

PROSODIC PATTERNS OF REFUSALS: DIFFERENCES BETWEEN ENGLISH NATIVE, NON-NATIVE, AND BILINGUAL SPEAKERS

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Recognizing the pragmatic nature of prosody, research on speech act production has developed over time with much attention given to yes/no and wh-questions. Prosodic patterns of refusals, however, have received less attention when compared to other speech acts although their appropriate production is critical in conveying politeness. Furthermore, comparisons of speech act production have often been between English native speakers (NSs) and non-native speakers (NNSs). The current work responds to these gaps through a comparison of prosodic patterns of refusals across three groups: English NSs ($n = 17$), NNSs ($n = 10$), and bilinguals (BLs) ($n = 7$). High- and low- imposition refusals were recorded from spoken discourse completion tasks. Prosodic analyses (temporal fluency, prominence, and intonation) were performed across the speaker groups. In low-imposition refusals, NNSs had more pause time than NS and BLs, and they also had a slower articulation rate than BLs. BLs used fewer rising tones than both NSs and NNSs. In high-imposition refusals, NNSs used more prominence than NSs, while BLs used fewer falling tones than NNSs. While these findings concur with current research on differences between NSs and NNSs, they add new subtleties on how BLs use prosody when compared with these groups.

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INTRODUCTION

Due to the growing number of non-native English speakers (NNSs) globally, comparisons are often made between NNSs and native English speakers (NSs) in terms of prosodic use and pragmatic success. Prosody is a crucial feature of language learning, not only because it has an impact on the comprehensibility and intelligibility of one's speech, but also because prosody conveys pragmatic meaning (Kang & Kermad, 2019; Pickering, 2018). However, using baseline data from NSs can be seen as part of a "monolingual bias" (Piller, 2002, p. 183) which ultimately leaves out other types of language users. Bilinguals (BLs), for example, are a unique group of language users who use two or more languages competently. While numerous definitions of bilingualism exist ranging from speaking two languages from birth (e.g., De Houwer, 1995) to having any degree of competency in two languages (e.g., Edwards, 2006), the current study adheres to the commonly adopted definition in L2 research which refers to those who speak two languages competently, intelligibly, or even native-like (Gass, Behney, & Plonsky, 2013; Piller, 2002). The way BLs use prosody may be influenced by either of their concurrent languages. Understanding the way that BLs use prosodic features alongside NSs and NNSs will enrich our

understanding of prosodic subtleties, similarities, and differences among different types of language speakers.

The current report therefore compares prosodic patterns among NSs, English BLs, and NNSs in high- and low-imposition refusals. Refusals are especially important to be looked at alongside prosody because refusals are a dispreferred pragmatic response. The politeness of a speech act, such as a refusal, is often conveyed through prosody, and therefore speech acts and prosody must be examined in relation to one another (Hellbernd & Sammler, 2016; Kang & Kermad, 2019).

The Pragmatics of Prosody

Prosody plays a crucial role in both creating and disambiguating meaning (Culpeper, 2011). While much prosodic research has been concerned with differences in how the prosody of NSs and NNSs influences accentedness, comprehensibility, or intelligibility, recent research has been focusing on how prosodic differences also convey pragmatic meaning (Kang & Kermad, 2019; Kang, Kermad, & Taguchi, 2021b; Kermad, 2021). One way this occurs is through intonation. A speaker's tone choice can convey attitudinal information such as irony, sincerity, friendliness, or surprise (Culpeper, 2011; Harris, Gries, & Miglio, 2014). Sentence prominence, pausing, and speech rate are other prosodic features that communicate pragmatic meaning (Culpeper, 2011; Kang & Kermad, 2019; Pickering, 2018).

The Use of Prosody by English Non-Native Speakers

NNSs have been shown to use prosody differently than NSs. One point of difference lies in pausing. In Trofimovich and Baker's (2006) study of Korean learners of English, lower proficiency speakers had greater pause frequency and duration than higher proficiency speakers. Along with pausing, NNSs have been found to use more falling tones than NSs, which can change the pragmatic content of their message (Hewings, 1995; Wennerstrom, 1994). The use of mostly falling and level tones results in an oblique orientation, which tends to pull the speaker away from the listener (Pickering, 2018). Kang, Rubin, and Pickering (2010) found that NNSs who used more mid-rising tones (a common tonal choice in American English) and rising tones (used for bridge building) had higher listener ratings than speakers who relied primarily upon falling tones. Additionally, some NNSs also tend to overuse prominence when compared to NSs (Kang, 2010; Wennerstrom, 2000).

