

Early Lexical Development and the Development of Translation Equivalents in a Simultaneous Bilingual Child

¹Ni Luh Putu Sri Adnyani, ²Ni Luh Sutjiati Beratha, ³I Wayan Pastika, ⁴I Nyoman Suparwa

^{1.} niluhputusriadnyani@gmail.com Universitas Pendidikan Ganesha

^{2.} sutjiati59@gmail.com Faculty of Arts, Udayana University

^{3.} wayanpastika@unud.ac.id Faculty of Arts, Udayana University

^{4.} suparwa_nym@yahoo.co.id Faculty of Arts, Udayana University

Abstract—This study focuses on the development of lexicon by a child raised simultaneously in Indonesian and German from birth. In the immediate family members, the child received Indonesian from the mother and German from the father. The data was collected in natural setting when the child was 1;0 up to 3;0. In collecting the data, diary records and weekly video recordings were used. The data was analyzed using two softwares, ELAN and Toolbox. The child's speech was segmented based on the child's utterances. The result of the study shows that at the end of the study the child developed 521 lexicon in Indonesian and 243 in German. Both in Indonesian and German the child acquired more nouns than verbs. Besides, the child also developed about 164 translation equivalents. Thus, it confirms that the bilingual child developed two different lexical systems.

Keywords: Lexicon, translation equivalents, bilingual, child

1. Introduction

How bilingual children develop their two linguistic systems is still a matter of debate. Researchers such as Leopold (1978) and Volterra & Taeschner (1978) believed that at the beginning bilingual children fuse two linguistic systems and the children are not able to develop the two systems separately. The hypothesis of fusing two linguistic systems was opposed by other researchers who gave evidence that bilingual children are able to separate language systems since very early in their language development in almost all linguistic domains. Evidence of morphosyntactic separation was found by DeHouwer (1990), in comprehension by Adnyani, Beratha, & Suparwa (2017) and Nakamura (2010), in pragmatic by Nicoladis (1998) in phonology by Adnyani & Pastika (2016). This paper, is then trying to focus on the development of lexicon by a bilingual child exposed in Indonesian and German as well as looking at the translation equivalent which indicates that a bilingual child has the capacity to separate two different language systems.



Lexicon is a mental dictionary that is used by language user at the time he or she is acting as a listener (or a reader) or as a speaker (or a writer) (Dardjowidjojo, 2000; see also Clark, 1993). This dictionary is situated in a person's memory so that he or she can use it in speaking or understanding other's utterances.

In the context of child's lexical acquisition, the scholars' findings are varied. Dromi (1987) found that a child starts producing one-word utterances at the age of 0;10, while Clark (1993) and also Benedict (1979) found that children start to utter comprehensible words at 1 year old. The initial words produced by children may be difficult to understand since they need time to be able to utter words like an adult's utterances. On the other hand, Dardjowidjojo's work (2000) about Echa found that up to the age of 1;0, a child has not produced forms that can be related to certain meanings which can be labeled as words.

In addition, in their developmental process, children experience different or varied lexical developments (Clark, 1993). For example, some children go through the utterance development which consists of one-word for months and during these months no indication of longer utterance production. On the other hand, there are children who only take some weeks through the one-word utterances and they continue with two- or more- word utterances not long after that period.

In relation to the development of lexicon by bilingual children, Nicoladis (1998) mentioned that translation equivalents can be used as evidence that the children can differentiate two different linguistic systems. According to Nicoladis, translation equivalents are determined when the child produces words in two languages which refer to the same word class or similar event and situation. Pearson, Fernandes & Olle (1984) (in Schelleter, 2005) found that translation equivalents developed early in bilingual children. The ability of bilingual children developed translation equivalents proved that bilingual children have the capacity to acquire two language systems.

This paper tries to investigate the lexical development of a child raised simultaneously in Indonesian and German as well as to describe the translation equivalents.

