

Codeswitching in Infant Bilingualism: A Case Study of a Two-Year-Old Simultaneous English-Japanese Bilingual

Shikano Midori

Part-Time Instructor, Nagoya University, Faculty of Language and Culture
email: mshikano@ppp.bekkoame.ne.jp

Longitudinal data was collected in a case study of a child who was acquiring English and Japanese simultaneously in the United States, and then examined to see if the child's switches in her language were due to linguistic insufficiency or were similar to the kind of codeswitching seen in adult bilinguals. As in an earlier study by Lanza (1992), the data suggested that the young bilingual could differentiate between two languages from the early stages of language development. The subject was also found capable of contextual codeswitching, in which she followed the lead of an interlocutor in switching her language, as well as situational codeswitching, in which she independently changed her language in accordance with changes in interlocutors or venue. Nonetheless, the subject's codeswitching appeared to differ from that of older bilinguals in some respects. There were many instances in which she abruptly switched languages for no apparent reason, whereas codeswitching by older bilinguals has been found to serve conversational functions (Fotos, 1995). Although the subject switched languages and repeated a message on a number of occasions, it was not clear that she did so for pragmatic reasons as older bilinguals do. The subject's high rate of codeswitching between utterances compared to switching within utterances might also be seen to be indicative of less maturity in bilingual communication, as a single word association in one language seemed to drag every element in the utterance into the language of that word. Despite these apparent differences, however, the data suggested that the mixing patterns in infant bilingualism and more mature bilingualism have characteristics in common.

＜同時バイリンガル幼児におけるコード切り換え：英語-日本語を同時に学ぶ2才児の場合＞

鹿野緑、名古屋大学言語文化部非常勤講師

この論文は、米国で英語と日本語を同時に習得した2才児の発話を定期観察した事例研究である。2つの言語の「混合」のパターンが、言語能力的な限界によるものであるのか、あるいは大人のバイリンガルが行なうコード切り換えに近いものであるのかを分析した。その結果、Lanza (1992)と同様、同時バイリンガルである被験者は、言語習得の初期においてすでに2言語を区別していることが示された。また、大人と同様な「場面、状況に応じた (situational)」コード切り換えが観察された。つまり、被験者は、相手の話者が行なったコード切り換えを言語的なきっかけとして切り換えに応じたり、文脈または場所の変化に応じて自ら切り換えを行なったりしていた。しかし、年上のバイリンガルがコード切り換えを会話の中に強調や引用の意味で活かす(Fotos, 1995)のに対して、被験者が自ら切り換えを行なった例の中には、そのきっかけや理由が特定できないものも見られた。全く同じ意味を2言語で繰り返す自然な翻訳も多く観察されたが、表面的な類似性に反して年上のバイリンガルのように語用論の方略に基づいた「会話的 (conversational)」コード切り換えとは特定し難い。文レベルのコード切り換えが多用されているのは、ある言語で単語連想をした場合に文内の他のすべての要素を引きずってその言語に切り換えたのが一因と思われる。被験者は、バイリンガルでコミュニケーションを行なう場合の方略がまだ未熟である一方、言語習得の初期にすでに大人の切り換えと共通性のあるコード切り換えを行なっていることがデータから示唆された。

INTRODUCTION

Codeswitching is a widely observed performance phenomenon common in communication among bi- or multi-lingual people. Meisel (1994) defined it as follows:

"[Codeswitching is] a specific skill of the bilingual's pragmatic competence, that is, the ability to select the language according to the interlocutor, the situational context, the topic of conversation, ... and to change languages within an interactional sequence in accordance with sociolinguistic rules and without violating specific grammatical constraints." (p. 414)

As language contact phenomena have come into more prominence (Koll-Stobbe, 1994), codeswitching has received increasing attention. Although many studies (Fotos, 1995; Myers-Scotton, 1998, etc.) seem to agree that codeswitching is an important pragmatically-motivated discourse strategy, it is still

to agree that codeswitching is an important pragmatically-motivated discourse strategy, it is still controversial whether generalizations based on the speech of adult or relatively older child bilinguals also apply to the mixed usage of languages seen in the earlier phases of bilingual development (Meisel, 1994). This study will therefore investigate the types and contexts of codeswitching by a bilingual in the early phases of language development to see if the switches were due to the child's linguistic insufficiencies or were more typical of the kind of codeswitching of mature bilinguals.

PRIOR STUDIES

Simultaneous Acquisition of Two Languages and Language Differentiation

Simple exposure has been shown to be enough to allow children to acquire more than one language easily (Vihman & McLaughlin, 1982). McLaughlin (1978) divided bilingualism into two categories depending upon the timing of the acquisition of the second language: acquisition of more than one language before age three is considered simultaneous, whereas acquisition of one of the languages before the other is considered consecutive. Romaine (1989) explains that the major variables in the linguistic environment that affect simultaneous bilingualism are the parents' language(s), the community language(s), and parental strategies for raising children bilingually. Vihman & McLaughlin (1982), on the other hand, divided previous studies according to the types of input the child received (i.e.: one person - one language strategy, mixed usage, or monolingual usage) in the home and community.

Although a variety of linguistic environments and input allow children to become bilinguals easily, the process of simultaneously acquiring two or more languages does not seem to be as simple as is often thought. Many studies have reported that there is a stage in which young bilingual children "mix" elements of the two languages (for example Fantini, 1978; Redlinger & Park, 1980; Vihman, 1985; Petersen, 1988; Genessee, Nicoladis & Paradis, 1995; Pearson, Fernandez, & Oller, 1995; Quay, 1995; and Wanner, 1996) and that this stage is a "hallmark of bilingualism as a first language" (Vihman & McLaughlin, 1982).

