The Influence of Power Relations on English L1 and L2 Speakers' Oral Requests

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Abstract

Recently, there has been a broader emphasis on studying the influence of social factors on phonetic realizations. Given that the second language learners' performances of speech acts differ significantly from the native speakers, investigating and acknowledging the social differences which affect the prosodic variations is the first step to make learners aware of the appropriate use of the speech acts in the target language. The current paper examines the differences in English L1 and L2 speakers' "request."

The participants for this study were 16 Korean EFL speakers and 9 English native speakers. Twelve English request sentences were elicited by the participants as responses to situation prompts (4 tokens for three power relations: power high, equal, and low). The speech variations (e.g., pitch, intensity, and speech rate) were analyzed with Praat. The findings indicated that L2, but not L1, speakers tended to slow down their pace in a power-high situation. Pitch results revealed that Korean male speakers lowered their pitch to mitigate difficult requesting situations. Moreover, the verbal report showed that all except one Korean EFL speakers felt that requesting to professors was the hardest whereas all but one English natives responded that requesting to strangers was the most difficult.

Index Terms: power relations, request speech act, L1 and L2 difference, sociophonetic variations

1. Introduction

The mainstream of second language sociophonetic studies had focused on the speech variations in segmental elements although past findings indicated the important role of suprasegmentals in foreign language learners' production [1, 2, 3]. Thus, the current study aims to offer an investigation on suprasegmental aspects (e.g., pitch, intensity, and speech rate) of second language learners' speech production and their relation with the social variations such as power relations, gender, and language community.

2. Previous research

A number of previous studies examined the gender effects on speakers' prosodic patterns. Except for the gender difference in pitch, however, research on gender-based suprasegmental variations have not reached consensus results [4]. Fitzsimons et al. [5] revealed that males have wider pitch range and higher pitch slope than females. On the other hand, results in [6] showed that there was no significant gender difference in pitch range and their use of pitch dynamism. As for duration, many studies pointed out that males speak faster than females [5, 7, 8, 9], but other findings indicated that there were no significant differences in speech rate in relation to gender [10, 11].

Another major influence on the prosodic structure of a language can be attributed to the cultural aspects. Cross-cultural differences may form contrasting tendencies in speakers' prosody. Van Bezooijen [12] found in her sociocultural study that Japanese women had higher pitch than Dutch women. She explained this tendency by showing that two cultures had different images of the ideal woman and man, Japan putting a stronger emphasis on femininity in women. Therefore, Japanese women's higher pitch may be associated with this cultural expectation of femininity. Other results indicated that women had a higher pitch when speaking in Japanese than in English while men showed no difference in pitch [13]. Previous studies offer a general implication that pitch differences exist among languages with different cultural backgrounds. However, sociocultural research on prosody has to be expanded to study on men since few studies have focused on men's divergent prosodic patterns according to cultural differences [1].

There also has been an issue of immense controversy over how situational differences influence the prosodic patterns of native and nonnative speakers. People exhibit varied speech styles according to the relation with the interlocutor. [14] and [15] both assumed that speakers expressing high pitch in polite speech is a case of cross-linguistic similarity. This is consistent with [13] and [16], predicting that speakers have higher pitch in polite or socially anxious situations. However, Grawunder and Winter [17] pointed out that this tendency is dissimilar cross-linguistically. Their study illustrated that both Korean male and female speakers had lower pitch in polite situations. In [18], it is revealed that Korean female speakers had lower pitch in average, whereas males had little or no difference in pitch.

As implied in previous studies, speakers' association and preference of a particular acoustic cues with social aspects may influence their differentiated prosodic structures. For example, Stel et al. [19] pointed out that speakers of English associated lower pitch with powerfulness and authority more frequently than higher pitch. On the contrary, [12] indicated that the association with physical and psychological weakness, dependency, and modesty with higher pitch and femininity led Japanese women to produce a higher pitch. Moreover, Gravano et al. [20] showed that English native speakers had different preference for acoustic cues when trying to be attractive to the same or the opposite gender. Due to these different associations and preferences in each language culture, it is expected that a prosodic structure of a second language can be attributed to L1 interference [21].

