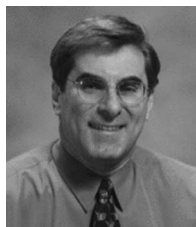


CPA Gold Medal Award for Distinguished Lifetime Contributions to Canadian Psychology – 2014 / Prix 2014 de la médaille d'or pour contributions remarquables à la psychologie canadienne au cours de l'ensemble de la carrière

Myths About Early Childhood Bilingualism

FRED GENESEE
McGill University



Abstract

There has been growing interest in children who learn language in diverse contexts and under diverse circumstances. In particular, dual language acquisition has become the focus of much research attention, arguably as a reflection of the growing awareness that dual language learning is common in children. A deeper understanding of dual language learning under different circumstances is important to ensure the formulation of theories of language learning that encompass all language learners and to provide critical information for clinical and other practical decisions that touch the lives of all language learners. This article reviews research findings on dual language learning in both school and nonschool settings, among simultaneous and sequential bilinguals, and in typically developing learners and those with an impaired capacity for language learning. Key findings with respect to 4 common myths about dual language acquisition in young learners are discussed: (1) the myth of the monolingual brain; (2) the myth that younger is better; (3) the myth of time-on-task; and (4) the myth that bilingualism is not advisable for children with developmental disorders or academic challenges.

Keywords: bilingualism, bilingual acquisition, child bilingualism

Competence in two, or more, languages has taken on increased value in recent years in many communities and countries around the world. There are local, national, and global reasons for this. Locally, there are communities where knowing more than one language is an advantage because knowing more than one language facilitates interpersonal communication, enhances job pros-

pects, and enriches one's day-to-day life; this is true in cities such as Montreal, Geneva, New Delhi, among others. Similarly, there are advantages to bilingualism in communities where an indigenous language is spoken, and members of the community want to maintain and revitalise competence in the indigenous language while also learning an important majority language. For example, the Mohawk community near Montreal has developed immersion programs that promote the acquisition of Mohawk among young Mohawk children while ensuring that they also know English and/or French (Jacobs & Cross, 2001). Bi- and even multilingualism are often advantageous for national reasons as well. In countries with policies of official bi- or multilingualism, such as Canada, Switzerland, and South Africa, there are personal, educational, and economic benefits to knowing both or all official languages. The European Union's "1 + 2" policy encourages member states to promote acquisition of the national language along with another European language and a third language so that European citizens can travel and work freely anywhere in the European Union and, also, be competitive globally.

There are yet other advantages to learning more than one language. Research has shown that bilingual individuals enjoy certain neurocognitive advantages in comparison with monolinguals. A bilingual advantage has been demonstrated in the performance of tasks that call for selective attention (e.g., Bialystok, 2001), including tasks that require focusing, inhibiting, and switching attention during problem solving, for example. It has been argued that learning and using two languages calls for selective attention to minimise interference between languages and ensure their appropriate use; this, in turn, enhances the development of executive control processes in general, not only in linguistic domains. These advantages have been found in both childhood and adulthood (Bialystok, Craik, Klein, & Viswanathan, 2004) and are most evident in bilinguals with relatively advanced levels of proficiency in two languages and who use their two languages actively on a regular basis (Bialystok, Peets, & Moreno, 2014).

Notwithstanding the evident professional, personal, social, and cognitive advantages of bi- and multilingualism, parents, educators, policymakers, and health care professionals often express serious concerns about raising or educating children bilingually. These fears are often founded on four myths: (1) the myth of the monolingual brain; (2) the myth that younger is better; (3) the myth of time-on-task; and (4) the myth of bilingualism and children with developmental disorders and academic challenges. These myths have serious theoretical significance as well as practical implications for raising and educating children bilingually. Thus, it is important that their validity be examined scientifically.

The author would like to thank Johanne Paradis, University of Alberta, for very helpful comments in an early draft of this article. Also, the author would like to thank the Social Sciences and Humanities Research Council of Canada for their continued support of his research, much of which is referred to in this article.

Correspondence concerning this article should be addressed to Fred Genesee, Department of Psychology, McGill University, 1205 Docteur Penfield Avenue, Montreal QC, Canada H3A 1B1. E-mail: fred.genesee@mcgill.ca

Each of these myths is explicated, and research findings relevant to each are reviewed in this article. Evidence is drawn from research on three populations of young learners: preschool children who acquire two languages simultaneously (simultaneous bilinguals); majority language students attending second language immersion/bilingual programs; and children who acquire a minority language at home but are educated in a majority language in school, such as Spanish-speaking children attending English language schools in the United States. Collectively, these diverse learners are referred to as “dual language learners.”

The Myth of the Monolingual Brain

There are often concerns that learning two languages simultaneously from birth stretches the limits of infants’ ability to acquire language and that they, therefore, will be confused and unable to differentiate between languages if their parents use both in the home; Paradis, Genesee, and Crago (2011) refer to this as the “limited capacity theory” of bilingual acquisition. It is feared that this, in turn, could result in delays in language development, deviant patterns of development, and possibly even incomplete competence. Viewed from a neurocognitive point of view, these fears can be interpreted to reflect a belief that infants’ brains are essentially monolingual and that they treat input in two languages as if it were a single language—what Genesee (1989) dubbed the “unitary language system” hypothesis. Parents in many bilingual families adhere to the one-parent/one-language rule on the assumption that their children need explicit markers of each language so that they do not become confused. Bilingual codemixing by children is often taken as evidence that they are unable to separate their two languages (Genesee, 2002). Evidence from three sources refutes this myth: research on milestones and patterns of language development in children raised bilingually, grammatical constraints on child bilingual codemixing, and bilingual children’s use of two languages in conversations.

Much of the research reviewed here was conducted in Montreal with children learning French and English. Montreal is a particular appropriate context for studying this issue because both French and English are prevalent in the community, and both have high status; thus, both are very useful and highly valued and, as a result, motivation to learn both is high. In other words, Montreal is an ideal context for examining children’s capacity for dual language learning when learning conditions are propitious. Having said that, there is wide variation in the conditions under which children acquire two languages, and their learning environments can change significantly over time. Amount, quality, and consistency of language exposure can influence all aspects of bilingual acquisition (see Grüter & Paradis, 2014, for detailed discussions of the role of input). In question in the present article is children’s capacity for dual language learning in supportive learning environments and not on variation among bilingual children and the extent to which children exposed to two languages actually become fully bilingual.

