Early Language Development in Children Adopted from Ethiopia

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ABSTRACT

The number of children who are adopted internationally has been steadily increasing. However, there is a limited amount of research on how language typically develops in this population. This study followed 20 children under the age of 5 who were adopted from Ethiopia to North America. Longitudinal surveys, including the *MacArthur-Bates Communicative Development Inventories* (MCDI; Fenson et al., 2007), were used to record their language progression at 3 month intervals post adoption. Results were compared to those of children adopted from China and to norms for non-adopted peers. Children who were adopted at a younger age ($\leq$ 6 mos) showed similar language development patterns to their non-adopted peers. However, children who were adopted at an older age took longer than those adopted at a younger age to catch up to age norms. Ethiopian children who were adopted at a later age ($\geq$12 mos) showed a much steeper growth curve in their expressive language than children who were adopted at a younger age. Children adopted from China showed similar patterns of language development. This information is important for clinicians and parents to understand the unique language development of their children and what it means for communication.

INTRODUCTION

Children who were adopted internationally have become a group that is more prevalent in our multicultural, globalized society and are often referred for speech-language assessment and intervention. Their linguistic development has been termed "second first language learning" (DeGeer, 1992; Pollock, 2005; Roberts, Pollock, Krakow, Price, Fulmer & Wang, 2005) to describe the experience where these children are removed from their first (or birth) language, which they have begun to acquire, and are completely immersed in a new second language that they must learn immediately in order to function in their new environment. The

process of language attrition happens simultaneously with new linguistic growth. Second-first language learners share similarities with first language learners, as well as with second language learners. However, their language development may differ from that of non-adopted monolingual peers or second language learners (Geren et al., 2005). More research and information must be gathered in order to better understand the linguistic sequence of development and differentiate between typical and atypical development in second first language learners. This information will assist professionals working with children to identify who is in need of additional supports and services.

There are many different reasons behind international adoption; Roby et al. (2006) found civil war, poverty and disease as the main factors behind inter-country African adoptions, a last resort for the children whose needs cannot be met otherwise. The endurance of the African identity, as well as the individual character of each country in which adoptions take place, should be maintained in international adoptions if possible. This would provide the adopted child with a potential connection to his or her roots, culturally and linguistically, and may support the development in their new home.

The first (or birth) language is typically not fully developed at the time of adoption, and it is important to understand the impacts that this has on the learning of a second first language (Snedeker et al., 2007). In addition, children living in institutional settings prior to adoption may experience inadequate opportunities for social and language interaction, resulting in delays in their first language development (Glennen, 2002). This has important implications for speech-language pathologists, teachers, and other professionals that work with children who are adopted internationally, and are involved in determining who is in need of further assistance as these factors need to be considered during the assessment and evaluation process. It is

important that all people involved in the care of these children understand the differences between a second first language learner, their monolingual peers, and bilingual language learners.

Studies such as Kane (1993), Selman (2002), Lehland (2000) show an increase in inter-country adoption that has been occurring since the 1980s, with a sharp peak in 2004 (Selman 2009). However, since this time, international adoptions have declined. Previous studies of language development in children adopted internationally have primarily focused on children who have been adopted from China and Eastern Europe (Glennen & Masters, 2002; Hwa-Froelich et al., 2010; Krakow et al., 2005; Roberts et al., 2005; Snedeker et al., 2007; Tan & Yang, 2005). However, other countries have seen a sharp rise in adoptions while China and Eastern European adoptions have declined. In fact, Ethiopian adoptions experienced a dramatic increase from 2002 to 2010, and Ethiopia was one of the top 10 countries of origin for international adoptees during that time. This began even before Angelina Jolie adopted her daughter Zahara from Ethiopia in 2005, though the increasing trend was media-cized at this time. Within the United States, the number of Ethiopian adoptions has maintained the second highest in number since 2009, only below adoptions from China (U.S. Department of State, 2012). Within Canada, statistics are available only up to 2010 in which Ethiopia ranked fifth for the total number of adoptions which is down from third highest in 2008 and 2009 (Hilborn, n.d.). Ethiopia has provided a major source of children who are adopted to North America, and has been the second most frequent country of origin for adoptions to North America since 2009, with the number of adoptions from Ethiopia to the U.S. or Canada rising from under 400 in 2004 to over 2600 in 2010 (Hilborn, 2011; U.S. Department of State, 2012). In 2011, total number of Ethiopian adoptions began to show a decline, decreasing to 1732 in the United States. Canadian

adoption statistics for 2011 are not yet available. Both countries are expected to show a dramatic decline in 2012 as Ethiopia is putting in place more restrictive international adoption policies which will make the process longer and more expensive.

Ethiopia is a country that faces unrest and poverty. It is estimated that 39% of the population live below the poverty line, which is listed at less than $1.25USD per day (UNICEF). Nearly 5 million children in Ethiopia have been orphaned due to HIV/AIDS, tuberculosis, malaria, or other causes (Miller, Tseng, Tirella, Chan & Feig, 2008). Poverty in combination with death or illness of a parent or parents has been reported as the primary factor that influenced Ethiopian families to place their children for adoption (Reaper & Knox, 2009). Orphaned or relinquished children are placed in orphanages or foster homes, where the caregiver- to- child- ratios vary considerably, ranging from 1:3 to 1:15 (Reaper & Knox, 2009).

Miller et al. (2008) investigated how the health and development of children adopted from Ethiopia differed from children adopted from other countries. As the number of adoptions from Ethiopia have increased over the past few years, it is important to understand the pre-adoption information that may affect the development of these children and how it may differ from other countries. The information was obtained from the International Adoption Clinic which included 50 children aged 3 months to 15 years. It was found that children from Ethiopia had near average head circumference, height, and weight which was higher than children from other countries such as Guatemala and China. No information on maternal health during pregnancy was available for any of the children. As well, birth dates for 5 of the children were re-assessed and assigned due to developmental, physical, growth and radiological assessments. Pomerleau et al. (2005), found that 4 variables predicted more positive cognitive and motor outcomes: weight to height ratios, head circumference measures, younger adoption ages, and

absence of neurological symptoms. This appears to be a positive indicator for children who are adopted out of Ethiopia.

Language Development in Children Adopted Internationally

It is important to compare the language development of infants adopted internationally to toddlers adopted internationally in order to determine whether there are differences in their acquisition of English related to age at adoption. One such study focused on children adopted from China or Slavic-speaking countries (Snedeker, Geren & Shafto, 2012). Parental reports and speech samples were collected for one year. Unlike other studies, this study did not compare children who were adopted internationally to age-matched peers (Scott, Roberts & Glennen, 2011). It was found that social words and concrete nouns gave way to verbs, adjectives and function words as vocabulary increased in size. Sentence complexity logically increased as vocabulary grew, and more functors and adjectives were added into their lexicon. This pattern of development follows the same trend as non-adopted peers. The second-first language development of children adopted internationally has been the subject of several research studies in the past decade (see review by Scott, Roberts, & Glennen, 2011). Longitudinal studies of children adopted from Eastern Europe and China document relatively rapid acquisition of English vocabulary for most (e.g., Glennen & Masters, 2002; Pollock, 2005), and studies of preschoolers suggest that the vast majority have caught up to norms for non-adopted peers by two years post-adoption (e.g., Roberts et al., 2005). However, extensive variability has also been noted, and clearly some children adopted internationally struggle with language development and require support and intervention (Scott et al., 2011).

The large number of children who have been adopted internationally has raised the question of the best way to assess these children to get the full understanding of their abilities

and potential. Geren, Snedeker & Ax (2005) looked at the language development of preschoolers adopted from China to discuss the question of assessment and evaluation, and whether it is appropriate to do this in their birth language or in their newly acquired language. Initially, it is difficult to know which would be the most accurate representation of their ability, as their native language undergoes quick attrition and their second first language is still developing. It was found that the language development of children in this group, adopted from China, had a high correlation with the length of time the child had spent in North America. They note that it is important to look at length of residence (which also represents length of exposure to English) as well as the pace at which the child is still acquiring language, as this can help to determine if language acquisition appears typical. Geren et al. (2005) write, "A child who is behind her peers, but is acquiring language as fast or faster than the typical first-language learner, may simply need more time rather than treatment" (p. 51).

