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Bilingual First Language Acquisition: Evidence from Montreal

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Article abstract

Bilingual code-mixing is the use of elements (phonological, lexical, and morpho-syntactic) from two languages in the same utterance or stretch of conversation or in different situations. Bilingual code-mixing is ubiquitous among bilinguals, both child and adult. Child bilingual code-mixing has been interpreted by researchers and laypersons as an indication of linguistic confusion and incompetence. This article reviews a series of studies on French-English simultaneous bilinguals from Montreal that examined their code-mixing with respect to young bilingual children's ability: to differentiate their developing languages, to control code-mixing in different communicative situations, to adjust their code-mixing in response to feedback from interlocutors, and to fill gaps in their developing language competence. Contrary those who view child code-mixing as evidence of confusion and incompetence, extant evidence indicates that it reflects linguistic and communicative competence even in very early stages of simultaneous bilingual acquisition.

Bilingual First Language Acquisition: Evidence from Montreal

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Abstract/Résumé

Bilingual code-mixing is the use of elements (phonological, lexical, and morpho-syntactic) from two languages in the same utterance or stretch of conversation or in different situations. Bilingual code-mixing is ubiquitous among bilinguals, both child and adult. Child bilingual code-mixing has been interpreted by researchers and laypersons as an indication of linguistic confusion and incompetence. This article reviews a series of studies on French-English simultaneous bilinguals from Montreal that examined their code-mixing with respect to young bilingual children's ability: to differentiate their developing languages, to control code-mixing in different communicative situations, to adjust their code-mixing in response to feedback from interlocutors, and to fill gaps in their developing language competence. Contrary those who view child code-mixing as evidence of confusion and incompetence, extant evidence indicates that it reflects linguistic and communicative competence even in very early stages of simultaneous bilingual acquisition.

L'alternance de codes (ou « code-mixing ») chez les personnes bilingues est l'utilisation d'éléments (phonologiques, lexicaux et morpho-syntaxiques) provenant de deux langues dans le même énoncé, dans la même partie de conversation ou dans différentes situations. L'alternance de codes est un phénomène omniprésent chez les enfants et les adultes bilingues. Ce phénomène a été interprété par les chercheurs et la population générale comme une indication de confusion et d'incompétence linguistique chez les enfants bilingues. Cet article présente plusieurs études portant sur ce phénomène auprès d'enfants bilingues de Montréal ayant appris le français et l'anglais simultanément. Les aspects suivants furent examinés : leur capacité à différencier les langues qu'ils acquièrent, à changer de langue dans différentes situations de communication, à changer de langue pour répondre aux réactions des interlocuteurs ou pour compenser les limites de leurs habiletés langagières en développement. Contrairement à la pensée voulant que l'alternance de codes soit une preuve de confusion et d'incompétence, plusieurs preuves suggèrent que ce phénomène reflète plutôt des compétences linguistiques et de communication, et ce, même dans les étapes très précoces de l'acquisition simultanée de deux langues.

Keywords: Bilingual acquisition, code-mixing, bilingualism, Montreal, Canada.

Mots clés : Alternance de codes, acquisition bilingue, bilinguisme, Montréal, Canada.

RESEARCHERS/THEORETICIANS, PROFESSIONALS, AND LAYPERSONS alike often view the simultaneous acquisition of two languages during the pre-school years with reservation and concern. It is thought to exceed the language learning capacity of the young child and, thus, to incur potential costs, such as delayed or incomplete language development or even deviant development (e.g., Foreman, 2002; Volterra & Taeschner, 1978). Such views are often evident in communities and among individuals who themselves are monolingual. They are reinforced in the research community by the overwhelming attention paid to monolingual acquisition by researchers and in research journals and textbooks. Most linguistic and psycholinguistic theories of language acquisition are silent on the matter of bilingual acquisition, reinforcing the notion that monolingualism is the norm and bilingualism is not. What is normal is usually regarded as risk-free; thus, by default, bilingual acquisition is often viewed as extraordinary, potentially putting the individual at some kind of risk (Genesee, 1988). Demographically speaking, however, there is no reason to believe that bilingualism is in fact unusual; to the contrary, there may well be as many, or more, children who grow up bilingually as monolingually (Sachdev & Bourhis, 2005; Tucker, 1998).

