

EFFECTS OF RATER'S ATTENTION ON THE PERCEIVED DEGREE OF FOREIGN ACCENT

Saya Kawase

Simon Fraser University, Canada
skawase@sfu.ca

ABSTRACT

The present study examined how native English speakers in Canada assessed the degree of foreign accent in nonnative speech when they were required to focus on the content of an utterance. The native English listeners were asked to listen to English sentences produced by speakers of Japanese, Mandarin, and Tamil, and to rate their foreign accent on a 9-point scale in two different rating tasks. One task was designed to rate only nonnative accent (Task 1), and the other task was designed to judge their accent while requiring raters to pay attention to the content in an utterance (Task 2). The results showed that the listeners perceived the degree of accent to be weaker when focusing on the content than focusing on only the accent. There was no significant difference in the accent ratings across the nonnative speakers regardless of their English use as EFL (for Japanese and Mandarin speakers) and ESL (for Tamil speakers). Overall findings suggest that the listeners' perception of foreign accent may differ depending on their direction of focus.

Keywords: foreign accent, attention to content, second language speech

1. INTRODUCTION

Accented speech is one of the concerns that second language (L2) learners face. Accent is defined as the degree to which the pronunciation of an utterance sounds different from native speakers' production patterns [9]. As a large number of studies have shown, listener's sensitivity to detect the foreign accent is amazingly high and they could easily notice it even in a 30ms speech sample [3]. They could recognize a foreign accent even in an unfamiliar language [8]. L2 learners are also highly aware of their accent influenced by their first language (L1). According to a survey [1], which entails interviews of nonnative English speakers in Canada, 53% believed that they would be respected more if they could speak with a native like" accent. It was clear that nonnative speakers

felt disadvantaged in speaking the target language with their own accent and tried to imitate the speaking patterns that native speakers used. The degree of the accent is associated with various factors such as the age of learning. A study which investigated the effect of the age of L2 learning on the perceived foreign accent of Italian immigrants in Canada revealed that late L2 learners' speech was more likely to be identified as nonnative compared to that of early L2 learners [6]. Adult L2 learners seem to find it more difficult to reduce their accent than early ones. Derwing et al. [2] investigated how Mandarin and Slavic adult immigrants in Canada showed the development of accent and fluency over ten months after their arrival. The scores of native listeners' judgments over time showed that neither speaker showed a significant development of their accent after ten months of English exposure in the ESL setting, although the development of fluency was observed among the Slavic immigrants who had more exposure to English in their daily life. This study supported how accents are deeply embedded in adult L2 learners. Overall, these studies suggested that listeners are highly sensitive to detect nonnative accents, and that nonnative speakers, especially adults, have difficulty in improving their embedded accent.

2. PRESENT STUDY

Whereas previous studies revealed significant implications for accent perception and production, one important factor has been ignored: the attention to content in accented speech perception. In our regular communication, interlocutors of nonnative speakers normally pay attention to the content regardless of the strength of accent in order to communicate successfully. However, in accent rating research, listeners are simply asked to rate the degree of accent with a quasi-continuous scale. This study examined whether native speakers of English perceive accented speech differently under two conditions: when listeners focus on the content of the speech, and when they focus solely on

accents. It is important to address this question because if listeners' judgments differ between the two conditions, this would imply that focusing on the content in nonnative speech may decrease the degree of accent in the listeners' rating. In addition, the results of previous accent rating studies in which the content of utterances was not considered, may not reflect perceptions of accent in non-laboratory situations.

The present study examined how native English speakers in Canada assessed the degree of foreign accent in English sentences spoken by Japanese, Mandarin, and Tamil speakers comparing the scores of the two rating tasks. One task was designed to rate only their accent (Task 1), and the other task was designed to judge their accent while requiring the raters to pay attention to the content (Task 2). In order for the listeners to focus on the content of speech samples, a true-false identification task was used. The question to be addressed was whether the listeners' rating of the degree of accent would be altered depending on the directionality of focus, either to the accent or to the content as well.

3. METHODS

3.1. Speakers

Three groups of L2 speakers (all male) participated in this study: Japanese, Mandarin, and Tamil speakers. All of them were officially enrolled in a university in British Columbia, Canada, as undergraduate or graduate students, ranging in age from 20 to 28 years ($M_{\text{age}}=23$) and were relatively newly arrived, ranging in the length of residence from two months to three years ($M_{\text{month}}=7$) when the recording sessions were conducted. The speakers of Japanese and Mandarin started to learn English as a foreign language from their middle school. The speakers of Tamil began to learn English (an official language in India) around the age of six as a third or fourth language. None of them used English at home or lived in an English speaking country before arriving in Canada.

