Language Development in Preschool Bilingual Children

L'apprentissage du langage chez les enfants bilingues d'âge préscolaire

by • par

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ABSTRACT

If speech-language pathologists are to identify bilingual children in need of intervention, it is essential to understand the normal variations of bilingual acquisition and how it is the same or different from monolingual development. In this paper, we present an overview of the basics of preschool bilingual development based on current research findings. We discuss how bilingual children's code-mixing is normal and cannot be considered a sign of "confusion" of their two languages. In fact, bilingual children have been shown to differentiate their languages as young as two years of age, and possibly earlier. In terms of developmental milestones, research suggests that there is no outstanding difference between bilinguals and monolinguals, as long as both languages of the bilinguals are taken into account. We also discuss how learning new language skills can be a challenging task for bilingual children if there is any conflict between social and cultural values associated with their two languages. In the final section, we offer some clinical suggestions that arise from our overview.

ABRÉGÉ

Pour que les orthophonistes soient en mesure de repérer les enfants bilingues ayant besoin d'intervention, l'on doit d'abord comprendre la nature des variations normales de l'évolution bilingue et les similitudes ou différences par rapport au développement unilingue. Le présent mémoire donne un aperçu des principes du développement bilingue chez les enfants d'âge préscolaire fondés sur les résultats de la recherche courante. On dit que le « mélange de codes » chez les enfants bilingues est chose normale et qu'on ne devrait pas l'interpréter comme indice de « confusion » entre les deux langues. Au contraire, on a pu démontrer que les enfants bilingues peuvent distinguer entre leurs deux langues dès l'âge de deux ans, peut-être même plus tôt. Et, pour ce qui est des étapes du développement langagier, la recherche déjà entreprise sur le sujet montre qu'il n'y a aucune grande différence entre les bilingues et les unilingues, pour autant que l'on tienne compte des deux langues utilisées par les bilingues. On y étudie aussi comment l'apprentissage de nouvelles connaissances linguistiques peut représenter un défi réel pour les enfants bilingues lorsqu'il existe un conflit quelconque entre les valeurs socioculturelles liées à leurs deux langues. La dernière partie du mémoire porte sur certaines suggestions cliniques issues de notre aperçu.

KEY WORDS

bilingual development, bilingualism, language differentiation, preschool language development, code-mixing

Bilingual children are brought to the attention of speech-language pathologists for a number of reasons. At times bilingual children are referred because of the worries of a parent or other adult about whether a child is developing normally. Sometimes the parent's worries will be justified — a bilingual child may indeed have a speech or language problem requiring intervention. At other times, a parent's worries may simply be based on a lack of understanding about how normal bilingual children develop. If speech-language pathologists are to accurately distinguish between children whose development falls within the normal range of individual variation and, therefore, does not require special intervention and children whose development is pathological or impaired, it is essential that they understand the normal variations of bilingual acquisition and how it is the same or different from monolingual development (see Crutchley, Conti-Ramsden, & Botting, 1997, for an excellent discussion of this issue). Although little research has adequately addressed the specific concerns of speech-language pathologists, there is a growing body of research on normally-developing bilingual children. In this paper, we provide a brief tutorial on the results of this literature and offer some tentative guidelines for clinical applications.

Before turning to the research, it is important to point out that there are a variety of circumstances in which children become bilingual — from parents, grandparents, childcare workers, or peer groups who speak different languages, and these different circumstances can influence a bilingual child's proficiency.

Their proficiency in each language can depend on a variety of factors including, community support for bilingualism, the children's feelings of identity with the languages being learned and with the members of the language communities associated with those languages, the sources of the two languages (e.g., from a source that makes it clear that different languages are valued and useful), the history of contact between the two languages and language groups, and the socio-economic status of the family. For example, middle-class English-speaking Canadian children in total French immersion programs have been shown to acquire the same levels of proficiency in English as comparable children in all-English school programs and, at the same time, they acquire advanced levels of functional proficiency in French (Genesee, 1987). In contrast, lower-class Spanish-speaking children who are submersed in English-only classrooms in the United States often fail to acquire full proficiency in either English or their native language (Cummins, 1981). It is essential that speech-language pathologists working with bilingual children who might be suspected of language or speech impairment have a thorough understanding of each child's individual language learning circumstances and history so that they can better interpret and understand the child s language development.

Unfortunately, despite the obvious diversity of language learning contexts associated with bilingual development, most research has focused on largely middle-class families in which one parent usually speaks one language with the child while the other parent usually speaks another language — the so-called one parent-one language context (Celce-Murcia, 1978; De Houwer, 1990; Lanza, 1992; Leopold, 1949; Quay, 1992; Ronjat, 1913; Swain & Wesche, 1975; Volterra & Taeschner, 1978). While research in such contexts can provide valuable insights about bilingual development, it is probably not the most common context worldwide in which children become bilingual. Indeed, there has been research in other contexts and we make reference to these studies in our review (for example, see Fantini, 1974; Pearson, Fernandez, & Oller, 1995; Tabouret-Keller, 1963; Vihman, 1985, for studies that have examined families that did not use the one parent-one language pattern; and Genesee, Boivin, & Nicoladis, 1996; Genesee, Nicoladis, & Paradis, 1995; Nicoladis & Genesee, 1996a; Paradis & Genesee, 1996, for studies that have included families from different socioeconomic backgrounds). In the following sections, we present an overview of the basics of preschool bilingual development based on current research findings. We have organised this overview around three topics: a) code-mixing, b) general developmental milestones, and c) socio-cultural factors. In the final section, we offer some clinical suggestions that arise from our overview.

