SONDERDRUCK AUS

LANGUAGE IN TIME AND SPACE

STUDIES IN HONOUR OF WOLFGANG VIERECK
ON THE OCCASION OF HIS 60th BIRTHDAY

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HEINRICH RAMISCH AND KENNETH WYNNE

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Recent Change of Word-accent in Japanese – Correlations with Sociolinguistic Groups

Fumio Inoue

1. Summary

A pronunciation change in the word accent of loanwords of European origin is now in progress in Japanese.[1] In this study, extensive data were acquired, and the relationships between accent usage and the speakers' sociopsychological characteristics were ascertained with the use of a multivariate analysis. The influence of social groups on linguistic change was also observed.

2. The theoretical background

Words familiar to speakers are generally found to proceed faster in linguistic change. Social groups are also influential in the adoption of new forms. As a result linguistic phenomena function as a symbol of group identity. Recent changes in the accent of loanwords in Japanese give clear examples of the influence of these group factors.

3. The system of Japanese accent and changes of loanwords

Japanese pitch accent has a distinctive function and the position of high pitch can segmentally distinguish minimal pairs. Words can be classified according to the relative pitch of syllables or, more exactly, morae. In this paper, accent is shown by /H/ (High) or /L/ (Low). The position of falling pitch (or ..HL..) is important for both the speakers' perception and the linguists' classification of Japanese accent. This falling position is phonologically distinctive and is called the "accent nucleus" by Japanese scholars. For example, *ame* 'rain' and *ame* 'candy' are different only as to their pitch. *Ame* /HL/ in the meaning of 'rain' is HIGH-LOW or falling = marked accent. *Ame* /LH/ in the meaning of 'candy' is pronounced as LOW-HIGH and is classified as flat = unmarked accent. The latter type is called 'flat' or 'unmarked'

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[1] This is a revised and enlarged version of the paper read at the 15th International Congress of Linguists held at Laval University in Quebec, Canada, in 1992. A shortened version appeared in the Proceedings of the Congress (Inoue 1993). It would be appropriate to dedicate this paper to Wolfgang Viereck who has extensively used computers to analyze dialectological phenomena and who has studied the contact of English with other languages all over the world.

because it has no syllable after which the pitch falls. Loanwords of European origin are usually pronounced with the marked accent (..HLL), falling after the third syllable from the end (i.e. antepenultimate mora). For example, *terebi* /HLL/ from 'television', *karute* /HLL/ from German 'Karte', *bareebooru* /LHHHLL/ from 'volleyball' and so on.

However, a change in the accent of European loanwords is currently occurring among young people (mainly in the Tokyo metropolitan area); several loanwords are being pronounced with the flat, unmarked accent. Use of the new accent seems to be characteristic of certain social groups whose members are familiar with the words in question. For example, riders of motorbikes pronounce the word *baiku* /HLL/ 'bike' with a flat unmarked accent /LHH/. People using computers tend to pronounce *disuku* /HLL/ 'disk' with a flat accent /LHH/. The general public, however, tends to pronounce these words with the marked (antepenultimate) accent. It is sometimes possible to guess people's interests from their use of a flat accent.

A similar phenomenon is reported by Aitchison (1981: 92) for weakening of unstressed vowels in English. A schwa is used in words people use often. "Australians reduce the first vowel in the word *Australia*... New Yorkers reduce the first vowel in *Manhattan*... and professional trombonists do the same with the first vowel in *trombone*."

4. The method of this study

For this study, accent in loanwords was extensively surveyed among many university students in the Tokyo metropolitan area. A cassette tape was made by a veteran broadcast announcer, in which each word was pronounced with two or three possible (flat or falling) pitch accents. These marked and unmarked accents of the word were presented in pairs and the words were grouped in semantic groups, such as music, sport, vehicles, computers and so forth. The copied tapes were played to university students in classrooms, and in a questionnaire the students were asked to tick the accent they usually use or hear. At the end of the questionnaire, they were asked to check extralinguistic questions related to social and sociopsychological attributes.