The Use of Prosody by English Bilingual Speakers

There is a small but growing body of research on how BL speakers of English use English prosodic features in speech. Some work in this area has focused on word stress (Zembrzuski et al., 2020) and on pitch and vowel duration (Miglio, et al., 2014)). Zembrzuski et al. (2020) investigated Polish and English BL children (whose dominant language was Polish) and found that speakers did not transfer Polish prosody to English, specifically for word stress. Their results suggested that if children acquire a language early enough, they are more likely to achieve native-like prosody in both languages, as well as a lack of prosodic transfer from one language to the next. However, Harris et al. (2014)) found that adult English-Spanish bilingual speakers (18-25 years of age) displayed a greater use of pitch movement when speaking in Spanish than Spanish monolinguals did, suggesting a prosodic transfer from English to Spanish. Most existing studies agree that BLs use prosody differently than monolinguals do, utilizing features of both of their languages (Gut &

Pillai, 2015; Harris et al., 2014). A BL's dominant language is thought to have a stronger influence over the direction of prosodic transfer than their non-dominant language.

Research shows that in addition to differences in word stress and pitch movement, there can also be intonational cross over between a BL's two L1's (Harris et al., 2014). This can be seen when using intonation, especially in situations where an L1 does not use pitch change to signal new information. Asadu, Okoro, and Kadiri (2019) analyzed 45 BL English speakers in Eboyni State, Nigeria and found that in a spoken reading task, the BLs used a much higher proportion of falling tones compared to rising tones when speaking in English. The results of these studies show that there are a variety of factors at work when determining how BLs use prosody.

Prosody and Refusals

The appropriateness of speech acts relies in part on target-like prosody in order to get the speaker's intention across (Kang & Kermad, 2019; Kang et al., 2021b; Kermad, 2021). Speech acts can span declarations, descriptions, promises, refusals, suggestions, and apologies, among others (Cutting & Fordyce, 2021). Refusals are one of the most habitual speech acts speakers use (Chunli & Nor, 2016). Also, because they are a dispreferred response on the part of the interlocuter, refusals are normally prefaced with various prosodic and lexical softening efforts, such as hedging, mitigation, and delays (Cutting & Fordyce, 2021). Furthermore, depending on whether the refusal sequence occurs in a high- or low-imposition scenario can make the sequence more or less high-stakes.

Refusal sequences are generally carried out over multiple turns, which can lessen the negative impact of a dispreferred response. Some studies have shown that lower proficiency NNSs use fewer mitigation efforts in refusals; they also carry out refusals through single turns, rather than over multiple turns (Al-Gahtani & Roevers, 2018; Bardovi-Harlig & Salsbury, 2004). While refusals have been analyzed thoroughly on a pragma-linguistic level, little attention has been given to the way speakers use prosodic features in refusal sequences.

Research Questions

The existing body of research has demonstrated the need for a prosodic focus of speech acts going beyond comparisons between NSs and NNSs. While exploratory in nature and marked by a small sample size, the current study addresses these gaps by uncovering prosodic variations in high- and low-imposition refusal situations for NSs, BLs, and NNSs. It was motivated by the following research questions: *To what extent do prosodic patterns (i.e., temporal fluency, prominence, and intonation) of low-imposition refusals vary among non-native speakers, bilinguals, and native speakers of English? And to what extent do prosodic patterns (i.e., pausing, prominence, and intonation) of high-imposition refusals vary among non-native speakers, bilinguals, and native speakers of English?*

METHODS

Participants

Thirty-four speakers were recruited from a four-year university on the Pacific West Coast. There were 17 NSs of English, including 12 females, 4 males, and 1 non-binary (19-34 years of age). Ten NNSs of English participated, including 4 females and 6 males. They ranged from 21-26 years of age. NNSs were those who neither grew up speaking English nor had native-like competency

in English at present. The first language of the NNSs included (Arabic $n = 1$); Korean ($n = 1$); Spanish ($n = 2$); Mandarin ($n = 4$); Vietnamese ($n = 1$); Marathi ($n = 1$). The average length of residence (LOR) for NNSs was 6.65 years. Five of the NNSs were advanced English speakers and 5 were high intermediate. There were 7 English BLs who ranged from 19-25 years of age. For the purposes of our study, BLs were those who did not grow up learning English, but at present day, had native-like competence in English and one or more languages. The average LOR for BLs was 15.57 years. The languages of the BLs included English and (Spanish $n = 4$); Korean ($n = 1$); Indonesian ($n = 1$); and Telugu ($n = 1$). Proficiency of both NNSs and BLs was self-assessed from the following options: beginner, high-beginner, intermediate, high-intermediate, advanced, and native-like.

