The evolution of trilingual code-switching from infancy to school age: the shaping of trilingual competence through dynamic language dominance

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Abstract

This article reports on a study of the code-switches produced by two children who acquired their three languages in early childhood. We compared formal and functional aspects of their switches recorded at two different stages of their development. Of particular interest was the consideration of sociolinguistic variables that have intervened in the children's environment. We undertook a quantitative and qualitative analysis of the children's code-switches to ascertain the frequency of switching, the use of each of the three languages employed for switching and the linguistic complexity of the switches. We assumed that the sociolinguistic conditions that changed the linguistic landscape in which these children operated would be reflected not only in the development of each of their languages, but also in the kind of switches that they produced. We tried to establish whether it is the case that certain forms and functions of code-switches constitute a "core" of trilingual language behaviour while others are prone to change. Ultimately, our aim was to gain an insight into the specific trilingual language production processes over a given period of time that can shed light on the development and nature of trilingual competence.

1. Introduction

The study of child trilingualism can be frustrating as it is often hampered by practical problems relating to the collection and interpretation of data on the one hand, and the absence of theoretical models that might be used for comparison on the other. The rewarding feature of such endeavours, however, is that they do allow fascinating glimpses into the human capacity of processing language and the linguistic resourcefulness of multilinguals. The study of bilingual code-switching has been undertaken from a variety of linguistic and pragmatic perspectives, with code-switches representing evidence of language processing, formal preferences, or discourse strategies. Not surprisingly, linguistic versatility can become even more enhanced when three languages are in constant contact and use.

While trilingualism is becoming a more widespread linguistic faculty in individuals, most of the research on trilingualism concerns individuals who acquire or learn a third language in a school context (Cenoz et. al., 2001; Cenoz & Genesee, 1998) or immigrant minorities who learn a third language in social contexts (Baetens Beardsmore, 1993). Most of these studies and models view the development of a third language consecutively to the development of one or two other languages.

Our subjects fall into a particular category of trilinguals, namely children who acquired their three systems almost simultaneously, i.e. children who had contact with three linguistic systems from birth and developed them as first language. Their language acquisition took place in contexts where their wider linguistic environment and particular family language constellation changed, although the languages involved remained the same. It therefore became necessary to bear in mind sociolinguistic factors alongside the developmental aspects as well.

The focus of our study is on language production of trilingual children in those instances where their output differs from that of their monolingual peers. As part of their trilingual communication, i.e. with bilinguals and trilinguals who share the same languages, code-switching serves as a highly effective interactional tool. It allows the user to compensate for linguistic gaps

in one or several of their languages or to capitalize on the typological efficiency of one linguistic system versus the other so as to achieve successful communication.

We examine the children's non-monolingual language output from a quantitative and a qualitative perspective. Thus, we analyse our data in terms of frequency of switches and mixes and according to their morpho-syntactic shape and the number of languages they contain. A developmental stance has been adopted as we compare the switches produced by the children at different ages and taken at different stages in their development. Ultimately, we hope to contribute some insights into the development and nature of trilingual competence, including its related issues of language choice, language dominance and directionality of switches.

2. Studies in code-switching

In line with our two-pronged approach to trilingual competence in children as demonstrated through code-switching behaviour our study is informed by two types of research:

i.) Studies that look at the language behaviour of groups in multilingual contexts that have a broad remit as they aim to trace changes in the linguistic systems of languages in contact. Diachronic studies show up particular language strategies of language choice and switching that bilinguals or multilinguals adopt. Those that take a longer-term perspective point towards the emergence of new, fused systems or language shift. In particular, we have been influenced by the conceptual and theoretical proposals put forward by Auer (1998), Clyne (1997, 2003) and Muysken (2000).

ii.) Some psycholinguistic investigations that look at developmental aspects of language contact as revealed in code-switching during the process of language acquisition in trilingual children, and that deal with the nature of multilingual competence. Unfortunately only few such studies exist and they are based on small samples (Hoffmann, 2001; Stavans, 1990, 2003, in press). While not exactly comparable to our own research, Clyne's work with large numbers of adult multilinguals who acquired their third language (English) in immigrant contexts was insightful and thought-provoking, as was Lanza's work on bilingual code-switching (1997, 2001).