Code-mixing

Virtually all children who grow up bilingually code-mix at some time. Code-mixing is the use of two languages in a single unit of discourse, such as an utterance or a conversation. Code-mixing includes both intra-utterance mixing, or the use of two languages in a single utterance (e.g., the utterance "doggy parti" 'doggy gone' has an English word and a French word) and inter-utterance mixing, or the use of different languages for different utterances in the same conversation (e.g., "give me some milk" when the conversation was mainly in Spanish). When adults use two languages in a single unit of discourse, their behaviour is commonly referred to as "code-switching", a term that implies that their use of the two languages is deliberate and systematic. We prefer to use the more general term "code-mixing" when talking about children because we do not wish to attempt to differentiate between deliberate and accidental code-mixing, and we do not yet fully understand the linguistic constraints on their mixing (see Meisel, 1989, for a discussion of terminology).

Children's rates of code-mixing vary widely. Nicoladis (1995) reviewed the rates of intra-utterance mixing for bilingual children ranging in age from 1;5 to 2;6 (year;month) from a number of studies. Their rates of code-mixing ranged from 0% to 45% of their utterances. There was no relationship between the children's rates of code-mixing and their ages (cf., Redlinger & Park, 1980). The lowest rates of code-mixing were reported for a bilingual girl at 2;2 and 2;4 (Köppe & Meisel, 1995) while the highest rate of code-mixing was for a bilingual girl at 2;1 (Lanza, 1992). Some of the variation in rates of code-mixing between studies may be due to slight differences in definition (see Nicoladis, 1995 for a discussion). Although rates of inter-utterance mixing are less commonly reported, a similarly wide range seem to occur. Rates of inter-utterance mixing in two-year old French-English bilingual children ranged from a high of 70% of their total utterances to a low of 0% in two studies drawn from the same population (Genesee et al., 1995; Nicoladis, 1995). Other reports of inter-utterance mixing have fallen within that range. For example, Singer (1988) reported that the rate of inter-utterance mixing for one Hebrew-English bilingual child aged 2;6 was 40%; De Houwer (1990) reported Kate's rate of inter-utterance mixing between the ages of 2;7 and 3;4, which ranged from 4.7% to 6.3%. Thus, it is clear that bilingual children's rates of code-mixing (both intra- and inter-utterance) is highly variable.

It is clear from these findings that a: (a) virtually all bilingual children code-mix and, thus, it is a typical or normal aspect of bilingual development, and (b) there are large individual differences in children's rates of code-mixing. Most research on children's code-mixing has focused on why they code-mix at all. More recently, researchers have sought to explain why there is such wide variation in rates of mixing. In the next section, we first review evidence for and against the most common explanation of why children code-mix at all — the unitary language system hypothesis. Then, we turn to possible explanations of the variation among children.

The Unitary Language System Hypothesis

The most frequent explanation as to why bilingual children code-mix at all has been that they have a single or unitary lan-

guage system (ULS) that does not distinguish between the two languages (see Genesee, 1989, for a review). Volterra and Taeschner (1978) have presented the most explicit form of this hypothesis. Drawing on data from three bilingual children, they suggested that there are three developmental stages in bilingual acquisition. In stage I, all aspects of the children's two languages are undifferentiated; thus, children in this stage code-mix extensively. In stage II, there is a single lexicon but differentiated syntactic systems so that bilingual children are likely to use the syntactic structures of one language but words from both languages in the same utterance (cf., Meisel, 1989). Finally, in stage III, there are distinct syntactic and lexical systems and thus very little code-mixing. According to this view, it is only when children reach stage III that they are truly bilingual.

In contradiction to the predictions of the ULS hypothesis, as we have seen above, children's rates of code-mixing do not necessarily decrease with age. Furthermore, careful research has shown that there is evidence against the ULS hypothesis on all levels of linguistic analysis — phonological, lexical, syntactic, and pragmatic. Research has shown that instead of initially confusing their two languages, bilingual children differentiate their languages from very early in development. We now turn to a discussion of the evidence for language differentiation in terms of phonological, lexical, syntactic, and pragmatic development.

Phonological Differentiation

In one of the earliest reports on bilingual development, Ronjat (1913) found that his French-German bilingual son produced words in each language like those of a monolingual speaker of each language, suggesting that he had two distinct phonological systems from the time he began uttering words. Ronjat concluded: "La prononciation de Louis est dans les deux langues celle d'un enfant indigène" (pp. 12-13) ['Louis's pronunciation in his two languages is like that of a native-speaking child']. In contrast, Leopold (1939) reported that the early word productions of Hildegard, his German-English bilingual daughter, lacked phonological differentiation and appeared to be derived from a single phonological system. More recent research has also reported an apparent lack of phonological differentiation in the early word productions of bilingual children, suggesting a unitary phonological system (Burling, 1959; Deuchar & Clark, 1996; Schnitzer & Krasinski, 1994). For example, Schnitzer and Krasinski (1994) found that a Spanish-English bilingual boy initially used the same set of consonants in producing Spanish and English words, and first showed phonological differentiation only at 2;3 and almost complete differentiation of consonants by 2;7. In contrast, this boy's vowels were always pronounced as clear approximations of the adult models in both languages.

Deuchar and Clark (1996) measured the voice onset time (VOT) of the stop consonants used by a Spanish-English bilingual child. VOT is the time interval between the release of a stop consonant and the onset of vocal fold vibrations; VOT is markedly different in Spanish and English. When the child was 1;7, there was no difference in the VOT in her Spanish and English consonants; however, when she was 2;3, there was a marked difference between the two languages. The authors explained their results by suggesting that Spanish voicing is more difficult than English voicing, although they provide no explanation of why this should be so. An alternative explanation is that the child's initial productions reflected a universal pattern that might be found among learners of all languages early in development and that this is followed later by language-specific patterns. A similar developmental sequence of universal followed by language-specific patterns has been noted in the case of speech perception (Vihman, 1996). At present, there is insufficient empirical evidence to provide definitive results and conclusions in this domain of phonology.

