

Development of Bilingual Awareness in Children Acquiring Two First Languages

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The present study investigates how bilingual awareness develops over time in young children acquiring two languages simultaneously. Many researchers in the field have reported linguistic behaviors that suggest bilingual awareness, including situational codeswitching, acquisition of translation equivalents, self- and other-initiated repair, the ability to translate and the labeling of languages (using expressions such as "Japanese" or "how Mom says it" to refer to a language). However, the developmental aspect of such awareness has not received close attention. Furthermore, although it is commonly believed that bilingual awareness is an impetus for language separation, the exact nature of the relationship between the two has not been established. To investigate this relationship and how the awareness of different codes develops, two Japanese/English simultaneous bilinguals who were acquiring their languages through the one-person/one-language approach were observed monthly for a period of approximately one year, from the ages of two to three years old. Natural interactions between the mother and child and the father and child in each family were audio- and video-taped every month, and signs of bilingual awareness were coded. It was found that the children began to exhibit bilingual awareness after their second birthday. The different types of linguistic behaviors that reveal such awareness emerged roughly in the following order: other-repair, self-repair, translation, and labeling languages. The data also suggests that, contrary to the conventional assumption, language differentiation may have triggered awareness of having two codes, rather than awareness of the two codes triggering separation of the languages.

同時二言語習得児におけるバイリンガル意識の発達

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本論文は、二言語を同時習得している子供たちのバイリンガル意識がどのようにして発達していくかに焦点をあてたものである。これまでバイリンガル幼児の言語発達を扱った研究の多くは、子供たちのバイリンガル意識の表れとされる言語行動について報告している。例えば、相手や場面に対応した言語（コード）切り換え、1つの物に対する両言語の名称の習得、自らの、あるいは相手から指摘された言語選択ミスの修正、1つの言語で言われた内容をもう片方の言語で第三者に伝えること、発話にラベル（「日本語」とか「ママの言い直し」など）を付けることなどが、2つの言語を意識していることを示しているとされてきた。しかし、そのような意識の発達過程についてはこれまで扱われてこなかった。また、バイリンガル意識が二言語分化を促すというのが定説であるが、この二者の関係ははまだ解明されていない。この関係を解明し、異なる2つの言語と関わっている意識がどのように発達するかを調べるために、両親が各々の母語のみで子供に話すという環境下で、日本語と英語を習得している二人の幼児を、2歳から3歳にかけて約1年間、月ごとに観察した。各親と子供との自然なやりとりをテープ録音ならびにビデオ録画し、バイリンガル意識の表れを記録した。その結果、子供たちが2歳を過ぎた頃から二言語を意識していると考えられる言語行動が観察されるようになった。また、このような言語行動は、おおよそ、他者修正、自己修正、翻訳、そして言語のラベル付けの順序で現れた。また、本データは、二言語の区別がバイリンガル意識の誘引となった可能性も示しており、バイリンガルの意識が二言語の区別を促進するとするこれまでの説とは異なる見解を提示している。

INTRODUCTION

Most research on the language acquisition of simultaneous bilinguals has been concerned with the issue of separation of the two language systems (e.g., De Houwer, 1990; Lanza, 1992; Nicoladis, 1995 for pragmatic separation, and De Houwer, 1990; Dopke, 2000; Meisel, 1989; and Paradis & Genesee, 1996 for syntactic separation). Parallel to these studies, many researchers in the field have also introduced indices of children's awareness of having two languages, such as the appearance of translation equivalents, situational codeswitching or translation, repair of one's own or another's inappropriate language choice, and labeling of the languages (e.g., Bergman, 1976; De Houwer, 1990; Fantini, 1985; Hoffman, 1991; Kessler, 1988; Lanza, 1997; Saunders, 1988; Shikano, 1998; Wanner, 1996). However, none of the studies mentioned above specifically focused on the development of bilingual awareness in conjunction

with developmental changes in young children. Instead, they appear to be based on the assumption that children either are aware of the fact that they are dealing with two languages or they are not. Yet in other areas of their development, children exhibit different levels of awareness which fall along a continuum.

Furthermore, there has been no research to my knowledge that explored the relationship between bilingual awareness and language differentiation. In fact, it has been assumed that a child's awareness of the existence of the two languages triggers differentiation in their use, but there has been no attempt to support this assumption with data.

This study therefore aims to examine how the awareness of having two codes develops in young simultaneous bilinguals over time. I will begin by considering the types of linguistic behaviors that may manifest such awareness, and then report my findings on when the first signs of awareness emerged in my data and in what order each sign of bilingual awareness appeared. I will then further explore if such awareness has any influence on the separation of the two language systems.