2.1 Can children code-switch?

We go along with the separate language acquisition hypothesis that has been proposed (Genesee, 1989, Genesee et al., 1995; Comeau et.al., 2003) and widely accepted in the literature on bilingual language acquisition and suggest that it extends to simultaneous trilingual acquisition as well. Similarly, we agree with the view that code-switching (CS) is a feature of adult as well as child language. Like Lanza (1997) and a previous study by Stavans (1992), we are of the opinion that there is no basic qualitative difference between adult CS and infant language mixing. The main difference is that children's language systems are under development and their competence is still to be achieved, whereas in the adult competence has already been acquired. A typical example of this is the case where trilingual children mix the same proposition in utterances in their different languages. Examples such as 'Will you play *mit* me?', 'Nina pinta *mit* lápiz', Nina Auto fahren *con* Mami' (Hoffmann, 1985) show that the child obviously knows that a preposition is required in a particular slot but that its language-specific lexical shape has not yet become fully contextualised, a phenomenon we refer to as permeability of languages. The present study provides evidence for a developing pragmatic competence in trilingual children. It has encouraged us to propose a preliminary model of such an evolving trilingual competence.

In this study, we look at language alternation primarily from a formal, structural perspective although functional considerations also come into play. We see code-mixing (CM) as the conflation of various linguistic units (be they morphemes, words, phrases or whole clauses) *within* the sentence. This is similar to Muysken who in an examination of bilingual speech uses code-mixing "to refer to all cases where lexical items and grammatical features from two languages *appear in one sentence*" (2000:1). Code-switching, on the other hand, involves mixing linguistic elements (from words to phrases and clauses) *across* sentences. Thus *intra-sentential CM* and *inter-sentential CS* are interpreted as different manifestations of bilingual speech when the concept of the sentence as a grammatical unit is given prominence.

2.2 Studies espousing our approach and perspective

For Auer (1998) code-switching is discourse-related. He associates it with a "locally meaningful event by the participants" and situates it at the pragmatics end, whereas language mixing is seen as having a wider remit as it is to be interpreted "in a more global sense", i.e. when it is seen as a

recurrent pattern. This he places in the middle of the scale. Fused lects, the new linguistic systems that emerge from (usually prolonged) language contact and are stabilised mixed varieties, are located at the grammar end of his continuum.

Auer suggests that his model characterizes not only the typology of language alternation but also highlights the progressive development of bilingualism. "Compared to CS," he writes, "LM seems to require a higher bilingual competence; in addition, there is some evidence that alternational LM requires more proficient bilinguals than insertional LM. On the continuum from CS to FL [fused lects], the most balanced bilinguals are likely to be found here." (Auer, 1998:10). One of the pillars of Grosjean's holistic view of bilingualism (1985, 2001) is his notion of language modes. When bilinguals are in monolingual mode their other language is largely deactivated and their language production is similar to that of monolinguals. Both languages are activated when they are in bilingual mode which is when their language output may display features of bilingual speech such as borrowing and code-switching. Grosjean's model can be adopted to account for the trilingual's language production as well. One would then have to posit that trilinguals can operate in monolingual, bilingual and trilingual modes depending on the degree of language activation or deactivation of their three linguistic systems.

We have argued before (Hoffmann, 2001; Stavans, forthcoming) that there may well be a difference between bilingual and trilingual competence that goes beyond a quantitative one that results from the fact that there are three instead of two languages involved. Three different linguistic systems, the combinatory choices in their actual or potential use, and the interplay of attitudinal and socio-cultural factors all contribute towards a qualitative difference as well. Bilinguals and multilinguals alike have been observed to be particularly sensitive to the linguistic context of language use and appear to be intuitively responsive to the linguistic needs of their interlocutors. We see this heightened sensitivity as part of the trilingual's overall metalinguistic awareness and language competence.

Multilingual children can be eclectic in their choice of languages and switched linguistic items. For them, code-switching affords economy and efficiency of communication with other multilinguals. A closer look at their CS indicates that certain language structures or properties are

more prone to switching than others. We can also see that the patterns of the switches change as children get older and/or other factors such as increasing dominance of one of their languages exert their influence (Hoffmann & Widdicombe, 1999; Reyes & Ervin-Tripp, 2004). The latter study traces such development by looking at school-age consecutive bilinguals' switching and borrowing practices and assesses their significance from a developmental perspective. They report on their subjects' change of pattern of switching behaviour and that their switches became increasingly more sophisticated; this we have also observed in our trilingual subjects.

Apart from drawing on studies of code-switching, we have looked at research in other, related areas, especially with regard to taking account of sociolinguistic factors that influence language development. As children go through their linguistic formative period they acquire communicative competence through acculturation and socialisation, both processes in which language plays a crucial role. Bryant's work (2001) highlights the importance of acquiring such competence early on in life: not only do they determine successful social integration and educational development; they also have a bearing on later literary skills. It is therefore to be expected that any changes in the linguistic environment of developing multilinguals is likely to have consequences for their communicative competence.

Over the past two decades a number of monolingual and bilingual language processing models with a psycholinguistic focus have been developed (e.g. Green, 1986, 1998; Levelt, 1989; also Walters, 2001). Work in this area has been widened by Clyne's proposed multilingual language processing model (2003:213). It is ambitious in that it attempts to be all-embracing, aiming to account for linguistic processing as well as the various forces that impinge on it. The result is a construct that in itself incorporates several psycholinguistic and sociolinguistic models of multiple language production, and includes a range of components that all influence and determine a multilingual's choice of output such as use and context, attitude and identity.