In contrast to these findings, analyses of bilingual children's prosody have yielded evidence of early differentiation. For example, Ingram (1981) examined the lexical productions of a two-year old Italian-English bilingual girl. On the basis of clear and consistent phonological differences in adult Italian and English, he predicted that the child would use more reduplicated syllables (e.g., baba, didi, gogo) in Italian than in English and more closed syllables (i.e., syllables that end in a consonant) in English than in Italian. Indeed, he found that the girl's rate of reduplication was twice as high in Italian as English, and her use of closed syllables was more than twice as high in English as Italian. He concluded that "(...) there is evidence for two phonological systems in the sense that there are specific tendencies in the output that help identify words as belonging to one lexicon or the other" (p. 103). Similarly, Paradis (1996) reanalysed Leopold's (1939) data from the time that his daughter knew 50 words and found that Hildegard showed different patterns of syllabification in German and English.

In summary, bilingual children's prosody has been shown to be differentiated early in development. Where bilingual children's early phonological development can be interpreted as an initial lack of differentiation between languages, this may reflect a universal pattern of acquisition exhibited by all language learners and may not be a lack of differentiation per se. For the purposes of this discussion, we are interested in the earliest evidence that bilingual children's phonological systems are differentiated allowing that they still have other aspects of the phonology of their respective languages to learn. Thus, we conclude that bilingual children have two distinct systems of pronunciation at least from the time they know 50 words, the same time that monolingual children's phonology is thought to become systematic (Ferguson, 1978; Ingram, 1976). We are uncertain about earlier development since the development of prosody in bilingual children has not yet been studied before they have a vocabulary of 50 words.

Lexical differentiation

Evidence that young bilingual children have translation equivalents (words in each language that refer to the same con-

cept) could also be taken as evidence for language differentiation. Vihman (1985) reported that 10% of her Estonian-English bilingual son's vocabulary was translation equivalents when he was 1;2 (a month after he started to say words). Similarly, using parental checklists of vocabulary, Pearson et al. (1995) showed that 27 Spanish-English bilingual children aged 0;8 to 2;6 had an average of 30% of their vocabulary devoted to translation equivalents. They also reported on a child with a vocabulary of only three words who knew translation equivalents. Quay (1995) examined a Spanish-English bilingual child's translation equivalents from 1;5 to 1;10, making sure that the words referred to the same object, event, or process. The child had a fairly stable rate of translation equivalents in her vocabulary — about 40% of her vocabulary was in translation equivalents. Thus, it seems that bilingual children know translation equivalents soon after they begin to talk. Nicoladis (1997) compared the rate of translation equivalents in the first 50 words of four bilingual children's vocabulary and the rate of synonyms in the first 50 words of monolingual children's vocabulary. She found that there was no significant difference between bilingual children's rates of translation equivalents and monolingual children's rates of synonyms. This finding suggests that during the very beginning of language production, bilingual children might think their translation equivalents are within-language synonyms.

In sum, there is clear evidence of lexical differentiation in so far as bilingual children can know two words that refer to the same concept from very early in language development, possibly soon after they begin speaking. If there is a period in which they do not know that the words belong to two different languages, it is very early in language development, up to the first 50 words.

Syntactic differentiation

Several studies have shown that bilingual children use two distinct syntactic systems from the time there is evidence of syntax in their productions (children must be using verbs in order for their syntax to be described). Research has shown that bilingual children use the appropriate word order, verb-agreement morphology, pronoun forms, placement of negative markers relative to the verb, and complementizers in subordinate clauses for both of their languages starting as early as 1;11 (Meisel, 1989; Meisel & Müller, 1992; Paradis & Genesee, 1996). One possible exception to these findings is reported by Döpke (1997). She examined the language production of three German-English bilingual children in Australia and found that they initially showed the same syntactic patterns as monolinguals with respect to word order, negative placement relative to the verb, and verb placement in the sentence. After this initial phase, starting about 2;6, however, the children's German syntax showed signs of being influenced by English for a short time. More specifically, they placed complements in their German sentences in the same place relative to the verb as would be seen in monolingual English-speaking children. These findings are,

arguably, more a case of interaction between two syntactic systems rather than a failure to differentiate between systems. That this might be the case is supported by the fact that these results were not found during the first stage of syntactic development but later on; and, moreover, these children were being raised in an English-dominant environment. Two other studies have shown that bilingual children's syntactic systems can interact in a variety of ways (Gawlitzek-Maiwald & Tracy, 1996; Hulk & van der Linden, 1996). Evidence of interactions between the developing syntactic systems of bilinguals presents weak evidence against the general conclusion proffered by all other studies that bilingual children acquire differentiated syntactic systems as early as the time they start using recognisable syntax. Furthermore, there is no reason to expect that the two syntaxes of a bilingual child will be exactly like those of two monolingual children because, by definition, the children's acquisition situations are different.

Pragmatic differentiation

The final way in which bilingual children might show language differentiation is pragmatically. An early form of pragmatic differentiation in bilingual learners would be the use of the appropriate language with different interlocutors; for example, a German-Hungarian bilingual child who speaks German to German speakers and Hungarian to Hungarian speakers would be evidencing pragmatic differentiation. Early diary studies of individual bilingual children have reported pragmatic differentiation at 1;4 (Ronjat, 1913) and 2;0 (Pavlovitch, 1920; although this child's exposure to his second language only started when he was 1;2). These early findings are supported by more recent studies. Köppe and Meisel (1995) observed two French-German bilingual children (Annika and Ivar) interacting with adult interlocutors who pretended to be monolingual. Both children made virtually no mistakes in language choice, for Annika at 2;0 and Ivar at 2;5, no analyses were performed when the children were younger. To see if there might be an earlier stage when bilingual children do not show pragmatic differentiation, Nicoladis and Genesee (1996a) examined the language use of four French-English bilingual children in interaction with their parents from the time they were about 1;7 until they were about 3;0. All four children initially used their languages in the proportion that would be expected by their relative dominance in each language. As we will discuss below, almost all bilingual children are more proficient, or dominant, in one of their languages and, indeed, all the bilingual children examined by Nicoladis and Genesee used more of their dominant language when talking to each parent. However, somewhere between 1;9 and 2;4, the children started to use more of their interlocutor's language than would be expected by their relative dominance in that language (see also, Genesee et al., 1995).

