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1. Introduction

In many parts of the world, there are children who acquire their language in a bilingual situation, being exposed to more than one language. This study concerns Japanese children living abroad due to their fathers' work. These children need to acquire the language of the host country, while at the same time maintaining their Japanese so that they will be able to adjust to Japanese society in the future. It would be expected that their language development has been considerably influenced by the bilingual environment in which they live.

The study examines code-switching (CS) produced by Japanese children living in England. The children participating in the study are successive bilinguals: they first acquired Japanese (first language:L1) in the home, and then they acquired English (second language:L2) through child-care, schooling and society at large; when they enter school, their language input becomes almost exclusively L2 (Yamada-Yamamoto, 1998). Such a dominant L2 environment normally has a dramatic effect on children's language. One wonders, for example, what happens to L1 when children are fully exposed to L2; how acquisition and use of L2 influence their L1 development. Seliger (1989) states that, in a bilingual mind, the L1 and L2 interact and the two languages in contact compete 'for space and dominance'. An obvious way to examine the L1 and L2 relationship would be to look at the child's CS patterns. It has often been claimed that patterns of CS provide a window into the degree of bilingual competence of the speaker (Singh, 1995; Myers-Scotton, 1997).

The purpose of this paper is to show whether CS, observed in Japanese children's storytelling, can be an indicator of bilinguals' language dominance. And if it can, what are indica-

tions of the child's language dominance? The data was collected in an elicitation by using one language at one time. This type of data collection is unusual in CS studies since previous works were all from naturally occurring discourse. In this sense, this study provides a new method of investigating CS behaviour.

2. Literature review

2.1 CS types and bilingual ability

Some researchers have attempted to relate different patterns of switching to differences in the relative proficiency of bilinguals in their two languages. For instance, Poplack (1980) found that among her Spanish/English bilingual informants, the balanced bilinguals, with high proficiency in both languages, used more intra-sentential switches, which she describes as 'the switches hypothesized to require most knowledge of both languages', while those less proficient in English (Spanish-dominant speakers) used more inter-sentential switches and switches for tag-like constructions. Poplack's findings were corroborated by Treffers-Daller's (1992) results on her Dutch/Brussels French informants, where she reports that intra-sentential CS requires a good knowledge of Brussels French.

Bentahila and Davies (1992; 1995) studied two groups of Moroccan Arabic/French bilinguals. It was shown that balanced bilinguals switched most commonly at clause or sentence boundaries, while Arabic dominant bilinguals switched for a whole noun phrase most frequently. In other words, speakers who are dominant in Arabic mainly engage in insertional CS¹⁾ with Arabic as the matrix language (ML)²⁾; speakers with a better command of French, that is, the original embedded language (EL)²⁾, a command that is more or less equal to their command of Arabic, that is, the original ML, tend to produce more inter-sentential CS, alternating with the ML. These findings are at odds with Poplack's claim, noted above, that greater use of intra-sentential switches is associated with balanced rather than dominant bilinguals.

Fotos (1995) analyzes Japanese/English CS in two types of bilinguals: balanced bilingual children and Japanese EFL learners with only limited proficiency in English. She concludes that the overall switching pattern of the two groups was similar, in that for both groups single-items were most frequently switched and entire sentences followed. However, a difference was found in the direction of switching in multi-word item switches, with children making more switches into English, especially whole sentences. In contrast, the EFL learners switched significantly more multi-word items into Japanese.

It seems that CS is actually a suggestive indicator of degree of bilingual competence. The problem is how types of CS should be classified to investigate the relationship between the two. In fact, how types of language mixture should be classified has been the heart of a fundamental disagreement among researchers. In particular, the status of single items is notoriously ambiguous. They may be code-switches or borrowings or yet another type of language mixture³⁾. We need a systematic way to classify CS types, which would make comparison between studies possible.