3. The Study[1]
3.1 The subjects
The subjects were two children (siblings) raised trilingually from birth with each parent speaking a different non-community language. The home environment was genuinely trilingual as each

parent was able to communicate in all three languages. The first set of data was recorded when the children were nearly 3 and 6 respectively and the family, the father speaking Spanish and the mother Hebrew, was living in the US. English was the language of the children's wider experience outside the home, while Spanish and Hebrew were used inside the home, Spanish being the language used by the parents to each other. The second set of data was collected three years later when the younger child was almost 6 and the older one was 9. At that time the family had moved to live in Israel and the mother had switched to using English with the children in order to provide the children with continued trilingual input, although Spanish continued to be the language the parents used with each other and the language the father used when addressing the children.

3.2 Data collection and analysis

The first set of data (T 1) was collected over a period of 18 months by Stavans (1990) in a naturalistic home environment while the children and family conducted normal family life. The recording sessions included interactions of the children in one of three possible language modes: monolingual – when playing with a friend; bilingual –with relatives or family and friends; trilingual –with parents.

The second set of data (T 2) was collected nearly 3 years later (Stavans, 2001). The children were asked to engage in an extensive discourse, a semi-structured experimental task of narration. The children were given the wordless picture-book entitled "Frog Where Are You?" by Mercer Mayer. The children where then asked to retell the story, at 2 week intervals, following the pictures. Recording of the children's narration in each one of the three languages was transcribed and analysed.

In this study we work with the terms CS and CM which suit our focus on formal aspects. In our discussion of the developing trilingual competence we draw on Auer's model when we regard CS and CM as landmarks on a linguistic continuum of multilingual production. We are mindful of the fact that, unlike Auer, we are dealing with trilingual simultaneous language acquisition. Therefore, the emerging linguistic competence is not the result of the same factors as in the case of language contact among adolescents or adults in a multilingual context. We distinguish and

define CS along the sociolinguistic lines of alternations that occur in utterance, clause or sentence initial position. CM are alternations that occur at the sentence structure level, at the lexical level, and at the morpho-syntactic level.

We examined our data with a view to finding answers to the following three questions:

1) How often did the children code-switch and code-mix when using their three languages?
2) Which language or languages were used for CM and CS?
3) What kind of switches did these trilingual children employ?
4)

4. Results

4.1 Frequency of switching

Our first step was to quantitatively assess the overall frequency and distribution of CM and CS by both children over time. We counted the total number of occurrences and compared these to the number of opportunities for switching between the languages that they had. Based on the observed switching behaviour of these subjects we define opportunity to be a morphosyntactic, a sentential or an utterance boundary.

Table 1: Percentages of CS and CM by each child at T1 and T2

Subject	M	E	M	E
Age	T1 2;6-4;0	T1 5;5-6;11	T2 6;4	T2 9;3
Proportion of CS	28.70%	35.40%	1.30%	1.70%
Proportion of CM	1.20%	3.20%	28.60%	10.20%
Total proportion of alterations	17.00%	38.60%	29.90%	11.90%

Table 1 shows that E (the older subject) used more switches in the earlier production compared to relatively few switches in the task at a later age. By contrast, child M (the younger subject)

produced significantly fewer switches at a younger age. More specifically, from this data we can see that across the ages from roughly 3 years to the age of 6 there is an overall steady increase in the production of CS and CM which decreases slowly towards the age of 9. This "bell-shaped pattern" of code-switching production reflects a developing transition from formal to functional emphasis on CS.

A closer look at the proportions of CS and CM over T1 and T2 by each child shows that as the children grow older, their dominance in the three developing languages increases as evidenced by the production of more CM which require not only a deeper understanding of the formal aspects such as the lexicon, the morphology and the syntax in each language but also the pragmatic and the functional appropriateness of these forms. These CM are manifestations of the complex combination of *forms* - that yield "rule governed mixes" - and *function*. The production of such combinations allows or disallows switches based both on language dominance and language choice.

The younger the age of the child, the fewer switches are produced because, we would argue, the three linguistic systems have not yet been fully acquired and the child's overall trilingual competence has a smaller formal "knowledge base" to draw on. The older child is linguistically more sophisticated: he has had contact with the systems for a longer period of time, his cognitive knowledge of language is more advanced, and he has had experience of literacy in all three languages, albeit to a different extent in each language.

The switches between languages are subdivided according to whether they were considered to be code-switches or code-mixes. This distinction is important here for methodological reasons if we want to trace some sort of gradual language development, as is customary in studies of monolinguals where morpho-syntactic development is considered to be a more refined indicator of the stage in the acquisition process.

