Differences in Receptive and Productive Vocabulary of an English and Arabic Speaking Bilingual Girl

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Abstract
Objective of this study is to examine, assess, and describe sources of variations in a receptive and productive vocabulary of a bilingual child, who can speak English and Arabic. Dunn & Dunn's Peabody Picture Vocabulary Test III (PPVT) (1997) was utilized to measure the productive and receptive vocabulary of 8 years old bilingual child. Findings of this study revealed that child's performance in English was better than Arabic. She generated right vocabulary in English at 96 per cent, while it dropped to 67 per cent in Arabic. Receptive vocabulary of the child, however, was nearly equivalent in English and Arabic. This research showed that exposure to different frequency and context can cause differences in vocabulary size of a bilingual child.

Keywords: Bilingualism, Lexicon, English language, Arabic language.

Introduction

As the world is rapidly developing, so nowadays, many children around the globe speak more than one language. One language is their first language, which is also called mother tongue, and another is foreign language, which is learned as a second language. Many children who can speak two or more than two languages at the same time, were raised in a bilingual society or family. They learned those languages during studying at schools or interacting with other people in their daily life. Kupisch and Rothman (2018) suggested that students can acquire distinct lexical repertoires when they receive essential input in a language from many different sources, such as from their parents, friends, or siblings. Because different individuals speak different languages.

The early childhood bilingualism acquisition has two dimensions; simultaneous bilingualism, and sequential bilingualism. If a child is subjected to two languages during his/her childhood, it is named as simultaneous acquisition or bilingual acquisition (Meisel, 2007 and Binks & Thomas (2019). While sequential bilingualism refers to the individual who has required the first language and later acquired another one ((Fhlannchadha & Hickey, 2017; Gathercole & Thomas, 2009; Thomas, Williams, Jones, Davies, & Binks, 2014)). A significant aspect which distinct simultaneous acquisition from sequential development is that **a child** is subjected to more than one language simultaneously in first three years after birth, under their parent's supervision (Bhatia, 2017; De Houwer, 1999; Genesee & Nicoladis, 2006).

There is a unitary language system hypothesis regarding simultaneous acquisition of two or more than two languages. This hypothesis states that children who were subjected to two different languages in their first three years, used those languages simultaneously as one system in terms of phonology, lexicon, syntax, and pragmatism. Later on they divide those languages into two language systems.

In this study, receptive and productive vocabulary of an Arab child is observed. Whose mother tongue is Arabic and studied English at international school of University Utara Malaysia. As the objective of this research is to examine, assess, and describe the sources of variations in a receptive and productive vocabulary of a bilingual child, who can speak English and Arabic.

Literature Review

Children's bilingualism can be categorized in different types. Children who require more than one language before age of three or four years are usually referred to as simultaneous bilinguals. As they have two first languages at the same time. When children start to learn or acquire a second language after age of three years, they are referred as sequential bilinguals. As they already have a primary language (Bhatia, 2017; Genesee, Paradis, & Crago, 2004). These terms can also be related to language capability. It is presumed that simultaneous bilinguals evolve into balanced bilinguals, where their skills in both languages are approximately comparable. However, sequential bilinguals have one dominant language among two or more than two languages. Some researchers also proposed that children with two languages (either acquired sequentially or simultaneously) usually

have more skills in one language than other language, and the language in which they are more proficient becomes their primary language. As primary language is the one in which they have experienced more input than other languages (Genesee et al., 2004).

In a study by Pearson, Fernandez, Lewedge, and Oller (1997) with EFL-Spanish-English bilingual children, it was proposed that the development of productive vocabulary requires at least twenty per cent exposure of learning time dedicated to only one language. However, time exposure of 40 to 60 percent is required for each language to create a balanced bilingual growth in vocabulary. Still, amount of input is not the only factor which influences a bilingual child's language development. Another study indicated that some other factors can also affect the rate of accuracy and achievement of bilingual acquisition of a language. These factors include; language aptitude, first language typology, parent education, and quality of input (Flynn, & Vinnitskaya, 2005).

A study conducted by Paradis (2010) performed a survey to determine which of these variables can predict lexical and morphological acquisition. Whether certain variables alter at the early or later stage of development or not, and lexical and morphological acquisition is predicted by the same variables or not. Children were split into two groups in Paradis's study; first group had children with less than 18 months of English exposure, and second group had children of more than 18 months of English exposure. Based on outcomes of this research, it was discovered that internal variables are powerful predictors of vocabulary and verbs morphology in first group. Whereas external variables such as wealth of English setting, are potent predictors of vocabulary and morphology in second group.