3.2. Speaking task

Each of the Japanese, Mandarin and Tamil speakers read a list of English sentences in sound-treated recording booth. Prior to the recording session, they were asked to look over the sentences to make sure that they knew the meaning and pronunciation. In the recording, they were asked to read 54 true-false sentences and six additional

sentences at their normal volume and speed. The stimuli were adopted from previous studies [7, 9], and all of them were lexically-controlled single clause English. For instance, a true sentence is "Some people like to watch television," and a false sentence is "Most fish live on dry land". Before starting the recording sessions, all of the speakers were informed that some false sentences (i.e., incorrect sentences with general knowledge) were included and were encouraged to read the false sentences in the same way as true sentences. The recording sessions were conducted using high-quality digital equipment.

3.3. Stimulus preparation

The recorded speech samples were saved as high-quality 16-bit computer audio files. Twenty-seven true and false sentences each were edited using Audacity, a sound editing and recording program. As for the stimuli for Task 1, which was designed to rate the accent without paying attention to the content, only the true sentences were used. The stimuli were composed of 54 sentences: three L1 groups (Japanese, Mandarin, Tamil) x three speakers in each L1 group x three true sentences randomly picked from the 27 true sentences + three sentences from the additional six meaningful sentences). The additional sentences were used to equalize the number of stimuli for both tasks. For Task 2, designed to judge their accent while requiring the raters to focus on the content, both true and false sentences were used in order to offer the T-F identification task as well as the accent rating task. The 54 stimuli were as follows: 27 different true sentences (three true sentences randomly picked from each speaker x three speakers in each L1 group x three L1 groups) + 27 different false sentences (three false sentences randomly picked from each speaker x three speakers in each L1 group x three L1 groups). In Task 2, the listeners were asked to rate 54 different speech items including both true and false sentences so that they could focus on identifying the accuracy of the semantic content without previous knowledge. Fifty-four sentences for Task 1 and Task 2 were randomized for each listener ($n = 10$) and ten sets of audio files were created.

3.4. Listeners

Ten native speakers of Canadian English (five male, five female) participated in this research to judge the degree of foreign accent for the three

groups of nonnative English speakers. All were students at the same university and participated as volunteers. Their age range was from 18 to 34 ($M_{\text{age}} = 26.7$). All the listeners had studied some foreign languages in school but none had reached the advanced level in any foreign languages according to self-report. As for the familiarity of the three languages and their accent used in this study, all of the listeners reported that they had never studied either Japanese, Mandarin or Tamil language, and that they had never been in the countries where those languages were spoken. In addition, none of them had substantial exposure to Japanese-, Mandarin-, or Tamil-accented speech in their lives. All the listeners reported that they had normal hearing.

3.5. Listening task

The two types of listening tasks were carried out individually. All listeners wore headphones and sat in the sound-treated room. In Task 1 (accent-only judgment task), they were asked to listen to the English sentences spoken by the Japanese, Mandarin, and Tamil speakers while paying careful attention to the accent, and asked to rate the degree of accent on a 9-point scale (1: no foreign accent at all, 9: very strong foreign accent) using an answer sheet. The researcher encouraged them to use the full rating scales for the judgments. In Task 2 (TF identification + accent rating task), they were told to focus on the content to decide if each sentence was true or false by checking T or F on their answer sheet, and proceeded to rate the degree of foreign accent as in Task 1. In both tasks, every sentence was heard only once. Half of the listeners (three male, two female) completed Task 1 first, proceeding to Task 2; and the other half (two male, three female) completed Task 2 first and went on to Task 1. The overall listening task lasted approximately 25 minutes.

4. RESULTS

4.1. Inter-rater reliability

In order to verify the inter-rater reliability of the ten native English listeners, Cronbach's alpha was computed for each task. The results indicated acceptable agreement among the listeners in both Task 1 and Task 2 (Cronbach's $\alpha = .922$, and $.934$ respectively). Thus, all the listeners' rating scores were pooled to analyze the data.