2. Method



This study used qualitative approach of case study using systematic observation to see bilingual child language acquisition through exposure to two languages of very different typologies, that is Indonesian and German. The primary source of data was the second daughter of the first author, ALY. The pattern of input was one language-one parent, that is, Indonesian acquired from mother and German from father. In the data collecting process, this study used three types of instruments including diary, a JVC handy cam to produce audio-video file data, and interview guide. The data collecting methods used were observation, recording and interview. In analyzing the data, the writer used two software, that is ELAN for transcription and TOOLBOX for analyzing syntactic data and organizing lexical data by using data analysis techniques of data coding, linguistic type determination, and *tier*, interval time selection, transcribing/annotating, inter linearization and data sequencing.

3. Findings and Discussions

3.1 Lexical Development at One Word Utterance Stage

At the initial stage of her language development, ALY developed one - word utterances or two-word utterances. ALY produced the first word that can be understood and related to meaning, thus it can be said that she produced the first word when she was 1;1. To determine that a word has been acquired by a child, this study refers to the proposal made by Dromi (1987) and also Dardjowidjojo (2000) which state that there are two criteria used in determining that a form produced by a child can be regarded as a word, that is, (1) the phonetic form uttered by the child is the same as or similar to the adult's phonetic form, and (2) there is a consistent correlation between form and reference. The similar criteria were also stated by Bloom (1993: 188), that is, that the criteria used to determine an acquisition of a word by a child are consistency in phonetic form and meaningfulness.

Using such criteria as proposed by Dromi (1987) and Bloom (1993) it can be said that ALY only acquired a form which can be taken as a word in Indonesian when she was 1;1 with the first word uttered [maam] and aam]. The two forms refer to the word "makan" ('eat') produced by the child every time she saw food, pointed to food, or pointed to rice cooker. In the mean time, in German, the first word she acquired was [bumbum] "brumbrum" which



refers to the sound of a motorcycle at the age 1;4. This word was uttered by her when she pointed to a motorcycle or a car.

The word *papa* ('dad') and *mama* ('mam') started to be uttered by the child progressively at 1;3, at this age these utterances did not refer to certain meanings. This is because the words *mama* and *papa* that the child uttered could refer to almost any object that she found around her. For example, the child uttered the word *mama* or *papa* when she referred to a water bottle, a cat, a cart, father, mother, older sister, a book, a toy, etc. Thus, it can be said that at the age 1;3, the words *papa* and *mama* were not words acquired by ALY, but they indicated that the child was trying to practice his speech organs by producing sounds which were easy for her to acquire. The words *mama* and *papa* could only be said to have been acquired by her at the age 1;4, at that time, she used the two words to refer to certain objects, that is, his mother and father or objects attached or possessed by her mother or father.

Clark & Clark (1977: 302) state that the first words produced by a child are related to objects that are found around him or her. Clark & Clark (1977) describe a study conducted by Nelson (1973) which found that the first ten words uttered by eighteen children that they studied were related to animals, food, and toys.

The things stated by Clark & Clark (1977) were also found in ALY's lexical acquisition. At the one word utterance stage in Indonesian which started since the child was 1;1 until she was 1;6.21, there were about 55 words acquired by ALY. The word *about* in the word count in this study is used since it is impossible for the writer to determine the definitive number or the exact number of words acquired although she has tried to take a note or record ALY's language development carefully (see also Dardjowidjojo, 2000).

From the whole number of words she acquired, ALY developed lexical forms that were related to objects that she found around her in Indonesian, such as

[tita?]	'cicak'
[a:m]	'ayam'
[dɪndɪn]	'dindin'
[ganɡaŋ]	'anjing'
[kaka?]	'kakak'
[mama]	'mama'
[papa]	'papa'
[nini?]	'nini'



[didi]	‘gigi’
[mɛm]	‘permen’

In addition, it was also found that the lexical forms which are verbs in Indonesian, among other things are

[maam]	‘makan’
[bʊʔ]	‘bubuk’
[dʊʔ]	‘duduk’
[taʔ]	‘minta’
[nʊm]	‘minum’
[taʔ]	‘buka’
[abe]	‘habis’
[tɪŋ]	‘kencing’

Beside nouns and verbs, she also developed adverbs, adjectives, and pronouns, such as

[dah]	‘sudah’
[adi]	‘lagi’
[ndaʔ]	‘ndak’
[naʔ]	‘enak’
[papɛʔ]	‘capek’
[ini]	‘ini’

