Intonation and Perception of Successful and Unsuccessful Request Sequences

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Abstract

The communicative success of speech acts is determined both by lexical and prosodic features (Wichmann, 2004, Alexander, 2012). However, the prosodic features of speech acts have not been studied as extensively as lexical features. The present study examines the prosodic features of request sequences by using Brazil's (1997) acoustic analysis framework to determine how they play a role in the interpretation and success of a request. Six non-native speakers and six native speakers were paired and performed a closed-role play of a high imposition request. Non-native speakers were asked to make requests to native speaker partners. Three groups were given a successful request sequence, and three groups were given an unsuccessful request sequence. Role-plays were recorded and analyzed using PRAAT to examine various prosodic features according to Brazil's (1997) framework. Participants were also given a survey to indicate perceived and actual sincerity using a Likert scale. Results indicated that in unsuccessful request sequences, native speakers used more falling tones (to indicate seriousness) than the non-native speakers. Additionally, unsuccessful request sequences produced fewer instances of pitch concord. In successful request sequences, non-native speakers used more rising tones when making a request, as well as more falling tones when explaining why they were making the request. Native speakers produced more falling tones in successful request groups as well, but also produced more instances of pitch concord (likely because they were agreeing with the non-native speaker). Finally, there was a mismatch between variables that non-native speakers perceived to indicate sincerity (level tones and pitch concord) and variables that indicated native speakers' actual sincerity level (the use of fall-rise tones). Results of this study could be useful in informing pragmatics and pronunciation instruction.

Keywords: pragmatics, speech acts, pronunciation, acoustic analysis, sincerity, requests

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Background

The importance of pragmatic success in communication leads to the necessity of studying the components of a successful speech act sequence, as well as indicates the usefulness of incorporating pragmatics instruction into language teaching curriculum. The lexical and prosodic aspects of a speech act should be examined. Additionally, an utterance can be interpreted differently depending on its intonation. The present study investigates the of requests by using acoustic analysis, in terms of examining different prosodic features using speech analysis software (PRAAT) and Brazil's (1997) tone choice analysis framework.

The present study examines and further reinforce Levis' (2002), Wichmann's (2004), Marek's (1973), and Brazil's (1997) claims that intonation can reveal the intended meaning of an utterance, illustrate social norms governing its construction, and indicate whether or not the intonation of a response to a request can indicate its sincerity. Though some studies have been conducted on the connection between sincerity, intonation, and speech acts regarding apology (Alexander, 2012) and Cheng (2013), these concepts have seldom been applied to the speech act of request. Additionally, few studies have examined the intonation of speech acts by using acoustic analysis, such as Brazil's (1997) framework. Therefore, it may be useful to examine how prosodic features such as those identified in Brazil's (1997) framework play a role in speech act construction, interpretation, and overall success.

Research Questions

1. What, if any, are the differences in the intonation of successful versus unsuccessful requests?

2. How do the prosodic features of a request sequence correlate with its perceived degree of

sincerity?

Methods

Participants

12 interlocutors (six non-native speakers, or NNSs) and six native speakers, or NSs)

participated in this study. Six non-native English learners ranged from intermediate to high-

intermediate level English proficiency and were enrolled in a university intensive English

program. To perform the role-play task, non-native and native speakers were paired, creating six

total pairs. The non-native speaker (the person making the request), was given role-play sheet A,

in which they were prompted to ask the native speaker (who is their classmate in the role-play

scenario) if they could borrow a hundred dollars to tow their broken down car. This request was

chosen because it is potentially face-threatening in terms of having high imposition on the

listener, as it involves asking for a substantial amount of money. The likelihood of the request

being met is also more difficult to predict because of its high imposition on the listener, hence

the person making the request may be implored to use polite intonation patterns (Marek, 1973,

Wichmann (2004).

To assess intonation patterns of both successful and unsuccessful requests, three groups

were given a version of the scenario in which the request is fulfilled, and three groups were given

a version where the request is denied. The person making the request did not know how the

listener would respond to the request (e.g., whether it would be fulfilled), and the person

responding to the request did not know what the request would be. This was done to possibly

elicit intonation patterns that could more closely resemble those that the interlocutor would

produce if they encountered this scenario in real life.