What is going on in this stage is a matter of dispute. Some researchers (Redlinger & Park, 1980; Vihman, 1985, and others) favor the one-system hypothesis, which claims that simultaneous bilinguals first acquire a single language system that has a unified lexicon and grammar for the two languages; later, this system gradually splits into two as the child learns to differentiate between the two languages in his or her environment. Supporters of this hypothesis consider "Any type of linguistic interaction between two languages" to be a sign of the child's lack of linguistic ability and awareness of the fact that s/he is dealing with two different languages (Lanza, 1992).

Genessee (1989), however, questioned the one-system hypothesis, arguing that "bilingual children develop differentiated language systems from the beginning and are able to use their developing languages in contextually sensitive ways" (p.161). His so-called "two-system hypothesis" claims that the language mixing in bilingual children is not a result of lack of linguistic or pragmatic awareness. Other studies suggest that even very young infants can differentiate between two languages (for example, Saunders, 1983; Fantini, 1985; DeHouwer, 1990; Meisel, 1990; Genessee, Nicoladis, & Paradis, 1995; Pearson,

Fernandez, & Oller, 1995; Quay, 1995; Yamamoto, 1996).

Recently, Karmiloff-Smith (1996) has proposed a third model which blends the so-called "one-system" and "two-system" hypotheses, suggesting that simultaneous bilinguals maintain one system for certain language domains and two systems for others. Some support for this model was seen in a case study of a young Japanese-English bilingual by Wanner (1996).

Codeswitching by Adult Bilinguals

If the mixing of languages in very young bilinguals has been seen as a sign of immaturity, switches in language by older bilinguals has now been recognized as "a specific skill of the bilingual's pragmatic competence" (Meisel, 1994), as we have seen above. Two main approaches have been used to investigate codeswitching: linguistic research on the syntactic nature of the switch, and sociolinguistic research on the functions performed by the switch (Fotos, 1995).

The former approach investigates the types of constraints on codeswitching which bilinguals follow to maintain grammaticality. According to Poplack (1980), there are three types of codeswitching with respect to the forms used: 1) tag-switching (i.e., the insertion of a tag in one language into an utterance in the other); 2) intersentential codeswitching (i.e., a switch at a clause or sentence boundary); and 3) intrasentential codeswitching (i.e., a switch within a clause or sentence). The third category is referred to as code-mixing as well. An alleged inability to separate two grammatical systems is labeled "fusion" by Meisel (1994).

Sociolinguistic research divides codeswitching into two types: situational codeswitching and conversational codeswitching (see Myers-Scotton, 1993). In the former, bilinguals switch languages when the situation changes, i.e., they use one language with speakers of that language and the other language with speakers of the second language, or they use one language at home and one in the community, or one to express emotions and the other for intellectual purposes.

In conversational codeswitching, however, speakers use two languages in the same situation and the same conversation. Switching from one language to another can fulfill a number of functions, including emphasizing or calling attention to certain points, setting off reported speech, dramatizing passages, and repeating the same message in two languages. Thus it is a discourse strategy which enriches conversations. Whereas situational codeswitching is used for the "establishment and maintenance of social relationships", conversational codeswitching is a more pragmatically oriented "communication strategy".

In addition to the enrichment provided by conversational codeswitching, Myers-Scotton (1993) argues that code choice is also an index of the social relationships between speaker and interlocutor. According to her markedness theory, "Code-choice which will index an expected rights and obligations set between participants is unmarked" and, thus, follows the community norms. In some bilingual communities, frequent codeswitching in conversations is a sign of belonging, and is the unmarked choice of in-group communication. Marked code choice, on the other hand, is "negotiation away from the expected" (Myers-Scotton, 1993).

Codeswitching by Child Bilinguals

Let us now consider how codeswitching in cases of "bilingualism as a first language" has been discussed. Fantini (1978) investigated the interrelationship of linguistic choice and context among bilinguals using the data of two young bilingual children acquiring Spanish and English. Codeswitching by the two children in his study was at a very early stage of development, but the children showed a deliberate choice of languages depending on social cues. Fantini called this codeswitching "bilingual behavior, and a most significant step toward differentiated speech styles" (p. 292).

Taeschner (1983) attempted to understand the peculiarities of the process of language organization in the child who faces the problem of learning two languages when other children are learning only one. "Transfer of elements from one language to another" was referred to as "interference." In her definition, "interference" refers to what is generally called mixing, borrowing, or codeswitching. She found that lexical interference, the most frequent of these phenomena, tended to decrease as the child's language proficiency progressed. She also suggested a strong correlation between the child's language dominance and the intense exposure to either of the languages as well as the quality of interactions with interlocutors.

Vihman (1985) investigated an English-Estonian infant bilingual's speech from 1;7 (1 year and 7 months) to 2;10 (2 years and 10 months) and claimed that diminution and avoidance of language mixing may be ascribed to the dawning of metalinguistic awareness or cognitive advances.

Petersen (1988) investigated a Danish-English bilingual three-year-old who used word-internal codeswitching (i.e., code-mixing at the morpheme level), even though the child had never been exposed to a codeswitching bilingual community. Petersen concluded that "codeswitching is not random and that there are constraints on where it can take place" (p.480). Petersen also hypothesized that codeswitching (i.e., code-mixing at the morpheme level in this case) is the result of language dominance and is not something that the child learns from the codeswitching represented in the input. Other studies (Genessee, Nicoladis, & Paradis, 1995, for example) have also discussed the relation between mixing in the child's production and the mixing displayed in the input.

