

DUAL LANGUAGE DEVELOPMENT IN PRESCHOOL CHILDREN ¹

Fred Genesee
McGill University

This paper reviews research findings on dual language learning in preschool children. By dual language learning, I mean the acquisition of 2, or more, languages during the preschool years – prior to age 5. Dual language learning in the preschool years can occur simultaneously, as for example when parents regularly use two languages with their child from birth; or, it can occur successively, for example when children are exposed to and speak only one language at home during the first one or two years of life and then attend daycare or preschool programs in which another language is used. It is important to distinguish between these two forms of language learning because there may be differences with respect to their patterns and rates of development and possibly even the ultimate level of proficiency in the second language. However, it is not always easy to distinguish between simultaneous and successive dual language learning. First, we do not have an empirically-determined age that can be used to distinguish between simultaneous versus successive dual language learning because, at present, we do not have solid evidence concerning the precise ways in which these two forms of learning differ although we know that older second language learners (adolescents and adults) differ from simultaneous bilinguals. Second, some children's exposure to and acquisition of two languages during the preschool years may not fit neatly into either of these categories; for example, a child who speaks only Spanish at home during the first two years of life and has periodic but limited and passive exposure to English through playmates or TV and then begins to attend a preschool program at age 2 or higher where the child actively begins to need and use the language for interpersonal communication.

¹ I would like to thank Sharon Unsworth, Utrecht University, and Johanne Paradis, University of Alberta, for helpful suggestions on an earlier version of this article.

A scientifically-based understanding dual language learning in the preschool years is critical for a number of reasons. Many people, including parents, general educators, education specialists, professionals who work with young children (e.g., speech and language pathologists and doctors), and educational policy-makers have misconceptions and apprehensions about young children acquiring more than one language during their early formative years (e.g., Beardsmore, 2003; Genesee, 2006). In the absence of a solid understanding of relevant scientific evidence, these individuals risk making the wrong or misguided decisions about young dual language learners. For example, the assumption that dual language learning during the preschool years is cognitive and linguistically burdensome for children could lead policy-makers to disfavor dual language preschool programs when, in fact, the evidence does not support this assumption. Assessment and support services that are part and parcel of early childhood and primary school education demand in depth knowledge of dual language learning in its multiple forms. A lack of understanding of what can be expected of young dual language learners may lead evaluation or educational specialists to interpret a bilingual child's language performance as symptomatic of delay or even impairment when, in fact, it is typical of dual language learning.

The first part of the paper reviews research on simultaneous dual language learning and the second part successive dual language learning. This is followed by a consideration of major research questions that need attention.

SIMULTANEOUS DUAL LANGUAGE LEARNING

Underlying much of the research on simultaneous dual language learning, or what is often referred to in the scientific literature as bilingual first language acquisition (BFLA) is the question of whether children's ability to learn language is challenged in any way by the acquisition of two languages at the same time. There are three fundamental ways in which

BFLA could differ from monolingual acquisition – rate and pattern of development and ultimate level of proficiency. Evidence that dual language learners take longer to attain critical milestones in language acquisition, such as babbling or first words, might be taken as evidence that dual language learning is burdensome and compromises development. BFL learners might also differ from monolingual learners with respect to their patterns of language development. One particularly strong version of this possibility is known as the unitary language system hypothesis (Genesee, 1989). Specifically, it has been hypothesized that infants with dual language exposure go through an initial stage when their languages are not differentiated, but constitute a single underlying language system. Arguably this occurs because learners treat input from the two languages as if it were part of a single language (Leopold, 1949; Volterra & Taeschner, 1978; see Genesee, 1989, for a review). This view can have particularly pernicious effects because it may result in parents being counseled to discontinue use of the heritage language in favor of the societally-dominant language on the assumption that the child will learn faster and better if they only learn one language. These concerns also raise a host of interesting and important theoretical issues concerning the nature of children’s capacity for language learning.

These theoretical and practical concerns have resulted in research that compares the development of bilingual children with that of monolingual children acquiring the same languages. On the one hand, this may be an inappropriate frame of reference because it uses monolingual acquisition as the “gold standard” and, thereby, risks attributing differences that bilingual children exhibit to deficits in children’s capacity to acquire two languages at the same time. It has been argued that the linguistic competencies of bilingual children, like those of bilingual adults, should be examined and evaluated on their own merit (Cook, 2002; Grosjean, 1997). On the other hand, comparisons between bilingual and monolingual children are

widespread in clinical and lay-settings and can have important real-world implications. Scientific comparisons between bilingual and monolingual children can serve to reveal the extent to which BFLA actually differs from monolingual acquisition and, most importantly, what such differences mean.

Many of the research findings reviewed in this section are based on single case studies (except see Pearson, Fernández, & Oller, 1993, and other work by this team of researchers in Miami), and most often are based on children learning two languages in the home from their parents. Findings based on single case studies are valuable for identifying children's capacity for language acquisition – that is, what is possible, or what children can do, other things being equal. However, findings from case studies cannot reveal typical patterns of language learning or variation in language development among dual language learners with all of the attendant variation that this entails; in other words, when learning conditions are not equal.

The research reviewed in this section is international in scope; it includes studies of infants and children living in different national settings who were learning different combinations of languages from birth; for example, children living in Quebec learning English and French; children living in Germany, learning German and French; or children living in the U.S. or Britain learning Spanish and English. In most cases, the children under investigation were learning a societally-dominant language (e.g., English in the U.S. or British studies) and a heritage or minority language (e.g., Spanish in these studies). In the case of most of the Canadian studies, the children were learning two official national languages – English and French. The children in all these studies were selected, although not always, because they were thought to have some minimum and extensive exposure to each language (e.g., 20-30% of their waking day), thereby ensuring that they were likely to have adequate input in both languages to acquire

them. This begs the question of what effects reduced or inconsistent exposure to either language would have on patterns, rates and ultimate level of proficiency in dual language learners. Issues of socio-economic and minority ethnolinguistic status have seldom been considered in these studies and, thus, their findings can be generalized to U.S. populations only with caution. The following review is organized around four questions:

- 1) Are the patterns and rates of language acquisition in simultaneous dual language learners altered in comparison to those of monolingual children and, if so, what do such differences mean?
- 2) Is bilingual code-mixing a sign of linguistic confusion or competence?
- 3) Can simultaneous dual language learners manage the additional demands of bilingual communication?
- 4) Are bilingual children with language impairment at greater risk for impaired language development than monolingual children with language impairment?

Patterns and Rates of Bilingual First Language Acquisition

Morpho-Syntax

Most research on the morpho-syntactic development of simultaneous dual language learners has examined production rather than perception. Findings from this research indicate that, contrary to the claims of the unitary language system hypothesis, they acquire language-specific properties of the target languages early in development and these correspond, for the most part, to those exhibited by same-age monolingual children (see De Houwer, 1990, 2005; Deuchar & Quay, 2000; Genesee, 2001; Meisel, 2001, for reviews). Paradis and Genesee (1996), for example, found that 2- to 3-year-old French-English bilingual children: (1) used finite verb forms earlier in French than in English; (2) used subject pronouns in French exclusively with finite verbs but subject pronouns in English with both finite and non-finite verbs, in accordance

with the status of subject pronouns in French as clitics (or agreement markers); and (3) placed verbal negatives after lexical verbs in French (e.g., *n'aime pas*) but before lexical verbs in English (*do not like*). These patterns characterize the performance of monolingual children acquiring these languages. Findings from research on BFLA also generally indicate that bilingual children exhibit the same rate of morpho-syntactic development as monolingual children, at least in their dominant language (see reviews in De Houwer, 2005; Nicoladis & Genesee, 1996; Paradis & Genesee, 1996). This is evident even in bilingual children who are identified as having a specific language impairment (Gutierrez-Clellen, Wagner & Simón-Cereijido, 2008; Paradis, Crago, Genesee, & Rice, 2003).