Language Development

If simultaneous acquisition of two languages is beyond the capacity of typically developing children, then one would expect that, in comparison with monolingual children, bilingual children would be delayed in their language development and, as well,

demonstrate different patterns of development. In particular, one would expect that their grammatical development would deviate from what is typical for monolingual children acquiring the same languages because they are unable to acquire differentiated grammars. The notion that the neurocognitive systems that underlie language development are essentially monolingual is evident in early theories of bilingual first language acquisition. A particularly influential theory by Volterra and Taeschner (1978) argued that children who learn two languages from birth initially have fused lexical and morphosyntactic systems; followed by separation of the lexicons of each language, but fused morphosyntactic systems; this is subsequently followed by differentiation of morphosyntactic systems. It was only by 3 years of age that children learning two languages were thought to be truly bilingual (also, see early work by Leopold, 1949).

There are a number of sources of evidence that dispute these concerns and theoretical claims. To begin, children who acquire two languages from birth achieve the same fundamental milestones in language development with respect to babbling, first words, and emergence of word combinations as monolingual children within the same time frame despite the fact that they have less exposure, on average, to each language than monolinguals. For example, in a study of a French-English infant, Maneva and Genesee (2002) found that he engaged in variegated babbling with each parent, one of whom spoke English and the other French, between 10 and 12 months of age, the same age as monolingual children. Similarly, in a much larger study of 73 infants learning Spanish and English in Miami, Kimbrough Oller, Eilers, Urbano, and Cobo-Lewis (1997) found that the onset of canonical babbling did not differ significantly for the bilingual and monolingual infants. Bilingual children, including children learning both a signed and a spoken language and children learning two spoken languages, have also been reported to produce their first words at about the same age as monolingual infants (e.g., Genesee, 2003; Patterson & Pearson, 2004; Petitto et al., 2001). Simultaneous bilingual children are often found to have smaller vocabularies than monolingual children when each language is considered separately, but equivalent or even larger vocabularies when both languages are considered together, what is referred to as conceptual vocabulary (Bedore, Peña, García, & Cortez, 2005). In a longitudinal study of children acquiring French and English in Montreal, Paradis and Genesee (1996) found that they began to produce word combinations within the same timeframe as that found for monolinguals—between approximately 1.5 and 2 years of age (see also Conboy & Thal, 2006; and Marchman, Martínez-Sussmann, & Dale, 2004).

Contrary to the unitary language system hypothesis, moreover, children acquiring two languages demonstrate evidence of differentiated systems from the earliest stages of language development. Maneva and Genesee (2002), for example, found that the babbling of the French-English infant in their study differed depending on whether he was interacting with his English-speaking mother or his French-speaking father and, furthermore, his babbling in each case was similar to that of monolingual infants with respect to the mean length of babbled utterances, syllable load, and syllable type. Detailed examination of the developing grammatical systems of French-English bilingual children in Montreal revealed that, for the most part, they were the same as those of monolingual children

(Paradis & Genesee, 1996). Zwanziger, Allen, and Genesee (2005) report evidence of differentiated grammatical development in children acquiring English and Inuktitut which, in contrast to French and English, have radically different morphosyntactic properties. Even under conditions of specific language impairment, bilingual children exhibit similar patterns of grammatical development as monolingual children with impairment (Paradis, Crago, Genesee, & Rice, 2003; Paradis et al., 2011). Taken together, these findings offer convincing evidence that learning two languages simultaneously is no more challenging for the human neurocognitive system than learning one.

Grammatical Constraints on Bilingual Codemixing

When individuals use words from two languages in the same sentence, or what is referred to as “intrautterance codemixing,” they run the risk of violating the grammatical constraints of one or both languages. For example, the utterance “I *le* like” (I like it) is ungrammatical since the object pronoun “*le*” (it) should follow the verb in English. Extensive research on adult bilinguals has shown that they rarely produce incorrect mixed sentences (e.g., Myers-Scotton, 1997). If young children who are learning two languages simultaneously go through a stage when they treat both languages as part of one system, then one would expect them to codemix extensively under the hypothesis that they initially have single lexical system. As well, they should produce many ungrammatical mixed utterances because their grammatical systems are undifferentiated. In an early study on this issue, Genesee, Nicoladis, and Paradis (1995) found that French-English bilingual children (1;10 to 2;02 years of age) in Montreal mixed within utterances less than 3% of the time, on average, far less often than one would expect if they were unable to differentiate between French and English. In an independent sample of young French-English children in Montreal, Sauve and Genesee (2000) similarly found that codemixing within utterances occurred less than 4% of the time, and moreover, there were virtually no grammatical errors when codemixing did occur. The same findings have been reported in studies of children learning other language pairs, for example, French and German (Meisel, 1994), English and Estonian (Vihman, 1998), and Inuktitut and English (Allen, Genesee, Fish, & Crago, 2002). Researchers have also reported that the constraints that operate on children’s bilingual codemixing are essentially the same as those that have been reported in adults (Paradis, Nicoladis, & Genesee, 2000). Moreover, there does not appear to be a stage in bilingual first language acquisition when grammatical constraints do not operate, albeit the nature of the constraints may change as children’s grammars change. These findings are interesting for two reasons. First, they indicate that these bilingual children had acquired the grammatical constraints of each language; otherwise, how could one explain that they complied with the constraints of each most of the time. Thus, these findings reinforce results reviewed earlier indicating that bilingual children acquire differentiated languages early in development. Second, and even more interesting, they indicate that these children were able to activate and access both language systems at the same time in order to ensure that their mixed utterances followed the constraints of both languages.

Differentiated Use of Two Languages

If simultaneous bilingual children go through an initial unitary language stage, then one would expect them to have difficulty using their languages appropriately. In other words, you would expect them to use each language indiscriminately with conversational partners regardless of their partner’s language competence or preferences. However, systematic studies on this issue have revealed that even very young bilingual children are communicatively very competent. For example, in an early study on this issue, Genesee et al. (1995) studied 2-year-old children who were acquiring French and English simultaneously from their parents who used the one parent/one language pattern with their children. They found that these children were able to use their two languages appropriately—they used more of the mother’s language with the mother than with the father and, conversely, more of the father’s language with the father than with the mother. In a follow-up study, Genesee, Boivin, and Nicoladis (1996) similarly found bilingual children can use their languages appropriately with strangers with whom they have had no prior experience. In a related vein, it has also been found that young bilingual children can adjust their rates of codemixing to match those of unfamiliar interlocutors who changed their rates of mixing from one observation session to the next (Comeau, Genesee, & Lapaquette, 2003). Finally, 2- and 3-year-old bilingual children who used the “wrong language” with a monolingual interlocutor whom they had never met before switched languages when their interlocutors indicated that they did not understand what the child had said (Comeau, Genesee, & Mendelson, 2010). The children switched languages even when their interlocutors used a very general prompt, such as “What?,” which did not indicate the source of the breakdown, indicating that managing their two languages was not a challenge. Taken together, this evidence is difficult to reconcile with the myth of the monolingual brain that would predict that bilingual children should not be able to use their two languages differentially and appropriately with others.