One recent study (Lanza, 1992) dealt with the question "Can bilingual two-year-olds codeswitch?", challenging Vihman's (1985) claim that "the mixing patterns in infant bilingualism and more mature bilingualism are different in their qualities." Lanza investigated grammatical morphemes, lexical morphemes and contexts of codeswitching by a two-year-old English-Norwegian bilingual and concluded that there was no qualitative difference between the subject's (Siri's) language mixing and that of older bilinguals (p. 655), although there was not necessarily the same pragmatic sophistication. Lanza considered language mixing by an infant to be a result of dominance and not a result of lack of language differentiation.

Support for her theories was provided by Wanner (1996), who investigated the stage of the linguistic development of a simultaneous bilingual child at which situational codeswitching begins. Wanner's study gave precise data on the subject's speech patterns, vocabulary growth, translation equivalents, and Mean Lengths of Utterances (MLUs) in each language. It argued that the initial appearance of translation equivalents between 1;9 - 1;10 meant the child had the vocabulary to codeswitch, and showed that the subject was, in fact, capable of contextually sensitive codeswitching at this point.

RESEARCH FOCUS

This case study attempts to explore language choice by an infant bilingual, moving beyond questions of whether two-year-olds can codeswitch (Lanza, 1992) or when codeswitching begins (Wanner, 1996), to an analysis of how codeswitching at this early stage in bilingual development compares to the codeswitching of older bilinguals. Longitudinal data on codeswitching by a two-year-old simultaneous Japanese-English bilingual is examined to see if the child's switches might be the result of linguistic deficiencies or dominance, or if they could be attributed to other motivational triggers. The possibility of the infant's codeswitching fulfilling conversational functions and enriching discourse, as it has been shown to do in older bilinguals (Fotos, 1995), is explored. Codeswitching examples are also examined for suggestions of the subject's sensitivity to contextual factors such as setting and interlocutor. The subject's methods of selecting a suitable language for various interlocutors are also investigated in a practical experiment.

SUBJECT

Language Acquisition

The subject of the present study is the writer's daughter Ai, who acquired English and Japanese simultaneously in the United States. She was 11 months old when the family left Japan for the United States. From the age of 11 months to 1 year and 5 months, she had a Japanese-speaking caretaker at home; after that, she started to go to a daycare center where all the children and staff spoke English. Her parents spoke Japanese as their mother tongue and English as a foreign language. The subject had an elder sibling (7 years older) who spoke Japanese and acquired English by going to a local school in the United States. Her mother and brother were the main providers of language input at home, as her father did not stay in the United States except for several visits a year. Ai spent six to seven hours a day, five days a week, at the daycare center.

Before the subject moved to the United States with her mother and brother at the age of 11 months, she had been mainly exposed to Japanese, although she also had limited experience with some English speakers. She spoke her first Japanese words, "*hai*" [yes] and "*chodai*" [May I have some?], when she was around 10 months old. Ai was still in the stage of babbling at around 1 year of age, continuously making utterances which sounded as if she were speaking real words.

As she started to go to the daycare center (1;5) and her older brother became more comfortable and more competent in speaking English (even at home), her babbling in English-like sounds and intonations increased. (The subject's age hereinafter will be abbreviated as 1;5,27, meaning 1 year, 5 months and 27 days.) Ai spoke her first English words and phrases, "no", "mine", and "See you 'morrow", around 1;6, about one month after she started to go to the daycare center.

After she began daycare, Ai was constantly exposed to English at the daycare center as well as in the community, and to Japanese and English at home. Her mother and brother were important interlocutors at home. Both of them often codeswitched freely in conversations between themselves and with the subject. In this sense, language usage around the subject (following Romaine, 1989) was

"monolingual usage in the community" and "mixed usage at home."

Judging from the above circumstances, the subject can be considered to be a simultaneous bilingual, as she had constant exposure to both languages from her infancy.

Distinguishing Sound Patterns

Before the subject began to speak in full sentences, she went through a stage in which she continuously made one-word utterances or sounds. Between 1;0 and 1;6, she often stopped making sounds and kept silent when there were English-speaking guests in the home. She was attentive, but did not utter a word to the English speakers. When she entered the English-speaking environment of the daycare center, she started to babble in English-like sounds and intonations as well.

The writer's diary contains an anecdotal example of how the subject associated sound patterns with gestures even before English production began at the age of 1;6. Ai liked to talk on her toy telephone, babbling into it as if she were talking to someone. When she made Japanese-like sounds and intonations, she inserted a few Japanese words such as *"hai"* [yes] and used gestures typically associated with the Japanese language and culture (e.g., bowing and putting up her hand to cover her mouth when she laughed). When she made English-like sounds and intonations, however, she inserted a few English words such as "well", "uhm," and "yeah" and used gestures associated with American language and culture (e.g., shrugging her shoulders, putting her palm face up and saying "well."). Thus, as was suggested by Fantini (1985), it may be valid to assume that the subject could distinguish the sound patterns of the two languages even before she started to utter full sentences.

DATA COLLECTION

The data of this study are based on a longitudinal investigation of the subject's simultaneous acquisition of English and Japanese in the United States. Both audiotape recordings of the child's daily conversations and the writer's diary notes were used. The audiotapes were made at approximately one-week intervals at convenient times over a period of about three months. Each recording lasted 10 - 15 minutes and consisted of everyday conversations in which the subject spoke spontaneously (i.e., her speech was not elicited in any way).

The tapes were transcribed by the writer. As the author was one of the important participants in many of the recorded conversations, her observations at the time of the recordings were also incorporated. Unclear parts of the recordings were excluded from the data.

