The accentedness of English as an additional language (EAL): A nonnative speaker's perspective

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Abstract

The perception of foreign speech is a complicated process from acoustic and visual cues as well as the attitudes we have towards linguistic variation. We also make judgments about the speech of others, such as *accentedness*. While most research to date has investigated the accentedness of English as an additional language (EAL) from a native speaker's (NS) perspective, relatively few studies have considered what EAL users think. Therefore, this study asked 100 EAL users to judge the accentedness of Japanese English, French English, Mandarin English, and German English. Using an online survey, this paper investigated the accentedness rating EAL users give their own accent as well as speakers with the same first language typology, such as Tone, Syllable, Mora, and Stress. The findings show that nonnative speakers (NNS) do not find their own accent to be weaker than other varieties of EAL accents. Likewise, sharing a language typology with one's interlocutor does not lead to weaker ratings of accentedness. If there is any advantage of sharing a first language typology with one's interlocutor, the benefits appear to be more speaker-dependent than listener-dependent. Finally, listeners from the same group did not agree on the accent strength of each speaker.

Keywords: Accentedness, EAL varieties, nonnative speaker's perspective, shared first language, shared language typology

1. Introduction

Accents have intrigued scholars from many fields of study, such as psycholinguistics (Bent & Bradlow, 2003) and experimental studies (Porretta, Tucker, & Järvikivi, 2016), sociolinguistics and the study of attitude (Lindemann, 2002) and identity (Culter, 2014). In the field of applied linguistics, one area that has received much attention has been the judgments people make about foreign accents and the factors that influence these judgments. Some of the judgments people make about foreign accents include *comprehensibility* (Munro & Derwing, 1995*)*, which is the ability to understand the accent. Similar to other judgments, comprehensibility is usually measured using a Likert rating scale. Another judgment involved in the perception of accented speech is *phonological discord*. This judgment refers to the degree of disruption unfamiliar sounds cause in the processing of foreign speech. But perhaps the most well-researched judgment is *accentedness*. Simply put, accentedness is a judgment of accent strength.

One of the first studies to investigate judgments of accentedness was conducted by Ryan, Carranza, and Moffie (1977). In their study, they asked native speakers (NSs) to evaluate the accentedness of Spanish-accented English. Since then, there have been countless studies

investigating the strength of different English accents, especially EAL. Some have looked at the relationship between judgments of accentedness and the comprehension of foreign speech. For example, Buck (2001) warned that in a listening test, "accent is a very important variable… [that] can cause problems and may disrupt the whole listening comprehension process" (p. 35). A study by Derwing, Rossiter, and Munro (2002) also showed that a lack of familiarity with foreign accents might cause NSs to be "apprehensive about their own abilities [so] even listeners who are not biased against L2 [English as an additional language] speech might be dissuaded from trying hard to understand it" (p. 129). Furthermore, Munro and Derwing (2010) suggested that there is a quasi-independence between accentedness and intelligibility, so a person can have a very strong accent yet be completely intelligible. On the other hand, research by Gluszek and Dovidio (2010) found a relationship between accentedness judgments and perceived intelligibility of speech. In sum, there seems to be a connection between judgments of accentedness and the comprehension of accented speech.

There have also been studies investigating different factors influencing judgments of accentedness. Looking at phonological factors, it has been suggested that segmental features that differ from a "NS version" of pronunciations influence judgments of accentedness (Kashiwagi & Snyder, 2010, p. 4). Other studies have indicated that suprasegmental features, such as speech rate and pausing, correlate highly with rating of accentedness (Kennedy & Trofimovich, 2008; Munro & Derwing, 2001). More recently, we have seen studies, such as Hayes-Harb and Hacking (2015) and Ballard (2013) consider the role that listener attitudes and expectations play in assessments of accentedness.

While the vast majority of research to date has studied judgments of English as an additional language (EAL) accents from a NS's perspective, very few studies have considered what NNSs think of different foreign accents. One of the first studies to do so was by Munro, Derwing, and Morton (2006) who found that NSs and NNSs did not differ significantly in their ratings of NNS accents. Another study looking at accentedness judgments of NNSs found that both segmental features of EAL, such as vowel and consonant 'errors,' as well as the prosodic features of speech rate, influence the accentedness ratings of NNSs (Kashiwagi & Snyder, 2010). Finally, Hendriks, van Meurs, and de Groot (2017) concluded that "a strong (Dutch-English) accent had a detrimental effect on understanding and attitudinal evaluations [of NNSs], while a slight accent hardly led to negative effects" (p. 44). In sum, there is still a great deal we can learn about the accentedness judgments of NNSs, especially the ones they make about EAL varieties of English.

In addition to the gap in the literature discussing accentedness judgments from a NNS's perspective, there is also contention surrounding how accentedness has been defined. The issue lies in the ideology underpinning discourse about the perception of foreign speech. Because definitions of accentedness, past and present, have been shrouded in native speaker (NS) ideology, there has been a tendency for researchers to define accentedness according to (NS) standards of English. For example, Kashiwagi and Snyder (2010) defined accentedness as "the extent to which a speaker's pronunciation is perceived to differ from a NS version" (p. 4). Harriott and Cichocki (1993) asked listeners to rate accentedness on a scale from "very French-sounding" to "very English-sounding" (p. 98). Participants have also been asked to rate accented speech from "speak with an American accent" to "speak with a foreign accent" (Kang, 2010, p. 307). More recently, accentedness has been defined as "linguistic nativelike"

(Saito, Tromovich, & Isaacs, 2015, p. 439). Finally, some have described accentedness judgments as a "perception of difference from local variety" (Munro & Derwing, 2010, p. 366).

There are a number of shortcomings associated with these definitions. Firstly, asking people to compare an accent to a nativelike model of English seems rather strange given that the majority of people using English and making judgments about the accentedness of EAL are not NSs. Also, comparing EAL accents to a nativelike standard makes little sense when "studies have shown that not all NSs receive NS ratings and that some NNSs achieve NS ratings by native listeners" (Major, 2007, p. 539). The inability to accurately distinguish between native and nonnative speakers was also demonstrated in a study by Kelch and Santana-Williamson (2002), where over half of the participants were unable to correctly identify the NS/NNS background of a speaker.

Another issue with current definitions of accentedness is that they are not applicable across all contexts, especially English as a lingua franca (ELF) where English is often used in the absence of a NS. There is no 'local' variety of English in ELF interactions because there is no 'standard' variety of English upon which all others are compared. Finally, the notion of *variety* fails to reflect the multilingual nature of ELF contexts, where there may be many varieties of English present in any given situation. Therefore, for the purposes of this study, accentedness is defined as a judgment about the degree of similarity between a listener's expectation of speech sounds and their experience with different varieties of English.

The aim of this study is to investigate the two factors influencing the accentedness rating of EAL users. The first factor is a shared first language background between EAL interlocutors. It is believed that having the same first language may affect judgments of accentedness. The other factor is a shared typology. More specifically, speakers whose first languages are similar in typology may give weaker ratings of accentedness. Therefore, this study investigated the impacts of a shared first language and shared typology between EAL users.

2. Method

2.1 Speech Samples

It has been suggested that most languages can be categorized according to four language typologies: Tone, Syllable, Mora, and Stress. While it is acknowledged that languages possess more than one of these prosodic properties, most languages tend to be denser in one or more of these properties. The present study investigated the accentedness of four accent types; each one corresponds to one of the four language typologies. Table 1 shows the typology, language family, and accent type.

Table 1
Speakers' first language backgrounds

Typology	Family	Accent
Tone	Sino-Tibetan	Mandarin-English
Syllable	Latin	French-English
Mora	Japonic	Japanese-English
Stress	Germanic	German-English

A number of factors guided the selection of the speech sample. Firstly, the samples were sourced from two speakers of each accent type, giving a total of eight speech samples. This was done to reduce the likelihood of the ratings being influenced by the idiosyncratic features of a speaker rather than their accent. Consequently, there was a need to ensure the two Chinese speakers, for example, had the same accent strength. Therefore, a set of Spearman's rho was calculated. The results found a strong correlation between each speaker pair in the accentedness ratings they received. The strongest association was between the pair of French-English speakers, with a strong correlation of .871. Lastly, the speech samples were only sourced from female speakers to address the validity issue of gender bias in the data.

The present study adopted the Verbal Guise technique (VGT) (Cavallaro & Chin, 2009), so the accents used in the speech samples were authentic and not feigned in any way. All the samples were sourced from authentic, academic contexts, including the Vienna-Oxford International Corpus of English (VOICE) and English as an Academic Lingua Franca (ELFA) corpora. The identity of the speakers included both students studying and lecturers working in the Faculty of Business at different universities across Europe and Australia. In order for the samples to be of the highest quality, the excerpts were taken from students giving formal presentations and professors delivering lectures. This also ensured a level of consistency in the register used across the samples. Finally, most of the samples related to discussions about international business.

2.2 Participants

2.2.1 Selection

One hundred participants were randomly selected to partake in the study, which was completely voluntary. However, each participant had to meet a number of criteria to be eligible. First of all, they had to identify themselves as an EAL user and self-report any hearing impairments. Moreover, by studying a degree at an English-medium university, this meant that the participant had met an advanced English language entry requirement, such as an overall International English Language Testing System (IELTS) score of 6.5 with a minimum listening score of 6.5, or equivalent.

