

Evidence against a Third Grammar: Code-switching in Italian-German Bilingual Children

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Introduction

In this paper we will discuss the issue of code-switching by analyzing data from bilingual children. There has been a long debate in the linguistic research field about what is to define as code-switching and on which constraints this speech style involves. Sociolinguists and psycholinguists as well as generativists studied adult code-switching, assuming several underlying rules not only for the language context in which code-switching should be applied (cf. among others Gumperz 1976, Grosjean 2001), but also for the syntactical rules that it should require (cf. among others Poplack 1980, DiSciullo, Muysken & Singh 1986, Belazi, Rubin & Toribio 1994, Muysken 1995).

Along this line of research, some switches are considered to be ungrammatical because they violate specific constraints which have been formulated in order to regulate code-switching. These restrictions, although they try to take into account universal constraints as government and dependency relations, seem to represent a specific grammar of code-switching rather than to reflect the grammar of the two languages involved.

In addition to this research agenda, several studies within the field of bilingual first language acquisition focussed on the mixing produced by young bilinguals, asking why the children mix their two languages and whether the mixed utterances differ quantitatively and qualitatively from adult's code-switching (cf. among others Meisel 1994, Köppe 1996).

Our data will show that the children's mixing is absolutely comparable to instances of adult's code-switching. From this we assume that even the earliest mixed utterances can be considered as cases of code-switching.

We specifically will analyze intrasentential mixes in the bilingual children's data and, following MacSwan's minimalist approach (1997, 2000), we will claim that there is no *third grammar* which constrains code-switching, so that no grammatical constraints like the restrictions proposed in the literature are needed to control the mixing in an artificial way.

We will argue that all mixes are to be considered as grammatical as long as they respect the constraints requested by the two languages involved. MacSwan's assumption that 'Nothing constrains code switching apart from the requirements of the mixed grammars' (1997: 36) will be confirmed by the empirical data studied here.

The paper is organized as follows: In section 1 we will discuss some terminology and present recent works on code-switching; in 1.1 we make some remarks on the definition of code-switching that will be used in this study and determine what is the language context which underlies the data recording situation; in 1.2 we discuss studies on adult's code-switching; in 1.3 we give an overview of studies on mixing in bilingual children; 1.4 we briefly discuss current hypotheses on interrelations between code-switching and the representation of the bilingual mind.

In section 2 we will present data from four bilingual Italian - German bilingual children; 2.1 gives some methodological explanations on how the data were collected; in 2.2 we show the figures and tables of the mixes, presenting a quantitative discussion of the mixes in 2.2.1, and a qualitative one in 2.2.2, including several children's utterances as examples for code-switching; in 2.2.3 we put forward the hypothesis that all the mixes discussed here can be considered as grammatical and as instances of code-switching.

In section 3, we discuss preliminary results which can be drawn from our analysis of the mixed utterances, assuming a grammatical perspective. Furthermore, we will conclude by proposing how to interpret our findings with respect to a minimalist view of the bilingual language faculty.

1. Overview on theory and literature

In what follows we will briefly discuss the phenomenon of code-switching, what is considered to be a mixed utterance in this study, how we define the base language, and finally the theoretical assumptions that underlie this work.

1.1 Some remarks on the term code-switching

The common definition of code-switching we will apply in this study is, quoting Meisel (1994:415), 'the ability to select the language according to the interlocutor, the situational context, the topic of conversation, and so forth, and to change languages within an interactional sequence in accordance with sociolinguistic rules and without violating specific grammatical constraints'. This also implies the capacity of language differentiation, language choice, and the mastery of the two grammatical systems of the languages involved.

Since the data collected in the present study gives evidence for the acquisition of the ability to select the language according to the interlocutor and to the language context very early, that is before the age of two, we will consider the children's mixing as code-switching from early onwards. The assumption that lack of pragmatic competence is the reason for the high mixing rate reported at the earliest stage of language acquisition (cf. section 1.3), is not plausible. Consequently the difference between code-mixing, which is used to define such instances of language mixing when constraints (grammatical as well as pragmatic) are violated, and code-switching does not exist anymore. From now on we will use the general terms *mixing* and *code-switching*.

When we speak of a *mixed utterance* we mean an utterance that contains elements from both languages, that is intrasentential code-switching.

In order to establish the language context in which the code-switching occurs, we define the base language as the one established by the interlocutor in the recording situation (cf. Meisel 1994, Muysken 1995; see section 2 for details about the methodology applied in this study). We assume a psycholinguistic definition of the base language, which considers the language of the conversation as the most activated (cf. Grosjean 2001), and not a grammatical definition, as for example in Myers-Scotton (1993), where the matrix language is defined as the one with the highest number of morphemes in an utterance.

In our analysis, a German element is considered to be mixed into an Italian utterance whenever the Italian interlocutor was interacting with the child, and viceversa, during the German session, a mix is defined by an Italian word (or more) mixed into the German utterance.

1.2 A brief review of literature on adult's code-switching

Several studies on adult code-switching in the last three decades have shown that this linguistic behavior is indeed constrained by grammatical principles, and not just random mixing of two languages (cf. among others Timm 1975, Poplack 1980, Di Sciullo, Muysken & Singh 1986, Belazi, Rubin & Toribio 1994). It has been shown that code-switching occurs at specific points (boundaries) in the sentence, and it has been predicted that it is disallowed at other points, focussing very intensively on syntactic constraints.

The first restrictions that have been put forward are the *Equivalence Constraint* and the *Free Morpheme Constraint* (cf. Poplack 1980). The former predicts switches only if the word order of the two languages converges, whereas the latter disallows a switch involving bound morphemes. Both constraints have been widely discussed and mostly rejected nowadays. Another very important contribution in the field of explaining and restricting code-switching behavior is the *Government Constraint*, formulated by Di Sciullo, Muysken and Singh (1986). This constraint predicts no occurrence of switches whenever government holds. There are several counterexamples to this restriction, too, as we also will see in our data in section 2.2.2. A switch is likewise not supposed to occur between a functional head and its complement, as predicted by the *Functional Head Constraint*

formulated by Belazi, Rubín and Toribio (1994). This constraint has been discussed in the literature and mostly falsified.

Although it is desirable to formulate universal principles and rules which constrain the phenomenon of code-switching, it seems very tricky not to become far too descriptive and too restrictive. Putting together the results of this research field (although stating that there is still a lot of work in progress) we recapitulate that several constraints which have been formulated observing a specific language pair and proposing a specific grammatical analysis, have been rejected by other studies who worked with different pairs of languages and claimed different syntactic restrictions to be more relevant.

The whole discussion on restricting code-switching syntactically may end up in formulating rules of a *third grammar*, a grammar of code-switching (cf. MacSwan 1997, 2000). This *third grammar* seems to take account of grammatical rules with respect to the two languages analyzed, because it reflects the convergence of these two languages and how they interact, but in doing so it formulates a specific grammar that is not even universally applicable. Moreover, all these restrictions constrain artificially a linguistic behavior, which is originally and widely based on pragmatic rules and not primarily on grammatical ones.

Furthermore, this research field is very theoretical and descriptive, since most of the studies adopt acceptability tests. This means that on one hand a lot of violations predicted are not found in spontaneous bilingual code-switching, and that on the other hand several code-switches, that are considered to be ungrammatical, occur in free conversation.

We want to claim that all these restrictions do not really reflect how code-switching occurs in bilingual speech. Since our data consist of children's utterances, it is not very much influenced by sociolinguistic rules as adult speech is. Therefore we think that the utterances we will discuss in 2.2 reflect in a good way what bilinguals are able to produce.

1.3 A brief review of literature on children's mixing

In several studies on bilingual first language acquisition it has been observed that almost all children pass through a stage in which they mix to a very large extent in both of their languages (cf. Lanza 1992, Köppe & Meisel 1995, Deuchar & Quay 2000), but there is no consensus how to analyze these mixes, namely as instances of a lack of language separation, as a result of missing equivalent words or as code-switching.

