

## **SOCIOLINGUISTICS OF INTONATION CHANGE IN PROGRESS IN TOKYO**

**Fumio INOUE**

*Tokyo University of Foreign Studies, Japan*

**Abstract :** In this paper recent changes of intonation among young speakers in Japan are discussed based on sociolinguistic and acoustic investigations. Young female speakers in Tokyo began using rise-fall intonation at the end of clauses in the 1970's, and this usage is still spreading among younger speakers. To add to this, another intonation pattern is spreading among young female speakers in the 1990's: the rising intonation applied to a word in the middle of a sentence. These new types of intonation are interpreted as new discourse techniques. The ultimate origin of the new intonation patterns is attributed to a long historical tendency of utilizing pitch more for grammatical intonation than for lexical pitch accent.

**Keywords :** rise-fall intonation ; discourse function ; conversational technique ; psychological images ; categorical perception

In this paper recent changes of intonation among young speakers in Japan are discussed based on sociolinguistic and acoustic investigations. Young female speakers in Tokyo began using rise-fall intonation at the end of clauses in the 1970's, and this usage is still spreading among younger speakers. This is sometimes called "Shiriagari intonation" or "end-rising intonation". To add to this, another intonation pattern is spreading among young female speakers in the 1990's: the rising intonation applied to a word in the middle of a sentence. This was named "Han-gimon" or "half question" intonation.

These new types of intonation are interpreted as new discourse techniques for keeping one's turn in conversation, or drawing attention to one's utterance. The ultimate origin of the new intonation patterns is attributed to a long historical tendency of utilizing pitch more for grammatical intonation than for lexical pitch accent.

## 1. SOCIOLINGUISTIC VARIATION OF THE RISE-FALL INTONATION

The first of the new intonation patterns is called "endrising" or "Shiriagari" intonation, and sometimes "gobi-nobashi". As will be explained later, this intonation is acoustically a steep rise-fall pitch. Thus, this intonation will hereafter be called "rise-fall intonation". This is applied to a word at the end of a clause. The linguistic unit which bears this intonation is a mora, which is lengthened to two morae. (In the recent Japanese orthography this intonation is shown by adding kana symbols for vowel lengthening, like "sore de (therefore) atashi ga (I + particle)".)

This intonation seems to have appeared first in the 1970's, and spread among young females in the next two decades. It is nowadays used even by boys and also by ladies who would not be considered young by others. A survey of the literature connected with this intonation showed that this new intonation is sociolinguistically a stigmatized form, because many critical opinions are found among essays and letters to the editors of newspapers, and because several anecdotes were also collected which tell that the users of this intonation were corrected or scolded by their elders. This intonation seem to have spread in the form of the linguistic change from below.

As a part of preliminary surveys, the image of this intonation was analyzed by collecting free descriptions of this intonation by students. This intonation is typically used by young girls who want to be cute and pretty. It conveys womanliness but it does not make an intellectual impression. When used in formal situations or talking to one's seniors, it is considered to be inappropriate. Users of this intonation seem to be low in social status. Thus, this rise-fall intonation is a socially stigmatized form.

## 2. DISCOURSE FUNCTION OF THE RISE-FALL INTONATION

At the same time actual usage data of this intonation were collected mainly by recording TV and radio programs. Types of sentences or expressions where this intonation appear or do not appear were analyzed. The result showed that this intonation is used in expressions connecting sentences. It is never used in imperatives or in greetings. This intonation is typically used at the beginning of utterances, and maintains the turn of speaking thereafter. When this intonation is used at the end of a breath group, it elicits nods of the head or back-channels from the interlocutor. Almost no turn-taking occurred immediately following this intonation. Thus this rise-fall intonation has a definite discourse function of holding one's turn of speaking. The reason why this intonation gives a bad impression to older people is not only because of the novelty, but also because of this discourse function. Use of this intonation interferes with the right of the seniors to intrude into the conversation. This discourse function

also explains the reason why this intonation gives contrastive impressions of both cuteness and impudency, as shown later in Figure 2.

### 3. INTERMEDIATE STAGE OF THE RISE-FALL INTONATION

The usage data collected further showed some intermediate examples where an atypical (intermediate) rise-fall intonation pattern was acoustically recognized. This phenomenon raises the classical question of the discreteness of phonological units. If this rise-fall intonation is phonologically discrete like a phoneme, it can be treated in the same theoretical framework with the so-called grammatical intonations of rise or fall at the end of sentences which show question or predication. If it is not discrete, it may be a part of the subjective intonation which is realized in the overall pitch pattern of the sentence.