In this study, *bilingual awareness* will be considered to be part of *language awareness*, which has been defined as "a person's sensitivity to and awareness of the nature of language and its role in human life" (G. Donmall, *Language Awareness*, 1985, p. 7, as quoted in Parke, 1994, p. 212). More specifically, bilingual awareness refers to consciousness of operating in two different language systems, or the ability to think about and control the use of the two languages. This is to be differentiated from a more advanced level of awareness referred to as *metalinguistic awareness*—"the ability to think about and reflect upon the nature and functions of language" (Pratt & Grieve, 1984, p. 2)—which includes the ability to monitor, comment on or question the grammaticality and the appropriateness of the utterance. The current study focuses on bilingual children's awareness of having two codes.

PREVIOUS RESEARCH

The majority of studies on early bilingualism have concentrated on the development of syntactic, phonological and pragmatic aspects of speech, with special attention given to when and how children distinguish between two language systems and whether or not the languages interact with each other in the course of acquisition. The accumulation of evidence on this issue has shown that children develop two separate language systems from the earliest stages of language production (e.g., De Houwer, 1990; Lanza, 1992, 1997; Meisel, 1989), and the two languages basically follow separate paths, with some interaction between them depending on the nature of the two language systems (e.g., Dopke, 1998, 2000).

Parallel to the investigation of language separation, a number of researchers have reported linguistic behaviors that can be considered signs of the awareness of having two codes in their young bilingual subjects. For example, some researchers claim that bilingual awareness is exhibited in a child's ability to codeswitch appropriately according to the context (Hoffman, 1985; Lanza, 1997; Shikano, 1998). Lanza (1997) sees codeswitching in toddlers as involving an "evolving awareness of bilingualism" (p. 65). Her data reveals that her two-year-old Norwegian/ English bilingual subject, Siri, used her two languages in context-sensitive ways. She frequently mixed the two languages when talking with her Norwegian father,

who allowed bilingual interaction, whereas she only used English with her mother, who strictly negotiated a monolingual context even though Siri was stronger in Norwegian. Lanza argues that Siri was differentiating the language choice pattern depending on the interlocutor and calls this a clear indication of the ability to reflect on language.

Shikano (1998) also reports that her two-year-old Japanese/English bilingual subject, Ai, demonstrated awareness of two codes through situational codeswitching. Shikano asked Ai to pass on a message, given in Japanese, to various people with different linguistic abilities. Ai successfully translated a message into English for an interlocutor who was a native speaker of English, but used both English and Japanese when she couldn't decide which language was appropriate to use with another addressee. Shikano states that such behavior indicates that the child was capable of consciously selecting codes depending on contextual information.

Acquisition of translation equivalents (expressions in different languages which have the same basic meaning) is also considered one of the earliest signs of bilingual awareness in some studies (Shikano, 1998; Wanner, 1996). In addition, through observation of his one-year-old Japanese/English bilingual son, Wanner (1996) found what he calls "simultaneous use of TEs," that is, translation equivalents occurring in a single utterance; for example, "none, *nai*" (pp. 31 - 32). Shikano (1998) also reports similar patterns of language use, which she calls "spontaneous self-translation" (p. 64). Both Wanner and Shikano emphasize that such phenomena are an overt reflection of the children's awareness of the two separate codes, since they realize that the two words, which come from different languages, have the same meaning.

Children are also capable of repairing utterances containing words from a language which is inappropriate for the situation they are in by replacing the inappropriate words with equivalents from the appropriate language (De Houwer, 1990; Shikano, 1998). De Houwer (1990) finds that her three-year-old subject, Kate, was able to repair across languages when she was 2;7. For example, in the following exchange, Kate addresses the investigator, a Dutch speaker, in an English/Dutch mixed utterance, and after the investigator makes a clarification request in Dutch, Kate restates the whole utterance in Dutch.

Example A: Self Repair (Adapted from De Houwer, 1990, p. 322)*

Kate:	<i>Jij</i> [you] white !	[1]
Investigator:	<i>Wablieft</i> ? [what?]	[2]
Kate:	<i>Jij wit</i> ! [you white!]	← [3]

* See Figure 1 for transcription key.

Shikano (1996, pp. 63 - 64) observes a similar type of repair, which was triggered by clarification requests such as "what?" or "huh?", in her Japanese/English bilingual subject's speech samples at the age of 2;6.