There is also evidence of cross-linguistic transfer of specific morpho-syntactic features from one language into the other (Döpke, 2000; Hulk & van der Linden, 1996; Müller, 1999; Nicoladis, 2002, 2003; Paradis & Navarro, 2003; Yip & Matthews, 2000). Döpke (2000), for example, found that Australian children learning English and German simultaneously used -VO word order much more in all verbal clauses in their German than native monolingual speakers of German. German uses both -VO and -OV word order: -VO in main clauses and both -VO and -OV word order in subordinate clauses; English, in contrast, uses -VO order in main and subordinate clauses. Döpke argued that her young subjects were prone to overgeneralize -VO word order in their German because the -VO order was reinforced on the surface of both the German and the English input they heard whereas -OV order appeared in only a limited number of subordinate German clauses. An alternative explanation is language dominance. Evidence of cross-linguistic transfer tends to come from children who have incorporated morpho-syntactic structures from their dominant into their weaker language, rather than vice versa (Döpke, 1998; Petersen, 1988; Yip & Matthews, 2000). For example, Yip and Matthews (2000) found evidence

of transfer from Cantonese to English in a Cantonese-English learning child during a period when he was dominant in Cantonese. Matthews and Yip (2003) have suggested that asynchronous development of two languages with respect to specific features might also explain instances of transfer of structures that are normally acquired earlier in one language (e.g., Chinese) to the language in which the corresponding structure is normally acquired later; e.g., relative clause constructions are acquired earlier in Chinese than in English and, thus, the Chinese pattern might be used to form relative clauses in English (see also Gawlitzek-Maiwald & Tracy, 1996; Paradis & Genesee, 1996). Instances of cross-linguistic transfer that have been reported pertain to specific aspects of the child's developing grammars and they appear to occur only under certain circumstances; in other words, they are not across-the-board effects.

Many, if not virtually all, simultaneous dual language learners acquire more proficiency in one language than the other. This is often referred to as dominance and has been assessed using a variety of measures, including: parental reports, Mean Length of Utterance in each language, word type and token frequencies/ratios, and language test scores. Researchers have noted that children's relative dominance in each language can change over time as a result of changes in the child's exposure to each language. There is surprising little systematic, objective research on this topic (except see Pearson, Fernández, Lewedag, & Oller, 1997, in the next section). The limited extant evidence suggests that reduced exposure does not necessarily entail delayed morpho-syntactic development in comparison to monolinguals, but it may reduce dual language learners' use of certain syntactic forms. For example, Paradis and Genesee (1996) found that the use of finite verb forms emerged at about the same age in French-English bilinguals and monolinguals, but that bilinguals tended to use finite forms less often than monolinguals. In other cases, reduced exposure may limit acquisition of certain syntactic

structures but in selective and complex ways. In a study of the acquisition of past-tense verb forms by 4;0 to 5;5 year old French-English bilinguals (some simultaneous some successive), Paradis, Nicoladis and Crago (2007) found that the bilingual children scored better in their dominant than their non-dominant language on regular past tense forms, but not necessarily on irregular past tense forms. Moreover, and as Pearson et al. (1997) indicate, exposure below some limit would surely be expected to impair the child's ability to acquire working knowledge of language.

The Lexicon

In a particularly important body of research on the lexical development in Spanish-English bilinguals (8-30 mths of age) in Miami, Pearson, Fernandez, Oller and their colleagues found that the children produced their first words at about the same age as monolingual children -- 12 to 13 months (see also Genesee, 2003; Patterson & Pearson, 2004; Petitto, Katerelos, Levy, Gauna, Tetreault, & Ferraro, 2001) and their rates of vocabulary growth generally fell within the range reported for same-age monolinguals, as long as both languages are considered for bilinguals (Pearson et al. 1993; Pearson & Fernandez, 1994). Nicoladis (2001) found that the distribution of lexical categories (e.g., noun, verb, etc.) in the early lexicons of bilingual children is similar to that observed in monolingual children.

Some studies report that the number of different words that pre-school bilingual children know in each language is smaller than that of monolinguals learning the same languages (Ben-Zeev, 1977; Doyle, Champagne, & Segalowitz, 1978; Rosenblum & Pinker, 1983). However, Pearson et al. (1993) note that single language measures are inadequate because they fail to consider the child's total vocabulary. They found that the total conceptual vocabulary (i.e., the number of words they knew in either language for different concepts) of the bilingual children

was, on average, equal to monolingual norms published for the MacArthur Communicative Development Inventory. They also found that the English vocabulary of English dominant bilinguals was equal to that of the English norms and, likewise, the Spanish vocabulary of Spanish-dominant bilinguals was equal to that of the Spanish norms. Thus, it is clearly important to examine bilingual children's vocabulary in both languages or, at least, in their dominant language.

Finally, Pearson and her colleagues found a correlation of .68 between amount of exposure to Spanish and vocabulary size in Spanish (Pearson & Fernandez, 1994; Pearson, Fernández, Lewedag, & Oller, 1997). The relationship between exposure and vocabulary size was stronger in families that provided relatively consistent and balanced exposure to both languages in comparison to families with inconsistent and less balanced exposure. The link between exposure and size of vocabulary was more important for the minority language (Spanish) than for English. Similar findings have been reported for general measures of language proficiency among school-aged Spanish-English bilinguals in dual language programs (see Lindholm-Leary & Borsato, 2006, for a review).

Phonology

Studies on the phonological development of simultaneous dual language learners have been concerned with patterns and rates of phonological development primarily of children in the pre-verbal (0-12 mths old) or early verbal stages (1-2 years of age) of development; both perception and production have been examined, with a preponderance of studies on early speech perception. These studies should be interpreted with caution because they are diverse in their linguistic focus and in the ages and language combinations of the children who have been

studied. The picture that is emerging is complex, with certain patterns of acquisition that are similar to those of monolinguals and others that are different.

Simultaneous dual language learners have been found to distinguish between familiar and unfamiliar languages that belong to the same or different rhythmic classes at the same age (about 4 mths of age) as monolingual learners (Bosch & Sebastian-Galles, 1997; see Sebastian-Galles & Bosch, 2005, for a review); they are also able to segment words from continuous speech in both of their first languages at approximately 7 mths of age (Polka & Sundara, 2003), like monolingual infants; and they have been found to engage in canonical and variegated babbling at the same ages as monolinguals, around 8-10 mths and 10-12 mths of age, respectively (Maneva & Genesee, 2002; Oller, Eilers, Urbano, & Cobo-Lewis, 1997).

In contrast, simultaneous dual language learners have been found to be delayed with respect to specific aspects of phonological development. Whereas monolingual children exhibit a language-specific ability to discriminate vowel and consonant contrasts at around 6-8 mths of age and 8-10 mths of age, respectively (Bosch & Sebastian-Galles, 2003; Werker & Tees, 1984), simultaneous dual language learners exhibit these shifts somewhat later – around 12 mths of age for vowel contrasts (Bosch & Sebastian-Galles, 2003) and 14-21 mths for consonant contrasts (Burns, Werker, & McVie, 2002). Fennel, Polka, and Werker (2002) found that while monolingual children were able to associate new words that differed by a minimal consonant contrast (i.e., /bih--dih/) with novel shapes at 17 months of age, bilingual children were able to do so only by 20 months of age. Early recognition of word forms in bilingual (and even monolingual) infants may be sensitive to amount of exposure. Vihman and her colleagues report that 11-month-old bilingual Welsh--English children in Wales failed to show differential

preference for familiar over unfamiliar words in a headturn preference study, while monolingual English children of the same age did (Vihman, Lum, Thierry, Nakai, & Keren-Portnoy, 2005).