Materials and Procedures

Participants were presented with a spoken discourse completion task (DCT), adapted from Taguchi, Lao, and Li (2016). They were given two refusal prompts, including a low- and high-imposition situation. The prompts are provided below:

High-Imposition Refusal: *Your professor has created a study group for your class. The study group will meet on a Sunday to prepare for the final exam. Your professor has asked you if you are attending. You currently have a B in that class and would prefer to study for another class in which you have a C; therefore, you cannot attend. What do you say to your professor?*

Low-Imposition Refusal: *It's been a busy semester and your classmate is inviting you to the campus Starbucks to chat about life in general. You would rather spend that time working on an assignment for your English class. What do you say to your classmate?*

Participants recorded themselves responding to the two prompts without the use of a script. When the DCT was completed, participants delivered their recordings to the research team.

Data Analyses

The recordings were analyzed using the data visualization software PRAAT (Boersma & Weenink, 2016). Prosodic properties spanning the areas of temporal fluency, prominence, and intonation were quantified (Brazil, 1997; Kang et al., 2021a). More specifically, these included total pause time, average pause time, syllables per minute, articulation rate, phonation time ratio, prominence, and falling, rising, and level tones (see Table 1 below for quantifications).

Table 1

Quantifications of Prosodic Properties

<i>Prosodic Category</i>	<i>Prosodic Property</i>	<i>Calculation</i>
Temporal Fluency	Total pause time	The total time of all silent pauses (in seconds)
	Average pause time	The total time of all silent pauses (in seconds) divided by the total number of silent pauses
	Syllables per minute	The total number of syllables divided by total speaking time (in seconds) (including pauses) normalized to one minute (multiplied by 60)

	Articulation rate	The total number of syllables divided by total time of speech sample (in seconds) (excluding pause time) normalized to one minute (multiplied by 60)
	Phonation time ratio	The total length of time spent speaking (in seconds) (not including pause time) divided by the total length of speech sample (in seconds)
Prominence	Space	The number of prominent words divided by the total number of words
Intonation	Total number of falling tones	Total of all falling and rise-falling tones in speech sample
	Total number of rising tones	Total of all rising and fall-rising tones in speech sample
	Total number of level tones	Total of all level tones in speech sample

For the statistical analyses, a series of one-way ANOVAs were run for the dependent variables (i.e., the individual prosodic properties). The independent variable consisted of the three group levels (i.e., NSs, NNSs, and BLs). Either Tukey or Games Howell post hoc comparisons were run depending on whether the assumption of homogeneity of variance was met.

RESULTS

Prosodic Properties in Low-Imposition Situations

The first research question compared prosodic properties across the three groups for low-imposition refusals. Descriptive statistics for all low-imposition analyses are provided below in Table 2. Several analyses were non-significant, including average pause time ($F(2,31) = .065, p = .937$); space ($F(2,31) = .313, p = .733$); syllables per minute ($F(2,31) = 2.173, p = .131$); phonation time ratio ($F(2,31) = 1.416, p = .258$), total falling tones ($F(2,31) = 1.372, p = .268$); and total level tones ($F(2,31) = 1.371, p = .269$).

Table 2*Descriptive Statistics for Prosodic Properties of Low-Imposition Refusals*