The hypothesis that children do not differentiate their two language systems, that has been brought up by some studies (cf. Taeschner 1983, Deuchar and Quay 2000), has largely been disconfirmed by several studies (cf. among others Genesee 1989, Meisel 1989, 1994, Gawlitzeck- Maiwald & Tracy 1996, Köppe 1996, in press). It seems a clear fact that children do separate their two languages from the very early onwards. Lexical need as the trigger for mixing an element into the other language could be an explanation for some mixes, but is definitely not the only reason (cf. Cantone to appear, Cantone & Müller 2003). Therefore it remains an open question why there is this stage of high mixing at the beginning of language acquisition, that is in the one-word stage and at the beginning of the two-words stage. We won't go into this discussion since it is not the topic of the present paper to explain the reasons for this early stage of language mixing.

What can be said (see also section 1.1) is that the children give evidence of being capable of using their language in a proper context. Given this fact, we will consider mixes as instances of code-switching from the beginning on. Nevertheless, we won't take the earliest mixes into account for our analysis (see section 2.2), for the simple reason that, as mentioned above, in this stage children's utterances are rarely longer than one or two words, so that it is very difficult to analyze them from a syntactic point of view.

1.4 Theoretical assumptions for the analysis of mixing in the bilingual mind

The minimalist approach provides a model of the mind's architecture (Chomsky 1995), which consists of two basic components: a Lexicon, which includes all language specific information and

variation, and a Computational System for Human Language, which is supposed to be invariant and fixed. These two components imply two important assumptions:

- 1) All syntactic variation is lexically encoded.
- 2) The I-Language is unchanging, therefore there is only one underlying structure, so that all surface differences derive from movement operations.

An operation called *Select* is responsible for taking items from the lexicon and introducing them into the Numeration. The operations *Merge* and *Move* build new structures and elements are moved in order to check features. The only condition that constrains these operations is that the features coming from the lexicon have to match in the course of derivation. The operation *Spell-Out* brings those elements that are relevant for the surface structure to PF (phonological form).

Assuming this theoretical framework, MacSwan (1997) develops a model concerning the bilingual mind's architecture. This approach presumes that in the bilingual language faculty there are two language specific lexicons, and two phonological components, each one for one language. The Computational System and all the operations are single.

Adapting this lexicalist model to the concept of bilingualism and to code-switching means that any external *control structure* can be avoided, since the only constraints that are requested are those which belong to the languages involved, so that '... code switching may be seen as the simple consequence of mixing two lexicons in the course of a derivation' (MacSwan 2000: 45). This implicates that there is no longer need for a *third grammar* or for constraints which restrict code-switching.

We argue that these assumptions make right predictions about what to consider as possible and grammatically acceptable in a theory of code-switching. This will be shown in the following section analyzing our data on bilingual children's code-switching.

2. Empirical findings

In the following section we will present the empirical findings drawn from our study. First we describe the data collection procedures, then we illustrate the data by showing figures and tables. Both quantitative and a qualitative analysis of the switches will be made discussing the examples of the children's mixed utterances.

2.1 Data Collection

The four bilingual children we discuss here are part of an ongoing study of the research project *Bilingualism in early childhood: Comparing Italian/ German and French/ German* at the Collaborative Research Center on Multilingualism in Hamburg, which is directed by Natascha Müller.

The children's names are Carlotta, Lukas, Jan and Aurelio. They grow up in Hamburg having their parents follow the *one person - one language* strategy. In all cases, the children's mothers are the Italian speakers. Lukas' and Jan's home-language is German, while Carlotta's and Aurelio's is Italian. Jan and Aurelio have siblings, Carlotta and Lukas don't. They all started going to German kindergarten between age 2 and 3.

The data consist of video-taped recordings that have been made at the children's homes twice monthly from approximately age 1;8 to 4;6. The recordings are two 30 minutes long sessions taken in both Italian and German. The German interlocutor is always monolingual, the Italian speaking part is done by German- Italian bilinguals.

The children have been analyzed with regard to the question of whether their language development is balanced or not. In order to compare language competence in both languages, Loconte (2001) and Müller & Kupisch (2003) applied quantitative criteria, such as MLU, number of utterances pro session, upper bound, etc. Qualitative criteria, e.g. verb types and the development of the lexicon (cf. Müller & Kupisch 2003, Cantone & Müller 2003), have also been taken into consideration. The results are that Lukas can definitely be considered as a *balanced bilingual*, whereas Aurelio has a stronger language: Italian. This can be observed by looking at the MLU values as well as by analyzing the development of the lexicon. Carlotta and Jan seem to be quite *balanced bilinguals*, but they show to

have a *preferred* language, respectively Italian for Carlotta and German for Jan (for the term *preferred* cf. Grosjean 2001).

In order to give an overview of the children's language production during the study, the Mean Length of Utterance (MLU) values of the single children are presented (the MLU is counted in words). In Figure 1 we can see that Carlotta has higher MLU values in her *preferred* language, that is Italian, in the first period of language acquisition. Then the two languages develop in a similar way, the German MLU values getting even higher than the Italian ones towards the end of the time span studied. As mentioned above, Lukas has very similar MLU values until he stops speaking Italian during the recordings (Figure 2). Then the Italian MLU values decrease rapidly. Around age four, Lukas starts speaking Italian again. In Jan's recordings (Figure 3), we can see that his *preferred* language, German, always has higher MLU values than the Italian ones (constantly almost one point / word difference). Finally, in Figure 4, we see that Aurelio's MLU values are higher in Italian than in German almost during the whole time span. Unfortunately, the last MLU values in German are not available yet. The number of utterances produced per session has been observed, too (cf. Müller et al. 2002, Cantone to appear). They give a very similar picture as the MLU values insofar as they confirm the *preferred* (Carlotta and Jan) and the stronger (Aurelio) language.