A test of bilingual children's pragmatic differentiation that is independent of language dominance is to examine how they use translation equivalents with speakers of different languages (e.g.,

"casa" to Spanish speakers and "house" to English speakers). Two studies have examined bilingual children's use of translation equivalents and have shown that around the age of 1;7 to 2;4, they use almost all words for which they know translation equivalents appropriately (Quay, 1995; Nicoladis & Genesee, 1996a; Wolf, Genesee, & Paradis, 1995). Finally, a study by Genesee et al. (1996) has shown that bilingual children are able to use their languages differentially and appropriately even with monolingual strangers, suggesting that they are able to make on-line adjustments in language use based on minimal prior experience or knowledge.

In sum, bilingual children have been shown to use their developing languages differentially and appropriately with different interlocutors starting around the age of two years, although there is considerable individual variation.

Summary of Language Differentiation Studies

Bilingual children have been shown to differentiate their languages phonologically, lexically, syntactically, and pragmatically as young as two years of age, and possibly earlier. There is no evidence that they ever go through a stage of a undifferentiated phonological, lexical, or syntactic development. The only domain in which there is any evidence of a possible lack of differentiation is pragmatic, that is, choosing the "right" language to use with particular interlocutors. On the one hand, one might expect pragmatic differentiation to emerge relatively slowly since pragmatic rules can vary among groups and even families and even within a family. For example, parents of a bilingual child might initially be delighted that he or she can talk at all, so they might initially praise any production, no matter what language. Then, as a child gets older and gains greater proficiency in both languages, the parents may become more strict about enforcing a one parent-one language rule (see Lanza, 1992). On the other hand, bilingual children may appear to lack pragmatic differentiation early in development simply because they lack sufficient proficiency in each language to use only one language to express themselves. Bilingual children may use whatever resources they have in both languages to express themselves until they acquire sufficient resources in each language to use only one at a time. A clear and important conclusion to emerge from this research is that learning two languages simultaneously is just as "normal" as learning one.

Explaining Variation in Children's Rates of Code-mixing

If language differentiation occurs at the beginning or very early in language development, why do bilingual children code-mix? Even if the unitary language system hypothesis has been resoundingly disproven, the question as to why children code-mix remains. In broad terms, two kinds of explanations have been put forth: (a) child-based explanations, and (b) input-based explanations. In this section, we discuss some of the variations of these two explanations.

Child-based explanations of children's code-mixing have one commonality — they can all be viewed in terms of whether or not bilingual children know (or have access to) a translation equivalent in the language that they are trying to speak (e.g., Vihman, 1985). That is, children code-mix because they do not know a particular word or expression in the language they are speaking. This idea has never been directly tested because the evidence would only be negative. For example, Nicoladis (1995) reported that when six French-English bilingual children code-mixed, there was no evidence that they knew a translation equivalent of the code mixed word at that time. Failure to find evidence of translation equivalents for code-mixed words is not very strong evidence in favour of this explanation because the children may have just chosen not to say that word at that time. There is, however, other evidence that this explanation is valid. As we pointed out above, almost all bilingual children are dominant, or more proficient, in one of their languages (Grosjean, 1982; Leopold, 1949). Dominance in one language implies a lack of translation equivalents in the other language (Lindholm & Padilla, 1978); for example, a French-dominant bilingual child might know a lot of words in French for which he or she has no translation equivalents in English. At least until 3;6, bilingual children tend to code-mix more when speaking to the parent who speaks their weaker language, indirectly supporting the idea that they code-mix when they do not have translation equivalents (Genesee et al., 1995; Nicoladis, 1995; Nicoladis & Genesee, 1996b, 1997, in press; cf., Lanza, 1992). Similarly, Petersen (1988) proposed that bilingual children code-mix more often by using words from their weaker language in utterances that are otherwise from their stronger language than the other way around. Thus, they borrow words for which they do not have a translation equivalent into their dominant language.

More direct evidence for the lack of translation equivalents explanation comes from analysis of particular words used by children. Bilingual children sometimes have domain-specific word knowledge in one language only; for example, the words for colour might be learned in one language before they are learned in the other (De Houwer, 1990). Thus, any time a bilingual child wanted to speak about that particular domain, he or she would be forced to use a particular language. We have observed something similar in bilingual families who have participated in our studies; that is, children sometimes have favourite words or phrases in one language only and use them when speaking either language. These favourite words and phrases may be especially common when translation equivalents do not exist in the other language; for example, among the French-English bilingual children we have observed, the French word "dodo", a nursery word meaning nap, sleep, or sleeping, was commonly used even when children were speaking English, perhaps because there is no simple translation in English. While a lack of translation equivalents might explain a lot of children's code-mixing, it cannot explain all of their code-mixing. Nicoladis (1995) found that children occasionally code-mixed

even when they possessed a translation equivalent. Bilingual adults occasionally code-mix for stylistic effect and not because they do not know a translation equivalent. There is no reason to think that bilingual children might not code-mix for stylistic effect as well.

