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An Experimental Phonetic Observation of the Takamatsu Accent (Part II)

Ray Fukui*

In an attempt to elucidate phonetic aspects of the Takamatsu accent, I have presented several pitch curves for two-mora words produced by one informant (MU)** (Fukui 1982). In this paper I will continue my study by presenting data obtained from another informant (TI)*** which differs from MU's data slightly, but in some important respects.

1. Age Differentiation

The scope of this study is limited to two-mora nouns as before. In the following, I will show the pitch patterns of two-mora words produced by TI, making comparisons with the results of MU. But before discussing my observations, it is necessary to mention here an important study made by a native researcher of this dialect, which I missed in my 1982 paper (Inagaki 1979-80). His observations on his own dialect resemble my observations on MU quite well in that he has an accentual distinction between two types of oxytonic words. Such a result is quite conceivable because he is 12 years senior to MU. For younger generations, this distinction is reported to be lost, and this also seems to be the case with my informant TI who is 11 years younger than MU.

Fig.1 summarizes the observations made by Inagaki, Wada (1958), and the present author in the order of their informant's age. The age of Wada's informant was estimated on the basis of the information that they were university students at that time. Fig.1 also includes a proto-accentual system for two-mora words, which can be established by comparison with neighboribg dialects such as Marugame. The numbers representing the accentual patterns given in the leftmost column do not follow those given in Fukui (1982) because I find them now inappropriate (my old numbers are given in parentheses in the following discussion). The accent type 1(1) is a high atonic accent characterized by a high level pitch. For younger generations, the initial mora tends to be pronounced with a low pitch. The accent type 2(2) is a low atonic accent characterized by a low level pitch, and some observers also recognize a rising pitch in the second mora of this type. The accent type 3a(4) is a prototonic accent. The accent type 3b(3b) was also prototonic in the proto-system, but a

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* Department of Linguistics, Faculty of Letters, University of Tokyo

** Mr. Masayoshi Uehara

*** Mr. Takeo Irie

Observed by:		Inagaki	Fukui		Wada
Informant(s) (Year of Birth)		Inagaki himself (1906)	MU (1918)	Tī (1929)	University students (ca. 1935 (?))
Proto-system					
1	*OO	OO	OO	OO	OO
2	*OO	OO	OO	OO	OO
3 a	*OO	OO	OO	OO	OO
3 b		OO	OO	OO	OO
4	*OO	OO	OO		

Fig. 1 Accentual Patterns of Two-Mora words

Table 1 Test Words

1 泡/awa/ "bubble" 犬/inu/ "dog" 梅/ume/ "plum"
炭/sumi/ "charcoal" 庭/niwa/ "garden"

2 飴/ame/ "candy" 粟/awa/ "millet" 稲/ine/ "rice"
隅/sumi/ "corner" 鑿/nomi/ "chisel"

3a 貝/kai/ "shellfish" 紙/kami/ "paper" 波/nami/ "wave"
昼/hiru/ "daytime" 冬/huju/ "winter"

3b 音/oto/ "sound" 型/kata/ "pattern" 川/kawa/ "river"
胸/mune/ "chest" 村/mura/ "village"

4 雨/ame/ "rain" 鮎/aju/ a fish 海/umi/ "sea"
桶/oke/ "tub" 蔭/kage/ "shadow" 鯉/koi/ "carp"
琴/koto/ "Japanese harp" 露/cuju/ "dew" 鶴/curu/ "crane"

split took place and it is now a sort of oxytonic accent. This split of prototonic words into 3a and 3b is conditioned by the vowel height of the second mora: 3a words have a high vowel /i/ or /u/ whereas 3b words have a non-high vowel /a/, /e/, or /o/ (cf. Table 1). The accent type 4(3a) is a oxytonic accent characterized by a falling pitch in the second mora and by an initial low pitch for older generations. For younger generations, this initial low pitch is no longer distinctive, resulting in the merger of 3b and 4.

2. Experimental Procedure

The test words were almost the same as the ones used in my 1982 paper with a few changes (see Table 1). I omitted two pairs /kama/ "iron pot" -/kama/ "sickle" and /kumo/ "spider"-/kura/ "saddle" because in TI's speech these do not make expected (quasi-) minimal pairs. In place of them, the pair /kata/ "pattern" -/koto/ "Japanese harp" was added.

The recording was made on Oct. 9, 1981, using a Sony cassette tape recorder (TC-D5M) with a Sony condenser microphone (ECM-260F).

Each word was pronounced in three environmental conditions as before: (A) in isolation; (B) in the phrase /kono /("this "); and (C) in the sentence / ga aru./("There is ."). These correspond to graphs A, B, and C, respectively, in Figs. 2.1-2.15. The pitch curves in each figure were obtained by tracing the fifth harmonic on the narrow-band spectrograms. Since TI's voice has a higher fundamental frequency than MU, the up and down movements of the pitch curves are a litle more exaggerated than for MU (this should be taken into account when comparing TI's data with MU's). The line-up point is the beginning of voicing in each graph.

3. Results and Discussion

Figs. 2.1 through 2.5 show the overall characteristics of each of the five accentual patterns. Figs. 2.6 through 2.15 are examples of (quasi-) minimal pairs. First take a look at Figs. 2.1 - 2.5.

3.1 Accent Type 1 - High Atonic (Fig. 2.1)

The pitch patterns in graphs A and B are quite similar to those of MU. In graph C, however, the initial mora tends to be slightly lower than MU's.