The variability observed in the phonological development of dual language learners could be linked to multiple influences, some that are the same as those that influence monolingual development and some that are particular to BFLA. Those that are specific to BFLA include unequal or limited exposure to or practice with each language (e.g., Arnberg, 1981; Bell, Muller & Munro., 2001; Paradis, 2001), asynchronous development that reflects normal language-specific differences in the pattern of emergence of phonological abilities (Matthews & Yip, 2003, have proposed this for morpho-syntax), cross-linguistic transfer (Holm & Dodd, 1999; Paradis, 2001), and idiosyncrasies in the distributional and/or qualitative properties of bilingual speech input (Sebastián-Gallés & Bosch, 2005).

Bilingual Code-mixing

Bilingual code-mixing (BCM) is the use of elements (phonological, lexical, morpho-syntactic) from two languages in the same utterance or stretch of conversation. It can occur within an utterance (intra-utterance mixing -- e.g., “see *cheval*” [horse]) or between utterances (inter-utterance mixing). When two languages are used in the same utterance, grammatical incompatibilities between the languages can arise (e.g., different word orders); these in turn can result in patterns of language use that are awkward or illicit. Research on intra-utterance code mixing in adult bilinguals has shown that it is grammatically constrained and serves a variety of meta-communicative purposes -- for example, to mark ethnic identities or affiliations, to negotiate social roles and status, and to establish interpersonal intimacy or distance (Myers-Scotton, 1993; Poplack, 1980; 1987; Zentella, 1999).

Young bilingual children also code-mix and do so from the earliest verbal stages of development. Rates of code-mixing in children have been found to vary depending on the form of mixing (intra- vs. inter-utterance), the nature of the mixed element (function vs. content words), the language of the conversation (the child's less vs. the child's more proficient language), and the context (with interlocutors who are bilingual vs. those who are monolingual, for example) (see Genesee & Nicoladis, 2007, for a detailed review). Individual differences in both rates and style of mixing are widely reported, even within the same family (Vihman, 1998). Child BCM has often been interpreted as a sign of incompetence and even confusion (e.g., Volterra & Taeschner, 1978). Indeed, parents, educators, and other professionals often look unfavorably on BCM in children and often attempt to follow the one-parent-one-language role on the assumption that this will reduce the risk of linguistic confusion in children. Research on code-mixing in BFLA has examined both its grammatical and functional or communicative properties (see Genesee, 2002; and Genesee & Nicoladis, 2007, for reviews).

Grammatical Properties of Child Bilingual Code-Mixing

Researchers have examined grammatical constraints on intra-utterance code-mixing by preschool dual language learners learning a variety of language pairs: French and German (Köppe, in press; Meisel, 1994), French and English (Paradis, Nicoladis, & Genesee, 2000; Sauve & Genesee, 2000); English and Norwegian (Lanza, 1997a); English and Estonian (Vihman, 1998), and Inuktitut and English (Allen, Genesee, Fish, & Crago, 2002). There is consistent evidence that child BCM is grammatically constrained (see Allen, Genesee, Fish & Crago, under review). Most researchers also report that the constraints that operate on child BCM are essentially the same as those that have been reported in adults (except see Meisel, 1994; and Köppe, in press). There does not appear to be a stage in BFLA when grammatical

constraints do not operate, albeit the nature of the constraints may change as their grammars change. These findings reinforce results reviewed earlier indicating that, for the most part, bilingual children acquire language-specific morpho-syntactic properties of each language early in development and, moreover, they can access these constraints simultaneously during production.

Functional Properties of Child Bilingual Code-Mixing

Research reviewed in the preceding sections indicates that BCM is not due to fusion of the child's underlying representations of their two languages. The question arises: Why then do they code mix? There are at least three functional explanations of why young bilingual children code mix: gap filling, context-sensitivity, and pragmatic or symbolic reasons. In support of the gap-filling hypothesis, it has been found that young bilingual children mix more when they use their less proficient than their more proficient language (Genesee, Nicoladis, & Paradis, 1995; Lanvers, 2001). While mixing to fill lexical gaps because of incomplete mastery of their languages is one explanation of child code-mixing, it can also be true for otherwise fully proficient, older bilinguals because lexical knowledge in both languages of the bilingual is seldom equivalent. Evidence for grammatical gap-filling comes from Petersen (1988) and Lanza (1997b) who report that bilingual children often mix function words and inflectional morphemes from their more proficient language with content words from their less proficient language, but seldom the reverse, and from Gawlitzek-Maiwald and Tracy (1996) who argue that young bilingual children use syntactic patterns from their stronger language to bootstrap into the grammar of their less proficient language. Both lexical and morpho-syntactic mixing of these types attest to the young bilingual child's ability to access and use creatively the lexical and morpho-syntactic resources of both languages on-line during language production.

There is considerable evidence that bilingual children's code-mixing is sensitive to contextual variables, including those related to interlocutor (Deuchar & Quay, 2000; Genesee, Boivin, & Nicoladis, 1996; Genesee et al., 1995; Lanza, 1997b; Meisel, 1990; Vihman, 1998, among others), topic (Lanvers, 2001), and the purpose of the interaction (Vihman, 1998). Bilingual children usually use their languages appropriately with different interlocutors so that, for example, children who are raised in bilingual homes where parents tend to use only their native/dominant language with the child generally use more of each parent's language with that parent than with the other parent (e.g., De Houwer, 1990; Deuchar & Quay, 2000; Genesee et al., 1995; Lanza, 1997b; Vihman, 1998). There is also evidence that their use of code-mixing is sensitive to the nature of the situation; both Sprott and Kemper (1987) and Vihman (1998) found that bilingual children as young as 3 year of age were less likely to code mix with authority figures (unfamiliar experimenter, or parent) than with peers.

Child BCM has also been associated with a variety of pragmatic functions, even in quite young bilingual children. Lanvers (2001) reports that her two German--English children (1;6 to 2;11) used language to emphasize (see also Goodz, 1989), to appeal, to quote a parent, and for topic shift (see also Vihman, 1998). Vihman (1998) also presents evidence that the unmarked language choice for her bilingual children when playing together was a mixture of English and Estonian, which she argued was a reflection of their dual identity with the Estonian and English speakers in their lives (see also Pan, 1995, for evidence concerning the use of BCM to mark identity in 4-6 year old Mandarin-English bilingual children).

Communicative Competence in Simultaneous Dual Language Learners

Simultaneous dual language learners face the same communication challenges as monolingual children, but, at the same time, the ability to communicate appropriately and

effectively in two languages entails an understanding of interpersonal communication that exceeds that required for monolingual communication, including, among others, understanding of when it is appropriate to use code-mixing and that breakdowns in communication may be due to language choice. In question is how bilingual children accommodate the specific demands of bilingual communication and when in development they can do so.