2.2.2 Demographics

The participants can be divided into three demographics, including gender, age, and language background. Fifty-one percent of the participants were female, while 49% of them were male. The age of the participants can be subdivided into four groups. The majority of the students fall in the 18-22 and 23-27 age groups at 31% and 50%, respectively. Eleven percent of the participants were aged 28 to 32 years old, while only 8% of students were over 33 years old. Finally, the participants came from eight different language backgrounds, the largest being the Mandarin speakers at 20%. Vietnam speakers were the second most common at 18%. The Japanese, Arabic, and Indonesian-speaking students made up 13%, 12%, and 11% of the participants, respectively. Students with Spanish and Thai language backgrounds made up 10% each. The smallest number of students were the French speakers, who made up 9% of the participant numbers.

2.3 Research Design

2.3.1 Methodological Perspective

Accentedness is defined as a subjective judgment about the degree to which phonological patterns are similar to a listener's expectation of speech sounds at any given point. As to which instrument may be the most appropriate for measuring accentedness, two factors need to be considered. Firstly, accentedness is likely to be the first cognitive process involved in L2 speech perception. Moreover, this process is a judgment about the degree, or strength, of foreign speech sounds. That is to say, the greater the similarity between one's expectations of speech patterns and the actual speech being heard, the weaker the judgment of accentedness will be. Therefore, any measurement tool needs to account for that fact that accentedness is a judgment dealing with degrees of similarity. The idea that a judgment is a cognitive task dealing with degrees of similarity is congruent with the theoretical works of Pisoni and Remez (2008). Following Gestalt principles for the perceptual organization of speech, they suggested that the cognitive process of speech perception involves the organization of sound according to two functions. The first function compares incoming speech signals with one's inventory of speech sounds. The second function groups the elements of speech sounds based on patterns of similarity.

Accentedness is a subjective judgment people make about the degree of difference between their expectations of speech sounds and the incoming speech sounds. Therefore, equal-interval rating scales, or Likert scales, have been widely used to quantitively measure judgments about foreign accents (Anderson-Hsieh, Johnson, & Koehler, 1992; Kennedy & Trofimovich, 2008; Munro & Derwing, 1995; Riney & Flege, 1998). The current study also deemed equal-interval rating scales to be the most appropriate tool for measuring judgments of accentedness.

2.3.2 Data Collection

Data was collected in a computer room on university grounds. First, the students were provided with a link to an online survey generated by Qualtrics via a weblink. As there were two speech samples for each accent type (i.e., two French-English, two German-English, two Mandarin-English, and two Japanese-English samples), the students found eight separate rating scales when they opened the survey. The participants were told they would hear an utterance from eight different speakers. Each sample consisted of approximately 15 words. The students were instructed to listen to each sample, which was played on a loud speaker, and judge the accentedness of the speaker on the nine-point rating scale. However, the scales did not show the points of increment. Instead, the participants were asked to judge each accent on a continuum from *no accent* to *very strong accent* rather than at predetermined intervals. Also, because "familiarity with a particular utterance [can lead] to harsher accentedness ratings" (Munro, 2008, p. 209), the excepts were played only once, and the different accents types were alternated. After listening to each sample, the students were given two minutes to rate the accentedness of the speaker and then asked if they could identify the speaker's accent.

2.3.3 Data Analysis

The quantitative data was analyzed using Excel and SPSS software packages. Although parametric measures have been used to compute the accentedness data, the researcher believes that ratings from accentedness are types of ordinal data (Hustad, Schueler, Schultz, & DuHadway, 2012). Therefore, nonparametric tests were considered to be the most appropriate analytical tool despite their reduced power. The data was analysed using median frequencies, Spearman's rank correlation coefficients, box plots, and Wilcoxon signed rank tests. Moreover, the data was presented in a number of formats, including tables, figures, and text.

There were three stages to the analysis of the accentedness data set. The first stage measured the frequency of median rating for each accent type/speaker, initially by all the participants and then by the listener group. Bar charts visually represented the median score of each accent type, which were colour-coded for easy interpretation. If a bar chart revealed identical medians between two or more accent types, another level of analysis was used to investigate the relationship between the speaker pairs. The distribution of ratings for each speaker was visually represented using box plots (Higgins, 2003). This aided in differentiating between the ratings for each accent type. If the box plots showed a difference in the distribution of ratings between two accents types, a third level of analysis was conducted. Related-samples Wilcoxon signed rank tests were used to investigate the significance of difference between the median positions evident in the box plots (Hollander, Chicken, & Wolfe, 2013).

3. Results

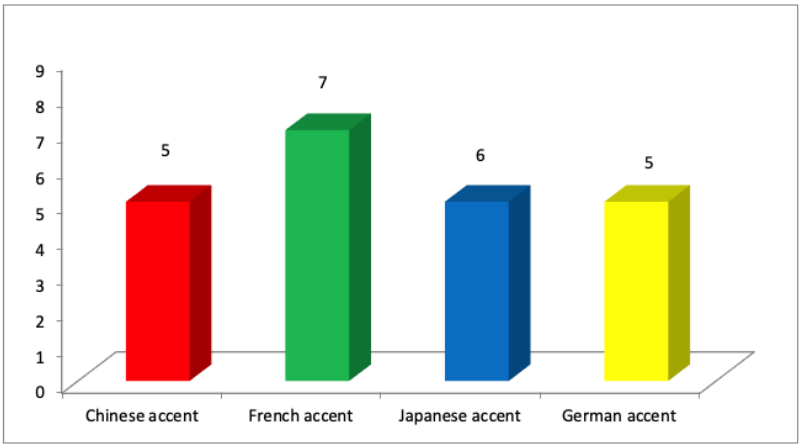

Figure 1. **Median accentedness ratings of 100 EAL users for Mandarin-English, French-English, Japanese-English, and German-English accents**

Figure 1 shows the median accentedness ratings of 100 EAL users for four accent varieties. Overall, there was a degree of similarity in the accentedness ratings between the four speaker groups. The French speakers were rated as having a stronger accent than the other three accent types with a median accentedness rating of seven. Japanese-English received the second highest rating of the four accent types. The Mandarin-English and German-English accents all received accent ratings of five.

The results for the Mandarin-English and German-English accents were identical. Therefore, further analysis was needed. The box plots in Figure 2 illustrate the distribution of ratings given by all the participants for the Mandarin-English and German-English accents.

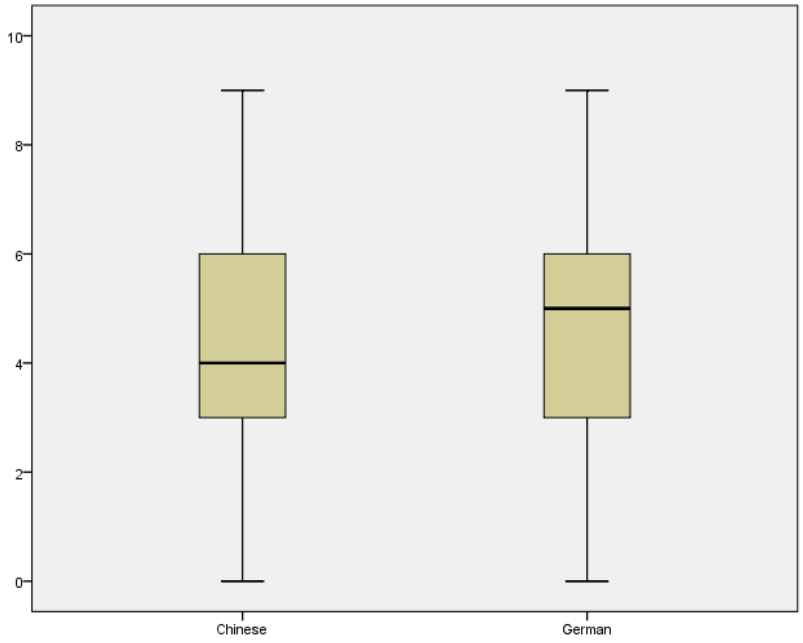

***Figure 2*. Rating distributions of 100 NNSs for Mandarin-English and German-English accents**

Figure 2 shows the distribution of ratings of all listeners for the Mandarin-English and German-English accent types. Overall, the distributions were quite similar. The inter-quartile ranges of each box plot were between three and six. The upper and lower whiskers on each box plot were also the same. However, the NNSs judged the Mandarin-English to be somewhat weaker than the German-English accent with a median position of four compared to five, respectively.

3.1 Shared First Language

The first factor that may influence the accentedness rating of an EAL user towards foreign-accented speech was a shared first language. It has been argued that a shared first language between interlocutors may lead to weaker ratings of accentedness. Figure 3 has the accentedness ratings of the Mandarin listener group for each accent type.

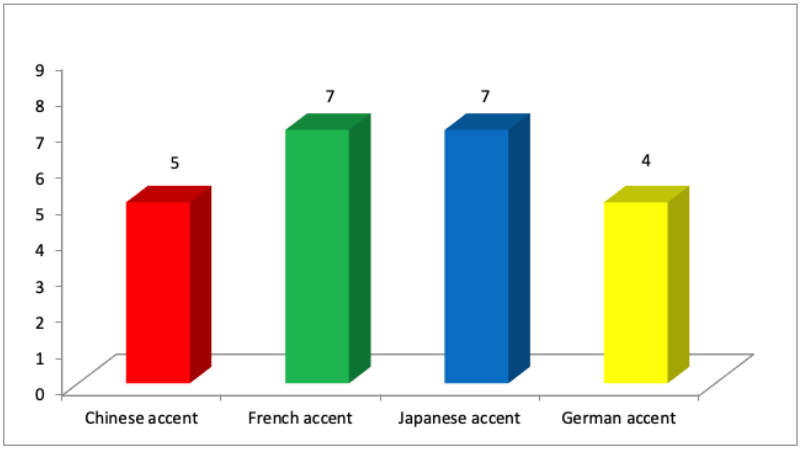

Figure 3. **Median accentedness ratings of Mandarin listeners for Mandarin-English, French-English, Japanese-English, and German-English accents**

In general, the bar chart showed a bimodal trend. The French-English and Japanese-English accents had the strongest accentedness rating. Both accent types were rated seven out of nine for their accent strength. On the other hand, both the Mandarin-English and German-English accents had ratings of five and four, respectively, which were somewhat less than the French-English and Japanese-English accent types.