3.2 Accent Type 2 - Low Atonic (Fig. 2.2)

The pitch patterns of the words with a low atonic accent are characterized by their relative lowness and flatness as compared with the high atonic words. This seems most prominent for graph

B, in which a steep pitch drop between /kono/ and the target word can be seen. Such features were also observed in MU's speech. However, in the case of the utterances in isolation (graph A), I noted for MU that the low atonic words had a pitch 10-20 Hz lower than the high atonic words, but this was not the case with TI's data. For TI, the acoustic correlate of the low atonic accent lies in its flatness when pronounced in isolation.

3.3 Accent Type 3a - Prototonic (Fig. 2.3)

I find no difference in pitch pattern between TI and MU for this type of accent.

3.4 Accent Type 3b - Oxytonic(a) (Fig. 2.4)

The pitch patterns of the words with the accent type 3b are similar to those of MU. In graph A, however, TI's pattern differs form MU's in a subtle way: both have a falling pitch in the second mora but TI has a covex shape whereas MU has a concave shape in the second mora. Although I am not sure whether such a minute difference is significant or not, it is certain that TI's 3b and 4 have the same pitch pattern.

3.5 Accent Type 4 - Oxytonic(b) (Fig. 2.5)

Here we have the most significant difference between TI and MU. For MU, I observed that 3b and 4 belong to separate groups of accents in that not only do their pitch patterns differ in isolation, but they also do so in the phrase /kono /. Words with the accent type 4 have a pitch drop between /kono/ and the word in question, which does not appear in 3b. For TI, no such differences were observed, 3b and 4 having the same accent. This could be also verified in the comparison of (quasi-) minimal pairs (see Figs. 2.8-2.10).

It is interesting to note that the merger of 3b and 4 occurred not as a simple unidirectional process but as a reciprocal process in which not only the 3b type approached the 4 type, but the 4 type itself also approached the 3b type by losing its initial low pitch.

3.6 Comparison of (Quasi-) Minimal Pairs (Figs. 2.6-2.15)

The above-mentioned characteristics are present in these cases too. There is no apparent counter-example.

An abrupt pitch drop found between /kono/ and /hiru/ (fig. 2.12 B) and between /kono/ and /huju/ (fig. 2.13 B) is due to the breathy voicing of the intervocalic /h/. This is peculiar to TI, since we have allophones of /h/, [ç] before /i/ and [ɸ] before /u/ in standard Japanese.

4. Phonological Representations

Here let us turn to the problem of the phonological representation of two-mora words. Apparently, we need two kinds of representations, one for older generations (Inagaki and MU) and another for younger generations (TI and Wada's informants). Following the phonological theory of Hattori (1973) and Uwano (1975), I propose the following representations.

	(A) Inagaki and MU	(B) TI and Wada's informants
1	¯¯ / OO /	O¯ / OO /
2	O´ /⌊OO /	OO /⌊OO /
3a	¯O } / O⌝O/	¯O / O⌝O/
3b	¯ˇ O }	ˇO } / OO⌝/
4	Oˇ /⌊OO⌝/	Oˇ }

One problem with this proposal is that Inagaki states that he has three words 頃 /koro/ "time", 為 /tame/ "(for -'s) sake", and 彼 /kare/ "he" pronounced with the accent 3a (not 3b). If this is true, these form counter-examples to the complementary distribution of 3a and 3b (in representation (A) it is assumed that 3a words have a high vowel in the second mora, whereas 3b words have a non-high vowel in the same position). Unfortunately, I don't have data from MU for these words, so that this is an open question for him.

5. Conclusion

The Takamatsu accent has been in the process of historical change for several decades (or more). This can be demonstrated by comparing data from informants with different ages. It is my hope that the present study has contributed to a deeper understanding of the events actually occurring in that process.

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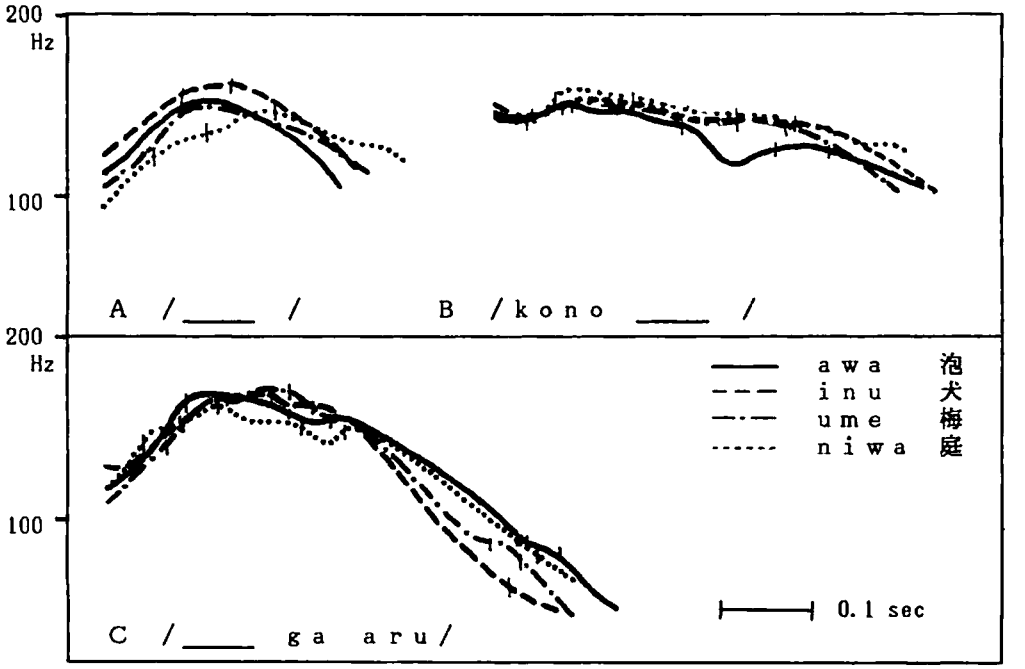

