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The differences in the receptive and productive vocabulary size of a bilingual boy speaking English and Turkish

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Abstract

A lot of children in the world today acquire one language as their mother tongue and afterwards learn another language. However there are also quite a number of children who are acquiring two or more languages at the same time during their early childhood because of being raised in a bilingual family or society. Since bilingualism brings advantages to the child's future development, understanding how a bilingual child acquires the lexicon becomes a question of interest. As De Houwer (1990) suggests, children who receive primary input in each language from different interlocutors (such as a mother, father or siblings) may acquire different lexical repertoires in each language because different people talk about different things. Thus this study aimed to examine, assess and describe the sources of the differences in the receptive and productive vocabulary size of a bilingual boy in English and Turkish. The Peabody Picture Vocabulary Test III (PPVT) by Dunn & Dunn (1997) was used as a tool in measuring a bilingual boy's (3;10) productive and receptive vocabulary. The results suggested that the child performed better in English than Turkish. He produced 96% correct vocabulary in English whereas the number declined to 67% in Turkish. However the child's receptive vocabulary was almost equal in both languages. The study revealed that the frequency of exposure and differences in context cause differences in vocabulary size of a bilingual child.

Keywords: Bilingualism; Child Language; Lexicon; English; Turkish

1. Introduction

The views about the development of bilingualism in early childhood can be divided into two groups: simultaneous bilingualism and sequential bilingualism. If a child is exposed to two languages beginning at birth, it is called simultaneous acquisition. In this case, bilingual children acquire two languages as if they were monolinguals. It can also be labeled as bilingual first language acquisition (Meisel, 2007). De Houwer (1999), Genesee and Nicoladis (2006) claim that one of the most important features that separate simultaneous acquisition of two languages from sequential acquisition is that children are exposed to two languages simultaneously from birth to the
age of four according to the one parent-one language rule. The Unitary Language System Hypothesis is taken as a basis in the simultaneous acquisition of two languages. According to this hypothesis, children exposed to two languages simultaneously use their languages as if they were a single system, in terms of phonology, lexicon, syntax, and pragmatics until the age of three. After the age of three, children start to use languages in their own systems by separating both language systems (Garau et al., 2000).

2. Review of Literature

In this brief study, a bilingual child is assessed on his vocabulary development in both of his languages. As earlier stated, bilingualism in children can be classified in different ways. Children acquiring two languages before the age of 3;0, usually from birth, are referred to as simultaneous bilinguals, having two first languages. When children start learning a second language after the age of 3;0 when the first language has already been partly established, they are called sequential bilinguals (Genesee, Paradis, & Crago, 2004).

These terms can also be linked to a categorization in relation to language competence. Simultaneous bilinguals are assumed to develop into balanced bilinguals, where their competence is roughly similar in both languages. On the other hand, sequential bilinguals are assumed to become dominant bilinguals, where one of the two languages is dominant. However, research has shown that both young simultaneous and sequential bilingual children are generally more proficient in one language than the other. The dominant language tends to be the language in which they have received the most amount of input (Genesee et al., 2004).

Research by Pearson, Fernandez, Lewedge & Oller (1997) among Spanish-English bilingual infants suggested that at least 20% of exposure time devoted to one language is needed to build up an active lexicon, while 40-60% exposure to each language is required to form a balanced bilingual vocabulary growth.

Nevertheless, the amount of input is not the only factor that influences the language development of a bilingual child. Research has shown that other factors, including language aptitude, typology of the first language, age of acquisition, parent education, and quality of input, can also have effects on the rate and success in bilingual language acquisition. A study was conducted by Paradis (2010) to find out which combination of these factors predicts the development of vocabulary size and verb morphology in early English second language acquisition, whether certain factors change in early or later stages of acquisition and whether the same factors predict lexical and morphological acquisition.

The children in Paradis’ study were divided into two groups: early stage (< 18 months exposure to English) and later stage (> 18 months exposure to English). A multiple regression analysis was conducted within each group for vocabulary and morphology scores separately. According to the results of the study, it was found that children's internal factors both for vocabulary and verb morphology are strong predictors in the early stage group, whereas the children's external factors, such as the richness of the English environment, are strong predictors for both aspects in the later stage group.

The distinctions between different kinds of bilingual development can also be categorized cognitively into ‘compound’ and ‘coordinate bilinguals’. This classification is especially of interest when looking at the vocabulary development of bilingual children because it addresses the question of whether bilinguals have two different representations for one word or concept, or if they have a shared representation for one concept. The answer to this question can be provided by investigating whether a bilingual child acquires one language system or two separate language systems. According to Clark’s principle of contrast (Pearson, Fernández & Oller, 1995) children assume that each word form must have a different meaning. This means that they use the word form for a referent of the language in which they first learned the concept. This principle would apply until children have acquired 150 words.