The results for the French-English and Japanese-English accents were identical. To fully understand the relationship between judgments of accentedness and a shared first language, the distributions of the ratings were analysed. The box plots given in Figure 4 illustrate the distribution of ratings given by the Mandarin participants for the French-English and Japanese-English accent varieties.

Figure 4 shows the distribution of accentedness ratings of the Mandarin listeners for the French-English and Japanese-English accents. In general, there were slight differences in distribution of ratings for each speaker. For example, the French-English accent has a lower quartile of four, while the Japanese-English accent has a lower quartile value of three. Moreover, the upper quartiles for the French and Japanese speakers were seven and six, respectively. Differences between the whiskers of both box plots also indicate that the Mandarin listeners varied more so in their judgment of the Japanese speakers' accent strength more so than the French-English accent. Finally, there was a slight difference in the median position between the two box plots; therefore, the Mandarin listeners found the French-English accent to be strongest, followed by the Japanese-English accent.

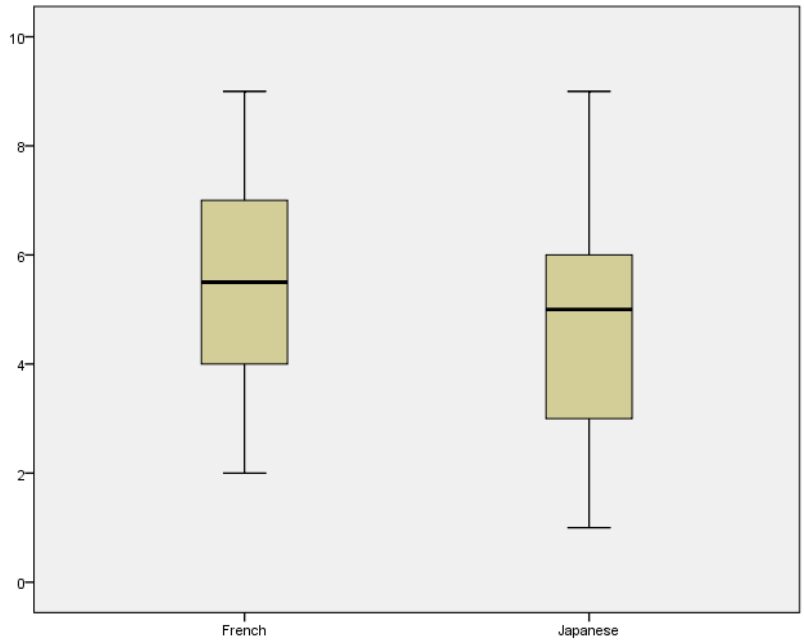

Figure 4. **Rating distributions of Mandarin listeners for French-English and Japanese-English accents**

Figure 5 shows the median accentedness ratings given by the French listeners to Mandarin-English, French-English, Japanese-English, and German-English accent types. In general, most of the accent types were rated in a similar fashion. For example, the Mandarin-English, French-English, and Japanese-English accents were all given the same rating of seven. However, there was one exception to this trend. German-English accent had a rating that was significantly less than the other three accent types. The median accentedness rating for the German-English accent was four. Thus, the French listeners found most of the EAL accent varieties to have similar accent strength.

The results for the Mandarin-English, French-English, and Japanese-English accents were identical. To fully understand the relationship (or lack thereof) between judgments of accentedness and a shared first language, further analysis was needed. Therefore, box plots were created to investigate the characteristics of the French listeners' ratings of the Mandarin-English, Japanese-English, and French-English accents. Refer to Figure 6 for the distribution of ratings given by the French participants for three accent varieties.

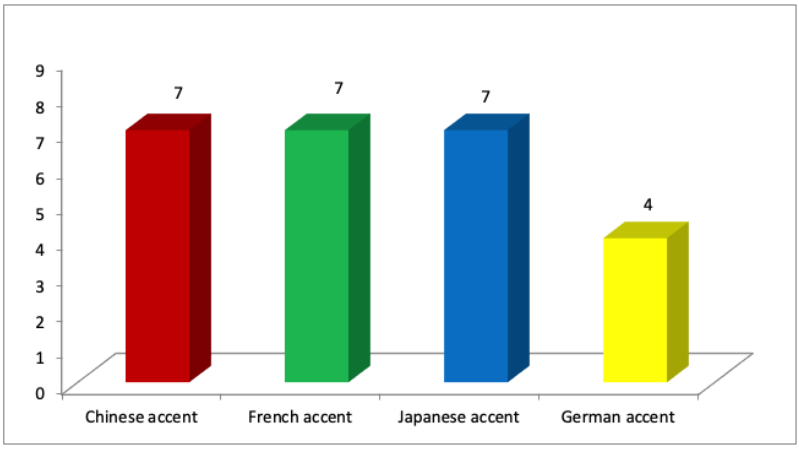

Figure 5. **Median accentedness ratings of French listeners for Mandarin-English, French-English, Japanese-English, and German-English accents**

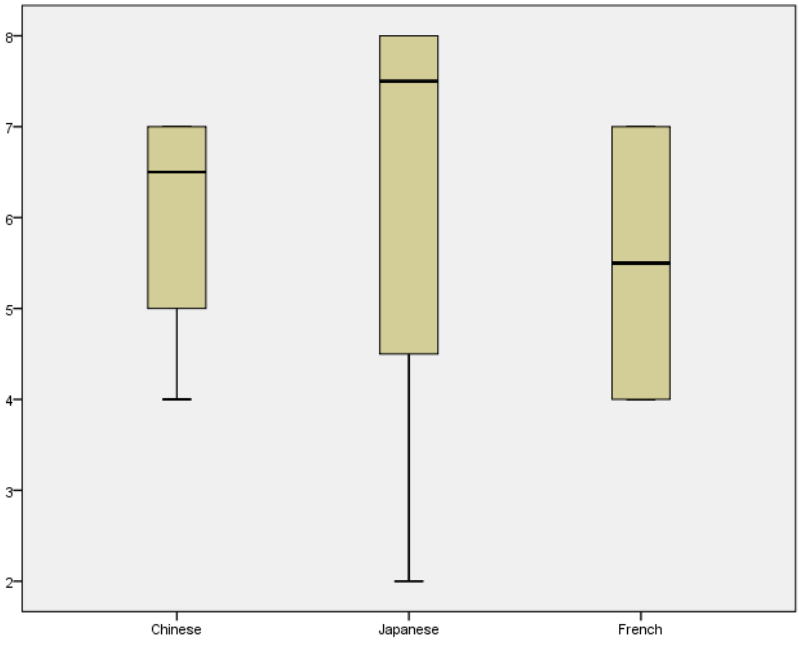

Figure 6. **Rating distributions of French listeners for Mandarin-English, Japanese-English, and French-English accents**

Figure 6 suggests that the French listeners found the Japanese-English accent to be the strongest, but there was a considerable amount of variation in the French listeners' ratings of this accent type. Furthermore, the French listeners found the Mandarin-English accent to be the second strongest, followed by the French-English accent. The German-English accent, according to the bar chart, was clearly rated the weakest by the French listeners.

Figure 7 shows the median accentedness ratings of the Japanese listeners for each accent type.

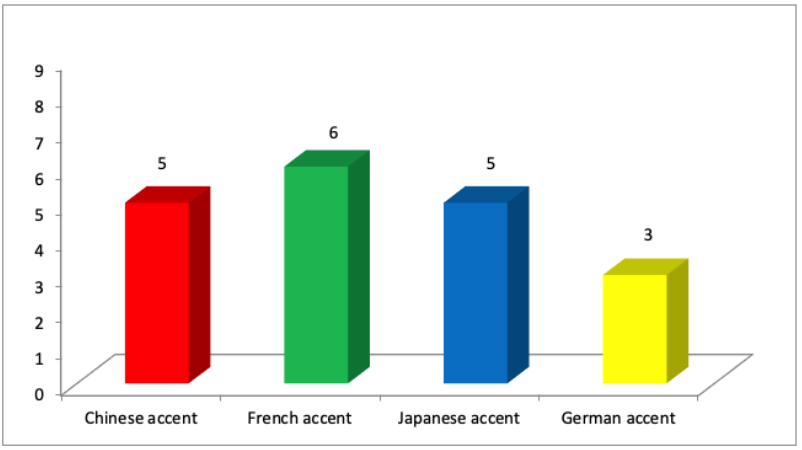

Figure 7. **Median accentedness ratings of Japanese listeners for Mandarin-English, French-English, Japanese-English, and German-English accents**

The results may be categorized into three groups. Firstly, the French speakers were judged as having the strongest accent with a rating of six. Secondly, the Mandarin-English and Japanese-English accents were rated the same, each with a rating of five. Finally, the German-English accent had the lowest rating of all the accent types, which was half that of the French speakers. The German-English accent also received an accentedness rating that was considerably lower than the Mandarin-English and Japanese-English accent types. Thus, the Japanese listeners seemed to make distinct judgments about the four EAL varieties of English.