Fig. 2.1 Examples of High Atonic Accent (1)

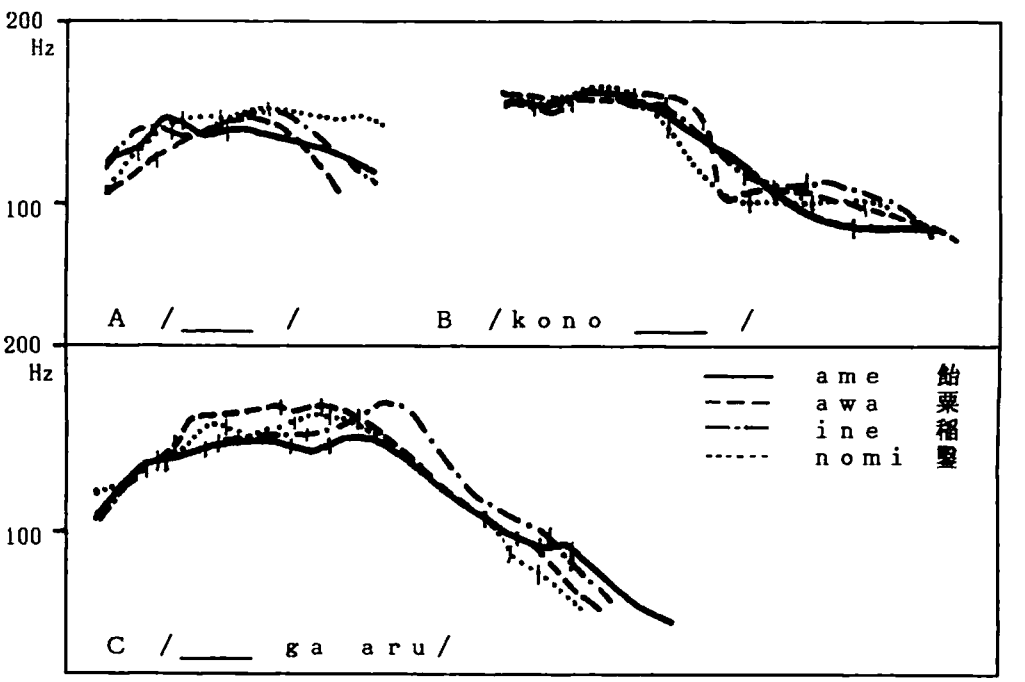

Fig. 2.2 Examples of Low Atonic Accent (2)

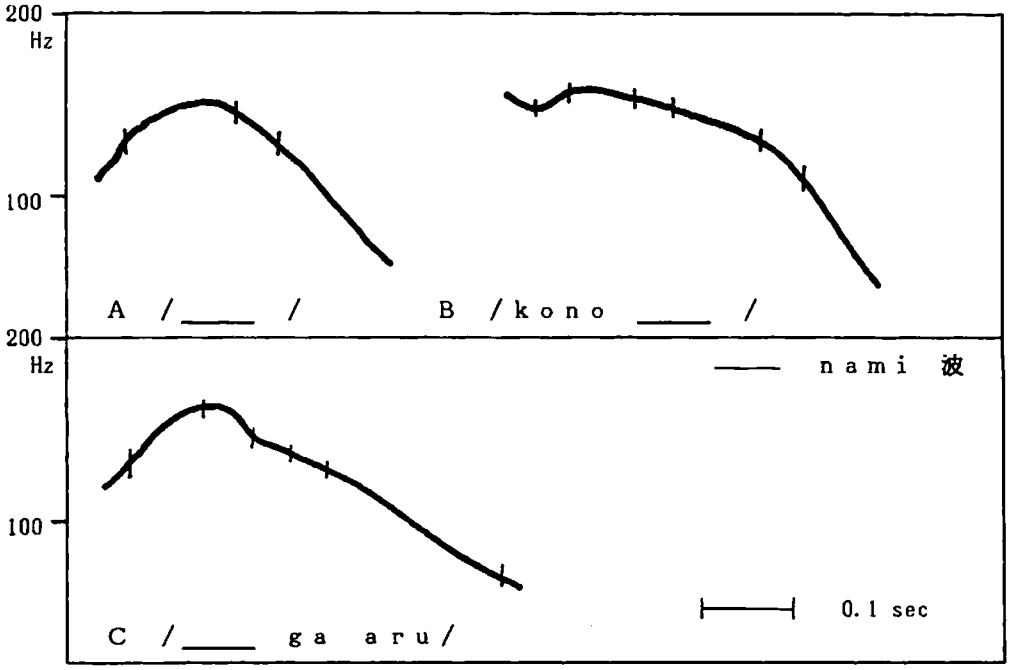

Fig. 2.3 Examples of Prototonic Accent (3a)