Korean English as a Foreign Language (EFL) learners' performances of the speech acts differ significantly from the native English speakers' [22, 23, 24]. Among numerous kinds of speech acts and languages, the current paper examined the differences in English and Korean speakers' "request" forms. Variations in suprasegmentals such as pitch, intensity, and speech rate were measured to see the correlation with native and

nonnative speakers' social backgrounds and situations. In general, previous studies indicated that English speakers lowered pitch, lowered intensity, and had slower speech rate in socially difficult situations, and that Korean speakers also lowered pitch and lowered intensity, but did not significantly had slower speech rate in socially difficult situations.

On the basis of the previous findings, the following hypotheses were established. First, in a power-high requesting situation, English and Korean EFL speakers do not show any pitch difference, both lowering their pitch. Second, English and Korean EFL speakers do not show any difference in intensity, both lowering the intensity when requesting in power-high situations. Third, English and Korean EFL speakers differ in speech rate; English speakers have slower speech rate in power-high situations but not Korean EFL speakers.

3. Methods

3.1. Participants

The participants for this study were 16 Korean EFL speakers (eight for each gender) and 9 English native speakers (four male and five female speakers). The Korean EFL speakers were in their mid-20s and early 30s. The native speakers of English were university students who came to Korea for an exchange program, and they were in their early 20s.

3.2. Materials

The target sentences for the experiment consisted of twelve English request sentences for both English and Korean EFL speakers. In each sentence, a description of a situation was constructed to indicate power relations between the speaker and the assumed listener (four tokens for each of the three power relations: power-high, power-equal, and power-low). Four tokens for each power relation included three different forms of interrogative sentences (i.e., *Can ~ please?, Do you mind ~?,* and *Is it possible to ~?*) and one declarative sentence. The twelve situations were randomized before presenting to the participants.

3.3. Procedure

In a quiet room, the participants were asked to act out twelve requesting sentences in response to the situation prompts. The participants listened to the description of the situations while watching the picture of a requestee (images of professors for power-high, classmates or neighbors in twenties for power-equal, and younger siblings, kids, or high school students for power-low situations) on the computer screen. After each listening, the participants produced the appearing target sentence on the screen as if they are actually talking to the person in the given picture.

Immediately after the task, verbal reports were conducted to examine the participants' perceived task difficulty while performing the task. The questions included "Which social situations were more difficult to request than others and why," "How did you manage your voice to mitigate the difficulty," etc. The whole process was recorded at a distance about 10 inches apart from the speakers.

After the experiment, the data were converted to the wave files and stored on a PC. The participants' speech variations (i.e., pitch, intensity, and speech rate) were measured by analyzing the voice recordings using Praat software.

3.4. Data analysis

The participants were divided into four groups: native males (NM), native females (NF), Korean males (KM), and Korean females (KF). Each of the three power relations (power-high, power-equal, and power-low) consisted of four different requesting sentences. Data for pitch (the global pitch level), intensity (mean dB), and speech rate (syllables/second) were submitted to two-way analysis of variance (ANOVA) with two factors: groups (4) and power relations (3). Additionally, independent samples *t*-tests were conducted for pitch, measuring male groups and female groups independently. Individual sentence analyses for intensity and speech rate followed the general analyses, using one-way ANOVAs and the subsequent Fisher's least significance difference (LSD) post-hoc tests. The level of statistical significance was set as $p < .05$.

4. Results

4.1. Pitch

The overall analysis of a two-way ANOVA for pitch showed no significant effect for power relations ($F(2, 288)=1.543$, $p= .216$) and for the interaction between group and power relations ($F(6, 288)=0.362$, $p= .902$). The verbal report, however, implied that individual pitch differences many vary a lot. When the participants were asked to indicate how they managed their voice to sound more appropriate in difficult requesting situations, the responses were divided into two: some responded that they lowered their pitch, but others said that they raised their pitch. The fact that individual speakers expressed different tendencies towards difficult situations is contradictory to the assumption that both English and Korean EFL speakers will lower their pitch in power-high situations.

