

# Lexical Accent in Kagoshima Japanese Children

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## ABSTRACT

This paper investigates the acquisition of Kagoshima Japanese. Kagoshima Japanese is one of the major groups of Japanese accent. Experiments on the production of lexical accent were carried out for both the Kagoshima children and adults. The results showed that 1) Kagoshima children seemed to acquire their native accent incorrectly. Previous research suggested that the course of acquisition of correct native accent may be a linguistic universal; however, our results indicated that kindergarten-age children fail to acquire their native accent and the course of acquisition of accent is not invariant, namely, it is not a linguistic universal; 2) the children's production of accent was less consistent than the adults'. This result suggested that the children's accent system is on the way to being established. Taking these results together, we can say that the emergence of incorrect accent in the Kagoshima children is due to the unestablished accent system.

## 1 INTRODUCTION

The goal of our study is to clarify the acquisition of Japanese accent system by Japanese children. Some research suggests that younger children may be more sensitive to the prosodic aspects of speech, such as the rhythmic structure of language and stress pattern, than to the segmental aspects. The "Prosodic bootstrapping" hypothesis<sup>[1]</sup> suggests that prosodic aspects help infants to segment continuous speech and to acquire their native language. Much research has showed how the ability to perceive prosody is developed during the course of acquisition; however, little is known about the acquisition of production of prosody.

We have studied the course of acquisition of the accent system in Japanese among three groups of Japanese. Japanese is divided into three major groups in terms of the accent system: one group is Tokyo Japanese, the second is Kyoto Japanese and the third is Kagoshima Japanese<sup>[2]</sup>.

With regard to the acquisition of lexical accent, it was shown that Tokyo and Kyoto children acquire their native accent correctly<sup>[3]</sup>; they produced lexical accent the same as an adult. This result agrees with previous research<sup>[4]</sup> which showed 3-year-old Japanese children could produce their native accent correctly, and some empirical

observations which show that children do not fail to acquire the correct native accent. The results suggested that the course of acquisition of the correct native accent may be the one which every child follows, and in that sense, we call it a linguistic universal.

In order to examine whether there is a universal course to correctly acquire native accents, this paper investigates the acquisition of Kagoshima Japanese. As indicated above, Kagoshima Japanese is one of the major accent groups of Japanese. Comparing the accent acquisition in Kagoshima Japanese with Tokyo and Kyoto Japanese will offer useful insights. If all of the children pronounce lexical accent the same as the adults' accent, namely, if children do not fail to acquire the "correct" lexical accent in the course of language acquisition in spite of the variation of accent systems, we may say that the universal course of accent acquisition is to acquire lexical accent correctly.

## 2 ACCENT SYSTEM OF KAGOSHIMA JAPANESE

Kagoshima Japanese has two types of lexical accent. One type has a high pitch on the penultimate syllable (Type A) and another type, on the final syllable of the accent phrase (Type B). Examples of accent types of 2-syllable words are shown in (1). "H" indicates high pitch, "L" indicates low pitch.

- (1) Accent types of 2-syllable word
- a. Type A HL HANA 'nose'
  - b. Type B LH YAMA 'mountain'

## 3 EXPERIMENT 1

Given that Kagoshima children also acquire their native accent correctly, these results provide some evidence that children never misacquire lexical accent during the course of acquisition regardless of the variation of the accent systems. Thus, the same experiment as in Tokyo and Kyoto Japanese was carried out in Kagoshima Japanese.

### 3.1 TEST WORDS

We used four 3-syllable nouns as test words; the accent patterns of these were both Type A and Type B. The description of the accent pattern followed a dictionary <sup>[5]</sup> which indicates the lexical accent of Kagoshima Japanese. This accent dictionary was not published recently; however, since this is the only dictionary that covers Kagoshima Japanese accent, we used this accent dictionary to refer to the Kagoshima accent. The test words were familiar nouns for children. The list of the test words is shown in (2) and (3).