The Myth That Younger Is Better

It is also widely believed that young children are effective and efficient language learners. As a result, it is generally expected that they will acquire a second language quickly and effortlessly and attain native-like proficiency largely through untutored, natural exposure to the target language. This thinking is based, in part, on the critical period hypothesis of language learning according to which the human neurocognitive abilities that underpin language learning are particularly “plastic” during early development, usually thought to be between birth and 12 to 13 years of age (Long, 1990). Accordingly, it is during this period when language learning is relatively effortless and results in complete mastery of language.

However, the link between age and second language outcomes is not linear and is much more complex than generally thought. To begin, learners who begin to acquire a second language earlier generally also have more exposure to that language than those who begin later. Thus, it is often impossible to separate the effects of age from amount of exposure. To facilitate discussion of research on age effects, age is considered in this section setting aside issues related to amount and quality of exposure; the role of exposure is discussed in the next section. With respect to age and second

language acquisition in general, there is evidence that, other things being equal, young second language learners are more likely to attain levels of oral proficiency like those of monolinguals or, at least, greater proficiency than learners who begin to learn a second language when older (Birdsong & Vanhove, *in press*). However, there is no consensus on how early is early enough to achieve native-like competence that is comparable with that of monolinguals and, in fact, whether monolingual native-like competence is possible even if second language learning begins very early. In this regard, research conducted in Sweden by Abrahamsson and Hyltenstam (2009) examined the language abilities of long-term residents of Sweden who had migrated to Sweden at different ages, including the preschool years. In comparison with native Swedish speakers, most preschool-age immigrants in their study did not demonstrate native-like competence in Swedish as a second language even after more than 20 years of exposure when tested using a battery of diverse and demanding language tests.

In a similar vein, our own research on internationally adopted children from China has shown that they score significantly lower than matched nonadopted children on a variety of standardised measures of language ability, including expressive and receptive vocabulary and grammar (Delcenserie & Genesee, 2014). The adoptees had begun learning the adopted language between 12 and 24 months of age; they had exclusive exposure to the adopted language postadoption; and they were raised in families with higher than average socioeconomic status—all factors that should favour language learning. The adoptees studied by Delcenserie and Genesee did not show similar delays in general cognitive, socio-emotional, or nonverbal memory development suggesting that their language development was uniquely affected by their delayed exposure. That these effects are probably due to delayed exposure to the second language and not attrition of the birth language comes from neuroimaging research by Pierce, Klein, Chen, Delcenserie, and Genesee (2014) on 9- to 17-year-old adoptees from China who were also acquiring French. The adoptees' neurocognitive responses to pseudowords that varied in tone, a phonemic feature of Chinese but not French, were compared with those of French monolingual children and children who had acquired Chinese as a first language and continued to use it. The responses of the adoptees did not differ significantly from those of the Chinese-speaking children; in other words, the adoptees evidenced traces of the birth language even after many years of disuse. Taken together, the Abrahamsson and Hyltenstam and Delcenserie and Genesee findings suggest that *monolingual* native-like competence may not be achievable even when second language acquisition begins very early, a point discussed further in the conclusions.

Commonly held beliefs about how easily and effectively young learners can acquire a second language usually do not take into account the complexities of language in the context of schooling. In this regard, education researchers argue that there are significant differences in the language skills used for social communication and those used for academic purposes, although obviously there is extensive overlap (see Genesee, *in press*, for an expanded discussion). Academic language refers to the specialised vocabulary, grammar, discourse/textual, and functional skills associated with academic instruction and mastery of academic material and skills; it includes both oral and written forms of language (see Genesee, *in press*, for an expanded discussion). A growing body of evidence

indicates that achieving competence in a second language for academic purposes is a more complex process that takes considerably longer than previously thought. For example, in a review of research on the oral language development of second language students in the United States (often referred to as English language learners or ELLs), Saunders and O'Brien (2006) concluded that ELLs, including those in all-English programs, are seldom awarded ratings of "generally proficient" (but not native-like) in English even by Grade 3. None of the studies they reviewed reported average ratings of "native-like" in English until Grade 5. In a longitudinal study of ELLs in Edmonton, Canada, Paradis (2006) found that after 21 months of exposure to English, only 40% performed within the normal range for native-speakers on a test of grammatical morpheme production (e.g., the use of "s" to pluralise nouns or "-ed" to express past tense in verbs), 65% on receptive vocabulary, and 90% on story grammar in narratives. Bolstering these results, findings from a number of reviews and individual studies on proficiency levels in English among ELLs indicate that it can take ELLs between 5 to 7 years to achieve proficiency in English for academic purposes that is comparable to that of monolinguals (Lindholm-Leary & Borsato, 2006; Thomas & Collier, 2002). These findings belie the myth that second language learning is easy even for relatively young learners.

Evidence that younger is not necessarily better and, to the contrary, older may be advantageous comes from evaluations of alternative forms of bilingual (or immersion) education for majority and minority language students in Canada and the United States. In a series of comparative evaluations of alternative forms of French immersion programs in Canada, Genesee (1981) found that, on the one hand, majority language English-speaking students in early immersion (beginning in kindergarten) generally achieved significantly higher levels of second language proficiency than students in programs with a delayed (middle elementary grades) or late (secondary school) starting grade, suggesting that an early start is often better. On the other hand, Genesee also found that students in 2-year late immersion comprised of 80% of instruction in French in Grades 7 and 8 sometimes achieved the same or almost the same levels of second language proficiency as students in early immersion. Harley and Hart (1997) similarly found few significant differences between early partial (50% instruction in each language) and late partial immersion students on a battery of French language tests. Genesee's results are particularly striking since the late immersion students in his studies had had considerably less exposure to the second language than students in early immersion at the time of testing. These findings attest to the ability of older learners to acquire a second language relatively quickly and, arguably, more quickly than younger learners in school contexts (see also Muñoz, 2014).

There are a number of possible explanations of why late immersion students can make such rapid progress in acquiring a second language despite reduced exposure compared with younger students. To mention just two—older students have the benefit of well-developed first language skills and, in particular, they may have well-developed literacy skills in the first language. Literacy skills acquired in one language can facilitate literacy development in a second language through transfer or the use of common underlying cognitive abilities linked to reading and writing (Genesee & Geva, 2006; Riches & Genesee, 2006); this is especially true for languages that are typologically similar and/or have

similar orthographies (e.g., French, Spanish, and English). Second, older students may also be faster second language learners than younger students because language teaching and learning in the higher grades is generally more abstract and context-reduced than in the earlier grades. As result, second language learners in higher grades may be able to call on acquisitional strategies that are more analytic and less experiential than is required in the lower grades and that are better developed in older learners.