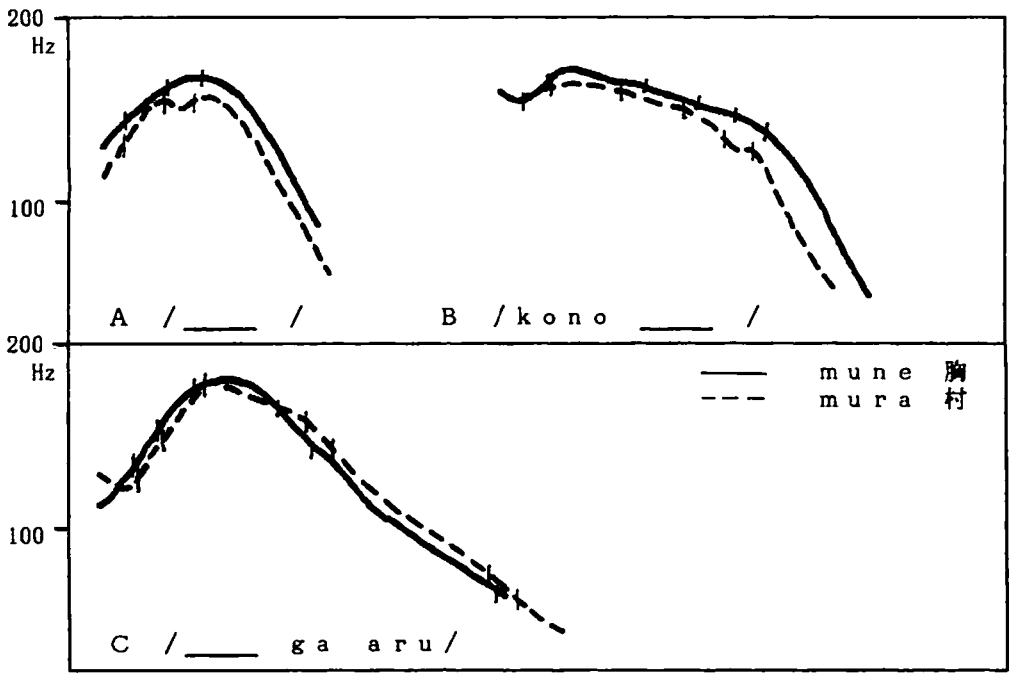

Fig. 2.4 Examples of Oxytonic Accent (a)(3b)

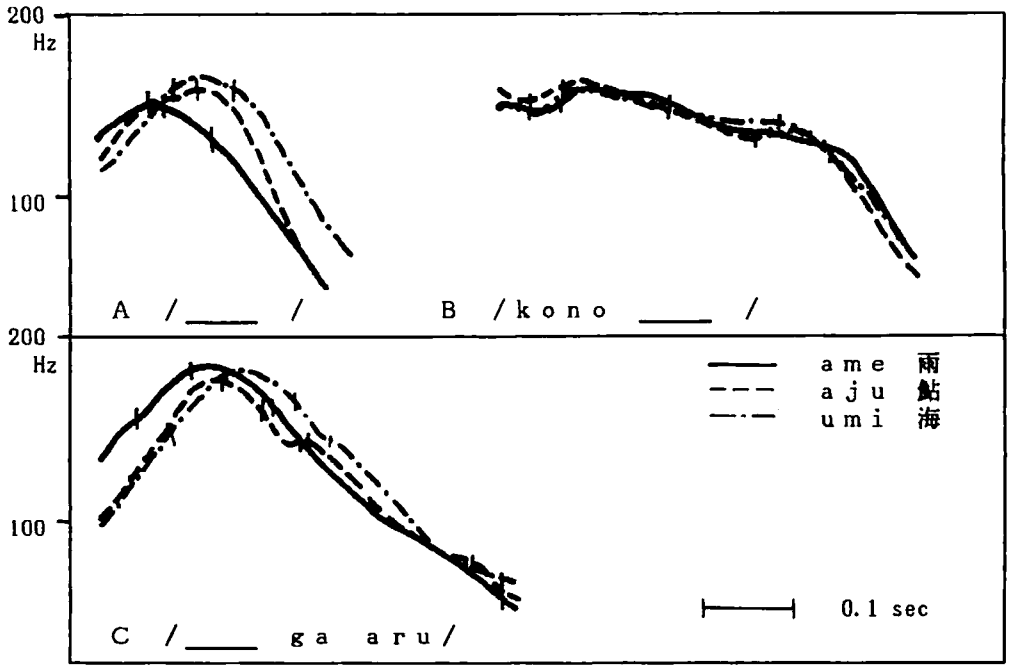

Fig. 2.5 Examples of Oxytonic Accent (b)(4)