This article reviews evidence concerning the simultaneous acquisition of two languages during the first years of life with a view to evaluating these pessimistic views. It focuses on one aspect of bilingual acquisition, namely code-mixing. Bilingual code-mixing is the use of elements (phonological, lexical, and morpho-syntactic) from two languages in the same utterance or stretch of conversation or in different situations. Bilingual code-mixing is ubiquitous among bilinguals, both child and adult. It can take different forms. Intra-utterance code-mixing refers to cases when two languages are used in the same utterance (e.g., "*give me le cheval* "/"give me the horse") whereas inter-utterance mixing refers to cases where there is a switch from one language to another across utterances, with each utterance being monolingual (e.g., Mother: "*What's this?*"; child: "*cheval*"). Some researchers have also referred to situational mixing where bilinguals change language depending on the formal or informal nature of the situation. In cases where language communities are in contact, diglossia may prevail with the low status language X being reserved for private informal use in the family and with friends, while the high status language Y is used for more formal usage at school, in the work setting, and for the public administration of the state.

Many researchers and most laypersons have noted that young children in the process of learning two languages often use elements from both

languages in the same utterance or stretch of conversation when they start speaking (see Genesee, 1989, for a review of this research). As noted earlier, the mixed elements can include different aspects of language, including sounds, words, or grammatical structures (Genesee, 1989). Using a word from one language while using the other language is the most common form of mixing among children. For example, a young Spanish-German bilingual boy speaking with his Spanish-speaking mother said, "*Das no juegan*"; "*das*" is the German word for "*that*" and "*no juegan*" is Spanish for "*do not play*" (Redlinger & Park, 1980, p. 341). Using the syntactic (grammatical) patterns from one language while speaking another language is another form of mixing, but is less common in children. Saunders (1982) reported that his five-year old German/English-speaking son said to his English-speaking mother, "*Mum, I had my school jumper all day on*" (p. 178). While German requires this word order, this construction is not grammatical in English.

Adult bilinguals also code-mix with one another; it is more common to use the term code-switching when referring to adult bilingual usage (Myers-Scotton, 1993; Poplack, 1980). Research has shown that adult code-switching is sociolinguistically and grammatically constrained; that is, it is not random. Sociolinguistically, adult bilingual code-switching is shaped by characteristics of interlocutors, the situation, and the purpose of communication (Genesee & Bourhis, 1982, 1988). Adult bilinguals code-switch for a variety of meta-communicative purposes: for example, to establish interpersonal intimacy or distance (Sachdev & Bourhis, 2005), to mark ethnic identities and loyalties (Bourhis, Montaruli, & Amiot, 2007), and to negotiate social roles and status (Myers-Scotton, 1993). It has also been shown that the social functions of adult code-switching are conditioned by community factors. Poplack (1987), for example, has noted differences in prevalence, form, and purpose in French-English code-switching in the Ottawa-Hull region of Canada in comparison to Spanish-English code-switching in the Puerto Rican community of New York City. Grammatically speaking, most theoreticians believe that adult code-switching is grammatically constrained. The evidence indicates further that proficient adult bilinguals engage in relatively fluent, sophisticated, and prevalent code-switching in comparison to less proficient bilinguals. In sum, code-switching is a useful, sophisticated, and rule-governed feature of language use among adult bilinguals and is linked to bilingual competence.

In contrast, child bilingual code-mixing has often been interpreted as a sign of linguistic confusion since the child is apparently unable to separate his or her two languages in different linguistic situations. In addition, child bilingual code-mixing has been interpreted as evidence that children exposed

to two languages from birth go through an initial stage when they treat input from two languages as if it belonged to a single underlying system; what has been referred to as the unitary language system hypothesis (Genesee, Nicoladis, & Paradis, 1995). The most explicit formulation of this hypothesis was presented by Volterra and Taeschner (1978, p. 312):

> *"In the first stage the child has one lexical system which includes words from both languages.* (…) *in this stage the language development of the bilingual child seems to be like the language development of the monolingual child.*(…)
>
> *In the second stage, the child distinguishes two different lexicons, but applies the same syntactic rules to both languages.*
>
> *In the third stage the child speaks two languages differentiated both in lexicon and syntax.* (…)"

In effect, Volterra and Taeschner's hypothesis proposed that the initial state of the developing bilingual child is essentially monolingual.