Further evidence that a late start to second language learning in school can be advantageous comes from research that has examined the relative effectiveness of bilingual versus English-only forms of education for minority language students in the United States who come to school with no or limited in English—that is ELLs. Minority language students in the United States, on average, attain significantly lower levels of achievement in school than their majority language peers; more of them drop out of school; and fewer go on to pursue postsecondary education (Genesee & Lindholm-Leary, 2012). There has been ongoing debate about the best ways to educate such students in order to close the achievement gap with majority language students. It has been proposed that bilingual forms of education in which ELLs receive initial academic instruction, including literacy, in the home language might be one way of enhancing their academic success since it would allow them to acquire literacy skills and keep up with academic instruction in a language they already know while they are learning English. A variety of forms of bilingual education exist that differ with respect to how much instruction is provided in the minority language, ranging from 50% to 90% (see Genesee, 1999, for more details); for example, in the 90:10 model, the home language is used for 90% of instruction in kindergarten to Grade 2, and English is used as a primary medium of instruction beginning in Grade 3. Systematic reviews of evaluations of these programs have concluded that ELLs in bilingual programs score as well as or often better than ELLs in English-only programs on tests of oral proficiency, literacy and other school subjects (e.g., mathematics) in English (see Genesee & Lindholm-Leary, 2012, and Goldenberg, 2008, for reviews); at the same time, bilingual program participants acquire significantly higher levels of competence in the home language, Spanish in most cases. Contrary to the myth that younger is better, these findings indicate delayed instruction in English resulted in better outcomes than early instruction for these students.

The Myth of Time-On-Task

A related belief that is commonly held about language learning in general and second language learning in particular is that the more time spent learning the language, the greater one's competence. This belief is common in educational contexts where the amount of time devoted to specific activities, like teaching specific school subjects, is a reflection of how important we think these activities are. Beginning instruction early in certain subjects, like reading and mathematics, is another manifestation of the importance we attach to time-on-task. An examination of research findings with respect to first and second language learning reveals, as was found for the age factor, that there is not a simple correlation between how much exposure children have to a second language in school or in the home and language proficiency. We have already seen some evidence of this in the monolingual brain section from

research showing that despite the fact that simultaneous bilinguals have less exposure to each language as monolinguals, they achieve the same milestones in language development at approximately the same ages as monolingual children, and they demonstrate the same patterns of development in general. However, this is not to say that amount of exposure is not important.

Bilingually raised children seldom have equal exposure to both languages. Understandably, below some minimum level of exposure, bilingual children are likely to demonstrate poor competence in a language. However, simultaneous bilingual children do not need as much exposure in each language as monolinguals in order to achieve comparable levels of competence. How much exposure is needed to perform within monolingual norms depends on what is assessed. In a study of children learning French as a second language in Montreal, Thordardottir (2011) found that 40% to 50% exposure is necessary to perform within monolingual norms on tests of receptive vocabulary, but between 40% and 60% exposure on tests of expressive vocabulary. Moreover, beyond a certain threshold level of exposure, the performance of the bilinguals was not enhanced.

Research on English-speaking students in French immersion programs in Canada similarly illustrates that the influence of time-on-task, like the influence of age, is complex and sometimes unexpected. As noted earlier, alternative forms of French immersion exist and vary with respect to the grade when instruction in French and how much instruction through French is provided. Comparative evaluations of these alternatives reveal that the relationship between exposure and language outcomes depends on whether the language under evaluation is the majority language, English, or a minority language, like French. Thus, on the one hand, students who participate in programs that devote more time to French, the second language, outperform students in immersion programs that devote less time to French (Genesee, 2004). On the other hand, and in contrast, these studies fail to demonstrate a relationship between amount of exposure to English and achievement in English in the long run. More specifically, students in early total immersion who did not receive instruction in or through English until Grade 3 demonstrate the same levels of competence on a variety of measures of English as students in delayed and late immersion even though students in the latter programs have had some instruction in English from kindergarten. The immersion and comparison students participating in these evaluations were comparable with respect to overall academic ability and socioeconomic status, and they often attended the same schools, with immersion being a strand within a larger school. Thus, major factors that might have favoured the immersion students were largely eliminated and, thus, cannot account for these findings.

The question arises how can students who get less instruction in their first language in school score as well as students who get all their instruction in the native language? Two possible explanations are considered here. First, the reduced exposure to English that Canadian students experience in French immersion is offset by their total immersion in English outside school. The exposure to English that immersion students get outside school includes exposure to written forms of the language which, in turn, supports students' acquisition of literacy skills in English even though they are being taught formally to read and write in French. A second explanation for why immersion students do not fall behind in first language development is related to transfer. A great deal of re-

search on second language reading has shown that students with relatively well-developed decoding and reading comprehension skills in one language demonstrate relatively advanced reading skills in their other language (e.g., [Erdos, Genesee, Savage, & Haigh, 2011](#); [Riches & Genesee, 2006](#); see [August & Shanahan, 2006](#), for a review). Thus, as immersion students acquire word decoding and reading comprehension skills in French, their second language, they are also acquiring skills that can be applied to reading English. As a result, immersion students require reduced instruction in English to achieve grade-appropriate levels of competence in reading English.

Similar findings with respect to the importance of exposure to a majority language, like English, in school and acquisition of that language have been found by [Lindholm-Leary](#) in her research in the United States ([Lindholm-Leary & Borsato, 2006](#)). The students who participated in this research included ELLs who were native speakers of Spanish and had no or limited proficiency in English when they started school. Some ELLs were attending bilingual programs, as described earlier, in which as much as 90% of instruction was provided in Spanish, beginning in kindergarten, while others attended conventional all-English schools. [Lindholm-Leary and Borsato \(2006\)](#) found that, despite their reduced exposure to English, ELLs in the bilingual programs scored as well as, or better than, similar ELLs in all-English programs on standardised tests in English. [Lindholm-Leary](#) argued, as have Canadian researchers, that the high status of English along with students' extensive exposure to English outside school minimises the potential negative consequences of reduced exposure to English in these bilingual programs. At the same time, there was a significant positive relationship between amount of exposure to Spanish and students' proficiency in Spanish.

The Myth of Bilingualism and Children With Developmental Disorders and Academic Challenges

Dual language learning during the preschool years or in school is thought to be unsuitable for children with a variety of learning challenges because it is thought that learning two languages or through two languages will exacerbate learning difficulties. This thinking is often applied to children with developmental disorders that implicate language learning difficulties (such as specific language impairment (SLI), Down Syndrome, or Autism Spectrum Disorder), and children with academic challenges that may be due to the child's sociocultural background (such as low socioeconomic and minority ethnic group status) or poor academic ability. As a result, education professionals and speech-language specialists often counsel parents of children with these kinds of challenges to use only one language in the home and/or to enrol them in a monolingual school program. Children with SLI provide a particularly rigorous test of this assumption because SLI is a developmental disorder with a genetic origin ([Leonard, 1998](#)) that is specific to language acquisition and is often associated with poor academic outcomes. Thus, it is discussed in some detail here.

