Language Acquisition Patterns of a Bilingual Child: A Psycholinguistic Approach

Dr. Niruba Sarath Jayasundara
Senior Lecturer in Linguistics, Department of Languages and Communication Studies, Trincomalee Campus, Eastern University Sri Lanka
Email: niruba2371@gmail.com
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Abstract: The aim of this study is to explore the extent to which the bilingual acquisition research plays a major part in bilingual acquisition theories. This study reports the language development of a bilingual child from a Tamil and English language speaking home from the first vocal sound to the holophrastic stage. It elaborates how in each stage the child develops her bilinguality in both comprehension and production. The study was carried out by maintaining the proper records of the child’s utterances in the form of ‘diary’ and digital recording and the traditional method of phonetic transcription was used to record utterances. The research method applied in this study is longitudinal and naturalistic observational sampling in nature, as most of the early bilingual researchers apply. The results of this study reveals contrary to the myth in bilingual language acquisition both the skills of comprehension and production in one language is always dominant, parallel and equal than the other language at a given time. This study falsifies the myth the comprehension skill is more dominant in one language (English) than the other language (Tamil), and at the same time production is vice versa (more dominant in Tamil than English). This case study reveals that the skills of comprehension and production are not language oriented but the accessibility of child, based on language choice.

Index Terms—language acquisition, bilingual acquisition, language development, holophrase

1 Introduction

Language acquisition is the study of the development of a person’s language, refers to the way people learn their native, first, second or other languages. More specifically, it may refer to the time a language feature has been acquired. This may vary from the first emergence or onset of a language item to the time of its accurate use. As a field of study, it is the subject of linguistics, psychology, and applied linguistics. Its objects is to study (1) how languages are learned, (2) what are the development stages in this process, and (3) what is the nature of language. To find answers to these questions, researchers apply longitudinal and cross sectional methods. In the first of these they study the specific development in the language of individuals and group over a period of time. In the second they research a particular feature in the language of a group at a given point in time.

1.1 First language acquisition

First language acquisition is the child’s learning of his or her first or native language. Traditionally and especially in monolingual societies, the first and native language were used synonymously. With the expansion of cross-cultural communication the two terms become more distinct. Children may acquire some knowledge of another language from a nurse or a relative before they acquire their native language, e.g. the language of the country they live in. Thus, a Chinese child born in the United States may first learn Chinese
from his or her parents, and learn English later from English speaking children and adults. To avoid the confusion arising from the use of ‘first’ and ‘native’, another term, ‘primary’ is sometimes used to indicate a child’s first language chronologically.

1.1.1 First Language Acquisition and the Language Acquisition device

Noam Chomsky’s work aroused interest in the way the children learn their first language. He believes that children are born with the ability to learn a language, i.e. they are born with a ‘language acquisition device’. The latter is species-specific/only for human, language specific /only for their first or native language, and innate/only inborn. He also claims that this ability is unconscious and children learn their native language by exposure to it and by using it, and not by being taught or corrected. He argues that as children acquire their native language, they are able to produce sentences that they have never heard before.

1.2 Bilingual Acquisition

Bilingual first language acquisition is defined as the parallel acquisition of two languages, which is, supposedly evenly paced process. Children growing up exposed to two or more languages acquire each of them in much the same way as monolinguals. Bilingual acquisition during childhood can thus be regarded as an instance of simultaneous acquisition of two ‘first’ languages. In fact, if children are exposed to more than two languages simultaneously, they are able to acquire full competence of each that does not substantially differ from the speaking ability of monolinguals; bilingualism is therefore a special case of multilingualism.