Because the Mandarin-English and Japanese-English accents were identical, further analysis was conducted. Box plots were used to investigate the distributional characteristics of the Japanese listeners' ratings of the Mandarin-English and Japanese-English accents. Refer to Figure 8 for the distribution of ratings given by the Japanese participants for the two accent varieties.

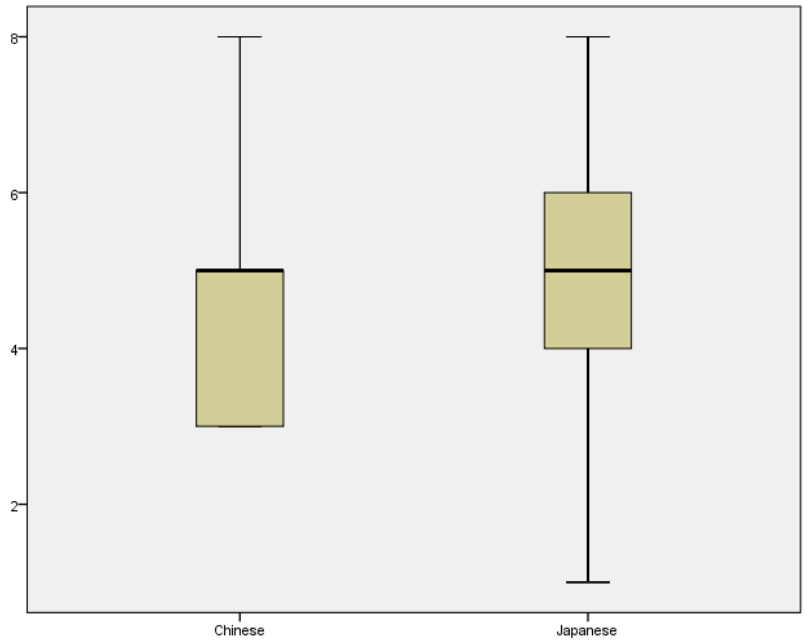

Figure 8. **Rating distributions of Japanese listeners for Mandarin-English and Japanese-English accents**

Figure 8 illustrates the distribution of ratings for the Mandarin-English and Japanese-English accents. There were some significant differences between the two box plots. For example, the ratings for the Mandarin-English accent varied more in the second quartile group. However, the Japanese-English accent had an even spread of ratings for the second and third quartile groups. There were also differences in the whiskers between the two box plots. While the ratings of the Japanese listeners varied for the upper whisker of the Mandarin-English accent, this was not the case for the lower whisker. On the other hand, the Japanese listeners varied in their ratings of the Japanese-English accent for both the lower and upper whiskers, more so for the lower whisker. Despite differences in the quartile groups and whiskers between the two accent types, their median positions were the same.

In conclusion, the findings for a shared first language do not support the notion that interlocutors with the same first language background will find their accent to be weaker than other varieties of EAL speech. The results showed that the Japanese listeners did not find the Japanese-English accent to be the weakest. Similarly, the Mandarin listeners clearly did not judge the Mandarin-English accent as being the weakest. Finally, none of the listener groups for a shared first language had similar results to those of all the listeners in Figure 1. Therefore, it seems that sharing a first language with one's interlocutor may negatively affect judgments of accentedness.

3.2 Shared Typology

The second factor thought to influence the accentedness rating of EAL users towards foreign-accented speech was a shared typology. It has been argued that a shared typology between interlocutors may lead to weaker ratings of accentedness. The speakers and listener groups were classified according to the prosodic properties of their mother tongue. Unfortunately, there were not enough Japanese listeners to conduct an analysis of their ratings. Therefore, a shared typology advantage could not be considered from the perspective of interlocutors with Mora languages. The following two figures have the accentedness ratings of the Thai and Vietnamese listener groups, both of which are Tone languages.

3.2.1 Tone Languages

Figure 9 presents the accentedness ratings of the Thai listeners for the four accent varieties.

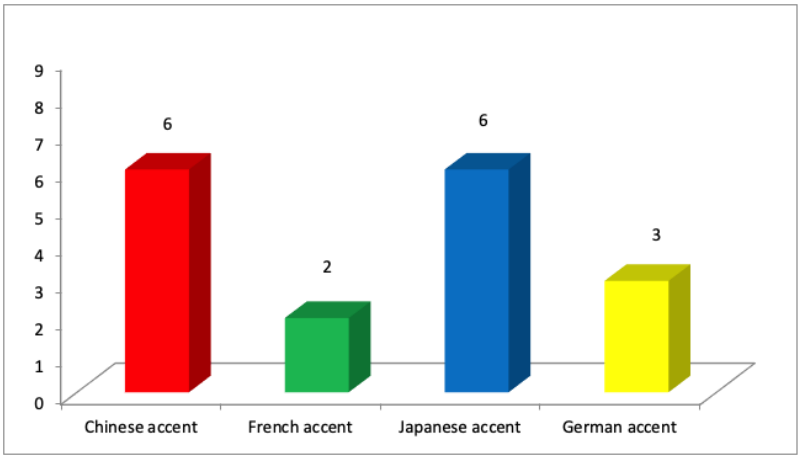

Figure 9. **Median accentedness ratings of Thai listeners for Mandarin-English, French-English, Japanese-English, and German-English accents**

Overall, half of the accent types were rated as being very strong, while the other half has quite low ratings. Both the Mandarin-English and Japanese-English accent types had very high accentedness ratings, each with a rating of six. In contrast, the French-English and German-English accent types were given very low accentedness ratings. For example, the German-English accent was rated three out of nine for accent strength. Moreover, the French-English accent was given the low rating of two. Hence, the Thai listeners were divided in their judgments about the accentedness of foreign speech.

The results for the Mandarin-English and Japanese-English accents showed marked similarities. To investigate possible differences in the ratings for these accent types, rating distributions were calculated. The box plots given in Figure 10 illustrate the distribution of ratings given by the Thai participants for the Mandarin-English and Japanese-English accents.

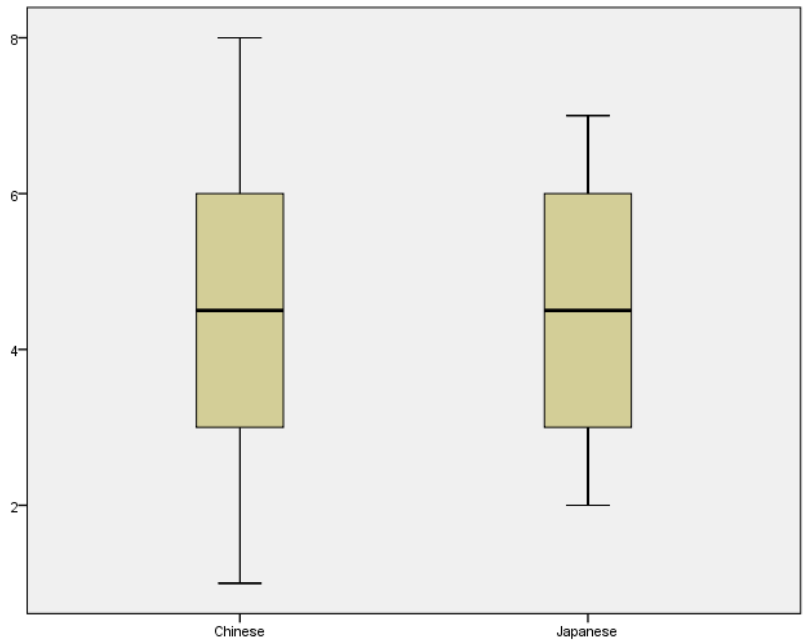

Figure 10. **Rating distributions of Thai listeners for Mandarin-English and Japanese-English accents**

Generally, the box plots for the Mandarin-English and Japanese-English accents were rather similar. For instance, the inter-quartile ranges were the same. Moreover, the spread of the lower and upper whiskers for the Mandarin-English accent was the same, which was also the case for the Japanese-English accent. The only difference between the two box plots was the amount of spread when comparing the whiskers between the two box plots. It appeared that the Thai listeners were more variable in their ratings of the Mandarin-English accent because the spread of ratings in the first and fourth quartile groups was greater for the Mandarin-English accent than the Japanese-English accent. Finally, there appeared to be no difference in the median position between the two box plots; therefore, further analysis was not needed.

The other listener group belonging to the Tone typology is the Vietnamese listeners. Figure 11 shows the accentedness ratings of the Vietnamese listeners for the four accent varieties.

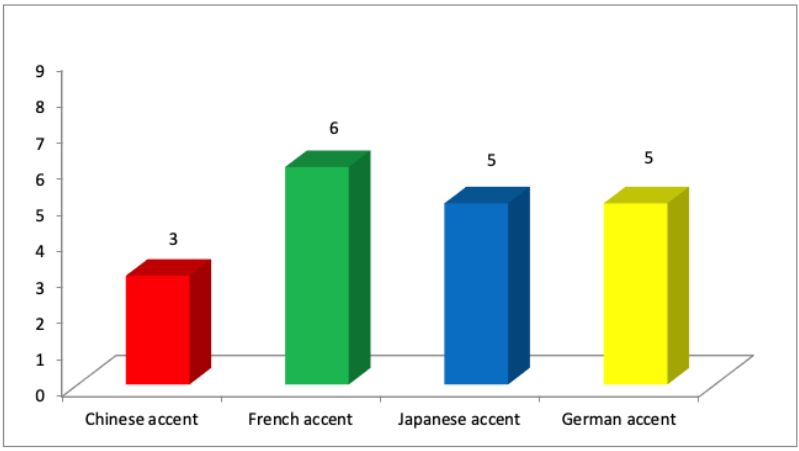

Figure 11. **Median accentedness ratings of Vietnamese listeners for Mandarin-English, French-English, Japanese-English, and German-English accents**

In general, there were both differences and similarities between the ratings. For example, the French-English accent had the strongest accentedness rating of all the four accent types. In addition, the Mandarin-English accent had the lowest rating, which was half that of the French-English accent. On the other hand, the Japanese-English and German-English accents were rated the same; each had a score of five. Thus, the Vietnamese listeners made quite definitive judgments about the accent types they considered similar and those they did not.