Two experiments were executed among university students in order to ascertain phonetic perception and psychological images of the intonation.

#### *3.1. The image survey of small number of utterances*

The first experiment consists of eleven short portions of utterances with and without (typical and atypical) rise-fall intonation. The subjects were university students who major in languages. (Hara 1993 made a similar survey among high-school students using the same cassette tape and acquired similar results. Thus, the quality of the subjects who may be too sensitive to language study is not a great problem here.) The students were asked to check the typicalness of the intonation and images of the speakers. The whole data was put into a computer and was analyzed by several statistical techniques. Here the result of a multi-variate analysis "Hayashi 3" will be presented (Hayashi 1954). The main result is shown in Figures 1 and 2.

Figure 1 shows that the eleven recorded people were separated into 3 groups according to the subjects' perception patterns of usage of the rise-fall intonation. The group at the left consists of 3 young people who used typical rise-fall intonation. The group at the right is represented by 4 older people who did not use the intonation at all. The middle group is represented by 4 young and old people who used a typical (or intermediate) rise-fall intonation. It should be noted that the recordings of the same person (a professor of about 50 years old) with and without the intonation in question were classified into different groups. This fact shows that the use of this intonation gives considerable effect for interpreting the speakers' apparent character, and that the intermediate, atypical rise-fall intonation should be recognized.

Another result of Hayashi 3 which can be interpreted as the other side of the coin is shown in Figure 2. It shows the patterns of expressions used for describing the recorded utterances of the 11 speakers above. The results concerning typicalness of the rise-fall intonation and psychological images of the speakers were also grouped into three. Utterances with typical rise-fall intonation in the left-hand side were perceived

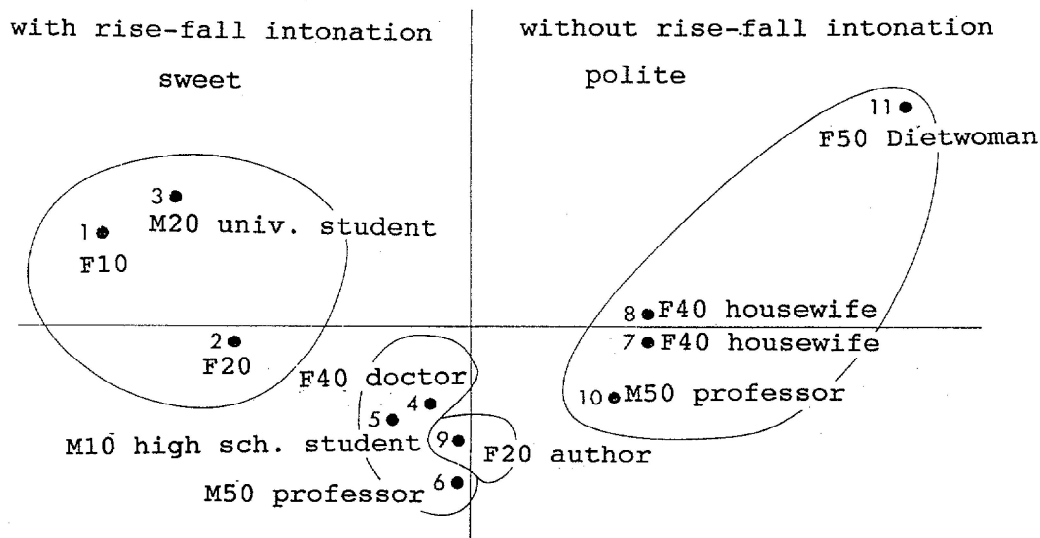


Figure 1. Hayashi's Quantificational Theory Type 3  
Average values for 11 recorded cases