Comparison with monolinguals is one of the main issues in research on bilingual acquisition. It can be extended to all types of acquisition where more than one language is learned, independently of age of onset and proficiency attained in each language. The present research, however, is limited to child bilingualism. Whether types of bilingual acquisition should, in fact be distinguished according to the age of onset of learning (‘bilingualism’ vs ‘foreign language learning’) depends ultimately on the results obtained in these comparisons. Given our current state of knowledge, it is plausible to assume that age of onset is a crucial factor causing fundamental differences between child and adult language acquisition. Consequently, it is necessary to distinguish between simultaneous and successive acquisition of bilingualism. ‘Simultaneous’ acquisition does not necessarily imply that the child has been exposed to both languages from birth, although this interpretation has occasionally been suggested. The controversial issue here is the age range during which changes occur, which result in qualitative differences between first and second language acquisition. Although sufficient evidence is not yet available, the period around three years of age appears to be of particular significance. The most widely accepted view is that one may qualify as ‘simultaneous’ those instances of bilingual acquisition where the child is exposed to two languages before the age of three. In this case, each language of the bilingual is predicted to share crucial similarities with that of the respective monolingual speakers but to exhibit differences in comparison with languages learned at the later age.

2. Literature Review

Studies on language acquisition began at the end of nineteenth century and those who carried out these studies were mostly parents observing the language development of their children maintaining ‘diaries’ of their utterances. In the meantime psychologists, showed their interest in the study of the process of language acquisition. A psychologist studies the phenomenon of language acquisition as part of their investigation of the child’s total growth and development. Language is considered by many of the psychologists as an important model of behavior and they feel that “the study of the process whereby children learn to speak and understand language holds the key to many fundamental problems of behavior” (Carrol 1986). The acquisition of language by children has also attracted the attention of linguists and psychologists who have made great contribution to the field.
Fortunately, a very large body of literature is found on language acquisition or child language right from the period of ‘parental diaries’ to the present time.

After Werner Leopold’s assertion in the late 1940s that ‘child language and infant bilingualism have so far only received marginal consideration from most linguistic scholars’ (Leopold 1948), there was, initially a slow but steady growth in research on child language. Since the cognitive revolution of the 1960’s an explosion of research on child language acquisition has taken place. However, in this growth, research on bilingual children has taken a back seat to the study of monolingual children. Romaine (1989) and many others have observed that the research on child language is predominantly devoted to the monolingual child and that too, to English. This neglect of bilingual children is readily evident just from the sheer number of studies devoted to this topic in comparison with those of monolingual children. One estimate is that out of about six hundred studies devoted to the child language acquisition, only about ten works deal systematically with the bilingual child.

There are number of reasons for this neglect, but the following two are noteworthy: first, the view has predominated that the phenomena of bilingualism are, in general, highly complex and therefore the study await the satisfactory development of a theory of monolingual language acquisition. In other words, a better understanding of monolingualism is the key to an understanding of bilingualism in general, and the bilingual child in particular. Second, there are fundamental conceptual problems with bilingualism including the definition and measurement of the phenomenon. Therefore, as the argument goes, it is not wise to invest time and energy in the study of the bilingual child. In spite of these apparent obstacles, there is currently a renewed interest in childhood bilingualism. The main reasons for this new and encouraging development fall into two categories; theoretical and applied. As regard the theoretical reasons, the interest in the theory of grammars in contact and in universal grammar have grown rapidly in recent times, thus changing the nature of research on childhood bilingualism which was predominantly descriptive as recently as the early 1990’s. Applied reasons deal mostly with the effects of bilingualism on language development, socio political aspects of educational practices and changing perspective on global and minority communities.

The most important and the most aged early study of bilingual language acquisition is the detailed work by Leopold (1939-49), a German linguist living in the United States, consisting of four volumes.it is the study of the speech development of Leopold’s own daughter Hildegard from her birth to the age for two years. Hildegard was acquiring both English and German simultaneously; Leopold’s work mostly deals with Hildegard’s acquisition of English.

Meisel (1992) presented his findings from a longitudinal study of two children. Both children were learning French and German growing up in middle class families in Humburg, Germany, at the time of the study. The study focuses on their speech patterns during the early period of acquisition (1.4 to 3.0). The male subject appears to be French dominant initially, whereas the female subject was to begin with balance language input from the French and German. However, after, the age 2.6 German began to be dominant in her case.