According to the Vietnamese listeners, the Japanese-English and German-English accent types were quite similar. To fully understand the relationship (or lack thereof) between these accents, further analysis was warranted. The box plots given in Figure 12 illustrate the distribution of ratings given by the Vietnamese listeners for the Japanese-English and German-English accent varieties.

Figure 12 shows the distribution of accentedness ratings of the Vietnamese listeners for the Japanese-English and German-English accent types. Overall, there were a few differences between the two box plots. Firstly, there was a difference in the inter-quartile ranges between the two accent varieties. The ratings for the Japanese-English accent had an inter-quartile range of three, while the range for the German-English accent was only two. There was also a greater spread of the whiskers for the Japanese-English accent when compared to the German-English accent. The box plots indicated that the Vietnamese listeners might have had less agreement regarding the accent strength of the Japanese-English accent. Finally, there appeared to be slight difference in the median position between the two

box plots; therefore, further analysis was needed to measure the significance of difference between the two medians.

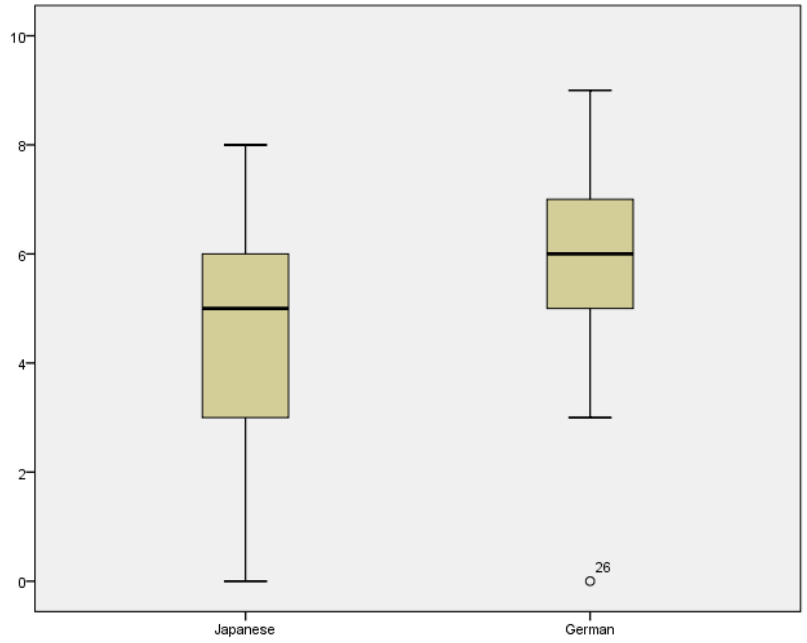

Figure 12. **Rating distributions of Vietnamese listeners for Japanese-English and German-English accents**

The results shown in Figure 12 indicated a difference between the median positions of the Japanese-English and German-English accents. Therefore, a third level of analysis was needed. A related-samples Wilcoxon signed rank test, which measured the significance of difference between the median positions of each speaker, was performed. Table 2 shows the related-samples Wilcoxon signed rank test for one pair of results, and their *p*-value.

Table 2
Wilcoxon signed rank test value for Vietnamese listeners with respect to one speaker combination

Speaker 1[a]	**Speaker 2**	***p* Value**[b]	**Significance**[c]
Japanese	German	.043	Significant

[a] N = 200 in all instances
[b] CILevel = 95 in all instances
[c] $\alpha = 0.05$ in all instances

Table 2 shows the Wilcoxon signed rank test *p*-value for the Vietnamese listeners concerning the Japanese-English and German-English accent types. The results indicated that there was a significant difference in the median positions for the Japanese-English and German-English accents. Therefore, the Vietnamese listeners found the German-English accent to be stronger than the Japanese-English accent.

In summary, the results for the Tone listeners were inconsistent. The Thai listeners thought that the Japanese-English and Mandarin-English accents were the strongest, while the Vietnamese listeners found the French-English and German-English accent types to be the strongest. Hence, the Tone listeners did not agree on the accentedness of the Asian and European accent types.

3.2.2 Syllable Languages

The second typology to be examined is the Syllable languages. There are two listener groups belonging to this typology. The first group to be discussed is the Indonesian listeners. Figure 13 indicates the accentedness ratings of the Indonesian listeners for the four accent types.

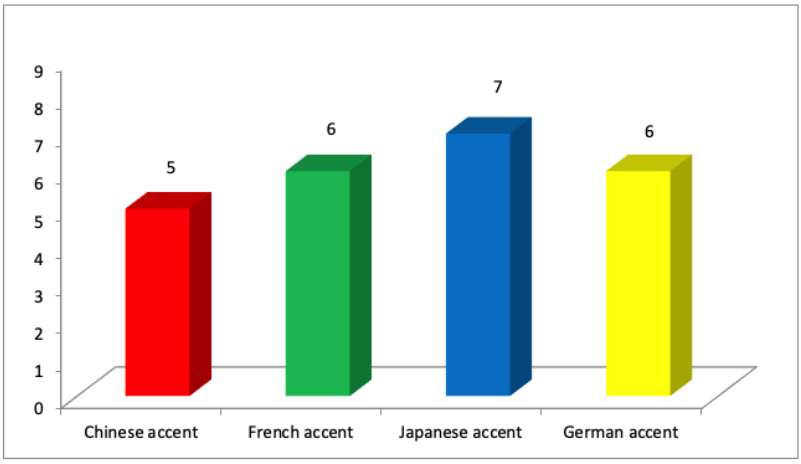

Figure 13. **Median accentedness ratings of Indonesian listeners for Mandarin-English, French-English, Japanese-English, and German-English accents**

In general, all the accent types were rated quite highly. For example, the Indonesian listeners rated the Japanese-English accent as being very strong with a rating of seven out of a possible nine for their accent strength. The French-English and German-English accents also have very high ratings for accentedness. Both the French-English and German-English accents were rated six out of nine. The Mandarin-English accent had the lowest accentedness rating, which was five out of nine. Therefore, the Indonesian listeners found all the EAL varieties to be heavily accented.

However, the results for the French-English and German-English accents were identical, so the following box plots show the distributional characteristics of the Indonesian listeners' ratings of the French-English and German-English accents. Refer to Figure 14 for the distribution of ratings given by the Indonesian participants for the two accent varieties.

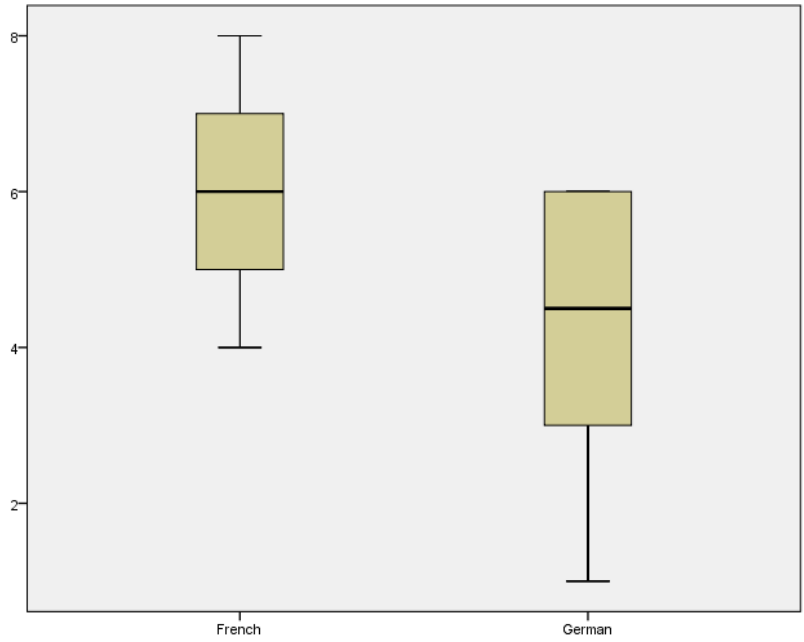

Figure 14. **Rating distributions of Indonesian listeners for French-English and German-English accents**

Figure 14 shows the box plots for the French-English and German-English accents. It was quite clear that there was a difference in the distribution of ratings between these two accent varieties. According to the Indonesian listeners, the inter-quartile group ranged between five and seven. However, the German-English accent has an upper quartile of six and a lower quartile of three. There were also differences between the whiskers of each box plot. For example, the Indonesian listeners varied somewhat in their ratings for the first and fourth quartile groups, as indicated by the lower and upper whiskers of the French-English box plot. In contrast, the ratings of the Indonesian listeners showed greater range for the first quartile group of the German-English accent, which suggested that the Indonesian listeners varied the most at the weaker end of the scale when judging the German-English accent. Finally, there was a clear difference in the median positions between the box plots, with the French-English accent being judged the stronger of the two.

The second group belonging to the Syllable typology is the Spanish listeners. Figure 15 shows the accentedness ratings of the Spanish listeners for each accent type.