2.2 Language dominance and CS in bilingual children

In some studies of children's CS, a child's language mixing or switching is thought to indicate language dominance. For example, Haskell's (1998) study of a child (aged from 4 to 5) in a bilingual British-Japanese family reports that language dominance influenced the subject's language choice and mixing. Her dominance in Japanese was reflected in contrasting language use with each of her parents, who were both English-Japanese bilingual. While interaction with her father was never conducted exclusively in English, even though he encouraged her to speak English, interaction with her mother revealed her ability to communicate exclusively in Japanese without using English or mixing languages. Takeuchi (2000) found differences in the types of language mixing among the four English/Japanese bilingual children (aged 5 and 6) studied. A difference was observed between Chie's mixing and the mixing of the other three children. The three children mostly conducted single English noun insertion into Japanese structures. In contrast, Chie inserted English words from a variety of speech parts and used more English phrases and sentences. Moreover, Chie used both Japanese and English as the base-language. This suggests her dominance in English.

Vihman (1985) makes an important observation that, in the speech of young bilinguals, the category of function words is the most frequently mixed while this category is rarely switched as single items by older bilinguals. Lanza (1997a; 1997b) claims that this type of mixing, that is, of function words can be explained by the issue of language dominance. The analysis examined the distribution of lexical and grammatical morphemes, which revealed the prevalence of a Norwegian grammatical framework in Siri's mixed utterances: in the mixed two-word utterances produced by Siri⁴⁾, Lanza found Norwegian function words combined with English content words, but generally not the reverse. She interpreted this 'directionality of mixing' as indicating Siri's language dominance in Norwegian. Lanza explains that grammatical morphemes from her dominant language entered into her non-dominant language in language production.

This interpretation is in accordance with the predictions of Petersen's (1988) dominant language hypothesis⁵). The mixing of function words in early bilinguals has been the central concern in the existing literature⁶), which is significant to note, because it may suggest that function words behave differently from content words in mixed utterances.

3. Method

3.1 Subjects

The data was collected from ten Japanese children, four boys and six girls, of Japanese-speaking parents from Japan. They were between the ages of five and eight years, and all had Japanese as their first language. All of the children attended a local school where there were few Japanese peers, providing an almost exclusively L2 environment. A survey of Japanese children in the UK (Yamada-Yamamoto & Richards, 1998) indicates that Japanese children who have started attending British schools have more contact with English speakers than with Japanese speakers. Children who had reached the Japanese school-age went to a Japanese Saturday school which ran for three hours on Saturdays. This type of supplementary school is operated for Japanese children who attend a local school on weekdays, with the aim of helping them to maintain and develop their knowledge of Japanese. Some of the subjects were selected from this school, while some were contacted through the families of earlier subjects.

Although the selected children had different combinations of abilities in the two languages, the sample included two opposing groups who could be contrasted in the relative dominance of their L1 and L2. Note that 'dominance' is treated here as a property of the individual speaker and the 'dominant language' is the relatively strong language of each individual child, and not objectively measured competence or proficiency. Taking into account the arrival age and length of residence in the UK, dominance was judged by the observation of each child's language use. Above all, the primary determinant was the language used at home between siblings. This was because the child's language dominance was assumed to be evident in family discourse patterns. Although the language used at home between children and parents may be predominantly Japanese, it is more likely to be their dominant language that is used between siblings (Yamada-Yamamoto, 1998). Tables 1 & 2 give the profiles of English- and Japanese-dominant children respectively. The age and length of residence in the UK are indicated by the year and month. (e.g., 6.7 means six years and seven months.)

Table. 1 Profiles of the five English-dominant children

Name	Sex	Age	Arrival-age	Residence in the U.K.	Saturday School	Siblings (age)	Language used at home
Rie	F	6.7	0.3	6.4	Nil	YB (3)	P: J/E S: E
Yuki	F	6.7	2.11	3.8	Nil	OS (8) OB (12)	P: J/E S: E
Yurie	F	6.11	2.6	4.4	Grade 1	YB (4)	P: J/E S: J/E
Ken	M	7.8	1.2	6.6	Grade 2	OS (9)	P: J/E S: E
Eimi	F	8.5	4.1	3.8	Grade 2	YS (6) OB (12)	P: J/E S: J/E

Legend

F: Female M: Male P: Parents S: Siblings J: Japanese E: English

OB/OS: Older brothers/sisters (brackets indicate age)

YB/YS: Younger brothers/sisters (brackets indicate age)