Early researchers assumed that very young bilinguals had a single abstract system joining their two languages. But an in-depth study in 1990 of a Dutch English bilingual child provided evidence such children develop two systems. This study by De Huwer showed that children regularly exposed to two languages from birth according to the ‘one parent, one language principle develop two morpho-syntactic systems’. Also her study showed that the grammatical development of one language does not have any fundamental effect on the development of the other. That is, once children are at the one word stage and beyond, research shows they have two systems, not one.
Until this time opinion followed by Volterra and Taescher (1978) and others claim that the child has a three stage model of acquisition, moving from one lexical system, to two such system but one set of syntactic rules, to finally two separate languages. Researchers spoke of ‘fusion’ of the child’s two grammatical systems. But, as De Huwer (2005) points out, the ‘fusion’ or ‘hybrid’ did not offer an explanation of how children eventually manage to differentiate their languages. Those researchers who argue that the child’s two language systems are fused have to come up with an explanation for how they eventually become divided.

As the 1990’s began, a number of studies had just appeared or were appearing with extensive data supporting De Huwer’s research (e.g. Deuchar and Quay 2001; Genesee et.al.1995; Lanza 1997; Meisel 1989 ). Her separate Development Hypothesis basically states that very young bilinguals employ two separate grammatical systems, one for each language, when they speak their two languages.

Studies show many differences in how the young simultaneous bilingual uses his or her two languages. At one extreme, child may use language A for many multi clause utterances and use language B only for single words. Other children do a good deal of code switching. Studies are mixed in regard to how much parents or caretakers input seem to influence children in their preference for one language. The case study of Siri, a child being raised in Norway as Norwegian – English bilingual, is an example of studies that support the notion of switching languages is not just a matter of filling lexical gaps. Lanza (1997) argues that not just parental language choices matter, but also their discourse strategies matter, too. Lanza studied Siri from about the age of one year, 11 months to two years 7 months. The American mother and Norwegian father claimed to practice ‘one language, one parent”, although the father had spoken English to the child up to age 10 months. Overall, Siri received more outside exposure to Norwegian than English. Her mother was her only regular source of English and she was exposed to her mother’s bilingual identity, because when they went for shopping, mother spoke Norwegian.

While Siri produces English content words with either English or Norwegian grammatical elements, she only produces Norwegian content words with Norwegian grammatical elements. Lanza states that this indicates the prevalence of a Norwegian grammatical frame. Siri’s discourse style included a good deal of switching while her parents maintained their ‘one language one parent style’.

Another study that seems to show the effects of parental input dealt with four Japanese English preschool bilingual boys whose production of the minority language (Japanese) increased (Kasuuya 1998). The children were raised with the ‘one parent, one language’ pattern but they lived in an environment in which they were exposed to English more than Japanese (they were raised in the United States). In fact, generally they were exposed to Japanese only at home still the parents wanted the children to retain Japanese, so the parents always spoke Japanese to the children, even though the parents were bilingual.

Three results from this study about the effect of parental language choice are noteworthy. First there was a relation between what the parent spoke to the child and the language in which they responded. Second the children whose overall use of Japanese during the course of study come from the families in which the parents used the most Japanese to the children. Third, the child who got the least Japanese in both absolute relative terms was showing the lowest relative use of Japanese compared to the other children.

The findings of several diary studies and other studies of bilingual child language acquisition e.g. (Burling 1959; Leopold 1939-1949 ) and other reveal that with a change in input conditions, bilingual children can retrieve one language and fail to retrieve another in terms of at least linguistic performance i.e. they can either ‘ turn off’ or ‘ turn on’ one of their language. If the conditions for turning on of one language and turning off of the other are prolonged, one language may progress and the other language may regress or delay to the extent that the child might experience total language loss at least at the performance level.
3. Present Study

3.1 Aim of the present study

The present study aims to investigate the language acquisition patterns of a bilingual child from birth to 1.6 years.

3.1.1 Methodology

The present study follows a longitudinal research method i.e. the data was collected on a regular schedule at predetermined times according to the stages in acquisition process. From birth onwards the child was observed by the researcher and the language data/samples were recorded by keeping a written diary and a tape recorded forms.