Another factor that might explain children's code-mixing may be found in the input. It is commonly assumed by researchers and laypeople alike that bilingual children code-mix a lot if their parents code-mix a lot. Indeed, parents in bilingual families are often counselled to follow a one parent-one language rule in order to minimise their children's code-mixing (see, for example, Grosjean, 1982; Ronjat, 1913). However, there is variation among communities with respect to the prevalence of code-switching and its formal and functional characteristics (Poplack & Sankoff, 1988) and, thus, the relationship between parental and children's rates may not be the same in all communities. There is surprisingly little systematic evidence concerning the relationship between parental and children's rates of code-mixing. The evidence that exists thus far suggests that the effect of parental code-mixing on children's rates of code-mixing may interact with children's proficiency in their two languages and the sociolinguistic context in which the family lives. For example, Montreal is a sociolinguistic context in which many people are bilingual but the languages are kept fairly separate relative to other bilingual communities (Heller, 1985; Nicoladis & Genesee, 1996c; see also Poplack, 1987, for discussion of the nearby community of Ottawa/Hull). One study in Montreal reported significant correlations between child and parent code-mixing in half of the eight cases; the four children were followed longitudinally from as young as 1;2 to as old as 4;9 (Goodz, 1989). In contrast, another study in the same community found significant correlations in only two of twelve cases; the children in this study were followed longitudinally from 1;6 to 2;6 (Nicoladis, 1995).

In an attempt to reconcile the discrepant results from these two studies, Nicoladis and Genesee (1997) examined the relationship between child and parental code-mixing in seven bilingual families when the children were 2;0, 2;6, 3;0, and 3;6. They found that the rates of parental and child code-mixing did not correlate at 2;0 and 2;6 but did correlate at 3;0, and 3;6. Furthermore, they showed that children's language dominance (or greater proficiency in one language) was an important factor in their code-mixing at all ages — namely, they code-mixed more when speaking their weaker language. They speculated that bilingual children must attain a certain level of proficiency in both languages before they can learn the pragmatic rule valid in Montreal to avoid code-mixing. Further evidence for this speculation was seen in the marked drop in rates of code-mixing between 2;6 and 3;0 in the two children who were relatively balanced in proficiency of their two languages.

In contrast to the Montreal results, one case study in a bilingual community in which code-mixing was prevalent showed that the child's rates of code-mixing reached similar rates to her parents by around two years of age (Tabouret-Keller, 1963). In this case, we cannot know whether the child's early attainment of similar rates of code-mixing to her parents' is due to her relative proficiency in the two languages or the prevalence of code-mixing in her environment or some combination of the two factors. Further research in communities in which code-mixing is prevalent might elucidate the inter-relationship between these two factors.

Another way in which input might influence children's code-mixing is through parental speech acts (Lanza, 1992; cf. Nicoladis & Genesee, in press). By responding to children's code-mixing as a valid form of communication, parents might indicate to children that code-mixing is acceptable and allow it to continue. In contrast, if parents respond to children's code-mixing by correcting their language choice or by pretending that they have not understood, they might discourage children's code-mixing (Lanza, 1992). At present, the evidence for this explanation is mixed, with Lanza reporting evidence for it in the case of a Norwegian-English bilingual child being raised in Norway and Nicoladis and Genesee (in press) reporting no link between parental response strategies and the code-mixing of five French-English bilingual children being raised in Montreal. This is an interesting and important issue that clearly requires more investigation.

In summary, studies focused on explaining differences between children in terms of rates of code-mixing have suggested that children's lack of translation equivalents might explain a lot of their code-mixing from very early on. Other factors may contribute to children's code-mixing such as their temperament, their willingness to accept a monolingual context, and ease of access to translation equivalents; these have not yet been examined. The effect of input on children's code-mixing might not be seen until later in development (after the age of three years), although the effect of the sociolinguistic context has not yet been adequately determined. If the primary explanation of children's code-mixing is indeed that they lack translation equivalents, then their early use of code-mixing can be understood as a creative and resourceful use of their developing language skills for communicating with others, and not as confusion as has previously been thought (Goodz, 1989).

Developmental Milestones

The next question that arises is whether there is any effect of bilingualism on language development in general. There are three logical possibilities about the rate of bilingual acquisition relative to monolingual acquisition: bilingual acquisition (a) delays language development, (b) speeds it up, or (c) has no discernible effect. Because bilingual children learn one more language than monolingual children, it might be thought that their development would be slower in both languages. Alternatively, it has been suggested that having two words for a single concept might increase children's awareness of language and thus

enhance their development. Lastly, it is possible that learning two languages is a minor variation from learning one language and, therefore, has no significant effect. One of the difficulties in comparing monolingual and bilingual development is that even monolingual children show wide individual variation in the rate at which they develop. Thus, in order to adequately compare monolingual and bilingual development, a study should include a large number of children so that differences between individuals would not confound any differences between groups. Such a study has not been done, and this gap in the research evidence should be taken into account as we review the extant evidence comparing monolingual and bilingual children.

Parents report that bilingual and monolingual children say their first words at approximately the same age, although the evidence that exists is limited. In two studies of French-English bilingual children, parents have reported the age of the first word somewhere between six and 13 months, with an average around 11 or 12 months (Doyle, Champagne, & Segalowitz, 1978; Nicoladis, 1995). Leopold (1949) reported that his daughter said her first word at about 10 months of age. In one study of 448 monolingual English-speaking children, the parents reported the children's first words were produced on average at the age of 11.3 months, with a standard deviation of 2.3 (Capute et al., 1986), clearly in line with the evidence based on bilingual children.

Bilingual and monolingual children have a productive vocabulary of 50 words at approximately the same age, again, as far as the evidence goes. Nicoladis (1995) reported that five out of six French-English bilingual children reached a vocabulary of 50 words between 18 and 21 months of age. The sixth child reached this developmental milestone at about 28 months; this child later received speech and language therapy. As for monolingual children, Benedict (1979) reported that eight monolingual English-speaking children attained a 50-word vocabulary at an average age of 18.5 months, with a range of 15 to 22 months. Capute et al. (1986) reported an average age of 20.9 months and a standard deviation of 3.2 months for the 448 English-speaking children in their study.

In terms of overall size of vocabulary, bilingual children, on average, have been reported to have half the vocabulary in each language as an average monolingual child, at least until the age of four years. However, when the vocabulary in both languages is added together, the size of the receptive vocabulary of bilingual children is the same or higher than that of monolingual children (Doyle et al., 1978; Pearson, Fernández, & Oller, 1993; Nicoladis & Genesee, 1996d). These results suggest that there may be cognitive limits to the overall size of children's vocabulary at least in the preschool years.