Children with SLI exhibit significant delays in early language development and their language competence is noticeably below that of same-age peers. However, they are typical in other aspects of development—they have no known central processing, neurological, cognitive, or socioemotional problems that could account for their language learning difficulties. They can exhibit difficul-

ties with lexical, morphosyntactic, and pragmatic aspects of language, with difficulty learning specific morphosyntactic features of language being an especially robust indicator of SLI. In fact, morphosyntactic problems are often taken as a marker of SLI and, thus, have received the lion's share of research attention (see [Paradis et al., 2011](#), Chapter 9, for a detailed discussion of bilingual and second language learners with SLI).

In one of the earliest studies to examine this issue, [Paradis et al. \(2003\)](#) found that simultaneous bilingual children (7 to 7.6-year-old) with SLI exhibited equivalent levels of morphosyntactic competence and the same profiles of morphosyntactic strengths and weakness as monolingual children with SLI. In other words, bilingual children with SLI were not at greater risk than the monolingual children with SLI. At the same time, the bilingual children were becoming bilingual within the limits of their ability. These results have since been confirmed by many studies examining other language pairs under different sociocultural circumstances (e.g., see [Gutiérrez-Clellen, Simón-Cerejido, & Wagner, 2008](#), for the case of Spanish-English minority language students in the United States). [Paradis and Sorenson \(2009\)](#) have similarly shown that children with SLI who were acquiring French as a second language were not extraordinarily delayed in their language development in comparison with monolingual learners of French as a second language who also had SLI, again indicating that dual language learning does not exacerbate the language difficulties of children with SLI. In a related vein, Down Syndrome and ASD are also developmental disorders with genetic bases that put children at risk for poor language outcomes, along with other difficulties. Investigations of these kinds of children indicate that they do not differ significantly from children with the same disorders who are learning only one language (e.g., [Bird et al., 2005](#); [Hambly & Fombonne, 2012](#); [Marinova-Todd & Mirenda, in press](#)), although they do demonstrate more language-related difficulties than children without these disorders. It is difficult to reconcile these diverse findings with the belief that dual language learning puts children with developmental disorders at greater risk for language difficulties than learning only one language.

Students who have poorly developed first language skills or SLI are often considered unsuitable for immersion/bilingual programs because it is feared that their language learning difficulties will be increased, and this, in turn, will jeopardise their overall academic success. This is an important ethical issue since excluding such children from bilingual programs can have significant long-term consequences especially for children living in bilingual families or communities where acquisition of two languages is important. It can also reduce the opportunities children have for employment in jobs that require competence in more than one language when they leave school, a possibility that is growing as globalisation increases. Despite the significance of this issue, there is relatively little empirical investigation of such learners, one exception being work by [Bruck](#) in Montreal ([Bruck, 1978, 1982](#)). [Bruck](#) compared the language and academic performance of Grade 3 immersion students with "impaired" first language skills to comparable students in nonimmersion programs using a battery of language, literacy, and academic achievement tests. She found no significant differences between the two groups, except the impaired immersion students had acquired significantly superior French language proficiency in comparison to the impaired stu-

dents receiving conventional French-as-a-second language instruction in the monolingual program.

Concerns about the suitability of bilingual forms of education for students who might struggle in school extend beyond students with language learning difficulties per se and include students with low academic ability and students from economically disadvantaged families. Students with these kinds of backgrounds often, although not always, underperform in school in comparison with students without these background characteristics. Research by Genesee on immersion students in Montreal who were at-risk for academic difficulty because of below average levels of academic ability indicates that such students are not differentially handicapped in their first language and academic achievement in comparison to similar students in English-only programs (Genesee, 1976). To the contrary, he found that below average students in early immersion sometimes performed as well as average immersion students on tests of listening comprehension and speaking in their second language, although significantly lower on tests of reading. Genesee also found that the students with academic difficulties benefited from immersion in the form of increased levels of functional proficiency in French. Immersion students from relatively low socioeconomic backgrounds have also been shown to keep pace academically and in English with similar students in all-English programs while, at the same time, acquiring more advanced French language skills (e.g., Bruck, Tucker, & Jakimik, 1975; Holobow, Genesee, & Lambert, 1991).

Conclusions

The findings reviewed in the preceding sections have significant theoretical significance as well as practical implications for parents, educators, and other professionals who work with young dual language learners. Before proceeding, however, it is important to repeat a caveat made earlier. The evidence reviewed here attests to children's capacity to develop dual language competence in early childhood and school settings under favourable conditions. Not all children thrive in dual language families or dual language schools to the same extent. Undoubtedly, the quality of the learning environment in which young children grow up and are educated affects whether or not individual children become fully bilingual and succeed fully in school. Understanding the conditions that favour or disfavour full dual language competence during the preschool years and academic success in dual language programs goes beyond the limitations of this article (see Grüter & Paradis, 2014, and Paradis et al., 2011, for extended discussions of these issues).

With these caveats in mind, taken together, the evidence reviewed here indicates that learning two languages simultaneously is as natural as learning one and that children can acquire full competence in two languages that is comparable with that of monolingual children, given the right learning environment. Evidence indicates that even children with genetic predispositions for language learning difficulties, including SLI, can acquire competence in two languages at the same time during the preschool years (or successively in bilingual school programs) within the limits of their impairment. In other words, their learning difficulties do not impair their language abilities beyond that seen in monolingual children with the same learning challenges. Detailed studies of simultaneous bilinguals indicate that they acquire differentiated language systems from the earliest stages of development that are,

moreover, the same as those of monolingual children in most important respects. That the neurocognitive mechanisms that underlie language acquisition have the capacity for dual language learning comes from a number of different sources of evidence, including evidence that they are able to access both languages online during codemixing and, as a result, avoid violating the grammatical constraints of both languages most of the time. Thus, contrary to early conceptualisations of child bilingual codemixing as indicating confusion and incompetence, it is a sign of linguistic and communicative competence. Studies of the communicative competence of simultaneous bilinguals indicates that they are able to use their two language differentially and appropriate with others and are able to adapt use of their two languages in accordance with their interlocutors' language abilities and preferences—even with unfamiliar interlocutors. There are, of course, differences among bilingual children and between bilingual and monolingual children; but to date most differences appear to be related primarily to characteristics of the learning environment, including the quantity, nature, and consistency of the input that bilingual children receive rather than to the fact of learning two languages per se (Grüter & Paradis, 2014).