Figure 1: MLU Carlotta

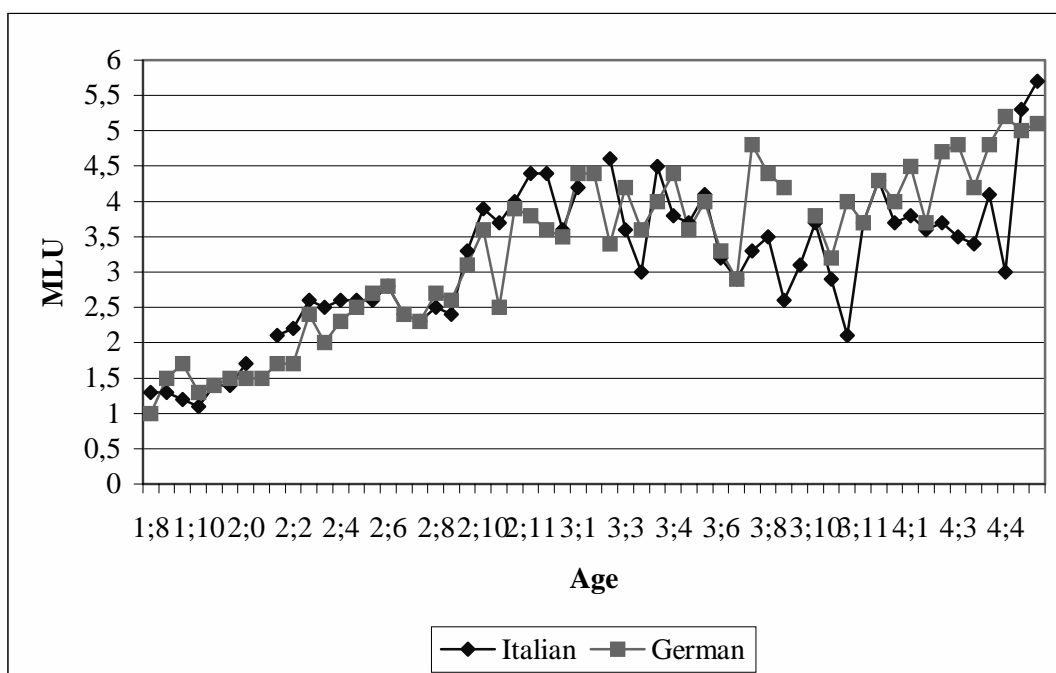


Figure 2: MLU Lukas

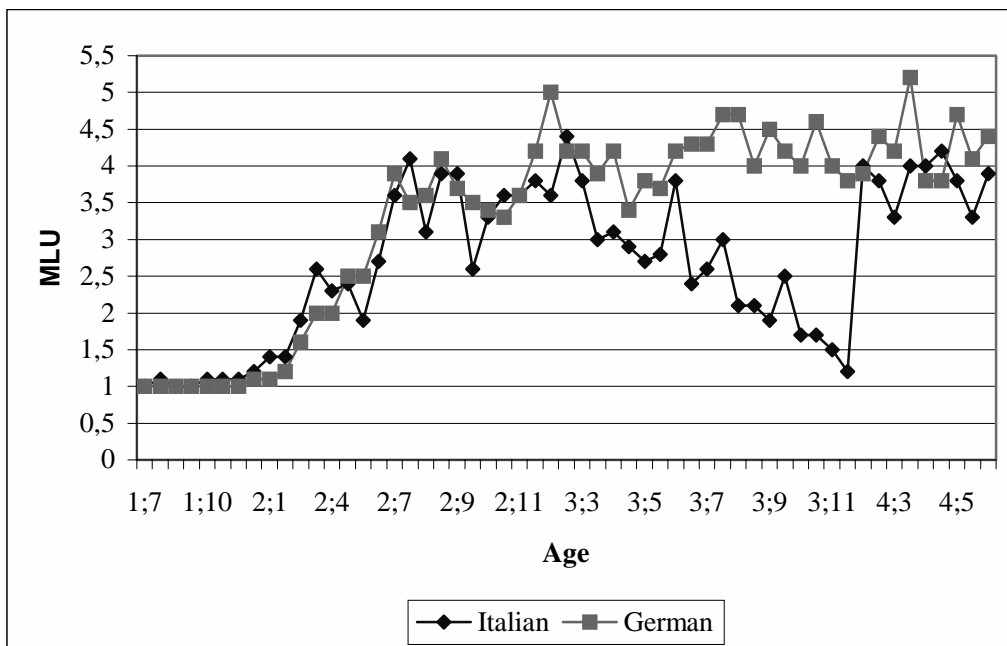


Figure 3: MLU Jan

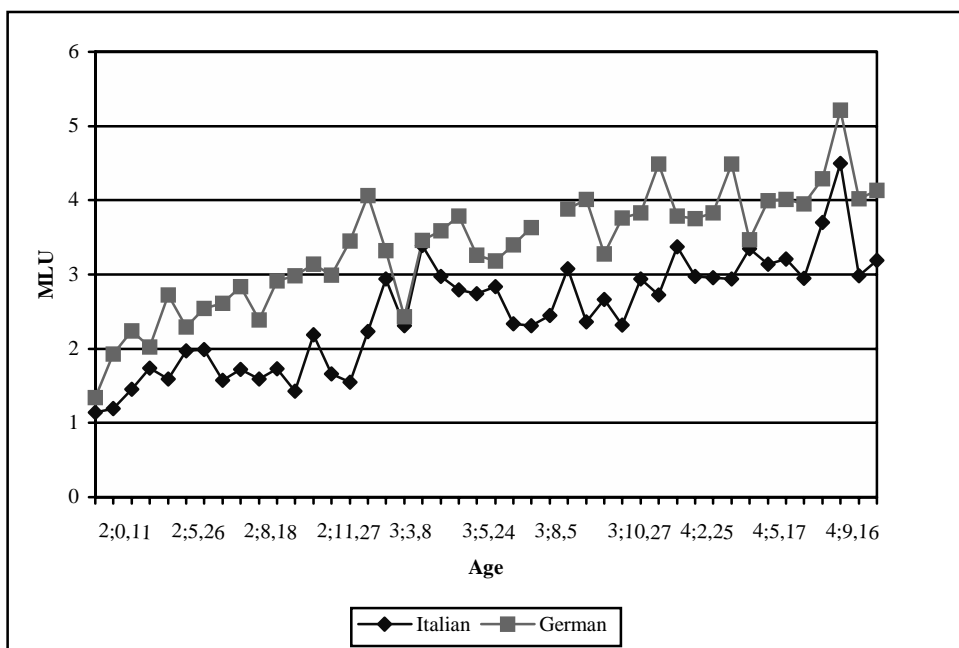
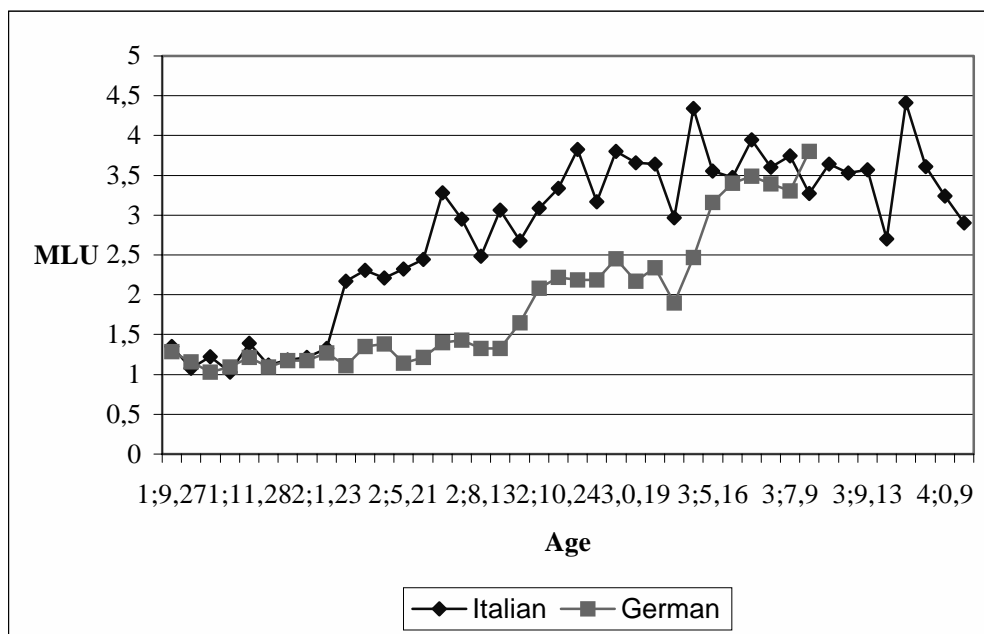


Figure 4: MLU Aurelio



2.2 The mixed utterances

In order to analyze the mixed utterances in the four bilingual children, we started counting as soon as the following criteria are guaranteed:

- 1) The mixed item does not appear in a single-word or in a two-words utterance.
- 2) The children mix consistently all kind of items, and not just nouns or deictic elements.
- 3) Intersentential mixes are not taken into consideration.
- 4) Requested code-switching is not counted.

With respect to the first criterion, as mentioned in 1.3, we do not count two-word utterances as long as they only consist of combinations of deictic elements and a noun or of other function words, since we are interested in making predictions about the grammaticality of the switches. In order to make a grammatical analysis of the restrictions, we will avoid such utterances which do not *overtly* reflect to be syntactically constrained, since the nature of such clauses has been discussed and there is still no consensus on how to analyze them.

2.2.1 Quantitative analysis

In what follows we will show the mixed utterances that occur during the recordings of the time span studied. We can observe that the four children mostly choose the language according to the interlocutor, although the number of mixed utterances is remarkably high in some recordings. All children pass through the stage of early mixing also observed in other studies (cf. section 1.3). Then the mixing decreases abruptly. The four children have a very different individual behavior towards code-switching and the languages are involved in a different way. Carlotta mixes to a very less extent compared to the other children, but she mixes in both languages. Lukas switches a lot into Italian, but almost never into German. Jan never does code-switching in the German recording and, what is surprising, since Italian is the weaker language, his rate of code-switching is very low in the Italian sessions. Aurelio mixes in both language contexts, although one could predict to find switches only into his weaker language, which is German. These findings do not corroborate the hypothesis of language dominance as *the only* reason for mixing (cf. Petersen 1988, Lanza 1992, 1997). Lukas and Aurelio show the so-called U-shaped development (cf. Meisel 1994), i.e. after a period without mixed utterances, they start mixing again.