Age at adoption has been found to be an important factor in second first language acquisition, and there have been a number of studies that have looked into its impact (e.g., Krakow, Tao, & Roberts, 2005; Snedeker, Geren, & Shafto, 2012). It is important to consider that there are higher linguistic and communicative expectations for children at an older age, such as preschoolers, which influences the perception of their school readiness, and the presence or degree of delay. There have been longitudinal studies that have looked at infants and toddlers adopted internationally with a focus on atypical and typical language development (Glennen & Masters, 2002; Pollock, 2005). They found that children adopted at later ages showed a higher level of delay in their language development though they followed the same patterns of development as their non-adopted peers. In other words, children adopted at older ages had further to go to "catch up" to norms of non-adopted peers. The present study used the same

methodology as found in Pollock (2005), in order to be able to compare the data collected about children adopted from Ethiopia to children adopted from China.

It is important to remember that each child needs to be seen individually, holistically and have his or her unique experiences recognized. Pre-adoptive information is usually sparse if any information is known (Miller et al., 2008). Children from Ethiopia have a different adoption background and experience compared to children from other countries and it is yet unknown what implications this may have for their linguistic development. Birth language, length of time spent living with extended family before adoption, uncertain age upon arrival at the orphanage, and better growth rates contribute to the distinct experience of Ethiopian adoption. These differences and unique experiences show the necessity of more information to aid in the understanding of the development schema for children adopted internationally at all ages from different cultural and linguistic backgrounds. It is difficult to address the effect of country of origin on language development as most studies have only included one group, and there are differences in the methodology across studies. In this study we are able to make direct comparisons between children adopted from China and children adopted from Ethiopia as the same methodology was used in each study.

The present study followed 20 children who were adopted under the age of five from Ethiopia to North America. It is a continuation of the study begun by Knox and Reaper (2009), who reported preliminary results for the first 6 participants, and Basit and McLaren (2010), who provided continued results for those participants and added preliminary results from 14 new participants. The present study includes data from the final surveys for many of these children and provides the full set of results for all 20 participants. The methodology was the same as that by Pollock (2005). Results of the study were compared to those of the children adopted from

China reported in Pollock (2005, 2011), as well as to non-adopted peers (i.e., MCDI normative data). The purpose of the present study was to describe the pattern of second first language development in children adopted from Ethiopia, and to compare it to children adopted from China and to normative data from non-adopted peers. The effect of age at adoption was also addressed within this study, as there is a wide range of ages at adoption though in a small sample. This will contribute to the body of research in helping to determine the typical linguistic development pattern for children adopted internationally, and which children are in need of intervention services.

METHOD

Participants

Participants included 20 children (11 female and 9 male) who were adopted from Ethiopia between 4 and 37 months of age (M = 15½ months). An additional three participants began the study, but 1 dropped out after the first survey and the data from two more were not able to be used due to investigator error. Participants were divided into six subgroups based on age at adoption (Group A: <6 mos, Group B: 6-12 mos, Group C: 12-18 mos, Group D: 18-24 mos, Group E: 24-30 mos and Group F: >30 mos). There were unequal numbers of participants (from 1 to 5) in each subgroup. The number of months post-adoption at the time of the first survey ranged from 1 - 17 months with an average of 6 months. Demographic information can be found in Table 1. Details of recruitment procedures and additional background medical/developmental information are included in Knox & Reaper (2009) and Basit & MacLaren (2010).

The children entered their orphanages between the ages of one week to a couple of years. Eleven children also received foster care for a duration ranging from one week to a year. Prior to adoption, the majority of the children were exposed to Amharic as a primary language.

Sidharata, Sadamo, Kimbatta and Wolayta were also some participants' pre-adoption languages.

E13 had only been exposed to Kimbatta and E23 only Sidharata. The adoptive parents were all

from North America and mostly spoke English. In addition to English post-adoption, E2 was also

exposed to Jamaica Patois and E8 was exposed to a Pakistani dialect. E3, E11 and E20 each had

a parent who could speak French. For 7 of the 20 children, at least one parent reported that

they were learning their child's native Ethiopian language, but the majority of the children had

limited or no continued exposure to their native language.

Table 1

Participant Demographics

Subject	Sex	Adoption Age	Language Exposure Pre-Adoption	Language Exposure Post-Adoption	Ear Infections	Developmental Concerns	Parental Percept of Speech/Lang	Parent 1 Education	Parent 2 Education
E1	F	21m 1d	amh	eng	0	none		grad/prof	
E2	M	5m 29d	amh	eng, jama pat	7+	none	exceptional	some coll	
E3	F	4m 10d	amh, sid	eng, fre	3 or 4	none	no con	grad/prof	grad/prof
E4	M	28m 15d	amh, sad	eng	0	sleep, F motor	mild con	grad/prof	coll grad
E5	F	16m 7d	amh	eng	0	none	exceptional	coll grad	
E6	M	6m 8d	amh, sid	eng	3 or 4	none	exceptional	coll grad	
E7	F	16m 22d	amh	eng	0	none	exceptional	Grad/prof	some coll
E8	M	15m 23d	amh	eng, pak	1 or 2	attn, social, RAD	no con	grad/prof	
E9	F	6m 1d	amh	eng	0	none	no con	grad/prof	grad/prof
E11	F	5m 16d	amh	eng, fre	3 or 4	none	exceptional	grad/prof	coll grad
E12	F	18m 21d	amh, kamb	eng	7+	G/F motor	mild con	grad/prof	grad/prof
E13	F	18m 3d	kamb	eng	0	none	exceptional	grad/prof	coll grad
E16	F	11m 25d	amh	eng	0	feeding	no con	grad/prof	some coll
E17	M	14m 14d	amh	eng	0	none	no con	grad/prof	grad/prof
E19	F	20m 4d	amh	eng	0	attach, social	no con	grad/prof	grad/prof
E20	M	9m 12d	amh	eng, fre	1 or 2	feed, G/F motor	no con	grad/prof	grad/prof
E21	F	4m 14d		eng	1 or 2	None	no con	grad/prof	
E22	M	35m 16d	amh, wol	eng	0	feed, G motor	mild con	grad/prof	coll grad
E23	M	15m 6 d	sid	eng	0	attach	no con	grad/prof	grad/prof
E24	M	37m 1 d	amh, wol	eng	0	none	no con	grad/prof	grad/prof

Legend (alphabetically): amh=amharic, attach=attachment, attn=attention, coll. grad=college graduate, con=concerns, eng=english , F motor =fine motor, fre=french, G/F motor=gross/fine motor delay, grad/prof=graduate/professional degree, jama pat=jamaica patois, kamb=kambaata, pak=pakistani dialect, RAD=reactive attachment disorder, sad=sadamo, sec. grad=secondary school graduate, sid=sidama, sleep=sleeping, SD=social developmental delay, some coll=some college, wol=wolaytta

Procedures

This study used the same methodology as Pollock's (2005) longitudinal study of children adopted from China in order to facilitate comparison across studies. Parents completed a parent questionnaire (adapted from Pollock, 2005) and the *MacArthur-Bates Communicative Development Inventories* (*MCDI;* Fenson et al., 2007) every 3 months for at least one year or until their child reached the ceiling on the MCDI measures or around 4 years of age. However, participants joined and exited the study at different times, and thus there was a wide range in terms of the number of surveys completed for each child (range = 2 to 11, mean = 5).

The parent questionnaire included sections on background information, developmental history, and medical history. This information was reviewed and updated as needed by parents at subsequent 3 month survey time points.

