How well is English with mora-timed rhythm understood by a multilingual community?

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Abstract

This study investigates the intelligibility of English with mora-timed rhythm or Japanese Katakana Hatsuon Eigo among NNSs living in a multilingual community, utilizing shadowing to measure the concept of intelligibility. Eighty-six participants (10 Malay NSs, 28 Mandarin NSs, and 30 Tamil NSs) were asked to shadow a recording of a 300-word English speech read aloud by a Japanese speaker, and to check their understanding by comparing the written transcript of the speech to their shadowed voices. The analysis revealed that the overall average of shadowing performance was 46.84% (the Mandarin NSs had a performance score of 33%, the Tamil NSs oriented of 49.54%, and the Malay NSs of 57.67%). Further statistical analysis indicates that the Tamil NSs and Malay NSs significantly outperformed the Mandarin NSs ($p<.01$, $p<.01$). These findings suggest that: 1) teachers and policy makers should be aware that even heavily Japanese-accented speech preserves intelligibility to some extent and that the listeners' mother tongue might affect such intelligibility, and 2) teachers and policy makers should find a way to promote both intelligibility and Japanese identity in students' pronunciation.

Keywords: spoken communication, EIL, intelligibility, accent, shadowing, pronunciation

Introduction

Issues in teaching pronunciation in Japan and the purpose of this study

The significance of spoken communication has drawn the interest of researchers for decades. Researchers such as Jenkins (2005), McKay (2002), and Derwing and Munro (2005) have pointed out the critical importance of spoken communication in their studies. However, very few empirical studies have been conducted on the norms of pronunciation that should be achieved by EFL learners to facilitate spoken communication among both native speakers (NSs), as well as non-native speakers (NNSs) in the global community. So, even though several researchers have pointed out that it is very rare for adult NNSs to achieve a native-like accent (Ioup, Boustagi, El Tigi, & Moselle, 1994; Moyer, 2004), the majority of EFL or ESL learners consider achieving a native-like accent to be one of the goals of learning the target language (Derwing, 2003).

As Jordan (2011) and Matsuda (2003) have highlighted, much research calls for a new framework of pronunciation in the global community; yet, the Japanese Ministry of Education, Culture, Sports, Science, and Technology (MEXT) still promotes an inner circle model in schools. As a result, the standardized tests administered in high schools or universities in Japan, such as The Test of English for International Communication (TOEIC), The Test of English as a Foreign Language (TOEFL), or even the Eiken Test in Practical English Proficiency are all based on the inner circle model. Some of the residents in Japan from a multilingual community such as Malaysia, whom we directly contacted, mentioned that giving such tests to students in Japan is not only burdening, but leads to other negative impacts, such as human segregation, since mimicking a NS model of English does not allow Japanese to portray their identity in their own spoken English.

Matsuda (2003) argues that even though Japanese acknowledge the status of English as an international language, a majority of the English textbooks used in Japan are from the inner circle models. Jordan (2011) further mentions that the lack of confidence among Japanese English teachers has demotivated them from using English as the medium of instruction in class. In the English language classroom in Japan, English with mora-timed rhythm or Japanese Katakana Hatsuon Eigo has not been encouraged because there is an intuitive belief among the Japanese that such an accent cannot be understood by the global community. However, very few empirical studies have been conducted to verify if Japanese Katakana Hatsuon Eigo is not understood by NSs or other NNSs. In view of this oversight, this study was conducted to investigate to what degree Katakana Hatsuon Eigo can be understood by English NNSs living in a multilingual community.

One of the few approaches to establishing a standard of pronunciation under the framework of EIL is Lingua Franca Core by Jenkins (2002). Based on observation of her classes, she proposed that several critical elements be learned by EFL learners to facilitate spoken communication among NNSs. However, some researchers argue that this model is only applicable to a minority (Jorden, 2011).

What kind of EIL standard for pronunciation should, then, be implemented? To answer this question, McKay (2002) suggests that the standard should be one that preserves international intelligibility and respects the desire of some bilingual users of English to preserve their own identity as expressed in their pronunciation (McKay, 2002). Furthermore, Jordon (2011) suggests that a Japanese English pronunciation model, which is easily achievable by Japanese, as well as highly intelligible in the global community, should be created to teach English pronunciation to Japanese learners.

What is intelligibility?

According to McKay (2002), the word intelligibility comprises intelligibility (identifying an expression), comprehensibility (understanding the meaning of an expression), and interpretability (knowing what an expression implies in its sociocultural context). On the other hand, several researchers (Derwing & Munro, 1997; Jordan, 2011; Munro & Derwing, 1995; Smith, 1992) draw distinctions between these three concepts, with the word "intelligibility" referring to the first of these three markers, i.e., identifying an expression, which represents "a vital building block for further understanding" (Jordan, 2011, p. 83). Transcription studies by Derwing and Munro (1997) and Munro and Derwing

(1995) to investigate the intelligibility of foreign-accented speech confirmed that some of it was entirely intelligible for NS listeners. Furthermore, another transcription study by Suenobu, Kanzaki and Yamane (1992) reported that the intelligibility scores increased from 42% to 67% when words were presented in context, as opposed to being presented in isolation. Referring to these findings, Derwing and Munro (2005) concluded that listeners' prior knowledge, such as lexical or syntactic knowledge, has a positive impact on intelligibility.