Some researchers report that children can even explicitly point to inappropriate choice of language by adults; that is, they are able to initiate repair of others' utterances. Saunders (1988), who with his wife employed the one person, one language strategy of raising their children as German/English bilinguals, lists a number of times when his two- to three-year-old children criticized one of their parents for using the "wrong" language. All three children in his study, Frank, Thomas and Katrina, would correct their English-speaking mother's use of German words or phrases in English utterances or vice-versa.

A frequently reported behavior in slightly older bilingual children is the labeling of languages. Many researchers point out that their subjects started to label their two languages around the age of two to three years old (Bergman, 1976; Fantini, 1985; Hoffman, 1985; Kessler, 1988). For example, according to Hoffman (1985), two Spanish/German bilingual children were observed to label German "*so wie Mami*" [like mother says] and Spanish "*como dice papa*" [like father says] from around two to three years of age. Kessler (1988) reports that at age 3;6, her Spanish/English bilingual subject labeled her two languages "*ingles*" [English] and "*español*" [Spanish] and engaged in a conversation in which her mother asked her how much she could speak each language and which one she liked better.

In older bilingual children, asking for translation is a commonly reported behavior indicative of bilingual awareness. Fantini (1985) states that by 4;1, his son Mario started to ask for translation of unfamiliar English words into Spanish and vice-versa; for example, "Papa, how do you say [Spanish word] in English?" (Fantini, 1985, p. 50).

In addition to such observational data, there are also experimental studies which offer interesting evidence of bilingual awareness in young children. A number of these studies involve what is called the principle of mutual exclusivity, which states that children initially allow only one label for each object (Markman, 1990). If a bilingual child honored this principle and did not accept labels from different languages for the same object, it could be considered a sign that the child lacked awareness of the existence of two different lexicons. If, on the other hand, the child did not apply this bias, we could interpret this as a sign that the child was aware of the two different languages. Au and Glusman (1990) and DeWitt and Au (1994) found that three- to six-year-old English/Spanish bilinguals suspended the mutual exclusivity principle when the two labels came from different languages, indicating that bilingual children after around the age of three exhibit awareness of the existence of two different lexicons.

Frank and Poulin-Dubois (2002) were the first to test if this applies to younger children. They report, however, that although their two- to three- year-old subjects had a significant number of translation equivalents, they adhered to the principle of mutual exclusivity just like their monolingual counterparts. These results suggest that mutual exclusivity is not a reliable tool to detect bilingual awareness in children below the age of three.

Despite the fact that many scholars have shown interest in bilingual children's consciousness of their two languages, as we have seen above, there have been few studies in which bilingual awareness was the major research focus. Moreover, even in the above studies, indications of bilingual awareness were not observed in a systematic way. Few of the researchers defined *bilingual awareness* concretely, and therefore, each researcher selected different types of linguistic behavior as signs of such consciousness.

To investigate bilingual awareness in children systematically, a taxonomy of linguistic behavior by which children may reveal such awareness needs to be devised.

More importantly, very few studies so far have focused on the developmental aspect of bilingual awareness. A number of scholars (Clark, 1978; Lanza, 1997; McLaughlin, 1984; Vihman & McLaughlin, 1982) acknowledge that different behaviors require different levels of awareness. For instance, Clark (1978) states that repair may involve automatic monitoring of speech, whereas language switching requires highly conscious control (p. 17). Similarly, Lanza (1997) points out that "...certain metalinguistic tasks require knowledge about language and the ability to express that knowledge while others indicate regulatory mechanisms (e.g. repair in conversation)" (p. 65). Such observations imply that different signs of bilingual awareness may appear at different stages of development; i.e., bilingual awareness in young children involves a developmental process. Vihman's observation of her bilingual child seems to illustrate this point:

Thus, although language differentiation may be said to have begun at about age 2, awareness of the fact that words could be labeled by language and translated appeared to come slightly later, while consciousness of the situation as a whole seemed to dawn only at the end of the fourth year, with explicit awareness of his own bilingual capacities acknowledged a few months later. (Vihman & McLaughlin, 1982, p. 46)

Nonetheless, most of the observations in the studies summarized above are restricted to one or a few types of behaviors considered to be indications of bilingual awareness, and thus fail to view bilingual awareness as something that comprises developmental changes as the children grow older. In Lanza's (1997) study, for example, bilingual awareness is restricted to the knowledge underlying pragmatic differentiation, even though she recognizes that codeswitching is one of the most primitive signs of bilingual awareness and that such awareness develops over time. In other words, her study identifies *bilingual awareness* with *pragmatic differentiation*. Wanner (1996) and Shikano (1998) also share the same assumption—they only focus on linguistic differentiation on the level of lexicon (i.e., translation equivalents) or on the level of pragmatics (i.e., situational codeswitching) as a manifestation of such awareness, which implies that language differentiation and bilingual awareness are considered to be the same thing.