The evidence reviewed in this article will not only contest these general pessimistic views, but also provide evidence that child bilingual code-mixing is a highly functional communication skill that is socially learned and conditioned. The research reviewed addresses four inter-related questions:

1) Can young bilingual children use their two languages differentially?
2) Can young bilingual children regulate their code-mixing with unfamiliar interlocutors?
3) What cues or feedback do young bilingual children use to adjust their language choice (or mixing) to be socially appropriate?
4) Do young bilingual children code-mix because they lack linguistic competence?

Answers to these questions would indicate whether child bilingual code-mixing is indeed symptomatic of failure to differentiate between the two input languages and a sign of confusion by revealing whether simultaneous bilingual children can or cannot use their two developing languages differentially and in socially appropriate ways.

The Children and their Community

The children who were investigated in this program of research were between 18 and 36 months of age. All were growing up in Montreal in bilingual families. Although the parents were bilingual in English and French,

they reported that they usually used only their native language (L1) with their child: the so-called one parent/one language rule of Grammont (1902). In Quebec, during the first half of the 20th century, English was the prestige language of upward mobility not only for the established Montreal Anglophone elite but also for the Francophone majority whose French language was reserved for lower status functions in private and public life. Following demands by Québécois French nationalists in the 1970s, successive Quebec governments adopted language laws which succeeded in improving the status and use of French relative to English in Montreal (Bourhis, 2001). Thus thirty years after the adoption of pro-French laws, the French language has gained the status of a majority language in Quebec, while English maintains its power of attraction as the lingua franca of North American business, science, and culture (Bourhis et al, 2007).

In Montreal today, both French and English are widely used in the media, among individuals, and in public situations, and both enjoy high status in Quebec, across Canada and, indeed, worldwide. As a result, the children in these studies could be said to be learning two "majority" languages with high functional and symbolic value in the community. Consequently, Montreal provides a favourable social environment in which to study bilingual first language acquisition and, in particular, bilingual code mixing because status differentials that often favour one language over another in other North American or international contexts are negligible in these children's lives. Montreal thus provides an optimal bilingual environment in which to study children's capacity for simultaneous acquisition of two languages relatively unencumbered by such socio-cultural inequities. Of particular importance for purposes of this research, these children were widely exposed to both languages in the home and in the community.

The sample sizes in these studies are small in comparison to experimental studies in psychology. The use of small sample sizes and, indeed, single case studies has a long and distinguished history in research on language acquisition. For example, arguably one of the first and earliest studies in contemporary times to systematically examine language acquisition in monolingual children was carried out on three children (Adam, Eve, and Sarah) by Roger Brown (1973). The justification for such small sample sizes lies in the logic of child language research – namely, that evidence that one child or a small number of children demonstrate certain psycholinguistic phenomena is sufficient to argue that, in principle, all children can do the same. This does mean that all children do exhibit the same developmental patterns, and other things being equal, they are capable of doing so. In fact,

the sample sizes in the studies reviewed here are larger than for most other research on bilingual acquisition.

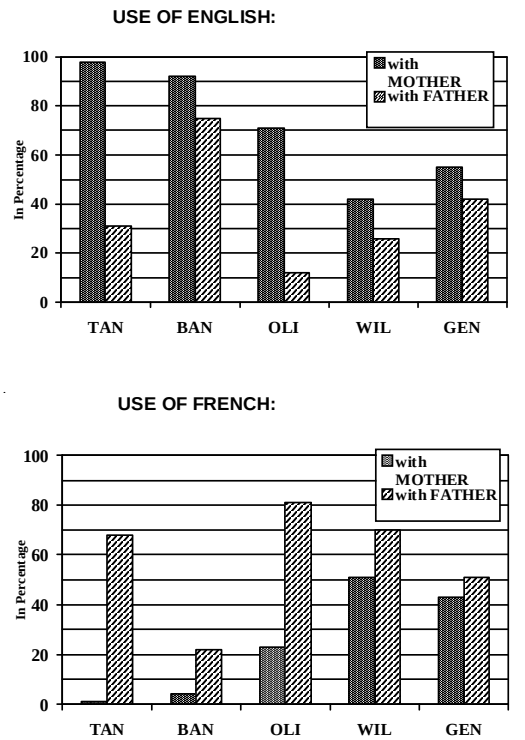
Can Bilingual Children Use their Languages Differentially?