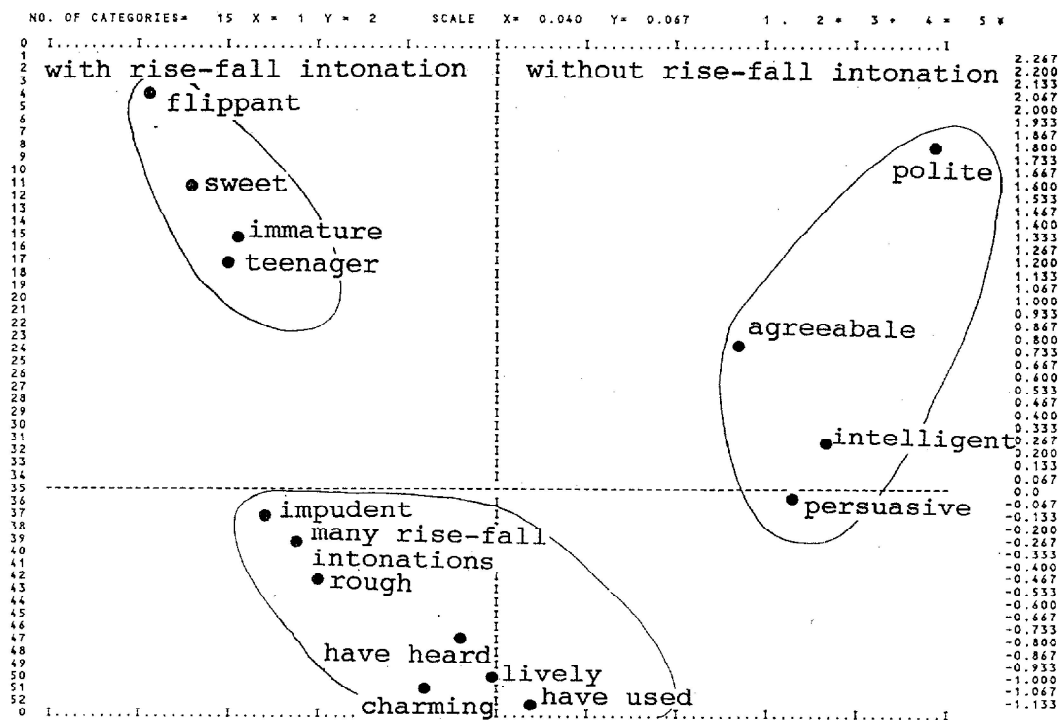


Figure 2. Hayashi's Quantificational Theory Type 3  
values of expressions for the recorded utterances  
free check response for "very ----"



to be unfavorable, immature, flippant, unintelligent, but sweet. (Another figure which is not shown here tells that the users of this intonation were also perceived mostly as being active, friendly and extroverted.) Utterances without the intonation in the right-hand side were perceived to be polite, intelligent, persuasive and agreeable. Utterances with intermediate rise-fall intonation in the middle were perceived to be lively and charming, but rough and impudent.

Thus, the rise-fall intonation has a great effect on the impression of the utterance and the speakers, and there is an intermediate stage in the rise-fall intonation.

### *3.2. The judgment test of a large number of utterances*

The second experiment consisted of many utterances with and without the rise-fall intonation. The sample recordings were collected from various sources: TV discussion program among high-school students, TV interviews, and so on. The subjects, who were again students who major in languages, were asked to check the clauses where typical or intermediate (atypical) intonations were heard. The other clauses were to be left unmarked.