It is also possible to categorize distinct types of cognitive bilingual growth into compound and coordinate bilingual growth. This categorization is particularly interesting when we are looking at bilingual children's vocabulary improvement. Because it highlights whether bilingual children have two representations for a single word or idea, or they have a shared description for a single thought or concept. Through distinct language systems it can be identified whether a child has acquired two language systems or one shared system for more than one language.

Clark's principle of contrast states that children assume that every single word should have different meaning (Pearson, Fernández, & Oller, 1995), and they refer to the word form of a language in which they first learned that idea. This principle does not apply, until they have acquired vocabulary of more than one hundred and fifty words. Prior to this vocabulary level, young bilingual children use cross linguistic equivalents, by using a term in one language but not in the other. Another reason for using cross linguistic equivalents is absence of certain words during a particular language input. Pearson et al. (1995) discovered that there was a translation equivalent in approximately 30% of all ideas known by bilingual children. Situation was same for children with 2 to 12 words of vocabulary and children with up to five hundred words of vocabulary.

Many studies revealed that bilingual children are less proficient in each language as compared to monolingual children who only learned one language. This phenomenon also applies to growth of vocabulary as well. Vocabulary is lower in each language, because when meaning of words are well known only then they are added to both languages (Appel & Vermeer, 2000). Pearson, Fernández, and Oller (1993) found that the pattern of lexical improvement in bilingual children's language is identical to the lexical improvement of monolingual children. In developing their productive vocabulary, bilingual young children are not slower than monolingual children. Hence, both languages must be taken into consideration in evaluating the progress of bilingual children's vocabulary.

Studies which examined the age of first-word production, reported that bilingual children generate their first words at about the same stage as monolingual children, around the age of 12 to 13 months (Genesee, 2003; Patterson & Pearson, 2004). Other lexical acquisition features are also quite comparable in bilingual and monolingual children. Vocabulary acquisition rate in bilingual children usually fall within the range recorded for monolinguals of the same age (Pearson et al. 1993). In the early stages of children's lexicon development, distribution of lexical categories (e.g. noun, verb, etc.,) is same in both bilingual and monolingual children (Nicoladis, 2001). However, acquisition of monolingual children's vocabulary is driven by the concept of mutual exclusivity (Marhkman, Wasow, & Hansen, 2003). Also, the amount of time that spend in every language can influence the relative dimensions of vocabulary in each bilingual child (Pearson et al., 1997).

Acquisition of translation equivalents (lexicals or items in each language which has the same meaning) in bilingual children is interesting. It is also a proof of their bilingualism (Patterson &

Pearson, 2004). Many studies have found that bilingual children generate language equivalents after at least eight months from the first time they started to talk (Deuchar & Quay, 2000; Peasrson et al., 1995). A study reported that bilingual children aged between one to five years used some translation equivalents for two languages. Which required subsequent jumping from 20 to 25 of their total vocabulary words (Nicoladis & Secco, 2000). This high rate of translation equivalents, a clear violation of mutual exclusivity, suggests that at least from this age onward children have two distinct lexical systems. Deuchar and Quay (2000) found that it is possible that the capability to violate mutual exclusivity may be developed during interpretation of word's meaning through people's intentions.

Hence, considering the suggestions of above discussed studies, it is hypothesized that;

H1: There is a difference between English and Arabic receptive and productive vocabulary of a bilingual girl.

H1$_0$: There is no difference between English and Arabic receptive and productive vocabulary of a bilingual girl.

Methodology

Peabody Picture Vocabulary Test III (PPVT) was used to measure productive and receptive vocabulary. This test knows as a test of auditory comprehension and is a measure receptive vocabulary at English language. A study was conducted on an eight years old Arabic girl who is daughter of researcher's friend. Both of her parents are native Arabic. She was living in a bilingual environment since she was four years old. In the beginning, her father tried to improve her English proficiency level by teaching her English through YouTube videos, pictures, music, and communicating with other people. In addition, for the last three years, they have been living in Malaysia. Where child use English as a primary language in her daily communication at international school. To overcome language challenges in new environment, her father tried to explain everything in Arabic to her. Especially her homework given from the school. But she faced difficulty in understanding him, so, she always requested him to explain in English for her. Data was gathered from child in a session through playing games inside the house. The session was video recorded on a smartphone. After that, collected data was analysed qualitatively and quantitatively.

Results and Discussion

Results of productive vocabulary in English and Arabic are presented in Table 1. Table shows that the performance of the child is much better in English than Arabic.