Table. 2 Profiles of the six Japanese-dominant children

Name	Sex	Age	Arrival-age	Residence in the U.K.	Saturday School	Siblings (age)	Language used at home
Kosuke	M	5.7	3.1	2.6	Nil	OS (8)	P: J S: J
Miwa	F	6.11	British-born	6.11	Grade 1	OS (10) OB (12)	P: J S: J
Shohei	M	7.1	4.6	2.7	Grade 1	Nil	P: J
Toshi	M	7.1	4.9	2.4	Grade 1	YB (5)	P: J S: J
Naoko	F	8.2	6.9	1.6	Grade 2	YB (6) OS (11)	P: J S: J

Legend

F: Female M: Male P: Parents S: Siblings J: Japanese E: English

OB/OS: Older brothers/sisters (brackets indicate age)

YB/YS: Younger brothers/sisters (brackets indicate age)

3.2. Procedure

The data was collected by tape-recording children's story-telling. Cinderella and Momotaro, a well known Japanese children's story, were chosen as the stories. Both stories were appropriate for children to narrate in that they have a story line which can be broken down into a sequence of actions or events. The topic was considered important as it has an impact on the type of speech produced by bilinguals. Children's stories are invariably culture-bound. Cinderella and Momotaro were judged to be typical of English and Japanese culture respectively, and it was assumed this would elicit CS. It was necessary to choose a culture-specific topic to create a condition where telling the story without using the other language was difficult.

The recordings were made by the researcher at each subject's home, after having a short

conversation with the child. The monolingual context was elicited by specifying the base-language in which the child would tell the story. Each child told the researcher about Cinderella and Momotaro in English, and then Japanese, or vice versa, while looking at picture books. The story-telling began by the researcher's asking, "Can you tell me the story of Cinderella or Momotaro?" The child was addressed in English when the story-telling was to be in English and in Japanese when it was to be in Japanese. Originally, it was attempted to do all the recordings of each child continuously on one day. This was possible for half of the children. For the other half of them, a second visit was needed either because there was not enough time or the researcher judged they were losing concentration and having difficulty to continue. The length of the recordings and the amount of utterances varied considerably from one child to another. In total, 6 hours and 5 minutes of audio-tapes provided the data.

3.3 Analysis framework: paradigmatic vs. syntagmatic

The dichotomy of paradigmatic and syntagmatic dimensions was used to classify the CS types. Paradigmatic CS is defined as the process of producing a 'single unit', while syntagmatic CS produces a 'string of units' in the other language. This distinction is based on the psycholinguistic concept of word retrieval. In the paradigmatic dimension, where word retrieval is treated within a single word framework, the word is explored in isolation from its sentence. This act is different from the syntagmatic dimension, where word retrieval is treated within a syntactic context and the word is identified as a part of the sentence chain (Whitworth, 1994). In this dichotomy, the problem of single item status becomes irrelevant. We should further note the more automatic nature of retrieving words within connected speech in contrast to the more conscious task of retrieving an isolated word.

Examples are given from the data. The following utterances contain syntagmatic CS. Switched parts are expressed by the bold type and overall translation is in the brackets.

- (1) Ugly sisters *ga* *kite* *ne*, *talking-shi-te-ta-n* *da* *yo*,
NOM come illocutionary-PTL doing-PAST copula illocutionary-PTL
about the lovely girl *o* *ne*, *talking-shi-te-ta-n* *-da*.
ACC illocutionary-PTL doing-PAST copula
[Ugly sisters were talking about the lovely girl.]
- (2) They made a nice name, *momotaro to tsuketa-n* *da* *yo*.
QUO make-PAST copula illocutionary-PTL
[They made a nice name "Momotaro".]

Example (1) was produced in the Japanese base-language. Here, switches involving phrasal categories, that is, the noun phrase 'ugly sisters' and the prepositional phrase 'about the lovely girl' were identified as syntagmatic, whereas 'talking' was paradigmatic. The switch shown in example (2) was also identified as syntagmatic. The base-language is English here and a sequence of words is switched. What happened is ML alternation; that is, the ML changed from English to Japanese.