The subject was 2;4 at the onset of recording and the data were collected until she became 2;7. A total of 18 recordings of 477 utterances were made. Following Lanza (1992, p. 638), an utterance was defined to be "a word or a group of words with a single intonation contour".

As the subject is the present writer's own child, she was under constant observation since her arrival in the United States. Therefore, the observations based on the writer's diary notes at irregular intervals (from 0;11 to 2;7) were also incorporated in this study.

RESULTS AND DISCUSSION

Analysis of Overall Language Use

The recorded data were first analyzed to determine the language used in each of the 477 utterances. This quantitative analysis is presented in Table 1 below. As shown there, the recordings contained 257 English utterances with no Japanese words inserted, 210 Japanese utterances with no English words inserted, and 10 utterances in which both languages were used (mixed utterances). These represented 53.9%, 44.0% and 2.1% of the total number of utterances respectively.

TABLE 1: Quantitative Analysis of Subject's Recorded Language Production (2;4 to 2;7)

Language(s)	MLU*	Upper Bound	MMU**
English utterances	2.94 (n=257)***	6	80.2% (n=206)
Japanese utterances	2.83 (n=210)	8	57.1% (n=120)
Mixed utterances	--- (n=10)	---	---

* MLU = Mean Length of Utterance

** MMU = Multi-morphemic Utterance

*** Numbers in parentheses indicate raw frequencies.

The subject used a total of 313 different words in the recorded utterances. Of these, 82 (26%) were doublets. These pairs of Japanese and English words with the same meaning (e.g., "*osoto*" and "outside") in the subject's lexicon suggest the potential to choose the language appropriate for the context (Wanner, 1996). However, the percentage of doublets included in the recordings may considerably underestimate the subject's acquisition of translation equivalents for two reasons: 1) Japanese and English do not always have one-on-one relationships, and 2) the recorded utterances do not reflect all of the subject's vocabulary.

Direction and Types of Codeswitching

The recorded data was also analyzed to determine the number of times the subject changed the language she was speaking, the direction of the switch, and the possible reason for the switch. Switches were also classified according to where they took place: within utterances or between utterances (comparable to intrasentential and intersentential codeswitching in older bilinguals).

The subject switched languages between utterances a total of 85 times in the recorded data. The direction of the subject's switches are presented in Table 2. As can be seen, they were almost evenly divided.

TABLE 2: Direction of Switches in Recorded Data

Direction	Number	Percent
English to Japanese	44	51.8%
Japanese to English	41	48.2%
Total Switches	85	100.0%

The recorded data showed no code-mixing at the morpheme level (i.e., word-internal switching) or phonological fusion. As mentioned above, the frequency of the subject's codeswitching between utterances was high (97.9%) whereas that of codeswitching within utterances (mixed utterances in Table 1) was low (2.1%). The few recorded cases of codeswitching within utterances were mainly nominal phrase (NP) insertions or adjective insertions. It is possible to presume that the subject did not codeswitch within utterances because she learned to say formulaic expressions both in Japanese and in English. If that had been the case, however, mixing would have increased as her production increased. This was not the case.

The absence of one-directional codeswitching (switching into the dominant language), combined with the high proportion of translation equivalents in the overall vocabulary of the subject, the absence of code-mixing at the morpheme and phonological levels, and the low rate of codeswitching within utterances, suggest that the subject was a balanced bilingual.

Codeswitching Triggers

The 85 cases of codeswitching in the data were analyzed to investigate the probable reason for the switches. Apparent causes included lexical gaps, communication problems, and changes in the interlocutor, the interlocutor's choice of language, or the language environment itself. Cases of spontaneous self-translation and abrupt, unexplainable switches in code were also observed. Examples of each type of codeswitching are presented below.

Lexical Gaps

In a few instances, the subject's codeswitching appeared to be a result of a lack of vocabulary in the language in use at the time. Examples 1 and 2 show instances of switches triggered by such lexical gaps¹.

Example 1 : (Home, talking in English with mother, an E-J bilingual; Age: 2; 4,29)

- | | | |
|----------|---|------|
| Subject: | (Almost falling from a chair when she is eating at the table) Help! | [1] |
| | (Having finished eating her bread) All gone. | [2] |
| | <i>Muki muki *suru</i> [Peel it.] | [3] |
| Mother: | (Giving the subject a piece of an apple) Here. | [4] |
| Subject: | A big one. | [5] |
| | (Pointing to a big piece and a small piece) A small and big.... | [6] |
| | An apple cider. | [7] |
| | <i>Pan mo atta</i> [There is bread, too.] | [8] |
| | <i>Pan</i> [Bread.] | [9] |
| | More, more, more. | [10] |
| Mother: | You want more? | [11] |
| Subject: | More. <i>Jamu tsukete</i> [Put jam on it.] | [12] |
- * This is a child form of *muku* [peel].

In Example 1, the interlocutor (the subject's mother) was speaking English to the subject. The subject responded to the interlocutor in English at first, and then made several switches between Japanese and English. At the age of 2;4,29, when this example was recorded, the subject had not yet learned the words "peel" (sentence 3) and "bread" (8 and 9) in English. Since she did not have the appropriate English lexical items at her command, it is presumable that lack of vocabulary triggered her codeswitching in this example. It is interesting to note that the subject switched between utterances instead of inserting items in one language into the syntax of the other language.

A similar case is presented as Example 2.