Some people may doubt the validity of the data acquired by this kind of passive judgement. But it is because of this method that we were able to confirm that people often pronounce the same word with two (or three) different accents, and that people often hear and remember the accent that they do not use themselves. For example, both *dorama* /HLL/ and *dorama* /LHH/ have been used in the media recently, and many students actually admitted that they hear both accents. The other merit of this method is that a large and homogeneous data, immediately applicable to computer processing, can be easily acquired. In order to verify the relationship between accent usage and multifarious interests of the students, it is necessary to gather a large amount of data.

The data were acquired from five universities in the Tokyo metropolitan area. A total of 644 students took part in the survey. The data was processed as a whole, and a report has been published in Japanese. As geographical differences in accent are

quite conspicuous in Japan, only the students born and brought up in the Tokyo metropolitan area were selected for the statistical analyses below. The number of students selected was 318 or about half of the total data, but the number is large enough for statistical analyses.

5. Results

5.0. The overall tendency of flat accent

As a result of this investigation a flat accent not recorded in accent dictionaries was found to be widely used. Students showed more flattening of accents than had been reported earlier in dictionaries and in other accentual research. The differences in real time (that is, in comparison with research in the past) and apparent time (that is, age differences) verify that accent flattening is now in progress in Tokyo Japanese.

The whole data is shown in Figures 1a to 1f. Figures 1a to 1c represent percentages of a flat accent in loanwords. Figures 1d and 1e show a flat accent in original Japanese words and Chinese loanwords (an English translation of the meaning is shown in the graphs). Figure 1f shows a flat accent in longer words with more than two possibilities of accent in both the Japanese words and loanwords. 'A' represents a flat accent and 'C', a falling accent, and 'B', answers with both flat and falling accents. 'D' shows the percentage of no response which shows that the students are not familiar with the words in question.

Figure 1a shows that about one third of the investigated words bear a flat accent. Most of these words are recently introduced words in the semantic field of mass-communication, audio equipment and music which is now popular among the young Japanese. Most of the items in Figure 1b have two coexistent accents. Words in the semantic field of sport, music, vehicles and computers are included here. Especially 'second', 'serve', 'guitar' and 'drama' are pronounced in two ways by many students. Figure 1c shows words which are mostly pronounced with a falling accent. These are words in various semantic fields, and most of them have been in use for many years. Japanese words in Figures 1d and 1e were investigated in order to ascertain the plausibility of the answers of the students. The selected 312 students born and brought up near Tokyo gave the standard accent correctly for the basic Japanese words which are on the top of Figure 1d and at the bottom of Figure 1e (minimal pairs of *ame, kami, hashi*). The words in the lower quarter of Figure 1d and in the upper half of Figure 1e show that even Japanese and Chinese loanwords are in fluctuation. The adjectives whose conjugation forms were once systematically divided into flat accent and falling accent are now losing the distinction, as the minimal pairs *atsui* ('hot' vs 'thick') and *atsukatta* ('was hot' vs 'was thick') show. These examples show that accent flattening has been occurring in various Japanese words for many years. In Figure 1f, words which are pronounced with more than two accents do not show so much flattening.

Figure 1. Average usage rate of flat accent per words
(University students of the Tokyo Metropolitan area)