(2) Test words with Type A accent

- a. *GORIRA* ‘gorilla’
- b. *RAKUDA* ‘camel’

(3) Test words with Type B accent

- a. *MOGURA* ‘mole’
- b. *USAGI* ‘rabbit’

### 3.2 PROCEDURE

Each of the test words was described on cards. The experimenter showed the picture cards of the nouns to a child and asked the child to pronounce the names of these nouns on the cards. The accent patterns produced by children were recorded and listened to by one of the authors to judge the accent types.

### 3.3 PARTICIPANTS

Participants were forty-nine 3- to 5-year-old children in one kindergarten. All of them were native speakers of Kagoshima Japanese.

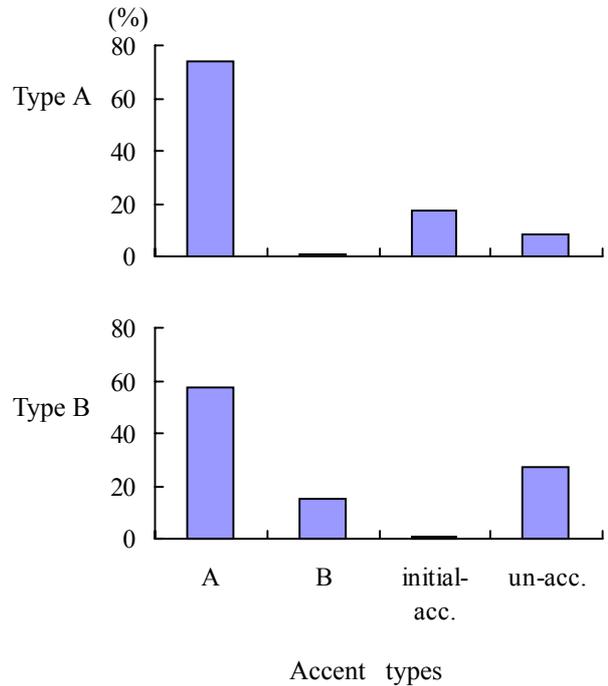
### 3.4 RESULTS

Figure 1 shows the occurrence of accent patterns produced by Kagoshima children. The vertical axis indicates the relative frequency of occurrence of accent patterns. The horizontal axis indicates the accent patterns. The top shows the results of the test words with Type A accent, the bottom shows the results of the test words with Type B accent. ‘A’, ‘B’, ‘initial-acc.’, ‘un-acc.’ indicate Type A accent and Type B accent of Kagoshima Japanese, initial-accented pattern and unaccented pattern of Standard Japanese, respectively. In the following data analysis, accent patterns that correspond to the accent dictionary are considered to be the correct patterns.

For the test words with Type A accent, Type A accent is produced more frequently than the other accent patterns. Children produced the correct accent pattern for the words with Type A accent. For the test words with Type B accent, children produced Type A accent most frequently (57%). The occurrence of the correct accent, Type B accent is lower (15%). Kagoshima children produced incorrect accent.

The experimental results show that the Kagoshima children

tended to pronounce both the nouns with Type A and Type B accent as Type A. It seems the Kagoshima children acquire lexical accent incorrectly.



**Figure 1:** Accent patterns produced by Kagoshima children.

## 4 EXPETIMENT 2

In order to confirm the results obtained in Experiment 1, frequent words in children’s colloquial vocabularies were used as test words in Experiment 2. In addition, in order to discuss our results further in detail, a concordance of the accent patterns produced by each participant were analyzed

In order to compare the accent patterns of children with those of adults, the same experiments with the children were carried out for their caregivers.

### 4.1 TEST WORDS

The number of test words in Experiment 2 were fifty-three. These words were high-frequency words in children’s vocabularies <sup>[6-8]</sup> such as *NEKO* ‘cat’. Table 1 itemizes the test words.