However, there is also evidence that young bilingual children already use crosslinguistic equivalents before this 150 word threshold. Moreover, the fact that they use a word in one language but not in the other could also point to the fact that the word is not present in the input of one language. Pearson et al. (1995) found that in about 30% of all concepts known by a bilingual child there was a translation equivalent, which means the word was produced in both languages. This was the case both for children with a vocabulary of 2-12 words as well as children with a vocabulary up to 500 words.

Appel & Vermeer (2000) state that most studies show bilingual children falling behind in each language, compared to monolingual children that acquire only one language. This is also the case for the vocabulary development: the vocabulary in each language is smaller, but when all known words for both languages are added,
the total vocabulary is usually bigger than that of monolingual children. Therefore, different researchers have shown that typically developing bilingual children only show a delay in language development when they are assessed in only one of their languages. Pearson, Fernández, & Oller (1993) conclude that the pattern of lexical development in languages of bilingual children is very similar to that of the development in monolingual children. Bilingual children are not slower in the development of their productive vocabulary than monolingual children. Therefore, it is necessary to take into account both languages in assessing the vocabulary development of bilingual children.

Studies in which age of first word production are examined report that bilingual children produce their first words at about the same age as monolingual children – 12 to 13 months (Genesee, 2003; Patterson & Pearson, 2004). Other characteristics of lexical acquisition in bilingual and monolingual children are also quite similar. Rate of vocabulary in bilingual children’s acquisition generally falls within the range reported for same-age monolinguals, as long as both languages are considered for bilinguals (Pearson, et al. 1993). The distribution of lexical categories (e.g., noun, verb, etc.) in the early lexicons of bilingual children is similar to that observed in monolingual children (Nicoladis, 2001). The amount of time spent in each language can affect the relative vocabulary size in each language of a bilingual child (Pearson et al 1997). It is well established that the acquisition of monolingual children’s new words is guided by the principle of mutual exclusivity, or the assumption that new words tend to refer to new referents (Markman, Wasow, & Hansen, 2003). Bilingual children’s acquisition of translation equivalents (words in each language that have the same referential meaning) is of interest because at first sight this would violate the principle of mutual exclusivity. However, evidence that bilingual children acquire translation equivalents can be used to argue that they are not acquiring one language, but two (Patterson & Pearson, 2004). A number of researchers have reported that bilingual children produce translation equivalents from the time they first begin to speak (Pearson et al., 1995) or at least by 8 months (Deuchar & Quay, 2000). Nicoladis and Secco (2000) further found that bilingual children used relatively few translation equivalents before the age of 1;5, but the percentage of translation equivalents in their two languages jumped subsequently to around 20-25% of their total vocabulary words thereafter. The high rate of translation equivalents, a clear violation of mutual exclusivity, suggests that at least from this age on children have two distinct lexical systems. It is possible that the ability to violate mutual exclusivity may be learned through the experience of interpreting people’s intentions about what words mean (Deuchar & Quay, 2000).

3. Methodology

Since the focus of the study is examining, assessing and describing the differences in receptive and productive vocabulary development of a bilingual boy speaking English and Turkish, the data was collected accordingly with The Peabody Picture Vocabulary Test III (PPVT) by Dunn & Dunn (1997), which measures the expressive and receptive vocabulary in the child. The data was collected by sitting down with the boy and playing a school game. The session was taped on a digital camera. Then the data was analyzed quantitatively and qualitatively in the section below.

The boy is the researcher’s own nephew who has a Turkish mother and an American father. He is 3;10 years old. He has been in a bilingual environment since birth. Besides his father, his paternal aunt and other native speakers of English have always been around to provide the necessary input for English. Since he has been living in Turkey, he has been exposed to Turkish as well. However, for the last four months he has been living on an American Air Base, which is a primarily English speaking environment. Another important issue is that the father always speaks English with his son, whereas the mother code switches frequently. Thus there is no one parent-one language pattern in the child’s input.

4. Findings

The results that the data analysis yielded for the productive vocabulary of the subject are represented in the Table 1. and Table 2.
Table 1.
Productive Vocabulary in English

|                        | frequency | %  |
|------------------------|-----------|----|
| Correct production     | 29        | 96 |
| Wrong or no production | 1         | 4  |
| TOTAL                  | 30        | 100|

Table 2.
Productive Vocabulary in Turkish

|                        | frequency | %  |
|------------------------|-----------|----|
| Correct production     | 20        | 67 |
| Wrong or no production | 10        | 33 |
| TOTAL                  | 30        | 100|

As evident in the Table 1. and Table 2., the child performed better in English in terms of productive vocabulary than in Turkish. The PPTV included thirty words for children to be used before the age of 4:0. The child was able to produce all thirty words in English with one exception. It was interesting that when he was shown the picture of a ‘sofa’ his first word choice was the Turkish equivalent ‘koltuk.’ When he was asked what the English version of the word is, he correctly answered ‘sofa’. However, his first choice was to use Turkish, even though he was told that he was supposed to answer in English. This brings about the question of whether children acquiring two languages at the same time have two different representations for one word or concept or if they have a shared representation. Since the word in both languages are present in the child’s lexicon, it can be assumed that the child chose Turkish first because he acquired the word form ‘koltuk’ before he learned the English equivalent. Thus it is apparent that the child has been using crosslinguistic equivalents for the same concept. These results regarding the development of English vocabulary may suggest that his production of English vocabulary is more proficient due to the amount of English input the child has been receiving from his environment. This assumption is in line with research stating that the relative amount of time spent in each language is suggested to affect the relative vocabulary size in each language of a bilingual (Pearson, Fernández, Lewedag, & Oller, 1997).