Thus, even though some scholars recognize the developmental nature of bilingual awareness, research to date has not taken this into consideration. As we have seen, awareness of having two codes may manifest itself in various forms, each of which may constitute a different developmental stage. Limiting the scope of an investigation into bilingual awareness to a particular behavior may therefore be misleading because it would fail to capture the nature of the development of language awareness, which may involve a continuum. Yet, to my knowledge, there are no studies that explicitly address the question of the order in which different signs of awareness emerge and the way in which bilingual awareness develops in young children.

Another important issue is the relationship between bilingual awareness and language separation. Some previous researchers have commented on the possibility that bilingual awareness contributes to

language differentiation (Vihman, 1985; Vihman & McLaughlin, 1982). However, no previous studies have specifically examined the relationship between language separation and the first signs of bilingual awareness. Is bilingual awareness triggered by syntactic and/or pragmatic separation, or is it such awareness that triggers and helps children keep the two languages apart?

Thus, research questions to be addressed in the current study are the following:

- 1) When does bilingual awareness emerge? In what forms does it appear?
- 2) In what order do different signs of bilingual awareness appear?
- 3) What is the relationship between bilingual awareness and language separation? Does bilingual awareness help separation of codes?

METHOD

Subjects and Their Families

The data was drawn from case studies of Ken (a boy) and Rie (a girl), who were born in the U.S. and have been exposed to Japanese and English simultaneously from birth. The longitudinal case study of Ken began in September 1994 when he was 1;1 (one year and one month of age), and a similar study of Rie began in October 1995 when she was 2;4. Results of research into the children's language separation process have been reported elsewhere (Mishina, 1997; Mishina-Mori, 2002).

The mothers of both children are Japanese and the fathers are American, and they claim to have adopted the "one parent - one language" policy. In both families, the mothers are proficient in English but the fathers have little knowledge of Japanese, so the parents speak English to each other.

Despite these similarities, the language environment of the two subjects is different in terms of their exposure to each of their languages. Ken has more English input than Japanese, mainly because he goes to English daycare three days a week, and he is also occasionally taken care of by his English-speaking grandparents during the day while his parents are at work. When he is at home, his mother or his father looks after him.

On the other hand, Rie's mother is the girl's primary care-giver, so Rie is exposed to Japanese more frequently than to English. Her father, who is a graduate student, tries to balance Rie's linguistic input by interacting with Rie in English as much as possible whenever he is studying at home.

The linguistic profiles of both children are more or less the same. Their speech can be characterized as at the one-word stage in both languages when the data collection began, and advancing to the two-word stage by the end of the observation period.

Data Collection

Since, as explained above, the experimental procedure for testing the mutual exclusivity principle may not be a suitable way to test the bilingual awareness of children under three years old, it was decided that spontaneous conversation would be the most informative data source for signs of bilingual awareness in such very young children. Monthly recordings of each child's spontaneous interaction with each parent were therefore conducted at their home, and triadic parent-child interactions were also taped whenever

they occurred.

The data was collected for approximately a year, at 14 intervals for Ken and 11 for Rie. Ken was between 1;1 and 3;2 and Rie was between 2;4 and 3;3 during the period of observation.

Recording lasted for one to two hours for each parent at each session. All the data were transcribed using CHAT conventions for English (MacWhinney, 1995), and JCHAT conventions for Japanese (Oshima-Takane & MacWhinney, 1995). The transcription key is provided in Figure 1.

FIGURE 1: Transcription Key (Adapted from MacWhinney, 1995)

-?	rising final contour
.	falling final contour
˘	level contour
:	lengthened syllable
(= text)	adult form corresponding to preceding child's form
[#]	turn number
←=	turn mentioned in following discussion

Taxonomy of Linguistic Behaviors Indicating Bilingual Awareness

As discussed in the previous section, there are several types of linguistic behavior that can be considered manifestations of bilingual awareness. In this study, I will report the emergence and development of bilingual awareness in the subjects based on the following classifications of linguistic behavior.

Repair to the appropriate language

Repair in general is an attempt to coordinate one's speech production with the memory representation of linguistic forms through the use of monitoring (Clark, 1978). In this study we focus on repair across languages, which indicates that the child is aware of operating in two languages. Repair can further be divided into other-initiated repair and self-initiated repair. Other-initiated repair is a switch across languages elicited by a clarification request by the interlocutor, while self-initiated repair refers to a switch not elicited by the interlocutor. Examples 1 and 2 illustrate other- and self-initiated repairs, respectively. In both cases, the children begin by using English with the researcher, with whom they usually speak Japanese.