In addition to the *Language Development Survey*, the parents were asked to complete the MCDI (Fenson, et al., 2007). This is a parent report checklist which looks at vocabulary and lexical development of children. It is standardized and norm-referenced for children from 8 to 30 months of age. It includes two forms based on the child's developmental level: the *Words and Gestures* form for infants or children producing primarily single word utterances and the *Words and Sentences* form for toddlers or children producing word combinations and sentences. The *Words and Gestures* form includes yes/no questions (e.g. does the child respond to his/her name) and a checklist of common English words and phrases. The number of vocabulary words that the child understands and/or produces is counted. *Words and Gestures* also looks at the number/type of gestures that the child uses. *Words and Sentences* provides a checklist of words produced and looks at the child's use of grammatical forms such as

past tense and mean length of the child's 3 longest sentences (ML3). Parents started with

Words and Sentences if their child had more than 6 months exposure to English or was able to

combine words, otherwise they started with *Words and Gestures*. They switched from *Words*

and Gestures to *Words and Sentences* when the child reached a production vocabulary of

approximately 30 words.

RESULTS

The three dependent measures used to analyze the children's language development

were the number of words produced (WP), the number of words understood (WU) and the

mean length of the three longest sentences produced (ML3). Data for all three measures and all

age-at-adoption subgroups were graphed by the children's number of months post-adoption

and by approximate chronological age. For the measures based on chronological age, MCDI

norms for the 10th, 25th, 50th, 75th and 90th percentiles were included for comparison. Data

were also compared to similar data for children adopted from China (Pollock, 2005).

Words Produced

In order to quantify the child's expressive language development, the number of words

produced was recorded for each MCDI survey. This was based on the number of vocabulary

items that the parents identified as being part of their child's spoken repertoire. The number of

words produced was the only measure that was found in both the *Words and Gestures* and

Words and Sentences form. Therefore, it was the only measure that could be used to compare
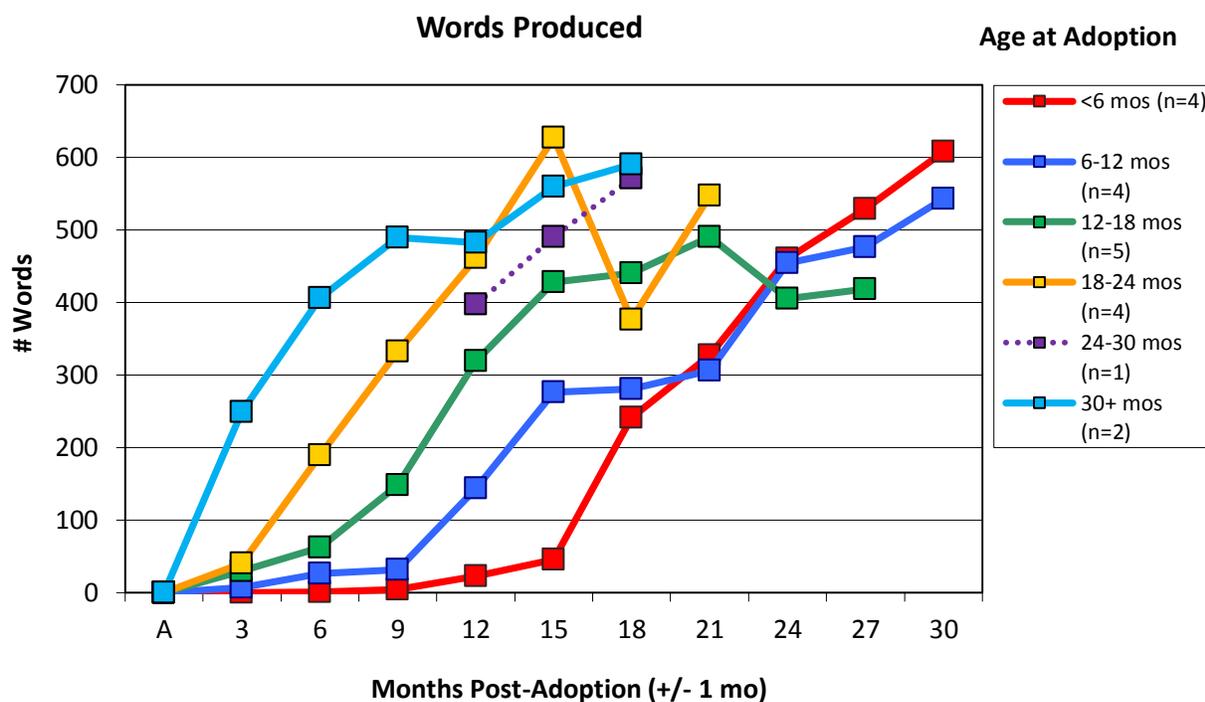
language development across all time points.

Words Produced

Figure 1: MCDI Words Produced by Months Post-Adoption

Figure 1 represents the number of words produced by months post-adoption. "A" represents the time of adoption, at which time none of the children produced any English words. The 24-30 mos age at adoption category has been depicted with a dotted line to indicate that that age group has only one child in it. Children in the two youngest age at adoption categories (<6 mos & 6-12 mos) followed a very similar trend, both showing relatively slower growth initially, followed by a rapid increase at 15 and 9 months post-adoption. In contrast, the children adopted at an older age displayed faster growth in the early months post-adoption. As such, these participants in the older age groups (≥12 mos) produced more words at fewer months post-adoption. For example, children who were adopted between 6 and 12 months of age were producing on average about 145 words at 12 months post-adoption, compared to the older groups who produced between 400 and 500 words at the same time

post-adoption. The two children who were adopted at 30 months of age or older (oldest group)

produced the most words on average for nearly every time period post-adoption.
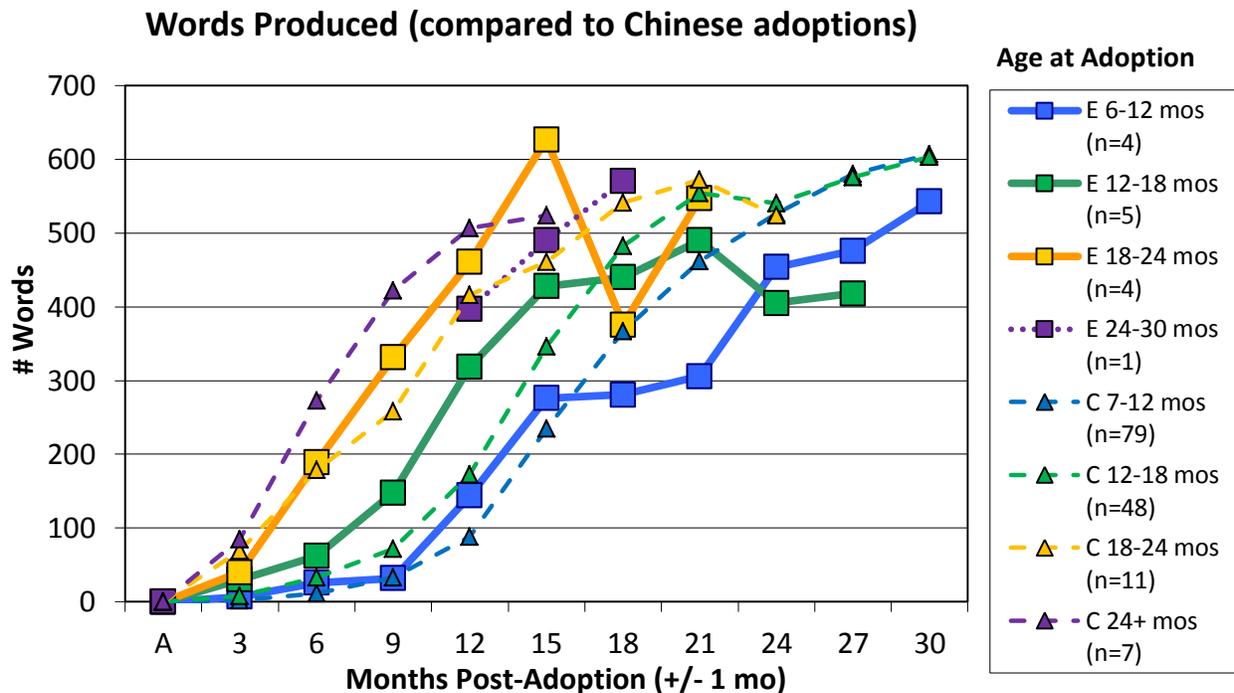