As for the data collection, systematic diary of the child language acquisition was maintained. Since her birth regular tape recordings were also made on child’s spontaneous speech from the time of her first word. The recordings were made at regular intervals. The average duration of the recording was 10 minutes. Details concerning the speech context, interlocutors, child’s gestures and pointing were noted down as carefully as possible for each utterance spoken by the child.

Besides collecting such samples of spontaneous speech, data were also elicited. Such elicitations were made possible by encouraging the child to respond to particular stimuli by naming, pointing, and answering questions etc. All such data were phonemically transcribed and analyzed.

4. Data analysis and discussion

Nothing can make a parent prouder than a child’s first word. We all recognize the first word as a major milestone in the child’s development, a clear token of the child’s entrance into a fuller membership in human society.

For many parents, a child’s first words, uttered around 1 year of age, mark the first real evidence of language development; the child has ‘started to talk’. But this is to ignore a great deal of early progress during the first year, without which no first word would emerge at all. Between birth and 12 months, a vast change takes place in a baby’s sound producing abilities, and several stages of development have been proposed.

The study reported in the following sections traces the language development of the child from a Tamil and English speaking home, from the first vocal sound and to the holophrastic stage. The child’s bilinguality was consciously helped on the “mixed language principle” according to which parents spoke to the child in both languages. Her grandmother and aunt who spent most of the time with her had spoken in both languages. The other caretakers and neighbors spoke to her in Tamil only. The child had an opportunity to spend a considerable time playing with her Tamil and English speaking friends in the apartment.

Right from the very beginning i.e. since her birth, the study was carried out by maintaining the proper record of her utterances in the form of a ‘diary; and tape record and the traditional method of phonemic transcription was used to record utterances.

4.1. Early Vocalizations

4.1.1. Stage I: Basic Biological Noises
The first vocal response Madhu made was, like other infants, her “birth cry”. A baby’s vocal sounds, over the first few weeks of life, reflect its biological stage and activities. The reflexive noises of crying and fussing reflects the stages of hunger, pain, thirst, or discomfort. A wide range of vegetative noises, such as sucking, swallowing, coughing, and burping also appears in this stage. Although, her crying was simple monotonous response, through this she had established a contact with the people around her. After a couple of months she developed ‘cooing’

4.1.2. Stage II: Cooing and Laughing

Between 6 and 8 weeks, the first cooing sounds are produced generally when the baby is in a settled state. If refers to the production of non-crying sounds. These sounds develop alongside crying, gradually becoming more varied, as the child responds to the mothers smile and speech. They are quieter, lower pitched and more musical than crying, usually consisting of a short vowel like sound preceded by a consonant like sound. Many have nasal quality.

During the period, madhu’s vocalizations mainly consisted of the following;

i. Non-nasalized short vowel sounds .such as a, u, e, i
ii. Nasalized long vowels, such as ì:, ā:, ē:, ũ:
iii. Short vowels /a/ and /u/ combined with /m/ or /mm/ such as ‘am’, ‘amm’, ‘um’, or ‘umm’ with continuous flow of air stream through the nasal cavity.

4.1.3. Stage III: Vocal Play

The sounds appear in this period are much steadier and longer than those of cooing. Most segments consist of consonant plus vowel like sequences, which are frequently repeated, prolonged over one second. Usually they are high pitched and involve wide glides from high to low. A considerable range of consonants and vowel qualities is apparent including nasal and fricative sounds. Individual differences are there, in the order of emergence of these sounds. Several changes are also noticeable during this period. On some days nasal sounds may be dominant sounds; on other days it may be labial. In due course, the sounds combine into longer sequences to produce the first babbled sounds.

4.1.4 Stage IV: Babbling

In the early part of this period, babbling is not much varied of vocal play. A smaller set of sounds is used with greater frequency and stability, to produce sequences known as reduplicated babbling. The consonant which Madu produced first is /m/ the bilabial nasal, then occurred another consonant /t/. The consonants /m/ and /t/ were uttered forming syllables, such as “ma”, “ba”, “mama”, “tata”. Sometimes same syllable was repeated many a times to produce reduplicated sounds such as “mamamama or tatatata etc. The other consonants she uttered during the babbling period were /n/, /p/, /b/, /d/ /g/, /kl. She had developed the habit of repeating these sounds in reduplicating patterns like “nana”, “papa”, “baba”, “dede”, “dada”.

