Internationally Adopted Bilinguals and Language Development*

Aileen Bach, Jane Emes, Sonia Guerriero, Karine Gauthier, and Fred Genesee
McGill University

ABSTRACT

Within the first year after adoption, IA children's grammars often undergo attrition, or loss, of the birth language (L1) while simultaneously acquiring the adoptive language (L2), a process that resembles that of successive bilingualism but lacks the necessary L1 proficiency to aid L2 acquisition. The lack of sufficient L1 or L2 proficiency during this transition puts IA children at high risk for semilingualism, where the child becomes proficient in neither L1 nor L2 (Glennen, 2002). An additional factor that may contribute to some IA children's language development is growing up in a bilingual environment. IA bilinguals may consistently experience more severe language delays than IA monolinguals and native-born monolinguals their age, as they must learn two adoptive L2's. The present study assesses the language development of two such internationally adopted bilingual children, ages 3;8 and 3;11, being raised in the Montreal area. Transcripts of the children's speech were coded for word kind to compare the distribution of word types used to monolingual native-born children whose age equivalent matched the bilinguals' productive vocabulary. Comparisons confirmed our hypothesis that IA bilinguals exhibit more severe language delays than their IA monolingual and native-born monolingual peers.

1. INTRODUCTION

Internationally Adopted (IA) children do not fit into conventional categories of language learners. They do not experience language development as monolinguals do, as they are confronted with two languages during early stages of their development. IA children rapidly undergo attrition, or loss, of their first language (L1) once they are adopted. Furthermore, in acquiring the language of their adoptive environment (L2), they do not have the advantage of carry-over effects from their L1, since, in most cases, these children have not acquired substantial knowledge of their L1 for it to be any use in learning the L2. Similarly, these children do not experience language development as simultaneous bilinguals, since they do not learn both languages at the same time. While their situation is somewhat comparable to that of successive bilinguals, those learning an L1 and then and L2, again, they do not have the advantage of L1 carry-over effects that successive bilinguals have (Cummins, 1981). Bilingual children are shown to have slight language delays in early development, though they catch up to their monolingual peers within a normal time frame.

The added disadvantage of rapid L1 attrition thus puts adopted children at great risk for language delays (Glennen, 2005). However, the body of research surrounding language development in internationally adopted (IA) monolingual children is optimistic about such children's ability to catch up with their native-born peers in terms of language proficiency (Glennen 2005; Glennen & Masters, 2002). In general, adopted children are found to catch up to their native-born peers within the first year of living in their adoptive environment

* We would like to acknowledge Marie-Eve Dubois, Valerie Sami, and Elisa-Maude McConnell for your contributions to the project.

(Glennen, 2005). These findings, however, are restricted to IA monolinguals with normal paths of cognitive and nutritional development.

For instance, Geren, Snedeker, and Ax (2005), studied 13 internationally adopted monolingual children within their first year in the adoptive environment in order to compare their rate of development, mean length of utterance (MLU), and distribution of word types with those of native-born monolinguals. Using CLAN to code transcripts of 30-minute play sessions, they found the distribution of word types and MLU of native-born bilinguals to be at par with their native-born peers as soon as 12 months after adoption. The language development of adopted bilingual children has not been researched to date, as the research on IA children in general is still in its early stages. Considering the slight language delays observed in both bilingual children and IA children, one would expect considerably more language delays when these two circumstances are combined.

The present study seeks to compare the language development of two IA bilinguals to that of their IA monolingual and native-born monolingual peers. Two children, ages 3;8 and 3;11 were recorded during 30-minute plays sessions, which were transcribed and coded for word-type. Comparing the results found by Geren, Snedeker, and Ax, in their assessment of IA monolingual language development; and using data from Thordardottir (2005) for comparison with monolingual native-born French and English Quebecers, the present study compares the MLU and word kind of IA bilinguals with their monolingual native-born and IA monolingual peers. This study is one of the first investigations into the language development of internationally adopted bilingual children. These results welcome further research into IA bilinguals' language learning strategies and obstacles. The more information obtained about IA bilinguals' language learning, the better bilingual communities can understand this unique situation and support IA bilingual children as language learners.