Figure 2: MCDI Words Produced by Months Post-Adoption compared to Chinese adoptions

Figure 2 illustrates the same data as Figure 1, with the additional data from Chinese

adoptions shown as a comparison. The youngest and oldest age at adoption categories for

Ethiopia (<6 mos & 30+ mos) have been removed as there were no comparison groups for these

ages among the Chinese participants. Due to the limited number of participants in each age

group for Ethiopia, it was not possible to make statistical comparisons between the Ethiopian

and Chinese groups. However, similar trends in expressive language growth are seen between

children adopted from Ethiopia and those adopted from China. For both groups, children who

were adopted at an older age produced more words at the same time post-adoption than those
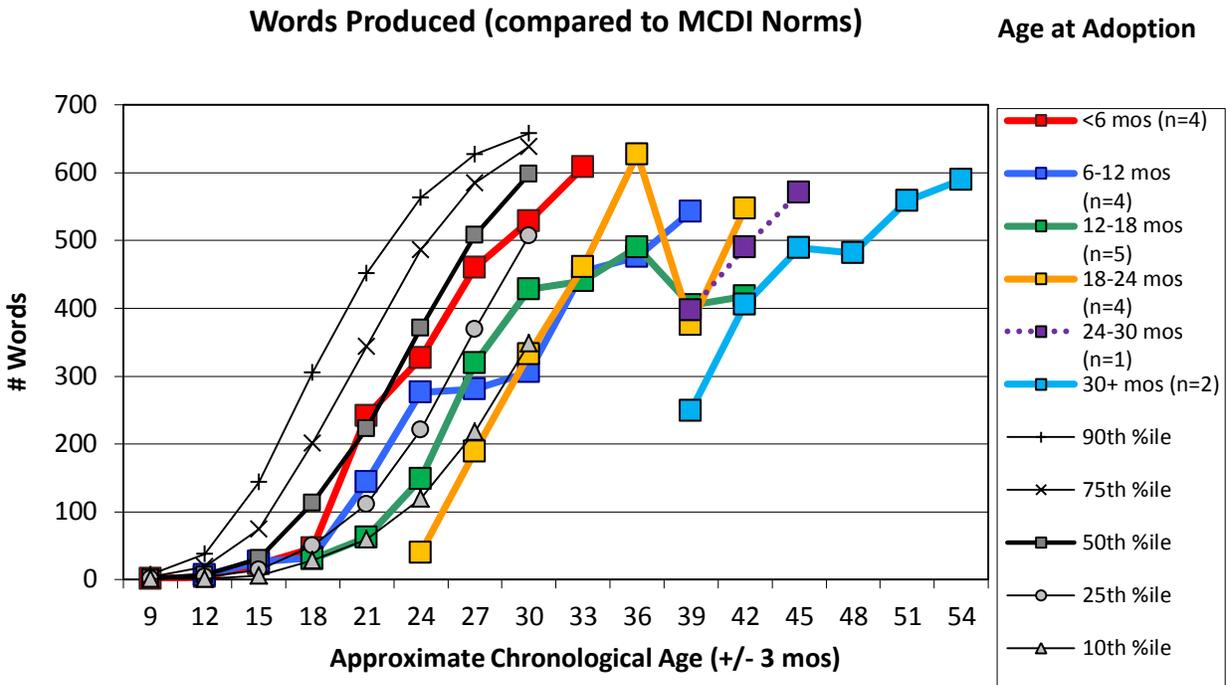
adopted at a younger age.

Figure 3: MCDI Words Produced by Chronological Age compared to MCDI Norms

Figure 3 depicts the number of words produced by approximate chronological age.

MCDI norms for the 10th, 25th, 50th, 75th and 90th percentiles are also shown as a reference.

Based on this graph, we can see that all subgroups fall at or below the 50th percentile when

compared to their non-adopted peers. The youngest age at adoption category (<6 mos) is fairly

consistent with the 50th percentile in their expressive language growth. The 6-12 month age at

adoption category is similar to the 25th percentile, until about 27 months of age, and the 12-18

month category follows the 10th percentile until about 33 months of age, when they both fall

below. The 18-24 month age group is close to the 10th percentile until about 39 months of age,

when it falls below. The two oldest age at adoption categories (24-30 mos, 30+ mos) cannot be

compared to the norms as the children were adopted at an age beyond the limits of the

normative data. As such, the expressive language development of the children adopted from

Ethiopia at the youngest age (<6 mos) seems to most closely match that of their non-adopted peers. However, given the very rapid growth seen in the older adoption age subgroups, it is very possible that they will eventually catch up to their peers.

Words Understood

The number of words understood was used to measure receptive vocabulary. However, it was only included on the *Words and Gestures* form so this measure was not obtained for all participants or at all post-adoption time periods. Therefore, this measure focuses more on the earlier surveys. For each vocabulary word, parents had the option of selecting whether the child could understand the word or produce and understand the word.
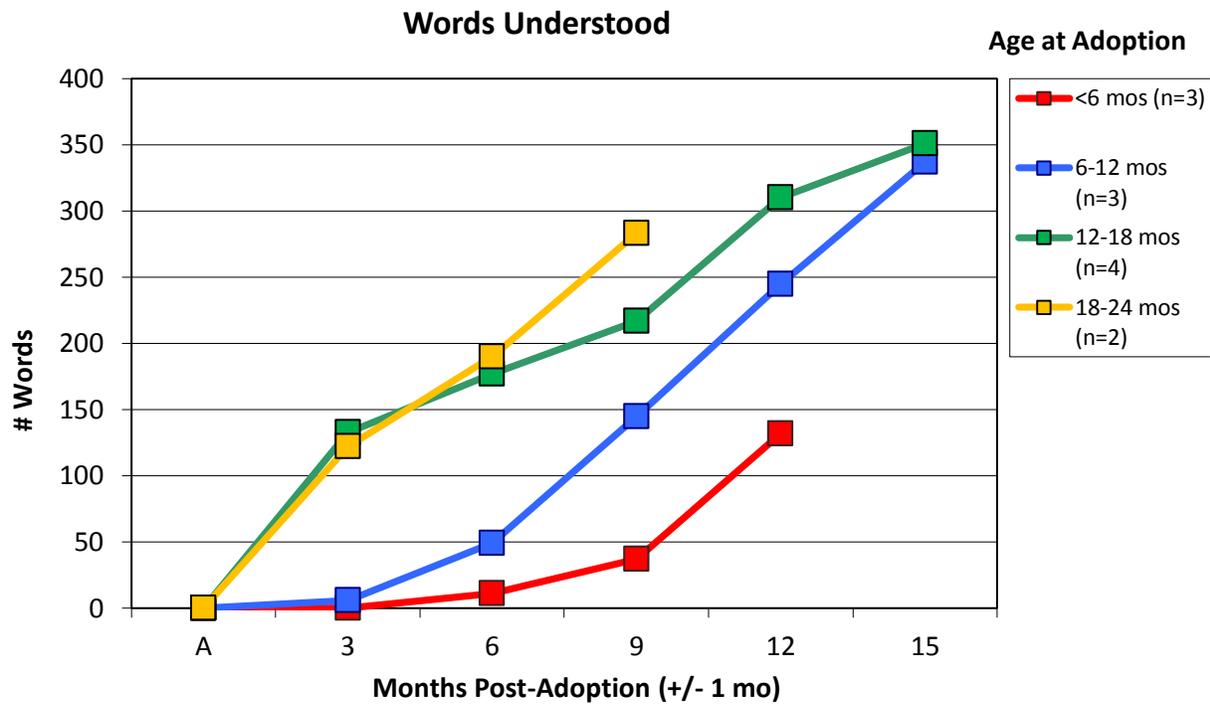

