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Preliminary report on the acquisition of the Japanese compound accent by children aged 5-7

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Introduction

The aim of this study is to analyze the process of the acquisition of Japanese compound accent (CA) rules by children. The main focus of the research is on how and to what extent children's CA patterns differ from adults' CA patterns. This paper reports on the results of a preliminary analysis of the CA patterns produced by children aged between 5 and 7.

Method

We analyzed the accent patterns of noun-noun compounds produced by 20 normal children aged between 5 and 7.

In this experiment, the first element of the compound was a 3-mora noun, and the second element was a 2- or 3-mora noun. It is generally known that in this type of compound, the CA pattern is essentially determined by the second element. Individual element nouns were familiar animal names. The resulting compounds were neologisms words which were defined as representing imaginary animals (e.g. 'usagi-panda' was defined to mean a kind of panda which has some rabbit-like features). The list of the compound nouns used in this experiment is shown below.

usagi + pa'nda→usagi-pa'nda*	usagi + ko'ara→usagi-ko'ara*
pa'nda + go'rira→panda-go'rira*	ko'ara + pa'nda→koara-pa'nda*
kuzira + usagi→kuzira-u'sagi*	usagi + rakuda→usagi-ra'kuda*
ko'ara + usagi→koara-u'sagi*	pa'nda + rakuda→panda-ra'kuda*
usagi + oba'ke→usagi-oba'ke**	ko'ara + oba'ke→koara-oba'ke**
rakuda + ne'ko→rakuda-ne'ko*	ko'ara + ne'ko→koara-ne'ko*
rakuda + hi'me→rakuda'+hime***	ko'ara + hi'me→koara'-hime***
rakuda + musi→rakuda'-musi*	ko'ara + musi→koara'-musi*
rakuda + yama→rakuda-yama***	ko'ara + yama→koara-yama***

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In the above list, the CA patterns marked with an * are the most productive ones, and the CA patterns with ** are less productive than the CA patterns with * but still lexically predictable. The CA patterns with *** are somewhat exceptional patterns which can be attributed to lexical idiosyncrasies.

In this experiment, we first showed picture cards corresponding to the individual element words to the children and examined their pronunciation of these words. Then we presented HIRAGANA representations of the compound nouns and asked the subjects to pronounce them within the carrier sentence '___ ga iru' or '___ ga aru'. We collected 779 utterances of compound nouns from 20 children. The accent patterns were judged perceptually by one of the authors. The adult accent patterns which have already been reported in the literature (Akinaga 1981, Sato 1989) will be referred to as the correct patterns.

Results and Discussion

It was found that the children could pronounce individual-element words with correct accent patterns. This result indicates that the children have already acquired the accent pattern of individual words. It was also found that all the children were capable of combing the two-element words into one accent unit; they produced noun-noun sequences without pausing between the elements and with only one accent. This suggests that Japanese children have already acquired the basic pattern of Japanese CA by the age of 5-7.

Tables 1 and 2 show the CA patterns produced by the children for each of the adult CA patterns. For the compounds accented on the first mora of the second element, the correct-answer rate was high (90%) regardless of whether the second element was a 2-mora word or a 3-mora word. For the remaining compounds, the correct-answer rate was lower (30~70%). It can be seen from Tables 1 and 2 that in most of the wrong answers for these compounds, the accent was placed on the first mora of the second element. Tables 1 and 2 show that there were 5 major types of wrong CA patterns.