Fundamental to bilingual communicative competence is the ability to make appropriate language choices with interlocutors who speak different languages and/or engage differentially in code mixing. Numerous researchers have found that even bilingual children in the one- and early two-word stages of development are able to use their languages differentially and appropriately with others – for example, with parents who habitually speak different languages with them (Nicoladis & Genesee, 1996) and with strangers with whom they have had no prior experience (Genesee, Boivin, & Nicoladis, 1996). It has also been found that they can adjust their rates of code-mixing to match those of unfamiliar interlocutors who change rates of mixing from one occasion to another (Comeau, Genesee, & Lapaquette, 2003; see Petitto et al., 2001, for similar evidence from children learning oral and sign languages simultaneously). Additional evidence of young bilingual children's capacity to manage the use of their two languages effectively comes from Comeau, Genesee, & Mendelson (2007) who found that 2;6 year old French-English bilingual children were able to modify their choice of language (switched from French to English, or vice versa) when their interlocutor expressed lack of comprehension and requested clarification when the child used the language the interlocutor did not prefer. In short, the additional challenges of bilingual communication are well within the competence of typically developing children.

Lanza (1997b, 2001) has argued that parental discourse strategies with respect to language use in the home serve to socialization their children to adopt specific bilingual practices. Bilingual parents who engage in code mixing themselves model mixing and, thereby, condone and possibly even encourage their children to code mix; in contrast, parents who disapprove code-mixing and avoid it discourage their children from mixing. In a related vein, Döpke (1992) found that bilingual families in Australia that actively used explicit strategies to favor the use of the minority language (German) over the majority language (English) were more successful at getting their children to use the minority language in the face of social pressures that favored English.

Children With Language Learning Impairment

Children with language learning difficulties are often thought to be poor candidates for dual language learning on the assumption that the challenges they face learning language will be exacerbated by learning two languages during the formative years. Children with specific language impairment (SLI), estimated to be between 5 and 10% of children (Leonard, 1998), exhibit language that is delayed and below that of age-matched peers, but they are typical in other aspects of their development; in other words, they have no known perceptuo-motor, neuro-cognitive, or socio-emotional problems that could account for their language learning difficulty. Children with SLI can exhibit difficulties with lexical, morpho-syntactic, and pragmatic aspects of language (see Leonard, 1998, for a review of research on monolingual children, and Goldstein, 2004, for research on Spanish-English children); but, difficulty learning specific morpho-syntactic features of language is an especially robust indicator of SLI and one that has received the lion's share of research attention.

The extant, albeit limited, evidence concerning dual language learners with language impairment indicates that such learners exhibit the same language-specific morpho-syntactic difficulties in each of their two languages as monolingual and, as well, that their language impairment is of the same magnitude as that exhibited by monolingual learners of the same languages. At the same time, these children can acquire bilingual competence within the limits of their learning ability. Gutierrez-Clellen and her colleagues examined Spanish-English bilingual children (4;5 to 6;5 years of age) in the U.S. and Paradis and her colleagues French-English bilingual children (mean age of 6;11) in Canada. While Paradis et al.'s young subjects were clearly simultaneous bilinguals, it appears that Gutierrez-Clellen's Spanish-English sample included some simultaneous and some very young successive bilinguals. Nevertheless, both studies found that the bilingual children with SLI did not differ from monolingual English-speaking children with SLI of the same age (see Goldstein, 2004, for more research on Spanish-speaking children with SLI).

An additional issue concerning bilingual children with language impairment is intervention and, in particular, whether intervention should be provided in only one language (and, if so, which one) or both. Intervention studies with bilingual children with language impairment (both simultaneous and sequential bilinguals) have demonstrated that outcomes following bilingual treatment are just as positive or even more positive than monolingual treatment (Gutierrez-Clellen, 1999; Perozzi & Sanchez, 1992; Thordardottir, Weismer, and Smith, 1997). Reviewing a variety of relevant research on bilingual acquisition, Kohnert and Derr (2004) present strong arguments to indicate that "the overall goal in language intervention is to affect positive change in both languages used by a bilingual child with language impairment in an effort to maximize his or her potential to communicate effectively" with important people,

such as family members, schoolmates and teachers. Kohnert and Derr go on to recommend that this does not mean that both languages be used at all times in all intervention sessions; but, rather that a bilingual or cross-linguistic approach be used depending on whether the focus of intervention is on underlying cognitive processes or linguistic features that are common to both languages or on features and processes that are unique to each language (see Kohnert & Derr, 2004, pp. 324-333).

SECOND LANGUAGE ACQUISITION

This section reviews research on children under 5 years of age who begin to learn a second language after first language learning has begun and is established. This review is limited to L2 learners who are less than five years of age for purely practical reasons – namely, this is the customary age for identifying pre-school from school-age children. It is also based on the assumption that evidence concerning L2 learners’ language development during the preschool years (and not subsequently) is critical for developing policy and professional practice for this group.

There are important policy-related and practical reasons for examining preschool L2 learners independently of simultaneous bilinguals, on the one hand, and “school-age” L2 learners, on the other hand. There is growing scientific evidence that critical foundations for academic language and literacy development are established during the preschool years (see Genesee, Lindholm-Leary, Saunders, & Christian, 2007). This, in turn, is leading to growing recognition among policy-makers and early childhood educators (e.g. Early Head Start and Head Start) that programs for preschool children have a critical role to play in promoting these foundational skills in preparation for children attending school. There is a particularly compelling case for enriching the preschool experiences of English language learners because

many ELs live in families that cannot always provide the kind of enrichment that development of these foundational skills requires. The creation of policies and enriched programs for preschoolers requires a solid understanding of their typical language development if they are to be developmentally appropriate and effective. Assessment and intervention strategies, in particular, that are intended for preschool English language learners who are suspected of language learning difficulties should reflect differences that distinguish typical from impaired L2 development; otherwise, we risk over-diagnosing young typically-developing English language learners as impaired and in need of clinical intervention.

It is commonly believed among parents, educators and researchers (c.f., Hyltenstam & Abrahamsson, 2003) that second language acquisition during the preschool years is unproblematic, occurs quickly and easily, and can be as successful as first language learning with respect to ultimate competence in the second language. In fact, however, our understanding of preschool L2 learning is far from precise. A major reason for this state of affairs is that there is relatively little research on child second language learners of any age. Moreover, data from studies on preschool second language learners have been aggregated with data on simultaneous bilinguals (see, for example, work by Gutierrez-Clellen, Wagner, & Simón-Cerejido, 2008) or with data from children who are 4 or 5 years of age, or older, upon first exposure to the second language and/or at the time of data collection. For example, in one of the earliest studies of bilingual children, Padilla and Lindholm (1976) examined the acquisition of interrogatives, adverbs, and adjectives in 19 Spanish-English bilinguals of Mexican descent living in the U.S. Based on analyses of spontaneous language samples of each child, these researchers concluded that the children were learning each language separately and did not transfer structures from one language to the other; nor was there evidence of cross-linguistic interference for the most part.

While this study was an important early step towards understanding children who acquire two languages during the preschool years, it did not distinguish between simultaneous and early successive dual language learning.

In a notable exception, Tabors (2008) used ethnographic techniques to study the acquisition of English as a second language by 15 pre-schoolers who ranged in age from 2;9 to 5;0 years of age. The children spoke a variety of first languages and came from a variety of countries and home backgrounds. Tabors' did not include objective measures of specific aspects of language development; rather, her focus was on the children's strategies for acquiring and using English as a second language and not on their actual developing linguistic competence per se or their acquisition milestones. She noted that the children passed through general stages of language development that are very similar to those seen in monolingual children, except for the first stage, even though they come to the task of learning English later than monolinguals: (1) home language use, (2) nonverbal period, (3) telegraphic and formulaic use, and (4) productive language use. These results provide rich descriptions of young English language learners' communication strategies and can be useful in similar settings to monitor other learners' progress.