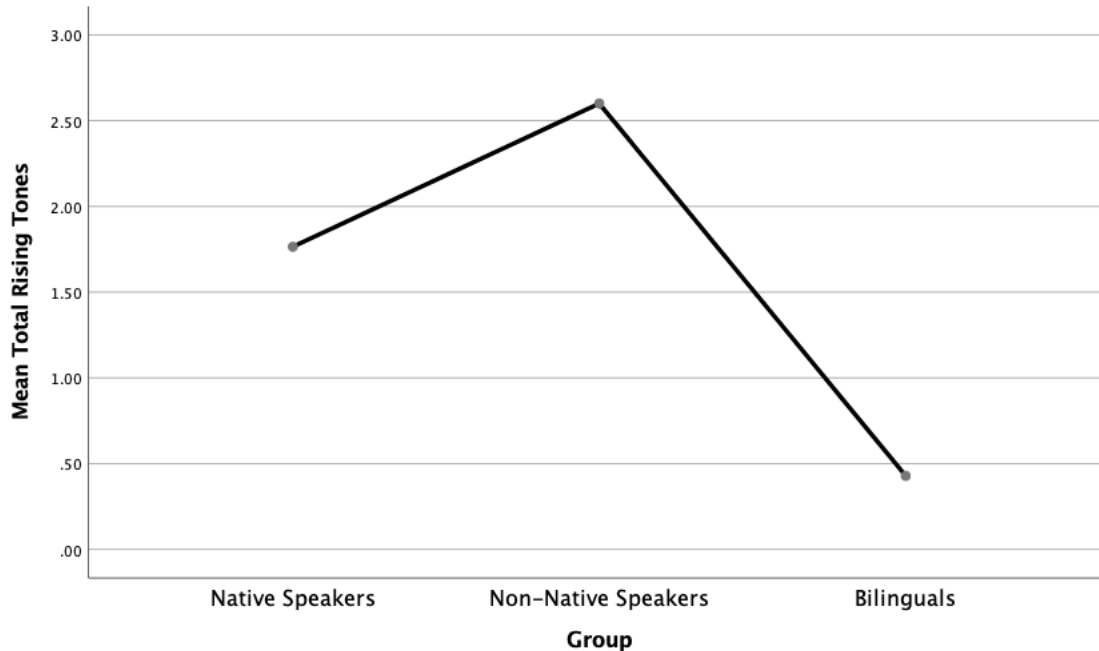
		NSs	BLs	NNSs
Total pause time	<i>M</i> =	2.489	1.681	4.587
	<i>SD</i> =	1.574	1.163	2.932
Average pause time	<i>M</i> =	.445	.437	.473
	<i>SD</i> =	.232	.242	.205
Syllables per minute	<i>M</i> =	245.204	290.671	213.490
	<i>SD</i> =	81.642	93.054	42.597
Articulation rate	<i>M</i> =	305.668	340.049	252.486
	<i>SD</i> =	51.685	93.338	53.119
Phonation time ratio	<i>M</i> =	.848	.851	.796
	<i>SD</i> =	.079	.082	.091
Space	<i>M</i> =	.223	.220	.243
	<i>SD</i> =	.069	.072	.073
Total number of falling tones	<i>M</i> =	2.824	2.000	3.500
	<i>SD</i> =	1.667	1.000	2.461
Total number of rising tones	<i>M</i> =	1.765	.429	2.600
	<i>SD</i> =	1.562	.535	1.838
Total number of level tones	<i>M</i> =	1.882	1.423	2.700
	<i>SD</i> =	1.495	1.134	2.111

Note: Units of measurement differ per prosodic property (see Table 1)

Total pause time between the three groups was statistically significant ($F(2,31) = 5.163, p = .012$). After running Tukey post hoc tests, a difference was found between NNSs and NSs, and NNSs and BLs: NNSs paused significantly more than both NSs and BLs. Articulation rate was also significant. Tukey post hoc tests revealed that NNSs had a slower articulation rate when compared to BLs: ($F(2,31) = 4.385, p = .021$). Although not statistically significant, it is worth noting that BLs had the fastest articulation rate (see Table 2 below). Finally, there was a statistically significant difference in the use of rising tones ($F(2,31) = 4.235, p = .024$). Games Howell post hoc tests showed that BLs used fewer rising tones than both NSs and NNSs (see Figure 1 below).

Figure 1

Rising tones across three speaker groups



Prosodic Properties in High-Imposition Situations

The second research question compared prosodic differences across the three speaker groups in high-imposition refusals. Descriptive statistics for all high-imposition analyses are provided below in Table 3. There were no significant differences for several prosodic properties, including average pause time ($F(2,31) = .574, p = .569$); syllables per minute ($F(2,31) = 1.756; p = .189$); articulation rate ($F(2,31) = 2.250, p = .122$); phonation time ratio ($F(2,31) = .468, p = .631$); total number of rising tones ($F(2,31) = .664, p = .522$); and total number of level tones: ($F(2,31) = 1.905, p = .166$).