In order to reject the possibility of the interlocutors to have stimulated a bilingual situation, we applied Lanza's (1992: 649) continuum of strategies of reacting towards the child's mixing to our data (cf. Cantone 2002). In the German recordings the interlocutors always pretended to be monolingual, and they either didn't react to the children's mixed utterances (*Minimal grasp strategy*), or they tried to guess what the child has said (*Expressed guess strategy*). In the Italian recordings the two bilingual interlocutors used different strategies: they both repeated the child's mixed utterance, translating it into Italian, but while Carlotta's and Jan's interlocutor often interrupted the dialogue by asking what the child was saying or guessing what has been said (*Minimal grasp*, *Expressed guess* and *Adult repetition strategies*), the bilingual who played with Lukas and Aurelio frequently continued to talk, accepting the mixed utterances (*Move on strategy*).

However, one can say that the recordings took place in a monolingual situation, because the interlocutors never started or supported mixed utterances at all. The Figures 5 and 6 show Carlotta's mixing in respectively the Italian and the German recording, in Figures 7 and 8 we see the mixing in Lukas' recordings, Figures 9 and 10 show Jan's mixed utterances, Figures 11 and 12 Aurelio's mixing.

Figure 5: Carlotta's mixed utterances - Italian context

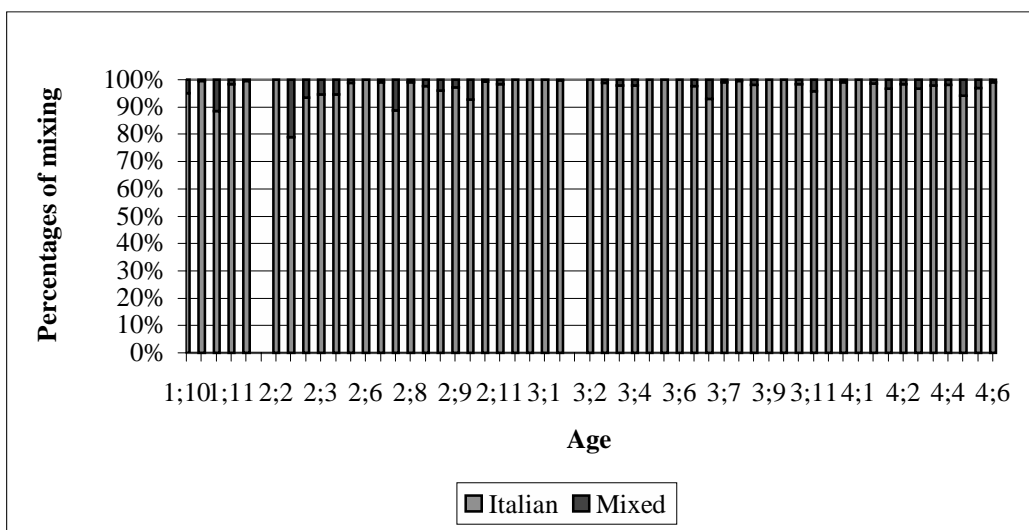


Figure 6: Carlotta's mixed utterances - German context

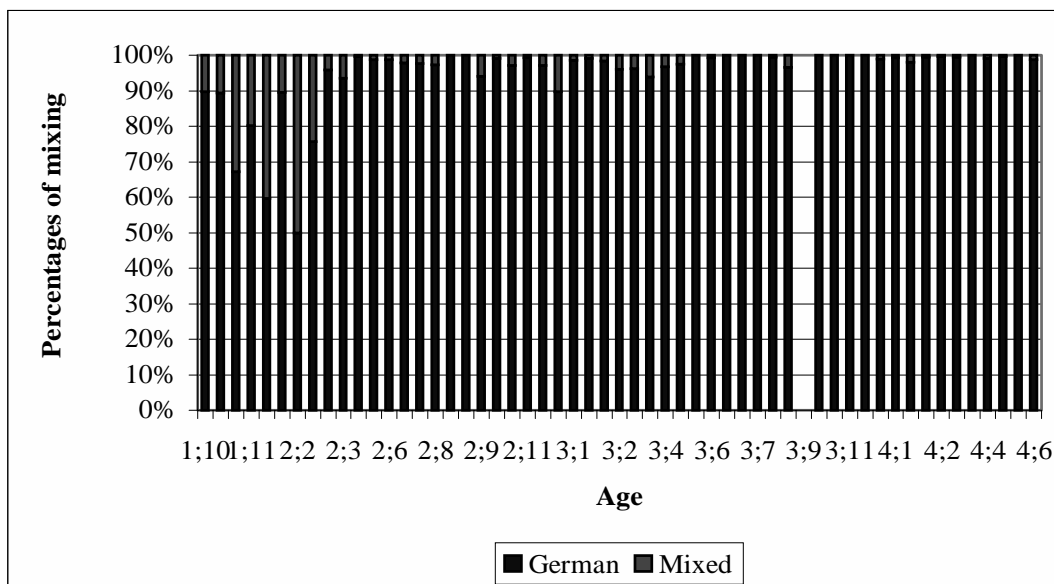


Figure 7: Lukas' mixed utterances - Italian context

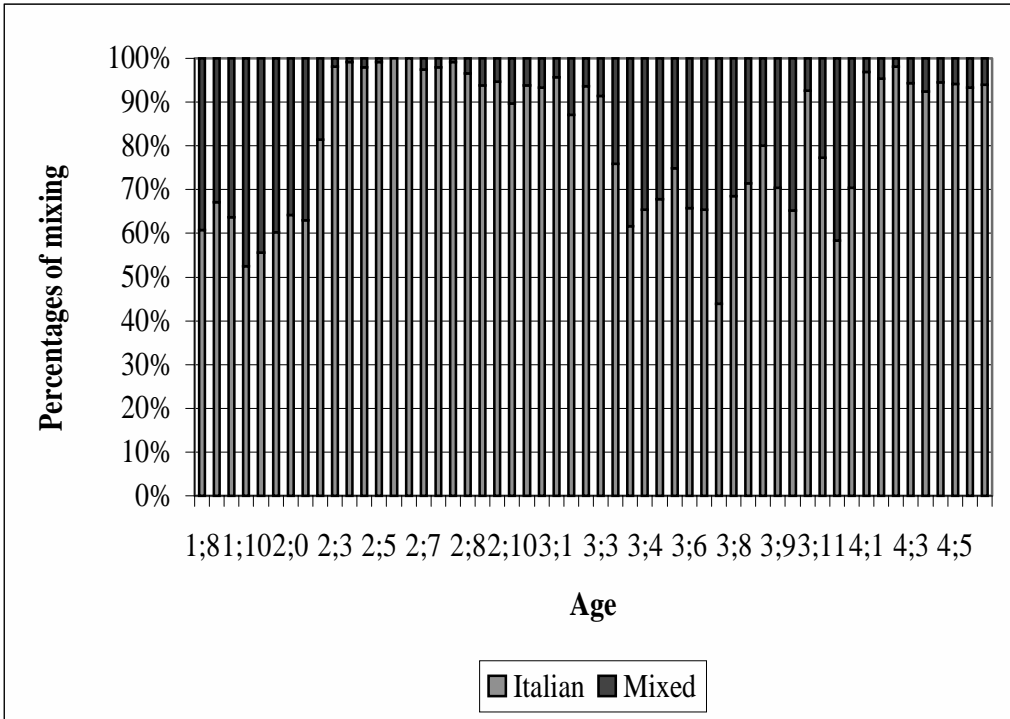


Figure 8: Lukas' mixed utterances - German context

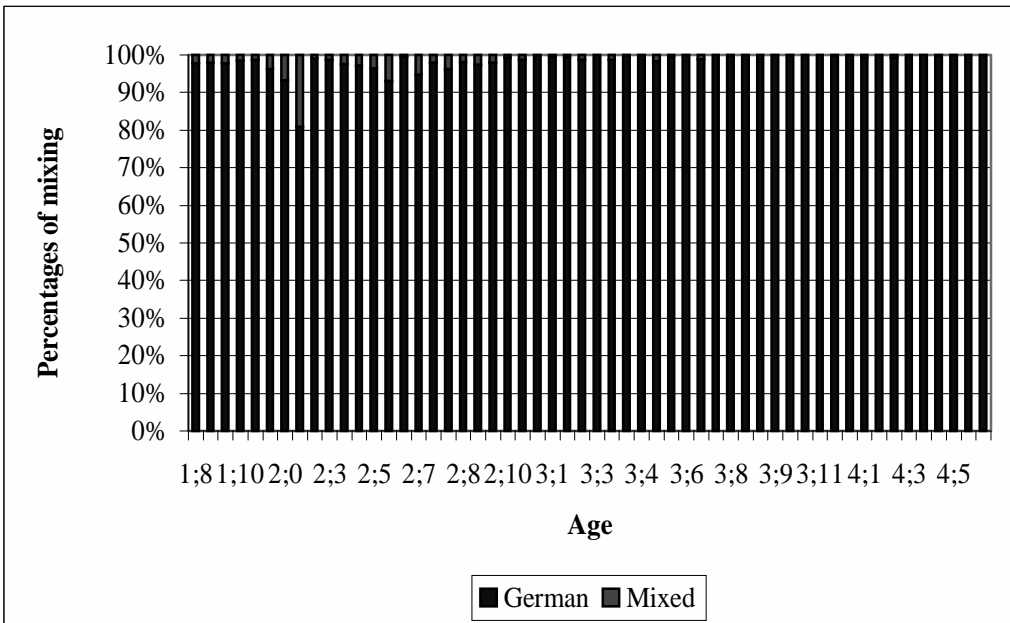


Figure 9: Jan's mixed utterances - Italian context

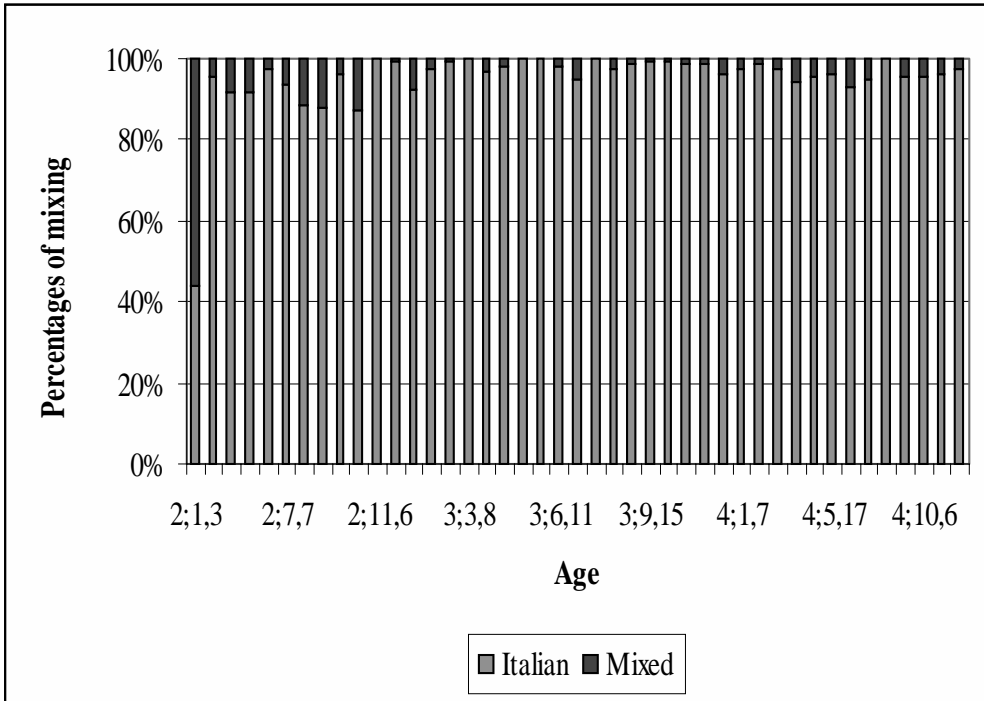


Figure 10: Jan's mixed utterances - German context

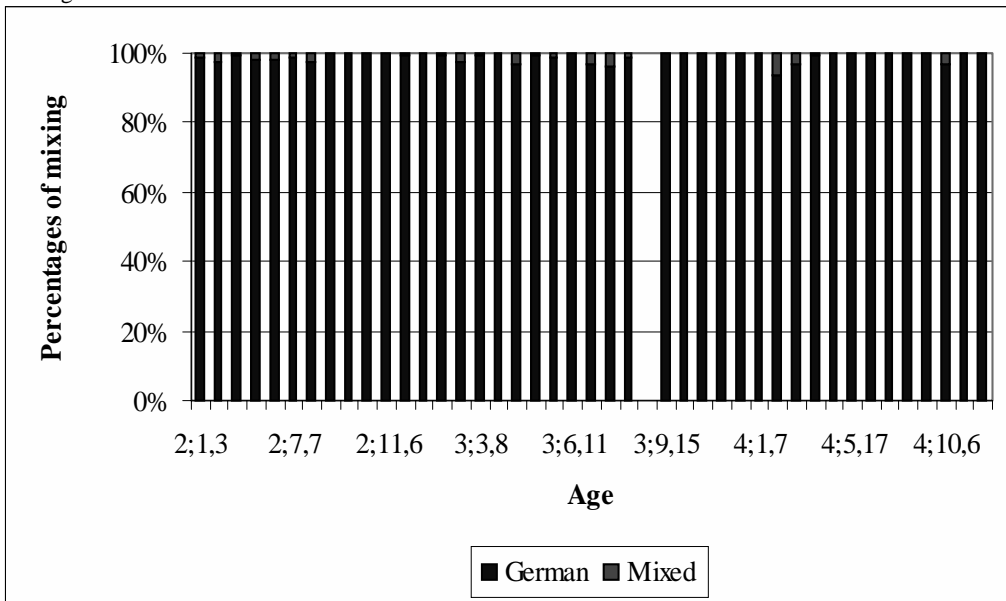


Figure 11: Aurelio's mixed utterances - Italian context

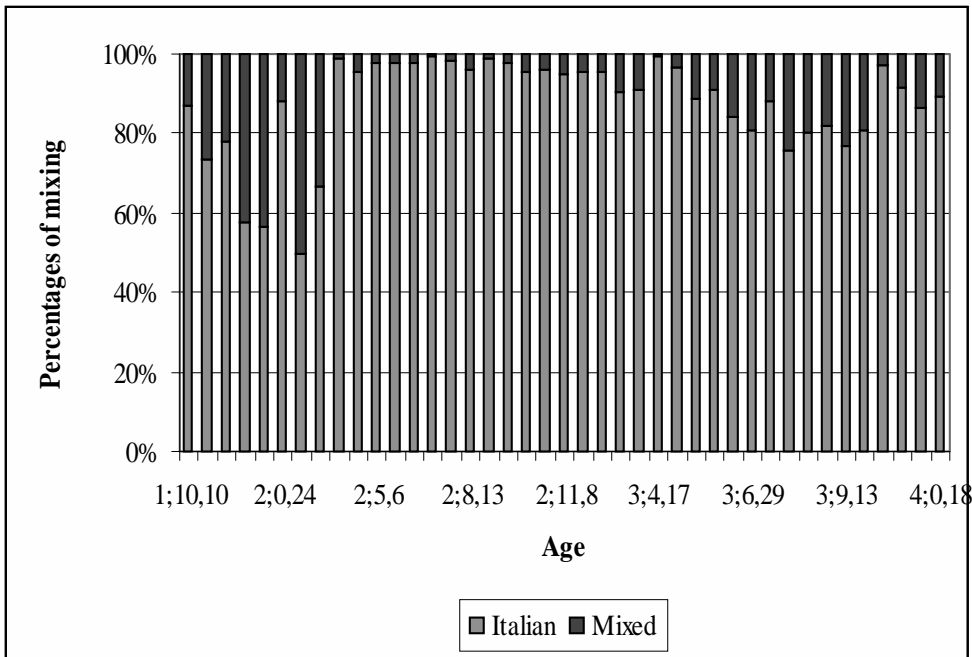
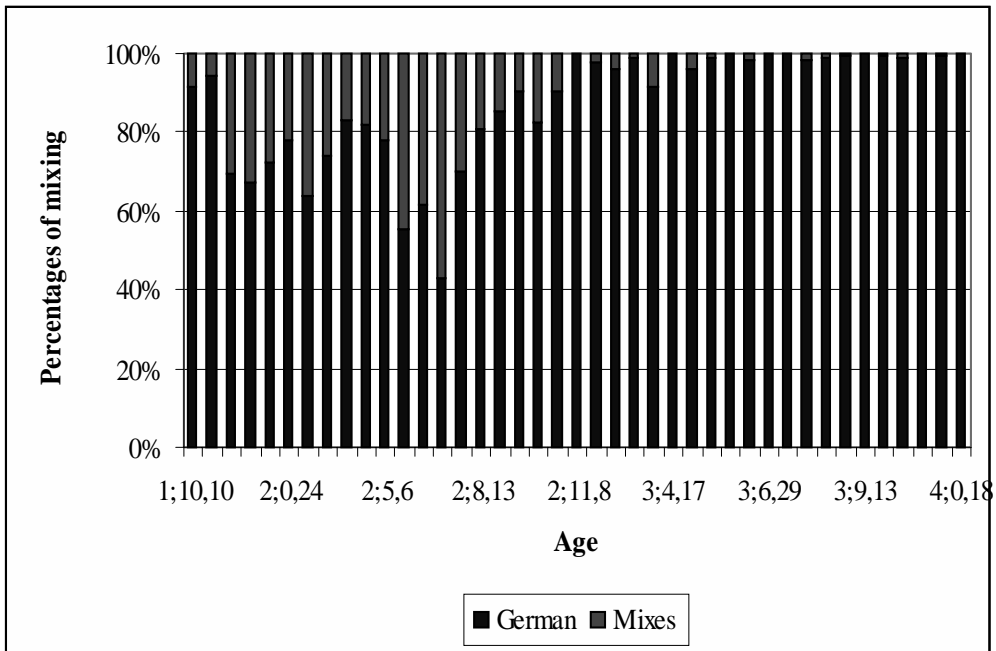


Figure 12: Aurelio's mixed utterances - German context



The children also differ in a qualitative way: Carlotta mixes almost only single items like nouns and adjectives, she often translates words and she is very creative in covering temporary lack of single words. By contrast, Lukas and Aurelio mix all possible elements. Finally, as mentioned above, Jan's language acquisition is unbalanced, so he sometimes *asks* the bilingual interlocutor in the Italian session for the translation of a German word he does not know in Italian.