These results show the evolution of code-switches and code-mixes across the subjects' developing trilingualism. Switches are those tokens which occur at the sentence level and, in particular, between sentences. According to Auer's model these are regarded as more basic and simple types of switches that reveal a more basic level of bilingual competence. Code-mixes, on

the other hand, which occur within the sentence anywhere, whether at clause, phrase or lexeme level, require a more sophisticated type of bilingual competence and reveal the child's greater command of each linguistic system. If we accept this position then we can say that, as children grow older, their dominance of the languages increases as evidenced by the production of fewer switches that require less linguistic knowledge and that rely on simpler forms and more basic functions of each language.

4.2 The use of each of the three languages in switching

We provide a brief answer to our second question: Which languages were involved in the children's switches? Our findings are summarized in Figure 1 and Figure 2.

Cf. Figure 1

Cf. Figure 2

Figure 1 illustrates all the alternations away from a language and Figure 2 shows alternations into another language. In the following we present the findings drawn from both figures.

At the youngest age there is no alternation away from English but extensive alternation into English yet very little alternation away or into Spanish and Hebrew. This may be because the child is at an incipient trilingual acquisition stage, or because English is the dominant language at the time.

Around age 5 the children switch away from Spanish more than they do from English, and more from Hebrew than from English. On the other hand, they switch more often into English than they do into Hebrew, and only rarely into Spanish. This may be because they are still developing their three language systems and English represents the language they are most comfortable with even though they have changed their linguistic habitat and now live in Israel.

But dominance is dynamic and at around age 9 the alternations from and to all three languages seems more balanced. However, there are more alternations away from Hebrew, fewer away from Spanish and even fewer from English. On the other hand, there is more alternation into

Spanish and a similar rate of alternation into both English and Hebrew. This might be explained by the progress of trilingual first language acquisition which may be benefiting from the introduction of literacy and the need to use frequently the forms and functions provided by the three languages.

In other words, what the subjects could express at the early stages was more restricted (per language and across languages) than what could be achieved at the later ages. These children's developing trilingual competence was shaped quantitatively (i.e. as regards exposure and production) and qualitatively (with regard to acquiring linguistic skills such as types, genres, styles and modes of language) by their pre-school language experience and, perhaps more significantly, also by their schooling in terms of socialisation and literacy.

4.3 Structural robustness and permeability of language form and function resulting in CS and CM

Both sets of data rendered switches which involved specific parts of speech. Apart from those considered general borrowings of a single lexical item that did not have a particular grammatical function assigned to them, there were switches such as subjects and predicates and those concerning a phrasal category of a noun phrase or a verb phrase. All types of switches most often occurred between any two of the three languages, although a small number (less than 10%) of these switches resulted in a trilingual switch involving all three languages. This was mostly at the sentential and phrasal level of analysis. This observation is intriguing as it raises the question of whether bidirectionality should be taken as the norm for multilingual competence. But what significance should one then attribute to those, admittedly few, instances of trilingual switches?

A comparison of the following tables shows a developmental change especially noticeable in the noun and verb categories:

Table 2: Percentage of alternation at the morpho-syntactic level by both children at early stages of trilingualism (T1)

	From E	From H	From S	No. of	% Total

	%	%	%	Switches	
N-NP	76.9	17.7	5.4	147	62.55
V-VP	92.5	2.5	5	40	17.02
Adj-AdjP	85.7	14.3	0	7	2.98
Adv-AdvP	88.9	0	11.1	9	3.83
P-PP	75	25	0	4	1.70
Other	62.5	20.8	16.7	24	10.21

By and large, the categories switched most often are the nouns and verbs as well as the noun and verb phrases. At this stage both children were switching primarily content words, and the largest amount of switching occurs from English into the other languages. This indicates that English was the dominant language. While the children interact with other interlocutors who speak either or both of the other languages (i.e. Spanish and Hebrew) they make little effort to communicate also in that language, often assuming that their interlocutors know English. The children's assumption as to the interlocutor's multilingualism is correct given that most of the settings in which they were engaged (over 75% of the settings) were bi- or trilingual. That is why there was, of course, no need to use the non-English language as the children must have sensed that English could be used for effective communication in most of their interactions.

The same kind of analysis was applied to the second set of data (T2). The results are shown in the following table. Here we are not concerned with dominance or directionality but with structure. This is best demonstrated by looking at language alternation away from one language and into the other because the switching will be influenced (partially at least) by a language structure that can be replaced or altered. We are not considering possible sociolinguistic variables such as participants or topic but rather the "tool", namely the language and its structural robustness, that is responsible for setting in motion the psycholinguistic processes that result in code-switches.