Figure 1a. Loanwords 1

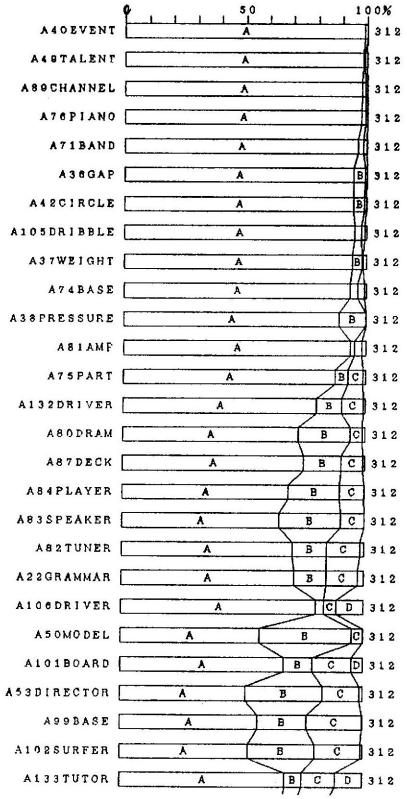


Figure 1b. Loanwords 2

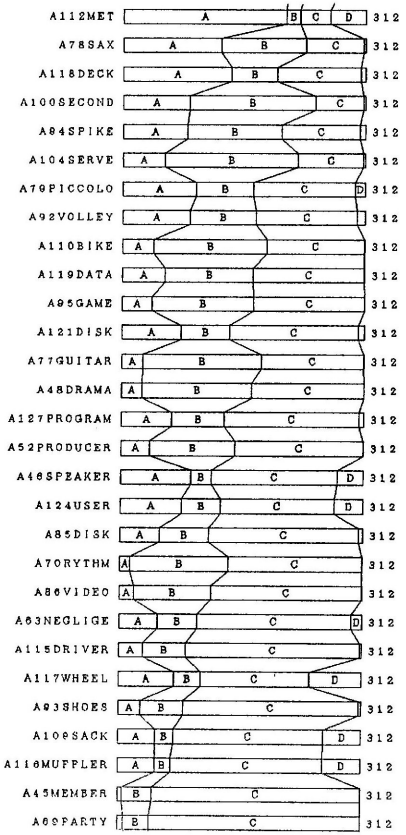
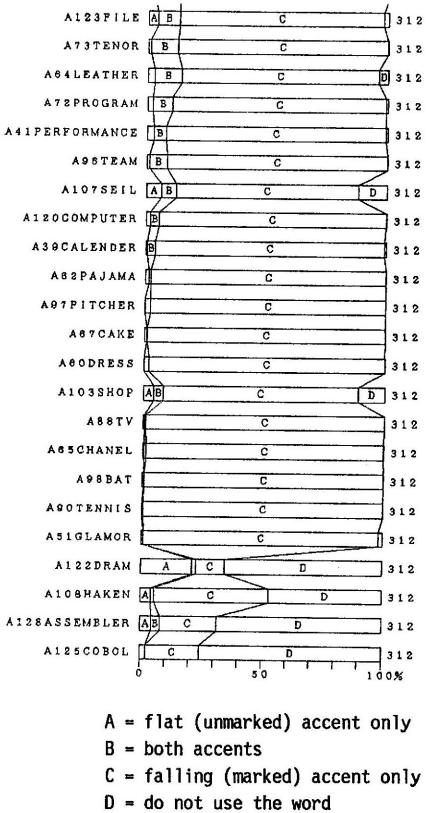
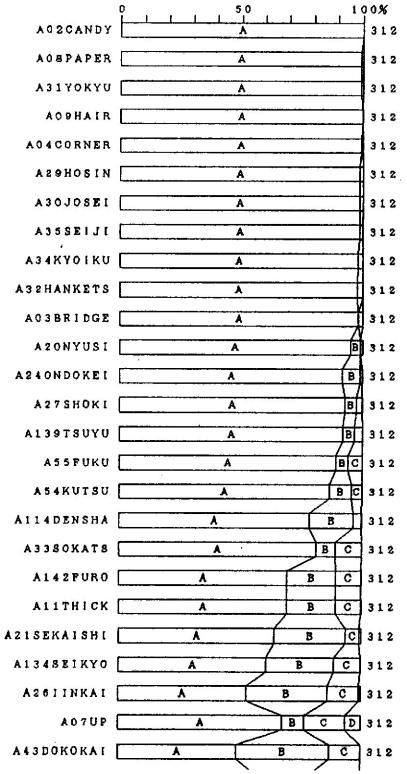


Figure 1c. Loanwords 3



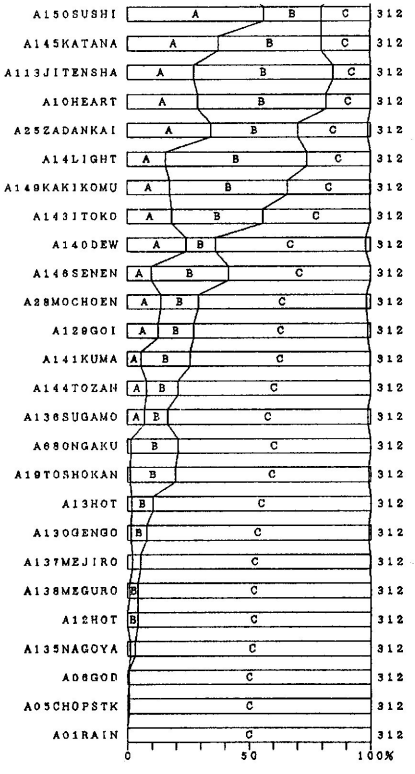
A = flat (unmarked) accent only
B = both accents
C = falling (marked) accent only
D = do not use the word