Figure 4: MCDI Words Understood by Months Post-Adoption

Figure 4 represents the number of words understood (but not produced) in relation to months post-adoption. The participants who were older at the time of adoption (12-18 mos &

18-24 mos) showed the fastest growth in their receptive language abilities overall. While these two groups understood about 185 words at 6 months post-adoption, the 6-12 months age at adoption subgroup understood 50 words, and the youngest group (<6 mos at time of adoption) understood about 10 words.
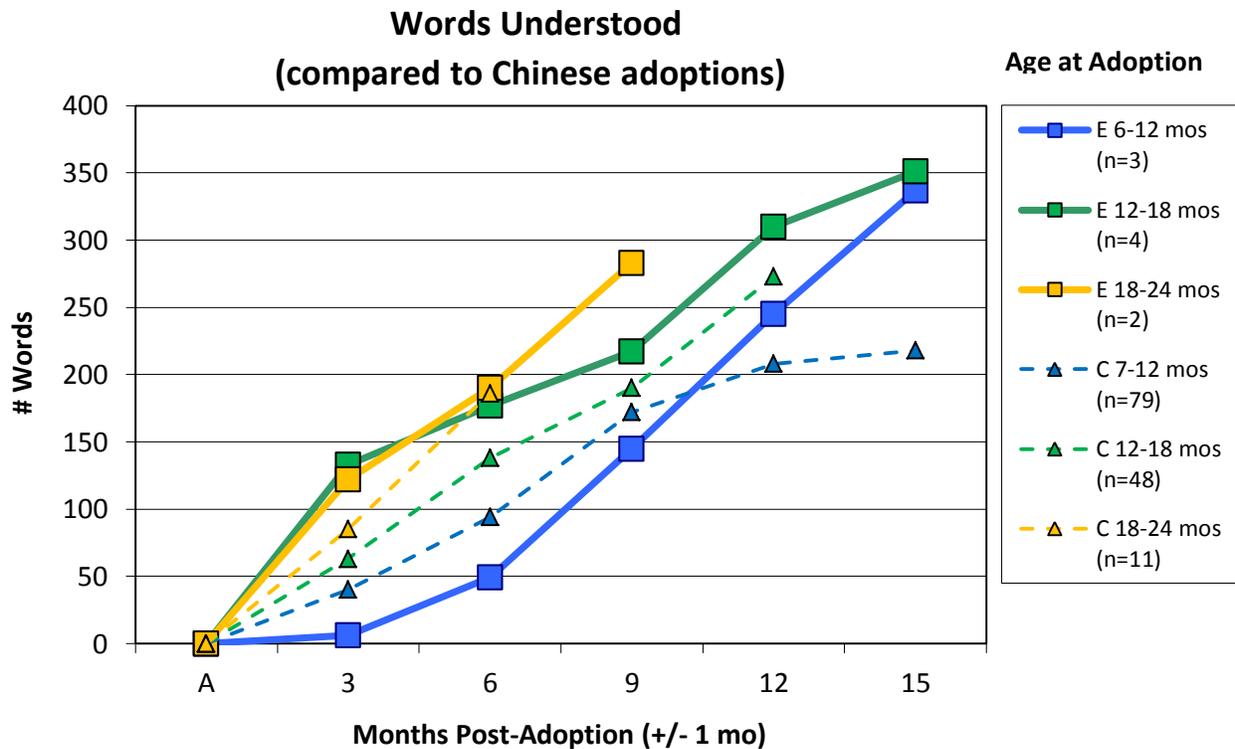
Words Understood
(compared to Chinese adoptions)

Figure 5: MCDI Words Understood by Months Post-Adoption compared to Chinese adoptions

Figure 5 illustrates the same data as Figure 4, with the additional data from Chinese adoptions shown as a comparison. The youngest age at adoption group (<6 mos) has been removed as it had no comparison group among the Chinese participants. Both Ethiopian and Chinese adoptions show the same basic trend in receptive language growth. Children adopted at an older age understood more words at the same time post-adoption than those adopted at

a younger age. Again, given the small number of participants adopted from Ethiopia, statistical comparisons were not possible.
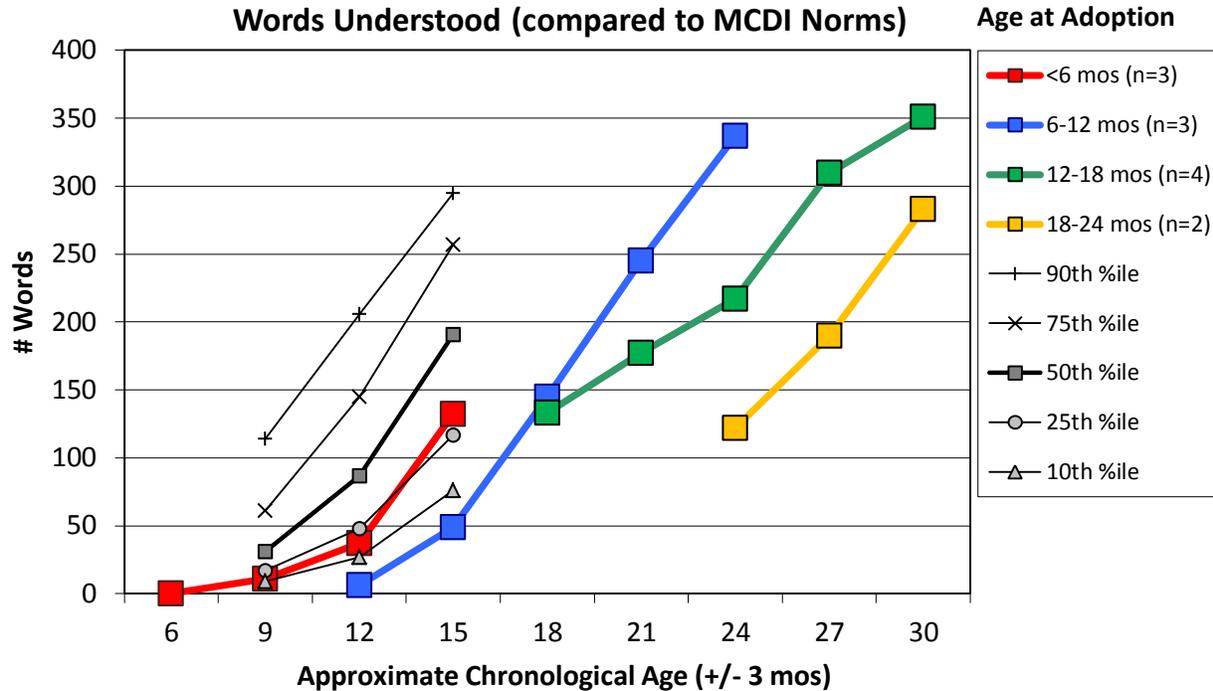

Figure 6: MCDI Words Understood by Chronological Age compared to MCDI norms

Figure 6 depicts the number of words understood by chronological age. MCDI norms for the 10th, 25th, 50th, 75th and 90th percentiles were added as a reference. As seen in the graph, all of the different age at adoption categories fall below the 50th percentile in receptive language abilities when compared to their non-adopted peers. The receptive language growth of the children who were adopted at the youngest age (<6 mos) closely resembles that of the 25th percentile. The 6-12 months age at adoption category falls just below the 10th percentile, and it is difficult to compare the two oldest age groups, as they were adopted at an age that is beyond the limits of the normative data. Although the receptive language development of children adopted at a young age (<6 mos) most closely matches that of their non-adopted

peers, those adopted at an older age show rapid growth and the ability to catch up to their peers.