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About half way through the period, this developed into variegated babbling, in which consonants and vowels change from one syllable to the next such as “ada”, “ida”, “iba”, “ipa”. The rhythm of the utterances and the syllable length at this point are much closer to that found in speech.

It was found that her babbling sounds were remarkably distinguished from the random vocalizations of early period and it was very easy to segment them into pieces consisting of syllables. It was also found that though babbled utterances seems to have no meaning, and serve no communicative function, but some resembled her first meaningful words of the holophrastic stage. It is an evidence to show that there is ‘continuity’ between the child’s babbling and later speech (Clark and Clark 1977).

At this stage of language acquisition, the child was imagined to be trying out every possible sound in a random manner and that babbling would stop before speech began. Recent studies have shown that this view does not hold. In many cases, babbling continues long after speech begins, sometimes as late as 18 months. In Madhu’s case also it is proved that she continues to babble like “blablablabla” at the month of 14.

Janda and Hamel (1982) however regard babbling as “necessary step in language development”. David Ingram (1989) is of view that babbling occurs because the child is innately disposed or programmed to babble. According to him “there are two inner drives behind babbling, one the drive is to express oneself, the other drive is to socialize with others”.

The brain seems to be controlling the development of babbling and early speech in a similar way, so that a set of well-practiced sounds is available for use at the time when children become intellectually capable of using sound for the communication of meaning.

<table>
<thead>
<tr>
<th>Period</th>
<th>Sound Uttered</th>
<th>Utterances</th>
</tr>
</thead>
</table>
| Crying   | Comfort and discomfort sounds | a) ū:, ē:, ã:, ũ: (all nasalized and lengthened)  
b) “am”, “um”, “umm” (with continuous flow of the air stream through the nasal cavity) |
| Cooing   | Vowels:  
a, i, u (short)  
ū:, ē:, ĩ:, ũ: (long)  
Consonants:  
m (occurring only with a preceding vowel) | Stage I  
a) “ma”, “mama”, “mamamama”, “mamamamamama” etc.  
b) “ta”, “tata”, “tatata” “tatatatata” etc  
c) “ba”, “kaka”, “nana” etc. (reduplicated syllables) |
| Babbling | Vowels:  
a, e, i, u  
Consonants:  
m, p, b (bilabial)  
n, t, d (alveolar)  
k, g (velar) |                                                                                   |
4.1.5 Stage V: Single or One Word/ Holophrastic

The period between twelve and sixteen months during which children normally begin to comprehend words and produce single unit utterances, is usually referred to as one word stage. Benedict (1979) shows that the gap between comprehension and production is usually very great at this time, a child may be able to understand about a hundred words before it begins to produce words. At this stage, the child’s utterances do not show any structural properties, and their meanings appear to be primarily functional.

At around 16-18 months, single word utterances seem to begin to reflect semantic categories such as Agent Action and Objects (Ingram 1989) though it is difficult to assign precise adult meaning to the child’s utterances even though the non-linguistic context often helps. For instance while adult may interpret /nanni/ ‘water’ to mean ‘it is water’ or ‘I want water’ or ‘give me water’. It is questionable whether it is justifiable to assign such translations; how can we know whether the child has the exact concepts which the adult interpretations imply? What does seem obvious however is that the child at this stage is doing more than just naming the objects, actions etc. Therefore many researchers prefer to call this stage as holophrastic stage.

The term “holophrastic” comes from the “holophrase” which is defined as follows “when a single word stands for a phrase or sentence, it is referred to as holophrase (Jinda and Hamel 1982). A holophrase (hologo which means complete) is a one word utterance which is used to give the complete sense of a sentence.