Figure 1d. Japanese and Chinese loanwords 1



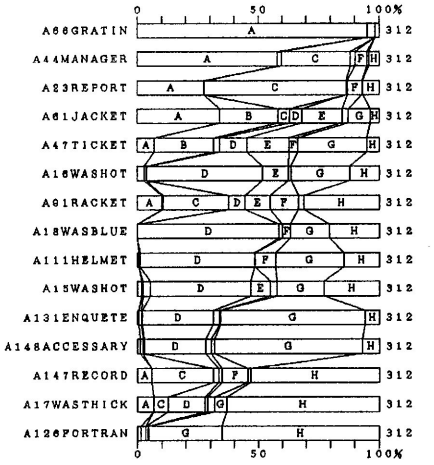
A = flat (unmarked) LHHH accent only
B = flat LHHH and HLLL accents
C = flat LHHH and LHHL accents
D = HLLL and LHHL accents
E = all the accents
F = LHHL accent only
G = HLLL accent only
H = do not use the word

Figure 1e. Japanese and Chinese loanwords 2



A = flat (unmarked) accent only
B = both accents
C = falling (marked) accent only
D = do not use the word

Figure 1f. Japanese words and loanwords with more than 2 accents



A = flat (unmarked) LHHH accent only
B = flat LHHH and HLLL accents
C = flat LHHH and LHHL accents
D = HLLL and LHHL accents
E = all the accents
F = LHHL accent only
G = HLLL accent only
H = do not use the word

5.1. The appearance of new doublets

The appearance of new doublets is observed in recent loanwords because of the accent flattening. The same loanwords are pronounced differently according to their meanings by young people. In general the words tend to be pronounced with a flat, unmarked accent in the meaning which has been adopted recently in Japanese, while words with old meanings are pronounced with the falling, marked accent. Several examples are illustrated in the graphs of Figure 2.

For example, the English word 'driver' has been introduced in Japanese in many specialized meanings. In Figure 2 the accents of three different meanings are shown for the same word *doraibaa* 'driver'. For 'driver' in the meaning of a kind of golf club, and 'driver' in the meaning of a tool for carpentry (*nejimawashi*), a flat accent is widely used. But 'driver' in the meaning of a person who drives a car (*untenshu*) is rarely pronounced with a flat accent and is mostly pronounced with a falling, marked accent.

Similarly, 'muffler' in the meaning of something to warm the neck (*erimaki*) is pronounced with a falling accent by all the students, but the muffler to soften the noise of a motorbike (*shoonki*) is sometimes pronounced with a flat accent.

'Speaker' in the meaning of audio equipment (*kakuseiki*) is widely pronounced with a flat accent but 'speaker' in the meaning of a person who gives a talk *(hanashite)* is rarely pronounced with a flat accent.

A 'program' for a computer is pronounced with a flat accent by some students, but a 'program' of a music concert is scarcely pronounced with a flat accent.