Early studies of child bilingual code-mixing usually took the form of single case studies and often suffered from a number of methodological weaknesses that compromised the interpretation of results. For example, Volterra and Taeschner's (1978) hypothesis was based on evidence consisting of single, isolated examples of code-mixing from two children. They did not examine the children's overall rates of mixing so we have no way of knowing how prevalent it actually was. Other evidence suggests that intra-utterance mixing is quite low, less than 10% of a child's overall language production, and, thus, cannot be construed as representative of their overall language usage (Genesee et al., 1995). Other studies reported children's rates of mixing as a percentage of their total language output, but they often failed to examine the children's language use in different language contexts. Examining the child's rates of mixing with interlocutors who speak different languages is critical to ascertain whether bilingual children can differentiate their two languages. In addition, few early studies examined how often bilingual children did not mix: that is, how often they produced entire utterances in the language of their interlocutor. Excluding these utterances yields an incomplete and, thus, misleading picture of their language use. In short, due to methodological shortcomings, the conclusions from many early studies can be called into question.

Subsequent evidence refutes that bilingual children are linguistically confused. In fact, it is now generally accepted that bilingual children can use their developing languages differentially and appropriately from the one-word stage onward and certainly from the stage when there is evidence of syntax in their spoken language (De Houwer, 1990; Genesee, 1989; Goodz, 1994; Lanza, 1997; Meisel, 1994; Petitto et al., 2001). For example, in a study conducted in Montreal, Genesee et al. (1995) observed English-French bilingual children during naturalistic interactions with their parents in the home. The parents, who spoke different native languages, used their respective L1 languages primarily with their children – the so-called one parent–one language rule. Thus, each parent presented a different language context for their child. The children were observed on three separate occasions: once with their mothers alone, once with their fathers alone, and once with both parents present. By observing the children with each parent individually and when both parents were present, we were able to observe the children's ability

to keep their languages separate in different language contexts. The children were between 22 and 26 months of age and were in the one- and early two-word stage of language development. We examined not only the frequency of the children's mixing (within and between utterances), but also the frequency with which they used single language utterances that were appropriate to each parent (e.g., French utterances with the L1 French-speaking parent and English with the L1 English-speaking parent). Even at this young age, these children were able to use their two languages in a context-sensitive manner – they used significantly more French than English with their L1 French-speaking parent and substantially more English than French with their L1 English-speaking parent. As seen in Figure 1, when the parents were together with the children, the children likewise used more of the father's language with the father than with the mother, and vice versa for the mother's language.

FIGURE 1:
Five children in Montreal and their use of French and English with their parents when together (Mothers were L1 English-speakers and Fathers were L1 French-speakers)



Evidence from these studies indicates that simultaneous bilinguals can use their two languages differentially and appropriately with different interlocutors, even during the first three years of life, before they have fully mastered each language. That these children used their two languages appropriately with each parent, whether alone or together, is incompatible with the unitary language system hypothesis – according to this hypothesis, one would expect random use of each language, regardless of parental language context.

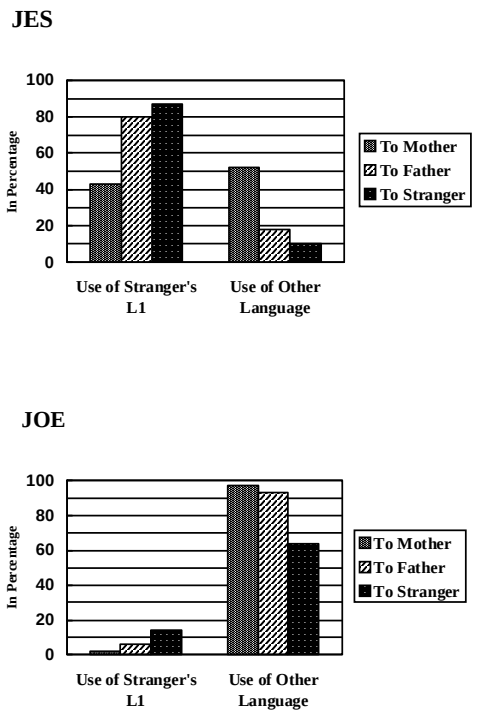
Can Bilingual Children Regulate their Code-mixing with Unfamiliar Interlocutors?