As for syntax, bilingual children pass through a one-word stage, then a two-word stage before forming multiword utterances. A rough measure of bilingual children's morphosyntactic complexity, their mean length of utterance, has been reported to fall within the normal range for monolinguals (Nicoladis,

1995). For any syntactic structure studied, the order of acquisition and the age at which it is acquired have been reported to be within the range for monolingual children (Döpke, 1997; Meisel, 1989; Paradis & Genesee, 1996; Vihman, 1985).

In summary, research comparing bilingual and monolingual children's language development suggests that there is no outstanding difference in the main language acquisition milestones of bilinguals and monolinguals. Bilingual children have generally been found to be neither remarkably delayed nor remarkably advanced in any aspect of language development relative to the norms for monolingual children. Before going on, however, there are a few caveats to be noted. First, most of the research reviewed in this section considered both languages together; thus, for example, the age of a child's first word was noted regardless of which language the word was in. However, bilingual children might look delayed if only one of their languages is considered. For example, a child's first word in English might be produced when he is 11 months old while his first word in Portuguese might not occur until he is 14 months old; thus, he may seem to be delayed in Portuguese. A more likely explanation in this scenario would be language dominance, that is, it is likely that this child heard more English than Portuguese and, thus, it is no surprise that his English proficiency was more advanced than his Portuguese. Language dominance is extremely common in bilingual children and can shift extremely rapidly for young children. For example, Leopold (1949) reported that his 13-month-old daughter's dominance shifted from English to German during a six-week stay in Germany. Among the families who have participated in our studies, we have noted some rapid shifts in dominance with a change in child-care circumstances. For example, one boy moved from a bilingual daycare to a monolingual French daycare and switched from being only slightly French dominant to being very French dominant. Another very French dominant child became more balanced in proficiency within eight weeks when his English-speaking mother was at home with him on maternity leave. Thus, it is essential that the two languages of bilingual children be considered simultaneously (and in conjunction with language dominance and preference). Otherwise they may appear to be delayed compared to monolingual children. A case in point comes from a study of a heterogeneous group of bilingual seven-year-olds with specific language impairment (SLI) in England (Crutchley et al., 1997). This study showed that the bilingual group almost always scored lower on standardised tests of a variety of measures of English-language development when compared with monolingual children of the same age and with similar symptoms. While it is possible that SLI is particularly devastating for bilingual children, it is more likely that only about half of the bilingual children's linguistic resources are tapped when the tests are only in one language.

Another caveat to be noted concerns the effect of context of acquisition on children's language development. Although virtually no direct evidence concerning context and bilingual

acquisition exists, it has often been claimed that monolingual children differ in language development, especially with respect to vocabulary, depending on whether their families are from working class or middle class backgrounds (Whitehurst, 1997). One might expect bilingual children from lower- or working-class families to demonstrate similar differences in development when compared to middle-class monolingual children. If this were the case, these differences would not be due to the children's bilingualism but rather to whatever causes such putative differences in children from different social class backgrounds.

Although bilingualism may have no effect on children's language development, some advantages in cognitive development have been reported. In particular, some kinds of metalinguistic awareness, or the ability to explicitly attend to the structure of language rather than its meaning, are thought to be enhanced by bilingualism (see Bowey, 1988, for a review). For the most part, these advantages have been reported for school-aged children, so we will not review these findings here. Suffice it to say that there is no evidence that bilingual acquisition slows down language development and, to the contrary, it might produce certain cognitive advantages, such as in metalinguistic awareness. By inference there is no reason to assume, pending evidence to the contrary, that bilingual acquisition would interfere with or otherwise impair the development of children with language impairments.

Language Socialisation of Bilingual Children

In the preceding sections, we focused on the strictly linguistic aspects of learning two languages at the same time. It is important to keep in mind that learning language, one or two, entails more than learning a set of linguistic structures and patterns. It also entails learning how to use the linguistic code to communicate and interact appropriately and effectively with others.

It is now well understood that there are different ways of using language depending on the nature of the social situation, event, or interaction: face-to-face conversations are different from telephone conversations; talk between children is different from talk between children and adults; talk between close friends is different from talk between strangers; and so on (Ninio & Snow, 1996). When they learn language, children learn the ways of expressing themselves and communicating with others that are characteristic of the social situations that are typical and important in their families and communities.

The ways in which language is used in different situations vary from one culture to another — people from different cultural groups transact business in different ways; converse with one another in different ways; praise, criticise, and greet one another in different ways; and so on. Variations in the ways cultures organise the use of language reflect differences in cultural beliefs, values, and goals concerning social roles and relationships in their group (Shieffelin & Ochs, 1986). Of most relevance to our concerns here, the ways parents and other caregivers use language with infants and children are closely related to their cultural beliefs about the status and role of children in society, the social organisation of caregiving, and conceptions of how children learn language (Schieffelin & Eisenberg, 1984). This has important implications for what it means to learn a language and can be illustrated more clearly by looking at some differences that characterise the social context for language learning in different cultures.

In some cultures, it is believed that children are not appropriate conversational partners for adults and that the ability to learn language is not associated with the child's active use of language. In these cultures, young children are usually not expected nor encouraged to initiate topics of conversation that are self-focused, and they are not encouraged to talk before a certain age (see Schieffelin & Eisenberg, 1984, for a useful review of research on cultural variations on conversations with children). These beliefs about language learning also often parallel views about learning in general so that children in such cultures are often expected to learn by listening to and observing competent adults model the behaviour or skill to be learned (Schieffelin & Ochs, 1986). As well, much valuable learning goes on among the children themselves.