1) ~ + oba'ke→~-o'bake (correct answer = ~-oba'ke)
2) ~ + hi'me→~-hi'me (correct answer = ~'-hime)
3) ~ + musi→~-mu'si (correct answer = ~'-musi)
4) ~ + yama→~'-yama (correct answer = ~-yama)
5) ~ + yama→~-ya'ma (correct answer = ~-yama)

The pattern of wrong answers for the individual children is presented in Table 3. As an index of the acquisition level of CA, the correct-answer rate over all the test compounds was calculated. Table 3 shows that children at the lower acquisition level (the rate of correct answers less than 0.55) tended to produce all three types of wrong answers, -o'bake, ~-hi'me and ~-mu'si. At this acquisition level, the children showed a tendency to put the accent on the first mora of the second element for all types of compound. As the acquisition level rises, the correct pattern '~-oba'ke' is the first to emerge. This might be interpreted as indications that children acquire a rule which retains the accent of the second element if the second element originally has an accent. At the next acquisition level, the wrong pattern '~-mu'si' disappears and the correct pattern '~'-

musi' emerges. That is, for the bimoraeic, unaccented second element, the accent is now put not on the first mora, but on the final mora of the first element. In the children at the highest acquisition level, the wrong pattern '~-hi'me' disappears and the correct pattern '~'-hime' emerges. These children seem to have acquired the lexically idiosyncratic CA patterns. The overall results suggest that the children generally acquire 'rules' before lexical idiosyncrasies.

Summary

1. Japanese children aged 5-7 have already acquired the basic pattern of Japanese CA; i.e, they are capable of producing compounds in one accentual unit.
2. In most wrong answers, the first mora of the second element is accented. Children appear to overgeneralize general rules.
3. General rules are acquired before lexical idiosyncracies.

References

K. Akinaga.: Meikai nihongo akusento jiten. Second edition. Sansei-do, Tokyo, 1981.
H. Sato.: Fukugou go ni okeru akusento kisoku to rendaku kisoku. Kouza nihongo to nihongo kyouiku, 2. Meiji-shoin, Tokyo, 1989.

Table 1. CA patterns produced by the children for each type of adult CA pattern (trimoraeic second element).

children's pattern / adult's pattern	○○○-○' ○○	○○○-○○' ○	other patterns
○○○-○' ○○ usagi ÷ pa'nda usagi ÷ ko'ara	92 (%)	0	8
○○○-○' ○○ pa'nda + go'rira ko'ara + pa'nda	87	0	13
○○○-○' ○○ kuzira ÷ usagi usagi ÷ rakuda	84	3	13
○○○-○' ○○ ko'ara ÷ usagi pa'nda ÷	83	1	14
○○○-○○' ○ usagi ÷ oba'ke	30	60	10
○○○-○○' ○ ko'ara ÷ oba'ke	30	55	15

Table 2. CA patterns produced by the children for each type of adult CA pattern (bimoraeic second element).

children's pattern / adult's pattern	○○○' -○○	○○○-○' ○	○○○-○○	other patterns
○○○-○' ○ rakuda + ne'ko	0 (%)	93	7	0
○○○-○' ○ ko'ara + ne'ko	0	88	0	12
○○○' -○○ rakuda + hi'me	50	48	2	0
○○○' -○○ ko'ara ÷ hi'me	32	50	8	10
○○○' -○○ rakuda + musi	51	26	13	10
○○○' -○○ ko'ara ÷ musi	54	28	10	8
○○○-○○ rakuda + yama	18	15	42	25
○○○-○○ ko'ara + yama	16	8	49	27

Table 3. Wrong-answer patterns of the individual children.

subject number	rate of correct answers	wrong pattern 1) ~-o'bake	2) ~-hi'me	3) ~-mu'si	4) ~'-yama	5) ~-ya'ma	other patterns
1	0.154		*				*
2	0.162		*				*
3	0.474	*	*	*			*
4	0.550	*	*	*	*	*	
5	0.622	*					*
6	0.676	*	*		*		
7	0.684		*	*			
8	0.700	*	*	*			
9	0.700	*	*		*		
10	0.718	*		*			
11	0.757		*	*			
12	0.775		*	*		*	
13	0.775		*				
14	0.775						
15	0.872					*	
16	0.897		*				
17	0.897						
18	0.897						
19	0.900						
20	0.950						