Example 2: (Home, watching an English TV program with E-J bilingual interlocutor; Age: 2;7,0)

- | | | |
|----------|--|-----|
| Subject: | Look! | [1] |
| | It's a bat. | [2] |
| | <i>Onbu shiteruyo</i> [It is carrying (something) on its back.] | [3] |
| | (Pause as she continues watching TV) | |
| | <i>Itai</i> [Ouch (It hurts.)] | [4] |

At the time of this recording (2;7;0), the subject had not yet learned the English equivalent of *onbu suru*, which appears here in in sentence 3.

Again we see the subject switching between utterances, limiting herself to a single language in each utterance instead of putting the element lacking in one language into an utterance in the other language. This could be interpreted as an avoidance strategy triggered by lack of vocabulary, as codeswitching within utterances might require more linguistic maturity. On the other hand, the subject displayed an

ability to make switches within utterances in a limited number of examples (ten) in the data. The predominance of codeswitching between utterances in the data might therefore be interpreted to indicate that a single word association in one language pulled every other element in the utterance into the language of that word.

As mentioned above, by the time the recordings were made, the subject had acquired many translation equivalents. However, some items of her lexicon appeared to be limited to one language because they were culturally specific. Since apples are neatly peeled before being eaten in Japan, the subject had already learned the "baby talk" form of the verb "*muku*" [to peel], as we saw in Example 1, sentence 3 above, but perhaps because she had not experienced fruit being peeled in her English-language environment, she had not acquired the translation equivalent. Similarly, cultural differences in childcare probably led to the codeswitch in Example 2, sentence 3. Since Japanese often carry infants on their backs, the subject knew the verb for that action (*onbu suru*), but had probably never heard its English translation equivalent.

Another source of the subject's lexical gaps might have been differences in her experiences in her different language settings. In some cases, she appeared to lack translation equivalents in one language because she experienced certain things exclusively in settings where the other language dominated. For example, among the words she used only at home and for which she had no English translation equivalents were the Japanese terms "*ofuro*" [bath], "*shawa*" [shower], "*gohan*" [rice], and "*oniichan*" [big brother]. English terms which she used only at the daycare center and for which did not have Japanese translation equivalents included "swing", "slide", "take a nap", "diaper", and "butter toast".

It must be stressed, however, that codeswitching apparently triggered by lack of vocabulary was not the most frequent type of codeswitching found in the data. The subject more often codeswitched from English to Japanese, or vice versa, when she already had the vocabulary to express almost the same meaning in both languages.

Communication Gaps

Some of the subject's codeswitching appeared to be triggered by communication problems, as shown in Example 3.

Example 3: (At a flower shop, talking in Japanese with her mother, an E-J bilingual interlocutor;
Age: 2;6,17)

- | | | |
|----------|---|-----|
| Mother: | <i>Okasan wa chiisai hana ga suki</i> [Mom likes little flowers.] | [1] |
| Subject: | <i>Ai-chan wa big no</i> [Ai likes (big) ones.] | [2] |
| Mother: | (Who did not hear the word "big.") <i>Un?</i> [Huh?] | [3] |
| Subject: | <i>Ai-chan wa big no</i> [Ai likes [big] ones.] | [4] |
| Mother: | (Still not understanding) <i>Nani?</i> [What?] | [5] |
| Subject: | <i>Ai-chan wa okkii* no</i> [Ai likes big ones.] | [6] |

* This is a child form of *okii* [big].

In this example, the subject repeated the mixed sentence (2 and 4), but the interlocutor still did not understand and asked for a repair. The child finally changed the inserted English adjective "big" to a Japanese equivalent, "*okkii*", in order to have her mother understand what she meant to say. Similar instances were reported by Fantini (1985). In advising parents on how to help bilingual children separate their languages, he said that it is more effective to ask for a repair by saying "What did you say?" or "I didn't hear you well" in the expected language than to directly elicit translation equivalents by saying "What is this word in German?" or "What does Mom call it?"

Spontaneous Self-Translation

The recorded data included a number of instances of unelicited self-translation, in which the subject followed a Japanese utterance with its English equivalent, or vice versa, in one turn of the conversation. Presumably these switches were not triggered by changes in the situation, since they took place in a single turn in the conversation. Five examples of this type of codeswitching are given below. Each pair was uttered in one turn of a different conversation, and in all cases, the Japanese and English utterances can be considered equivalents.

- Example 4** Subject: *Asobo*. Let's play.
Example 5 Subject: I wanna go outside. *Osoto iku*.
Example 6 Subject: *Yonde*. Read it!
Example 7 Subject: Look at that. *Mite*.
Example 8 Subject: I wanna play here. *Koko de asobu*.

A similar instance of this kind of spontaneous self-translation occurred in the first two utterances of Example 9 (which will be presented in full later).

- Example 9:** (Home, talking mainly in English with E-J bilingual interlocutors [mother and brother]; Age: 2;4,29)
 Subject: (Eating in the kitchen) *Oishii* [Delicious.] [1]
 I like it. [2]

From the transcripts alone, it might appear that the subject was using codeswitching for emphasis in these examples, especially in 4 through 8, where she was expressing a desire to do something or making a request. This would make these switches similar to one kind of conversational codeswitching performed by older bilinguals. In Fotos' study (1995), both the 7 year-old balanced bilingual children and the limited-proficiency EFL learners were found to switch languages and repeat the same information in order to emphasize important points (p. 10).

However, the writer found it difficult to conclude that the subject was actually using the above switches in this way. In none of these cases was the switch in language accompanied by a change in

tone that might suggest emphasis. Moreover, in Example 5, the writer (mother) had already begun to move outside when the statement was repeated in the other language, so there was no apparent need for the subject to emphasize her desire to go out. Given the subject's maintenance of the same tone in these examples, her spontaneous translations might be interpreted to be nothing more than a sign that she knew there were two ways to express one meaning.