Interestingly, participants who answered that they raised their pitch had higher mean pitch in general. Figure 1 displays the overall mean pitch for individual speakers. The black bars in Figure 1 indicate speakers who responded that they raised their pitch in power-high situations; the white bars indicate speakers who answered that they lowered their pitch in those difficult requesting situations.

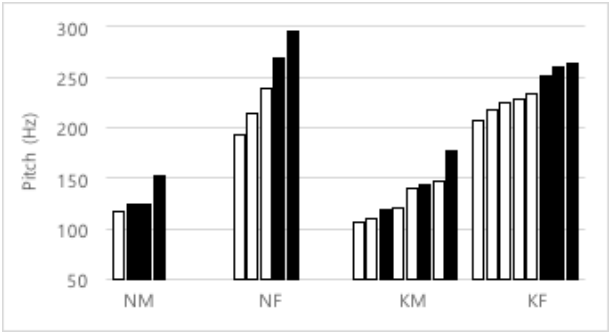

Figure 1: *Individual speakers' mean F0 (Hz) in all twelve sentences.*

The fact that speakers with higher mean pitch preferred raising their pitch and that speakers with lower mean pitch preferred lowering their pitch lead to an implication that pitch differences in relation to social situations are subject to speakers' original pitch, rather than to general cultural tendencies. In order to provide evidence for the implication, independent samples *t*-tests were conducted to see if the two groups' pitch differed in

their actual performances. The participants were re-organized into four different groups: males who responded that they raised their pitch (HM), males who said they lowered their pitch (LM), females with responses that they raised their pitch (HF), and females who answered that they lowered their pitch (LF) in difficult requesting situations. The following table (Table 1) shows the pitch difference between HF and LF.

Table 1. *Independent samples t-tests for pitch between HF and LF (* $p < 0.50$)*

	Can~ please?	Do you mind~?	Is it possible~?	Declaratives
High	4.986 (.001)*	4.037 (.001)*	4.743 (.001)*	5.763 (.001)*
Equal	4.194 (.001)*	4.806 (.001)*	4.677 (.001)*	4.328 (.001)*
Low	4.799 (.001)*	3.631 (.002)*	3.760 (.002)*	2.769 (.009)*

In all twelve sentences, HF had significantly higher pitch than LF. Even though the results did not indicate whether female speakers actually raised or lowered in power-high situations, it provided the notion that female speakers who originally had higher mean pitch tended to respond that they changed their voice to an even higher pitch to mitigate the difficult situations.

Table 2. *Independent samples t-tests for pitch between HM and LM (* $p < 0.50$)*

	Can~ please?	Do you mind~?	Is it possible~?	Declaratives
High	2.480 (.016)*	2.027 (.035)*	1.496 (.083)	1.839 (.048)*
Equal	0.981 (.175)	1.077 (.153)	1.059 (.157)	1.666 (.063)
Low	0.491 (.317)	1.614 (.069)	0.846 (.209)	1.025 (.164)

Table 2 shows that the pitch differences between HM and LM are only significant in power-high situations. That is, between male speakers who answered that they raised their pitch in difficult situations and male speaker who said that they lowered their pitch in those situations, there was a statistical significance only in power-high situations.

Moreover, the fact that the difference between HM and LM reached significance only in power-high situations show that in power-high situations but not in other power relations, either HM performed with higher pitch or LM lowered their pitch.

This analysis implies that people prefer acoustic cues that are similar to their own. People who have high pitch may regard higher pitch to be more familiar, thus preferring to raise their voice in a situation they want to be more friendly, nice, or polite.

4.2. Intensity

The two-way ANOVA for intensity indicated a significant main effect for group ($F(3, 288)=21.977$, $p < .001$). Neither power ($F(2, 288)=1.453$, $p= .236$) nor interaction between group and power ($F(6, 288)=0.318$, $p= .928$) had a significant impact on intensity. The significant effect of group was due to fact that native female speakers had lower intensity than other three groups in all twelve sentences ($p < .001$), as shown in Figure 2. Other two group differences did not reach significance in the LSD post-hoc tests (NM and KM ($p= .771$), NM and KF ($p= .554$), and KM and KF ($p= .280$)).