Table 3: Percentage of alternation at the morpho-syntactic level by both children at the later stages of trilingualism (T2) when required to perform in one language

	From E	From H	From S	N of CS	% Total

	%	%	%		
N	44.1	8.8	47	68	23.8
V	28.8	19.2	52	125	43.7
Adj	100	0	0	1	0
Adv	20	0	80	5	1.7
Prep	47.4	15.8	36.8	38	13.3
Art	18.9	2.7	78.4	37	12.9
Conj	50	0	50	10	3.5
Other	50	0	50	2	0

Once again, the most frequently susceptible structures to be code-switched or mixed are the content words. Yet the proportions of switches in these categories changed in comparison to the earlier stages of trilingual development in that nouns are less frequently switched or undergo morpho-syntactic violations of the monolingual systems as compared to the verbs. Verbs, especially in Hebrew and Spanish, are much more complex when it comes to tense, aspect, mood and agreement. Because of these complexities there are more opportunities for mutual influence.

In other aspects, too, the three languages are typologically quite diverse. For example, articles in Spanish and Hebrew must agree in gender and number whereas this is not a feature of English. There are informal and formal pronoun forms in Spanish (second-third person) as compared to only one form in Hebrew and English. In Hebrew, unlike Spanish and English, there are mandatory articles before the adjectives in certain constructions: *ha-bait ha-gadol* (the big the house = the big house) vs. *ha-bait gadol* (the house big = the house is big) vs. *bait gadol* (big house - a big house). These typological differences have obviously had an influence on morpho-syntactic switching as in:

pero no encontráron<u>lo</u>   [but they did not find it] English has the pronoun in post-verbal position whereas in Spanish it is in pre- verbal position: **no <u>lo</u> encontráron]**

5. Discussion

From out study we draw two broad conclusions. One concerns the nature of trilingual competence, the factors that influence it and the way it manifests itself. The other addresses the developmental aspect of this competence.

5.1 The nature of trilingual competence

Our subjects are able to use their three codes separately, and they are able to move in and out of three codes, in different combinations, according to the situation in which they find themselves. This is evidenced in their switching which is both insertional and alternational and involves all three linguistic systems. In some cases sociolinguistic factors appear to trigger switching, but in others formal explanations seem more appropriate. From our data it is clear that by far the largest number of switches is bidirectional, although there are some examples of clearly trilingual switches. For example:

(1)   "… *ki* the **moscos**   *dvorim* …"

        Hebrew "because" + English "the" + **Spanish** "flies" + *Hebrew* "bees"….

        'Because the flies…bees…'

The preference for using two rather than three languages at a time can be partially explained with reference to context, preference and experience. But it cannot be fully explained in cognitive terms. More data from more diverse sociolinguistic contexts might be able to shed light on the question of whether all trilinguals favour bidirectional switches and whether this is a feature of their trilingual competence.

The fact that there *is* evidence of the confluence of three languages in the same utterance in the form of meaningful and grammatically sophisticated switches is proof that the trilingual is able to juggle his or her three languages simultaneously even if sporadically. It is these productions we will be concerned with in what follows. Some of the switches can be interpreted as borrowings that are either flagged up or are followed by self-repair (or an attempted repair such as in Example 1). Sometimes they are repetitions of an item just uttered in another language. They may

also represent a demonstrative change in code signalling a new turn in conversation or activity. Or they may trace a unique path [pattern] of the development of trilingual competence.

5.2 Language alternation and the development of trilingual competence

First, both children produced fewer CM when they were younger and more when older (when they were compared with themselves), although there are different frequencies. Our tentative conclusion is that CM requires more refined linguistic knowledge which is achieved through a combination of increased cognitive development, exposure to the language and experience of using it. Our hypothesis therefore is that CM depends more on psycholinguistic variables in these children and is linked to their cognitive development.

Second, with regard to CS it is not possible to establish a clear correlation with age. CS is context sensitive and a number of factors have been identified that influence CS in adults and children, such as setting, interlocutor, topic, degree of formality, attitude, purpose of interaction and proficiency. Presence or absence of these may help activate or suppress a code. Our tentative conclusion on this point is that CS depends more on sociolinguistic variables than on psycholinguistic or formal linguistic ones. Sociolinguistic factors influence a child from a very early age onwards, as they form part of the child's socialisation. With increasing maturity the child learns to recognize them and to monitor and manipulate his or her own output, including his or her CS behaviour.