2. METHOD

2.1 SUBJECTS

Transcripts of Internationally adopted bilingual children from the Montreal area collected from a previous study. 2 IA bilingual children ages 3;8 (from China) and 3;11 (from Korea). The child from China (Child E), was adopted at 10 months old, having spent almost 3 years in his adopted L2. The child from Korea (Child A) was adopted at 5 months, having spent 3 years and 4 months in the adoptive L2. Both children spent their time before adoption in orphanages, where their development was relatively normal.

Three comparison groups were used from previous studies, investigating language development in IA monolinguals, native-born monolinguals, and native-born bilinguals. IA monolinguals' language development came from Geren, Snedeker, and Ax (2005) and the native-born monolingual data came from Thordardottir (2005). Transcripts of 2 native-born French-English bilingual children from the Montreal area were taken from another study to serve as a comparison group. Child B, 3;7, and child C, 3;11, was each recorded in 2 sessions, however these sessions were not led specifically in English or French, thus scores for each native-born bilingual combine both languages, whereas scores for IA bilinguals are calculated separately for each language testing session (French and English).

2.2 MATERIALS

The materials provided for each IA bilingual child, collected during previous research, included a background questionnaire used to note pre-adoption circumstances contributing to early development. In addition, experimental measures included a comprehension and a production measure. The Peabody Picture Vocabulary Test (PPVT) and Échelle de Vocabulaire en Images Peabody (EVIP) (Dunn, Thériault-Whalen & Dunn, 1993) tested the children's comprehension abilities, providing an age equivalent to reflect their stages of language comprehension development. The Expressive One-Word Picture Vocabulary Test (EOWPVT) and French adaptation (Brownell, 2000) served as a production measure, similarly providing an age equivalent to reflect their stage of development with regards to language production. Observational: 30 minute free play video sessions in each language.

Transcripts of the children in 30-minute play sessions were provided from the previous study, where each child was recorded in two separate sessions: one in English and one in French. Using the CLAN program, the presented study coded the first 100 utterances for word kind, coding for word classes that are expected to emerge in native-born monolinguals during the first few years of word learning. The first 100 utterances were coded excluded utterances outlined by Johnston (2001). Utterances excluded were: exact repetitions of parents' speech; one-word utterances such as "yes" and "no"; and answers to questions that were not complete sentences. Appendix A shows the coding scheme created for this study.

In addition, CLAN was used to determine the MLU for each child in each language, as well as the number of nouns, verbs, and closed class words used in French and English testing sessions. Results from the CLAN analysis were compared with vocabulary and MLU measurements of Chinese adopted monolinguals, as reported by Geren, Snedeker & Ax (2005), and native-born French and English monolinguals from Quebec, as reported by Thordardottir (2004). If IA bilinguals' word kind distribution patterns with those of an equivalent age group, their vocabulary should exhibit an abundance of nouns, specifically count nouns. Geren, et al. (2005) establish three stages of language development that are characterized by word type proportions: In vocabularies of50- to 200-words, an abundance of nouns is observed; with a vocabulary of 200- to 400-words children demonstrate the emergence of verbs and adjectives; and in children with 400-word vocabularies comes the emergence of closed class words.

3. RESULTS

3.1 MLU

Table 1 shows the productive and receptive vocabularies for both of the children in each language, as determined by the experimental measures. The scores presented below indicate a considerable lag in the productive capabilities of the children, compared to their receptive vocabulary scores.