Mean Length of Three Longest Sentences

For each *Words and Sentences* survey, the parents were asked to report three examples of the longest sentences that their child had produced. The length was determined by counting the number of morphemes and taking the average of the three sentences.
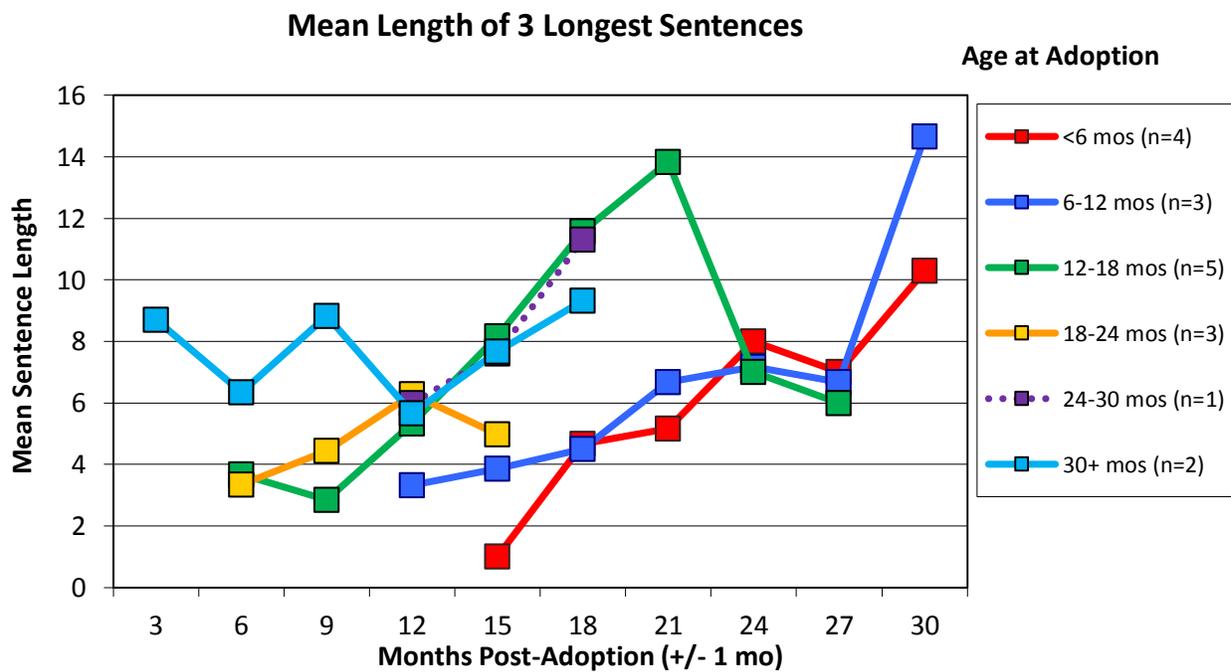
Mean Length of 3 Longest Sentences

Figure 7: MCDI Mean Length of Utterance by Months Post-Adoption

Figure 7 illustrates the average length of a child's three longest sentences in relation to number of months post-adoption. A very general trend that can be seen is that the children who were adopted at an older age tend to produce longer sentences than those adopted at a younger age. For instance, the two participants in the oldest age at adoption category (30+ mos) have a score of 8 at 15 months post-adoption, whereas the four participants in the

youngest category (<6 mos) have a score of 1 at 15 months post-adoption. Although the data

for the two oldest groups ends at 18 months post-adoption, it seems as if the gap is starting to

narrow as time goes on. The two youngest age at adoption categories (<6 mos, 6-12 mos)

behave similarly, as do the two oldest age at adoption categories (24-30 mos, 30+ mos).

However, the 12-18 month age at adoption category shows an unusual peak from 15 to 21

months post-adoption, due in part to one particularly verbal child who produced long conjoined
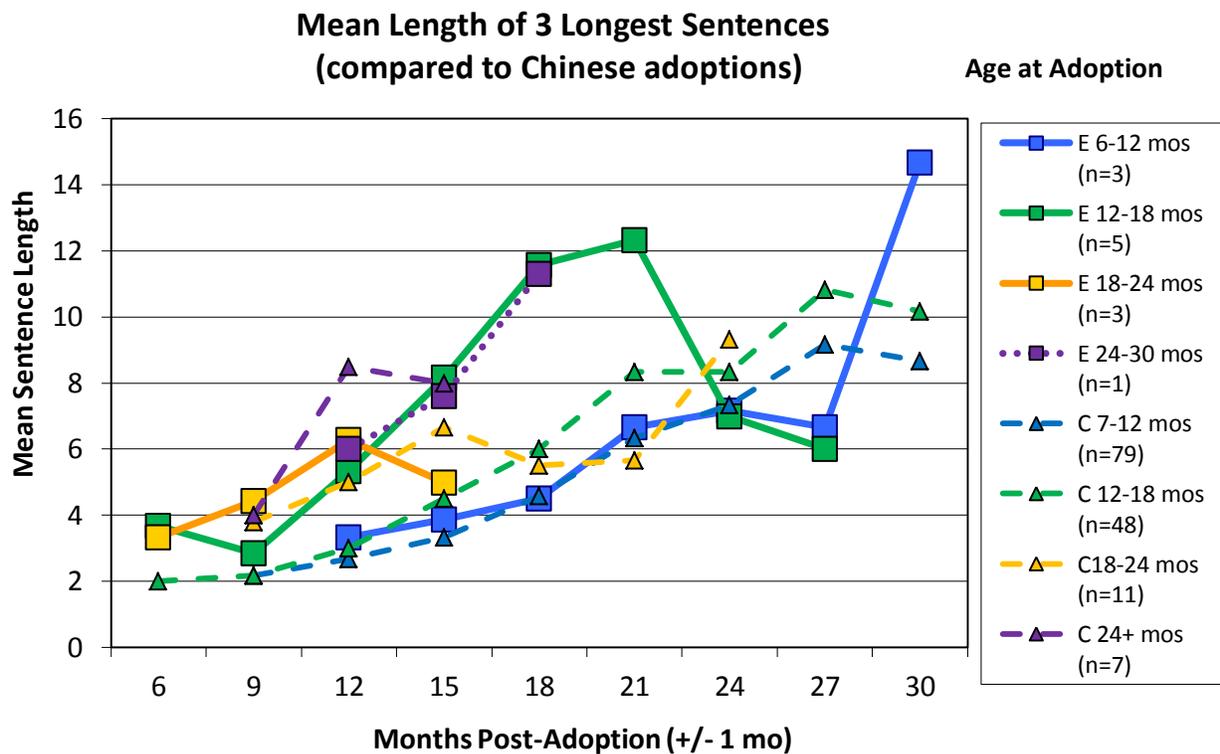
utterances.

Figure 8: MCDI Mean Length of Utterance by Months Post-Adoption compared to Chinese adoptions

Figure 8 represents the same data as Figure 7, with the additional data from Chinese

adoptions shown as a comparison. The Chinese data shows the same basic trend as the

Ethiopian data, that children adopted at an older age produce longer sentences than those

adopted at a younger age. However, due to the greater number of Chinese participants, there is

less variation in the data.