Table 3

Descriptive Statistics for Prosodic Properties of High-Imposition Refusals

		NSs	BLs	NNSs
Total pause time	<i>M</i> =	2.376	1.889	4.542
	<i>SD</i> =	1.606	1.724	3.350
Average pause time	<i>M</i> =	.457	.341	.454
	<i>SD</i> =	.288	.239	.177
Syllables per minute	<i>M</i> =	254.718	242.200	211.800

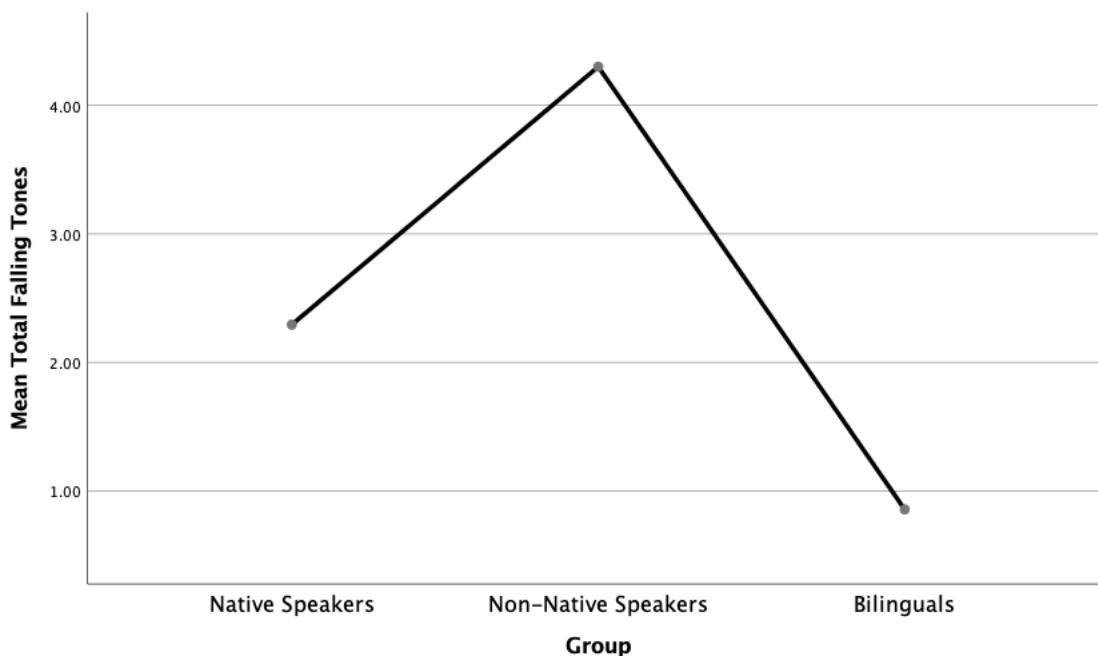
	<i>SD</i> =	51.578	58.405	66.562
Articulation rate	<i>M</i> =	307.716	280.177	263.397
	<i>SD</i> =	53.608	44.991	59.467
Phonation time ratio	<i>M</i> =	.799	.860	.795
	<i>SD</i> =	.185	.114	.102
Space	<i>M</i> =	.199	.230	.262
	<i>SD</i> =	.054	.066	.065
Total number of falling tones	<i>M</i> =	2.294	.857	4.300
	<i>SD</i> =	2.953	.690	2.584
Total number of rising tones	<i>M</i> =	1.882	1.000	1.600
	<i>SD</i> =	1.764	1.414	1.776
Total number of level tones	<i>M</i> =	1.118	2.571	2.500
	<i>SD</i> =	.928	2.440	3.136

Note: Units of measurement differ per prosodic property (see Table 1)

Total pause time, however, was statistically significant ($F(2,31) = 3.756, p = .035$), but after running the Games-Howell post hoc tests, no statistically significant group comparisons were found. However, descriptive statistics in Table 3 demonstrate that NNSs tended to have more pause time than the other two groups. Space, the proportion of prominent words to the total number of words, was analyzed and a significant effect was found ($F(2,31) = 3.504, p = .042$). Tukey post hoc comparisons illustrated that the differences in prominence usage only occurred between NSs and NNSs with NNSs using more prominence than NSs. Finally, the total use of falling tones was also significant: ($F(2,31) = 25.874, p = .029$). Results showed a statistically significant difference in falling intonation between BLs and NNSs, with BLs using significantly fewer falling tones than NNSs (see Figure 2 below).

Figure 2

Falling tones across three speaker groups



DISCUSSION

This study compared prosodic patterns of low- and high-imposition refusals across categories of temporal fluency, prominence, and intonation for NSs, NNSs, and BLs. Keeping the exploratory nature of this study in mind, initial patterns revealed differences in how these groups used prosody in both low- and high-imposition refusals. For low-imposition refusals, NNSs had more overall pausing time than both NSs and BLs and a slower articulation rate than BLs. These patterns could be indicative of the uncomfortable nature of refusals and the need for more real-time planning for the NNSs. Even though these refusals were low-imposition, due to the need for building solidarity with close peers, perhaps NNSs needed careful planning to ensure their relationships were maintained. However, generally speaking, NNSs tend to exhibit more pausing and a slower speech rate than NSs (Guion et al., 2000; Kormos & Dénes, 2004; Lennon, 1990; Munro & Derwing, 1995, 1998; Trofimovich & Baker, 2006;), thus this finding supports current trends.