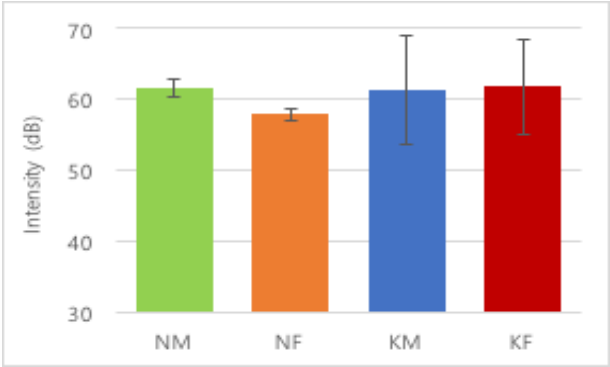

Figure 2: *Mean intensity (dB) and standard deviations of four groups: native males (NM), native females (NF), Korean males (KM), and Korean females (KF).*

In Figure 2, the values for standard deviations are much bigger for Korean EFL speakers than those for native English speakers. The reason may be due to the different proficiency levels among Korean EFL speakers, which leads us to examine the effect of proficiency in further studies.

4.3. Speech rate

Two-way ANOVA on speech-ratios were conducted. The analysis revealed a significant group effect ($F(3, 288)=17.133$, $p < .001$), but the effects of power ($F(2, 288)=1.828$, $p= .163$) and the interaction between group and power ($F(6, 288)=0.909$, $p= .488$) showed no significance. The LSD post hoc tests further indicated that both male and female Korean EFL groups had significantly lower speech rate than the native English groups.

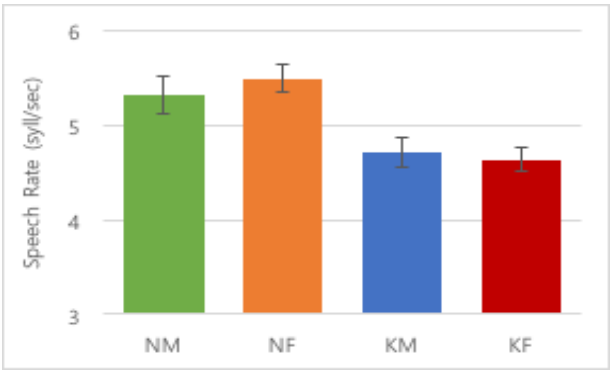

Figure 3: *Mean speech rate ratio (syll/sec) and standard deviations of four groups: NM, NF, KM, and KF.*

Figure 3 shows the overall speech rate of the four groups. The group differences between males and females did not reach significance in both native groups (NM and NF, $p= .345$) and Korean EFL groups (KM and KF, $p= .527$). However, all the group comparisons between native English speakers and Korean EFL speakers had a significant difference, regardless of gender ($p < .001$). Overall, the analyses indicate that the Korean EFL speakers have slower speech rate than the native English speakers in general.

Regarding the significant discrepancy between native and Korean EFL speakers, two one-way ANOVAs with the fixed factor power relations were conducted separately for the L1 groups and the L2 groups. The results are given in Figure 4.

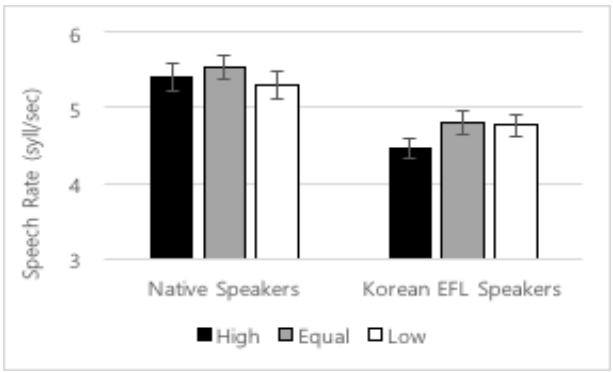

Figure 4: *Native and Korean EFL speakers' mean speech rate ratio (syll/sec) and standard deviations of three power relations: high, equal, and low.*

One-way ANOVA for the English L1 speakers did not show any group effect ($F(2, 105)=0.697$, $p= .500$). However, Korean EFL speakers had a significant difference in relation to power ($F(2, 189)=3.545$, $p= .031$). The LSD post-hoc test for the Korean EFL speakers showed significantly slower speech rate in power-high situations than in power-equal ($p= .016$) and in power-low ($p= .031$) situations. Thus, L2 speakers produced slower speech in power-high situations, but L1 speakers did not differ in speech rate in relation to power, contrary to the expected result that English speakers, but not Korean EFL speakers, have slower speech rate in power-high situations.