4. Findings and Discussion

4.1 Overall tendency

The length of story-telling by each child was tabulated. The average length of each child's story was 9 minutes 50 seconds for English and 8 minutes 27 seconds for Japanese. The frequency of CS occurrence was also examined for each child in each story. A total of 524 switches (tokens) were counted for all subjects, a rate of only 0.4 switches per minute in English and 3 switches in Japanese. This rate seems low in comparison with Fotos's (1995) English/Japanese bilingual children, whose rate was 4 per minute. This is probably due to the different language modes. The language mode refers to the activation levels of the bilingual's two languages at a given point of time. Grosjean (1992; 1997; 2001) discusses the concept of bilingual and monolingual language modes: when the speaker is in a more or less monolingual mode, we can assume that the occurrence of elements from the other language will be less frequent, as the other language is not activated. However, when the speaker is in a bilingual mode, he/she will often use elements from both languages, because both languages are activated. The children were probably in a monolingual mode while telling a story, as they were elicited to speak one language at one time, while Fotos's children were recorded more or less in bilingual modes, for whom switching was the normal, unmarked choice in their conversation (Fotos, 1995).

The following overall tendencies were evident: 1) A large portion of total switches (84%, N=439) occurred in the L1 Japanese base-language. The direction of CS is, therefore, asymmetrical, that is, from Japanese (L1) to English (L2). This contrasts with Fotos's (1990, 1995) data that the direction of switching was more balanced. 2) The topic affected the frequency of occurrence: CS was more likely to occur in English/Momotaro and Japanese/Cinderella context. The occurrence of CS was more affected by the topic when the base-language was English (Cinderella 15% vs. Momotaro 85%, N=85) than Japanese (Cinderella 66% vs. Momotaro 34%, N=439).

4.2 Contexts where CS occurred: what motivated CS?

The contexts in which CS occurred were analyzed to examine what motivated CS from the English base-language. The following categories were identified for switches from English to Japanese. Explanation and examples are given for each category.

1. Cultural borrowing: This means the EL is used for culture-specific words which have no equivalent in the ML. This is a type of switch whose function is to fill a lexical gap between the languages. It appears that the EL words are used intentionally to solve lexical communication problems. The speaker is aware of the lack of a particular item in the ML mental lexicon, and often signals their use by pausing. Some children switched to Japanese for culture-specific items such as *dango* and *oni*, as in the following.

(3) Please can I have one of your *dango*? [dumpling]

(4) I'm going to *oni*'s island. [ogre]

2. Flagged borrowing: This refers to lexical borrowing which has some pragmatic function such as emphasis or humour. The speaker appeared to use the EL word consciously and the switched word tended to be uttered distinctively or to be flagged by a pause. For example, one child said:

(5) She is Momotaro's *baasan*. [grandmother]

The speaker knew the English equivalent, which was used in other contexts. It seems that he is fully aware of using the EL word and the effect its use has. Here, a humorous effect is produced by the use of the Japanese *baasan* instead of the English 'grandmother' or 'grandma'.

3. Quotation of character's utterances and feelings: CS for quotation is common in bilingual speech. In the following examples, the speaker switched to Japanese for the character's decision and inner utterance respectively.

(6) He decided, "*Bukkowasoo!*" [(I) will kill (him) !]

(7) And Cinderella thought when you Prince Prince knows my name and where I live, I ... "*Watashi wa sugoku komaru wa.*"
[I would be very embarrassed.]

4. Personal comment and feeling: This refers to switches expressing the speaker's personal comments or feelings. Switched utterances are not relevant to the sequence of the story itself but rather mark an aside. The switch seems to act as a device to demarcate the comment mode from the narrative mode. The following examples illustrate this.

(8) Researcher: Are they pretty?

Subject : *Zenzen pretty ja naai!* [(They) are not pretty at all!]

(9) *Eeto Cinderella janakute nandakke, eeto...*

[Well, not Cinderella, what is it? mm..]

In (8), the speaker switched to Japanese to make a comment about Cinderella's two sisters. Here, the speaker's own feeling about the characters is expressed with emphasis. The switched utterance in (9) is addressed to the speaker herself, which is aside from the story-line. Switching to mark personalization versus objectivization is frequently referred to in the literature (e.g. Romaine, 1995; Fotos, 1990, 1995, 2001).

5. Request for a lexical term: Sometimes a switch is used for an aside which appeals for help in continuing in the original language. The children sometimes asked about a target word they did not know, for which they switched to Japanese, as is shown below.

(10) *Kore nante iu no, eigo de?* [What is this called in English?]

The categories stated above are frequently referred to in the literature as the discourse functions or pragmatic purposes of CS. These types of switch can be categorized as 'functionally motivated'. Note that another type of switch was observed, which was categorized as 'syntactically triggered' as opposed to functionally motivated.