At the one-word utterance stage in Indonesian, the nouns acquisition had a dominant number, that is, 30 words or 54.5%. the second position was occupied by verbs acquisition with the number of 19 words or 34.5 %. Then, it was followed by adverbs, adjectives and pronouns acquisitions, which were 3 , 2, and 1 word respectively. It can be said that the number of adverbs acquired was 5%, adjectives 4%, and pronouns 2%. Universally, nouns and verbs really have a far greater quantity than other word classes, for example, adverbs, and pronouns. This can also explain the minimum number of words acquired by the child which belong to adverbs and pronouns.

ALY experienced the one-word utterance stage in Indonesian for almost seven months from age 1;1 to age 1;6.21. in the first three months since the first word started to be produced by her, ALY’s word developmental rate of acquisition was rather slow with the number of one word in the first month until the third month, while in the second month, new



words even did not appear. The lexical development acquired increased sharply when the child aged 1;4, that is, 14 words, then it was followed by 12 additional words when she aged 1;5 and when she was 1;6, ALY experienced a rapid enough increase in vocabulary with the addition of 27 new words. The cumulative number of words, acquired by ALY in Indonesian at the one word utterance stage was 55 words.

In German, ALY started to produce forms which can be labeled words at the age 1;4. It can be said that ALY acquired words in German about 3 months later than her Indonesian acquisition. ALY's one word utterance stage in German started at the age 1;4 until the age 1;8.28.

At the one-word utterance stage in German, ALY also acquired the number of nouns exceeding the number in any other word classes. The nouns she acquired are related to the words which refer to objects around the child. For example,

[bam]	<i>Ball</i>	'bola'
[bile]	<i>Brille</i>	'kaca mata'
[ais]	<i>Eis</i>	'es'
[ara]	<i>Eier</i>	'telur'
[buta]	<i>Butter</i>	'mentega'
[bʊs]	<i>Buch</i>	'buku'
[unt]	<i>Hund</i>	'anjing'
[eləm]	<i>Helm</i>	'helm'
[ato]	<i>Auto</i>	'mobil'
[lis]	<i>Licht</i>	'lampu'

In addition to nouns, ALY also acquired verbs, which were

[fan]	<i>fahren</i>	'berkendara'
[holɪn]	<i>holen</i>	'ambil'
[pɛntɪn]	<i>fernsehen</i>	'nonton TV'
[kəkən]	<i>kaken</i>	'buang air'
[badən]	<i>baden</i>	'mandi'
[lis]	<i>lesen</i>	'membaca'

Then, other classes of words she acquired were adverbs, adjectives, particles, and pronouns, such as

[tʊs]	<i>Tschüs</i>	'dada'
[atʊŋ]	<i>Achtung</i>	'hati-hati'
[mɪt]	<i>mit</i>	'ikut'
[alo]	<i>Hallo</i>	'halo'



[ais]	heiss	‘panas’
[papot]	kaputt	‘rusak’
[tu]	zu	‘ke’
[da]	da	‘itu’
[aoh]	auch	‘juga’

The total number of words which were acquired by ALY at the one word utterance in German was 32. At the one word utterance stage in German, which was experienced by ALY for about 5 months from the age 1;4 to the age 1; 8.28, she acquired the number of noun more than the number of any other word category that she acquired. The noun she acquired amounted to 16 words, that is, 50% from the number of words she acquired at this stage. Verbs had the second place with the number of 6 words or 19%. Other word categories she acquired were particles (4 or about 12%), adverbs (3 or 10%), which was then followed by adjectives (2) and pronouns (1) which were only 6% and 3% respectively).

Like what has been explained before, ALY experienced one word utterance stage in German from the age 1; 4 until the age 1;8 28 or around 5 months. ALY's development of word acquisition in the first months since she produced the first word in German can be said to be rather slow. At the age of 1;4, ALY could only produce 3 words and at the age of 1; 5 no more new words appeared. New words were then produced by her when she was 1;6, that is, 6 words. The addition of words by ALY continued when she was 1;7, that is, by 10 words.