Table 1

Productive vocabulary in English and Arabic

	English		Arabic	
	frequency	%	frequency	%
Correct production	28	96	20	67
Wrong or no production	2	5	10	33
Total	30	100	30	100

The PPTV involved thirty words for test. She was able to know most of the English words. It was fascinating when a picture of refrigerator was shown to her and she was asked about it, she correctly replied a fridge. The Arabic equivalent is "تلاجه". Her option was to use Arabic, though it was said she should respond in English. It raises question whether children who learn two languages simultaneously have two distinct representations for one word or idea, or they share a common representation. As the word in both dialects is in lexicon of the child, she might have chosen Arabic first because she learned the word تلاجه much before learning the corresponding word in English. So, it is obvious that the child used cross-language equivalent for the same concept. This finding concerning English vocabulary growth indicates that a child's English vocabulary production might increase with the quantity of English feedback she received from meeting. It can be assumed that the time spent on a language can influence relative vocabulary size of a bilingual child in that language (Pearson et al., 1997). This justifies H1 and rejects H1$_0$.

Results changed dramatically when child's Arabic vocabulary was observed. As Table 1 shows that only 20 vocabulary articles out of thirty were produced by child. It is because English was dominant language in the meeting, and Arabic was recessive language. The girl replied "I do not know" or "لا اعرق" when she did not know Arabic equivalents of the word. This is a sign that child received more information in English than Arabic. Some nouns and adjectives appeared to be problematic for her as she was either unable to

pronounce those in Arabic, or she used English words instead. Such as she said "لوز" when exposed a photo of "almond" and point out the colour (green) correctly in English while she called it ابيض (white) in Arabic which is wrong in Arabic meaning. Moreover, her performance in verbs of both languages was perfect as shown in table 2. Table 2 presents the results of productive vocabulary in Arabic and English. Arabic words produced for each English word are listed in front of each word, and (x) refers to wrong answer.

Table 2
Productive Vocabulary Items for English/Arabic (30 words)

Sr. No.	English	Arabic	Sr. No.	English	Arabic
1	Cat	قط	16	Playing	يلعب
2	Donkey	حمار	17	Bread	x (طعام)
3	Bear	دب	18	Elephant	فيل
4	Slight	ضوء	19	Tiger	x
5	Banana	موز	20	Ship	x
6	Pen	قلم	21	Duck	x
7	Bag	حقيبه	22	Star	نجمه
8	Hair	شعر	23	Reading	نوم
9	Room	غرفه	24	Moon	قمر
10	Toe	عين	25	Stick	قلم رصاص
11	Rain	مطر	26	Blue	ازق
12	Spoon	ملعقه	27	Umbrella	مطله
13	House	منزل	28	Mobile	نقال
14	Drink	شراب	29	Moon	شمش
15	Eat	ياكل	30	Pink	x (اسود)

Some useful observations about phonological performance of her production were also found. As the above table explains that the child produced term "spoon" without original phoneme "s", which suggest that she might encountered problem in producing English consonant cluster. Also, she said "a" umbrella instead of "an" umbrella and utilized it every time with noun and verb. These findings highlight the importance of studying speech errors in bilingual children.

Child receptive vocabulary improvement is analyzed in next part of this study, and its results are presented in table 3. Two signs; plus, and minus are used in the table to describe answers of child. Plus indicates correct answers, and minus indicates unfamiliarity of child with words.

Table 3
Receptive Vocabulary words for English/Arabic (12 words)

Sr. No.	English	Answer	Arabic	Answer
1	Cat	+	قط	+
2	Man	+	رجل	+
3	Airplane	+	طائره	+
4	Walking	+	يركط	+
5	Money	+	نقود	+
6	Swinging	+	سباحه	+
7	Broom	+	مكنسه	+
8	Driving	+	يقود	+
9	Speak	+	يتحدت	-
10	Circle	+	دائره	+
11	Kinder	+	حلو	+
12	Rose	+	ورده	+

It can be observed from table 3 that she produced all of the words correctly in English, and most of the words in Arabic except one (يتحدت). Child's error could be because of total unfamiliarity or less exposure to the word (يتحدت), indicating its absence in her lexicon. Although she was born and raised in an Arabic country, but she was more exposed to English than Arabic. This further confirms English as her dominant language of communication. This highlights the fact that exposure frequency and contextual differences could cause variation in vocabulary size of a bilingual child. Kupisch and

Rothman (2018) also suggested the same phenomenon. He indicated that children receiving feedback from various interlocutors (such as parents, siblings, and friends) in each language can obtain distinct lexical repertories.

Conclusion

To conclude, this study revealed that different test frequency or context can cause differences in vocabulary size of a bilingual child in each language. As differences in receptive and productive vocabulary were found within and between two languages. However these results are specific to a bilingual girl who can speak Arabic and English. Results could vary with different sample characteristics. Future researchers should consider studying vocabulary size of bilingual children with larger samples including both males and females to generate more conclusive results.

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