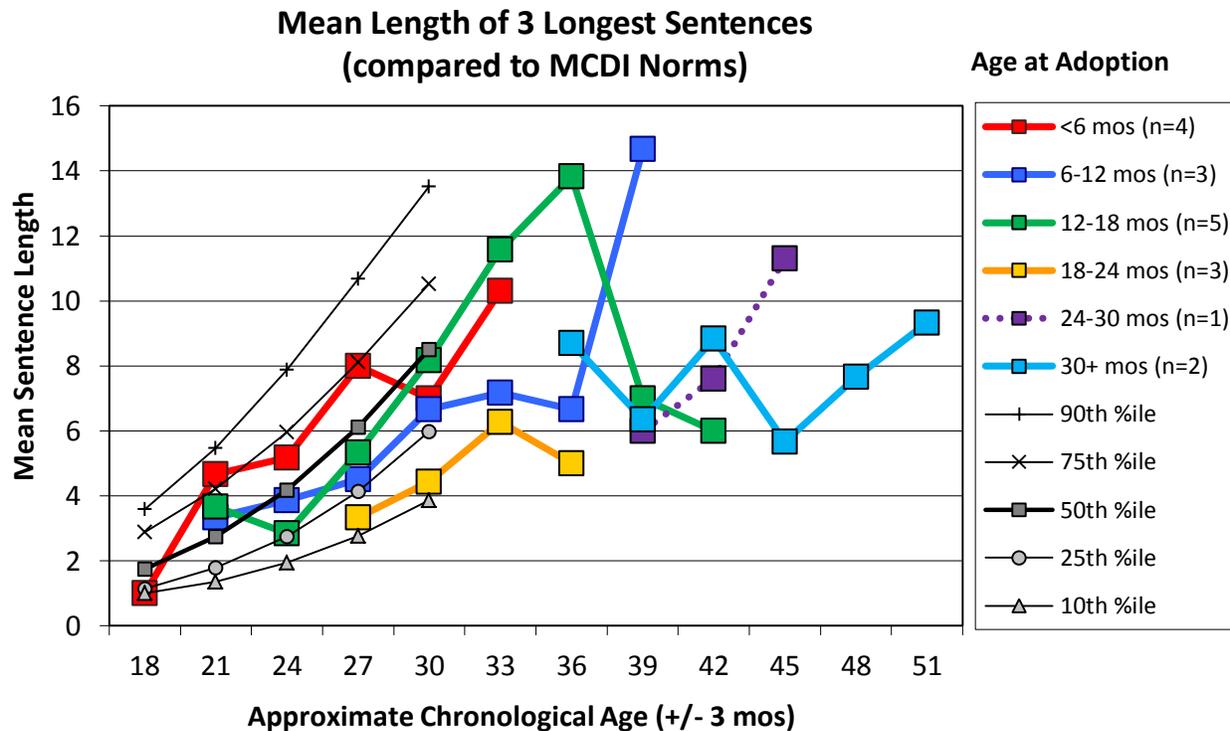**Mean Length of 3 Longest Sentences
(compared to MCDI Norms)**

Figure 9: MCDI Mean Length of Utterance by Chronological Age compared to MCDI norms

Figure 9 depicts the average length of a child's three longest sentences in relation to

chronological age. MCDI norms for the 10th, 25th, 50th, 75th and 90th percentiles are shown

as a reference. The youngest age at adoption category (<6 mos) falls in between the 50th and

75th percentile, and the next two groups (6-12 mos, 12-18 mos) fall in between the 25th and

50th percentiles. The 18-24 month age at adoption category is between the 10th and 25th

percentile for language development when compared to the norms. The two oldest age at

adoption categories (24-30 mos, 30+ mos) cannot be compared to the norms as the children

were adopted beyond the limits of the normative data. The language development of the

children adopted from Ethiopia at the youngest age (<6 mos) is the closest match to that of their non-adopted peers.

DISCUSSION

The purpose of this study was to analyze whether there are particular patterns of language development that exist for children who are adopted from Ethiopia, and to look at these patterns of development in comparison to data that have been collected from another prominent country of origin (i.e., China) as well as normative data from non-adopted peers. There is a lack of knowledge concerning whether information about the language development of children adopted internationally can be generalized across countries of origin due to the varying pre-adoption conditions, political environment, and economical status in the birth country. The effect that these factors have on adoptees is important to know, particularly with the increasing Ethiopian adoptions in recent years.

Previous studies of English language development in children adopted from China (e.g., Pollock, 2005) and Eastern Europe (e.g., Glennen & Masters, 2002) found that children who were adopted at an older age had a faster rate of vocabulary growth and they produced longer utterances. This development trend was also seen within the participants in the current study. Ethiopian children who were adopted at a later age (≥12 mos) showed a much steeper growth curve in their expressive language than children who were adopted at a younger age. It logically follows that children who have had an increased level of language exposure, even if not their "second first language," would have established some linguistic skills that would help them to acquire another language without the time required of younger children who have not had the same level of language experience. These older children have cognitive skills that have

developed throughout this prior exposure, and help them understand the purpose and use of language. Children who have been adopted before they have this knowledge would need to learn their "second first language" in a similar way to which first language learners would acquire language.

It is important to recognize that children who are adopted at a later age also have much further to go to catch up to their age-matched peers. This pattern of development can be seen on the graphs which display the normed values from the MCDI for words produced as well as the mean length of the 3 longest sentences (Figure 3, Figure 8). This same trend is observed for words understood (Figure 6), as children who were adopted at a later age (e.g. 18-24 months) showed a sharp increase in the words that they are seen to comprehend in comparison to children who were adopted at an earlier age (e.g. <6 months). However, the remainder of the age groups (those adopted <18 months) are found at low percentiles on the MCDI, as the difference in their language development, in comparison to their monolingual peers, decreases slightly. When the age at adoption is ≤6 months, the children adopted from Ethiopia near the 50th percentile and more closely resemble the normative data for age-matched peers.

This same trend of producing a higher number of words in a short amount of time post-adoption was seen for children who were adopted from China at a later age (≥12 mos). Children adopted at a younger age, while they still experienced a delay in word acquisition, displayed a trend more closely resembling their age-matched peers and required less time to narrow the distance in their language performance. This similarity of growth patterns between China and Ethiopia serves as a good indication that there may be certain consistencies across development that exist for children adopted internationally from different countries.

There are many risk factors that have been studied to determine if there is an impact on the development of children adopted internationally. These factors include length of institutionalization or other accommodations. One factor that appears to be unique to the Ethiopian adoption situation is the higher proportion of children who experience alternative options to institutionalization. Over half of the children in the study (11 participants) received foster care prior to adoption, while the remaining 9 participants spent time within an orphanage. This is a high proportion of children who experience an alternative environment to institutionalization which has been shown to have negative emotional and linguistic implications (Glennen, 2009). The pre-adoption circumstances in Ethiopia have a high level of children who remain in foster care or in the care of extended family prior to adoption and may result in less negative emotional consequences that could impact the children's development (Miller et al., 2008).

Miller et al. (2008) examined 50 children adopted from Ethiopia into the United States and found that growth *z scores* were near average (weight -.59, height -.64, head circumference -.09), and that these children had higher scores than children adopted from China, Guatemala, and Russia from the clinic. The authors of the study speculated that this may have been a result of less time spent in institutional care, and more time spent in foster care or with extended family. The data do suggest that children adopted from Ethiopia, on average, do not appear to experience significant physical developmental delays, and this study provides some important comparison values for general physical development with which, with statistical analysis, the children within the present study could be compared.

Limitations

It is important to note that there are a few limitations to this study, particularly the small number of participants as, consequently, fewer participants lends to increased variability in results. Also, the parents who adopted the children from Ethiopia had high levels of education, as 14/20 participant families had received some college education, graduated college, or completed a graduate program. This has a large impact on the socioeconomic status of the families, and in addition could impact the amount and type of language exposure and interaction that the children experience (Hart & Risley, 1995; Hoff, 2006). However, it is important to note that the normative sample from the MCDI also had very high levels of education when compared with the general population. Finally, when looking at the comparison data between children adopted from Ethiopia and children adopted from China, it is important to recognize that most of the children adopted from China were female while the children adopted from Ethiopia were more evenly distributed across the sexes.