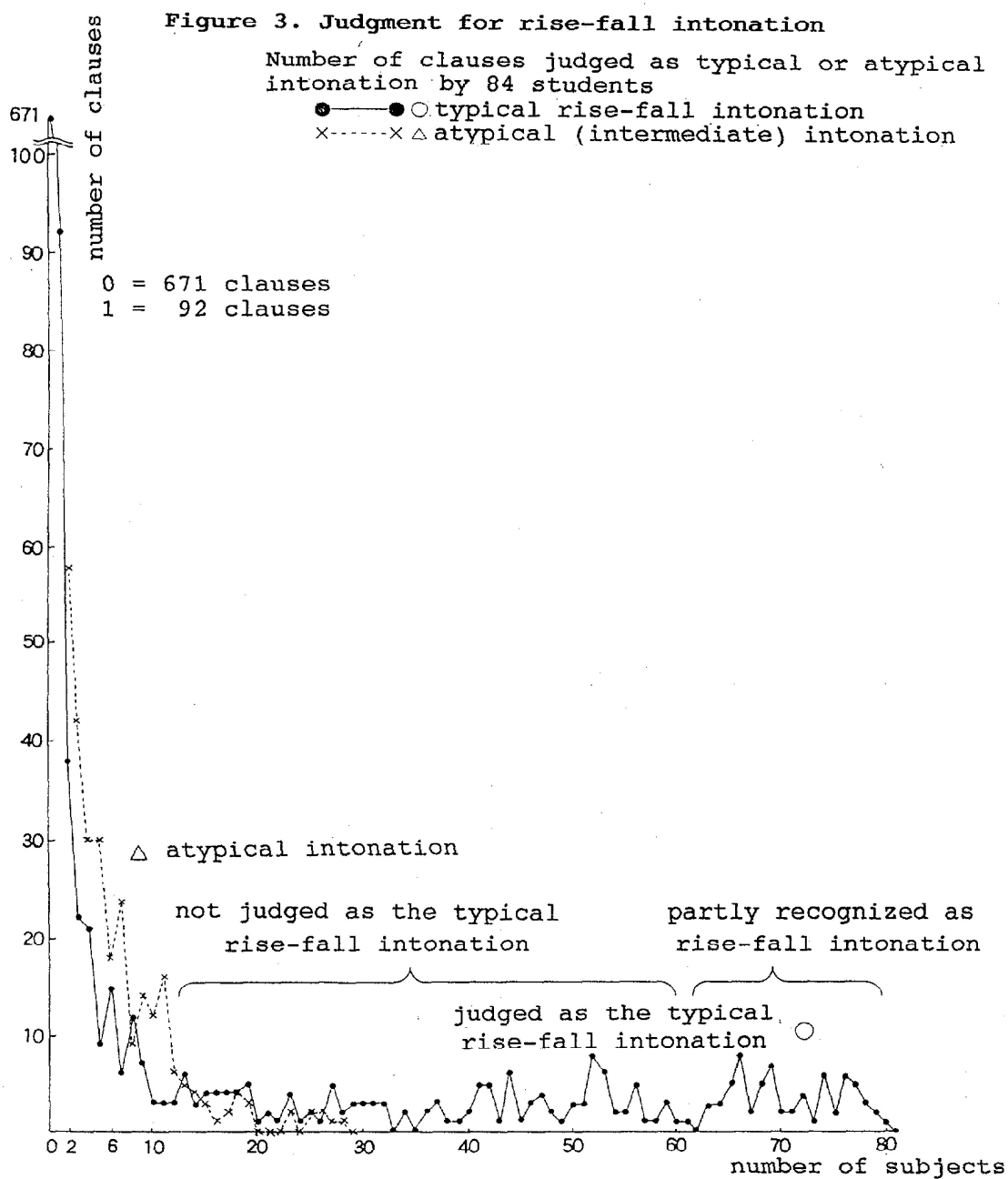
The overall result is shown in Figure 3. The typical rise-fall intonation is shown by black, solid circles, and atypical (intermediate) intonation is shown by crosses. The vertical axis shows the number of clauses, and the horizontal axis shows the number of subjects. Each clause is entered in Figure 3 according to the number of the subjects who checked the intonation.

The clauses plotted at the right-hand side are judged as the typical rise-fall intonation by almost all students. The clauses in the middle are recognized as rise-fall intonation only by a part of the students. The clauses at the left-hand side are not judged as the typical rise-fall intonation by the students. The cross marks which show intermediate intonation are mostly given to these clauses. The clauses at the leftmost side indicating no rise-fall intonation are numerous. It is natural because this intonation is not used continuously in ordinary conversation.

This Figure 3 shows that there are degrees of typicalness of the rise-fall intonation, or that there are typical and atypical (or intermediate) rise-fall intonations.

However, this pattern of perception is not quite similar to the so-called categorical perception often reported for the recognition of synthetic consonants. Nor is it similar to the perception of subjective intonation which reflects the speaker's emotion. The intonation pattern of the latter is continuous and non-discrete. The rise-fall intonation in contrast is fundamentally discrete. However, as was suggested by figure 3, there definitely are degrees of typicalness of the rise-fall intonation.

The existence of the intermediate stage does not necessarily mean that the intonation is continuous. The intonation is discrete and still there can be degrees of typicalness. This typicalness is partly a reflection of the speaker's linguistic ability of realizing the pitch



pattern, and is partly result of the speaker's manipulation according to the intention of communication.

### 3.3. *The acoustic experiment of typical and intermediate utterances*

The degrees of typicalness can be acoustically measured by artificially changing the pitch pattern by computer. Figure 4 shows the pitch pattern of a rise-fall intonation which was ?

recognized as most typical by the students. The portions of the curve pointed to by the arrows show the rise and fall of fundamental frequency.