The following table gives an overview of the number (absolute and percentage) of mixes divided into two main domains: mixing involving a noun (that is mixes between determiner and noun, between adjective and nouns etc.) and mixes involving a verb (including a mix between subject and verb, between verb and object, as well as switches between the modal and the PP, etc.):

Table 1: Code-switching divided into domains (Percentages and absolute numbers)

| Switches involving: | Into Italian | | Into German | |
|---------------------|--------------|-----------|-------------|----------|
| | Verb | Noun | Verb | Noun |
| Lukas | 53% (240) | 47% (210) | 0% (0) | 100% (7) |
| Carlotta | 18% (10) | 82% (46) | 4% (3) | 96% (84) |
| Jan | 20% (22) | 80% (88) | 17% (7) | 83% (35) |
| Aurelio | 45% (162) | 55% (194) | 11% (3) | 89% (25) |

It is striking to mention that the mixing in the *unbalanced* Aurelio as well as in Carlotta and Jan (whose *preferred* language lead the other one at some stages of acquisition) during the period of development of the two grammatical systems does not reflect the fact that the slower language takes advantage of the stronger one in those structures which have already been acquired in the stronger language are applied to the slower one, the so-called *bilingual bootstrapping* phenomenon (cf. Gawlitzek-Maiwald & Tracy 1996, Gawlitzek- Maiwald 2001).

The four bilinguals develop the same competence in grammatical phenomena and reach the *end state* as monolingual children (cf. Kupisch and Cantone 2003). The results of several analyses of different grammatical domains report no noteworthy qualitative differences (cf. Müller et al. 2002).

2.2.2 Qualitative analysis

In order to test grammaticality of code-switching, we categorized all mixings with respect to the most important and valid constraints proposed for adult's code-switching.

The next table, which is adapted from MacSwan (1997), presents in the first column the boundaries, i.e. the switching points, revealed in the literature in the last years. In the second column we state in which studies these boundaries have been reported to be disallowed, either because speakers have rejected them, considering them as ungrammatical, or because the theoretical assumptions which underlie the studies assume that they are not possible. The third column lists the studies that reject the ungrammaticality of these switching points, because they either have evidence for bilinguals to switch at these boundaries, or because they present a different grammatical analysis in order to account for these switches. Finally, in the fourth column, we present the findings of our own study.

Independently of being grammatical or accepted, we can state that in our data we have evidence for all these switches to occur. Some boundaries seem to be less *violated* than others, e.g. switching between a complementizer and the CP, or switching between a clitic and a verb. But others are apparently very popular, for example mixing between an article and the noun, since all children do code-switch at this boundary.