In comparison, in most European and majority North American cultural groups, it is generally believed that children are appropriate conversational partners for adults and that language learning is related to the child's active use of language. In these cultures, children are encouraged to talk with adults and to talk about themselves. Moreover, much adult talk is child-centred. North American parents even engage pre-verbal infants in pseudo-conversations by construing their non-linguistic vocalisations and physical gestures as conversational turns worthy of response. Adults also accommodate their topics of conversation and their speech styles to children. So-called baby-talk or caregiver speech, as this modified form of language is called, is highly simplified and repetitive, and it has a number of distinct acoustic properties (Snow & Ferguson, 1977). Modified language input to child language learners and conversations with verbal and even pre-verbal infants are not typical of cultures that do not view the child as a legitimate conversational partner or do not believe that the child's active use of language is important for language learning (Schieffelin & Ochs, 1986).

The important point here is that infants and children in different cultures are exposed to different patterns of language use and through these experiences are exposed to different belief systems about their status and role in relationship to adults and to the world at large. Thus, the way in which children construct a model of the world and discover their place and power of control within it is strongly influenced by the sociocultural values and orientations that are encoded and transmitted in the everyday conversations they have with parents and other adults in their community (Wells, 1986). It is through the process of learning language that is embedded in systems of cultural beliefs and values that children learn the sociocultural values and ways

of the group into which they are being socialised. And, it is through language learning that children become members in good standing in their own cultural group. As Heath (1983) has so aptly stated, "language learning is cultural learning" (p. 145).

All children learn the sociolinguistic rules and sociocultural values that characterise life in their community; bilingual children are no different in this regard. What is different in the case of children raised bilingually is that they must learn the rules and values that are associated with two languages and communities, and they must learn when they are appropriate. There can also be rules of language usage and ways of behaving that are particular to the social situations that characterise life in bilingual communities. These must also be learned and used appropriately. Taken together then, children learning two languages simultaneously learn patterns of language use, cultural values, and social behaviours that are characteristic of monolingual contexts as well as those that are specific to bilingual contexts. This means that children raised bilingually develop rich and complex patterns of communication and interaction (Oksaar, 1971; Pease-Alvarez & Vasquez, 1994) and they use these resources in the new social situations they encounter as they grow older and extend their social lives.

There are times, however, when bilingual children might appear less than competent. This can occur if they are called upon to use one or both of their languages in social situations that have not been part of their experiences learning those languages. If, for example, Spanish-English bilingual children in the United States have had little opportunity to interact with monolingual English-speaking adults, then they may lack the linguistic and social competence necessary to interact effectively with teachers or speech-language pathologists. In such cases, it would not be surprising for such children either to use whatever communication and general social skills they have, in admittedly inappropriate ways, or simply to withdraw and not communicate or interact at all. Such behaviour might be interpreted as delayed or impaired development. This would be a false evaluation since in most cases it is a lack of social experience that underlies the child's language performance, not an underlying deficit (see Crago & Cole, 1991). Given sufficient time and experience, most bilingual children will acquire the skills needed to communicate and interact in new situations.

Learning new language skills can be a challenging task for bilingual children if the social behaviours and cultural values associated with the new skills conflict with the values and social behaviours they have learned in the home (Crago, 1992; Genesee & Nicoladis, 1995). For example, children from some cultures learn that it is inappropriate to initiate conversations with adults, to participate publicly in competitive ways with others, and to look directly at adults when being spoken to. In comparison, mainstream North American children learn that it is appropriate to initiate conversations with adults, to compete verbally with other children, and to make eye contact during conversations with others. It has been shown that it is through the use of these styles of communication that students are expected to display what they have learned in school. Moreover, teachers in most North American schools evaluate and grade students by their ability to participate in classroom activities in these ways. This is probably equally true in interview or diagnostic sessions with speech-language pathologists (Crago & Cole, 1991). If bilingual children are hesitant in using language in unfamiliar or culturally loaded situations, it may reflect unfamiliarity with new socio-cultural rules or difficulties they have in reconciling new cultural values and orientations with existing ones. It is important that professionals working with bilingual children understand this and seek to identify what situations lead to such behaviours and to find alternatives. At the same time, it is important that they not overlook the extensive linguistic resources that bilingual children have already acquired.

Clinical Implications

Owing to the lack of systematic empirical investigation with language impaired bilingual children, it is impossible to draw direct implications from the extant work on early bilingual development. The recommendations we suggest in this section are necessarily indirect and inferential. They nevertheless represent minimum guidelines that can benefit clinical observation and diagnosis.

First, as we pointed out at the outset, there is a great deal of variation in how children become bilingual. This variation can influence both the levels of proficiency bilingual children acquire in each language, the social domains in which they have or have not acquired proficiency, and the very nature of the proficiency that they acquire. Consequently, the language history of bilingual children should be considered carefully in order to fully understand a bilingual child's current linguistic status. In addition to ascertaining the extent and nature of exposure to each language, recent changes in language exposure, and any possible differences in affectivity toward each language or speakers of each language should be considered. Children may be more or less expressive in each language as a result of variations in these factors and it is critical that language development specialists obtain as much accurate information about each as possible.

Second, it is imperative that BOTH languages of bilingual children be examined. It has been found in the domain of vocabulary development, for example, that bilingual children demonstrate the same range and depth of vocabulary skills as monolingual children if both languages are considered together, whereas their vocabulary in either language considered alone may be less than that of a monolingual speaker of the same language. This remains true at least until children are four years old (Doyle et al., 1978) and may well be true later on as well (Crutchley et al., 1997), particularly in cases of later second language acquisition. Examining only one language of the preschool bilingual child provides information about (on average) only half of their language skills. Unfortunately, in many

cases, formal or standardised diagnostic tests will not be available in both languages. In such cases, it is incumbent on the examiner to conduct informal language assessments or to consult individuals who know the child well and are proficient in the relevant languages (e.g., parents, guardians, extended family members, teachers, doctors). Information provided by such informants can be useful, especially when other sources of information are lacking. At the same time, such informants might not be able to provide the specialised, detailed kinds of information that the speech-language pathologist is seeking. In any case, multiple sources of information about both languages is essential to arrive at a comprehensive and accurate assessment of the child's language abilities. If it is possible to assess the child in only one language, the child's stronger language may provide a better picture of what he or she can do.