We conducted a follow-up study to examine the limits of young bilingual children's ability to use their developing languages appropriately (Genesee, Boivin, & Nicoladis, 1996). Our initial study with parents may have underestimated the ability of bilingual children to differentiate their languages because their parents, like the parents of many bilingual children, knew and sometimes used both languages with their children. In other words, these parents may not have applied a strict separation of the languages. Moreover, the differentiation that we observed in these children might have reflected a process of associative learning whereby each child had come to associate certain words with each parent over time – French words with the L1 French-speaking parent and English words with the L1 English-speaking parent. True bilingual communicative competence entails the ability to adapt one's language use on-line in accordance with relevant characteristics of the situation, including the preferred or more proficient language of one's interlocutor. Thus, alone our initial results would not reflect true communicative competence.

In order to examine these issues, we observed a number of additional French-English bilingual children during play sessions with monolingual strangers. The children had an average age of 24 months and their mean length of utterance measured in words (MLUs) in French varied from 1.08 to 1.59 and in English from 1.33 to 1.66. These MLU values put these children in the one-word stage of development, according to Brown's guidelines (Brown, 1973). We selected strangers as conversational partners with the children on the assumption that evidence of children's differential language use with unfamiliar interlocutors would reinforce our argument that two-year-old bilinguals' languages are differentiated and, furthermore, would attest to true on-line communicative competence at an early stage of bilingual acquisition. The children would not have been able to associate the "right"

language with this interlocutor because this was the first time they had talked with her. We selected monolingual French– or English-speaking strangers in order to ascertain the children's ability to identify critical language characteristics of an interlocutor despite having had minimal prior exposure to her. Since the language spoken by the stranger was the less proficient language of three of the four children, this was a particularly rigorous test of their abilities to accommodate to the linguistic needs of the stranger. All the stranger/interlocutors were female. Three of the four children gave evidence of on-line adjustments to the stranger by converging more towards the stranger's language than with their parents and, in particular, the parent (usually the father) who spoke the same language as the stranger. One of the children did not modify her language use appropriately with the stranger. Figure 2 presents results for two of the children – JES and JOE – who made the most clear cut language convergence toward the stranger. Also, three of the children used less of the language not known by the stranger with the stranger than with either parent. At the same time, these children did not necessarily use more of the stranger's language than the other language with the stranger; this is evident in the results for JOE in Figure 2.

FIGURE 2:
French-English language choices made by two Montreal bilingual children (Jes & Joe) with a stranger and with each parent



This can be explained by the fact that the children were more proficient in the language that was not spoken by the stranger and, thus, tended to use that language more overall than the stranger's language. Thus, what is important about these results is not the children's overall use of each language with the stranger and their parents, but the relative use of each language with the stranger in comparison to their use of that language with their parents.

In short, these results indicate that the children converged to the stranger as much as possible and minimized their use of the language the stranger did not know as much as possible. Despite the fact that these three children had had no prior experience with this adult and despite the fact that they were compelled to use their less proficient language with her, they were able to converge to the stranger by using her native language to the extent that their proficiency in that language permitted.

Many bilingual children appear to be more proficient in one of their languages relative to the other; proficiency is defined in different ways by different researchers, and can include MLU, relative number of word types and tokens, number of multi-morphemic utterances in each language, and parental reports. It is often, although not always, associated with amount of exposure to each language, with the more proficient language being the language of greater exposure. That they maintained the language not known by the stranger (see Figure 2) simply reflects their proficiency in that language, a pattern that we observed even when the children were speaking with their parents.