Practically speaking, there is no empirical evidence at present to justify restricting children with developmental disorders from learning two languages. At the same time, parents and others who care for children who are being raised bilingually should take active responsibility to ensure that they get adequate exposure to both languages so that they acquire both languages fully. It also seems likely, although evidence on this is anecdotal, that bilingual children need continuous and regular exposure to both languages to ensure full acquisition. Abrupt changes in exposure and/or irregular exposure should probably be avoided, as much as possible.

While the competence of bilingual children is often evaluated by comparing them to monolingual children, this is not the only basis of evaluation, nor even the right one. The language proficiency profiles of bilingual children will always be somewhat different from those of monolinguals, even as they grow into adulthood. This is necessarily so because their acquisition of each language as well as their use of each is distributed across different contexts—simply put, they learn and use each language with different people, in different social and professional contexts, and for different purposes. As a result, whether one examines their vocabulary, grammar, or functional language skills, they are likely to differ from monolinguals who use the same language with everyone, in all contexts, and for all purposes. Thus, differences between bilinguals and monolinguals are to be expected, and they should be analysed and understood with reference to the different environments in which they learn and use each language. The same is true for children who are educated in dual language school programs.

When it comes to educating children bilingually, the evidence consistently indicates that children who speak a majority first language and who participate in second language immersion-type bilingual programs attain the same, or higher, levels of native language proficiency and academic achievement in the long run as children in monolingual programs. In fact, there is some evidence that students in enriched immersion programs outperform students in monolingual programs when tested in the first language even when the two groups are equated for intellectual and socioeconomic factors (Holobow, Genesee, Lambert, Gastright, & Met,

1987). At the same time, students in immersion programs acquire advanced levels of functional competence in a second language. Research on immersion programs in Canada (Genesee, 2007) and the United States (Genesee & Lindholm-Leary, 2013) indicates further that immersion is suitable and effective for a wide variety of learners, including English-speaking students who often struggle in school. Thus, at present, there is no evidence to preclude most students from participating in immersion/bilingual programs, including students who might otherwise be at-risk for academic difficulties. At the same time, second language learning in school settings and the benefits of learning two languages take time. Thus, parents must make a long-term commitment to immersion education and avoid switching students out of these programs unless there is strong evidence that individual children will perform better in a monolingual program.

Finally, research on children who speak a minority language at home and are schooled in a majority language, such as English in Canada or the United States, indicates that they are not at a disadvantage if they maintain and continue to learn the minority language—in the home or in school, despite the myth that younger is better. To the contrary, there is growing evidence that high levels of competence in the home language, especially in domains related to literacy and schooling, can give minority language children an advantage in school in comparison to other minority language students who have not developed their home languages in these ways (Genesee & Geva, 2006). Minority parents who do not speak the majority language should be encouraged to continue to use the home language with their children, if this is their dominant language (Paradis, in press).

There is still much to learn about early childhood bilingualism. However, there is sufficient research evidence to dispel many common myths held by parents, educators, and professionals about raising and educating children bilingually. Moreover, findings from dual language acquisition by young children are providing a rich data source for extending current theories of language learning and teaching and extending our understanding of individual differences and contextual factors that influence dual language learning in home and school environments.

Résumé

On constate un intérêt grandissant à l'égard des enfants qui apprennent une langue dans divers contextes et différentes circonstances. En particulier, l'apprentissage de deux langues fait désormais l'objet de beaucoup de recherches, peut-être en raison de la sensibilisation au fait qu'il est courant parmi les enfants. Il est important d'avoir une compréhension approfondie de l'apprentissage de deux langues dans des circonstances différentes afin que la formulation des théories de l'apprentissage d'une langue englobe tous les apprenants et afin de fournir de l'information essentielle pour la prise de décisions cliniques et autres décisions pratiques qui influenceront sur tous les apprenants de langues. Cet article présente les résultats de recherches sur l'apprentissage de deux langues dans un contexte scolaire et hors de l'école, parmi les personnes bilingues ayant appris une langue à la fois ou deux concurremment, ainsi que parmi les apprenants sans et avec difficultés sur le plan de l'apprentissage des langues. Les principaux résultats concernant 4 mythes courants au sujet de l'apprentissage de deux langues

chez les jeunes sont présentés. Ces mythes sont les suivants : 1) le cerveau unilingue; 2) l'apprentissage en bas âge est préférable; 3) l'importance du temps nécessaire à l'apprentissage; 4) l'apprentissage d'une deuxième langue n'est pas recommandé pour les enfants ayant des déficiences développementales ou des difficultés à l'école.

Mots-clés : bilinguisme, apprentissage d'une langue seconde.

References

- Abrahamsson, N., & Hyltenstam, K. (2009). Age of onset and nativelikeness in a second language: Listener perception versus linguistic scrutiny. *Language Learning, 59*, 249–306. <http://dx.doi.org/10.1111/j.1467-9922.2009.00507.x>
- Allen, S. E. M., Genesee, F. H., Fish, S. A., & Crago, M. B. (2002). Patterns of code mixing in English-Inuktitut bilinguals. In M. Andronis, C. Ball, H. Elston, & S. Neuvel (Eds.), *Proceedings of the 37th annual meeting of the Chicago Linguistic Society* (Vol. 2, pp. 171–188). Chicago, USA: Chicago Linguistic Society.
- August, D., & Shanahan, T. (Eds.). (2006). *Developing literacy in second language learners. Report of the National Literacy Panel on Minority-Language Children and Youth*. Mahwah, USA: Erlbaum.
- Bedore, L., Peña, E., García, M., & Cortez, C. (2005). Conceptual versus monolingual scoring: When does it make a difference? *Language, Speech and Hearing Services in Schools, 36*, 188–200.
- Bialystok, E. (2001). *Bilingualism in development: Language, literacy, and cognition*. New York, USA: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511605963>
- Bialystok, E., Craik, F. I., Klein, R., & Viswanathan, M. (2004). Bilingualism, aging, and cognitive control: Evidence from the Simon task. *Psychology and Aging, 19*, 290–303. <http://dx.doi.org/10.1037/0882-7974.19.2.290>
- Bialystok, E., Peets, K. F., & Moreno, S. (2014). Producing bilinguals through immersion education: Development of metalinguistic awareness. *Applied Psycholinguistics, 35*, 177–191. <http://dx.doi.org/10.1017/S0142716412000288>
- Bird, E. K., Cleave, P., Trudeau, N., Thordardottir, E., Sutton, A., & Thorpe, A. (2005). The language abilities of bilingual children with Down syndrome. *American Journal of Speech-Language Pathology, 14*, 187–199. [http://dx.doi.org/10.1044/1058-0360\(2005/019\)](http://dx.doi.org/10.1044/1058-0360(2005/019))
- Birdsong, D., & Vanhove, J. (in press). Age of second language acquisition: Critical periods and social concerns. In E. Nicoladis & S. Montanari (Eds.), *Lifespan perspectives on bilingualism*. APA and de Gruyter.
- Bruck, M. (1978). The suitability of early French immersion programs for the language disabled child. *Canadian Journal of Education, 3*, 51–72. <http://dx.doi.org/10.2307/1494685>
- Bruck, M. (1982). Language impaired children's performance in an additive bilingual education program. *Applied Psycholinguistics, 3*, 45–60. <http://dx.doi.org/10.1017/S014271640000415X>
- Bruck, M., Tucker, G. R., & Jakimik, J. (1975). Are French immersion programs suitable for working class children? *Word, 27*, 311–341.
- Comeau, L., Genesee, F., & Lapaquette, L. (2003). The modeling hypothesis and child bilingual code-mixing. *The International Journal of Bilingualism, 7*, 113–126. <http://dx.doi.org/10.1177/13670069030070020101>
- Comeau, L., Genesee, F., & Mendelson, M. (2010). A comparison of bilingual and monolingual children's conversational repairs. *First Language, 30*, 354–374. <http://dx.doi.org/10.1177/0142723710370530>
- Conboy, B. T., & Thal, D. J. (2006). Ties between the lexicon and grammar: Cross-sectional and longitudinal studies of bilingual toddlers. *Child Development, 77*, 712–735. <http://dx.doi.org/10.1111/j.1467-8624.2006.00899.x>