Example 1: Other Repair—Rie (3;3) asks the researcher if the chair is hers

Rie:	this my chair -?	[1]
Researcher:	ha -? [what?]	[2]
Rie:	kore watashi no -? [is this mine?]	← [3]
Researcher:	soo . [yeah.]	[4]

Example 2: Self Repair—Ken (2;11) and the researcher looking at pictures of animals

Researcher:	kore na:ni kore ? [what's this?]	[1]
Ken:	this is kore da::o (=zo:). [this is an elephant.]	← [2]
Researcher:	kore <u>da</u> ::o. [this is an elephant.]	[3]
Researcher:	soo ka . [I see.]	[4]

In turn 1 in Example 1, Rie asks the researcher a question in English, to which the researcher responds with a clarification request in Japanese. Given the opportunity to reflect upon her own utterance, Rie restates the question in Japanese in the following turn. In the second example, in turn 2 Ken starts his utterance in English, but restates it in Japanese without being requested to do so. Both of these repairs from English to Japanese show that Ken and Rie are monitoring their utterances and trying to adapt their speech to the context by switching to Japanese for the Japanese researcher.

Translation

There are two types of translation: elicited translation and spontaneous translation. Elicited translations are those that occur after the interlocutor explicitly asks the speaker to translate a word or a sentence from one language into the other language. Spontaneous translations, on the other hand, occur after the interlocutor asks the speaker to pass on a message to another party who speaks a different language. The following is an example of elicited translation. In turn 1 Rie's father indirectly asks Rie to say the equivalent of "mommy" in Japanese, and in turn 2, Rie provides the Japanese word.

Example 3: Elicited Translation—Rie (2;4) and her father looking at family pictures.
Rie has referred to her mother as "mommy"

Father:	Rie, you can say mommy in Japanese .	[1]
Rie:	okaashan (= okaasan). [mother.]	← [2]

This exchange clearly indicates that Rie understands that "Japanese" is a label for a language, and that she knows that "*okaashan*" belongs to Japanese and "mommy" belongs to the other language.

Now observe an example of spontaneous translation.

Example 4: Spontaneous Translation—Ken's mother wants Ken (3;1) to ask his father if he wants some coke

- | | | | |
|---------|---|---|-----|
| Mother: | <i>kooku nomu: tte itte kiitekite -?</i> | | [1] |
| | [go ask him if he would like to drink some coke.] | | |
| Ken: | you want some coke -? | ⇐ | [2] |
| Father: | what's that -? | | [3] |
| Ken: | you want some more coke -? | ⇐ | [4] |
| Father: | more coke -? | | [5] |

In turn 1, Ken's mother tells Ken in Japanese to ask his father if he wants some coke. In order to pass on this message to his father, Ken changes his mother's Japanese utterance into English, as observed in turns 2 and 4. Such linguistic behavior indicates that the child can translate from one language to the other.

Labeling languages

Labeling languages includes 1) using adult labels such as "English" or "Japanese", and 2) referring to the languages as "mother's language" and "father's language". In the exchange below, we can observe Rie using the first type of labeling.

Example 5: Labeling Languages—Researcher asks Rie (2;11) what language she uses with her friend Alice, who is a Japanese/English/Korean trilingual

- | | | | |
|-------------|--|---|-----|
| Researcher: | <i>Alice chan to nanigo de hanasu no ? Alice chan to ?</i> | | [1] |
| | [what language do you use with Alice?] | | |
| Rie: | <i>nihongo</i> . [Japanese.] | ⇐ | [2] |
| Researcher: | <i>a soo:</i> . [oh really.] | | [3] |

The second type of labeling was observed in Hoffman (1985), where her German/Spanish bilingual children labeled German as "*so wie Mami*" (like mother says) and Spanish "*como dice papa*" (like father says). Both types of labeling are clear indications of bilingual awareness, since they show that the child can reflect upon the existence of two separate sets of linguistic systems.

Reflective statements about the use of two languages

This category includes children's utterances that manifest their reflection upon the use of the two languages: for example, asking for translation or commenting on or correcting the interlocutor's language selection, with or without directly labeling the language. As mentioned in the previous section, Saunders' (1988) subjects would criticize their parents' use of the "wrong" language, as seen in the following exchange.