It should be noted, however, that the writer/mother herself often made this type of self translation, so the subject had plenty of examples of this type of codeswitched repetition in her linguistic input. One instance was recorded and appears below in Example 10. Lanza (1992) stresses the importance of parental input in creating a monolingual or bilingual context, in which codeswitching is discouraged or encouraged to varying degrees. The mother's use of this type of codeswitching may have therefore encouraged similar switching in the subject.

Thus the subject's use of translation equivalents within single utterances is open to several possible interpretations. Further research is required to determine how closely this type of codeswitching in an infant bilingual resembles the pragmatic functions of conversational codeswitching by more mature bilinguals.

Unexplainable Language Shifts

Occasionally the subject made abrupt shifts from one language to the other for no observable reason. Consider the following example.

Example 9: (Home, talking mainly in English with E-J bilingual interlocutors [mother and brother]; Age: 2;4,29)

- | | | |
|----------|--|------|
| Subject: | (Eating in the kitchen) <i>Oishii</i> [Delicious.] | [1] |
| | I like it. | [2] |
| | <i>Moo ii</i> [I don't want any more.] | [3] |
| | An orange! An apple! | [4] |
| | (Looking at a book on the table) <i>Yabuicha dameyo</i> [You mustn't tear it.] | [5] |
| | (Locating a picture in the book) <i>A, koko da</i> [Ah, here it is.] | [6] |
| | (Noticing the sound of the heater) What's the matter? | [7] |
| Brother: | Nothing. | [8] |
| Subject: | What's the matter? | [9] |
| | <i>Goro goro?</i> [(Is that) thunder?] | [10] |
| | What's that? | [11] |
| | What's the matter? | [12] |
| Brother: | Nothing. | [13] |
| Subject: | What's the matter? | [14] |
| | Nothing. | [15] |
| | Ha, ha, what's that? | [16] |

Mother:	It's a heater.	[17]
Subject:	A heater?	[18]
	(Spilling her drink) <i>A koborechatta</i> [Oh, it spilled.]	[19]
	(Throwing away her plastic cup) Here you go!	[20]

Although it is possible to assume that the subject had particular word associations with specific items or topics, as the child's mother and constant observer, the writer found no evidence of such distinctions here. The subject's changes in code appeared to the author to be random.

The above conversation could be taken to support the hypothesis that in some domains, the subject had not yet differentiated between her languages and established two systems. On the other hand, it should be noted that the interlocutors in this case were both English-Japanese bilinguals who codeswitched in their conversations. The subject therefore may have felt that conversational codeswitching was appropriate in the context. The relationship between the subject's codeswitching and the contextual setting will therefore be analyzed next.

Context

Some examples of codeswitching in the data suggest that the subject was able to choose a code appropriate for a specific context, much as adult bilinguals do. Examples 10 and 11 are representative of the subject's codeswitching in response to contextual cues: in this case, changes in code by her interlocutor.

Example 10: (Home, talking with her mother, an E-J bilingual interlocutor; Age: 2;4,29)

Mother:	<i>Ki wo tsukete ne</i> [Be careful.]	[1]
Subject:	<i>Hai</i> [Yes.]	[2]
Mother:	(Repeating the same thing in English) Be very careful.	[3]
Subject:	(Following mother's lead and switching to English) Yeah.	[4]

In Example 10, when the E-J bilingual interlocutor conveyed the same message first in Japanese (utterance 1) and then in English (utterance 3), the subject responded in the language chosen by her interlocutor (utterances 2 and 4, respectively). It was observed that this same strategy was displayed by other bilingual interlocutors in the subject's environment, and this input could presumably have triggered the subject's self-translation in this instance.

A more complex case of the subject following her interlocutor's lead through multiple switches in code is seen in Example 11.

Example 11: (At a school, talking in English with her E-J bilingual brother, his British friend, and the subject's mother, then only with her mother, an E-J bilingual interlocutor; Age: 2;5,14)

- Subject: (To the British friend and her brother) See you later. Bye. [1]
 (Brother and friend leave. Subject then switches to Japanese to speak to her mother.) *Osanpo ikuyo* [(Let's) go for a walk.] [2]
 Mother : (Answering in English) No, we are not going outside. [3]
 How about playing here? [4]
 In this building. [5]
 Subject: OK. Go downstairs. [6]
 (Pointing at a plant near the wall) It's a tree. [7]
 (Going upstairs again) I wanna here. OK? [8]
 Mother: No, we are not going upstairs. [9]
 Subject: Yeah, go upstairs? [10]
 No one's here. [11]
 Let's find it here. [12]
 I'll find it. (Walks around) [13]
 Mother: (Switching to Japanese) *Ai, ikuyo* [Let's go, Ai.] [14]
 Subject: (Also switching to Japanese) *Iyada* [I don't want to.] [15]
 Mother: *Shita ni ikoka* [Shall we go downstairs?] [16]
 Subject: *Kore* [This way] *Iku* [I'm going.] [17]

In the above example, three instances of codeswitching were observed. After the subject said "Bye" to the English-speaking acquaintance and her brother, she independently switched to Japanese to address her mother in utterance 2. The motivation for this switch appeared to be the departure of the English monolingual interlocutor and consequent change in expected language. When the remaining interlocutor replied in English, however (sentences 3 - 5), the subject switched back to English again (6). Later, when the interlocutor abruptly switched to Japanese (14), the subject again followed her lead (15). Thus the subject's codeswitching appears to indicate her responsiveness to linguistic cues from her interlocutor in the conversations.