The children did not all perform alike; one of the children, whose results are not included in Figure 2, did not appear to accommodate to the stranger at all. This should not be surprising given the well-documented and large individual differences found among children in a variety of different aspects of language acquisition. There is no reason to believe that the development of interpersonal accommodation and communicative competence (bilingual or monolingual) is not subject to the same individual variation among children that is demonstrated in other aspects of language acquisition.

Additional evidence from our lab that young bilingual children are sensitive and responsive to unfamiliar interlocutors' language preferences comes from a study by Comeau, Genesee and Lapaquette (2003). Comeau et al. observed six Montreal French-English bilingual 2- to 2 ½ year olds while they played with an unfamiliar experimenter on three separate occasions. The

experimenter showed a preference for one language, but varied her rate of French-English mixing across sessions. About 15% of her utterances were mixed during the first session, 40% during the second session, and 15% again during the third and last session. As was found by Genesee et al. (1996), Comeau et al. found that the children converged to the stranger's preferred language more than her non-preferred language; the six children who participated in this study used the strangers language, on average, about 82% of the time the first time they interacted with her. This was particularly noteworthy during the first session when the children first interacted with the stranger. Moreover, all of the children mixed significantly more during the second session than the first session, and four of the children reduced their mixing rate once again during the third session. These rates of child code-mixing corresponded closely to the rates of mixing by the stranger. In fact, the mixing rates of three of these children fell within 4% of the experimenter's in every play session, suggesting that these children were closely monitoring their interlocutor's language choice and matching their language use accordingly.

These studies indicate that bilingual children code-mix in ways that are sensitive to the language proficiency and preferences of their interlocutors. Early research on bilingual children had argued that their code-mixing was a sign of linguistic confusion and, underlying, of an undifferentiated language system comprised of both languages. Clearly, the differentiated and controlled nature of their code-mixing even at these young ages argues against this hypothesis.

How Do Bilingual Children Adjust their Language Choice to Be Socially Appropriate?

Bilingual children face the same communication challenges as monolingual children: namely, production of target-like language forms (including, words and morpho-syntactic patterns) that are comprehensible to others; getting one's meaning across when language acquisition is incomplete; and using language in socially appropriate ways. At the same time, the ability to communicate appropriately and effectively in two languages entails an understanding of interpersonal communication that exceeds that required for monolingual communication. In particular, young bilingual children must understand that not all adults (or children for that matter) know two languages, that mixing languages may not be appropriate or comprehensible to others, and that breakdowns in communication can result from using an inappropriate language. Examining bilingual children's sensitivities to

constraints on their use of language provides a window into their cognitive capacities as well as their linguistic competencies because bilingual communicative competence goes beyond the acquisition of the formal properties of two language codes and includes the ability to use two languages appropriately and effectively with others.

Comeau, Genesee and Mendelson (2007) explored these issues by examining French-English bilingual children's ability to adjust their language choice in accordance with feedback from an adult interlocutor that the child's utterance was not understood. The children were between 2 and 3 years of age and the adult interlocutor presented herself as a monolingual in the child's weaker language. The question of interest was whether the bilingual children were able to respond to a request to repair a breakdown in communication that resulted from the child's use of a language that was not understood by their conversational partner. The adult conversational partner who was unfamiliar to the child used the child's less developed language on the assumption that the child would be likely to use his or her more proficient language, resulting in a high number of breakdowns in communication. Each time the child used the "inappropriate" language, the adult made up to five requests for clarification, beginning with a non-specific request which did not specify the source of the breakdown or the nature of the required repair to an explicit request that did. The specific requests for clarification that were used following the children's use of the language not spoken by the interlocutor/speaker were:

a) "*What?*"
b) "*I don't understand.*"
c) "*Can you say that so I can understand?*"
d) "*I don't understand French.*"
e) "*Can you say that in French?*"

The adult interlocutor also requested clarification of the children following utterances that were incomprehensible for other reasons; for example, they were inaudible or unclear or the child used a non-adult-like word. The latter are all sources of communication breakdowns for monolingual and bilingual children alike; breakdowns that result from an inappropriate language choice are distinctive to bilinguals. The adult interlocutor requested clarification of the children whenever they produced such utterances. The first three requests were the same as above, and the last two were modified to reflect the precise nature of the breakdown: that is, whether it was due to the child's utterance being inaudible or the child's use of the wrong or inappropriate word. For

example, following an inaudible utterance, the last request made by the interlocutor was "*Can you speak more loudly*?". By examining children's responses to clarification requests, we were able to determine if bilingual children understood which language choice was a source of communication difficulty with others.