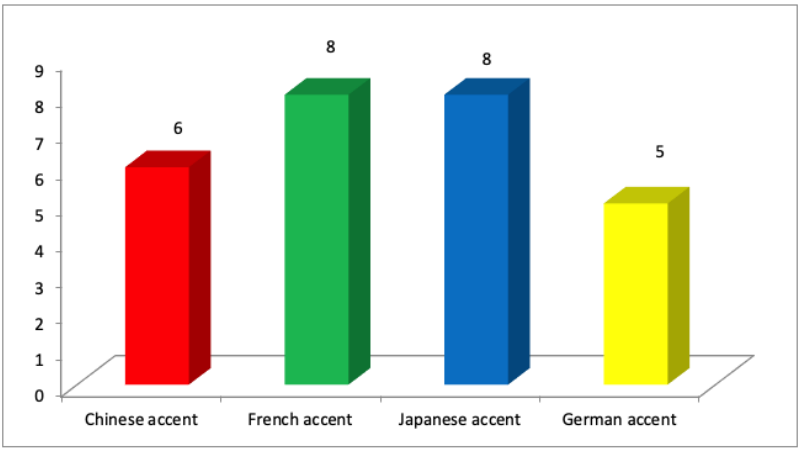

Figure 15. **Median accentedness ratings of Spanish listeners for Mandarin-English, French-English, Japanese-English, and German-English accents**

Overall, all four accent varieties were rated quite highly by the Spanish listeners, especially the Japanese-English and French-English accents. The French-English and Japanese-English accent types each had a rating of eight out of nine. The Mandarin-English accent also received quite a high accentedness rating with a rating of six. However, the Spanish listeners judged the German-English accent to be the weakest of the four accent varieties with a rating of five. In sum, the Spanish listeners found all four EAL varieties to be heavily accented.

The results for the Japanese-English and French-English accents were alike. The box plots given in Figure 16 illustrate the distribution of ratings given by the Spanish participants for the French-English and Japanese-English accents.

Generally, the box plots for the French-English and Japanese-English accents were quite similar. For instance, the inter-quartile ranges were almost the same. Moreover, the spread of the upper whiskers was the same for the two accent types. There was a slight difference in the spread for the lower whiskers. The only obvious difference between the two box plots was their median positions. Therefore, further analysis was needed to measure the significance of difference between the two medians.

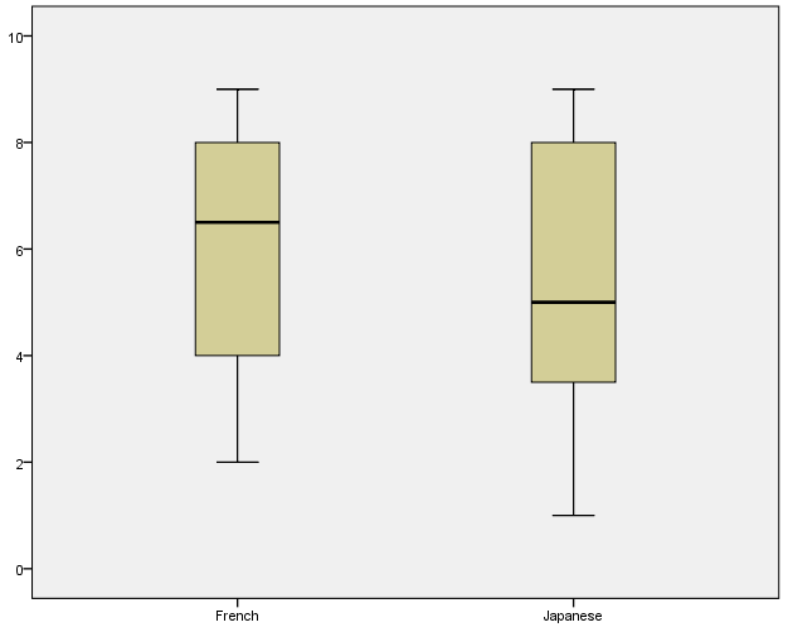

Figure 16. **Rating distributions of Spanish listeners for French-English and Japanese-English accents**

A related-samples Wilcoxon signed rank test, which measured the significance of difference between the median positions of each speaker, was performed. Table 3 shows the related-samples Wilcoxon signed rank test for one pair of results, and their *p*-value.

Table 3
Wilcoxon signed rank test value for Spanish listeners with respect to one speaker combination

Speaker 1[a]	**Speaker 2**	***p* Value**[b]	**Significance**[c]
French	Japanese	.878	Not Sig.

[a] N = 200 in all instances
[b] CILevel = 95 in all instances
[c] $\alpha = 0.05$ in all instances

Table 3 presents the Wilcoxon signed rank test *p*-value for the Spanish listeners concerning the French-English and Japanese-English accent types. The results indicated that there was no significant difference in the median positions for the French-English and Japanese-English accents. Therefore, the Spanish listeners judged the French-English accent as having the same accent strength as the Japanese-English accent.

The results for the Spanish listeners were most similar to the ratings given by the Mandarin listeners because the French-English and Japanese-English accents were rated the highest and the Mandarin-English and German-English accents were rated the lowest. Interestingly, the Spanish listeners not only gave the highest rating to any listener group, but they did so for more than one accent type. Eight out of nine was the highest rating given to a speaker by any of the listener groups.

In summary, the results for the Syllable listeners indicated that a shared typology with one's interlocutors might have a negative influence on judgments of accentedness. For instance, the Spanish listeners rated the Syllable speakers, who were the French speakers, as having the strongest accent. Moreover, the Indonesian listeners also judged the French speakers as having one of the strongest accents out of the four varieties. These results contradicted the findings for the Tone listeners, where there appeared to be both positive and negative effects of a shared typology on judgments of accentedness. In sum, the Syllable listeners judged the Syllable-timed French speakers to be heavily accented on more occasions than not.

3.2.3 Stress Languages

The last listener group used to investigate the impact of typology on ratings of accentedness were the Arabic listeners. Figure 17 shows the accentedness ratings of the Arabic listeners for each accent type.

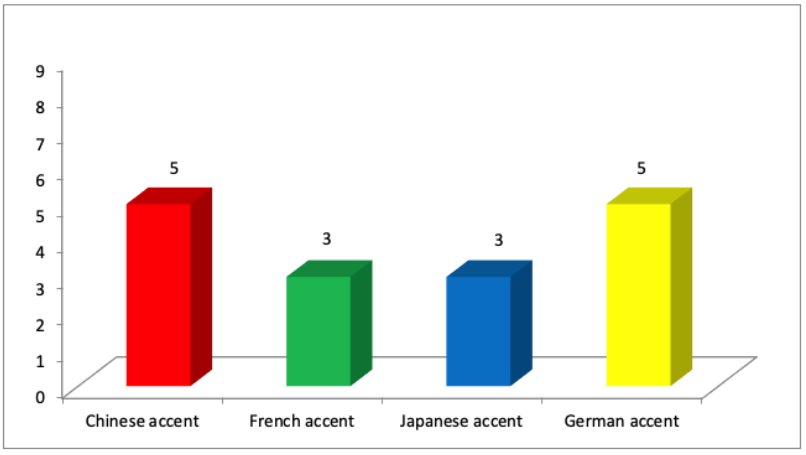

Figure 17. **Median accentedness ratings of Arabic listeners for Mandarin-English, French-English, Japanese-English, and German-English accents**

The ratings given by the Arabic listeners to each accent type seem to be grouped in pairs. For example, the Mandarin-English and German-English accents were rated by the Arabic listeners as being the strongest, with an accentedness rating of five. On the other hand, the French-English and Japanese-English accents were both rated the weakest with

an accentedness rating of three. Therefore, the Arabic listeners seemed to be divided in their judgments about the accentedness of different NNSs.

The results for the Mandarin-English and German-English accent types, as well as the French-English and Japanese-English accents, were identical. To investigate the strength of relationship between these two sets of accent types, further analysis was conducted.

The box plots given in Figure 18 illustrate the distribution of ratings given by the Arabic participants for the Mandarin-English and German-English accent varieties.

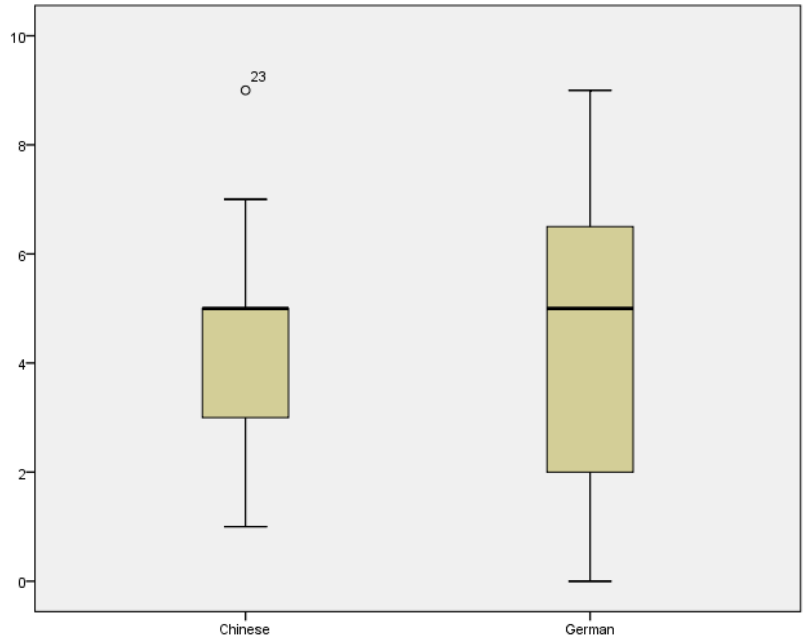

Figure 18. **Rating distributions of Arabic listeners for Mandarin-English and German-English accents**

There were noteworthy differences between the two box plots. For example, there was a greater inter-quartile range for the German-English accent. In addition, the ratings for the Mandarin-English accent varied considerably in the second quartile group when compared with the third quartile group. However, the German-English accent had a much more even spread in the second and third quartile groups. There were also differences in the whiskers between the two box plots. For example, the ratings of the Arabic listeners varied for the upper and lower whiskers of the German-English accent, while there was slightly less spread in the ratings given to the Mandarin-English accent. Despite differences in the quartile groups and whiskers between the two accent types, their median positions were the same.

