

# THE EFFECT OF AN INTERLOCUTOR'S GENDER ON PITCH-RANGES EMPLOYED BY JAPANESE MEN

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## ABSTRACT

The present study investigates the pitch-ranges of intonation groups spontaneously produced by four Japanese males in conversations with two interlocutors of different gender unfamiliar to them. The results indicate that a relatively narrow pitch-range was used to converse with the unfamiliar interlocutors regardless of gender differences. The finding of the present study may support Yuasa's claim (1998) that a politeness system which the Japanese speakers adopt in relation to the restraint and the release of emotions, rather than gender, should be a fundamental issue in discussing the pitch-range differences which the Japanese adopt. It may also suggest that the politeness system as reflected in a gender-blind hierarchical orientation of the Japanese society makes gender of interlocutors less noticeable in a formal setting.

## 1. INTRODUCTION

One prominent aspect of Japanese society is a rigid expectation of conformity to prescribed gender roles. Loveday (1981) used this feature as the best explanation for the results of his acoustic study on politeness. According to his fundamental frequency (hereafter FO) analysis of three polite utterances in role-play narrations: (1) Japanese men consistently adopted extremely narrow pitch-ranges at low pitch levels and (2) Japanese women adopted much wide pitch-ranges by employing remarkably high pitch in polite utterances. Loveday interpreted Japanese women's use of a wide pitch range that reached conspicuously high pitch levels as a demonstration of decorative and feminine images of Japanese females. Alternatively, Loveday interpreted Japanese men's use of a flat range at lower pitch levels as a demonstration of masculinity. In Yuasa's study (1998), an experiment was conducted on spontaneous speech and an acoustic phonetic analysis was performed. Two different types of speech produced by Japanese speakers who held two contrasting social relationships (i.e., familiar and unfamiliar) were examined. The findings of Yuasa's experiment revealed that both Japanese men and women adopted narrow pitch-ranges during conversations with unfamiliar (relative to familiar) members of their society, and adopted wide pitch-ranges in conversations with familiar (relative to unfamiliar) members. She argued that gender roles might not be a primary issue in politeness in Japanese. Rather, the subject of the politeness system that the speakers of Japanese adopt in conjunction with the restraint and the release of emotions should be integral to any discussion of the concept of politeness in the Japanese language. In the present study, I would like to demonstrate that an interlocutor's gender does

not affect the tendency for a narrower pitch-range to be employed when the interlocutors are unfamiliar with each other in a formal situation. The finding of this experiment may suggest that gender differences of interlocutors may not affect the practice of politeness, which Japanese adopt when conversing with unfamiliar interlocutors.

## 2. THE STUDY

### 2.1. Introduction

I used the same male informants in Yuasa's previous study. They were Japanese men in their twenties and thirties who were considered socially Japanese. First, these informants were asked to converse with a male interlocutor, the vice president of the business school that they were attending. Then, I make an arrangement to speak with a female interlocutor, a senior lecturer of the same business school, who was not teaching the informants. Following the procedures of Yuasa's experiment, I focused on a pitch-range of each of ten consecutive intonation groups randomly chosen from the speech data. By a pitch-range here, as in Yuasa's study, I mean a difference between the highest and the lowest F0 of every intonation group used for analysis. I observed that the informants, regardless of gender of the interlocutor, employed similarly narrower pitch-ranges when they conversed with unfamiliar interlocutors.

### 2.2. Analyses

**2.2.1. Analyses of the Relationship between the Informants and Interlocutors (the vice president and the senior lecturer).** In order to determine the nature of the relationship between the informants and the vice president, the data was searched for honorific forms. Japanese honorific forms include referent honorifics, humble honorifics, and addressee honorifics. A referent honorific verb can indicate deference by honoring the referent's act, while a humble honorific verb can indicate deference by lessening the speaker's action. An addressee honorific can indicate that speakers respect psychological distance from their addressees. The search of the data confirmed the presence of honorific forms used by both the informants and the interlocutors. The distribution of honorific forms in the data support the claim that the relationship between the informants and the interlocutors was one in which both parties felt unfamiliar with, and distant from, each other.

**2.2.2. Intonation Groups.** An intonation unit is defined as "a stretch of speech occurring under a single unified intonation contour" (Du Bois et al., 1992:102). The beginning of such a unit is often, though not always, marked

by a pause, hesitation noise, and/or resetting of the baseline pitch level. The ending of the intonation unit is often, though not always, marked by a lengthening of the last syllable. I identified intonation boundaries according to the standards set by Cruttenden (1986). The primary external criterion I used to identify an intonation group was both the filled pause with fillers, such as *anoo* (well) or *eeto* (let's see), and the unfilled silent pause which often occurred at major constituent boundaries. Another indicator of a boundary marker (as a substitute for a pause) was a lengthened final syllable. I determined that an intonation group contains a minimal internal structure that includes at least one accented syllable. Consequently, if an intonation pattern preceding a pause was not accented, I considered the pause as a simple hesitation marker. As for utterances with no pauses, changes in pitch levels were used as boundary indicators among unaccented syllables after rising and falling tones. Boundaries were marked when an utterance ended with high pitch and the beginning of the following utterance was lower in pitch, or, when an utterance ended with low pitch and the beginning of the subsequent utterance was higher in pitch.