Clinical Implications

All children learn language the same way – through exposure to speech and communication in meaningful interactions, and within daily routines. With the rise in international adoptions, particularly with Ethiopia, there is a need to look at how the "second first language" learning takes place, and what it means for these children's language and communication. Speech-language pathologists are meant to incorporate the concept of evidence-based practice into all of the decisions that are made in regards to clients. As there is very little information available specifically in regards to language development in children adopted from Ethiopia, it is important that additional research is done in order to establish

normative information on this unique population of children adopted internationally to know the best way to provide support and determine services.

As shown, there is a particular pattern that exists in the language development of children adopted internationally that is strongly impacted by age at adoption, and provides important information on the development trend of these children. The pattern follows that of typically developing children, but "lags behind." However, the steadily increasing numbers, for example in the school system, present the difficulty of determining who is in need of direct intervention, and who is experiencing a delay that will resolve in time with language exposure and practice. An increase in resources and information would allow teachers and other professionals to know what is typical and atypical development for this particular population as these children face a discontinuation of exposure and development of their first language and must begin the acquisition process once again with a novel language. These data would assist professionals in knowing whether the individual would benefit from specific language intervention, as there is very little objective evidence available (Glennen & Masters, 2002).

The results of this study support the research that is available which says that children who are adopted internationally follow similar trends to non-adopted peers, but "lag behind." In this regard, it would be beneficial to know if there were consistent and common needs, delays or difficulties that were present within a particular population of internationally adopted children, such as those adopted from Ethiopia.

Future Directions

It is important that future research continues to look at children adopted from Ethiopia and other countries. Recruiting more participants across the range of adoption age sub-groups

will further show the importance of having norms that are specific for children adopted

internationally and their unique trajectory of language development. As well, following up with

the children in the study once they have reached school-age would provide valuable

information on the long-term effects of "second first language learning," and its implications for

academic learning and school readiness.

As there were a number of children in this study who exceeded the age range for the

MCDI norms, finding another method to appropriately assess their language abilities would

provide rich and integral information for understanding and following the development of these

children at later ages. Additional studies that would incorporate age-matched control groups to

compare the language abilities of children adopted from Ethiopia would allow more direct

comparison of language development. It could be that children who are adopted internationally

are not clinically delayed or behind in development, even though their performance may appear

to have consistent similarities to children who have difficulties with speech and language that

require intervention by a speech-language pathologist. Unfortunately, the methods by which

these children could be appropriately and fairly assessed across these two different populations

have not yet been determined. It is important that there are more studies to contribute to a

better understanding of what is seen as typical and atypical and how this performance can be

accurately assessed. As Glennen (2005) writes, "The problem is how to determine a true

language delay or disorder when there is no proficient language to assess." It is an amazing

achievement to be learning an unfamiliar language, and the challenges that accompany this

need to be recognized and considered when assessing children adopted internationally. In

addition, being able to differentiate between differences due to rate of language acquisition or

disorder would be valuable as speech-language pathologists often have very limited time availability and a heavy caseload. Having normative data, particularly from extensive longitudinal studies, would aid in realistic expectations for when these children should "catch-up" to non-adopted peers, and in the collaborative decision-making between professionals for those individuals for whom intervention is warranted.

REFERENCES

Basit, E. & McLaren, B. (2010). Longitudinal Survey of Language Acquisition in Children

Adopted from Ethiopia & India. 2010. *University of Alberta Research Projects.*

DeGeer, B. (1992). *Internationally adopted children in communication : a developmental study*.

Lund: Lund University, Department of Linguistics.

Fenson, L., Marchman, V., Thal, D., Dale, P., Bates, E., & Reznick, J.S. (2007). *MacArthur-

Bates Communicative Development Inventories* (2nd Ed.). Brookes Publishing Co.

Geren, J., Snedeker, J., & Ax, L. (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., & Masters, M. G. (2002). Typical and Atypical Language Development in Infants

and Toddlers Adopted From Eastern Europe. *American Journal of Speech Language

Patholog*y, *11*, 417-433.

Glennen, S. (2009). Speech and language guidelines for children adopted from abroad at older

ages. *Topics in Language Disorders, 29(1),* 50-64*.*

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(1), 10-21.

Hart, B. & Risley, T. (1995). *Meaningful differences in the everyday experience of young

American children*. Baltimore: P.H. Brookes.

Hilborn, R. (2011). Ethiopia puts the lid on international adoption. Retrieved from

http://www.familyhelper.net/news/110317ethiopia.html

Hilborn, R. (n.d.). International Statistics for Canada. Retrieved from

http://www.familyhelper.net/news/stats.html

Hoff, E. (2006). How social contexts support and shape language development. *Developmental*

Review, 26(1), 55-88.

Hwa-Froelich D.A. & Matsuo, H. (2010). Communication development and differences in

children adopted from China and Eastern Europe. *Language, Speech & Hearing Services*

in Schools, 41(3), 349-66.

Kane, S. (1993). The Movement of Children for International Adoption: An Epidemiological

Perspective. *Social Science Journal, 30(4),* 323-39.

Krakow, R.A., Tao, S., & Roberts, J. (2005). Adoption age effects on English language

acquisition: Infants and toddlers from China. *Seminars in Speech and Language, 26*, 10-

21.

Lehland, K. (2000). *Crude Adoption Rates for Receiving Countries in 1998*. Oslow, Norway:

Adopsjonforum.

Miller, L., Tseng, B., Tirella, L., Chan, W. & Feig, E. (2008). Health of Children Adopted from

Ethiopia. *Maternal and Child Health Journal, 12*, 599-605.

Pollock, K. E. (2005). Early language growth in children adopted from China: Preliminary

normative data. *Seminars in Speech and Language*, 26(1), 22-32.

Pomerleau, A., Malcuit, G., Chicoine, J.F., Seguin, R., Belhumeur, C., Germain, P., Amyot, I.,

& Jeliu, G. (2005). Health Status, Cognitive and Motor Development of Young Children

Adopted from China, East Asia, and Russia Across the First 6 Months after Adoption. *International Journal of Behavioural Development, 29(5),* 445-457.

Reaper, S. & Knox, S. (2008). Longitudinal Survey of Language Acquisition in Children Adopted from Ethiopia. 2008. *University of Alberta Research Projects.*

Roberts, J.A., Pollock, K.E., Krakow, R., Price, J., Fulmer, K.C. & Wang, P. P. (2005). Language development in preschool-age children adopted from China. *Journal of Speech, Language, and Hearing Research*, 48, 93-107.

Roby, J.L. & Shaw, S.A. (2006). The African Orphan Crisis and Internal Adoption. *Social Work, 51(3),* 199-210.

Scott, K.A., Roberts, J.A. & Glennen, S. (2011). How Well Do Children Who Are Internationally Adopted Acquire Language? A Meta-Analysis. *Journal of Speech, Language and Hearing Research, 54,* 1153-1169.

Selman, P. (2002). Intercountry Adoption in the New Millenium. *Population Research and Policy Review, 21(3),* 205-225.

Selman, P. (2009). The Rise and Fall of Intercountry Adoption in the 21st Century. *International Social Work, 52(5),* 575-594.

Snedeker, J., Geren, J. & Shafto, C.L. (2007). Starting Over: International Adoption as a Natural Experiment in Language Development. [missing rest of reference}

Snedeker, J., Geren, J. & Shafto, C.L. (2012). Disentangling the effects of cognitive development and linguistic expertise: A longitudinal study of the acquisition of English in internationally-adopted children. *Cognitive Psychology, 65,* 39-76.

Tan, T., & Yang, Y. (2005). Language development of Chinese adoptees 18-35 months old.

   Early Childhood Research Quarterly, 20, 57-68.

U.S. Department of State. (2012). Statistics. Retrieved from

   http://adoption.state.gov/about_us/statistics.php

UNICEF. (2003). Ethiopia Statistics. Retrieved from

   http://www.unicef.org/infobycountry/ethiopia_statistics.html#92