Table 1

	Age Equivalents	
	EVIP/PPVT (comprehension)	EOWPVT (production)
A (3;8) English	4;5	3;5
A (3;8) French	3;0	2;1
E (3;11) English	4;2	3;5
E (3;11) French	4;5	3;5

Scores for MLU in morphemes were calculated and compared to the scores of IA monolinguals, native-born monolinguals, and native-born bilinguals from Geren, et al. (2005), Thorardottir (2005), and child C and D, respectively. Child A showed an MLU of 2.87 morphemes (standard deviation = 1.64) in English. Child A's French transcript contained only five French utterances and showed an MLU of 2.79 morphemes. Due to the small amount of utterances in this child's French transcript, Child A's data is excluded from the rest of the data analysis. Child E showed an MLU of 3.041 morphemes (standard deviation = 1.545) in English and an MLU of 3.10 (standard deviation = 1.245 morphemes) in French.

Geren, et al. (2005) found a positive correlation between sentence complexity scores of IA monolinguals and controls (r = 0.77). Comparing Child A and E's MLU's to native-born monolinguals, scores from Thordardottir were assessed among children whose age was equivalent to Child A and E's productive age equivalents. Figure A shows MLU in morphemes of native-born monolinguals found in Thordardottir (2005) compared to those of Child A and Child E. Excluding Child A's unreliable French MLU, this figure shows that the MLU's of native-born monolinguals are consistently higher than those of Child A and Child E.

Figure A

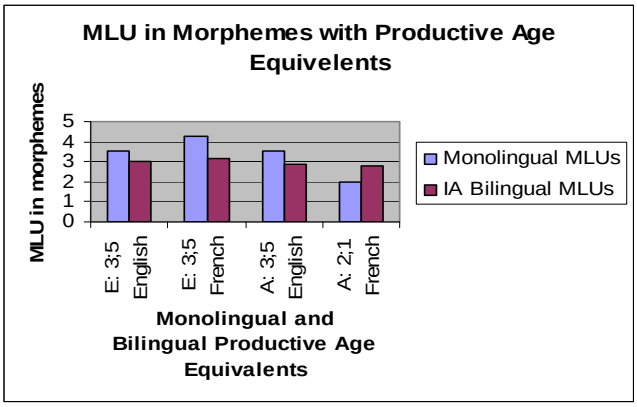

Table 2

	IA bilinguals			Native-born bilinguals	
	A (3;8) English	E (3;11) English	E (3;11) French	B (3;7) English	C (3;7) English
Nouns/open class	29/159 = 18%	29/155 = 19%	37/124 = 30%	22/51 = 43%	22/77 = 29%
Verbs & Adj/ open class	102/159 = 64%	109/155 = 70%	76/124 = 61%	23/51 = 45%	44/77 = 57%
Closed class/ total	159/312 = 51%	167/322 = 52%	138/262 = 53%	76/127 = 60%	50/127 = 39%

For the bilingual data, child B showed an average MLU in morphemes (between two transcripts, adding up to 31 utterances) of 5.23 (standard deviation = 2.646). Child C showed an average MLU in morphemes (between two transcripts, adding up to 47 utterances) of 3.588 (standard deviation 1.395) in English. The MLU's of native-born yielded considerably higher MLU's than the IA bilinguals', suggesting that IA bilinguals experience language delays in this respect. These data are not included in Figure 1, since neither child produced 100 utterances and may not provide comparable data, with which to assess the differences in MLU size.

3.2 WORD KIND DISTRIBUTION

At this age equivalent, the IA bilinguals should still see a robust proportion of count nouns in their vocabularies. Since the percentage of nouns in Table 2 indicated a smaller proportion of nouns in these children's vocabularies, the proportion of pronouns in the children's vocabularies was calculated as well, to see if pronoun usage may serve as a substitute for these children when they do not know an object's name. Table three shows the percentage of count nouns and mass nouns in the children, as well as the percentage of pronouns within the closed class word category. While the native-born bilingual data does not appear to be consistent across members in terms of pronoun distribution, count noun ad mass noun distributions are consistent. Nonetheless, the pronoun distribution among IA bilinguals is considerably high, while their count noun proportion is consistently lower than native-born bilinguals. These data suggest that, while the general trend of count noun bias in early word learning appears to be adopted by these children, their frequency of object naming may be generally lower than that of their native-born peers; these lower percentages, furthermore, appear to be compensated in the consistently high pronoun usage among IA bilinguals.