**2.2.3. Pitch Measurement.** Conversations were recorded on cassette tapes, and then digitized and analyzed by the CSL (Computerized Speech Lab). First, the results of pitch extraction were examined using pitch ranges between 70Hz and 350Hz for male informants and between 150Hz and 450Hz for female informants. The purpose of inspecting the results of pitch extraction was to find general locations of the highest and lowest pitch levels of each intonation unit. I avoided counting F0 extracted in the areas where voiceless consonants were located. Then the first to the tenth harmonics were measured depending on the speech data. Whenever I used harmonics other than the first in order to determine F0s, I divided the measured F0 by the number of the harmonic.

**2.2.4. Perception of pitch-ranges: Conversion from Hertz to Semitones.** Our ears judge pitch range by using a logarithmic scale rather than a linear scale. In order to display perceptual dimensions, I converted measurements of pitch range in Hertz into a pitch scale using the logarithmic semitonal scale. The equation I adopted was (Henton, 1989):

$$\text{Semitones} = 39.86 \times \log (F0 / F0 \text{ ref.})$$

where F0 is the highest value in the range in Hertz and F0 ref. is the lowest value of the range in Hertz.

### 3. RESULTS

Tables 1 and 2 (see APPENDIX) display the distribution of occurrences of pitch ranges according to the measurements I obtained. Table 1 shows the distribution plotted along increments of 25 Hz; Table 2 reflects the distribution plotted along increments of 2 semitones. These results indicate that in terms of both Hertz and semitones, informants employed

similarly narrow pitch ranges in conversing with both the male and female interlocutors independent of the gender of the interlocutors. The results from the present study are clearly contrasted with the outcome of Yuasa's study in which the informants who conversed with each other employed a wider pitch-range more frequently. Table 1 reveals that pitch-ranges which the informants employed in conversing with unfamiliar interlocutors are concentrated between 25Hz and 49Hz while the informants adopted pitch-ranges between 50Hz and 99Hz more often in conversing with each other. As for the results in semitones illustrated in Table 2, the informants frequently employed pitch-ranges between 4 semitones and 7.9 semitones in conversing with unfamiliar interlocutors whereas pitch-ranges they often used in conversing with fellow informants fell between 8 semitones and 9.9 semitones

## 4. DISCUSSION

### 4.1. Introduction

Yuasa (1998) analyzed the relationship between pitch-ranges, politeness, emotions, and group consciousness of Japanese speakers as follows. A narrow pitch-range may be associated with the absence of emotions, the presence of self-restraint, and formal (Lakoff)/negative (Brown&Levinson) politeness. In contrast, a wide pitch-range may be associated with the presence of emphatic emotions, the absence of self-restraint, and camaraderie (Lakoff)/positive (Brown&Levinson) politeness. This analysis was based on Yuasa's observations of a sequence of connections between restraint (*enryo*) and Japanese group consciousness, emotions and pitch-ranges, and restraint/release of emotions and politeness. In the following sections these connections which Yuasa explored are presented. For the purpose of the current study I augment her analysis by arguing that the conventionality of linguistic politeness in Japanese and gender-blind hierarchical orientation of the Japanese society make gender identification of interlocutors less conspicuous

### 4.2. Politeness models

Yuasa adopted Brown and Levinson's treatment of the notion of politeness for her analysis. Assuming that 'face (positive and negative)' and 'rationality' are common properties of human beings, Brown and Levinson define two types of politeness (positive and negative) depending on the aspect of face being preserved. In positive politeness, the speaker considers the addressee to be a friend who shares the same cultural or moral values, with in-group rights and duties and expectations of reciprocity; the speaker treats the addressee as a member of an in-group, a friend, and a person whose wants and personality traits are known and liked. Negative politeness is essentially avoidance-based, and is characterized by self-effacement, formality, and restraint, with attention to a very restricted aspect of addressee's self (1978:75). I believe that the result of Brown and Levinson's approach is generally in alignment with conclusions drawn by Lakoff's rules of politeness (1973). Lakoff posits three rules of politeness: 'formality: remain aloof', 'hesitancy: give

option' and 'camaraderie: be friendly'. 'Formality' and 'hesitancy' can at ease be interpreted as negative politeness based on preserving negative face, while 'camaraderie' is undoubtedly about positive face preservation, positive politeness. Incorporating Lakoff's notion of politeness into Brown and Levinson's by referring to negative politeness as 'formal politeness' and positive politeness as 'camaraderie politeness' would be beneficial for understanding Yuasa's analysis.