A comprehensive review by Unsworth (2005) of studies on child-L2 acquisition that were published since approximately 1995 illustrates how recent research on preschool L2 learners has often been aggregated with school-age learner data. Unsworth defined child-L2 learners as those who begin L2 acquisition after 4 years of age and before 8 years of age on the assumption that most grammatical principles of language are established in first language learners by 4. Even though some of the children included in the studies she reviewed were first exposed to a second language before 5 years of age, their language

development was not actually examined until after 5 years of age. While Unsworth's cut-off age of 4 has some conceptual merit, it is arbitrary, as she recognizes (Unsworth, pers. comm.), and it begs the question of whether child-L2 acquisition under 5 years of age is like L1-acquisition and, if not, in what ways it differs. Unsworth concluded her review:

The evidence regarding the question of whether L2 children pass through the same developmental stages as L1 children is rather inconclusive. Although it is clear that as a result of L1 transfer, these two groups differ from each other and as such their developmental sequences will differ, the question of whether certain developmental stages found in child L1 development also characterize child L2 development remains largely unanswered. As yet, the child L2 data are rather limited in terms both of the linguistic phenomena which have been systematically investigated and the language combinations of the L2 children who have been studied? (p. 54).²

Understanding the language development of preschool second language learners is complicated by the fact that they can begin learning a second language at different ages, and this may influence their patterns and rates of development. The question of when simultaneous bilingual acquisition ends and child-L2 acquisition begins remains to be answered. Some researchers have argued that the cut-off occurs as early as 1 year of age or younger (De Houwer, 1995); others have suggested that it occurs at 3 (McLaughlin, 1978), or 4 years of age (Unsworth, 2005). Whether there is a critical age during the preschool or early childhood period that demarcates the ability to acquire a second language like a first language in all respects, and if so when, is an open question at this time.

Second Language Learners With Language Learning Impairment

There are significant challenges in identifying second language learners with language learning impairment above and beyond the challenges associated with identifying monolingual

² Unsworth's own results with respect to acquisition of the interpretive constraints on direct object scrambling in Dutch L2 suggest that both the child L2 learners, as well as adult L2 learners she also investigated, were constrained in their acquisition of this feature of Dutch in the same way as Dutch L1 learners.

children with language learning impairment because it is often difficult to identify clinical markers that are unique to an endogenous impairment in learning language versus common difficulties that even typical L2 learners face. Take tense-marking for example. While monolingual English-speaking children with SLI exhibit delays in many aspects of language development, including vocabulary, they exhibit particularly protracted delays in acquiring tense-marking morphology. Verb tense is also produced variably and, initially, with low accuracy by typically-developing L2 learners of English. In other words, typically-developing English language learners exhibit the same difficulty acquiring tense marking as monolingual children with SLI. As a result, typically-developing English language learners could be diagnosed inappropriately as having SLI if their status as second language learners were not considered appropriately. Paradis (in press) has reported preliminary results from two preschool children with SLI who were learning English as a second language in Edmonton, Canada, indicating that they had difficulties acquiring tense marking in English that exceeded the difficulties exhibited by typically-developing second language learners. Given the small sample size and variation (not reported here) between the two learners in this study, these results must be viewed with some caution, but they are important in suggesting that it may be possible to distinguish difficulties learning English as a second language that are a result of an underlying language learning impairment from difficulties learning English as a second language that are typical of L2 learners using standard test instruments.

SUMMARY AND FUTURE DIRECTIONS

Research on simultaneous bilingual acquisition in children from diverse language communities around the world is broad in scope and in the linguistic and family backgrounds of the children who have been studied, although there has been little systematic investigation of the

role of family background factors in their development. Taken together, findings from this body of research indicate that, other things being equal, language acquisition in simultaneous bilingual children is as natural as learning one language – it is systematic and exhibits the same critical milestones, at approximately the same ages, as that documented in monolingual children acquiring the same languages. Simultaneous bilingual acquisition is not a burden on infants' and toddlers' capacity to acquire language and does not compromise their competence in comparison to monolingual children, provided they receive adequate exposure to each language. At the same time, simultaneous bilingual children are different from monolingual children, often in ways that appear to be due to input and exposure. For example, they may have smaller vocabularies in each language than monolinguals, although not always. When such differences occur, they are probably due to the distributed nature of their exposure to vocabulary in each language and their reduced input in each language in comparison to monolinguals. In other words, vocabulary differences exhibited by bilingual children do not reflect limitations in children's ability to acquire two languages. Simultaneous bilinguals also differ from monolinguals in that they code-mix their two languages. Extensive research on this topic indicates that their code-mixing is a reflection of dual language competence and serves useful communicative functions.

Our understanding of preschool child-L2 learning is incomplete at present because data on such learners has often been aggregated with either simultaneous dual language learners or school-age L2 learners (see Paradis, 2007, for a review of second language acquisition in childhood, including school-age children). As a result, there is a lack of clean data on preschool L2 learners and, thus, a lack of understanding of dual language learning in children who begin learning a second language after first language acquisition has begun and before the age of school entry (taken to be age 5). Research on school-age minority language students in dual

language programs in the U.S. (Lindholm-Leary & Borsato, 2006) indicates that such students can acquire competence in academic English that exceeds that of similar language minority students in all-English programs and, moreover, is equal to, and in some cases superior to, that of native English-speaking children. In addition, both the National Literacy Panel (August & Shanahan, 2006) and the Center for Education, Diversity and Excellence (Genesee, et al., 2006) reports on literacy development in English language learners concluded that there is considerable positive transfer of home language skills to the development of literacy in English as a second language, resulting in facilitation in the acquisition of literacy skills in English as a second language. Taken together, these findings indicate that contrary to the time-on-task notion, support for the development of English language learners' home languages in school actually facilitates their acquisition of English as a second language. These findings, in turn, support conclusions from the research on simultaneous bilingual acquisition that dual language learning does not compromise minority language students' acquisition of language; to the contrary, it enhances it (see Barnett, et al., 2007, for similar evidence from a dual language pre-school program).

Extant findings on early dual language learners are based on studies of children who were selected because researchers deemed their learning environments to be sufficient to allow them to become bilingual. In other words, these learners were in additive bilingual learning environments. This is not always the case. Research in the U.S. has shown that dual language acquisition by minority language students in all-English school programs often leads to a shift in dominance from the home language to English and loss of the home language as English becomes stronger (Anderson, 2004; Jia & Aaronson, 2003; Kohnert & Bates, 2002; Kohnert, 2004; Pease-Alvarez, Hakuta, & Bailey, 1996). Both lexical and morpho-syntactic skills in the

home language can undergo shift and loss as English supplants the home language. A number of factors have been proposed to explain such shifts, including, early exposure to English (Wong-Fillmore, 1991; except see Winsler, Diaz, Espinosa, & Rodriguez, 1999), level of community support for the minority language (Winsler et al., 1999), attitudes toward English and the home language (Jia & Aaronson, 2004), and depth of immigration to the U.S. along with personal commitment to the home language (e.g., Pease-Alvarez, Hakuta, K., & Bayley, 1996). Research has shown that minority language students who participate in developmental and two-way immersion programs that provide instruction through the native language as well as English, score significantly higher on Spanish language tests than similar students in all-English programs (Lindholm-Leary & Borsato, 2006). Thus, use of minority languages in school is one way in which shift away from and loss of minority languages can be reduced. While researchers have shed some light on the nature and extent of language shift and loss in minority dual language learners, more research is needed in order to further elucidate the exact nature of these shifts and of factors in the home, community, and school that precipitate them.