6. Syntactically triggered: The switch of this category is an abrupt EL intrusion at the syntactic level. CS may be unintended when the speaker is in a monolingual mode. Unintended switching can be referred to as 'triggering', which is often activated by a trigger word. It was found that the triggered word tended to be a proper noun, such as "Momotaro", or a culture-specific word, as is shown in the next example.

(11) But he ate a *dango* *o* *tabeta* *kara* *ne*,
ACC eat-PAST reason-PTL illocutionary-PTL

dakara ne / he was a bit more strong.

so illocutionary-PTL

[But he ate a *dango*, so he was a bit more strong.]

In Example (11), the switch was triggered by *dango*, accompanied by the ML alternation from English to Japanese. But then, the speaker reverted to the base-language, English. The speaker realized her mistake and re-oriented herself to English. Romaine (1995) describes 'triggering' as more or less unconscious switching which is motivated by internal linguistic factors. Such 'triggering' occurs accidentally because of the impact of topic-associated words. This type of switch needs to be distinguished from functionally motivated switches, because it is not motivated by contextual factors or linguistic need, but rather results from language interference.

4.3 CS in English base-language (English→Japanese CS)

The grammatical categories of switched constituents were broken down and classified. Single nouns were identified as paradigmatic and other categories (clauses, sentences, phrases) were counted as syntagmatic. In an attempt to quantify CS, I counted the number of types (different items), not tokens (the total items). This is because some items associated with the story line were used repeatedly by the same speaker. Out of the total number of English→Japanese switches (N=42), 26% were paradigmatic (N=11) and 74% were syntagmatic (N=31). It appears that, overall, switches in the English base-language tended to be syntagmatic.

The distribution of CS contexts in each topic was examined. It is noteworthy that out of 11 paradigmatic CS, 10 occurred in the story of Momotaro and 6 of them were for culture-specific words. The occurrence of paradigmatic CS seems to be related to topic. The question we address is whether the type of CS, either paradigmatic or syntagmatic, was associated with bilinguals' language dominance. When examining who produced paradigmatic CS with which topic, it was found that the occurrence of paradigmatic switches was not dominance-related but topic-related; in other words, whether to use Japanese words or not could be attributed to the speaker's preference. It is considered that paradigmatic CS would take place in rather controlled conditions, where a specific word is selected from the EL, Japanese. Syntagmatic CS, on the other hand, seems to occur rather automatically, which may reflect language dominance.

We assumed that Japanese-dominant children would produce more syntagmatic switches when speaking the non-dominant language, namely, English. It was examined who did syntagmatic switches for which topic and how many switches they made (Table 3).

Table. 3 Number of CS type in each topic for each child

	topic	Cinderella			Momotaro		
	CS type	paradigmatic	syntagmatic	total	paradigmatic	syntagmatic	total
1	Rie	0	0	0	1	3	4
2	Yuki	0	0	0	0	1	1
3	Yurie	1	0	1	5	0	5
4	Ken	0	0	0	0	0	0
5	Eimi	0	0	0	1	0	1
6	Kosuke	0	4	4	0	1	1
7	Miwa	0	4	4	1	7	8
8	Shohei	0	2	2	2	2	4
9	Toshi	0	0	0	6	4	10
10	Naoko	0	1	1	0	2	2

In Cinderella, no syntagmatic CS occurred for English-dominant children, so it appears that Japanese-dominant children tend to produce the syntagmatic type. In Momotaro, however, syn-

tagmatic CS occurred even for two English-dominant children. When examining the contexts where those switches occurred, it was found that they were triggered accidentally by the influence of the topic. The switches categorized as syntagmatically triggered were observed in children irrespective of dominance. The analysis examined all contexts where syntagmatic CS was produced by each child in each topic. To capture the variation among the children, the distribution of assigned contexts is shown in Table 4. The star-mark ☆ represents functionally motivated switches, whereas the mark ★ represents syntagmatically triggered ones (see Table 4). We see that Japanese-dominant children produced more syntagmatic CS. It seems possible to say that syntagmatic CS is more likely to occur with Japanese-dominant children and is associated with dominance in Japanese. However, it could also occur with English-dominant children in certain contexts.

To sum up, children make syntagmatic CS regardless of their language dominance when the base-language is English. A difference is found in the contexts. While the switch tends to occur functionally for Japanese-dominant children, it is triggered accidentally for English-dominant children.