If ALY's word acquisitions in Indonesian and in German are compared it can be said that, *first*, words in Indonesian were acquired earlier than those in German. This might be caused by the child's linguistic environment where more people who spoke Indonesian than those who spoke German. Words in Indonesian started to be produced when she was 1;1, while German words started to appear only when she was 1;4. In other words, in terms of word production, German was slowly acquired. Second, the period of one-word stage in Indonesian was relatively longer than that in German. ALY's one-word period in Indonesian lasted 6 months and in German, 5 months. Third, the number of words acquired by ALY in the one-word stage in Indonesian was more than that in German with the ratio 53; 32 or the number of Indonesian words was 40% greater. Fourth, both word acquisitions in Indonesian and in

German were similarly dominated by nouns acquisition. The second place was occupied by verbs acquisition. Then it was followed by other words, such as adverbs and adjectives.

3.2 Lexicon Development at Two-Word Utterance Stage

ALY started to experience two-word utterance stage in Indonesian when she was 1;7 until she was 1; 8. This is in agreement with what is stated by Clark (1993: 37) that many children start to produce two-word utterances between the ages 1;6 and 2;0. The lexical development experienced by ALY shows that she started to produce two-word utterances when she was 1;7 and this stage only lasted two months until she was 1;8.

Compared to the one-word utterance stage, at the two-word utterance stage, the number of new words acquired in Indonesian every month increased sharply. For example, in one month when she was 1;7, she acquired 34 new words. The new word acquisition continued when she was 1;8. At this age, ALY again produced 35 new words. So, on the whole, at the two word utterance stage there were 69 new words that she acquired.

Like adults, new words that were produced by ALY in Indonesian at the two-word stage can also be categorized into some domains, such as

- 1) human : *Agus, Alyssa, bibi, Erlin, Pasek, Komang*
- 2) animals : *bebek, burung, semut*
- 3) food : *jajan, susu, roti, semangka*
- 4) body parts : *kaki, hidung, mata, rambut, tangan, telinga*
- 5) clothing : *celana, helm, karet, sepatu, kalung, sandal*
- 6) vehicles : *mobil, motor*
- 7) toys : *kartu, bola*
- 8) house hold things : *payung*
- 9) food utensils : *pipet*
- 10) activities : *bangun, beli, hapus, pakai, pinjam, pulang, tutup, buat, gendong, ikut, main, mandi, punya, putus*
- 11) Properties and states : *banyak, berat, jatuh, kalah, dingin, hujan, luka, mati, takut*



Out of 69 new words she acquired at the two-word utterance stage, ALY developed word classes which consisted of nouns, verbs, adjectives, and particles. Other word classes were adverbs, numerals, and pronouns. There were no additional new words.

At the two-word utterance stage, nouns still dominated, that is, 42 words, or 60.9%. This means that at the two-word utterance stage, more than a half of new words acquired were nouns. The second place was occupied by verbs acquisition, that is, 19 words with the percentage of 27.5%. Then, she acquired adjectives and particles with 4 new words each. In other words, the number of adjectives acquired was 5.8% from all of the new words which ALY produced at the two-word utterance stage. The same thing occurred in particle acquisition.

As a whole, from the number of new words acquired in Indonesian every month, since ALY produced her first word at the age 1;1 until the end of the two-word utterance stage, or at the age 1;8, the total number of words acquired cummulatively was 124.

The development in lexicon acquisition was also experienced by ALY in Indonesian. ALY started her two-word utterance stage in Indonesian when she was 1;7, in German she started her two-word utterance stage later, that is, when she was 1;9. This means that to reach the same stage in her Indonesian development, ALY needed two months longer in her German development. In addition, in her Indonesian development, ALY only experienced the two-word utterance stage in only two months, while in her German development, she experienced the two-word stage for eight months, that is, from age 1;9 to age 2;5.

When ALY was 1;9, there were 16 new words that she acquired. A month later, at the age of 1;10, there was an addition of 12 more words. The vocabulary that she acquired kept on increasing when she was 1;11 with the development of 21 more words. However, at the age of 2;0, there was only one new word that she produced. Later, when she was 2;1 and 2;2 there were only six and nine new words consecutively. At the age of 2;3 again there was a quite rapid progress, that is an increase of 14 words. At 2;4, ALY developed 12 new words and at the end of the two-word utterance stage, that is at 2;5, there was an addition of 12 new words.