After completing the role-play task, each interlocutor was given a survey. The survey given to the non-native speaker asked them to rate how sincere (i.e., how likely the person will follow through with their promise) they believed the non-native speaker's response to be. Non-native speakers rated the sincerity of request responses on a Likert scale from one-ten, one being "not sincere at all," five being "somewhat sincere," and ten being "extremely sincere." Native speakers were given a survey where they were asked to indicate how sincere their response to the request was (i.e., will they follow through with their promise). This survey also contained a Likert scale that ranged from one to ten, one being "not sincere at all," five being "somewhat sincere," and ten being "extremely sincere."

Analyses

Acoustic analysis. Recorded data was analyzed using PRAAT in order to investigate prosodic features of both request sequences and request responses. In terms of request sequences, Brazil's (1997) tone analysis framework was applied. Seven features were chosen for analysis: number of tone units, rising tones, level tones, falling tones, rise-fall tones, fall-rise tones, and pitch concord. Pitch concord, according to Brazil (1997), indicates that speakers are in agreement with each other, and occurs when the last prominent syllable of an utterance matches the first prominent syllable of the following utterance in response by 10 Hz.

Statistical analysis. To determine how prosodic features of native speaker requests correlate with both non-native speakers' perceived sincerity scores and native speakers' actual sincerity scores, each prosodic feature was correlated with each score using a Pearson correlation coefficient. Then, each correlation was checked for statistical significance at both $p=>.01$ and $p=>.05$.

Results

Research Question 1

Examining the prosodic features of unsuccessful requests, we can see that non-native speakers used more rising tones than the native speakers, as displayed in Table 1. This may have because the request was phrased as a question. Additionally, the non-native speakers had to elaborate on the situation that caused them to need money to tow their car, hence creating shared knowledge between the two speakers. According to Brazil (1997), rising tones indicate that shared knowledge is being discussed, hence this may explain why they appeared more frequently in non-native speaker requests. Non-native speakers also used all tone choices more often than native speakers. This could be due to the increased number of tone units produced by speakers making a request.

Table 1

Prosodic Features of Unsuccessful Requests

	Speaker A1	Speaker A2	Speaker A3	Speaker B1	Speaker B2	Speaker B3
Tone Units	.25	.25	.25	.16	.15	.15
Fall (%)	24	19	29	22	66	37
Level (%)	12	6	6	11	0	37
Rise (%)	47	44	35	11	17	13
Fall-Rise (%)	17	25	3	33	16	0
Rise-Fall (%)	11	6	26	22	0	13
Concord	0	.33	0	0	.66	0

Note: Non-native speakers are labeled as "Speaker A" and native speakers are labeled as "Speaker B."

Native speakers who answered the request (labeled B) used falling tones the most out of any of the tone choice categories. According to Brazil (1997), the use of falling tones means that a speaker is declaring new information, and according to Marek (1975), falling tones mean that a speaker is trying to appear calm and serious. The use of falling tones by the native speakers in this group are likely because they were both giving new information and denying a request, which may cause them to want to appear calmer.

Additionally, speakers in both categories displayed very few instances of pitch concord, with only one native speaker (speaker B2) producing more than one instance. Pitch concord can indicate agreement between speakers (Brazil, 1997), hence unsuccessful requests may elicit fewer instances of pitch concord because the request is rejected.

Turning now to successful requests, speakers in the successful request sequence groups produced more total tone units than speakers in the unsuccessful request groups (Table 2). Similarly to the non-native speakers making a request in the unsuccessful request groups, non-native speakers making a request (labeled A) in the successful request groups produced more rising tones than speakers answering the request (labeled B). Non-native speakers in this group also produced more falling tones than non-native speakers in the unsuccessful request group, as well as more fall-rise tones than native speakers, which did not occur as consistently in the unsuccessful request groups. Non-native speakers in this group perhaps used more falling tones when explaining their situation (i.e., giving new information) that led to them to make a high imposition request. Additionally, fall-rise tones may have occurred as an attempt at politeness (Wichmann, 2004).