The four children all mix more into Italian than into German. As already mentioned, we can observe that Lukas and Aurelio do much more code-switching than Carlotta and Jan.

Table 2: Main constraints proposed for code-switching applied to our findings

| Boundaries | Reported in | In disagreement with | Our findings |
|----------------------|--------------------------------|---|--|
| because+CP | Gumperz (1976) | Poplack (1980) | Lukas 2 into Ita |
| that+CP | Belazi, Rubin & Toribio (1994) | Bentahila & Davies (1983) | Lukas 4 into Ita Aurelio 1 into Ita |
| have+VP | Belazi, Rubin & Toribio (1994) | Di Sciullo, Muysken & Singh (1986) | Lukas 19 into Ita Aurelio 7 into Ita |
| modal+VP | Belazi, Rubin & Toribio (1994) | Di Sciullo, Muysken & Singh (1986) | Carlotta 0 into Ita, 1 into Ger Lukas 52 into Ita Jan 2 into Ita Aurelio 42 into Ita |
| Aux+V | Timm (1975) | Poplack (1980) | Lukas 17 into Ita Aurelio 5 into Ita |
| Article+NP | Belazi, Rubin & Toribio (1994) | Bentahila & Davies (1983) | Carlotta 39 into Ita, 60 into Ger Lukas 210 into Ita, 7 into Ger Jan 84 into Ita, 28 into Ger Aurelio 178 into Ita, 14 into Ger |
| Subject pronoun+V | Timm (1975), Gumperz (1976) | Poplack (1980), Bentahila & Davies (1983) | Lukas 20 into Ita Jan 1 into Ita Aurelio 6 into Ita, 1 into Ger |
| V+object pronoun | Timm (1975), Gumperz (1976) | Poplack (1980) | Carlotta 2 into Ita, 1 into Ger Lukas 27 into Ita Jan 9 into Ita, 7 into Ger Aurelio 14 into Ita |
| clitic+V or V+clitic | Timm (1975) | undisputed | Lukas 18 into Ita Aurelio 2 into Ita |

In what follows, we will present examples of code-switching in the four children. Since we aim a grammatical analysis of the code-switching, the utterances are divided with regard to the domain in which the switches occur. Starting with switches involving a noun, we have evidence for single nouns mixed into an utterance in all children, as in (1a) to (1d), also for switches between determiner, adjective and a noun, as presented in (1e) and (1f), and for switches between a preposition and a noun, as in (1g) and (1h). Recall that the switching point between a determiner and a noun is supposed to be ungrammatical since it violates the *Functional Head Constraint*, which disallows a switch between a functional head, in this case D^0 , and its complement, here an DP (cf. Belazi, Rubin & Toribio 1994). In the examples, the switched element is always underlined. After the example we give the child's name, then the age described in year; month, day. The language context is given in acronyms: IC for the Italian context, GC for the German one (cf. section 2.1).