At the two-word utterance stage, nouns again occupied the highest position in terms of the number of words acquired, that is 57 words or about 52.8%. The next position was occupied by adjectives, that is 14 words or 13%. At this stage, there were 11 verbs acquired and 11 particles or 10.2% each. ALY also acquired nine pronouns and six adverbs or 8.3% and



5.5% respectively from the total number of new words acquired at the two-word utterance stage in German.

Cummulatively, when it is seen from the beginning of the word production in German, when the child was 1;4 till the end of the two-word utterance stage in German, that is when ALY was 2;5, she was able to produce 140 words. When it was compared to ALY's lexical acquisition at the two-word utterance stage in Indonesian and German, the following conclusions can be made. *First*, ALY experienced the two-word utterance stage relatively earlier in Indonesian than she did in German. There was a two-month difference in the beginning of the stage. ALY started the two-word utterance stage in Indonesian when she was 1;7 and in German at 1;9. *Second*, the two-word utterance stage in Indonesian was much shorter than that in German the two-word utterance stage in Indonesian lasted only 2 months, that is at 1;7 to 1;8, while the time needed by ALY to be at the two-word utterance stage in German was eight months, that is at 1;9 to 2;5. *Third*, the number of new words acquired in Indonesian at the two-word utterance stage was less than that in German at the same stage. The new words in Indonesian was only 69 in total while there was 108 new words in German. However, this can be understood since the time needed by ALY to be at the two-word utterance stage in German was much longer than to be at the same stage in Indonesian. Logically, the number of new words acquired by ALY in German exceeded that in Indonesian. *Fourth*, the cumulative number of words acquired until the end of the two-word utterance stage in Indonesian was 124 words and in German 140 words. It seems that the number of vocabulary acquired correlates with the time needed by ALY to be at the two-word utterance stage. To reach the end of the two-word utterance stage in Indonesian, ALY needed eight months since the beginning of first word production. While, to get to the same stage in German, ALY needed three months since the beginning of the first word production in German. Hence, it is natural if at the two-word utterance stage, the number of ALY's vocabulary in German exceeded that in Indonesian. *Fifth*, both lexical acquisition in Indonesian and that in German were still dominated by nouns acquisition, even more than 50% of the total number of words from all word classes acquired.

3.3 Lexicon Development at Multi-word Utterance Stage



In her Indonesian development, ALY started to develop multi-word utterances which can be labeled simple sentences when she was 1;9. The examples of sentences in Indonesian produced at this age are [kaka? muña taloŋ] *Kakak punya kalung* “Sister has necklace”, [kaka? Mandi] *Kakak mandi* “Sister takes a shower”, [mau main taŋkis] *Mau main bulu tangkis* “Want to play badminton”, [utŋ makan pupu] *Kucing makan krupuk* “Cat eats chip”.

In this study, the data on the development of word acquisition were collected until the child was 3;0. In other words, the data on the word development acquired by ALY which is discussed in this section are the data on the word development at the simple sentence utterances since the child was 1;9 until she was 3;0.

When ALY was 1;9, there were 33 new words that she produced. Then, at 1;10 there was an addition of 37 new words. The addition of the new words that ALY acquired increased sharply when she was 1;11, that is 53 words. However, at 2;0 she only produced 16 new words at 2;1 again there was a quite significant increase, that is 55 new words. Then at 2;2, 2;3 and 2;4 she only acquired 1, 8. And 8 new words consecutively. The number of new words ALY produced again increased quite highly when she was 2;5, that is 40 words. At 2;6 32 new words appeared. At 2;7 she could utter 20 new words. Then when ALY was 2;8 there were 14 new words she could utter well. Then when ALY was 2;8 there were 14 new words and at 2;9 there were 20 words. There were 22 new words she produced when she was 2;10 and 17 words when she was 2;11. When she was 3;0, there was an addition of nine new words she successfully produced. Thus, it can be said that at the multi-word utterance stage in this study the data acquired by ALY, the acquisition started when ALY was 1;9 until the end of data collection, that is when ALY was 3;0, the number of new words she acquired in Indonesian was 397 words. The increase in word acquisition at this stage can be caused by the child's more developed speech organ so that her articulatory ability increased. In addition, the child's social environment became more extensive so that there was an addition of new words which she acquired from her playmates. The new words she acquired at this multi-word utterance stage consisted of six word classes including noun, verb, adjective, adverb, particle, pronoun, and numeral.



