (1;11) this niña (1;11)	oto picture (1;9) otra (fem.) picture (1;9) x7 otro new book (1;9) otro book (1;9) otro one (1;9)	el cake de M (2;2)	un woof (1;7) un woofy (2;2) un bus (2;5) un pram (2;6)
English Det: 2	Spanish Det: 11	Spanish Det: 1	Spanish Det: 4
TOTAL: 16 Spanish Det + English N // 2 English Det + Spanish N			

In the experimental test conducted when the twins were 2;6, the mother read from a list of items that Leo and Simon were asked to repeat. They seemed to have no problem repeating Spanish Det + English N as in (22) - (24).

(22) su [his] nose (Simon and Leo 2;6)
(23) la [the-fem] ball (Leo 2;6)
(24) esta [this-fem] bike (Simon 2;6)

As the repetition task was not completed (eventually the twins became involved in their toys and refused to repeat any more items), they did not get any prompts with English Det + Spanish N. In fact, they got very few prompts with English functional categories at all, but when these were given the twins repeated them. In view of our proposal, however, it is interesting to note that it was the mother who selected the items from the list we provided her (which included both types of sequences), and that her selection clearly favoured the Spanish Det + English N construction.[7]

As for the twins' spontaneous data, there are instances of Det + N mixings as in (25) - (30). The total production of DetP mixings produced by Leo and Simon is shown in tables 3 and 4.

(25) el otro [the other] birdy please (Language: English) (Simon 2;7)
(26) el [the] other birdy please (Language: English) (Simon 2;7)
(27) a cocina [kitchen], a kitchen (Language: English) (Simon 2;7)
(28) un [a] sheep (Language: English) (Leo 2;7)
(29) otro [another] blanket (Language: English) (Leo 2;7)
(30) un [a] tree (Language: English) (Leo 2;7)

Table 3. DetP mixings: Spanish/English. Leo (Fernández Fuertes, Liceras and Spradlin 2000-2005)

Language context: English			
Definite article [the]	Indefinite article [a / an]	Indefinites [another]	Possessives
el piggy (2;7)	un tree (2;7) un sheep (2;7)	otro blanket (2;7) x17	tus [your] blocks (2;7)
1	2	17	1
TOTAL: 21 Spanish Det + English N			

[7] There was only one instance of an English Determiner among the items the mother asked them to repeat, and this was with an English N (my nose). This appeared immediately following the Spanish Det + English N sequence mi nose. While both of the twins repeated the latter example, only Simon repeated the former.

Table 4. DetP mixings: Spanish/English. Simon (Fernández Fuertes, Liceras and Spradlin 2000-2005)	
Language context: English	
Definite article [the]	Indefinite article [a / an]
el otro birdy (2;7) el other birdy (2;7)	a cocina, a kitchen (2;7)
2	(1)
TOTAL: 3 Spanish Det + English N	

These data show that Mario produces instances of the Spanish Det + English N pattern to the exclusion of the English Det + Spanish N pattern through age 10;9, despite Fantini's claim that by 5;0 Mario was 'bilingual and bicultural' (29). Manuela, on the other hand, does produce instances of English Determiners with Spanish Nouns, but only in 3 cases out of 24 instances of this type of functional-lexical mixing; contrarily, there are 21 instances of Spanish Determiners with English Nouns. Leo patterns with Mario in that he exclusively favors the Spanish Det + English N pattern. The data for Simon, meanwhile, show one case of the English Determiner. It is interesting to note, however, that Simon self-repaired this instance of English Determiner and Spanish Noun into an English Determiner and an English Noun (e.g., example (27)).[8]

For Petersen's dominant language hypothesis, as stated above, these data would suggest that ALL four children are Spanish dominant at all stages, which is far from clear to us if language dominance must match the diagnostics provided by Petersen (1988) (i.e., such factors as parents' perception, amount of exposure or even prevalence of overall functional words from one of the two languages, etc.).

Our interpretation of the Det + N data is that in a language contact situation where children have to abstract the features of both the English and the Spanish Determiner Phrase, the Spanish Determiner will eventually win over, for it is the most transparent one in that it has two (Number and Gender) uninterpretable features (Chomsky 1995) while English only has one (Number),[9] as shown in Table 5.

Table 5. DetP uninterpretable features				
	English		Spanish	
	Gender	Number	Gender	Number
Det	——	UNINTERPRETABLE	**UNINTERPRETABLE**	UNINTERPRETABLE
Noun	INTERPRETABLE	INTERPRETABLE	INTERPRETABLE	INTERPRETABLE

Thus, we argue that child code-switching data will reflect a preference for the language whose free or bound morphemes provide the richest phonetic evidence for the projection of abstract features. This, we propose, constitutes the DOMINANT language for that specific mixing. This implies that the sequence la house or el house would be preferred over the sequence the casa because it is the former and not the latter DetP projection in which the uninterpretable feature [+gender] will be activated and eventually checked.

5. Conclusion

There is a clear need not only for more data on code-mixing in young bilingual children but also on adult code-switching so that valid comparisons may be made both between individuals and across languages (it is of little consolation that the patterns we have outlined above seem to be those that appear in most of the research on both child and adult code-switching presently available to us). This

[8] We should point out that this Determiner is realized as a schwa and therefore may not be English at all, but rather possibly a protodeterminer/monosyllabic place-holder (López-Ornat 1997; Liceras, Díaz and Mongeon 2000; Liceras, in press). At the same time, however, it may also be a pragmatically motivated self-repair based on the language context, which was English—Simon was talking to his mother—and have little to do with our proposal since there are other examples of these types of self-repairs involving referential items when the twins are with their mother.

[9] We assume that uninterpretable features are affixal (morphologically realized) and play a role in the syntax.

is particularly true in the case of language pairs that differ in terms of the uninterpretable features that are available to the child in the input. We believe that the data we have presented above are very telling in terms of the information they may provide about how language is represented in the bilingual mind. The data from the three studies considered above show that, even though the bilingual only accesses one computational system, the process of selecting abstract features from the two lexicons determines the type of code-switching patterns (Spanish Det + English Noun, rather than English Det + Spanish Noun) that will prevail. This will be so as soon as the child has sufficient exposure to the lexical items in question and regardless of his/her overall level of competence in either of the two languages.

More recent analysis (Liceras, Spradlin and Fernández 2002) of data from young bilingual French/English (Swain and Wesche 1975) and Italian/German children (Volterra and Taeschner 1978; Taeschner 1983) appear to support this hypothesis. Further, we would like to speculate that, in accordance with our conception of dominance, early bilingual word-internal switches might favor morphemes that are relevant for the specification of uninterpretable features related to Tense, Aspect, Person, etc., for each of the two languages; a discussion of this possibility, however, is beyond the scope of this paper.

We are aware of the fact that our definition of language dominance stems from a very strong hypothesis on how the child's computational system confronts language data, but we believe that it is worth exploring because it is faithful to the Minimalist tenet according to which all language variation (and therefore triggers for the acquisition of a given language) are contained in the lexicon proper.

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