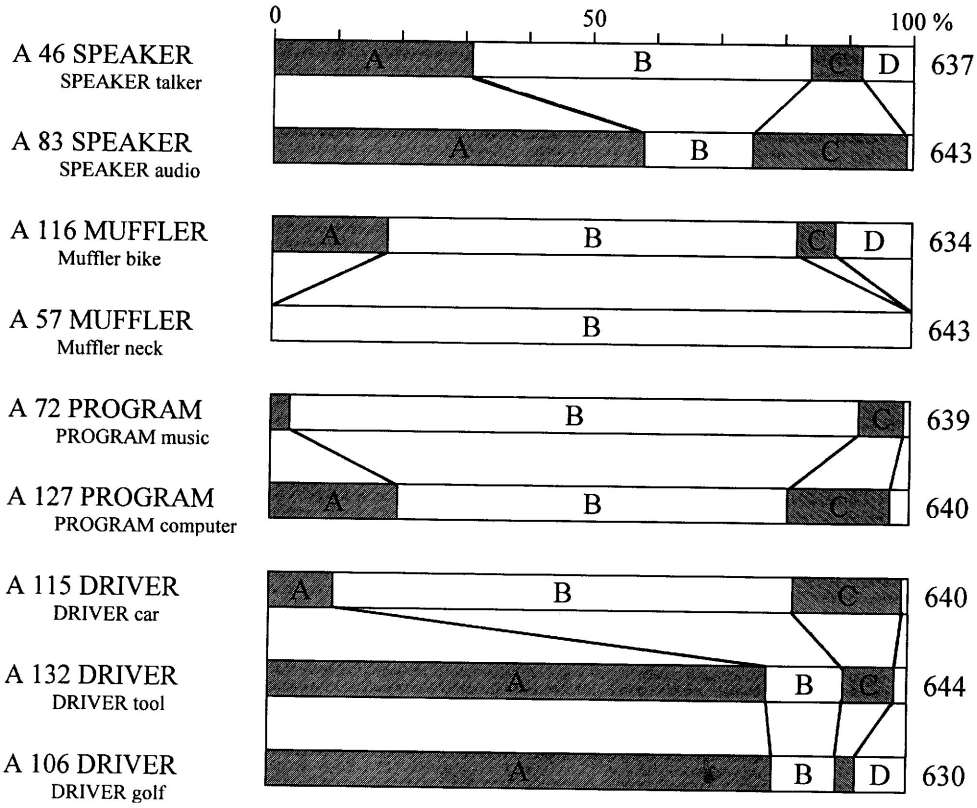
All the loanwords discussed here bear a flat accent in accent dictionaries, with the only exception of 'driver' which, in a recently published broadcasting accent dictionary, bears a flat accent in the meaning of a tool and both a falling and flat accent in the meaning of a person who drives a car.

There are more examples, though the graphs are not shown here. 'Deck' in the sense of audio equipment is mostly pronounced with a flat accent but the 'deck' of a ship or a train is rarely pronounced with a flat accent. 'Bass' as in audio equipment (musical instrument) is nearly always pronounced with a flat accent but the 'base' of baseball is rarely pronounced with a flat accent.

These examples show that some loanwords are now becoming minimal pairs with regard to pitch accents in the process of change. It is argued that Japanese pitch accent is steadily losing the distinctive function of differentiating segmentally minimal pairs and that Japanese accent now mainly shows a delimitative function of showing the beginning and the end of words or phrases. For example former differently accented pairs of *kumo* 'spider' /LH/ and *kumo* /HL/ 'cloud' and some other minimal pairs have now become homophones. But the recent trend of accents of loanwords seems to run counter to this trend.

This phenomenon is interesting from the standpoint of linguistic theory of change and differentiation of meaning, but it is troublesome from the standpoint of actual use of accent. Perhaps this trend is only ephemeral, and many more loanwords will be pronounced with a flat accent in the future, thus losing the function of differentiating the meaning.

Figure 2. Average ratio of flat accent according to meaning



A = *flat (unmarked) accent only*
B = *falling (marked) accent only*
C = *both accents*
D = *do not use the word*

5.2. Multivariate analysis applied to the data

The data was analyzed by "Hayashi's Quantificational Method Type 3" (hereafter "Hayashi 3"), a multivariate analysis which was developed for non-numerical, categorical data and which gives similar results to factor analysis (Hayashi 1954). This method is analogous to the correspondence analysis developed by Benzécri in

France (Cichocki 1996). "Hayashi 3" has been widely applied to public opinion polls and linguistic research in Japan. In this study "Hayashi 3" was applied to the answers for accent usage and sociopsychological attributes, first separately and later jointly. The results showed first that words pronounced with a flat accent can be classified according to the semantic fields of the words, secondly, that students can be classified by sociopsychological attributes into introverted and extroverted types, and thirdly, that the semantic fields of words and sociopsychological attributes of students show a close relationship.

The direct results of the multivariate analyses will not be explained here because it would take too much space to explain the complicated graphs.