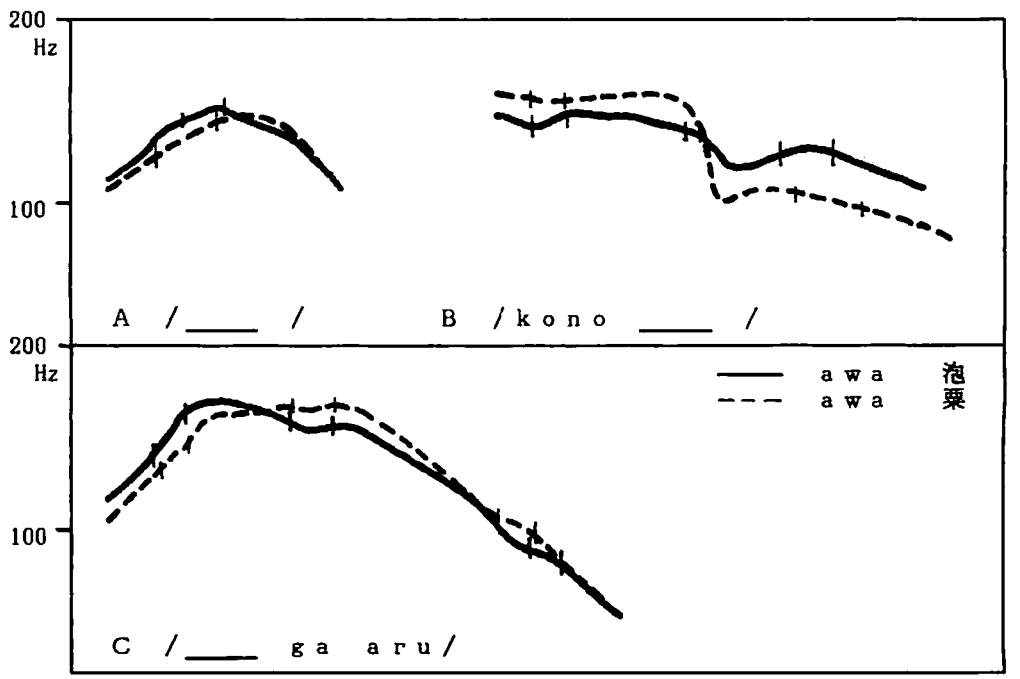

Fig. 2.6 Comparison of High Atonic and Low Atonic Accents

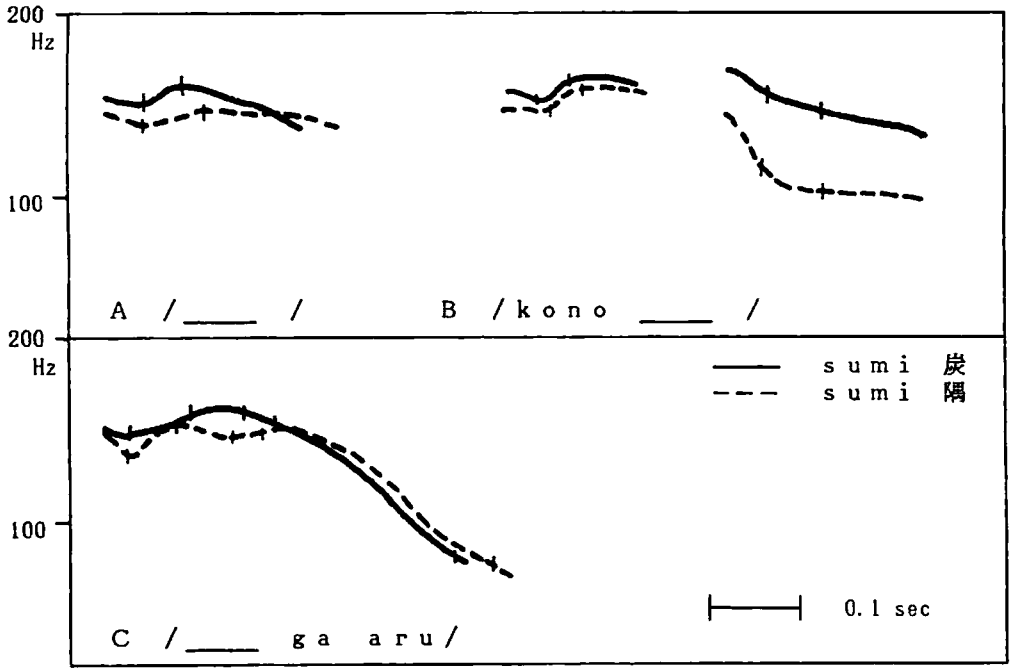

Fig. 2.7 Comparison of High Atonic and Low Atonic Accents