The Montreal children switched to the appropriate language about 25% of the time following a request for clarification from the adult. Most of these language changes were made in response to the first or second requests for clarification which did not provide the reason for the communication breakdown. Thus, in order for the children to make the appropriate repair (i.e., change languages), they had to understand implicitly that their choice of language was the source of the breakdown. Moreover, the bilingual children virtually never switched language when attempting to repair breakdowns that were due to reasons other than language choice. Their ability to switch language only when it was appropriate suggests that young bilingual children have the ability to correctly infer the meaning of non-specific feedback regarding language choice and to switch language in response to such feedback, even if this means abandoning use of their more proficient language. This language switching ability appeared to be more developed among the older children – a significantly higher number of 3-year-olds changed their language when they were required to do so. As well, the 3-year-olds also favoured reformulation as a repair strategy over repetition, suggesting that they understood that the form of their utterance was a possible cause of communication breakdowns. In contrast, the younger children used a higher proportion of repetitions, a repair strategy that is less complex than reformulating the original utterance.

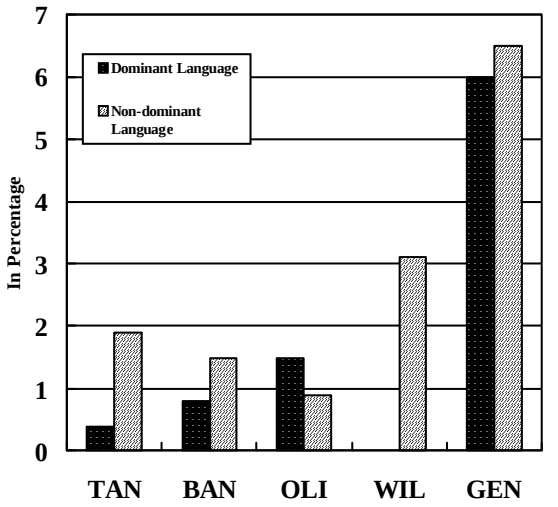
Contrary to the unitary language system hypothesis, the evidence from this Montreal research indicates that young bilingual children can adjust their language choices to accommodate feedback from interlocutors indicating that their choice of language is impeding communication. As in the previous section, children demonstrate control over their use of their two languages which reflects bilingual competence, not confusion.

Do Bilingual Children Code-mix Because they Lack Linguistic Competence?

A final source of evidence that contests the view that bilingual code-mixing reflects incompetence, confusion, or deficient language development comes from an examination of specific instances of child bilingual code-

mixing. There is evidence that when bilingual children code-mix, within a single utterance or from one utterance to another, they do so for reasons related to incomplete acquisition of one or both languages. More specifically, a bilingual French-English child in the early stages of bilingual development who says "*un petit bird*" (a little bird) when speaking with her French-speaking mother does not know the French word for bird (*oiseau*) and, therefore, substitutes the English word to complete her utterance. We might refer to this as the *lexical bootstrapping* hypothesis. However, in contrast to earlier theories which attribute child bilingual code-mixing to confusion and lack of language differentiation, this explanation of language mixing indicates that code-mixing is a strategy that bilingual children use to extend their communicative competence at a stage in development when their mastery of their two languages is incomplete. Indeed, on occasion, even fully proficient adult bilinguals engage in lexical bootstrapping when they experience a temporary block in accessing words in one language or when a more appropriate word or expression exists in the other language.There is considerable evidence to support the lexical bootstrapping hypothesis (however, see Deuchar & Quay, 2000, for a counter example). First, we have found that young French-English bilingual children tend to code-mix more, within and across utterances, when they use their less proficient language (Genesee et al., 1995). Figure 3 summarizes the rates of intra-utterance code-mixing of the five children studied by Genesee et al. (1995) when they used their more and less proficient languages. Four of the children code-mixed more often when using their less proficient language.