In low-imposition refusals, BLs used fewer rising tones than both NSs and NNSs, thus relying more on falling and level tones. Existing research has shown that NNSs tend to use more falling tones, while underutilizing rising tones (e.g., Hewings, 1995; Wennerstrom, 1994); however, our results do not show a marked difference between NSs and NNSs, but instead between BLs and NSs and BLs and NNSs. Our results carry similarities to Asadu et al. (2019), who found that when 45 Nigerian English BLs were given a speaking scenario in English, they tended to rely on falling tones. Significant use of low pitch boundary and low pitch accent were also recorded in this study. Furthermore, they posited that the speaker participants' use of intonation was in part due to interference from their dominant language(s). In the current study, BLs use of tone could have been affected by their dominant language or perhaps even by the low-imposition pragmatic

context, i.e., due to the close solidarity felt in low-imposition situations, BLs felt at ease to rely on more asserting/proclaiming tones to accompany their refusals.

High-imposition results showed that NNSs stressed a greater number of words compared to NSs. This prominence pattern supports similar findings in Kang et al. (2021a), and is also in line with research which has demonstrated that NNSs tend to stress more words overall (Kang, 2010; Wennerstrom, 2000). While a certain amount of stress makes the speaker appear polite and engaged (Kang & Kermad, 2019), too much stress when refusing can be detrimental when trying to save face, making the message unclear or insincere for the listener. Furthermore, the overuse of sentence prominence can affect the comprehensibility of the speaker, further adding to the listener's effort to parse the pragmatic meaning.

Finally, BLs used fewer falling tones in high-imposition refusals than NNSs did. While not statistically significant, patterns demonstrated that BLs tended to rely the most on level tones in these situations. This suggests that the imposition of these refusals may have caused the need for a more sustained linguistic planning for BLs as opposed to proclaiming/referring, which is a common use of the level tone (Pickering, 2018). In Kang et al.'s (2021b) study on imposition and speech acts, the use of level tone was used more by NSs and high proficiency learners with study abroad experience. This stands in contrast to low level learners in their study who tended to use more rising tones in high imposition speech acts (requests and opinions) which can be considered inappropriate for the situation (Kang et al., 2021b). Therefore, in high-imposition refusals, it appears that BLs were relying more strategically on level tones, similar to NSs and other high proficiency learners reported in Kang et al. (2021b).

To date, much prosodic research has compared English NNSs with NSs. However, adding the additional comparison of BLs invites a wider point of inquiry. The results of this study show that BLs use prosody in ways that share similarities and differences with both NSs and NNSs; largely speaking, BLs relied on an oblique orientation (more falling and level tones) (Pickering, 2018), but they tended to use level tones strategically in high-imposition situations.

The current findings are limited due to the non-homogenous L1-L2s of the BL group. That is, the BLs in this study had various L1s, and thus general prosodic patterns of their dominant language could not be compared with their influence on English. It would be valuable if future research pursued any presence of individual variation in bilingual prosodic performance depending on bilinguals' non-English language backgrounds. However, these initial pragma-prosodic patterns expand our understanding beyond typical NS-NNS comparisons. Understanding how other language groups (e.g., English as a Lingua Franca users) use prosody may help increase communication efficiency among disparate groups of English speakers. Furthermore, due to the fact that monolingualism is no longer the standard (Mauranen, 2012), it is worthwhile to expand speaker group comparisons when comparing NNSs and NSs, since it can provide greater insight not only into how these other groups use prosody, but also how their use compares with that of NSs and NNSs. Additionally, while this study only analyzed prosodic elements in the speech act of refusals among NSs, NNSs, and BLs, future studies could explore how lexico-grammatical variations interact and pair with prosodic elements. A final limitation of the current study concerns the elicitation method of the DCT; that is, participants recorded themselves monologically responding to a prompt. This lack of a face-to-face interaction could have affected the prosodic use of the speakers. Future studies could attempt to replicate authentic interactive scenarios with embedded or even real interlocutors to capture the most natural use of prosody in these contexts.

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