Word length	Accent type	
	A	B
2-syllable	6	15
3-syllable	20	12

**Table 1:** Number of test words in Experiment 2.

## 4.2 PROCEDURE

The test words were pictured as animated cartoons and shown to the participants using a PC (LET'S NOTE, Panasonic). The animated cartoon on the PC encouraged the children to participate in the experiment. Figure 2 shows an example of the animation shown in the experiment.

The experiments were carried out over two days to record the participant's production of accent patterns twice. The children were asked to pronounce the names of test words on the PC proceeding to their caregivers.

The accent patterns produced by participants were recorded and listened to by one of the authors to judge the accent types.

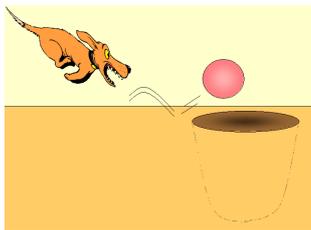


Figure 2: An example of test cartoons.

## 4.3 PARTICIPANTS

The participants were two 4-year-old children (4;04, 4;09) and their caregivers. All of them were native speakers of Kagoshima Japanese.

## 4.4 RESULTS

### 4.4.1 Occurrence of accent patterns

Figure 3 shows the occurrence of accent patterns produced by Kagoshima children and adults. The vertical axis indicates the relative frequency of occurrence of accent patterns. The horizontal axis indicates the accent patterns. The top shows the results of the test words with Type A accent, the bottom shows the results of the test words with Type B accent. The right side shows the results of accent patterns produced by adults, the left side shows the results of accent patterns produced by children.

For the test words with Type A accent, Type A accent is produced more frequently than other accent patterns (children; 63%, adults; 86%). Both children and adults produced the correct accent pattern for the words with Type A accent. For the test words with Type B accent, children produced Type A accent most frequently (56%). The occurrence of the correct accent, Type B accent is lower (35%). Kagoshima children produced incorrect Type A accent for the words with Type B accent. In the adults' results, the correct accent, Type B accent, is produced most frequently (79%).

The children's results obtained in Experiment 2 show almost the same tendency as those in Experiment 2: the Kagoshima children tended to pronounce nouns with Type A and Type B accent both as Type A accent. In contrast to this, the Kagoshima adults produced the nouns with Type A as Type A accent and the nouns with Type B as Type B