Table 2

Prosodic Features of Successful Requests

	Speaker A4	Speaker A5	Speaker A6	Speaker B4	Speaker B5	Speaker B6
Tone Units	.25	.32	.27	.16	.15	20
Fall (%)	25	23	37	44	50	31
Level (%)	15	9	7	38	0	25
Rise (%)	35	45	22	13	19	19
Fall-Rise (%)	5	9	19	0	13	0
Rise-Fall (%)	20	14	15	6	19	25
Concord	0	.33	0	.5	.66	1

Note: Non-native speakers are labeled as "Speaker A" and native speakers are labeled as "Speaker B."

Native speakers in the successful request groups produced more falling tones than non-native speakers in two groups, perhaps because they spent more time explaining how they would help fulfill the non-native speakers' requests. Two out of three native speakers in this group produced more rise-fall tones than the non-native speakers, likely because they were providing new information about how they would fulfill the request as well. Finally, native speakers in the successful request group produced more instances of pitch concord than non-native speakers, and more instances of concord occurred overall than in the unsuccessful request groups, likely because the native speakers agreed in the successful request groups to grant non-native speakers' requests.

Research Question 2

The relationship between prosodic features and the perceived degree of sincerity was examined next. Table 3 shows the Pearson correlation coefficients of Speaker B's tone choices in their response to Speaker A's request and how sincere speaker A perceived the response to be. According to Table 3, only one variable, pitch concord, of native speaker request responses had a strong, positive correlation with how sincere non-native speakers perceived the responses with a correlation coefficient of 0.79. Variables with a moderate degree of positive correlation with perceived sincerity scores included the number of tone units (.32), falling tones (.37) and rising tones (.36). Variables with a weak degree of positive correlation with perceived sincerity scores included level tones (.17) and rise-fall tones (.10). The variable with a weak degree of negative correlation with perceived sincerity scores was the number of fall-rise tones (-.08). However, no variables appeared to be statistically significant.

Table 3

Native Speaker Prosodic Features and Non-Native Speaker Perceived Sincerity Score

Feature	Perceived Sincerity Score
Tone Units	.32
Fall	.37
Level	.17
Rise	.36
Fall-Rise	-.08
Rise-Fall	.10
Concord	.79

Note: N=12. Correlations marked with an asterisk (*) were significant at $p < .01$. Correlations marked with two asterisks (**) were significant at $p < .05$.

Pearson correlation coefficients of the tone choices in Speaker B's response to speaker A's request and Speaker B's reported degree of actual sincerity were computed. As shown in Table 4, the strongest positively correlated variable with actual sincerity scores was the use of fall-rise tones, with a correlation of .56. The strongest negatively correlated variable with actual sincerity scores was the use of level tones (.88). The use of level tones and actual sincerity scores were also the only variables that significantly correlated, $r(4)=-.88$, $p <.01$. No variables correlated moderately positively or negatively with actual sincerity scores. Many variables correlated weakly and negatively with actual sincerity scores, such as the number of tone units (-.26), falling tones (-.08), rise-fall tones (-.27) and concord (-.18). The only variable that correlated positively and weakly with actual sincerity scores was rising tones (.14).

Table 4

Native Speaker Prosodic Features and Native Speaker Actual Sincerity Score

Feature	Actual Sincerity Score
Tone Units	-.26
Fall	-.08
Level	-.88*
Rise	.14
Fall-Rise	.56
Rise-Fall	-.27
Concord	-.18

Note: N=6. Correlations marked with an asterisk (*) were significant at $p < .01$. Correlations marked with two asterisks (**) were significant at $p <.05$.

Relevance to the PIE and Second Language Learning

The results of this study may be useful when determining which prosodic features to focus on when teaching how to make and respond to requests in the language classroom. Though few features distinguished successful and unsuccessful requests, aside from the use of falling, rising, fall-rising tones, as well as pitch concord, it may be useful to raise learners' awareness of the communicative function of each tone choice in terms of how they indicate stance and likelihood of request fulfillment/rejection. It could also be useful to indicate to learners that perception of an interlocutor's stance may not match their actual stance, such as when an interlocutor communicates that they are sincere by using lexical choices that could indicate sincerity, but their intonation indicates otherwise. This can help learners interpret the outcomes that are likely to occur as the result of a particular speech act. Overall, pragmatics instruction may be improved by raising awareness of features that contribute to the success or failure of a pragmatic act, thus it is useful to continue researching which features to focus on.

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