Situation

The data also included examples in which the subject displayed "the ability to select the language according to the interlocutor [or] the situational context" (Meisel, 1994), that is, the type of codeswitching that is conventionally considered the hallmark of "bilingual behavior" (Fantini, 1978). In some instances the subject independently switched her language in accordance with a change in interlocutors or venue. Utterance 2 in Example 11 above could be interpreted as such a situational switch, since the linguistic situation changed with the departure of the sole English monolingual interlocutor.

Another, more clear-cut case of a switch in codes initiated by the subject because of a change in situation is presented as Example 12.

Example 12: (On the way to the daycare center, talking in Japanese with her E-J mother, then in the daycare center itself, where the interlocutors other than the subject's mother are English monolinguals; Age: 2;6,4)

- | | | |
|--|---|------|
| Subject: | (Outside the daycare house) <i>Naite kuru</i> [I'm going to cry.] | [1] |
| Mother: | <i>Naichau no ?</i> [You're going to cry?] | [2] |
| Subject: | <i>Un</i> [Yes.] | [3] |
| Mother: | <i>Nakanai yo</i> [You will not cry.] | [4] |
| | (Pointing to another child) <i>Ano ko dare?</i> [Who is that?] | [5] |
| | <i>Atarashii ko ?</i> [Is she new?] | [6] |
| (Mother opens the door. Both enter the daycare house.) | | |
| Subject: | I wanna go home. | [7] |
| Mother: | Do you wanna go home? (To the staff) Good morning. | [8] |
| Teacher 1: | Good morning, Ai! | [9] |
| Other children: | Ai, Ai. | [10] |
| Teacher 1: | Yes, Ai is here. Good morning. Hi, Ai. | [11] |
| Subject: | Good morning. | [12] |
| Teacher 2: | Hi, Ai. Want some muffins? | [13] |
| Subject: | Yeah. | [14] |
| Teacher 2: | Want some milk? | [15] |
| Subject: | Yeah. | [16] |
| Teacher 2: | Good! | [17] |
| Subject: | Need a jacket. | [18] |
| Mother: | I'll put your jacket in another room. | [19] |

Here, the subject and the interlocutor (her mother) were speaking Japanese on their way to the daycare center (utterances 1 - 6). However, the subject switched to English (utterance 7) when the door of the center was opened, and continued speaking in English to English-monolingual speakers in the daycare center as well as to her mother. It seems clear that she understood what the expected language was in this particular setting and independently initiated a situationally appropriate switch of codes. Since this switch followed situational norms, it would be characterized as unmarked according to Myers-Scotton's categories.

Contextual Language Choice

Examples 10 through 12 suggest that the subject was able to choose her language according to the context of the conversation, codeswitching situationally in the same way adult bilinguals do. To check

whether such situational codeswitching was consistent, the recorded data was analyzed to determine which language the subject used more in particular settings. The 18 recordings were classified according to which of 8 contextual settings they took place in. The settings were determined not only by the place (home, daycare center), but also by the main language used in the conversation, and the type of interlocutor(s) (English-Japanese bilinguals, English monolinguals, Japanese monolinguals) or absence of interlocutors. The number of utterances the subject made in each setting and her language choice are shown in Table 3. The utterances in Setting 5 are very limited partly because the subject was not much involved in the conversation; however, no purposeful elicitation was made.

TABLE 3: Relation Between Subject's Language Choice and Context

Setting	Place	Main Language Used in Conversation	Interlocutor(s)	No. of Subject's Utterances	Language of Subject's Utterances		
					English	Japanese	Mixed
1	Home	English	E/J bilingual	n=101	71.3% (72)*	26.7% (27)	2.0% (2)
2	Home and Family Outings**	Japanese	E/J bilingual	n=45	20.0% (9)	80.0% (36)	0.0% (0)
3	Home and Family Outings**	E/J switching	E/J bilingual	n=122	45.1% (55)	52.4% (64)	2.5% (3)
4	Home	(Alone)	None	n=50	80.0% (40)	14.0% (7)	6.0% (3)
5	Home	English	E/J bilingual + E monolingual	n=4	100.0% (4)	0.0% (0)	0.0% (0)
6	Home	Japanese	E/J bilingual + J monolingual	n=76	0.0% (0)	98.7% (75)	1.3% (1)
7	Daycare	English	E monolingual	n=68	100.0% (68)	0.0% (0)	0.0% (0)
8	Daycare	English	E monolingual + E/J bilingual	n=11	81.8% (9)	9.1% (1)	9.1% (1)
Total				(477)	(257)	(210)	(10)

* Numbers in parentheses indicate raw frequencies.

** Settings 2 and 3 include going out with the family, but the contextual setting is fundamentally the same as staying home with the family.

As shown in Table 3, the relation between the subject's language choice and the main language expected in the context is high. The ratio of English utterances is fairly high when interlocutors spoke English in Settings 1 (71.3%), 5 (100%), 7 (100.0%), and 8 (81.8%). The proportion of Japanese utterances is also fairly high when interlocutors dominantly spoke Japanese in Settings 2 (80.0%) and 6 (98.7%). In Settings 5 and 6, when there was at least one monolingual interlocutor, the subject seldom codeswitched; instead, she used the monolingual interlocutor's language. At the daycare center, where all but the subject spoke only English, the recorded data contained no cases of her use of Japanese words or sentences. Observations by the caretakers at the center confirmed that she limited herself to English in this environment.

In contrast, when the interlocutors were code-switchers and codeswitched two-directionally between the two languages (in Setting 3), the subject used similar amounts of each language (E=45.1%, J=52.4%), making several switches.