5. Discussion

The purpose of the present study is to compare the effect of social factors such as gender and power relations on the request acts of Korean EFL speakers and on those of native English speakers. The results for pitch and intensity indicated that both L1 and L2 speakers had no significant difference in relation to power, contrary to the prediction that they both lower pitch and intensity in power-high situations. The reason for the lack of pitch differences in groups may be due to varied individual strategies in relation to each speaker's original pitch. For example, the results for pitch showed that speakers tended to mitigate the difficult situation by adjusting pitch to the direction that they are more familiar with (e.g., speakers raise their pitch if they originally have higher pitch). This further suggests that research on pitch should be based on speakers' original pitch values and see how they change their pitch in certain cases.

As for speech rate, Korean EFL speakers had significantly slower speech rate than native English speakers, especially in power-high situations. This result is again against the predictions based on literature. English speakers did not use the durational cues to adjust their speech in different power situations. Moreover, the prediction about speech rate for Korean speakers was based on their native speech, not their L2 English speech. Given the lack of research in L2 suprasegmentals, further studies investigating general patterns of L2 speakers is recommended.

There were several limitations in the current experiment. First, the verbal reports revealed that all Korean EFL speakers said that requesting to professors was the hardest situation, whereas most of the native English speakers responded that requesting to strangers was more difficult than to professors. Although this different cultural tendency might not have affected the experiment results as the English speakers also felt difficulty towards professors, it indicates that familiarity of the interlocutor is another important factor that influences speakers' suprasegmentals in addition to power relations. Thus, follow-up studies should consider that each language group has distinct criteria for different power-classes.

Next, the experiment design may need some modifications for further studies. Some of the target sentences were unlikely to be produced naturally; for example, the participants preferred requesting with *could* rather than *can* in general. The number of participants should be expanded in future studies for a more concrete generalization. Moreover, the role-playing task may help the participants speak more naturally than the picture-based acting task used in the current study. In addition, the current experiment only dealt with English and Korean EFL speakers' English production. If native Korean speakers' Korean sentences were included, it would have provided an implication whether the L1 influence affected speakers' suprasegmental elements.

Despite the limitations, the present study revealed significant difference in speech rate in relation to the power. The findings indicated that Korean EFL speakers tended to slow down their pace regardless of gender when the requesting situation was more difficult. This is inconsistent with the previous assumption that English speakers, but not Korean speakers, will have slower speech rate in power-high situations. Korean EFL speakers had the slowest speech rate in power-high situations, significantly different from the faster speech rate in power-low and power-equal situations. This is inconsistent with [24] that Korean EFL speakers were the slowest in power-low situations and the fastest in power-equal situations in the case of the reject speech act. It may be the case that rejecting is harder towards people with lower age, but requesting is the hardest towards people with a higher age or the higher social status.

6. Conclusion

The current study investigated the suprasegmental variations such as pitch, intensity, and speech rate on English request speech act between native English speakers and Korean EFL speakers in relation to power. As for pitch, both English and Korean speakers did not lower their pitch in a power-high situation nor changed their pitch in other situations, contrary to the assumption made in the current study that both speakers will lower their pitch. However, it is observed that speakers tend to change their pitch in a difficult situation to the extent of their original pitch tone. Intensity also had no difference in power relations, only having group difference where native female speakers have smaller intensity than other three groups. Thus, the presumed result that both native English and Korean EFL speakers will have lower intensity in power-high situation was rejected. Lastly, speech rate showed the opposite result from the assumption; Korean EFL speakers had slower speech rate in power-high situations, but native English speakers did not have significant difference in speech rate. The findings of the current study indicate that speech rate is the most prominent suprasegmental element among Korean EFL speakers, which is distinct from the native speakers.

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