Example B: Reflecting on Use of Two Languages (Adapted from Saunders, 1988, p. 76)

- Thomas (3;9.22) (looking in boot of car): What's that? [1]
Mother: That's the *Ersatzrad*. [2]
Thomas (very emphatically): No, you say spare wheel, not *Ersatzrad*. <== [3]

In turn 2, the English-speaking mother mixes German into her utterance, and in turn 3 the child directly points out the wrong language selection "*Ersatzrad* [spare wheel]" and provides the English equivalent "spare wheel". From this it is obvious that the child has developed an awareness of knowing two languages, since he not only can translate a word into the other language, but also reflect upon the form of the mother's utterance and explicitly point out what was inappropriate.

In some of the studies summarized in the previous section, the emergence of codeswitching abilities or translation equivalents—language differentiation at different levels—were considered to be initial signs of bilingual awareness (Lanza, 1997; Shikano, 1998; Wanner, 1996). However, in the current study, language differentiation and bilingual awareness were considered to be distinct. It should be noted, however, that the children in the current study exhibited pragmatic as well as syntactic differentiation, as reported in earlier studies (Mishina, 1997; Mishina-Mori, 2002).

Analysis

The four signs of bilingual awareness discussed above were coded as they occurred in the corpus using CHAT conventions (MacWhinney, 1995). Quantitative analyses were conducted using CLAN (MacWhinney, 1995).

Most of the signs of bilingual awareness used in the analysis in this study appeared during spontaneous conversation. However, it was found that such behavior, especially translation, did not occur frequently within a limited time of observation. To supplement the natural data, a quasi-experiment was conducted to try to trigger spontaneous translation during each observation period. Starting from the twelfth recording session with Ken (October 1995) and the second with Rie (November 1995),¹ I asked each of the parents to tell the child to convey a message to the other parent; that is, we created situations in which the child was required to spontaneously translate a message from one language into the other. Since both parents in each family were requested to do this, both children were required to translate from English to

Japanese and Japanese to English. It should be noted, however, that such requests were not made in every recording session, since sometimes the parents could not find a suitable context to trigger this type of behavior.

Although these situations were artificially created, the children's translations were spontaneous. Moreover, this type of situation can occur naturally without elicitation. In fact, some of the translations in the current corpus were made in the course of natural interactions. Therefore, the translations which were triggered by artificial requests were combined with the translations which occurred naturally for the purpose of analysis.

RESULTS

Emergence of Signs of Bilingual Awareness

I will first report the timing of the emergence of the four behaviors indicative of bilingual awareness explained above. The number of occurrences of each type of linguistic behavior is displayed in Table 1. Repair to the appropriate language is broken down into other repair and self repair, while translations are further classified according to whether they occurred spontaneously or were explicitly elicited by the children's parents.

As can be seen in Table 1, Ken started to show signs of bilingual awareness from the age of 2;6 in the form of other-initiated repair. It should be noted, however, that it was not until Ken was 3;0 that I asked his parents to try to trigger translation by asking Ken to give a message to the other parent, so our information on the development of his bilingual awareness is not as complete as that which was gathered for Rie.

As for Rie, we observed bilingual awareness behavior from the very first session, that is, when she was 2;4. Since she was showing such awareness from the first recording session, we were not able to confirm the timing of the emergence of bilingual awareness in her case. The very first occurrences of bilingual awareness observed in Rie's data were spontaneous and elicited translation. It is important to note that the spontaneous translation observed in this interval was not an artifact of the triggering procedure, since it occurred naturally without prompting by the researcher or her parents.

Thus, from the current data we were able to show that both children already exhibited bilingual awareness around the age of 2;4 to 2;6 in the form of repair and translation, although Rie may have shown such awareness even earlier.

TABLE 1: Emergence of Signs of Bilingual Awareness

Subject	Age	Repair		Translation		Labeling Language	Reflective Statement
		Other-Initiated	Self-Initiated	Spontaneous	Elicited		
Ken	1;11	0	0	NA*	0	0	0
	2;0	0	0	NA	0	0	0
	2;1	0	0	NA	0	0	0
	2;2	0	0	NA	0	0	0
	2;3	0	0	NA	0	0	0
	2;4	0	0	NA	0	0	0
	2;6	3	0	NA	0	0	0
	2;7	0	0	NA	0	0	0
	2;8	0	0	NA	0	0	0
	2;9	0	0	NA	0	0	0
	2;11	0	1	NA	0	0	0
	3;0	1	1	2	0	0	0
	3;1	3	0	5	0	0	0
	3;2	1	3	6	0	0	0
Rie	2;4	0	0	2	1	0	0
	2;5	2	0	1	0	0	0
	2;6	0	0	2	0	0	0
	2;7	0	0	3	1	0	0
	2;8	0	0	1	0	0	0
	2;9	0	0	3	0	2	0
	2;10	0	0	3	0	0	0
	2;11	0	0	0	0	4	0
	3;0	0	0	1	0	3	0
	3;2	0	0	4	0	1	0
	3;3	1	2	9	0	1	0

* NA = Not applicable; triggering experiment not yet underway

Order of Emergence of Signs

Now let us examine the order in which different linguistic behaviors indicative of bilingual awareness emerged. As discussed in the earlier part of this paper, the linguistic behaviors analyzed in this study represent different levels of bilingual awareness; that is, they differ in the degree to which the child explicitly focuses on the linguistic form, and they may require different levels of linguistic ability.