Figure 19 shows the distribution of ratings given by the Arabic listeners for the French-English and Japanese-English accent varieties.

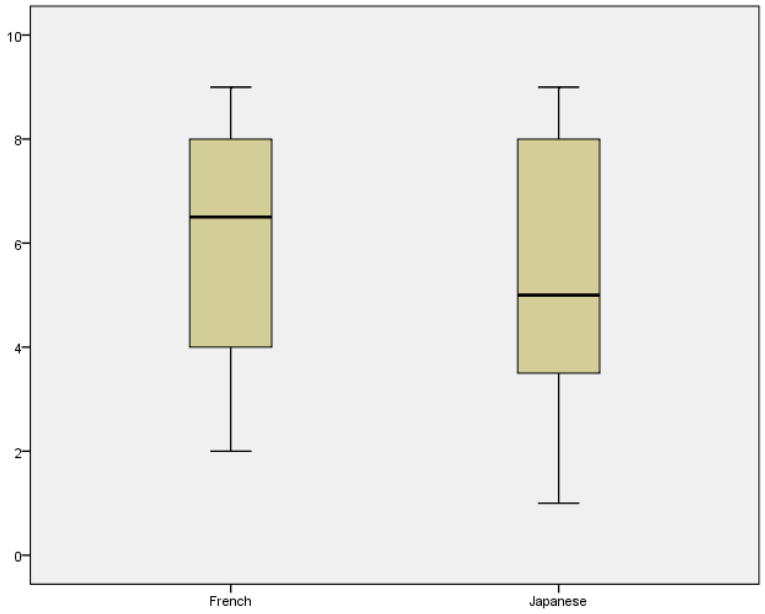

Figure 19. **Rating distributions of Arabic listeners for French-English and Japanese-English accents**

Generally, the box plots for the French-English and Japanese-English accents were quite similar. For instance, the inter-quartile ranges were almost the same. As well, the spread of the upper whiskers was the same for the two accents. There was a slight difference in the spread for the lower whiskers. The most salient difference between the two box plots was their median positions. Therefore, further analysis was needed in order to measure the significance of difference between the two medians.

The results shown in Figure 19 indicated a difference between the median positions of the French-English and Japanese-English accents. Therefore, a third level of analysis was needed. A related-samples Wilcoxon signed rank test, which measured the significance of difference between the median positions of each speaker, was performed. Table 4 shows the related-samples Wilcoxon signed rank test for one pair of results, and their *p*-value.

Table 4
Wilcoxon signed rank test value for Arabic listeners with respect to one speaker combination

Speaker 1[a]	**Speaker 2**	***p* Value**[b]	**Significance**[c]
French	Japanese	.444	Not Sig.

[a] N = 200 in all instances
[b] CILevel = 95 in all instances
[c] $\alpha = 0.05$ in all instances

Table 4 shows the Wilcoxon signed rank test *p*-value for the Arabic listeners concerning the French-English and Japanese-English accent types. The results indicated that there was no significant difference in the median positions for the French-English and Japanese-English accents. Therefore, the Arabic listeners judged the French-English accent as having the same accent strength as the Japanese-English accent.

The results for the Arabic listeners deviated considerably from the other listener groups' judgments about the strength of the French-English accent. That is, the majority of the other listener groups judged the French-English accent as being quite strong, and usually equal to or stronger than any of the other accent varieties. However, the Arabic listeners judged the French-English accent to be one of the weakest accents, the other being the Japanese-English accent. Moreover, the German-English accent was rated one of the strongest. These results matched those of the Vietnamese and Indonesian listener groups. Finally, the Arabic listeners rated the Mandarin-English accent as being quite heavy, which was similar to the results for the French and Thai listeners.

In summary, there were a number of findings concerning a shared typology between interlocutors and the accentedness of EAL speech. At first, the results for the Tone listeners indicated that a shared typology between interlocutors might reduce judgments of accentedness. For instance, the Vietnamese listeners thought that the Mandarin speakers had the weakest accent. However, this trend did not extend to the Thai listeners, who thought that the Mandarin-English accent was one of the strongest. Moreover, the Stress listeners, which included the Arabic students, did not rate the Stressed-timed German speakers as having the weakest accent. In fact, the Arabic listeners rated the German-English accent as the strongest. In addition, the Syllable listeners, such as the Indonesian and Latin American students, thought that the French speakers had one of the heaviest accents. Thus, the vast majority of the listeners did not find speakers with the same typology to have the weakest accent.

3.3 Between-group Correlations

There were mixed results concerning a shared typology between interlocutors and its impact on judgments of accentedness. While the Thai, Spanish, and Arabic listener groups did not find their respective typologies to have the weakest accent, the Vietnamese and Indonesian listener groups did judge the Mandarin speakers as having the weakest accent. To shed further light on the possibility that a shared typology between interlocutors may influence judgments of accentedness, further analysis was conducted. A set of intergroup correlations was calculated in order to investigate the level of agreement between the different listener groups in their judgments of accentedness. It was hoped that the analysis would shed further light on the notion of a shared typology advantage. More specifically, Table 5 investigates possible similarities in the perception of EAL varieties of English between listeners with the same typology (highlighted in yellow). Thus, the following investigation is looking at relationships between listener groups of the same typology rather than a relationship between speakers and listeners. Given below are the between-group correlations for all combinations of listener groups.

Table 5
Intergroup Spearman correlations between all listener group combinations for accentedness

Language 1	Language 2	Rho	Strength	*p* Value	Significance [a]
Arabic	Mandarin	-.027	Very Weak	.763	Not Sig.
Arabic	French	-.112	Very Weak	.679	Not Sig.
Arabic	Indonesian	.129	Very Weak	.549	Not Sig.
Arabic	Japanese	.014	Very Weak	.950	Not Sig.
Arabic	Spanish	.211	Weak	.149	Not Sig.
Arabic	Thai	-.187	Very Weak	.096	Not Sig.
Arabic	Vietnamese	.101	Very Weak	.258	Not Sig.
Mandarin	French	.409	Moderate	.054	Not Sig.
Mandarin	Indonesian	-.412	Moderate	.045	Significant
Mandarin	Japanese	.316	Weak	.133	Not Sig.
Mandarin	Spanish	-.293	Weak	.043	Significant
Mandarin	Thai	.085	Very Weak	.453	Not Sig.
Mandarin	Vietnamese	-.043	Very Weak	.622	Not Sig.
French	Indonesian	-.087	Very Weak	.749	Not Sig.
French	Japanese	.006	Very Weak	.981	Not Sig.
French	Spanish	-.097	Very Weak	.720	Not Sig.
French	Thai	.260	Weak	.331	Not Sig.
French	Vietnamese	.552	Moderate	.027	Significant
Indonesian	Japanese	.124	Very Weak	.564	Not Sig.
Indonesian	Spanish	.003	Very Weak	.988	Not Sig.
Indonesian	Thai	-.222	Weak	.297	Not Sig.
Indonesian	Vietnamese	.228	Weak	.285	Not Sig.
Japanese	Spanish	-.062	Very Weak	.755	Not Sig.
Japanese	Thai	.104	Very Weak	.628	Not Sig.
Japanese	Vietnamese	.438	Moderate	.032	Significant
Spanish	Thai	.003	Very Weak	.983	Not Sig.
Spanish	Vietnamese	.015	Very Weak	.919	Not Sig.
Thai	Vietnamese	.037	Very Weak	.748	Not Sig.
Arabic	Mandarin	-.027	Very Weak	.763	Not Sig.
Arabic	French	-.112	Very Weak	.679	Not Sig.
Arabic	Indonesian	.129	Very Weak	.549	Not Sig.

$\alpha = 0.05$ in all instances

There are only a handful of significant correlations between any of the listener group combinations. Only four out of the 28 possible listener group combinations showed a significant correlation. In addition, the relationship between those four pairs of listener groups was quite weak. Thus, NNSs tend not to agree on the accentedness of different EAL varieties, including listeners with the same typology.

4. Discussion

It has been suggested that judgments of accentedness may influence the misunderstandings of EAL. Therefore, numerous studies have investigated the accentedness of foreign speech sounds. The majority of studies to date have investigated judgments about the accentedness of EAL speech from a NS's perspective. However, an increasing number of researchers have started to investigate such judgments from a NNS's perspective (Kashiwagi & Snyder, 2010; Munro et al., 2006). It has been suggested that NSs and NNSs may not perceive foreign speech in the same way. That is, judgments of accentedness may differ between NNSs and NSs when listening to foreign speech sound, such as EAL.