Table 3

	IA bilinguals			Native-born bilinguals	
	A (3;8) English	E (3;11) English	E (3;11) French	B (3;7) English	C (3;7) English
Count Nouns/ Nouns	20/29 = 69%	18/29 = 62%	26/34 = 76%	19/22 = 86%	8/9 = 89%
Mass Nouns/ Nouns	9/29 = 31%	11/29 = 38%	8/34 = 24%	3/22 = 14%	1/9 = 11%
Pronouns/ Closed Class	112/153 = 73%	95/167 = 57%	62/138 = 45%	22/76 = 29%	33/50 = 66%

A closer examination of pronoun usage may be necessary to determine whether suggesting that IA bilinguals compensate for object naming with pronoun usage is plausible. Table 4 shows the distribution of types of pronouns used by IA and native-born bilinguals. Of particular interest is the use of demonstrative pronouns, such as "this" and "that", where children may be directly referring to an object without naming it. This is in contrast to use of personal pronouns, such as "me", "you", or "I", where the child may normally, and appropriately, refer to a person using the pronoun instead of their name. Other pronouns observed were reflexive ("myself") and relative pronouns ("here", "there"), where relative pronouns may indicate some tendency to compensate for object naming. For instance, a child may describe putting their toys away by referring to the toy box as "here" instead of "box". Still, relative pronouns may only by marginally indicative of name compensation, as such pronouns may be used appropriately in cases such as "come here".

Table 4

	IA bilinguals			Native-born bilinguals	
	A (3;8) English	E (3;11) English	E (3;11) French	B (3;7) English	C (3;7) English
Demonstrative Pronouns	28/112 = 25%	42/95 = 45 %	33/62 = 53%	2/22 = 9%	7/33 =21 %
Personal Pronouns	67/112 = 60%	40/95 = 42%	19/62 =31%	16/22 = 73%	19/ 33 = 58%
Relative Pronouns	15/112 = 13%	9/95 = 9%	10/ 62 =16%	4/ 22 = 18%	7/ 33 = 21%
Reflexive Pronouns	2/112 = 2%	4/95 = 4%	0%	0%	0%

4. DISCUSSION

The data suggest these IA bilinguals show differential results with regards to native-born monolinguals' MLU and word kind distribution. These IA bilinguals' production skills are lower than the average for their age group, while their comprehension skills are higher than their age group average. Results from the experimental measures support the hypothesis that

IA bilinguals experience more pronounced language delays than IA monolinguals, more specifically in the realm of production.

Geren, et al. (2005) found correlations between MLU's of IA monolinguals and native-born monolinguals with similar vocabulary sizes, however this does not seem to be the case for the IA bilinguals, who showed differential MLU's compared to both monolingual and bilingual native-born children. Smaller percentages of noun production, particularly count nouns, compared native-born bilinguals and to the norm for their age equivalent, suggest that while IA bilinguals may not experience different paths of development, they may have a language delay specific to noun learning.

This is also suggested by a high proportion of pronoun production among the IA bilinguals; more specifically, it may be evident from the high proportion of demonstrative pronouns found in speaker E, who seems to demonstrate an even balance in proficiency among the two languages. This pattern is not observed in speaker A, however, it is likely that the child's French production may involve a similar amount, if not a larger amount, of pronouns, since the child's refusal to speak English during the English session likely reflected a lack of proficiency in the language. This imbalance in proficiency between French and English in speaker A may also explain why they do not show a higher proportion of demonstrative pronouns in their English; since this seems to be the child's dominant language, the child is more likely to have higher proficiency in object naming in English and thus have less need for pronouns.