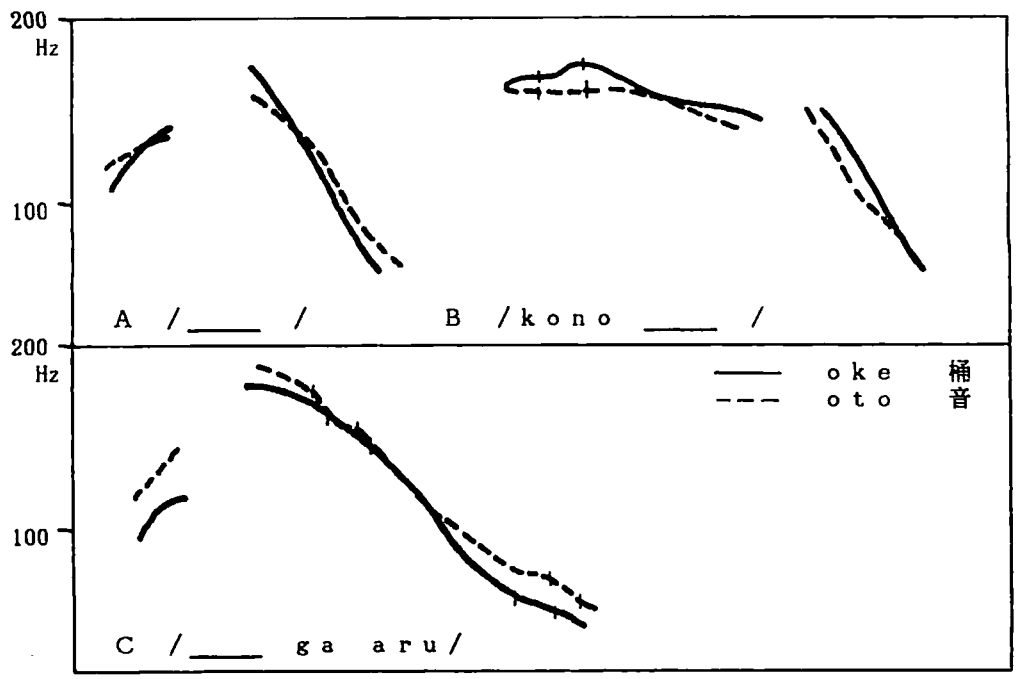

Fig. 2.8 Comparison of 3b and 4

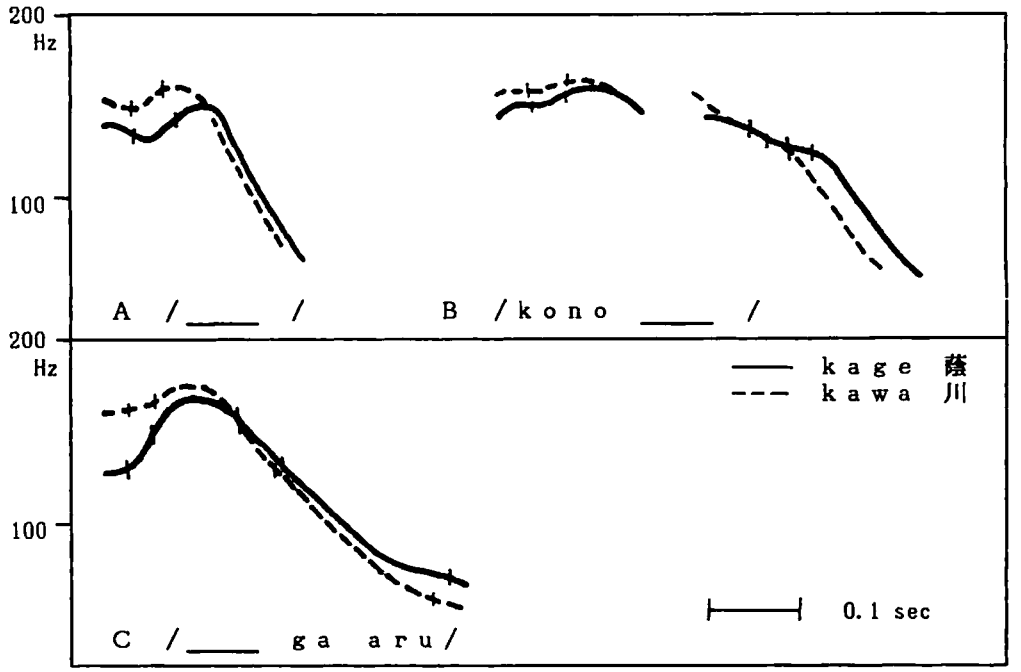

Fig. 2.9 Comparison of 3b and 4

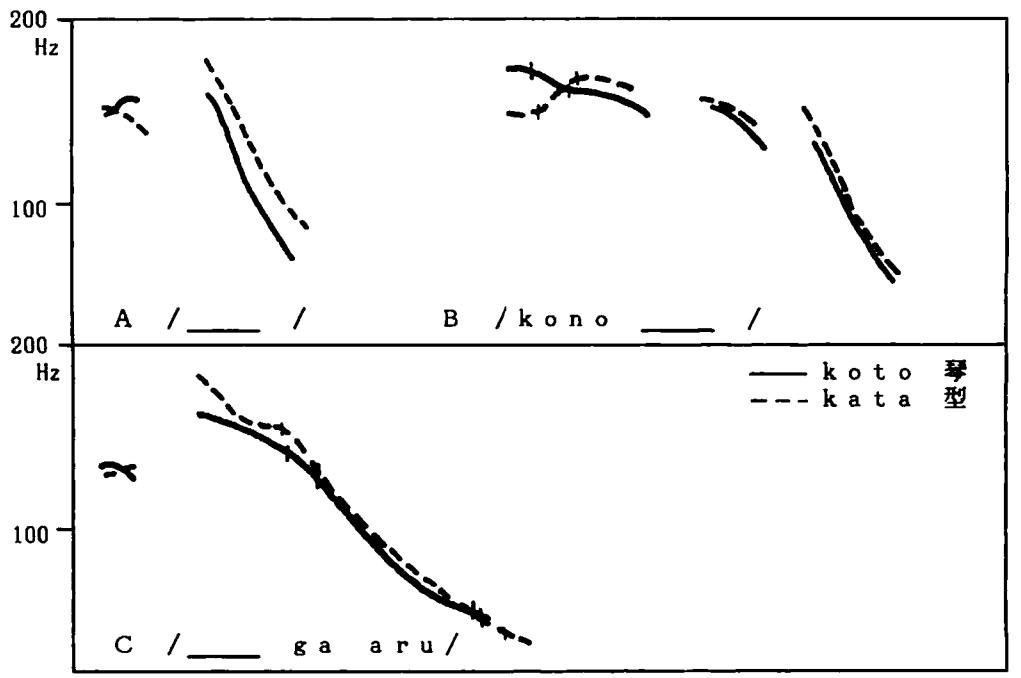