When we look at the Turkish vocabulary production of the child, the results change drastically. As evident in the Table 2., the child was able to produce only twenty vocabulary items out of thirty. This is because of the fact that English is the dominant language in his environment, whereas Turkish remains the recessive language. This also confirms that the child has received more English input since he was born. The child answered ‘I don’t know’ or ‘Bilmiyorum’ when he didn’t know the Turkish equivalent of the word. He seems to have problems with some nouns and adjectives, as he either didn’t know how to say them in Turkish or he provided English words in their place, such as ‘pie’ when shown a picture of a ‘cake’ instead of the Turkish ‘pasta,’ or labeling the color ‘yellow’ correctly in English, but calling it ‘kırmızı’ (red) in Turkish. However his overall performance of verbs in both English and Turkish is proficient. Table 3. is representing the child’s actual productive vocabulary in both English and Turkish. The (x) denotes wrong production or no production.
Table 3.
Productive Vocabulary Items for English/Turkish (30 items)

| English | Turkish | English | Turkish |
|---------|---------|---------|---------|
| 1. cup  | 1. bardak| 16. running | 16. koşuyor |
| 2. car  | 2. araba | 17. cake | 17. x (pie) |
| 3. Dog  | 3. köpek  | 18. duck  | 18. ördek |
| 4. (s)poon | 4. kaşık | 19. elephant | 19. x |
| 5. a apple | 5. elma | 20. boat | 20. x |
| 6. ball | 6. top | 21. rabbit | 21. x |
| 7. book | 7. kitap | 22. star | 22. yıldız |
| 8. hand | 8. el | 23. sleeping | 23. uyuyor |
| 9. nose | 9. x | 24. sofa | 24. koltuk |
| 10. eye | 10. göz | 25. pencil | 25. x |
| 11. hair | 11. saç | 26. red | 26. kırmızı |
| 12. key | 12. x | 27. umbrella | 27. x |
| 13. house | 13. ev | 28. blue | 28. mavi |
| 14. clock | 14. x | 29. sun | 29. güneş |
| 15. eating | 15. yeyiyorlar | 30. yellow | 30. x (kırmızı) |
| TOTAL | | 30 | 30 |

Another interesting observation about the child’s performance is concerning the phonological aspect of his production. As obvious in the table above, the child has produced the word spoon without the initial phoneme /s/, which indicates that the child may have problems with consonant clusters in English. He also said ‘a apple’ instead of using ‘an’, and he pronounced ‘yiyorlar’ as ‘*yeyiyorlar’. Further studies with the same subject might shed more light on these errors in the child’s speech.

The second part of the study analyzed the receptive vocabulary development of the child. Table 4. shows the results of the data. The plus signs denote that the child indicated the word correctly; minus means he wasn’t able to decide on the correct meaning of the word.

Table 4.
Receptive Vocabulary Items for English/Turkish (12 items)

| English | answer | Turkish | answer |
|---------|--------|---------|--------|
| 1. cat  | +      | 1. kedi | +      |
| 2. baby | +      | 2. bebek | +      |
| 3. airplane | +     | 3. uçak | +      |
| 4. running | +     | 4. koşuyor | +     |
| 5. money | +      | 5. para | +      |
| 6. swinging | +     | 6. sallanyor | +     |
| 7. broom | +      | 7. süpürge | +     |
| 8. eating | +      | 8. yiyor | +      |
| 9. mail | +      | 9. posta | -      |
| 10. circle | +     | 10. daire | +      |
| 11. ladder | +     | 11. merdiven | +     |
| 12. candle | +     | 12. mum | +      |

As clear from Table 4., the child was able to show all of the uttered words in English, whereas he had one mistake in Turkish. The only mistake the child did was the recognition of the word mail, ‘posta,’ in Turkish. This may be because the child has never heard the word before in Turkish or heard it only few times. Hence it is not
present in his lexicon. This confirms the previous assumption that the child’s dominant language is English, suggesting that he has been exposed to English more than Turkish, even though he was born and raised in Turkey.

This brief study revealed that the frequency of exposure and differences in context can cause differences in vocabulary size of a bilingual child. As De Houwer (1990) suggests, children who receive primary input in each language from different interlocutors (such as a mother, father, or siblings) may acquire different lexical repertoires in each language because different people talk about different things.

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