- Delcenserie, A., & Genesee, F. (2014). Language and memory abilities of internationally adopted children from China: Evidence for early age effects. *Journal of Child Language*, *41*, 1195–1223.
- Erdos, C., Genesee, F., Savage, R., & Haigh, C. (2011). Individual differences in second language reading outcomes. *The International Journal of Bilingualism*, *15*, 3–25. <http://dx.doi.org/10.1177/1367006910371022>
- Genesee, F. (1976). The role of intelligence in second language learning. *Language Learning*, *26*, 267–280. <http://dx.doi.org/10.1111/j.1467-1770.1976.tb00277.x>
- Genesee, F. (1981). A comparison of early and late second language learning. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, *13*, 115–128. <http://dx.doi.org/10.1037/h0081168>
- Genesee, F. (1989). Early bilingual development: One language or two? *Journal of Child Language*, *16*, 161–179. <http://dx.doi.org/10.1017/S0305000900013490>
- Genesee, F. (1999). *Program alternatives for linguistically diverse students. Educational Practice Report #1*. Santa Cruz, USA: Center for Research on Education, Diversity and Excellence.
- Genesee, F. (2002). Portrait of the bilingual child. In V. Cook (Ed.), *Portraits of the second language user* (pp. 170–196). Clevedon, UK: Multilingual Matters.
- Genesee, F. (2003). Rethinking bilingual acquisition. In J. M. deWaele (Ed.), *Bilingualism: Challenges and directions for future research* (pp. 158–182). Clevedon, UK: Multilingual Matters.
- Genesee, F. (2004). What do we know about bilingual education for majority language students? In T. K. Bhatia & W. Ritchie (Eds.), *Handbook of bilingualism and multiculturalism* (pp. 547–576). Malden, USA: Blackwell.
- Genesee, F. (2007). French immersion and at-risk students: A review of research findings. *Canadian Modern Language Review*, *63*, 655–688.
- Genesee, F. (in press). Reconceptualizing early childhood education for minority language children. In V. Murphy & M. Evangelou (Eds.), *Early childhood education in English for speakers of other languages*. London, UK: British Council.
- Genesee, F., Boivin, I., & Nicoladis, E. (1996). Talking with strangers: A study of bilingual children's communicative competence. *Applied Psycholinguistics*, *17*, 427–442. <http://dx.doi.org/10.1017/S0142716400008183>
- Genesee, F., & Geva, E. (2006). Cross-linguistic relationships in working memory, phonological processes, and oral language. In D. August & T. Shanahan (Eds.), *Developing literacy in second language learners. Report of the National Literacy Panel on Minority-Language Children and Youth* (pp. 175–184). Mahwah, USA: Erlbaum.
- Genesee, F., & Lindholm-Leary, K. (2012). The education of English language learners. In K. Harris, S. Graham, & T. Urdan (Eds.), *APA handbook of educational psychology* (pp. 499–526). Washington, DC, USA: APA Books.
- Genesee, F., & Lindholm-Leary, K. (2013). Two case studies of content-based language education. *Journal of Immersion and Content-Based Education*, *1*, 3–33. <http://dx.doi.org/10.1075/jicb.1.1.02gen>
- Genesee, F., Nicoladis, E., & Paradis, J. (1995). Language differentiation in early bilingual development. *Journal of Child Language*, *22*, 611–631. <http://dx.doi.org/10.1017/S0305000900009971>
- Goldenberg, C. (2008). Teaching English language learners: What the research does—And does not say. *American Educator*, *32*, 8–23.
- Grüter, T., & Paradis, J. (Eds.). (2014). *Input and experience in bilingual development*. Amsterdam, The Netherlands: John Benjamins. <http://dx.doi.org/10.1075/tilar.13>
- Gutiérrez-Clellen, V. F., Simon-Cerejido, G., & Wagner, C. (2008). Bilingual children with language impairment: A comparison with monolinguals and second language learners. *Applied Psycholinguistics*, *29*, 3–19. <http://dx.doi.org/10.1017/S0142716408080016>
- Hambly, C., & Fombonne, E. (2012). The impact of bilingual environments on language development in children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *42*, 1342–1352. <http://dx.doi.org/10.1007/s10803-011-1365-z>
- Harley, B., & Hart, D. (1997). Language aptitude and second language proficiency in classroom learners of different starting ages. *Studies in Second Language Acquisition*, *19*, 379–400. <http://dx.doi.org/10.1017/S0272263197003045>
- Holobow, N. E., Genesee, F., & Lambert, W. E. (1991). The effectiveness of a foreign language immersion program for children from different ethnic and social class backgrounds: Report 2. *Applied Psycholinguistics*, *12*, 179–198. <http://dx.doi.org/10.1017/S0142716400009139>
- Holobow, N., Genesee, F., Lambert, W. E., Gastright, J., & Met, M. (1987). Effectiveness of partial French immersion for children from different social class and ethnic backgrounds. *Applied Psycholinguistics*, *8*, 137–152. <http://dx.doi.org/10.1017/S0142716400000175>
- Jacobs, K., & Cross, A. (2001). The seventh generation of Kahnawà:ke: Phoenix or Dinosaur. In D. Christian & F. Genesee (Eds.), *Bilingual education* (pp. 109–121). Alexandria, USA: TESOL.
- Kimbrough Oller, D., Eilers, R. E., Urbano, R., & Cobo-Lewis, A. B. (1997). Development of precursors to speech in infants exposed to two languages. *Journal of Child Language*, *24*, 407–425. <http://dx.doi.org/10.1017/S0305000997003097>
- Leonard, L. (1998). *Children with specific language impairment*. Cambridge, USA: MIT Press.
- Leopold, W. (1949). *Speech development of a bilingual child* (Vol. 4). Evanston, USA: Northwestern University Press.
- Lindholm-Leary, L., & Borsato, G. (2006). Academic achievement. In F. Genesee, K. Lindholm-Leary, W. Saunders, & D. Christian (Eds.), *Educating English language learners: A synthesis of empirical evidence* (pp. 176–222). New York, USA: Cambridge University Press.
- Long, M. (1990). Maturation constraints on language development. *Studies in Second Language Acquisition*, *12*, 251–285. <http://dx.doi.org/10.1017/S0272263100009165>
- Maneva, B., & Genesee, F. (2002). Bilingual babbling: Evidence for language differentiation in dual language acquisition. In B. Skarabela, S. Fish, & A. H.-J. Do (Eds.), *Boston University Conference on language development 26 Proceedings* (pp. 383–392). Somerville, USA: Cascadia Press.
- Marchman, V. A., Martínez-Sussmann, C., & Dale, P. S. (2004). The language-specific nature of grammatical development: Evidence from bilingual language learners. *Developmental Science*, *7*, 212–224. <http://dx.doi.org/10.1111/j.1467-7687.2004.00340.x>
- Marinova-Todd, S. H., & Mirenda, P. (in press). Language and communication abilities of bilingual children with ASD. In J. Patterson & Barbara L. Rodriguez (Eds.), *Multilingual perspectives on child language disorders*. Bristol, UK: Multilingual Matters.
- Meisel, J. M. (1994). Code-switching in young bilingual children: The acquisition of grammatical constraints. *Studies in Second Language Acquisition*, *16*, 413–441. <http://dx.doi.org/10.1017/S0272263100013449>
- Muñoz, C. (2014). Contrasting effects of starting age and type of input on the oral performance of foreign language learners. *Applied Linguistics*, *35*, 463–482. <http://dx.doi.org/10.1093/applin/amu024>
- Myers-Scotton, C. (1997). *Duelling languages: Grammatical structure in codeswitching*. New York, USA: Oxford University Press.
- Paradis, J. (2006). Second language acquisition in childhood. In E. Hoff & M. Shatz (Eds.), *Handbook of language development* (pp. 387–405). Oxford, UK: Blackwell.
- Paradis, J. (in press). Supporting the home language of EAL children with developmental disorders. In V. Murphy & M. Evangelou (Eds.), *Early childhood education in English for speakers of other languages*. London, UK: British Council.
- Paradis, J., Crago, M., Genesee, F., & Rice, M. (2003). French-English bilingual children with SLI: How do they compare with their monolin-