- (1a) adesso è pronto il nachtisch (Carlotta, 3;4,22 - IC)
now is3Psg ready the dessert
- (1b) es gibt auch poliziotti für motorrad (Lukas, 3;11,4- GC)
there exists3Psg also policemen for motorbikes
- (1c) ja aber wir sind immer in der motoscafo reingegangen (Jan, 4;2,25 - GC)
yes but we are always into the motorboat gone
- (1d) perché io ho una überraschung pe Emilio (Aurelio, 3;6,14- IC)
because I have a surprise for Emilio
- (1e) la schaufel magica (Lukas, 3;1,30 -IC)
the shovel magic

- (1f) io sono un grüne monstere sono un mosto (Aurelio, 3;5,2 -IC)
I am a green monster am a monster
- (1g) le borse vanno nel kofferraum (Carlotta, 4;5,11 - IC)
the bags go into the boot
- (1h) il coloe del baum (Aurelio, 3;8,1 - IC)
the color of the tree

In fact, those kind of switches occur very often in our data (see also Table 1 and Table 2). With respect to the mixes involving an adjective, which are very few, it is mostly the noun that is mixed, like in (1e), where we find the adjective in the position of the base language (Italian), whereas the German mixed noun *schaufel* normally follows the adjective. In (1f) the article is Italian, whereas the adjective and the noun are mixed from German, the word order being German. In (1g) and (1h) we have a switch between an Italian preposition and a German noun.

Turning to switches involving verbs, there are several switching points that are considered as ungrammatical and non-occurring. A switch should not occur between the subject and the verb, and also not between the verb and the object (cf. Timm 1975). The following utterances are counterexamples to Timm's assumption. We start presenting switches involving the subject and the verb (2a) - (2c):

- (2a) io angel qualcosa (Lukas, 3;7,15 - IC)
I fish something
- (2b) va- der der fa barba (Jan, 3;1,1 - IC)
goes he he makes beard
- (2c) allo io, io non spiel mit nicht (Aurelio, 3;5,30 - IC)
so I I not play with not

In the switches between the verb and the object the object may be a German DP, as in (2d) and (2e) or it is a mixed DP as in (2f):

- (2d) ho fatto zimtsterne (Carlotta, 4;6,8- IC)
have1Psg made cinnamon-stars (cookies)
- (2e) mi serve ancoa , die fabe (Aurelio, 3;7,9 - IC)
me need3Psg still <pause> the color
- (2f) perché hanno fatto un kampf (Jan, 4;4,6 - IC)
because have3Ppl made a fight

Code-switches occur between an auxiliary and the past participle, (3a) to (3e), and between the modal verb and the infinitive, (3f) to (3j), although reported to be disallowed (cf. Belazi, Rubin & Toribio 1994):

- (3a) sono già angekommen (Lukas, 3;6,30 - IC)
are3Ppl already arrived
- (3b) a- adesso è gelandet (Lukas, 4;2,28 - IC)
now is3Psg landed
- (3c) ho vergessen ancola questo (Lukas, 3;6,30 - IC)
have1Psg forgotten still this
- (3d) noi abbiamo gewonnen (Aurelio, 3;8,13 - IC)
we have won
- (3e) poi - poi- poi è aufgestanden (Aurelio, 3;11,26 - IC)
then is3Psg stand up
- (3f) ja wenn du-wenn du so machst wenn die sich dai-sdra-sdraiare will (..) (Carlotta, 4;4,20 - GC)
yes if you so make if she herself lie down wants
- (3g) devi finden un seil (Lukas, 2;11,27 - IC)
must2Psg find a rope

- (3h) vogliamo il il pirati la angel klaunen (Lukas, 3;7,15 - IC)
want1Ppl the pirates the fishing rod steal
- (3i) qua, può kleben (Jan, 3;11,19 - IC)
here <pause> can3Psg stick
- (3j) non lo devi verraten (Aurelio, 3;6,14 - IC)
not it should2Psg tell

The word order is mostly the Italian one, since Italian is the base language in almost all of these examples. In (3g) and (3h) we also have a mixed NP. In (3h) the word order is German.

It is undisputed that a switch should never occur between a clitic pronoun and a verb (cf. Timm 1975), but our data, at least Lukas' code-switching, does not corroborate this assumption as shown in the examples (4a) to (4c):

- (4a) la mamma orsa si dachte (Lukas, 2;8,26 - IC)
mother bear herself thought3Psg
- (4b) non lo brauchen (Lukas, 3;1,30 - IC)
not it need3Ppl
- (4c) dopo si dreht anche questo (Lukas, 3;6,13 - IC)
later itself turns3Psg also this

A switch between the complementizer C and a complement or a relative clause is also reported to be ungrammatical (cf. Belazi, Rubin & Toribio 1994), because C is supposed to be of the same language as the embedded clause. On the other hand Di Sciullo et al. (1986) predict on the basis of the *Government Constraint* that C has to be of the same language as the governing head. The latter case is what we find in our data, as in (5a) to (5c). The same holds for a switch between *because* and the CP, as in (5d) and (5e), the latter with C as the element switched:

- (5a) hai visto che geht leicht (Lukas, 3;4,25 - IC)
have2Psg seen that goes3Psg easy
- (5b) sì che paßt (Jan, 3;9,15 - IC)
yes that fits3Psg
- (5c) no voglio che che lu che che lui lo tragt (Aurelio, 3;9,13 - IC)
no want1Psg that he it holds
- (5d) pecchè ich war kleiner (Lukas, 4;0,5 - IC)
because I was younger
- (5e) wir sind aus- perché wir sind aus-aus-aus-auf deutsch- auf deutschland (Jan, 3;1,1 - GC)
because we are from in germany

We want to mention some switches that are also disallowed in current works on code-switching, for they violate word internal rules: as formulated in Poplack's (1980) *Free Morpheme Constraint*, and as claimed in Meisel (1994), word internal rules should be the most coherent and therefore they should always be respected. In the same vein, MacSwan's (1997) *PF Disjunction Theorem* also predicts no code-switching within a PF component. By contrast, we have evidence for cases in which a suffix is added to a noun in order to agree with the determiner, as in (6a), where the German word *Krone* is changed into *crona*, making it more similar to the Italian equivalent *corona*. We also find a German noun - *Topf* - with the suffix *-ino*, which is an Italian diminutive, as reported in (6b). In (6c) a suffix is taken away in order to apply the phonological rules of the base language: the Italian word *gusto* appears without the suffix to make it sound more German. Note that a compound - *fruitflavor* - has been created using two items from two different languages. The example (6d) contains the Italian word *viola* with the German comparative suffix *-ren*. In (6e) the Italian word stem *cas* - is used with the German plural ending *-en*, creating *houses*, in (6f) the same operation creates *ice-creams*:

- (6a) quella c'ha una crona (Carlotta, 4;4,6 - IC)
that one has3Psg a crown
- (6b) e chi ce l'ha questo topfino co co colla zuppa? (Carlotta, 3;7,13- IC)
and who has3Psg this little pot with soup
- (6c) die habn-die habn-die habn fruchtgust (Carlotta, 4;3,23 - GC)
they have fruitflavor
- (6d) ich hab `n violaren (Carlotta, 3;3,25 - GC)
I have a more lilac one
- (6e) (xxx) die casen so (Aurelio, 3;0,5 - GC)
the houses so
- (6f) gelaten (Aurelio, 3;0,19 - IC)
ice-creams

2.2.3 Further evidence

Summing up, we argue for the grammaticality of all the switches presented here. The reason why we consider all these mixes as grammatical, hence the theoretical assumption that the only rules which constrain code-switching are those defined by the two languages involved, will be explained in the next section.