In addition, research on the following topics with respect to preschool dual language learning in children from minority language backgrounds in the U.S. would extend our understanding of these children and, thereby, benefit the early childhood education community:

- 1) the prevalence of simultaneous and successive dual language learning in minority language children in the U.S.;
- 2) the nature of the language learning environments in which minority language students acquire English along with the home language beginning during the pre-school years (e.g., sources of input for each language, nature and extent of exposure to each language, continuity in exposure, community variables, etc);

- 3) social and linguistic factors in the home, community and school that serve to maintain minority language students' competence in the home language as their competence in English increases;
- 4) family-related factors that shape minority language children's language learning environments during the preschool years (e.g., parents' language backgrounds, education, job status, and attitudes to the home language and English), and the specific ways in which these factors shape the child's learning environment;
- 5) the morpho-syntactic development of simultaneous and successive preschool dual language learners from major minority language groups in the U.S. (Kindler, 2002);
- 6) the acquisition of discourse/conversational skills of preschool dual language learners from major minority language groups and, in particular, their ability to use language to perform cognitively-demanding tasks that are age-appropriate, as well as their ability to use language for routine social interactions;
- 7) the acquisition of skills that are thought to be precursors to later literacy and academic language development (see August & Shanahan, 2006; and Genesee et al., 2006 -- for example, advanced vocabulary skills, phonological awareness, letter-sound knowledge, print-related knowledge, use of anaphor and connectives in discourse, etc);
- 8) normative studies on rates and patterns of development of preschool dual language learners for clinical purposes;
- 9) the influence of amount of exposure or input to the home language and English on maintenance of the home language; and
- 10) the validity of standard test instruments in English for identifying child-L2 learners with language impairment.

References

- Allen, S.E.M, Genesee, F.H, Fish, S.A & Crago, M.B. (under review). Typological constraints on code mixing in Inuktitut-English bilingual adults. In N. Tersis & M.-A. Mahieu (Eds.), *Variations on polysynthesis: The Eskaleut languages*. Amsterdam: Benjamins.
- 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, IL: Chicago Linguistic Society.
- Anderson, R. (2004). First language loss in Spanish-speaking children: Patterns of loss and implications for clinical practice. In B. Goldstein (Ed.), *Bilingual language development and disorders in Spanish-English speakers* (pp 187-212). Baltimore: Brookes.
- Arnberg, L. (1981). *A longitudinal study of language development in four young children exposed to English and Swedish in the home*. Linköping, Sweden: Linköping University, Department of Education.
- Barnett, W.S., Yarosz, D.J., Thomas, J., Jung, K., & Blanco, D. (2007). Two-way and monolingual English immersion in preschool education: An experimental comparison. *Early Childhood Research Quarterly*, 22, 277-293.
- Bates, E., & MacWhinney, B. (1987). Competition, variation, and language learning. In B. MacWhinney (Ed.), *Mechanisms of language acquisition* (pp. 157--194). Hillsdale, NJ: Lawrence Erlbaum.
- Beardsmore, H.B. (2003). Who is afraid of bilingualism? In J.M. Dewaele, A. Housen, & L. Wei (eds), *Bilingualism: Beyond basic principles* (pp10-27). Clevedon, Eng.: Multilingual Matters.

- Bell, M. J., Müller, N., & Munro, S. (2001). The acquisition of rhotic consonants by Welsh--English bilingual children. *International Journal of Bilingualism*, 5, 71--86.
- Ben-Zeev, S. (1977). The influence of bilingualism on cognitive strategy and cognitive development. *Child Development*, 48, 1009-1018.
- Birdsong, D., (2006). Age and second language acquisition and processing: A selective overview. *Language Learning*, 56, 9-49.
- Bosch, L., & Sebastián-Gallés, N. (1997). Native language recognition abilities in four-month-old infants from monolingual and bilingual environments. *Cognition*, 65, 33--69.
- Bosch, L., & Sebastián-Gallés, N. (2003). Simultaneous bilingualism and the perception of a language-specific vowel contrast in the first year of life. *Language and Speech*, 46, 217--243.
- Brown, R. (1973) *A first language*. Cambridge, MA: Harvard University Press.
- Burns, T. C., Werker, J. F., & McVie, K. (2002, November). *Development of phonetic categories in infants raised in bilingual and monolingual homes*. Paper presented at the 27th Annual Boston University Conference on Language Development, Boston, MA.
- Capps, R., Fix, M., Murray, J., Ost, J., Passel, J.S., & Herwanto, S. (2005). *The New Demographics of American Schools*. Washington, DC: The Urban Institute. Comeau, L., Genesee, F., & Lapaquette, L. (2003). The modeling hypothesis and child bilingual code-mixing. *International Journal of Bilingualism*, 7, 113--126.
- Comeau, L., Genesee, F., & Mendelson, M. (2007). Bilingual children's repairs of breakdowns in communication. *Journal of Child Language*. 34, 159-174
- Cook, V. (2002). Background to the L2 user. In V. Cook (Ed.), *Portraits of the L2 user* (pp. 1--28). Clevedon, UK: Multilingual Matters.

- De Houwer, A. (1990). *The acquisition of two languages from birth: A case study*. Cambridge: Cambridge University Press.
- De Houwer, A. (1995). Bilingual language acquisition. In P. Fletcher & B. MacWhinney (Eds.), *The handbook of child language* (pp. 219--250). Oxford: Blackwell.
- Deuchar, M., & Quay, S. (2000). *Bilingual acquisition: Theoretical implications of a case study*. Oxford: Oxford University Press.
- Döpke, S. (1992). *One parent one language: An interactional approach*. Amsterdam: John Benjamins.
- Döpke, S. (1998). Competing language structures: The acquisition of verb placement by bilingual German-English children. *Journal of Child Language*, 25, 555-584.
- Döpke, S. (2000). Generation of and retraction from cross-linguistically motivated structures in bilingual first language acquisition. *Bilingualism: Language and Cognition*, 3, 209--226.
- Doyle, A., Champagne, M., & Segalowitz, N. (1978). Some issues in the assessment of linguistic consequences of early bilingualism. In M. Paradis (ed.), *Aspects of bilingualism* (pp. 13-21). Columbia, S.C.: Hornbeam Press.
- Fennel, C. T., Polka, L., & Werker, J. (2002, May). *Bilingual early word learner's ability to access phonetic detail in word forms*. Paper presented at the Fourth International Symposium on Bilingualism, Tempe, AZ.
- Gawlitzeck-Maiwald, I., & Tracy, R. (1996). Bilingual bootstrapping. *Linguistics*, 34, 901--926.
- Genesee, F. (1989). Early bilingual development: One language or two? *Journal of Child Language*, 16, 161--179.