Acoustic measurement was later applied to the above data to see the correlation of the perception and the pitch patterns. Typical and atypical (intermediate) pitch patterns were found to exist, and continuity rather than discreteness was found among various degrees of rise-fall patterns of the intonation. Still, the basic function of this intonation is similar to the sentence-final intonation which has grammatical functions for declarative and interrogative sentences.

Hara (1993) artificially changed the pitch patterns of the sample sentences, and found that the degree of falling pitch is important for recognition of this rise-fall intonation. This result again shows that there are differences of typicalness of pitch pattern for this intonation.

## 4. DISCOURSE FUNCTION OF THE "HALF QUESTION" INTONATION

The other intonation pattern now spreading among young female speakers in Tokyo is the rising intonation. Several people have hitherto noticed it, and various names have been given to this new intonation. The term "quasi-questioning intonation" was used in an academic paper. However a weekly magazine AERA (July 4, 1994) coined a newer term of "half question" or "Han Kuesuchon".

This intonation was first reported at the beginning of the 1990's. This is also used by young women in order to draw the listener's attention. The linguistic unit for the intonation is different from the rise-fall intonation discussed in the previous sections. The "half question" can be applied to any word in a sentence, but mainly to nouns.

Figure 5 shows the pitch pattern of the "half question" intonation which was used by a student. Steep rise in pitch can be observed on a word in the middle of a sentence.

This intonation sounds misleading for those people who are not accustomed to this new phenomenon. Older people tend to interpret this intonation as an authentic question, and tend to answer "yes" or "no" (or they at least nod or give back-channelling sounds like "eh", "un"), which is not expected by the young speaker. For conservative speakers of Japanese, the use of rising intonation for content which can be assumed to be well-

1-1、けれどもー やっぱり わたしがー (女20代、8)