The intraclass correlations given in Appendix A illustrate the level of agreement in the ratings given by members of each listener group. Overall, the majority of the listener groups have very weak to moderate correlations between the ratings given by their group members. These findings contradict the conclusions drawn by Derwing and Munro (2009), and more recently Hayes-Harb and Hacking (2015), who claimed that "listeners usually agree with each other quite strongly on who has a heavy accent and who doesn't" (p. 478). This contrast between findings may have something to do with the identity of the participants. All the listeners in the studies mentioned above were NSs; however, only NNSs participated in the current study. It is argued that the judgments NNSs make about foreign-accented speech are quite different from those of NSs, possibly because of their exposure to different varieties of English, particularly EAL ones. The accentedness judgments NNSs make may be quite different from NSs, especially those living in a monolingual community, because "it is not easy for NSs to come to terms with the variations that occur in NNS use of what the NS feels to be 'one's own language'" (Strevens, 1982, as cited in Kachru, 1992, p. 28). On the other hand, these expectations of speech are quite different from those of a multilingual EAL user, who only knows heterogeneous forms of English. Therefore, the contrast between a NS's expectations of spoken word and those of an EAL user may lead NSs to make stronger accentedness judgments of foreign speech than NNSs.

While the majority of the listener groups had very weak to weak correlations between their members, the data in Appendix A indicates that the French listeners had a moderate correlation between their accentedness ratings, the Spanish listeners had a strong correlation between theirs, and the Mandarin listeners had a very strong correlation between their ratings of each accent type. The distinction between the results for these three listener groups and the other five groups may be explained by the listeners' attitudes towards EAL. For example, the Mandarin listeners may have had greater in-group consistency because they shared a common belief about EAL varieties of English, more so than the other listener groups. In fact, Munro et al. (2006) found that Mandarin students tend to rate the accentedness

of EAL varieties of English harsher than other varieties. These findings are also similar to those mentioned above where NSs from a single speech community showed strong in-group agreement. Likewise, if we look back at Figures 3, 5, and 15, the Mandarin, French, and Spanish listener groups, respectively, gave higher accentedness ratings than any of the other listener groups. Therefore, the attitudes of listeners from particular speech communities are likely to have a strong influence on how they judge the accentedness of EAL varieties.

It has been suggested that two factors may influence a NNS's perception of EAL. More specifically, a shared first language background or shared typology between NNSs may judge their foreign accent to be weaker than other varieties of English. Therefore, the current study investigated the possibility of a shared first language benefit and shared typology advantage.

4.1 Shared First Language

There were mixed results for the shared first language analysis. Firstly, the findings do not support the notion that interlocutors with a shared first language background will lead to weaker accentedness ratings. For example, the French and Japanese listeners found their counterparts to be one of the most accented of the four EAL varieties. Moreover, the French and Japanese listeners, and, to a lesser degree, the Mandarin listeners clearly judged the German-English accent as being the weakest of the four types.

The investigation of a possible relationship between a shared first language and judgments of accentedness raised questions as to why the listeners, especially the French and Japanese listeners, found their own accent variety to be one of the strongest of the four types. The nature of interlanguage may help explain these results. It has been argued that the differences between the phonology of one's interlanguage and the pronunciation features of a speaker will impede one's adaptation to foreign speech sounds. Similarly, if there is a mismatch between the phonology of one's interlanguage and that of their interlocutor, accentedness judgments are likely to be higher. In the case of the Japanese and French listeners, their repertoire of speech sounds may have contained more sounds of other Englishes, such as standard Australian (StAust) and Mandarin-English, than their own. This quickly became apparent during the data-collection process because the French and Japanese participants had no difficulty understanding the interviewer's StAust accent. Therefore, proficiency or familiarity with one's own accent variety will likely have a positive impact on the accentedness of interlocutors who shared a first language.

The German-English accent was consistently rated the weakest by the all listeners. One explanation may have something to do with the students' expectation of particular speech sounds. It is possible that the participants expected to hear NSs when listening to speech samples, especially when they were studying in an inner circle country. Evidence of this expectation can be seen in the survey data, where a significant number of the survey participants thought that the Mandarin, French, Japanese, and German speakers were NSs. In fact, 17% of them thought that the German speakers were NSs, which was almost double the percentage of the French and Japanese speakers. Further evidence that the participants expected to hear a NS variety of English accent can be seen in the perceived identity of the first speech sample. Twenty percent of the interview participants thought that the first

(Mandarin) speaker was a NS. On the contrary, only three percent of the students thought that the second Mandarin speaker was a NS. Therefore, the listeners may have found the German-English accent to be the weakest of the four accent varieties because of their belief that the German speakers were NSs.

4.2 Shared Typology

A number of inferences can be drawn from the shared typology data set. Firstly, a shared typology between listeners and speakers did not reduce judgments of accentedness for most of the Tone listeners. To exemplify, the Thai listeners rated the Mandarin-English accent as one of the strongest. Only the Vietnamese listeners weakly rated the Mandarin speakers. Moreover, the Stress listeners, which included the Arabic students, did not rate the Stressed-timed German speakers as having the weakest accent. On the contrary, the Arabic listeners thought that the German speakers had the strongest accent. This was also the case for the Syllable listeners, such as the Indonesian and Spanish students, who rated the French speakers as having one of the heaviest accents. Therefore, a shared typology between EAL users seemed to bring about stronger ratings of accentedness.

Limited exposure to a particular accent variety probably explains the strong accentedness ratings despite a shared typology between the listeners and speakers. For instance, it is unlikely that the Arabic students had had extensive exposure to the German-English accent, so they gave this accent variety a high rating for accentedness. In addition, the Latin American students would have had inadequate exposure to the French-English accent, thus finding it a rather heavy accent. Furthermore, Mandarin students make up the vast majority of international students from non-English speaking background or NESB at many universities in Australia. In fact, there are at least seven times more Mandarin students at Deakin University, Melbourne than any other nationality of students from NESB (Deakin University, 2011). Given the abundance of Mandarin students studying in Australian universities, the Vietnamese listeners would certainly have had considerable exposure to Mandarin-English accent. Therefore, the Vietnamese students judged the Mandarin-English accent the weakest of the four accent varieties as one might expect. It appears that exposure also has an impact on the accentedness of foreign speech.

There is a second inference about the impact of a shared typology on accentedness judgments. It appears that the relationship between a shared typology and accentedness is speaker-dependent rather than listener-dependent. That is, EAL users will give similar accentedness ratings to two NNSs if they share the same L1 typology. This is opposed to accentedness judgments being influenced by a shared typology between the listener and speaker. There is evidence of this in the present study. For instance, the German-English speakers may have been confused with NSs because of genealogy; English and German share a common ancestry. Hence, there are phonological features common to both languages, such as their rhythmic properties. These commonalities may have led some participants to believe that the German-English speech samples were actually produced by NSs. Surprisingly, the German-English accent was labelled as being General American English (GA) 27 times, StAust 20 times, and Received Pronunciation (RP) 16 times. These results suggest that a shared typology between a listener and speaker does not positively affect accentedness.

Rather, lower ratings of accentedness are dependent on speakers sharing an L1 typology. Furthermore, the findings indicated that people might be able to generalize their adaptation to one accent type to a typologically related, novel accent. For example, the students gave the novel German-English accent low ratings of accentedness because it is typologically similar to a NS variety of English they were familiar with, which in the present study was StAust. Therefore, it appears that familiarity with a NS variety of a language may lower the accentedness of a typologically related NNS variety. In summary, the impact of a shared typology on accentedness judgments is speaker-dependent rather than listener-dependent.

Thirdly, it has been hypothesized that regional varieties of ELF may exist (Deterding & Kirkpatrick, 2006; Seidlhofer, 2007). More specifically, there are phonological patterns common to the EAL varieties of a particular demographic, such as Thai-English and Vietnamese-English accents, because of their genealogy. It has been suggested that exposure to one variety of an Asian English, such as Mandarin-English, may have a positive influence on the accentedness of a novel variety from the same region, such as Japanese-English. However, there was no evidence of this in the present study. The results in Figure 1 show a weak correlation between the Mandarin-English and Japanese-English accentedness ratings according to 100 listeners. Therefore, exposure to an EAL accent does not seem to have a positive impact on the accentedness of another EAL variety from the same region.

5. Conclusion

This paper examined two factors that may influence the accentedness ratings of 100 EAL users towards four varieties of English: German English, Japanese English, Mandarin English, and French English. The first factor to be investigated was the impact of a shared first language background between EAL users on their judgments of accentedness. The results suggest that interlocutors with the same first language background do not find their accent to be weaker than other varieties of EAL accents. The second factor thought to influence the accentedness ratings of NNSs towards different EAL varieties was a shared first language typology between speakers and listeners. Similar to the results for listeners rating their own accent type, interlocutors who share a first language typology do not give weaker ratings of accentedness. Moreover, the results suggest that the relationship between a shared typology and accentedness is speaker-dependent rather than listener-dependent. That is, a listener's rating of an EAL accent is more likely to be affected if two speakers share the same typology rather than a shared typology between the listener and speaker. Finally, there were weak in-group agreements for the majority of the listener groups. However, the three groups that gave the strongest accentedness ratings also showed moderate to very strong agreements among their members, perhaps because of their members sharing a more uniform opinion towards EAL varieties. It is hoped that future research will continue to broaden our understanding of how different groups of people perceive, judge, and form attitudes towards different varieties of English.

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Appendix A

Cronbach's alpha values for intraclass correlation coefficient by listener group for accentedness

	Mandarin Listeners	**Arabic Listeners**	**Vietnamese Listeners**	**Thai Listeners**	**Spanish Listeners**	**Indonesian Listeners**	**Japanese Listeners**	**French Listeners**
Accentedness	.869	.028	.255	.018	.588	.415	.030	.605

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