Consequently, some may emerge in children's speech earlier than others. In this section, I will report the observed ordering of emergence of each linguistic behavior and discuss possible reasons why each of them appeared in that order.

The first indicators of bilingual awareness to appear in Ken's speech were three cross-language repairs which occurred in the data from the recording session when he was 2;6, and which were initiated by either his mother or the researcher. In Rie's case, the first sign of bilingual awareness to appear was translation, both spontaneous and elicited, which she made in the first recording session at age 2;4. Other-initiated repair was observed in the data from the following recording session, which took place when Rie was 2;5. However, since Rie revealed signs of bilingual awareness from her first recording session, we cannot draw any conclusions from her data regarding which indicator emerged first. Based on Ken's data alone, it seems that repair may be the earliest sign of bilingual awareness.

Within the category of repair, the emergence of other-initiated repair preceded that of self-repair in both children's data. Other-initiated repair may occur more easily because the child is given the opportunity by the interlocutor to reflect upon his/her own utterance, whereas self-repair requires the child to be constantly monitoring his/her own speech.

The next signal of awareness to appear in Ken's data was translation. He successfully translated a number of messages in spontaneous translation tasks, although there were no instances of elicited translation in the collected data.

Labeling languages seems to appear later in a child's development. Rie started to name languages after repair and translation had emerged in her speech, while Ken was not seen to have engaged in such metalinguistic behavior at any time during the observation period. Even in the case of Rie, all the instances of labeling languages were prompted by one of her parents, which suggests that without such metalinguistic input by the parent, this type of awareness may not have emerged in the corpus. It can be inferred that a higher level of awareness is necessary to name languages as opposed to repairing or translating, since it requires the child to use names for abstract concepts and reflect on language using those concepts.

Reflective statements did not appear in the speech of the children observed. We may speculate that this type of linguistic behavior is a later development, since it requires an increased awareness of language, that is, more explicit focus on the linguistic forms being used.

In sum, the order of emergence suggested by our data was the following: other-repair, self-repair, translation, labeling languages, and then reflective statements. The data suggests that there is a natural order in the emergence of the different signs of bilingual awareness which is determined by the level of awareness required to engage in each type of linguistic behavior. The findings also suggest that children go through different stages of bilingual awareness as they grow older, meaning that they gradually develop higher levels of bilingual awareness.

Bilingual Awareness and Language Differentiation

I will now explore the relationship between bilingual awareness and language separation by comparing

the current data to my previous findings on language separation in research using the same subjects. In the earlier studies, both Ken and Rie were reported to have two separate grammars from the very beginning of observation, that is, when Ken was 1;11 and Rie was 2;4 (Mishina, 1997; Mishina-Mori, 2002). Yet it was not until Ken was 2;6 that the earliest signs of bilingual awareness appeared in the current study. Thus, in Ken's case, his awareness of bilingualism does not seem to have had any influence on the separation of the two languages at the level of syntax. On the contrary, it is possible that the syntactic separation played some role in the emergence of bilingual awareness. In Rie's case, however, the direction of influence is not clear from the current data, since both bilingual awareness and syntactic separation were observed from the first recording session.

As for the relationship between pragmatic separation and bilingual awareness, it was found that Ken was able to use the two languages somewhat discriminately from the very first recording session (Mishina, 1997). Therefore, it is evident that Ken's awareness of knowing the two languages was not an impetus for pragmatic differentiation. In fact, there is a possibility that pragmatic differentiation triggered the emergence of bilingual awareness. In the case of Rie, however, the current data does not provide any evidence for the directionality of influence, since she exhibited pragmatic differentiation (Mishina, 1997) and bilingual awareness from the very first time of observation.

Thus, there is no evidence in the current data for the assumption that children's awareness of bilingualism contributes to the separation of the two languages at the level of syntax or pragmatics. Rather, the data suggests that syntactic separation and pragmatic differentiation may have sparked the emergence of bilingual awareness; in other words, such awareness developed as a result of separating the two languages into independent systems.