Fig. 2.10 Comparison of 3b and 4

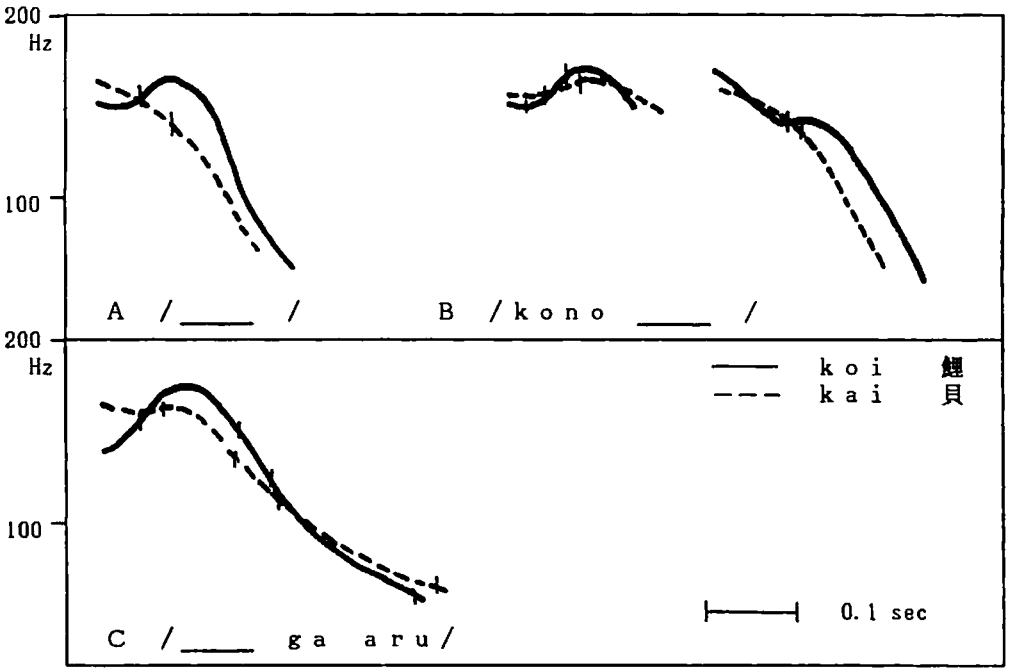

Fig. 2.11 Comparison of 4 and 3a

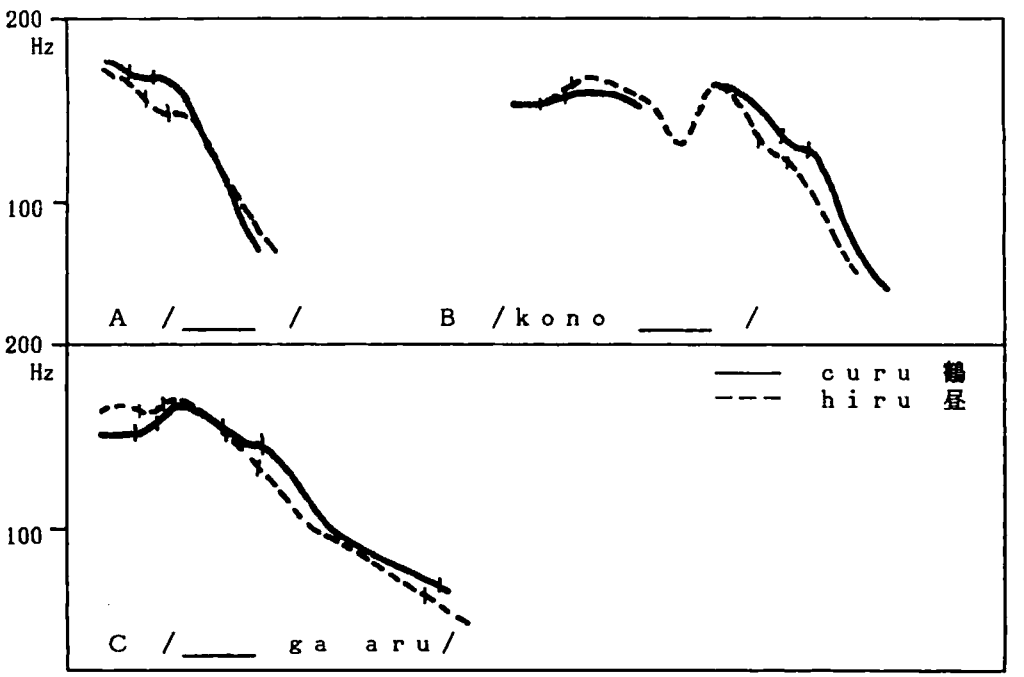

Fig. 2.12 Comparison of 4 and 3a

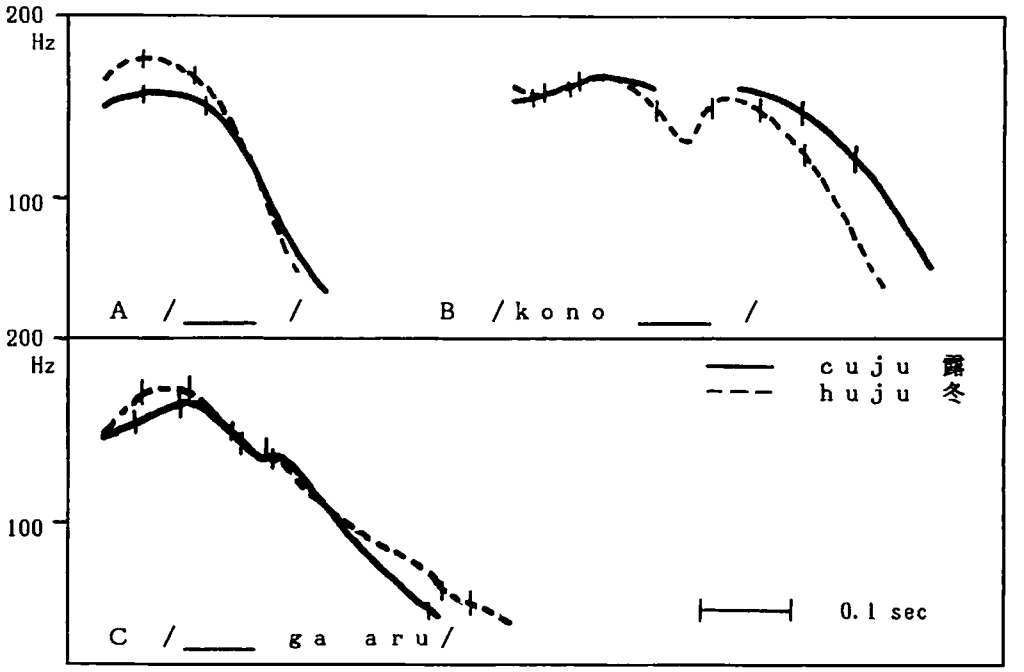