In the next section, we will see the cases in the Japanese-base language.

Table 4 Distribution of syntagmatic CS of individual children

	Child		Cinderella	Momotaro
1	Rie	↑		★★★
2	Yuki		—	★
3	Yurie	L2 dominant	—	—
4	Ken			
5	Eimi	↓	—	—
6	Kosuke	↑	☆☆☆☆	★
7	Miwa		☆☆☆☆★	☆☆☆☆★★★
8	Shohei	L1 dominant	☆☆	☆☆
9	Toshi		—	☆☆★★
10	Naoko	↓	☆	☆☆

4.4 CS in Japanese base-language (Japanese→English CS)

The point to be observed in the Japanese base-language is that switches were largely lexical, involving basic vocabulary rather than culture-specific items. In addition, the switches tended to be smooth. This is in contrast to the lexical switches observed in the L2 base-language, which were often flagged by hesitation or pausing. In most cases, the switches cannot be explained by contextual factors such as discourse functions and linguistic need. A possible explanation could be psycholinguistic: the EL was more readily available or easily accessible than

the ML for the speaker. It is assumed that the level of activation of one language over another determined which language was more available for the speaker. For children living in an L2 environment, L2 activation will easily reach the level to be selected in language production.

To identify whether the individual switch was paradigmatic or syntagmatic, grammatical categories of code-switched constituents were examined. Single words and isolated phrases (not in a sentence) were classified as paradigmatic, whereas phrasal categories produced in a sentence were classified as syntagmatic. The total number of Japanese→English switches was 196, out of which 150 (77%) were paradigmatic and 46 (23%) were syntagmatic.

The question we focus on is whether language dominance is associated with the CS type; in particular, whether syntagmatic CS tends to be produced by English-dominant children. The assumption was that the more dominant in English, the more syntagmatic switches would be produced. Now, let us look at Table 5, in which the types of CS for individual children are tabulated. We see that all children produced paradigmatic CS in the Japanese base-language. Rie was prominent among them, in that she did 68 paradigmatic switches, accounting for 32% of the total number of this type of CS produced by all children (N=213). The majority of code-switches were paradigmatic and the ratio is from 0.91 to 1.0 for all the children except Rie. Rie was the only child who produced a considerable amount of syntagmatic CS and her ratio was 0.36. She did 39 syntagmatic type CS, which was 85% of the total (N= 46). Syntagmatic CS accounted for either one or none in the cases of all the other children. We need to consider why the patterns of CS differed between Rie and the other children. Also, does the topic influence the CS type displayed by individual children? The number of CS types was examined for each topic separately for individual children (see Table 6).

Table. 5 Number & ratio of Japanese→English CS type (paradigmatic/syntagmatic) for each child

	Child	CS type				total
		paradigmatic	ratio	syntagmatic	ratio	
1	Rie	68	0.64	39	0.36	107
2	Yuki	18	0.95	1	0.05	19
3	Yurie	10	0.91	1	0.09	11
4	Ken	31	0.97	1	0.03	32
5	Eimi	13	0.93	1	0.07	14
6	Kosuke	20	0.95	1	0.05	21
7	Miwa	8	1	0	0	8
8	Shohei	30	0.97	1	0.03	31
9	Toshi	12	0.92	1	0.08	13
10	Naoko	3	1	0	0	3

Table. 6 Number of CS type (paradigmatic & syntagmatic) in each topic

		Cinderella			Momotaro		
		paradigmatic	syntagmatic	total	paradigmatic	syntagmatic	total
1	Rie	27	*29	56	43	11	54
2	Yuki	11	0	11	7	1	8
3	Yurie	8	1	9	2	0	2
4	Ken	20	1	21	11	1	12
5	Eimi	13	1	14	0	0	0
6	Kosuke	10	1	11	11	0	11
7	Miwa	7	0	7	2	0	2
8	Shohei	26	1	27	4	0	4
9	Toshi	10	1	11	2	0	2
10	Naoko	3	0	3	0	0	0