- Genesee, F. (2001). Bilingual first language acquisition: Exploring the limits of the language faculty. In M. McGroarty (Ed.), *21st Annual Review of Applied Linguistics* (pp. 153--168). Cambridge: Cambridge University Press.
- Genesee, F. (2002). Portrait of the bilingual child. In V. Cook (Ed.), *Portraits of the Second Language User*. Clevedon, Eng.: Multilingual Matters, 170-196.
- 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. (2006). *Myths and Misconceptions about Early Dual Language Learning*. Invited plenary, 21st National Training Institute of Early Head Start (Zero to Three), Albuquerque, NM, Dec. 2, 2006.
- Genesee, F., Boivin, I., & Nicoladis, E. (1996). Talking with strangers: A study of bilingual children's communicative competence. *Applied Psycholinguistics*, 17, 427--442.
- Genesee, F., & Nicoladis, E. (2007). Bilingual acquisition. In E. Hoff & M. Shatz (eds.), *Handbook of Language Development*, 324-342. Oxford, Eng.: Blackwell.
- Genesee, F., Nicoladis, E., & Paradis, J. (1995). Language differentiation in early bilingual development. *Journal of Child Language*, 22, 611--631.
- Genesee, F., Lindholm-Leary, K., Saunders, W., & Christian, D. (2007). *Educating English language learners*. Cambridge, MA: Cambridge University Press.
- Goldstein, B.A. (2004). *Bilingual language development and disorders in Spanish-English speakers*. Baltimore, MD: Brookes.
- Goodz, N.S. (1989). Parental language mixing in bilingual families. *Journal of Infant Mental Health*, 10, 25-44.

- Grosjean, F. (1997). The bilingual individual. *Interpreting*, 2, 163--187.
- Gutierrez-Clellen, V.F. (1999). Language choice in intervention with bilingual children. *American Journal of Speech-Language Pathology*, 8, 291-302.
- Gutierrez-Clellen, V.F., Wagner, C., & Simón-Cereijido, G. (2008). Bilingual children with language impairment. *Applied Psycholinguistics*, 29, 3-19.
- Hart, B., & Risley, T. R. (1998) *Meaningful differences in everyday experiences of young American children*. Baltimore, MD: Paul H. Brookes.
- Hoff, E. (2003). The specificity of environmental influence: Socioeconomic status affects early vocabulary development via maternal speech. *Child Development*, 74: 1368-1378.
- Holm, A. & Dodd, B. (1999). An intervention case study of a bilingual child with phonological disorder. *Child language teaching and therapy*, 15, 2, 139-158.
- Hulk, A. C. J., & van der Linden, E. (1996). Language mixing in a French--Dutch bilingual child. In E. Kellerman et al. (Eds.), *Eurosla 6: A selection of papers* (pp. 89--103). Amsterdam: John Benjamins.
- Hyltenstam, K., & Abrahamsson, N. (2003). Maturation constraints in SLA. In C.J. Doughty & M. Long (Eds) *The handbook of second language acquisition*, 539-588, Malden, MA: Blackwell.
- Hyltenstam, K., & Abrahamsson, N. (2007). *Age of L2 acquisition and degree of nativelikeness: Listener perceptions vs. linguistic scrutiny*. Unpub. ms. Center for Research on Bilingualism, University of Stockholm, Sweden.
- Jia, G., & Aaronson, D. (2003). A longitudinal study of Chinese children and adolescents learning English in the United States. *Applied Psycholinguistics*, 24, 131-161.

- Johnson, J.S., & Newport, E.L. (1989). Critical period effects in second language learning: The influence of maturational state on the acquisition of English as a second language. *Cognitive Psychology*, 21, 60-99.
- Kasuya, H. (1998). Determinants of language choice in bilingual children: The role of input. *International Journal of Bilingualism*, 2, 327--346.
- Kindler, A.L. (2002). *Survey of the states' limited English proficient students and available educational programs and services: 2000-2001 summary report*. Washington, DC: National Clearinghouse for English Language Acquisition and Language Instruction Education Programs.
- Kohnert, K. (2004). Processing skills in early sequential bilinguals. In B. Goldstein (Ed.), *Bilingual Language Development and Disorders in Spanish-English Speakers* (pp. 53-76). Baltimore: Brookes.
- Kohnert, K. & Bates, E. (2002). Balancing bilinguals II: Lexical comprehension and cognitive processing in children learning Spanish and English. *Journal of Speech, Language and Hearing Research*, 45, 347-359.
- Kohnert, K., & Derr, A. (2004). Language intervention with bilingual children. In B. Goldstein (ed.) *Bilingual language development and disorders in Spanish-English speakers* (pp. 311-338). Baltimore, MD: Brookes.
- Kohnert, K., Windsor, J., & Yim, D. (2006). Do language-based processing tasks separate children with language impairment from typical bilinguals? *Learning Disabilities Research & Practice*, 21, 19-29.
- Köppe, R. (in press). Is cod switching acquired? In J. MacSwan (Ed.) *Grammatical Theory and Bilingual Code Switching*. Cambridge, MA: MIT Press

- Lanvers, U. (2001). Language alternation in infant bilinguals: A developmental approach to codeswitching. *International Journal of Bilingualism*, 5, 437--464.
- Lanza, E. (1997a). Language contact in bilingual two-year-olds and code-switching: Language encounters of a different kind? *International Journal of Bilingualism*, 1, 135--162.
- Lanza, E. (1997b). *Language mixing in infant bilingualism: A sociolinguistic perspective*. Oxford: Clarendon Press.
- Lanza, E. (2001). Bilingual first language acquisition: A discourse perspective on language contact in parent--child interaction. In J. Cenoz & F. Genesee (Eds.), *Trends in bilingual acquisition* (pp. 201--230). Amsterdam: John Benjamins.
- Lenneberg, E. H. (1967). *Biological foundations of language*. NY: John Wiley.
- Leonard, L. (1998). *Children with specific language impairment*. Cambridge, MA: MIT Press.
- Leopold, W. (1949). *Speech development of a bilingual child: Vol. 4*. Evanston, IL: Northwestern University Press.
- Lindholm-Leary, K. & Borsato, G. (2006). Academic achievement. In F. Genesee, K. Lindholm-Leary, W. Saunders, & D. Christian (eds), *Educating English language learners* (pp. 176-223). Cambridge, MA: Cambridge University Press.
- Long, M. (1990). Maturation constraints on language development. *Studies in Second Language Acquisition*, 12, 251-285.
- Maneva, B., & Genesee, F. (2002). Bilingual babbling: Evidence for language differentiation in dual language acquisition. In B. Skarbela et al. (Eds.), *Boston University Conference on Language Development 26 Proceedings* (pp. 383--392). Somerville, MA: Cascadilla Press.

- Matthews, S., & Yip, V. (2003). Relative clauses in early bilingual development: Transfer and universals. In A. G. Ramat (Ed.), *Typology and second language acquisition* (pp. 39--81). Berlin: Mouton de Gruyter.
- McLaughlin, B. (1978). *Second language acquisition in childhood*. Hillsdale, NJ: Lawrence Erlbaum.
- Meisel, J. M. (1990). *Two first languages: Early grammatical development in bilingual children*. Dordrecht: Foris.
- Meisel, J. M. (1994). Code-switching in young bilingual children: The acquisition of grammatical constraints. *Studies in Second Language Acquisition*, 16, 413--441.
- Meisel, J. M. (2001). The simultaneous acquisition of two first languages: Early differentiation and subsequent development of grammars. In J. Cenoz & F. Genesee (Eds.), *Trends in bilingual acquisition* (pp. 11--42). Amsterdam: John Benjamins.
- Müller, N. (1999). Transfer in bilingual first language acquisition. *Bilingualism: Language and Cognition*, 1, 151--171.
- Myers-Scotton, C. (1993). *Social motivation for codeswitching: Evidence from Africa*. Oxford: Oxford University Press.
- Nicoladis, E. (2001). Finding first words in the input. In J. Cenoz & F. Genesee (Eds.), *Trends in bilingual acquisition* (pp. 131--147). Amsterdam: John Benjamins.
- Nicoladis, E. (2002). What's the difference between "toilet paper" and "paper toilet"? French--English bilingual children's crosslinguistic transfer in compound nouns. *Journal of Child Language*, 29, 843--863.
- Nicoladis, E. (2003). Cross-linguistic transfer in deverbal compounds of preschool bilingual children. *Bilingualism: Language and Cognition*, 6, 17--31.