Again, nouns occupied the highest position in the word acquisition in the multi-word utterance stage in Indonesian. The number of nouns she acquired at this stage was 204 words or about 51.43%. The second position was occupied by verb acquisition, that is, 90 words or 22.7%. Then, ALY acquired 51 words or about 12.8% and the words can be categorized into adjectives. There were 19 pronouns that ALY acquired or about 4.8%. Then ALY acquired 17 words which can be categorized into the particle group, that is, about 4.3%, 14 words or about 3.5% adverbs, and 2 numerals or just about 0.5%.

Cummulatively, the number of words ALY acquired in Indonesian since the production of the first word at the age 1;1 until the simple sentence utterance stage in this study or at the age 3;0 was 521 words.

When in Indonesian ALY started producing simple sentences when she was 1;9, in her German development, she started the same stage just at 2;6. Like what was explained above, the data on the word development in this study was collected until the child reached 3;0. Hence, the data on the word development at the simple sentence utterance stage in German were described from the age 2; 6 to the age 3;0.

When ALY was 2;6 she acquired 11 new words in German. When she was 2;7 there was only 9 additional words and at 2; 8, four words. When she was 2;9, there were 13 new words she acquired. The acquisition of new words increased once more when ALY was 2;10, that is, 23 words and kept on increasing when she was 2;10, that is by 23 words. At the end of the data collection when the child was 3;0, only 13 new words produced by her. Thus, at the simple sentence utterance stage in German, ALY acquired 103 new words. All of the words consist of nouns, verbs, adjectives, pronouns, particles, adverbs and numerals.

From the 103 words acquired in German at the simple sentence stage, the vocabulary acquired was dominated by nouns, that is, 38 words or about 36.9%. next it was followed by the verbs, 22 or about 21.3%. From all of the new words she acqured at this stage, she had also acquired 13 adjectives or just about 12.6%. the number of pronouns that she acquired was 11 words or about 10.7%. then, it was followed by the acquisition of adverbs and particles, which were 9 and 8 words consecutively. The last position was taken by numerals, that is only two words or just 1.9% of all of the new words which were acquired at the multi-word utterance stage.



Cummulatively, the total number of ALY's lexical acquisition in German since she produced the first word at the age 1;4 until she reached the simple sentence utterance stage at the end of data collection in this study or at the age 3;0 was 243 words.

When compared to the total number of ALY's lexical acquisition in Indonesian since she produced the first word, the following conclusions can be made. *First*, the total number of words in Indonesian that ALY had acquired since she acquired the first word, that is when she was 1;1 until she was 3;0 was 521 words. The number of words in German she had acquired since the age 1;4 until the age 3;0 was 243 words. The cumulative number of ALY's word acquisition in Indonesian and German from age 1;1 to age 3;0 can be seen in Figure 01.