Relating this phenomenon to similar difficulties in other types of language learners, it seems plausible that pronoun usage may serve as a type of code switching for IA monolinguals, who don't have the knowledge of the L1 with which to code switch, but who may experience delays in word learning. The concept originated with native-born bilingual children, who have been found to code switch, or combine constituents of both languages in one utterance when they do have not acquired the name in one language but have acquired it in the other. At the basic level code switching may be applied to the IA bilingual context, L1-L2 transfer, where a lack of L1 may result in the use of pronouns instead (Genesee, Nicoladis and Paradis, 1995).

The data thus suggest that IA bilinguals show more delays in MLU than do IA monolinguals, confirming the hypothesis that the combined effects of bilingualism and L1 attrition result in more severe consequences with regards to language development. What was more intriguing is the disproportionately large amount of pronouns in the IA bilinguals' speech; however a larger sample is needed to determine whether or not this is a phenomenon specific to speaker E, or if speaker A would demonstrate a similar use of pronouns in French.

Limitations on the present study include the number of utterances collected for native-born bilingual controls. The native-born bilingual data was included as a comparison group at the expense of reliability; these speakers' results may have been misleading, as neither produced a full 100 utterances among the transcripts. In addition, a balanced sample among IA bilinguals was necessary to determine whether differences between speaker E and A were due to the fact that speaker A was considerably less proficient in French.

The present study served as a preliminary account of IA bilinguals, a population that has not been studied to date that may provide great insight into the mechanisms and rate of language learning. The data suggest that this population may be particularly interesting in studying language transfer in bilinguals. This, in turn, may provide valuable information about the interaction between cognitive and language development, as these two factors

behave in a unique way among IA bilinguals. These data provide evidence supporting the hypothesis that IA bilinguals do not catch up to their native-born monolingual peers at the same rate as IA monolinguals. The main piece of evidence supporting this hypothesis comes from lower age equivalence in experimental production measures. In addition, these data show that IA bilinguals experience more severe language delays than IA monolinguals with regards to mean length of utterance and vocabulary distribution, particularly in the realm of noun naming.

REFERENCES

Bates E & J C Goodman. 1997. On the inseparability of grammar and the lexicon : evidence from acquisition, aphasia, and real-time processing. *Language and Cognitive Processing*. 12:507-584.

Dunn L, Thériault-Whalen C, & L Dunn. 1993. Échelle de vocabulaire en images Peabody: adaptation française du Peabody Picture Vocabulary test –Revised.

Fenson L, Marchman V, Thal D J, Dale P S, Reznick J S, & E Bates. 1993. MacArthur Communicative Development Inventories : User's Guide and Technical Manual. San Diego, CA: Singular.

Genesee F. (2003). Bilingualism and language impairment. In R D Kent, ed., *MIT encyclopedia of communication disorders*, 275-278. Cambridge, MA: MIT Press.

Genesee F, Nicoaldis E, & J Paradis. 1995. Language differentiation in early bilingual development. *Journal of Child Language*, 22:611-631.

Geren J, Snedeker J, & L Ax. 2005. Starting over: a preliminary study of early lexical and syntactic development in internationally adopted preschoolers. *Seminars in Speech and Language 26*:44-53.

Glennen, S. 2002. Language development and delay in internationally adopted infants and toddlers: a review. *American Journal of Speech-Language Pathology 11*:333-339.

Glennen, S. 2005. New arrivals: speech and language assessment for internationally adopted infants and toddlers within the first months home. *Seminars in Speech and Language 26*:10-21.

Johnston JR. 2001. An alternate MLU calculation: magnitude and variability effects. *Journal of Speech and Language Hear Res 44*:156-164.

Krakow R & Roberts J. 2003. Acquisition of English vocabulary by young Chinese adoptees. *Journal of Multilingual Communication Disorders*.169-176.

Tan T & Y Yang. 2005. Language development of Chinese adoptees 18-35 months old. *Early Childhood Research Quarterly 20*:57-68.

Thordardottir E. 2005. Early lexical and syntactic development in Quebec French and English: implications for cross-linguistic and bilingual assessment. *International Journal of Language & Communication Disorders* 243-277.