FIGURE 3:
Percentage of intra-utterance mixing with dominant and non-dominant language by five Montreal children



One likely explanation of these results is that the children were "filling in" lexical gaps in that language. However, this explanation is only inferential since the data does not permit us to determine if the children, in fact, lacked the code-mixed words in the appropriate language of their interlocutors.

Direct evidence for the lexical bootstrapping hypothesis comes from a short-term intensive study we conducted on the vocabulary development of two Montreal bilingual children (Wolf, Genesee, & Paradis, 1995). In this study, we trained two sets of parents who were raising their children bilingually to keep detailed daily records of their children's French-English language use during three consecutive weeks. The two children were in the one-word stage of development and had not yet acquired fifty words in total in both languages. The first child, named FEL, was 1.8 years old and had a MLU (measured in words) of 1.08 in English and 1.08 in French. The second child, named WAY, was 2.0 years old and had an MLU of 1.55 in English and 1.39 in French. The parents were asked to record every word and utterance that each child produced (including its target form if it was not produced exactly like the target), the context in which the utterance was spoken (setting and addressees), and the child's intended meaning (according to the parents' interpretation).

We examined in detail the instances when each child used a word from the inappropriate language with each interlocutor – for example, a French word with the English-speaking parent – to see whether the child knew the equivalent term in the appropriate – language. The detailed records from the parents made this analysis possible. Our analyses indicated clearly that both children were much more likely to code-mix when they did not know the translation equivalent in the appropriate language. Thus WAY did not know the equivalent word in the appropriate language for 94.7% of his code-mixed words, while FEL did not know the word in the appropriate language in 65.2% of his code-mixed words.

Using the corresponding word from the other language in these cases was a way for these children to extend their communicative competence by using the resources of both languages. It has been well-documented that monolingual children overextend the use of certain words to referents that are not perfectly appropriate – the most widely-cited, and embarrassing, example being children's use of the word "daddy" to refer to all adult males. Children usually stop doing this once they have larger vocabularies and, thus, more appropriate terms for referring to specific referents – other male adults in our example. One could argue that bilingual children who code-

mix to fill lexical gaps are overextending in the same way as monolingual children, except that they draw on the lexical resources of two languages.

Conclusions

Bilingual children demonstrate different language behaviours in comparison to monolingual children – most noticeably, they mix elements from two languages in the same utterance or conversation. This has often been interpreted as a sign of lack of differentiation in the underlying representation of a bilingual child's two developing languages. More generally, it is viewed as cause for concern because it is thought to violate what are regarded as appropriate norms of language use: that is, only use one language at a time. These points of view, arguably, reflect monolingual behaviour and norms. Misinterpretation of child bilingual code-mixing may also be attributable, in part, to a lack of understanding of its actual functional and formal properties.

Research evidence reviewed in this article indicates that, contrary to the unitary language system hypothesis, young bilingual children can use their developing languages differentially and appropriately with both familiar and unfamiliar interlocutors. Moreover, they are sensitive to their interlocutors' language competencies and preferences, including their preferred rates of code-mixing, and they can adjust their use of their two languages in accordance with these preferences and competencies. This is evident even when bilingual children interact with unfamiliar interlocutors and, thus, child bilingual code-mixing reflects sophisticated communicative competence in the use of two languages. Finally, our examination of code-mixing in Montreal indicates that it is a strategy whereby bilingual children can extend their communicative competence during development when their proficiency in language is not complete. We saw that when bilingual children code-mix they are drawing on all their linguistic resources to express themselves, much like monolingual children, except that bilingual children have the resources of two languages in contrast to the monolingual child who has only one. Code-mixing for communicative purposes is a strategy that works because others in the bilingual child's community are often bilingual, but it is a strategy that can easily be misinterpreted by adults who are not bilingual.

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Biography

Fred Genesee (Professor, Psychology, McGill University) has conducted extensive research on alternative forms of bilingual and immersion education. His current research interests include language acquisition in pre-school bilingual children, internationally-adopted children, and the language and academic development of students at-risk attending bilingual school programs. (fred.genesee@mcgill.ca).

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