Again, Rie's pattern is different from that of all the other children. The topic does not affect the total number of her CS (56 vs. 54) but it does affect her CS type: she made more syntagmatic switches than paradigmatic ones in the story of Cinderella, while she made more paradigmatic ones in Momotaro. This pattern was not found with the other children; for the rest of them, it was the total number of CS which was affected by the topic, not the CS type. Although they did more CS in the story of Cinderella, the CS type remains the same, that is, paradigmatic regardless of whether it is Cinderella or Momotaro. The findings seem to indicate Rie's strong dominance in English compared with the other English-dominant children, which could influence her CS type even in a monolingual mode. As stated earlier, the speakers were in a monolingual language mode, in which they tried to deactivate the other language. Green (1986) even proposes that the other language is inhibited. It can be predicted that, in such contexts, syntagmatic CS would not easily occur. However, it could occur when the child's dominance in English exceeds the effect of language mode which would inhibit the occurrence of CS, because of the need to communicate. To sum up, in the Japanese base-language, the CS type tends to be paradigmatic regardless of language dominance. The general tendency is that even though the children are dominant in English, they do not do much syntagmatic CS. It is paradigmatic CS that is more likely to occur. However, syntagmatic CS could occur even in the monolingual L1 mode if the child is strongly L2 dominant, as can be seen with Rie.

4.5 Indication of language dominance

4.5.1 Morpheme level

It was interesting to observe morpheme behaviour within the paradigmatic type in the Japanese base-language. A qualitative difference was found in the children's switch patterns according to dominance: while only content morphemes were switched by the Japanese-

dominant children, grammatical morphemes were also switched by the English-dominant children. Such cases were found in the use of plural *s*, as the following examples show.

(12) Step-sister *tachi ga kaette-ki-te* [The step-sisters came back and]

plural NOM came back and

(13) Ugly sisters *no uchi ni kita.*

GEN house directional come-PAST

[(They) came to the ugly sisters' house.]

(14) *roppiki no mouse o yonde-kita- no.* [(She) called six mice.]

six ACC call-PAST illocutionaryPTL

(15) *ikko pumpkin to ne, niko mice to ne*

one enumerative illocutionaryPTL two enumerative illocutionaryPTL

[one pumpkin and two mice]

In (13), the English noun is switched to the plural form, whereas the Japanese plural marker *tachi* is used in (12). In (14), the singular form ‘mouse’ is switched to refer to six mice, and the plural form ‘mice’ is switched to refer to two mice in (15)⁷. Further analysis revealed that these grammatical morphemes were what the 4-M model calls ‘early system morphemes’ (Myers-Scotton 1999; 2002; Myers-Scotton & Jake 2001). While Myers-Scotton’s (1993) MLF model emphasizes the content vs. system morpheme opposition, the 4-M model adds the distinction between early and late system morpheme. The theory is based on the fact that system morphemes are activated at two different abstract levels. Like content morphemes, early system morphemes are activated at the lemma⁸ level, whereas late system morphemes are not. Early system morphemes are selected or ‘pointed to’ by the lemma supporting the content morpheme at the conceptual level (Jake and Myers-Scotton 1997). They may appear along with content morphemes in code-switched utterances when the child becomes dominant in L2. Thus, L2 early system morphemes can be seen as an indicator of L2 dominance.

4.5.2 Direction

It was found that the direction of switching for quotation, emphasis, comment and interjection indicated children’s language dominance. Children tended to switch to their stronger language to express characters’ utterances or feelings. Also, children switched to their dominant language to make a comment external to the narrative or to mark an aside. The earlier examples cited from (6) to (10) were all produced by Japanese-dominant children speaking English. To contrast, examples are given from English-dominant children speaking Japanese.

(16) *Soshitara ne, soshitara,* Oh, nice cake ! [And then and]

(17) Shiny *ja nai* ? (tag) [Shiny, isn't it ?]

(18) Servant *kana* ? (question marker) [Is he a servant ?]

In Example (16), the speaker switched to English to comment on the wedding cake, which is not relevant to the story-line itself. Example (17) is her comment on the glass dancing slippers. It is addressed to the interlocutor, asking for assent. Example (18) is uttered to the speaker himself as an inner thought. The next two examples are of quotation. The utterances of the prince and Cinderella's sisters are quoted in English respectively.