One might think of an analogy between CS and CM on one hand, and a machine: if we want to establish the relationship between building and operating a machine, we can think of CS as operations of structures that are triggered by, or that require, the active participation of the trilingual child and the interlocutors. That is to say, CS depends on the triangulation of speaker-hearer-utterance. CM involves the "nuts and bolts" of the machine to create the message. That requires putting together all the knowledge the child has acquired at that time of development of each language separately and of the mixed language which is part of this trilingual competence. In other words, you need not only know how to operate the machine (a pragmatic and discursive knowledge- entrenched primarily in the CS) but you need to be able to capitalize on the trilingual

asset when you "code" the message and you build it up (the morpho-syntactic knowledge of structure and function - underlying or manifested in the CM).

5.3 Towards a dynamic model of multilingual competence

The following examples show complex combinations of the child's three linguistic systems within the same utterance. They are brought about by combining knowledge *of* the languages with knowledge *about* the languages. It is these organic combinations that we regard as the most obvious manifestations of trilingual competence.

[All examples are taken from the T2 corpus when the children were 6.4 and 9.3 years old.]

(2)   **el** owl **está** *yoce*

    Spanish: **el**= the+3rd.prs.sing.def.masc.; **está** = is + 3rd.prs.sg.pres.aux.; English: owl;

    Hebrew: *yoce* = coming (out) + 3rd prs.sg.pres.masc.

    'the owl is coming'

(3)   then **están** *mevuhalim*

    English: then; **Spanish**: **están** = is + 3rd.prs.pl.pres. aux.;

    Hebrew: *mevuhalim* = frightened + 3rd.prs. pl. masc.

    'then they are frightened'

(4)   **el** frog **está** *mevi* **un niño** *bematana*

    Spanish: **el** = the+3rd prs.sg.def.masc.; **está** = is + 3rd prs.sg.pres. aux..; **un niño** = indef. Art. 1st prs. sg.masc., + boy; English: frog; *Hebrew*: [*mevi* = bring + 3rd prs. Sgl. Pres.masc.;   *be-matana* = as – gift]

    'the frog is bringing a boy (as) gift'

We are not only intrigued by the "end-state" of these contact phenomena which are illustrated by examples such as the above but are also interested in tracing the incipient evidence that shows how such features are set in motion. The following three examples give an insight into the child's

metalinguistic awareness; in Examples 5 and 6 this is in relation to awareness that a noun requires a plural marker and what this should look like.

(5)

M (3;4) during a conversation about olive pit /*garin*/ in *Hebrew* with the trilingual mother:

Mother*: tizahari im **hagarinin***   '(you be) careful with the pits'

M: Ima, take out the ***garinim***s.   'mom, take out the pits'

[*pits* in *Hebrew* + /-s/ pl.in English]

Mother: *At roa hozeti et kulam*   'You see, I took them all out'

M: You see, there is only one more ***gar*** to take out.

      [***gar*** * oversimplified form of sg. noun /*garin*/]

Mother: *Ine ein od garinim*.   'There are no more pits'

M: All the ***gar***s are out now.   [***gar*** * oversimplified form of sg. noun instead of /g*arin*/ + /-s/ English plural morpheme]

Despite the initial input by the mother of the correct plural for pits in Hebrew, M attaches the -s (from English or, possibly, Spanish) to make it plural, and then attempts to reduce the word to a singular-base form (but strips too many syllables away) – as though she uses it as a borrowing –, and finally adds an English plural to this creation.

This example of early trilingual competence development illustrates how the child, while coping with the demand of language production (performance), displays covert metalinguistic awareness which brings about different language manifestations reflecting on language competence.

While child M is sorting out noun pluralisation in English and Spanish and Hebrew, the older child can actually talk about pluralisation:

(6)

E: (6;2) engaged in a discussion with his mother on the formal aspects of pluralisation in English and later on the noun gender issue. The child had just begun attending first grade):

E: Ima, do you know how we do manys in English?

Mother: *Lema ata mitkaven ?*

            'What do you mean?'

E: Well, when you have one book and you want to say many book

            you put s at the end and you make it books.

Two months later, when speaking in Hebrew (which requires the verb to be marked for noun-gender agreement) E began inquiring about a formational aspect of Hebrew. This was triggered by E's recounting of an event that took place in school where a classmate discussed loosing his first tooth. E was puzzled by the fact that in Hebrew "tooth" is feminine, while in English it is neutral and in Spanish it is masculine.

(7)

E: *le-xaver shel* me   [to a - friend of **me** (Eng)]

Mother: *nafla*   [def. art.+ fell + Heb past sg. fem.]

E: no *nafla*   [No def. art.+ f*ell* + Heb past sg. fem.]

Mother: *nafla shen kaxa omrim beivrit*

            [def. art.+ f*ell* + Heb past sg. fem. tooth that's how we say (it) in Hebrew]

E: *nafla shen*   [def. art. + *fell* + Heb past sg. fem. tooth]

Mother: *lex lenagev et ha'af*

            'go blow your nose'

E: yeah, but you said like a girl

Mother: *lo, shen beivrit omrim nafla.*

            'No, tooth in - Hebrew (we) say +pres. masc. sg. *fell* + Heb past sg. fem.'