- Nicoladis, E., & Genesee, F. (1996). A longitudinal study of pragmatic differentiation in young bilingual children. *Language Learning*, 46, 439--464.
- Nicoladis, E., & Secco, G. (2000). The role of a child's productive vocabulary in the language choice of a bilingual family. *First Language*, 58, 3--28.
- Oller, D. K., 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.
- Padilla, A., & Lindholm, K. (1976). Acquisition of bilingualism: An analysis of the linguistic structures of Spanish/English speaking children. In G. Keller, T. Teschner, & S. Viera (eds.), *Bilingualism in the bicentennial and beyond*. NY: Bilingual Press/Editorial Bilingue, 97-142.
- Pan, B. A. (1995). Code negotiation in bilingual families: "My body starts speaking English". *Journal of Multilingual and Multicultural Development*, 16, 315--327.
- Paradis, J. (in press). Tense as a clinical marker in English L2 acquisition with language delay/impairment. In E. Gavrusseva & B. Haznedar (Eds.), *Current Trends in Child Second Language Acquisition: A Generative Perspective*. Amsterdam: John Benjamins.
- Paradis, J. (2001). Do bilingual two-year olds have separate phonological systems? *International Journal of Bilingualism*, 5, 19--38.
- Paradis, J., & Genesee, F. (1996). Syntactic acquisition in bilingual children: Autonomous or interdependent? *Studies in Second Language Acquisition*, 18, 1--25.
- Paradis, J., & Navarro, S. (2003). Subject realization and crosslinguistic interference in the bilingual acquisition of Spanish and English: What is the role of the input? *Journal of Child Language*, 30, 371--393.

- Paradis, J., Nicoladis, E., & Crago, M. (2007). French-English bilingual children's acquisition of past tense. In H. Caunt-Nulton, S. Kulatilake & I-H Woo (eds), *BUCLD 31 Proceedings* (pp. 497-507). Somerville, MA: Cascadilla Press.
- 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.
- Paradis, J., Crago, M., Genesee, F., & Rice, M. (2003). Bilingual children with specific language impairment: How do they compare with their monolingual peers? *Journal of Speech, Language and Hearing Research*, 46, 113--127.
- 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, MD: Paul H. Brookes.
- Pearson, B.Z., & Fernandez, S.C. (1994). Patterns of interaction in the lexical growth in two languages of bilingual infants and toddlers. *Language Learning*, 44, 617-654.
- Pearson, B. Z., Fernández, S. C., & Oller, D. K. (1993). Lexical development in bilingual infants and toddlers: Comparison to monolingual norms. *Language Learning*, 43, 93--120.
- Pearson, B. Z., Fernández, S. C., Lewedag, V., & Oller, D. K. (1997). The relation of input factors to lexical learning by bilingual infants (ages 10 to 30 months). *Applied Psycholinguistics*, 18, 41--58.
- Pease-Alvarez, L., Hakuta, K., & Bayley, R. (1996). Spanish proficiency and language use in a California Mexicano community. *Southwest Journal of Linguistics*, 15, 137-151.
- Penfield, W., & Roberts, L. (1959). *Speech and brain-mechanisms*. Princeton, NJ: Princeton University Press.

- Perozzi, J.A., & Sanchez, M.L.C. (1992). The effect of instruction in L1 on receptive acquisition of L2 for bilingual children with language delay. *Language, Speech, and Hearing Services in Schools, 23*, 348-352.368.
- Petersen, J. (1988). Word-internal code-switching constraints in a bilingual child's grammar. *Linguistics, 26*, 479--493.
- Petitto, L. A., Katerelos, M., Levy, B. G., Gauna, K., Tetreault, K., & Ferraro, V. (2001). Bilingual signed and spoken language acquisition from birth: Implications for the mechanism underlying early bilingual language acquisition. *Journal of Child Language, 28*, 453--496.
- Polka, L., & Sundara, M. (2003). Word segmentation in monolingual and bilingual infant learners of English and French. In M. J. Solé, D. Recasens, & J. Romero (Eds.), *Proceedings of the International Congress of Phonetic Sciences, 15*, 1021--1024.
- Poplack, S. (1980). 'Sometimes I start a sentence in English y termino en Espanol': Toward a typology of code-switching. *Linguistics, 18*, 581--618.
- Poplack, S. (1987). Contrasting patterns of code-switching in two communities. In E. Wande, J. Anward, B. Nordberg, L. Steensland, & M. Thelander (Eds.), *Aspects of multilingualism* (pp. 51--77). Uppsala: Borgströms, Motala.
- Rice, M., & Wexler, K. (2001). *Test of Early Grammatical Impairment*. New York, NY: The Psychology Corporation.
- Rosenblum, T. & Pinker, S.A. (1983). Word magic revisited: Monolingual and bilingual children's understanding of the word-object relationship. *Child Development, 54*, 587-599.
- 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.

- Sebastián-Gallés, N., & Bosch, L. (2005). Phonology and bilingualism. In J. F. Kroll & A. M. B. D. Groot (Eds.), *Handbook of bilingualism: Psycholinguistic approaches* (pp. 68-87). Oxford: Oxford University Press.
- Sprott, R. A., & Kemper, S. (1987). The development of children's code-switching: A study of six bilingual children across two situations. *Working Papers on Language Development*, 2, 116--134.
- Tabors, P. (1997). *One child, two languages*. Baltimore, MD: Brookes.
- Thordardottir, E.T., Weismer, S.E., & Smith, M.E. (1997). Vocabulary learning in bilingual and monolingual clinical intervention. *Child Language Teaching and Therapy*, 13, 215-227.
- Unsworth, S. (2005). *Child L2, adult L2, Child L1: Differences and similarities*. Utrecht: LOT.
- Vihman, M. (1998). A developmental perspective on codeswitching: Conversations between a pair of bilingual siblings. *International Journal of Bilingualism*, 2, 45--84.
- Vihman, M. M., Lum, J. A. G., Thierry, G., Nakai, S., & Keren-Portnoy, T. (2005). *Cross-linguistic experiments in infant word form recognition*. Unpublished manuscript, School of Psychology, University of Wales, Bangor.
- Volterra, V., & Taeschner, T. (1978). The acquisition and development of language by bilingual children. *Journal of Child Language*, 5, 311--326.
- Werker, J. F., & Tees, R. C. (1984). Cross-language speech perception: Evidence for perceptual reorganization during the first year of life. *Infant Behavior and Development*, 7, 49--63.
- Werker, J., & Byers-Heinlein, K. (in press). Bilingualism in infancy. *Trends in Cognitive Science*.
- Winsler, A., Díaz, R., Espinosa, L. & Rodríguez, J. (1999). When learning a second

language does not mean losing the first: Bilingual language development in low-income, Spanish-speaking children attending bilingual preschool. *Child Development*, 70, 349-362.

Wong Fillmore, L. (1991). When learning a second language means losing the first.

Early Childhood Research Quarterly, 6, 323-346.

Yip, V., & Matthews, S. (2000). Syntactic transfer in a Cantonese--English bilingual child.

Bilingualism: Language and Cognition, 3, 193--208.

Zentella, A. C. (1999). *Growing up bilingual*. Malden, MA: Blackwell.