We only have evidence for one kind of tricky switch: When Lukas switches a German verb into an Italian utterance, he sometimes does not realize the subject, as Italian allows (since it is a Null-Subject language), but German does not. We also find such an utterance in Jan's data (7h). Here some examples:

- (7a) wäscht die hände anche a lui (Lukas, 3;4,7 - IC)
washes the hands also to him
- (7b) schneidet il capelli (Lukas, 3;4,7 - IC)
cuts the hair
- (7c) ti sei verletzt (Lukas, 2;11,13 - IC)
yourself have you hurt
- (7d) adesso si verbrennt (Lukas, 3;4,25 - IC)
now himself burns
- (7e) un pirata pende una spada e dopo kämpft con un cavaleie =cavaliere (Lukas, 3;3,23 - IC)
a pirate takes a sword and then fights with a knight
- (5a=7f) hai visto che geht leicht (Lukas, 3;4,25 - IC)
have2Psg seen that goes3Psg easy
- (7g) guarda che war hier (Lukas, 3;10,3 - IC)
see that was here
- (5b=7h) sì che paßt (Jan, 3;9,15 - IC)
yes that fits3Psg

In all these examples the word order is Italian, and the finite verb is German. The German verb generally does not license a Null-Subject, therefore the utterance should be ungrammatical, and the mixing disallowed, as reported in the *Equivalence Constraint* in Poplack (1980) and in Timm (1975) (see also section 2.2.2).

Two explanations are possible in order to account for these examples which apparently do not respect the rules of the German grammar: Either Null-Subjects *are* allowed in German in some contexts, e.g. they are syntactically licensed, and then pragmatically identified because they have been introduced into discourse before. Or we have to assume that the item coming from the lexicon does not carry the features, but that the features are added to the item later into the course of derivation.

The latter proposal is problematic under the current assumption of Minimalism, which supposes all syntactic variation to be lexically encoded, that means, related to the particular lexical item. Assuming that the item does not carry the features that belong to it, we would reject the whole lexicalist approach.

Moreover it is inconceivable to think of the possibility to add features later in the course of derivation. Additionally, possibility two, hence a grammatical explanation, raises up the following question: how is it possible that the German verb seems to carry the features of an Italian verb, since it appears in clauses with an Italian word order and seems to license a Null-Subject.

In our opinion, possibility one is the most plausible. The Null-Subject is syntactically licensed and pragmatically identified by the context and therefore the utterance is not ungrammatical anymore. In fact, it has been reported that topicalized subjects in adult German are omitted to an extent of 5% (cf. Schmitz 2003). The examples (7a) and (7b), which are omissions in topic position, have been produced looking at pictures telling the daily life of a bear family (it was part of an elicitation task), so that the protagonists have been introduced at the beginning of the story and appear on every picture. Therefore it seems clear that the subject is known to both the speaker and the interlocutor. Additionally, Lukas mostly points at the pictures, describing what he sees.

With respect to the examples (7c) and (7d) we think that the child establishes a co-reference between the reflexive clitic and the subject, leading to an implicit understanding of the Subject. Still, these utterances would be ungrammatical in German.

For the examples (7e) to (7h) we propose a different analysis: since the complementizer is *always* Italian and the word order in the embedded clause is also *always* Italian, we presume the functional categories T and AGR also to be Italian. Hence, the complementizer C being Italian means that its features build an Italian CP, and therefore the German verb is treated like an Italian verb with respect to checking.

This way we can explain why these utterances have a Null-Subject. Assuming that the Null-Subjects are pragmatically licensed, and therefore that they can be omitted, the examples in (7) are not a problem raised up by code-switching, namely that it looks like the German verb has either no features when coming from the lexicon, or that it has the features of an Italian verb, but they can simply be explained by language internal factors. In addition, we argue that in the examples (7e) to (7h) the German item is just inserted into the Italian CP.

3. Discussion

The examples shown in 2.2.2 and 2.2.3 clearly demonstrate that a lot of switches, which are disallowed on the basis of constraints formulated in the literature, *do* occur in bilingual code-switching. The fact that the data presented here come from child speech, that means from bilingual children between two and five years, is not a problem for the analysis of the switches, since we have evidence for the children to acquire the two languages without any problem. The switches are not due to language dominance or to the lack of grammatical competence. It seems rather better for the authenticity of the data to have children's speech, since they express themselves without any fear of producing ungrammatical or unaccepted utterances.

As already mentioned, we claim that all the grammatical constraints proposed in the literature are too descriptive and too restrictive in order to account for all the mixed utterances produced by bilinguals. They rather generate a *third grammar*, which controls code-switching in an artificial way.

Following MacSwan (1997, 2000) and assuming the general framework of Chomsky (1995), we argue that two separate lexicons in the bilinguals make use of one invariant Computational System. There are no formal properties of code-switching and no grammar of code-switching. The only rules which constrain code-switching are those that are defined by the two languages involved. Therefore, as supposed in the monolingual's mind, the features encoded in each lexicon must be checked successfully during the derivation in order to make an utterance arrive at LF and PF level. As long as language specific constraints are respected, any case of code-switching is allowed. This lexicalist approach makes it quite easy to account for the phenomenon of code-switching. Even the most complicated examples of switches, in the sense that more than two elements in different domains are mixed, can be better understood if we assume that they are the result of the lexicons *working* together:

(8a) il dottore hüpft qua aus diesen loch raus, adesso (Lukas, 3;5,8 - IC)
the doctor jumps here from this hole out <pause> now

(8b) e que- qua con il schwanz po pixen poi fa male (Jan, 3;7,1 - IC)

and here with the tail can2Psg prick then makes hurt

(8c) sei te dran, a a prendere una karte (Aurelio, 3;8,13, IC)

are2Psg you in <pause> to take a card

In (8a) there is a switch between the subject and the verb, in addition the Prepositional Phrase between the adverb of place *here* and the temporal adverb *now* is switched. In (8b) we have a mixed DP and a switch between the modal verb and the infinitive. Finally, in (8c), the particle *dran* is switched as well as the determiner.

Summing up, the data from the four children have shown all kind of mixes at different points in the utterance: mixes between determiner and noun, between auxiliary and verb, between a complementizer and its complement, etc.. All mixes are to be considered as grammatical in our opinion, because they do not violate any grammatical rules, either in the grammar of Italian nor in the German one. The word order, which is different in the two languages, mostly seems to depend on the base language, that means the language of the context in which the element(s) is (are) mixed. Even the examples showing a German finite verb without a realized subject, which is not syntactically licensed in German grammar, turned out to be acceptable. On a closer analysis, it becomes clear that some of the subject omissions are pragmatically licensed, German being a Topic-Drop-Language which occasionally allows Null-Subjects.

Furthermore, we propose to consider all functional categories within the CP as Italian whenever the complementizer is Italian. This explains the subject omissions and, moreover, it implies that the Null-Subject properties may depend on the features of the functional categories and not on lexical and / or properties of the verb.

This question is certainly a topic for further research and cannot be answered in this paper. However, the discussion raised up by this analysis clearly shows the advantages of studying code-switching, since a lot of predictions made in order to explain language faculty can be checked by looking at how two languages work in bilinguals, hence at looking at mixed utterances in bilingual speech.

To sum up, the claim of this paper was to show that a lot of switching is possible and indeed occurs in bilingual speech. We analyzed data from four bilingual children and argued for considering all instances of mixing as grammatical code-switching. In contrast with other studies, we define even the earliest mixes as code-switches, since we have evidence for the children to have acquired pragmatical competence and the ability to choose the language with respect to the interlocutor very early. Language choice, language use and preference are very important aspects for respecting sociolinguistic and psycholinguistic rules of code-switching.

We presented recent studies on adult code-switching and the constraints that have been developed in order to regulate the code-switching. All of the switches considered as disallowed and rejected *do* occur in our data without causing any reaction of misunderstanding during the interaction.

Therefore we disconfirm the assumption that specific kinds of switches are not allowed and do not occur in bilingual speech, considering all of the sentences presented in this paper as correct and well-formed instances of code-switches.

In the same vein of MacSwan (1997, 2000), we argue that two lexicons interact in the bilingual mind. Since all learning in the Minimalist Program is associated with language specific properties of the lexicon, the lexically encoded features will be responsible for triggering and consequently generating a phrase structure. The single items selected from the lexicon introduce features into the derivation, and these will be checked there. If they mismatch, the derivation crashes. If they do not, they will undergo movement and generate a phrase structure on the basis of the language specific requirements they have. This is what is spelled out at the phonological level and can be described as code-switching. No other constraints are needed in order to regulate this process. Assuming this model, we consider all switching possible as long as it respects the grammatical constraints of the languages involved.

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The responsibility for the contents lies with the author.

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