            Shen be-iverit zo mila kmo yalda az omrim shen nafla.

            'Tooth in - Hebrew is + fem. (a) word like girl so (we) say + pres.masc.sg. tooth *fell* + Heb past sing. fem.'

E: Yes, but you said *nafla* and it sounds like a girl

[fell + Heb past sing. fem.]

Mother: *naxon, ki shen ze yalda be-iverit ve-biglal ze tzarix –le-hagid nafla velo nafal*

'right, because tooth is girl in- Hebrew and -because (of) that (we) have- to- say *fell* + Heb. past. sg. fem. and not *fell* + Heb past sg. masc.'

Taking these examples along a developmental time continuum we argue, like Auer, that the transition from CS to CM (without morpho-syntax) to CM (with morpho-syntax which Auer labels "fused lects") is in fact a way of tracing the development of trilingual competence. We propose the following visual model:

Cf. Figure 3

The continuum has two parallel scales: degree of multilingual competence and linguistic level of analysis. Language combinations, i.e. mixes and switches, may be analysed along these and reflect the degree or placement along the multilingual competence development scale. We propose taking this model as a basis for a more comprehensive view of language alternation instances looking at their dynamics not only at the performance stage but further into the competence aspects. Naturally, our proposal is still rudimentary and will need to be considerably elaborated both qualitatively and quantitatively before it could be considered to have explanatory force.

The proposed model establishes a continuum whereby code-switches are characterized functionally as carrying important sociolinguistic roles such as establishing identity and belonging to a speech community or sub-group thereof. This is most often manifested by the ability to switch from one language into the other at the turn or utterance boundary. This use of CS is intentional and may create a communicative situation of empathy and belonging, for instance when used to establish comradeship; or alternatively, a situation of "otherness", when it is deemed necessary or beneficial. While the use of CS may be dynamic here it is more typical of adults who are deploying communicative forms for social purposes. That is not the case with developing multilinguals (children or adults) who are in the process of acquiring more than one

language. In this instance these types of alternations (CS) occur for purposes of either message efficiency or language deficiency. The former is illustrated by Ex. 8):

(8)

    (E is playing a game with the bilingual (**Spanish** and English) grandmother and the trilingual father)

a) Grandmother: **Ahora sí ya no voy a decir nada**

        'And now I'm definitely not going to say anything more'

b) E: I know

d) Father: **Pero entonces te tienes que fijar bien**

        'But then you've got to pay attention'

e) E: **Yo sé**. I beat her last time and I'll beat her this time

        'I know'

f) Father: **OK. Ahorita tú**

        'And now it's your turn'

g) E: **¿Qué?**

        'What?'

h) Father: **Lo importante es jugar para divertirse**

        'What matters is that you play in order to have fun'

The transition from line a) to b) above illustrates the case of language efficiency for E in that situation but later in line d), where we have no alternation across interlocutors, we have evidence (the child actually produces the Spanish equivalent to "I know") that the first alternation (line a) to b) was *not* a language deficiency as it is commonly thought when regarding children's switches. The child knows – in both languages – how to make the same statement.

We regard CS as the basic manifestation of multilingual competence which is often driven by sociolinguistic forces and occurs at the linguistic level of analysis of the utterance or turn (which may be a single sentence or more). We then move towards the more advanced type of multilingual competence as our units of analysis become smaller.

We regard CM at the sentence level as consisting of two types. The first are code mixes which occur *within* a sentence and include alternations which involve word order, or occur at clausal or phrasal boundaries. These may invoke what is commonly used as "borrowings" of, primarily, function words which do not undergo any syntactic or morpho-syntactic adaptation.

The other type of code mixes we distinguish is the one we deem to reflect the greatest degree of multilingual competence. This type of code mixing involves complex combinations of elements:

(9)

      Lexico-phonetic switches such as:

      Gar**di***na*

      English: ga<u>r</u>den   **Spanish: jar<u>dín</u>**   *Hebrew*: gi<u>na</u>

      Morpho-phonemic switches such as: The three versions of forming plurals in Hebrew and English as in the above "pits" example:

      garinim<u>s</u> - g*ar<u>s</u>* - *<u>garin</u>*s

(10)

      Morpho-syntactic switches such as:

      Está *mitlabesh*ing   'she is getting dressed'

      Spanish: **está** = aux. "be" 3rd. prs. sg. pres. prog.; *Hebrew*: *mitlabesh* = "getting dressed" 3rd. prs. sg. masc. pres. +English: -ing = progressive morpheme on V.

      Yo también te <u>send</u>**o un beso**   **'**I too send you a kiss'

      Spanish: /-o/ on V + 1st prs. sg.pres.; English: send + /-o/ = base V + Spanish 1st pers. sg.morpheme on V.