Fig. 2.13 Comparison of 4 and 3a

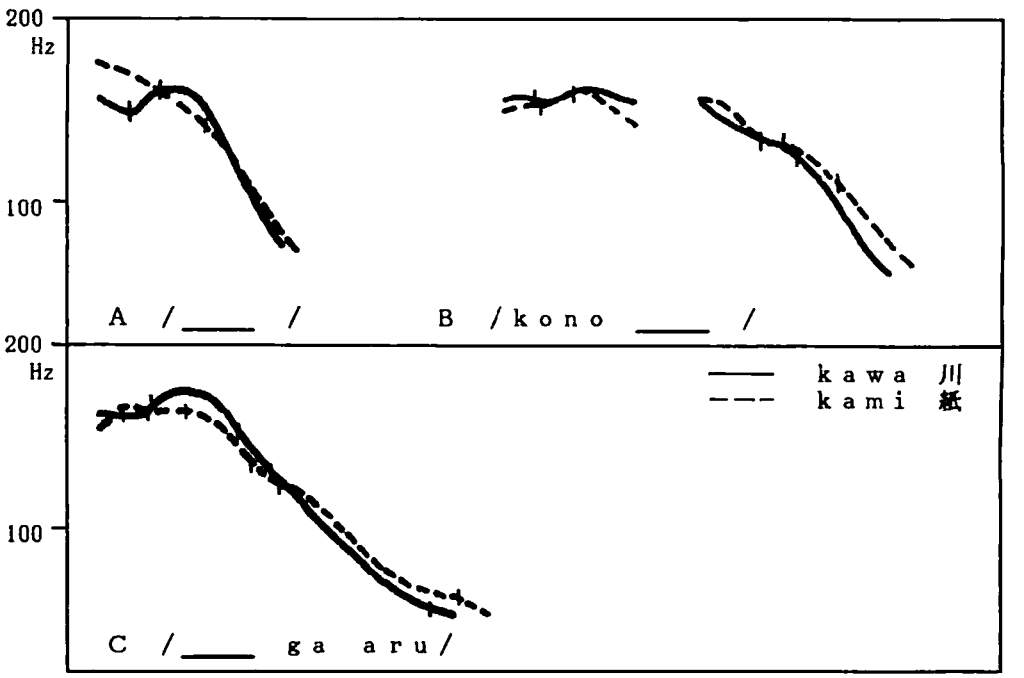

Fig. 2.14 Comparison of 3b and 3a

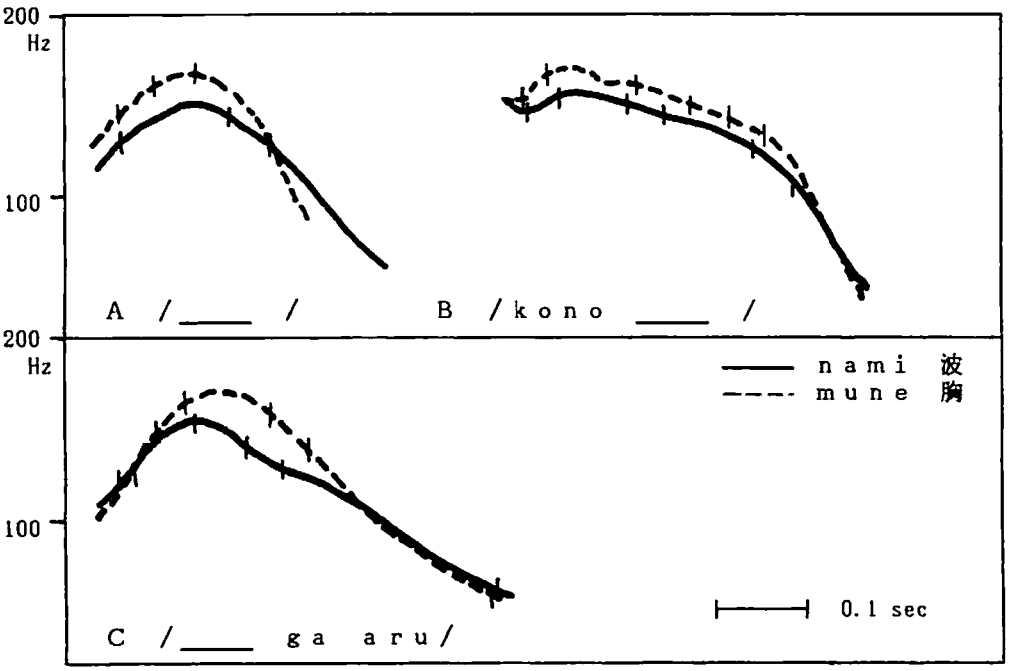

Fig. 2.15 Comparison of 3a and 3b