Third, it is important to realise that code-mixing by bilingual children is usually not evidence of aberrant language development and, in particular, it does not signify language confusion or fusion of the child's languages. Code-mixing is a common and universal form of communication among bilinguals, even adults. Children may code-mix for a variety reasons, none of which are necessarily cause for clinical concern; for example, children may code-mix because it is a frequent pattern of language use in the home or community, they lack full proficiency in certain aspects of their languages, or they prefer certain words or syntactic forms. Children who code-mix extensively, especially in inappropriate contexts, may have to learn the socio-pragmatic constraints of doing so; but, such behaviour in itself is not evidence of language pathology (Bergman, 1976). Given sufficient opportunities, most bilingual children will learn appropriate patterns of language use in non-bilingual settings.

Fourth, it is common for bilingual children to be more proficient (or dominant) in one language than another; this often results from unequal exposure to both languages. This may reflect itself in hesitancies or code-mixing when the child is called upon to use the less-proficient language. In a related vein, bilingual children may have domain-specific gaps in their knowledge of specific languages (e.g., know colour words in language X but not in language Y). Once again, such gaps in knowledge should not be interpreted as evidence of pathology, but rather as incomplete acquisition of specific aspects of the language. Again, in virtually all cases, this is likely to be an indication of incomplete sociolinguistic/pragmatic development rather than of an underlying pathology in competence. We do not fully understand yet how children who grow up bilingually treat or manage any cultural differences that underlie the languages that they are learning (Crago, Chen, Genesee, & Allen, in press). Alternatively, bilingual children may have difficulty communicating appropriately in certain situations because the appropriate social behaviours conflict with the values and behaviours they have learned in the home. It is imperative that speech-language pathologists seek explanations of any inappropriate or seemingly atypical communication or language patterns by bilingual children in their socio-cultural histories before concluding that pathological development is involved.

Fifth, diagnoses of specific language impairment (SLI) in bilingual children should take certain research findings into account. First, the syntactic development in each language is initially autonomous (Paradis & Genesee, 1996); where differences in syntax have been seen in bilingual children relative to monolingual children, these differences are in terms of frequency of use of particular structures rather than creation of completely new structures (Döpke, 1997; Gawlitzek-Maiwald & Tracy, 1996; Hulk & van der Linden, 1996). Second, the manifestation of SLI is not the same in all languages — the grammatical typology of each language determines the morphological impairment characteristic of the language (Crago & Allen, 1996). However, we have not yet been able to fully identify the exact morphological impairment associated with typologically different languages (Leonard, Bortolini, Caselli, McGregor, & Sabbadini, 1992; see also Clahsen, Bartke, & Gollner, 1997; Dromi, Leonard, & Shteiman, 1993 for discussion of SLI in languages other than English). To the extent that SLI acts on general language-learning potential, we would expect that bilingual children with SLI will be equally impaired in both languages. However, if a bilingual child manifests what appears to be an impairment in one language but not in the other, then a diagnosis of underlying impairment would be unwarranted. An explanation of the child's difficulty in the language in question would need to be sought elsewhere.

Sixth, young bilingual children from minority sociocultural groups may use language inappropriately or with much hesitancy in unfamiliar situations. In some cases, the language behaviour that is called for in many mainstream settings may be antithetical to the social norms that children from some ethnolinguistic groups learn in the home (Crago, 1992); for example, children from some Amerindian groups are expected to remain silent with adults and to not look directly at adults; these are behaviours that could easily be misconstrued as inappropriate or, worse, indicative of developmental delay or pathology in a situation that calls for overt and direct display of language and communication skills. It is important to consider sociocultural factors when interpreting language usage patterns by bilingual children from minority group backgrounds that differ from the patterns for children from majority group backgrounds. In this regard, it can be useful to examine or inquire into the child's functional language use in his or her normal social environment to ascertain whether any language difficulties are evidenced. The absence of language difficulties in such settings would argue for situation-specific explanations of "abnormal" patterns of language use in clinical or otherwise unfamiliar settings.

Finally, clinicians often wonder whether children with language-learning problems may be further challenged by exposure to two languages. If this were the case, then modifying the child's environment so that he or she were exposed to only one language, if it were at all possible, would be warranted. In fact,

we have no evidence suggesting that learning one language is any simpler than learning two. To the contrary, the existing evidence indicates that most bilingual children exhibit the same fundamental language acquisition milestones at the same time as monolingual children. Thus, the evidence from normally developing bilingual children suggests that learning two languages is as easy as learning one. Naturally, we do not wish to suggest that generalisations can be made between normally developing children and children with language problems without justification. Given the lack of evidence, however, we would suggest that a recommendation to modify a bilingual child's language environment should not be done lightly. Such a recommendation should have a clear clinical goal. Consideration of extralinguistic factors such as ease of communication between the child and the rest of his or her family and the importance of the languages in the larger community should certainly be considered. Finally, while we do not have any systematic evidence for this position, our impression is that the language spoken by parents and other important members of the child's community should remain relatively stable.

In general, because bilingual children have had different language learning histories, it should be expected that they may exhibit different patterns of language use and competence relative to monolingual children; after all, they are learning two language systems and the sociocultural constraints that characterise their use in social settings. The challenge for language development specialists is to identify when such behaviour is simply a manifestation of different language learning backgrounds as opposed to an underlying language delay, impairment, or pathology requiring clinical intervention. Before any such differences are interpreted as pathological or evidence of impairment, all other possible explanations, such as those discussed above, should be ruled out.

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