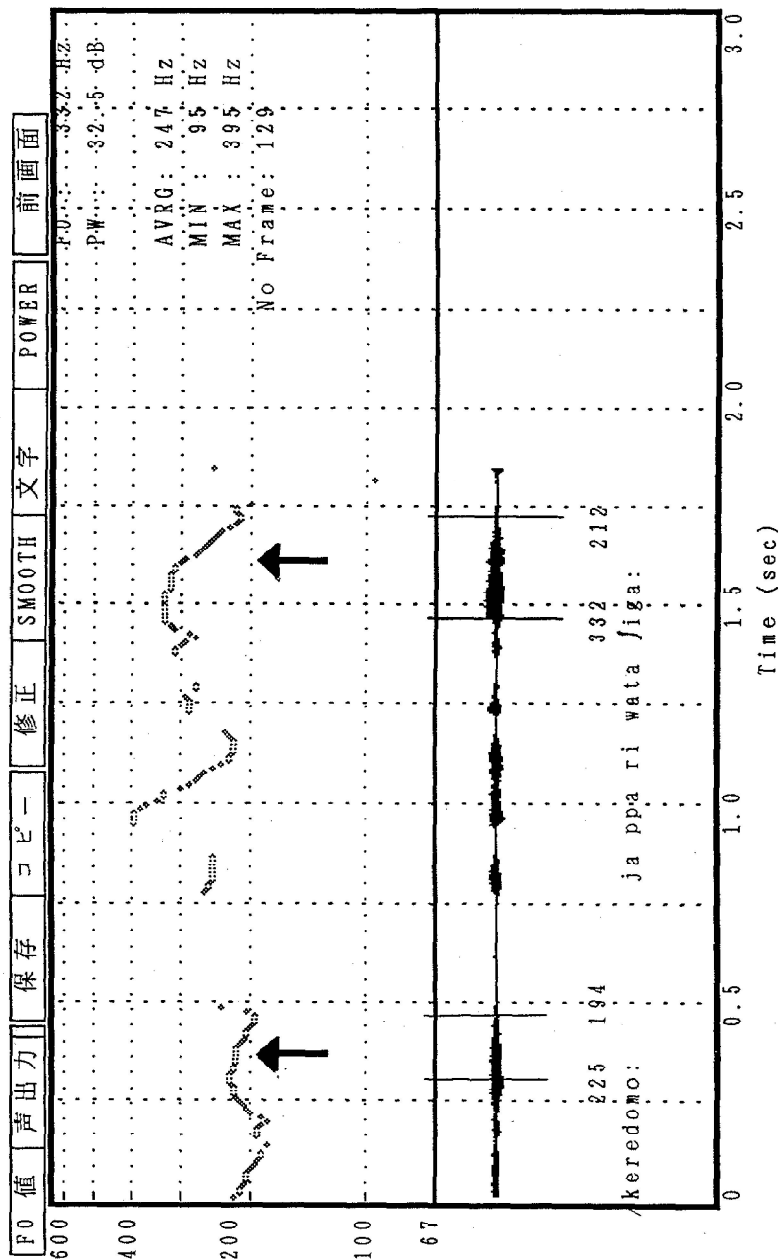


Figure 4. Pitch pattern of a rise-fall intonation  
recognized as most typical (Female 20)

典型的の尻上がりイントネーション (1)

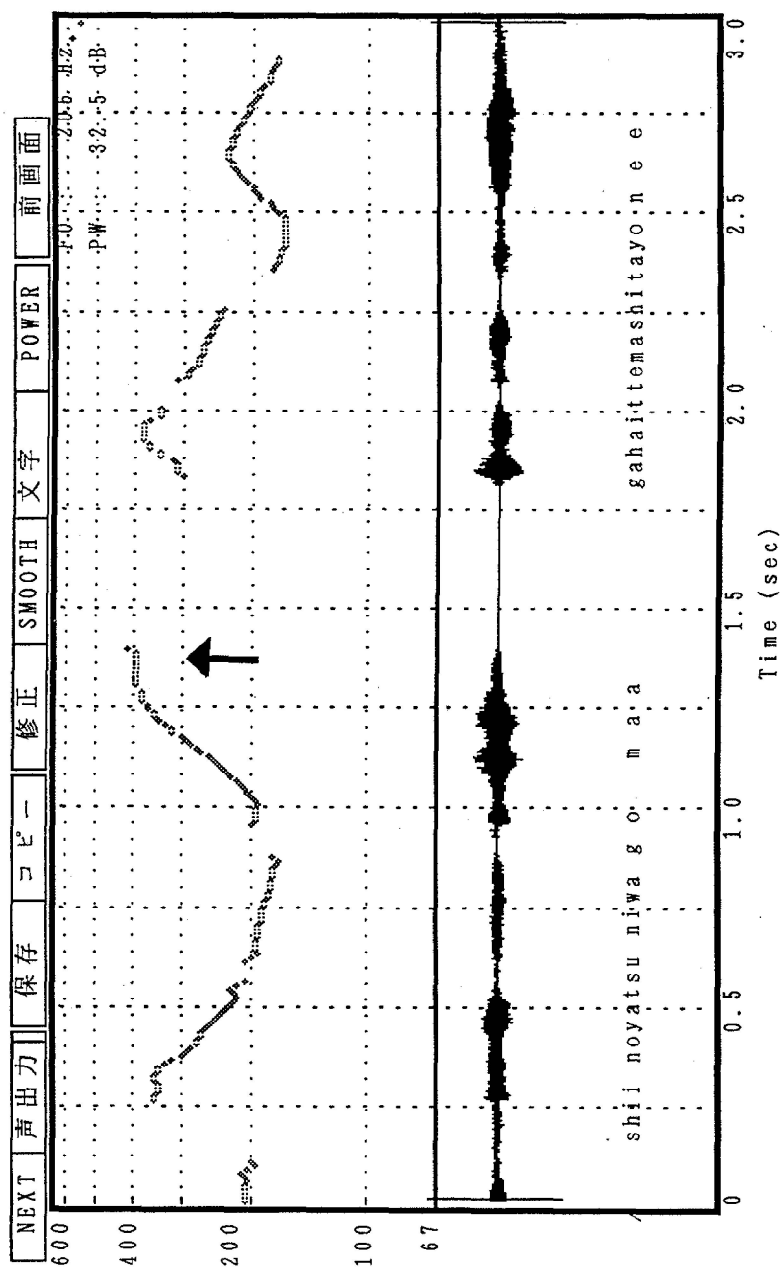


Figure 5. Pitch pattern of the "half question" intonation used by a female student

known to the speaker is strange. Observation shows that young people accustomed to this intonation lightly nod or look into the speaker's eyes when this intonation is used.