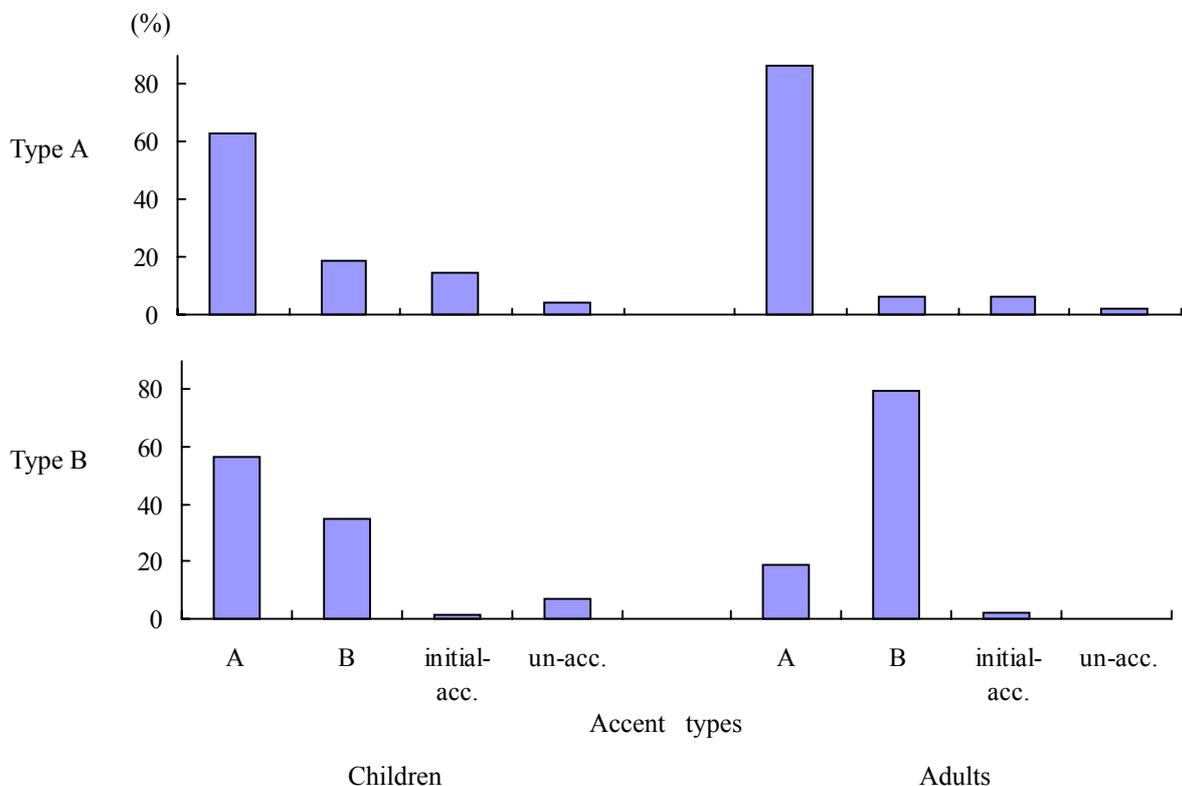


Figure 3: Accent patterns produced by Kagoshima children and adults.

accent: they inherited their original accent system of Kagoshima Japanese. Thus, the tendency toward Type A accent may emerge only during the course of acquisition, not at the same time Type B accent is acquired.

Previous research suggested that the course of acquisition of the correct native accent may follow a universal pattern. Our present results, however, indicate that children do not acquire their native accent all at the same time. The course of acquisition of accent is not invariant, that is, there is not a single universal pattern for acquiring accent.

#### 4.4.2 Consistency of accent production

The intra-personal consistency of production of accent patterns shows in further detail the results obtained in the Kagoshima Japanese experiment.

A concordance rate was calculated by counting the number of responses that the same accent pattern is produced for the same test word over two days: for example, when one child pronounced “hiyoko” (chick) as Type A accent both on the first day and second day of the experiment, we counted one occurrence of concordance. The concordance rate is shown in Table 2.

The results show that the concordance rate was lower in the children (.54) than in the adults (.78). The children’s results show that the concordance rate of the test words with Type A accent and that of the test words with Type B was almost same, while the adults’ results show that the concordance rate of the test words with Type A was higher than that of the test words with Type B accent.

These results indicate that the children’s production of accent is less consistent than the adults’: the accent system of these children is not established.

	Concordance rate		
		A	B
Children	.54	.54	.55
Adults	.78	.82	.74

**Table 2:** Concordance of produced accent patterns.

## 5 CONCLUSIONS

This paper explored the course of acquisition of lexical accent in Kagoshima Japanese. In summary, the examination of Kagoshima Japanese revealed 1) Kagoshima children seemed to acquire their native accent incorrectly. This result suggested that the accent acquisition may not be invariant, namely, not universal; 2) the children’s production of accent was less consistent than the adults’. This result suggested that the children’s accent system is on the way to being established. Taking these results together, we can say that the emergence of incorrect accent in the Kagoshima children is due to the unestablished accent system.

We should note that the Kagoshima Japanese speakers tend to use the Kagoshima Japanese accent together with the Standard Japanese accent; in other words, they are accustomed to pronouncing or hearing a different accent from their native one. The Kagoshima Japanese speakers are likely to pay little attention to a speaker’s accent, even when he/she pronounces a word with an unfamiliar accent; namely, they are unconcerned about giving social feedback to point out that the unfamiliar accent is “incorrect”. The possibility that the above social factor induces the incorrect accent of Kagoshima children will be dealt with in a further analysis.

## ACKNOWLEDGEMENT

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