Once the multivariate analysis was applied, the results can be utilized to show the simple cross analyses more efficiently as will be explained hereafter. The relationship between accent usage and students' sociopsychological traits can be shown in the form of an overall distribution pattern of the data as follows.

5.3. The sociopsychological traits of users of flat accent

Cross analysis between the use of the flat accent and the sociopsychological attributes showed that in general the newer flat accent is used more often by students with active and extroverted characters. In Figure 3 the number of words with a flat accent was counted for each student and average values were computed for the sociopsychological attributes. The sociopsychological attributes are arranged in the order of values of the 1st axis of "Hayashi 3". The sociopsychological attributes in the left-hand side are: introverted, like study, not self-confident, member in cultural activity, careful in accent, and so on. The attributes in the right-hand side are: conversant with costume, fast in adopting fad words, pursue trends, like surfing, ... extroverted and so on. Figure 3 shows that students with extroverted attributes (right-hand side) tend to use more flat accent and those with introverted attributes (left-hand side) less flat accent.

This tendency seems to be a kind of sociopsychological universalism in linguistic change, because similar phenomena have been ascertained in the study of the spread of fad words, slang and new dialect forms in Japanese and other languages (Inoue 1986a, 1986b).

Incidentally, the recent Japanese expressions *nekura* and *neaka* which were used in the questionnaire, are translated here in English as 'introverted' and 'extroverted'. These expressions were found to be useful in classifying the students.

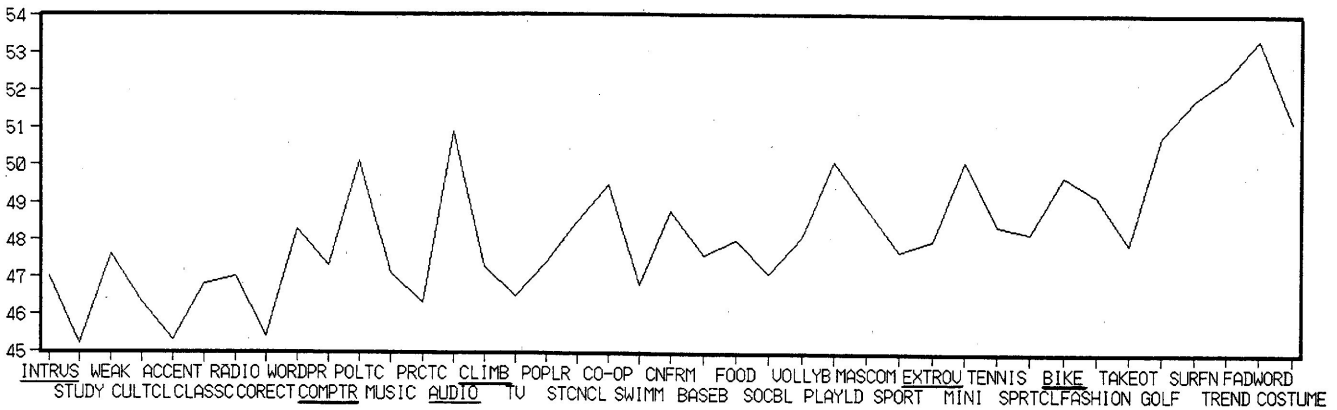
5.4. The relationship between social groups and flat accent

Thus, by utilizing the result of the multivariate analysis, clear relationships have been ascertained between the flattening of accent of loanwords and the general sociopsychological attributes of the participants. But at the same time, many students were found to pronounce words which are connected with their hobbies or social activities with a flat accent. Although extroverted students adopt the flat accent more widely, even the introverted students, who are generally slow in

Figure 3. Average number of flat accent by sociopsychological attributes

Average number of flat accent among introverted students

Average number of flat accent among extroverted students



adopting the new accent, use the flat accent in those fields which are closely connected to their interests.

Several typical examples are shown in Figure 4. All the words mentioned here bear falling or marked accent in accent dictionaries which show standard or older accent.

In Figure 4a, students who ticked the item "I like mountain climbing" (who are generally classified as introverted types as shown in the left-hand side of Figure 3) adopt the flat accent more in their familiar technical loanwords. They pronounce *Zakku* (from German 'Sack'), *haaken* (from German 'Haken') and *zairu* (from German 'Seil') more in a flat accent, than those who did not indicate that they like mountain climbing.