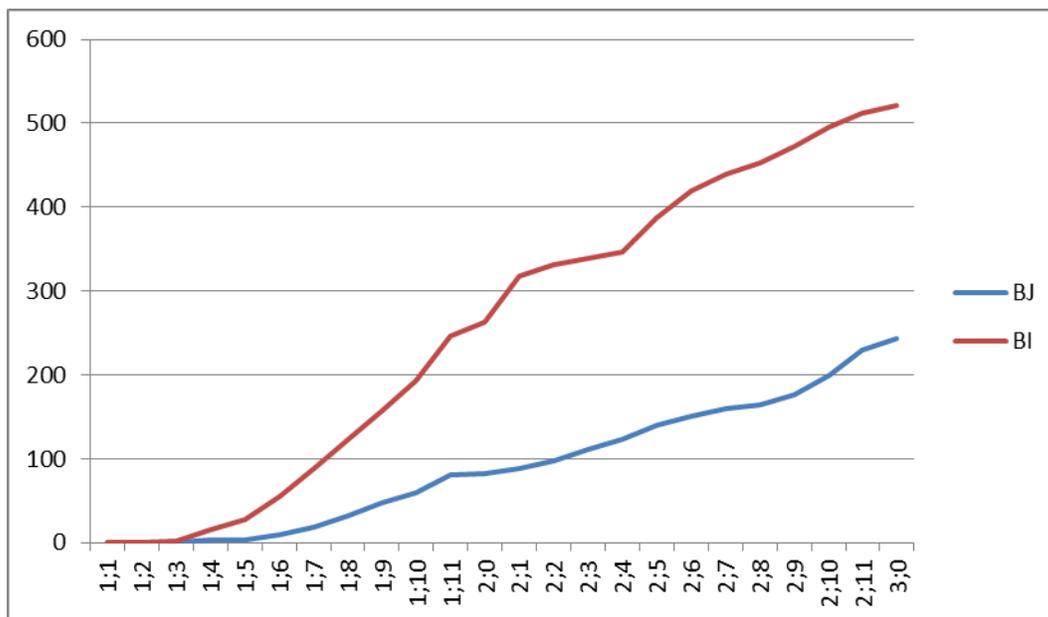


Figure 01. Comparison of the Cummulative Number of Words Acquired in Indonesian and German from Age 1;1 until Age 3;0

In Figure 01 it shows that the number of words acquired by ALY in Indonesian was more than twice as many as the number of words acquired by her in German. The number of words acquired by ALY in Indonesian exceeds the number of words acquired by her in German and this can be understood since there were a lot of people who communicated in Indonesian around her, while German was acquired regularly by her only from her father and her older sister. Besides, when ALY joined the playgroup, the language used in the playgroup was Indonesian. As the consequence, the number of words acquired by ALY in Indonesian exceeds



to a greater extent than that in German. A similar situation was also found by Nicoladis (2001) in his study which investigated simultaneous bilingual child's word development who was exposed to English and Portuguese. Nicoladis (2001) found that the cumulative number of the child's words in English was higher than that in Portuguese. According to him, this was caused by the situation, in which both in the family environment and in the child's social environment, more people used English. The only person who spoke Portuguese regularly to the child was his father so that the child acquired English more dominantly. Schelletter (2005) who investigated German-English bilingual child word acquisition also categorized children who acquired more words in German into children who were dominant in German and the reverse, those who acquired more words in English into children who were dominant in English.

Second, from Figure 01, it can also be stated that when the number of words acquired in Indonesian and German development, at the age 3;0, ALY acquired 764 productive words. The results of research on word acquisition so far show varied findings and most of them were based on monolingual child language development. Italian children in general were able to acquire 200 productive words at 2;6 (D'odorico, Carubbi, Salerni, & Calvo, 2001). Moskowitz (1981) showed that at 1;6 children were able to acquire about 100 words, while Clark (2009: 75) stated that when a child is 2;0, he or she can acquire words with a variation of numbers from 100 to 600 words. Stoel-Gammon (2011) informed that American children at 2.0 can acquire from 250 to 350 productive words. Meanwhile, Dardjowidjojo (2000) reported that his grand child acquired 465 words at 2;0. According to Dardjiwidjojo (2000) that number (465) is relatively greater than the number of words acquired by most children. However, he did not give any reason why the subject in his study acquired that higher number of words than the average number of words acquired in other studies. In ALY's case, who simultaneously acquired Indonesian and German, the result on the number of words acquired at 2;0 in Indonesian shows that the number of productive words acquired in Indonesian was about 263 and in German about 82 and when they are added together the number was 345. This finding is closer to the finding of D'odorico, Carubbi, Salerni, & Calvo (2001), and that of Stoel-Bammon (2011).



Third, in word acquisition, both in Indonesian and German, noun acquisition dominated, then it was followed by verb acquisition and adjective acquisition, as shown in Table 01.