The data thus suggests that the subject's language choice was affected by the main language spoken or expected in the settings and by whether there were switches between the languages in the contexts. The data also contained some instances in which the subject switched due to a change of settings. For instance, as we saw in Example 12, she spoke Japanese to her mother on her way to the daycare center and switched to English at the moment the door was opened to go into the room. Thus a situational change during a conversation affected her language choice as well.

Experimental Evidence of Situational Codeswitching

To examine whether the subject made conscious choices of code based on linguistic knowledge gained through previous experience, the author conducted an experiment which was not included in the recorded data. At a party in the subject's home, the subject was asked to convey a message to six people in general conversation settings. The party guests included two English-monolingual American interlocutors with much previous contact with the subject, one English-Japanese bilingual American interlocutor with extensive previous contact with the subject, two American interlocutors whose language information was unknown to the subject, and three Chinese-English bilingual interlocutors whose linguistic background was also unknown to the subject. The subject was instructed in Japanese by the present writer to offer cookies to the interlocutors and say "*oishii yo*" [These are good/delicious]. The settings were made as neutral as possible. The interlocutors were asked not to start the conversation so that they would not give a cue as to the expected language.

In conveying the message to interlocutors whom she knew to be English monolinguals, the subject translated the original message into English and said "This is good". Thus linguistic information gained through previous contact was used to help the subject codeswitch in a situationally appropriate manner. To the English-Japanese bilingual interlocutor, with whom she had also spent a great deal of time, the subject conveyed the message in Japanese as she was instructed, again displaying her ability to use a language appropriate to the interlocutor.

To the non-Asian looking interlocutors whose linguistic capabilities were unknown, the subject

conveyed the message in Japanese as instructed. Because these interlocutors were English monolinguals, the communication was unsuccessful. Similarly, the subject tried to convey the message in Japanese as instructed to the Chinese-English bilingual interlocutors, whose language information was unknown to her but whose physical appearance was like Japanese-speaking people. It was not until these interlocutors started to speak English that the subject switched to English. When the two Chinese speakers said "What?" after the subject's second and third utterances, she was prompted to codeswitch into English.

The subject did not deliberately switch to English for the unknown interlocutors until she discovered that this language was more comprehensible to them. In other words, she did not have a presupposition that people in the community all speak English. The data here is so limited that it is not possible to generalize, but it suggests that the subject did not rely on her interlocutors' physical appearance, but rather, based her choice of code on linguistic information.

CONCLUSION

The longitudinal data of the two-year-old English-Japanese bilingual in this study lend support to theories advanced by earlier researchers. The high proportion of translation equivalents in the subject's vocabulary, as well as her self-translation and switching for a repair, lend support to the so-called two-system hypothesis (Genessee, 1989). The subject's differentiation of sound patterns in the early stages of her language development, her low rate of code-mixing within utterances, her natural self-translation, and reliance on social and linguistic cues suggest that the young bilingual could differentiate between two languages from the early stages of language development.

The data also suggest that the subject was already able to codeswitch situationally. Although some of her language switches in the recorded data appear to have been triggered by lexical gaps and the need to repair communication gaps, other examples indicated that she was able to choose the language appropriate to the situational context. The subject was shown to be capable of both following the lead of an interlocutor in switching her language and independently choosing to change her language with different interlocutors or in different venues. Examples in which the subject codeswitched in response to the interlocutor's codeswitching may suggest that even cognitively and linguistically undeveloped infants respond to linguistic cues. Analysis of the relationship between the subject's language use and the setting, as well as the unrecorded experiment in which she was asked to convey a message to interlocutors of different linguistic backgrounds confirmed her "... ability to select the language according to the interlocutor [and] the situational context". Her reliance for the most part on codeswitching between utterances helped her do this "... without violating specific grammatical constraints" (Meisel, 1994). The contextually and linguistically sensitive codeswitching displayed by the subject can thus be seen to explicitly support findings by Lanza (1992), Wanner (1996) and others, that two-year-old infant bilinguals can codeswitch.

The subject's use of her two languages was difficult to compare to older bilinguals in some cases, however. There were many instances in which she abruptly codeswitched for no explainable reason. She may well have been simply playing with language. Moreover, although she switched languages and

repeated a message on a number of occasions, it was not clear whether she did so for pragmatic reasons as adult bilinguals might, translating herself to emphasize certain points, or whether she was simply imitating parental input or even displaying her knowledge of two languages. Further research on self translation by bilingual infants is needed before it can be determined whether it is comparable to self translation by older bilinguals.

The subject's high rate of codeswitching between utterances might be seen to be indicative of less maturity in bilingual communication, as it is much easier to maintain grammaticality when each utterance contains only one language. Adult bilinguals with ample experience in communities in which codeswitching is common are often very proficient at intrasentential codeswitching. However, it should be noted that in the ten cases in which the subject did make switches within a single utterance, they were all grammatically correct.

Thus, these differences may well be matters of degree. The data of this study suggest that the mixing patterns in infant bilingualism and more mature bilingualism have characteristics in common. The codeswitching by the two-year-old infant in this study was in most cases triggered by social and linguistic cues, much as the codeswitching by older bilinguals is.

In future research, it would be interesting to consider 1) how the types of infant bilinguals' codeswitching change when the balance of input changes or when the bilinguals become more aware of the pragmatic functions of codeswitching and 2) how the code-switchers in the community and in the home function as input providers for infant bilinguals.

NOTES

1. The setting, main language being spoken at the time, information about the interlocutor, and the subject's age at the time of the recording are given in parentheses after the example number. Actions and gestures accompanying the utterances are explained in parentheses. Japanese utterances are shown in italics, followed by their English equivalents, which are enclosed in brackets.

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