Figure 4b shows that those "interested in audio equipment" (who are also classified in the introverted group as shown in Figure 3) use more flat accent in the related terms. They pronounce *gitaa* (from English 'guitar'), *bideo* (from English 'video') and *disuku* (from English 'compact disk') more in a flat accent than those who are indifferent to the field.

Figure 4c shows that those who "like cars and motorbikes" use more flat accent in words such as *baiku* (from English 'motorbike' but in slightly different meaning), *hoiiru* (from English 'wheel'), *mafuraa* (from English 'muffler') than those who are indifferent.

Figure 4d shows that those who "like computers" use more flat accent in words such as *deeta* (from English 'data'), *disuku* (from English 'disk'), *fairu* (from English 'file'), *konpyuutaa* (from English 'computer') than those who are indifferent.

All the words in Figure 4 show that a flat, unmarked accent is first adopted by the students who are familiar with the meaning in question. In other words, "minor interest" groups and spontaneously-formed groups are sometimes essential for the adoption of newer linguistic forms. Only typical examples are presented here and many more examples are shown in the report written in Japanese (Inoue 1992a, 1992b).

6. General problems of the linguistic process of diffusion

The basic reason for the influence of these "minor interest" groups is that loanwords in Japanese (and also in other languages) have lexicologically special characteristics. Their meanings are often very specific, so that they are not used so often when considered in the community (or in Japan) as a whole; but they are used very often in certain small social groups. When a change occurs in a loanword, this new phenomenon is often used in a group, and has a good chance of spreading within the members of the group. But outsiders have little chance of noticing the new phenomenon. This is what is happening with the pitch accent in Japanese loanwords.

The new accent then works as a kind of jargon symbolizing identity (or solidarity) for group membership. The flat accent becomes a "marker" to show the degree of "accommodation" of group members (Giles/St. Clair 1979). This process of adoption of a new accent is symbolic of the social network of the group members (Milroy 1980).