## 5. ORIGIN OF THE "HALF QUESTION" INTONATION

The origin of this intonation has not been ascertained, but much evidence shows that it may have been introduced from the English language. The early reports of this intonation in Japan show that it was first used by intellectual female professional workers. There are also reports that women who come back from foreign countries use this intonation, and also reports that students of international high-schools use this frequently.

The acoustic realization and the conversational function of the Japanese "half question" are quite similar to the "Australian questioning intonation" and "HRT" or "High Rising Terminal Contour", the "Uptalk" originating from "Valley Girl Talk" of the United States. There are several studies of this intonation in Australia (Guy et al. 1986), New Zealand (Ainsworth 1994), the United States (Ching 1982) and Canada (James et al. 1989). Similar intonation pattern is also reported in some dialects of England and Wales. If this intonation pattern was borrowed from the English language, then it is a rare case of global dissemination of a suprasegmental phenomenon.

However, this intonation can also be explained by independent developments in various places in the world, utilizing rising intonation for the purpose of a universal conversational strategy, which is typically utilized in "foreigner talk". When the speaker is not sure of the understanding of the interlocutor, the rising intonation is often used at the word in question when one of the interlocutors is a foreigner. This intonation can be effectively used between native speakers when a technical term or rare word is used. Relying upon the "politeness theory" of Brown and Levinson, use of this intonation is more effective and also more polite than asking boldly "Do you understand?" or "Do you know this word?" This explains why the use of this intonation is spreading now in many places in the world.

This intonation thus has a definite function for conversation in Japanese. It not only keeps one's turn of speaking but also attracts the interlocutor's attention. Essays criticizing this new intonation are occasionally found in newspapers and magazines. However, male speakers and middle-aged female speakers have also been observed using it recently. This intonation also will spread in Japanese in the near future.

## 6. CONCLUSION: DEVELOPMENT OF FUNCTIONS OF INTONATION IN JAPANESE

The recent appearance of these types of intonation can be explained by a long historical tendency (or drift) in the Japanese language. The fundamental mechanism is the recent development of a more effective utilization of intonation as a conversational technique in the Japanese language. Two underlying reasons can be pointed out.

First, interrogative sentences needed interrogative particles in the past. However, in the past one or two centuries, utilization of rising intonation instead of interrogative particles seems to have appeared. Recent employment of rise-fall intonation and rising intonation is a newer discourse technique for keeping one's turn in conversation, or drawing attention to one's utterance. They symbolize the tendency of making more effective use of intonation in conversation.

Secondly, acoustic pitch has been utilized both for sentential intonation and for lexical distinction of (pitch) accent in the Japanese language. Thus it may have been difficult to fully utilize intonation in Japanese. However, the recent change of pitch accent in Tokyo shows a tendency towards losing the distinctive function of the lexical accent. The flattening of accent of loanwords and the loss of distinction of accent in adjectives are symptomatic. Kindaichi argues that modern Japanese accent is beginning to bear a more demarcative function, showing syntagmatic boundaries of words or clauses, as opposed to the distinctive function of differentiating words in paradigmatic relations.

It is interesting in this context that geographical differences of lexical pitch accent of Japanese is so great that there are even regions without phonological distinction of pitch accent at all, like the central Kyushu, northern Kanto and southern Tohoku areas and several small detached areas in central Japan. Japanese accent has changed from a complicated classical system to a modern, simple system. The simplest system of no accent distinction is found in those remote dialects listed above. In these areas, sentential intonation which shows grammatical relations between clauses or phrases is heard in a extreme and clear way (Maekawa 1997). It is difficult to tell which is cause and which is effect, but it is theoretically possible to utilize pitch pattern for grammatical intonation where there is no lexical distinction of pitch accent.

Thus the two new intonation patterns above have shown sociolinguistic characteristics in two ways, one related to variational theory and the other related to discourse analysis. Variational analysis of the users revealed the typical pattern of a linguistic change in progress, that is, the routes of dissemination through young girls to the general public. Consideration of the discourse function showed that these intonation patterns are effective means for conversation, either for turn taking or for drawing attention of the interlocutor. Thus, these are examples of linguistic change in progress and also change from below. Though these intonation patterns are sociolinguistically stigmatized at present, they definitely have sociolinguistic impetus to spread. They will propagate in the future because no one can artificially stop a linguistic change in progress. Worldwide sociolinguistic study of these changes in suprasegmental phenomena prove to be rewarding.

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