      Este es el <u>black</u>**ito**   **'**This is the little black one'

      Spanish: this (agr. no. & gender) is (agr. no.& gender) the (agr. no.& gender) N + /-ito/ diminutive (agr. no & gender); English: black

*Ha*burglars   [the burglars]
Hebrew: */ha-/=* the; English: burglars

These examples illustrate a depth of analysis permeating several levels in each of the three languages. It is not the *absence* of a form but its clear *presence* that is being exploited so as to maximize knowledge and efficiency of message delivery.

6. Conclusion

In this study we have addressed the question whether morpho-syntactic mixes of the type exemplified above represent a posterior stage in the multilinguals' language development as opposed to CS? We would be inclined to argue that this is indeed the case, by virtue of the disproportionate amount of CS versus CM in general, and the frequency with which they appeared at different stages in our subjects in particular. It seems that it is easier to CS than to CM, just as it takes a highly competent trilingual to understand such linguistic combinations fully when they are integrated in normal discourse. The relative scarcity of trilingual mixes may be accounted for, at least in part, with the argument that it is harder to alternate between the different units of linguistic analysis (phonology, morphology, syntax and lexicon) - with structural robustness or permeability - when three linguistic systems are involved than to combine units from two languages, i.e. by taking recourse to a quantitative argument. We would be on less certain ground if we attempted to account for the nature of such simultaneous processing and the general preference for bidirectionality. Needless to say, a good deal more of research in this area is needed to substantiate our suggestions. Our preliminary model is designed to account for the developing (hence dynamic) trilingual competence in children which consists of not only acquiring the languages of their immediate environment one by one, but also of developing the facility of combining different elements and units of linguistic analysis within and across these linguistic systems.

Note:
1) We have adopted the following transcription conventions in the examples taken from the trilingual children's speech: words in English are in normal font, words in Hebrew are in italics,

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and words in Spanish are in bold. Translations of the Hebrew and Spanish utterances are placed in inverted commas.

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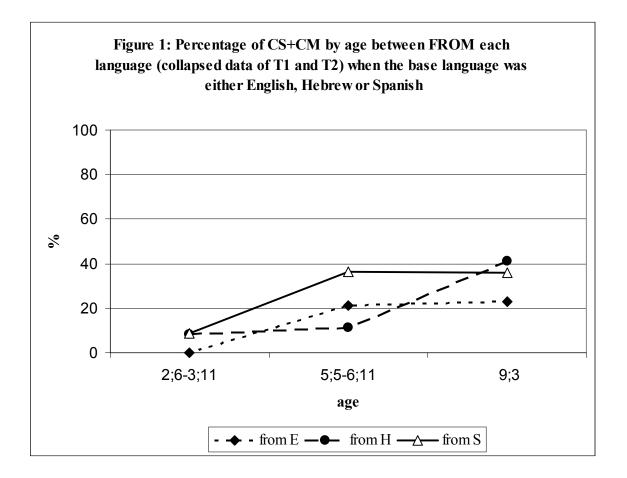
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Figure 1: Percentage of CS+CM by age between FROM each language (collapsed data of T1 and T2) when the base language was either English, Hebrew or Spanish

Figure 2: Percentage of CS+CM by age between TO each language (collapsed data of T1 and T2) when the base language was either English, Hebrew or Spanish
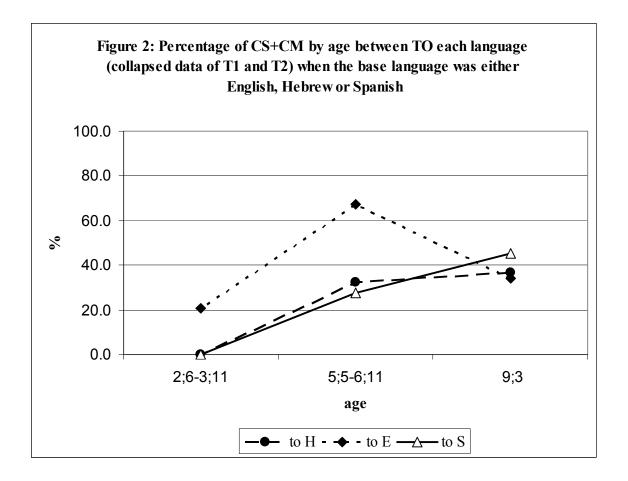
Figure 3: Model of developing multilingual competence

Degree of Multilingual Competence

Basic   *Advanced*

⟵————————————————————|————————————————————⟶

CS (Inter-sentential)   CM (Intra-sentential)

Discourse   Sentence   Phrasal-Lexical
Level   Level   Level

Linguistic Analysis as Evidence