4.2. Accent rating scores

After pooling the rating scores by the ten listeners, the mean accent scores for each speaker were calculated for Task 1 (accent-only rating task) and Task 2 (TF identification task with accent rating). In order to investigate how native speakers of English perceived the accented speech spoken by Japanese, Mandarin, and Tamil speakers, depending on whether or not they focused on the content, the mean scores were submitted to a mixed-design ANOVA with three L1 groups (Japanese, Mandarin, Tamil) as the between group factor and two rating types (accent rating only, TF identification with accent rating) as the within-group factor. There was a significant main effect for the rating types, $F(1, 6) = 27.194$, $p < .01$, $\eta_p^2 = .819$. This showed that the difference in the mean scores of the two tasks was statistically significant and that the effect size was quite large. In particular, the native English listeners rated the nonnative speech as significantly more accented in Task 1 than in Task 2 (The mean scores of the two accent rating tasks are summarized in Figure 1). The main effect for the L1 groups, however, was not significant, $F(2, 6) = 2.096$, $p = .204$, nor was the interaction between the types of rating task and the L1 groups, $F(2, 6) = .671$, $p = .546$. This was an interesting finding because regardless of the speakers' English use of a foreign language (for Japanese and Mandarin) and a second language (for Tamil), the listeners perceived the accents similarly across the speakers' groups.

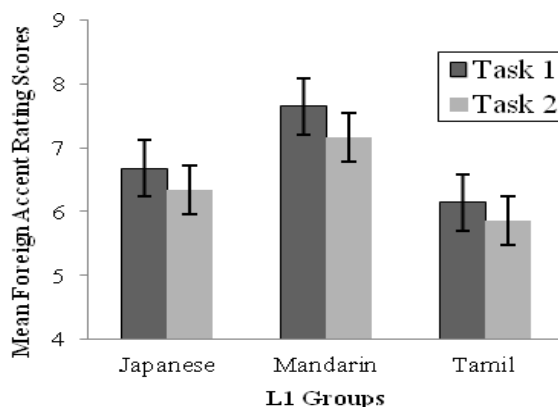
Thus, when the native English listeners judged the three L1 groups' utterances, focusing on the content, they rated them as less foreign-accented across the three groups than when they focused solely on their nonnative accent.

5. DISCUSSION

This study examined how native English speakers in Canada assessed the degree of accent in English sentences spoken by Japanese, Mandarin, and Tamil speakers under the two different conditions: when attention was paid to the nonnative accent only, and when both the content and accent were considered. This finding showed that the listeners' attention to the content did affect their accent ratings, and that when the native English listeners rated the three different L1 groups' accented speech while focusing on the content, they rated it as a less degree of accent than when they focused solely on the accent. Kennedy et al. suggested that nonnative

sentences which were more difficult to rate, due to lack of real-word contexts, tended to be rated as more accented [7]. Thus, not only semantic factor, but also listeners' attention to the content may affect the perceived degree of foreign accent.

Figure 1: Mean foreign accent scores of English sentences produced by speakers of Japanese, Mandarin, and Tamil languages on Task 1 (accent-only rating) and Task 2 (TF identification with accent rating). The error bars enclose +/- one standard error.



In addition, there was no significant difference in the three L1 groups' rating scores regardless of the speakers' English use as EFL (for Japanese and Mandarin speakers) and ESL (for Tamil speakers). In previous studies, the age of learning has been found to be an important factor in determining the degree of accent, such that "younger is better" [e.g., 5, 10]. The Tamil speakers had started to study English much earlier than the Japanese and Mandarin speakers; however, they were primarily exposed to Tamil-accented English, according to their language background questionnaire, and therefore their English input was different from early L2 learners described above. Flege et al. [4] argued that the different phonetic input for the early Spanish-English bilinguals in Puerto Rico and those in the continental US may have resulted in the formation of different English phonetic categories. In the present study, the Tamil speakers may have formed English phonetic categories that were influenced by that of Tamil-accented input they received.

Furthermore, the Tamil speakers may have been similar to late L2 learners in terms of the age of arrival in an English-speaking country because they had lived in India until they entered a university in Canada, and had spent only three months there when this study was conducted. Therefore, the difference in the length of English study and the amount of English use may not have

affected the listeners' perception of their accents in this study.

The findings of this study have raised a question regarding previous accent rating studies in which listeners did not focus on the meaning but only on the speaker's pronunciation. The present study may more authentically reflect the degree of listeners' perceived accent in a natural conversational setting, compared to the previous ones. Although further studies are required to gain a complete understanding of how listeners perceive foreign accent, this study may lead to further investigations considering the effect of content on the perceived degree of foreign accent.

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