(19) Prince *ga* "Wait! Wait" *tte itta kedo ne*,
 NOM QUO said but illocutionaryPTL

[The prince said, "Wait! Wait!" but]

(20) "If fits" *tte itte ne*, "I'm marrying you!" *tte ittara ne*,
 QUO say-and illocutionaryPTL QUO said illocutionaryPTL

[(They) said, "If it fits, I'm marrying you", and]

In the next example, it is emphasized that Cinderella's sisters are angry, which is seen in the effect of combining a Japanese interjection "*moo ne*" and code-switched English words.

(21) Ugly sisters *ga moo ne* very mad *nanda yo*,
 NOM emphasis copula illocutionaryPTL

and angry and cross *dattanda yo*.

copulaPAST illocutionaryPTL

[Ugly sisters were very mad and angry and cross.]

It may be said that language dominance can be indicated by the direction of functionally motivated CS. Elements of the dominant language slip into what is intended to be monolingual discourse in the non-dominant language.

5. Summary & Conclusion

The study observed CS in Japanese children's story-telling narratives in a monolingual language mode. The analysis was made to show how CS can be an indicator of bilingual children's language dominance. Although the data was limited with less CS frequency, some indications of the child's language dominance were revealed.

The code-switched contexts were examined to see what motivated CS. Syntactically triggered CS was distinguished from functionally motivated CS. It was suggested that the direction of switches categorized as functionally motivated could be an indication of the child's language

dominance.

To see whether language dominance is associated with specific CS types, the data was analyzed in the dichotomy of paradigmatic and syntagmatic types. The results suggest that it is the syntagmatic type, rather than the paradigmatic, which can indicate language dominance. It was found that, in the Japanese base-language, the switch type tended to be paradigmatic. It was even the case for the children dominant in English. We can say that, in an L1 monolingual mode, paradigmatic CS would be predicted to occur whether the child was L2 dominant or not. However, syntagmatic CS could occur because of the need to communicate if the child was strongly L2 dominant. In the English base-language, children did syntagmatic CS regardless of language dominance. However, a difference was found in the contexts. While the switch tended to occur functionally for Japanese-dominant children, it was always triggered accidentally in the case of English-dominant children.

Within the paradigmatic type, morpheme behaviour was considered significant. A qualitative difference was evident in children's L1 speech according to language dominance: that is, whether grammatical morphemes were involved or not. Furthermore, such grammatical morphemes were categorized as early-system morphemes according to Myers-Scotton's 4-M model. Using the 4-M model's classification, it was suggested that L2 early system morphemes in CS could be an indicator of L2 dominance. Further examination is necessary to discuss how different morphemes behave differently in bilinguals' language production process.

Notes

- 1) Alternation and insertion are discussed by Muysken (1997; 2000) as separate processes of intra-sentential CS.
- 2) Myers-Scotton (1993) argues that, in any utterances involving CS, the two languages fulfill contrasting roles, those of the matrix language (ML) and the embedded language (EL). The ML is the main language, which sets the morphosyntactic frame of sentences showing CS. The EL is the other language which also participates in CS, but with a lesser role.
- 3) Poplack and her associates introduced the category of 'nonce borrowings' for single lexemes which are morphologically and syntactically integrated into the ML but show little phonological integration (Poplack, Sankoff & Miller, 1988). Myers-Scotton (1993), arguing that removing single lexemes from the CS field simplifies the data to be explained, rejects nonce borrowing as a motivated category and includes most items as CS forms.

- 4) Lanza's informant, Siri, was a Norwegian/English two year-old bilingual.
- 5) Petersen's (1988) study of a three year-old Danish/English bilingual child suggested that grammatical morphemes of the dominant language may co-occur with lexical morphemes of either language, while grammatical morphemes of the non-dominant language may occur only with lexical morphemes of the non-dominant language.
- 6) Scholars on infant bilingualism discuss the significance of mixing function words (e.g. Vihman, 1985; Meisel, 1994; Köppe and Meisel, 1995; Köppe, 1996; Deuchar, 1999). The distinction between 'function' and 'content' words is discussed in Deuchar (1999), Deuchar & Vihman (1999).
- 7) The children did not use the correct plural form 'mice'.
- 8) Lemmas are abstract entries in the mental lexicon which contain semantic, syntactic, pragmatic and morphological information (Levelt, 1989).

Appendix

The following abbreviations were used in the explanations of the examples in this paper.

ACC: accusative GEN: genitive NOM: nominative PTL: particle QUO: quotation

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