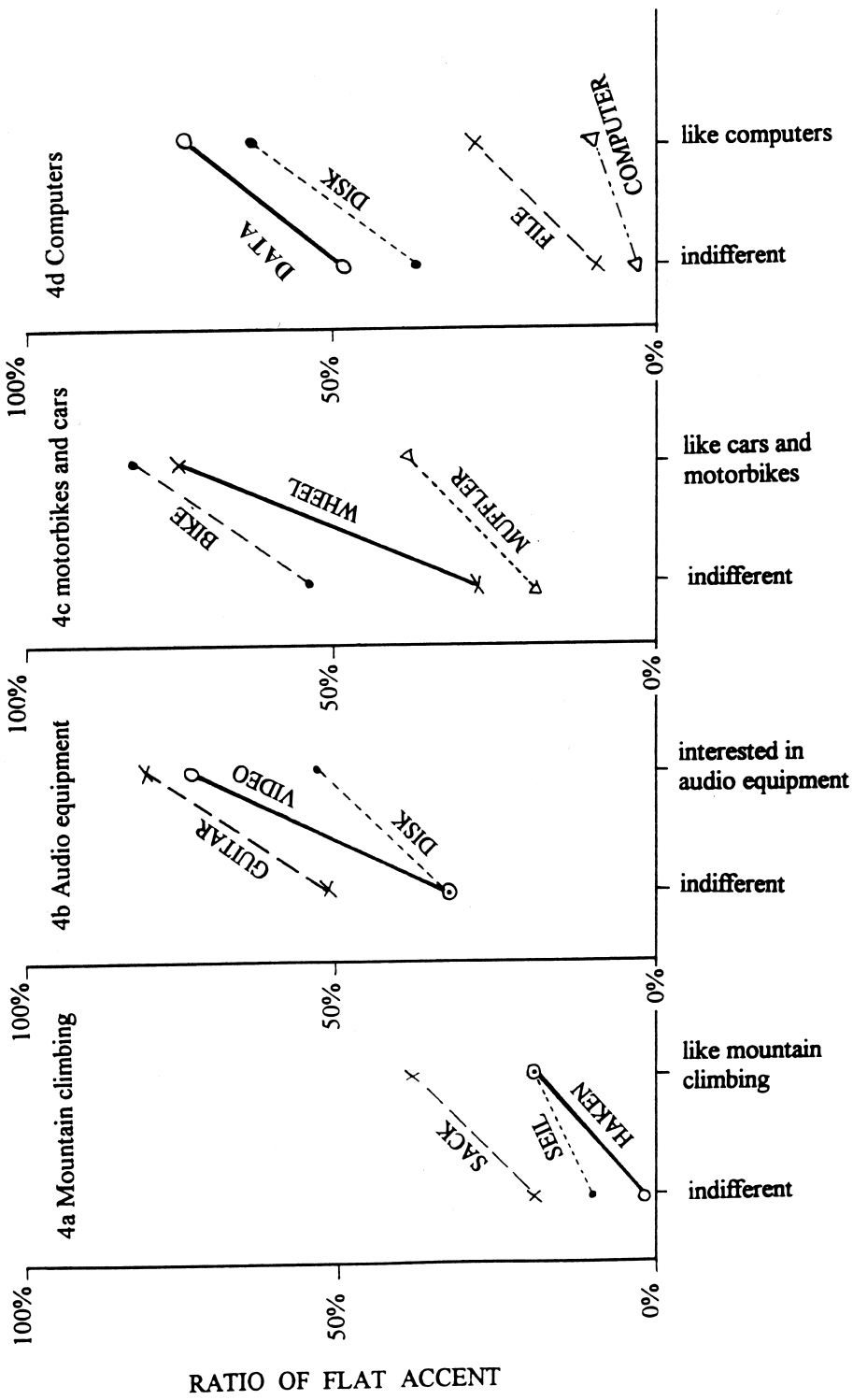


Figure 4. Ratio of flat accent by each sociopsychological attribute

The new flat accent is now becoming symbolic of "experts" in a certain field. This kind of speakers' evaluation is a typical case of the "embedding problem" of sound change in progress discussed by Labov (1972). When the social group in question has a high social prestige, the accent flattening diffuses outside the group.

Words concerning the mass media tend to be pronounced with a flat accent; for example, *direkutaa* (from 'director'), and *tarento* (from 'talent'). This is perhaps because the area of mass media is thought to be most fashionable among young people.

To add to this, the accent flattening spreads to other loanwords specific to the group. A student who was born and brought up in the countryside reported that she had adopted a flat accent in many loanwords after coming to Tokyo, just to save her the trouble of remembering different accent types for many words. This is a process of over-simplification which is often observed in linguistic change. The basic mechanism of this change in progress can be explained by the theory of "lexical diffusion" advocated by Wang (1972) and Chen (1969).

Actually, accent flattening is a reflection of a long historical tendency in Japanese. Words frequently used tend to adopt a flat unmarked accent. For example, place names of familiar areas are often pronounced with a flat accent. Flat, unmarked accent in loanwords symbolizes that the words are no longer considered "foreign" to the speakers.

It has been observed that loanwords introduced recently tend to be pronounced with a flat accent, and that loanwords introduced long ago continue to be pronounced with marked accent. In Tokyo Japanese, unfamiliar words or artificially-made words are pronounced with a marked accent falling at the antepenultimate mora. For younger speakers of Japanese the flat unmarked accent symbolically shows that the loanwords are not "foreign" but familiar enough for them. It is coincidental with the result of a public opinion survey about the usage of loanwords in Japanese. Most younger speakers showed no opposition to loanwords, and they actually selected more loanwords for several pairs of Japanese words and loanwords.

7. Conclusion

In this study, a suprasegmental phenomenon of pitch accent was found to show a change in progress, and sociopsychological attributes of the speakers were found to be influential in the use of the new flat accent.

The influence of small groups on language has been ascertained in nearly homogeneous social groups of university students. This phenomenon is suggestive of the incipient process of linguistic diffusion in small groups (and in small geographically isolated villages). In a homogeneous social stratum at least, linguistic differences are determined by so-called sociopsychological attributes. The sociolinguistic study of linguistic change should now move beyond the classical model of social stratification and expand itself into the field of the sociopsychological study of language use as has been discussed by Inoue (1986a, 1986b).

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