DISCUSSION

The data suggest that the children started to show signs of bilingual awareness after their second birthday. All of the different signs of bilingual awareness included in my taxonomy were observed in the children's data except for reflective statements. Further, I found a rough ordering of the emergence of these different indicators of bilingual awareness, starting from other-initiated repair and moving on to self-repair, translation and labeling languages. This suggests that children go through different stages of awareness as they grow older and that they gradually develop higher levels of bilingual awareness.

The current results seem to be consistent with previous findings. The onset of bilingual awareness was observed after the subjects turned two, which roughly coincides with previous reports on young bilingual children (De Houwer, 1990; Hoffman, 1985). The general order of appearance of these signs also roughly matches previous observations. The first sign of bilingual awareness in the corpus was repair, and repair in general has been reported to be one of the earliest metalinguistic behaviors that appear in monolingual children's speech as well (Clark, 1978). On the other hand, labeling and reflective statements seem to emerge much later in development, which agrees with Hoffman (1991) and Vihman (1982). Translation, however, appeared earlier than expected in Rie's speech. Rie was able to translate from English to Japanese as early as 2;4, and she constantly exhibited such ability throughout the

observation period. This may be due to environmental factors such as characteristics of parental speech, which I will discuss later in this section.

Some previous researchers have argued that the onset of bilingual awareness is the impetus for language differentiation (Vihman & McLaughlin 1982; Vihman 1985); however, I found no evidence for this claim in the current study. Rather, the data seems to support the opposite view: that bilingual awareness emerged as a result of separating two languages into independent systems. Tunmer and Myhill (1982) have proposed that the experience of becoming bilingual as a child requires a more analytic orientation to the properties of language, which leads to the early emergence of metalinguistic awareness. Although we cannot deny the possibility that bilingual awareness may help language separation, the influence from the opposite direction is likely to occur as well. It may well be a reciprocal process in which awareness of codes and independent development of two grammars feed off each other in the course of development. In any case, I would like to suggest that the relationship between bilingual awareness and language separation is not as simple as it was thought to be, and further investigation is necessary to clarify what is really going on in young bilinguals' language development.

One interesting finding in the current study was that Rie exhibited bilingual awareness at a much earlier age than Ken did. She showed her ability to translate a message from English to Japanese at the age of 2;4, whereas Ken did not exhibit such ability until he was 3;0. Rie was also able to label the two languages when she turned 2;9, whereas this linguistic behavior did not occur in Ken's data at all during the observation period.

Such differences may be due to the quality of parental input. As mentioned elsewhere in this study, Rie's parents frequently drew her attention to the language being used by presenting her with metalinguistic statements or questions. For example, they would explicitly correct Rie's inappropriate language selection by naming the languages (e.g., "You don't speak Japanese [English] to me", or "How do you say it in English [Japanese] ?"). They would also provide the translation for the word or expression uttered in the wrong language (e.g., "You say big" after Rie repeatedly said "*ookii* [big]" to her father). They would even have her repeat the translation equivalent to make sure that she knew the word or expression in both languages. I also observed her mother bringing up the topic of languages in conversations with Rie, for example, by asking which language she uses with whom or which language is easier for her. These types of metalinguistic statements and questions were rarely found in the speech of Ken's parents.

The comparison between the two children suggests that parental input plays an important role in raising awareness in bilingual children. This is consistent with Arnberg and Arnberg's (1992) view that differences in awareness are primarily due to social factors such as patterns of exposure to the two languages and the extent to which the parents draw attention to the two languages. In other words, although bilingual awareness may be raised to a certain extent by bilingual exposure per se, external factors such as parental input may play a significant role in enhancing the level of awareness in young children.

CONCLUSION

In this paper, the emergence and development of bilingual awareness were examined based on observation of linguistic behaviors that signal awareness of the two languages. Although the classification of such behaviors presented in this paper is still preliminary, it may serve as a basis for comparison among different subjects.

This study may also serve as the first step in investigating the developmental process of bilingual awareness, which has not been given close attention in previous research. Further examination of the gradual development of awareness may reveal how a less sophisticated level of awareness (language awareness) evolves into a more advanced form of awareness (metalinguistic awareness) and what contributes to such development.

The current study also questioned the common belief that bilingual awareness helps children separate two language systems. The data showed no firm evidence for this claim; to the contrary, it suggested that the experience of acquiring two distinct systems may give rise to the awareness of codes. Future research is awaited to clarify how bilingual awareness develops and its role in bilingual language acquisition.

NOTES

1. The experiment began late in Ken's data collection since the first 10 sessions of observation had already been completed when the experiment was designed, whereas Rie's recording sessions had just started.

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