- gual peers? *Journal of Speech, Language, and Hearing Research*, 46, 113–127. [http://dx.doi.org/10.1044/1092-4388\(2003/009\)](http://dx.doi.org/10.1044/1092-4388(2003/009))
- Paradis, J., & Genesee, F. (1996). Syntactic acquisition in bilingual children: Autonomous or interdependent? *Studies in Second Language Acquisition*, 18, 1–25. <http://dx.doi.org/10.1017/S0272263100014662>
- Paradis, J., Genesee, F., & Crago, M. (2011). *Dual language development and disorders: A handbook on bilingualism and second language learning* (2nd ed.). Baltimore, USA: Brookes.
- Paradis, J., Nicoladis, E., & Genesee, F. (2000). Early emergence of structural constraints on code-mixing: Evidence from French-English bilingual children. *Bilingualism: Language and Cognition*, 3, 245–261. <http://dx.doi.org/10.1017/S1366728900000365>
- Paradis, J., & Sorenson, D. T. (2009). *Differentiating between English L2 children with typical and impaired language development*. Paper presented at the Boston University Conference on Language Development, Boston University.
- Patterson, J. L., & Pearson, B. Z. (2004). Bilingual lexical development: Influences, contexts, and processes. In B. A. Goldstein (Ed.), *Bilingual language development and disorders in Spanish-English speakers* (pp. 77–104). Baltimore, USA: Brookes.
- Petitto, L. A., Katerelos, M., Levy, B. G., Gauna, K., Tétreault, K., & Ferraro, V. (2001). Bilingual signed and spoken language acquisition from birth: Implications for the mechanisms underlying early bilingual language acquisition. *Journal of Child Language*, 28, 453–496. <http://dx.doi.org/10.1017/S0305000901004718>
- Pierce, L., Klein, D., Chen, J. K., Delcenserie, A., & Genesee, F. (2014). Mapping the unconscious maintenance of a lost first language. *Proceedings of the National Academy of Sciences of the United States of America*, 111, 17314–17319.
- Riches, C., & Genesee, F. (2006). Cross-linguistic and cross-modal aspects of literacy development. In F. Genesee, K. Lindholm-Leary, W. M. Saunders, & D. Christian (Eds.), *Educating English language learners: A synthesis of research evidence* (pp. 64–108). New York, USA: Cambridge University Press. <http://dx.doi.org/10.1017/CBO9780511499913.004>
- Saunders, W., & O'Brien, G. (2006). Oral language. In F. Genesee, K. Lindholm-Leary, W. Saunders, & D. Christian (Eds.), *Educating English language learners: A synthesis of research evidence* (pp. 14–63). New York, USA: Cambridge University Press.
- Sauve, D., & Genesee, F. (2000, March). *Grammatical constraints on child bilingual code-mixing*. Paper presented at the annual conference of the American Association for Applied Linguistics, Vancouver, Canada.
- Thomas, W., & Collier, B. (2002). *A national study of school effectiveness for language minority students' long-term academic achievement*. Santa Cruz, USA: Center for Research on Education, Diversity and Excellence.
- Thordardottir, E. (2011). The relationship between bilingual exposure and vocabulary development. *The International Journal of Bilingualism*, 15, 426–445. <http://dx.doi.org/10.1177/1367006911403202>
- Vihman, M. (1998). A developmental perspective on codeswitching: Conversations between a pair of bilingual siblings. *The International Journal of Bilingualism*, 2, 45–84.
- Volterra, V., & Taeschner, T. (1978). The acquisition and development of language by bilingual children. *Journal of Child Language*, 5, 311–326. <http://dx.doi.org/10.1017/S0305000900007492>
- Zwanziger, E. E., Allen, S. E. M., & Genesee, F. (2005). Crosslinguistic influence in bilingual acquisition: Subject omission in learners of Inuktitut and English. *Journal of Child Language*, 32, 893–909. <http://dx.doi.org/10.1017/S0305000905007129>

Received September 16, 2014

Accepted December 1, 2014 ■