Many children at the one word and holophrastic stages have a tendency towards over extension: having learnt, perhaps, the word ball to refer to a ball, the child may use ball to refer to other round objects (Braun Wald, 1978). The range of reference of a child’s word is called its associative complex and it is usually determined by such perceptual features as shape, size, sound, movement, taste, and texture (E.Clark 1973). It is likely that a child overextends because it’s vocabulary is limited, i.e. if it is presented with a new object it will refer to it by a word it already known for something which resembles a new object, just as adults tend to do (Ingram, 1989). Some over extension is exclusively productive, i.e. a child may be able to pick out the appropriate object in response to motor cycle, bike, truck, and plane but refer to them all as car in production (Rescorla 1980). This may be because the child has difficulty in retrieving the correct word (Chapman 1977; Rescorla 1980).

In case of Madhu, holophrastic speech occurred sometime around the age of 10 months and the meaningful word she first uttered was “amma” (mother). The next word Madhu uttered was ma:ma (uncle). This was actually the combination of two syllables ma+ma lengthening the vowel in the first syllable. The only addition made was the lengthening. Otherwise this utterance had been babbled around the sixth month of her age. Some other words Madhu uttered were “ nanni” (water), “mi:mi:ya” (fish), “pu:si” (powder/cream), “baba” (baby), “ta:ta” (grandfather), “da:da” (dog) “ba:” (come), ko: (crow), “bo” (ball), “do” (doll), “ba:y” (bye bye), “ki:” (key), “alla” (hello/phone) “pu:” (flower) “ma:mi” (god), “mu:” (moon), “pappu” (milk), “ka:y” (leg), “ka:” (car), etc. These words represented food items, household objects, birds, toys, kinship terms and actions.

Some of these words are constantly repeated by her mother, the caretakers, and the people around her in specific contents and meaningfully imitated by the child. These are characterized by two types of linguistic peculiarities.
5. Findings and Discussions

A close study of the recorded vocabulary items (sample of data) in different ages reveals the following facts

1. The following new consonants and vowels added for both English and Tamil to her repertoire of sounds
   a. Consonants tʃ, n, v,x
   b. Vowel: /æ/,/o/
2. Words begin and end with vowels and consonants
3. The verbal forms also begin to appeared
4. Consonantal germination also appeared
5. Adverb of negation also forms the part of vocabulary

The findings show substantial increase in the vocabulary of the child from the age of 1.0 in both languages. The findings also show that it is not only that comprehension precedes production but there are also substantial difference between comprehension and production. The most widely accepted assumption that children comprehend language more than they produce it.

In this case study, it was observed that responses to gestures and response to saying goodbye occurred at the age of 0.9, but she didn’t utter her first word until she was 10 months of age. Many studies of language development mentioned by Mc Cathy (1946) suggest that a child’s first word appears at about one year of age.

Table 2 Madhu’s Tamil Vocabulary at Different Age Periods

<table>
<thead>
<tr>
<th>Age</th>
<th>Production Number of words</th>
<th>Comprehension Number of words</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>0.9</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>0.10</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>1.0</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>1.1</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>1.3</td>
<td>11</td>
<td>28</td>
</tr>
<tr>
<td>1.6</td>
<td>21</td>
<td>37</td>
</tr>
</tbody>
</table>

Table 2 Madhu’s English vocabulary at different age periods

<table>
<thead>
<tr>
<th>Age</th>
<th>Production Number of words</th>
<th>Comprehension Number of words</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>
6. Conclusion

The results of this study reveals contrary to the myth in bilingual language acquisition both the skills of comprehension and production in one language is always dominant, parallel and equal than the other language at a given time. This study falsify the myth the comprehension skill is more dominant in one language (English) than the other language (Tamil), and at the same time production is more dominant in Tamil than English. This case study reveals that the skills of comprehension and production are not language oriented but the accessibility of child, based on language choice.

REFERENCES

AUTHORS
First Author – Dr.Niruba Sarath Jayasundara Senior Lecturer in Linguistics, Department of Languages and Communication Studies, Trincomalee Campus, Eastern University Sri Lanka. niruba2371@gmail.com