Table 01. The Acquisition of word classes in Indonesian and German

	BI	BJ
N	276	111
V	128	39
Adj	57	29
P	21	23
Pron	20	21
Adv	17	18
Num	2	2
Total	521	243

In other words, the majority of words produced by ALY both in Indonesian and German, belong to noun group, that is, the percentage of nouns in Indonesian was 53% and in German, 47% of all word classes acquired. This finding runs parallels with the universal tendency from the results of cross linguistic studies that showed that at the initial development in the child's lexicon it was found that nouns dominate in the child's lexical acquisition.

Although in his or her initial language development the child is able to express words that are related to activities and conditions, most of words produced by him or her are words that can be labeled as nouns, then it is followed by predicators and adjectives. The studies that found that noun acquisition was more outstanding than the acquisition of other word classes, for example, lexical acquisition for English and Italian (Caselli, Casadio, & Bates, 1999), for German acquisition (Grimm, 1999), French (Carubi, Salerni, & Calvo, 2001), see also Mills (1985), for Indonesian (Dardjowidjojo, 2000), for Hebrew (Berman, 1985), for Navajo (Getner & Boroditsky, 2009).



In relation to word class acquisition by bilingual children, Nicoladis' work (2001) also shows that from the case of children who acquire English and Portuguese simultaneously it was also found that both in English and in Portuguese, children produced more nouns than verbs. In other words, it can be concluded that the tendency for children to acquire more nouns than other words is also true for children who acquire two languages simultaneously.

Theoretically, the reason why nouns are acquired before verbs or that the acquisition of nouns is more dominant than verbs in child language acquisition was explained by Gentner (1982) which is known as noun-bias hypothesis. In noun-bias hypothesis it is explained that children have a tendency to learn nouns more easily than other words. This tendency is caused by the fact that nouns name objects (things) and objects are easily learned by children than actions or conditions. The reasons why objects are more easily learned by children among other things are: (1) perceptively, objects have clear/ real existence, (2) semantically, objects are easier than predicators, (3) object category is innate, see also Poulin-Dubois & Graham, 2007; Nicoladis, 2001).

3.4 Development of Lexical Equivalents

Nicoladis (1998) states that one thing that can be used as the evidence that simultaneous bilingual children can differentiate two different linguistic systems that they acquired is by looking at lexical differentiation developed by the children or the use of translation equivalents. Translation equivalents are also called cross-language synonyms (Schelletter 2005).

The way of counting translation equivalents produced by children in this study follows Nicoladis' technique (1998) that is translation equivalents are counted when the child produces words in the two languages that he or she acquired, that is, Indonesian and German which refer to the same word class or similar event and situation. For example, Nicoladis (1998) gives an example that in his study of a child who acquired Portuguese and English, the child produced in Portuguese the word *bola* 'ball', and English *ball*. Although the two words do not have to refer to the same ball, both words refer to the same word category, that is 'ball'. Thus, the word *bola* and *ball* are regarded translation equivalents.



In the case of ALY's language development, there are about 164 translation equivalents developed from age 1;1 to 3;0. ALY has developed translation equivalents or cross language synonyms since an earlier age or at the beginning of her language development. This agrees with the finding of Pearson, Fernandes & Olle (1984) and Quay (1995) (in Schelletter, 2005) which report that translation equivalents emerge since the beginning of bilingual child language development. The child's ability to produce translation equivalents is also shown by Schelletter (2005) who studied German-English bilingual child lexical development. The ability of the bilingual child to produce translation equivalents since the beginning of his or her language development is the empirical evidence of Separate Development Hypothesis (SDH) in bilingual child language development. A similar conclusion was also made by Schelletter, Sinka & Garman (2001) that since an early age children were able to differentiate words that they acquire. In other words, the child's ability to produce translation equivalents annihilates Unitary Language System (ULS) or linguistic integration which was proposed by Volterra & Taeschner (1978).

4. Conclusion

In conclusion, the child raised simultaneously in Indonesian and German has developed approximately 521 lexicon in Indonesian and 243 in German. The child produced more nouns in comparison to other words categories. The child also developed about 164 translation equivalents or bilingual synonyms. That the child developed translations equivalents, it proves that the bilingual child developed two different lexical systems. The finding implies that the bilingual child has the capacity to acquire two different linguistic systems.

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