#### 4.3. Japanese Group Consciousness

When the Japanese speakers feel a psychological distance from their interlocutors, they are likely to consider each other as non-ingroup members. They tend to constrain themselves psychologically in this social relationship. Yuasa found Doi's explanations of "the presence or absence of restraint (*enryo*) inclusive. *Enryo* is used by the Japanese as a gauge" for distinguishing between the types of human relationship that the Japanese refer to as 'inner' and 'outer' (1973: 89). A social relationship in which no enryo (restraint) is necessary exists between ingroup members. In contrast, a social relationship in which enryo (restraint) is present exists between ingroup and outgroup members. A certain degree of enryo must always be present when dealing with outgroup members, and ingroup relationships are assumed to be free from enryo. Yuasa emphasizes that the Japanese are constantly either restraining or releasing their 'selves' in relation to the degree of social constraint or relaxation of constraint.

#### 4.4. Acoustic Studies on Emotions and Attitudes

By introducing Uldall's (1964) and Crystal's (1969) studies on the semantics of intonation, Yuasa demonstrated that pitch contrasts, including pitch ranges, play an extremely important role in perception of attitudes and emotions. Uldall investigated the meaning of intonation using synthesized speech and Crystal analyzed sentences uttered by English speakers. Both of them found that wide pitch ranges were often perceived or utilized as expressions of 'emphatic' emotions (e.g., 'interested,' 'excited,' 'angry,' 'irritated' etc.). Narrow pitch ranges were used to convey the absence of these emphatic emotions (e.g., 'uninterested' and 'bored'). Yuasa applied them their findings to the case of the Japanese.

#### 4.5. Emotions and Politeness

In Japanese society, scarcity or abundance of emphatic emotions may possibly be associated with the types of speech mode utilized to indicate politeness. When Japanese restrain themselves before their unfamiliar interlocutors, their restraint (*enryo*) may well result in the suppression of emotions. Yuasa speculates that a narrow pitch range employed in such a situation could then be an indication of scarcity of emotions due to the restraint (*enryo*). In Japanese society, speakers may be perceived as polite (formal/negative) if they employ a narrow pitch range since it creates a perceptual impression that they are restraining

themselves and their feelings. Since restraint is not required when conversing with familiar ingroup members, speakers are more likely to express themselves. A wide pitch range, adopted more frequently among familiar ingroup interlocutors in Yuasa's study, appears to be related to the presence of emphatic emotions. Since no restraint is needed between familiar ingroup members, expression of emotions is much more acceptable. A wide pitch-range as a reflection of such emotions may function as a camaraderie/positive politeness approach.

#### 4.6. Conventionality of linguistic politeness and Gender-blind hierarchy in Japan

In Japanese, honorifics are used to comply with conventions of politeness. Social rules of politeness in Japanese include being polite according to the social position, power, and age of a person one is speaking to, and being polite according to a setting determined by such factors as who and what participants and occasions are (Ide, 1989: 230). Gender does not seem to be regarded as a significant criterion that a Japanese speaker uses to determine whether to use honorifics in Japanese. As observed in the consistent use of honorifics by informants toward both male and female interlocutors (2.2.1.), interlocutor's gender seems to have no determining effect on linguistic politeness which the informants chose to converse in with these interlocutors. Lebra speculates that in Japan hierarchical orientation insulates men and women from their gender identities (1984: 242-43). Smith observed in her interviews with Japanese in positions of authority a validation of Lebra's claim that in Japan, although there are many hurdles which a woman must surmount to attain a high ranking position in an organization, she seems to have virtually no problem once she accomplishes it (1992: 63). The male Japanese informants in the present study appeared to have been motivated by age, status, and power rather than gender, in addition to group membership, of the female interlocutor as well as the male interlocutor in determining the type of politeness they utilized in interacting with them. Accordingly, toward both female and male interlocutors they adopted formal/negative politeness mode to show deference as well as distance. In this politeness approach, they used honorifics and may have suppressed the expressions of their emotions due to the restraint (*enryo*) which they felt toward the female interlocutor. The lack of emphatic emotions, in turn, might have resulted in their use of narrow pitch-ranges, as Yuasa suggested.

### 5. CONCLUSION

Although this is a preliminary study, my findings may suggest that Japanese speakers employ relatively narrower pitch-ranges during interactions with unfamiliar interlocutors independent of the gender of the interlocutors. Gender differences of interlocutors may not affect the pitch-ranges in such a formal setting because the practice of politeness characteristic of the Japanese makes gender of interlocutors less visible than other social features. It is plausible that the

Japanese politeness system, which Japanese speakers utilize based on various factors such as group consciousness and social attributes (age, status, and power), may shield them from gender identification of interlocutors.

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**APPENDIX**

Hertz	0-24	25-49	50-74	75-99	100-124	125-149	150-174	175-199
Male Interlocutor	7	14	10	5	3	1		
Female Interlocutor	5	23	7	3	2			
Fellow Informant	4	5	10	9	4	5		1

Table 1. Pitch-range Distribution in Hertz

Semitones	0 -1.9	2 - 3.9	4 - 5.9	6 -7.9	8 - 9.9	10-11.9	12-13.9	14-15.9
Male Interlocutor	2	8	11	7	8	2	1	
Female Interlocutor	2	5	13	13	2	1	2	
Fellow Informant		3	6	6	11	6	6	3

Table 2. Pitch-range Distribution in semitones