The influence of listener tasks

A transcription task is a task in which listeners listen to a speech and write what they hear. Obviously, since listeners cannot listen and write simultaneously, the speech will be paused while they are writing down what they have heard. This type of task is called an off-line task, since listeners can control the speed of the speech so that they can take time to process the input (Kadota, 2007). This therefore gives listeners time to refer to their prior knowledge in order to fill in the gap between what they hear and what the speech actually contains. However, in reality, listening requires instant processing of incoming input, since auditory input will disappear as soon as it is heard. Therefore, listening itself is called an "online task," which differs from a transcription task. Thus, "intelligibility is extremely important but somewhat difficult to assess" (Derwing & Munro, 2009, p. 479). The differences in processing types are shown in Table 1.

Table 1
Differences in processing types

Type	Definitions	Tasks
Offline	possible to control time to process input (Ex. Reading)	Transcription
Online	impossible to control time to process input (Ex. Listening)	Shadowing

An alternative way to measure intelligibility online is shadowing. Shadowing is a task in which one repeats what one hears vocally as soon as it has been heard. Shadowing has been used in the field of psycholinguistics to measure speech perception. For example, Newman and Evers (2007) used the shadowing technique to examine the influence of speaker familiarity on speech perception. They asked participants to shadow speeches and record their voices. Then, the researchers listened to the recording and counted the number of words successfully shadowed by matching the voice to the written transcript of the speech. Nakayama and Suzuki (2012) applied this method to EFL listening training to improve speech perception. In this study, shadowing is used as a task to measure intelligibility of speech.

The language-specificity of speakers: Katakana Hatsuon Eigo

The speaker's native language has been said to affect the spoken production of a second language (Selinker, 1972). For example, Katakana Hatsuon Eigo, or

Japanese-accented English, is English pronounced on the basis of Japanese phonetic rhythm structure, a mora-timed rhythm. Japanese is a mora-timed language, in which each mora takes equal time to pronounce, and all words end in vowels, with the exception of n (Otake, Hatano, Cutler, & Mehler, 1993). English is a stress-timed-rhythm language, in which stressed syllables occur at about the same intervals; the time taken to produce an utterance scales with the number of stressed syllables it contains (Classe, 1939; Pike, 1946; Abercrombie, 1967). For example, the verb "take" is pronounced "teɪk" by the American standard, while it tends to be pronounced "teikɯ" by Japanese. Katakana Hatsuon Eigo is English pronounced with a mora-timed rhythm.

The language-specificity of listening

The past two decades of psycholinguistic research have shown evidence that listeners process spoken input in the same ways that they process their native languages (Cutler, 1997; Cutler, Mehler, Norris, & Segui, 1983; Cutler, Mehler, Norris, & Segui, 1986; Cutler & Otake, 1994; Otake et al., 1993;). As in the case of spoken output, L2 learners tend to apply the same strategy they use for native languages to segment the non-native language in listening. For example, French listeners when presented with spoken Japanese did not show mora-based segmentation (Otake et al., 1993), nor did English listeners (Cutler & Otake, 1994).

The participants' native languages in the current study are Malay, Tamil, and Mandarin. Tamil is a syllable-timed language (Corder, 1973; Asher, 1985). However, Malay and Mandarin are unclassified (Grabe & Low, 2002). Japanese used to be classified as a syllable-timed language until recently (e.g., Catford, 1977). This implies that there is a similarity between Japanese mora-timed and other syllable-timed languages. If so, the participants who are Tamil language users might have an advantage over Mandarin or Malay speakers in segmentation of Katakana Hatsuon Eigo.

Objective of this study

This study aims to investigate whether differences in linguistic background yield differences in the performance of shadowing Katakana Hatsuon Eigo.

Method

This study was conducted in Malaysia between 4th and 6th February, 2014. There were 68 students (30 Mandarin NSs , 10 Malay NSs, and 20 Tamil NSs). Each participant was paid 800 yen (about 25 RM) for participating in this study.

An article titled "Learning from Nature" from a junior high school English textbook (Takahashi et al., 2012), approved by MEXT was chosen as the listening material. Six Japanese university students were asked to read it aloud and their voices were recorded into an IC recorder. Then, one native English teaching expert and one Japanese English teaching expert were asked to choose the most heavily Japanese-accented English speech (most mora-based rhythm speech) out of the six recordings, and both of them chose the same recording of a male student. In this way, the recording was chosen as the listening material for the shadowing task.

Participants were asked to shadow the speech and to check their understanding by comparing the written transcript of the speech to their shadowed voices.

First, participants were seated at a distance from each other that allowed them not to be disturbed by other participants' voices. Then, each participant was given two IC recorders (one for recording, and the other one for listening to the recorded speech). The first author of this paper explained how to use those two IC recorders and had each student record their names and student ID numbers to make sure the device was working properly. He then asked each participant to shadow the voice recorded on the IC recorder and record their shadowed voices into the other IC recorder. After they finished shadowing, he gave each student a written transcript of the speech. He also asked the students to write their names and the number of the IC recorders, as labeled, at the top of the paper. He then had each participant listen to the recorded voice and check it against the written transcript, asking them to underline with pencils the words that were not properly shadowed or the words that were different from their understanding. The authors of this paper collected the two IC recorders and written transcripts, and distributed two different documents, asking the participants to fill out the information necessary to claim participation fees.

Results

The authors recounted the number of shadowed words of each participant and input the data into a Microsoft Excel spreadsheet. Table 2 shows the descriptive analysis. This revealed that the Mandarin group had a performance of 33%, the Tamil group of 49.54%, and the Malay group of 57.67%. Overall, the average score of shadowing performance was 46.84. Since there was a gap in the performance among the three groups, a one-way analysis of variance (ANOVA) was conducted to see if these differences in performance among the groups were significant. The main effect was significant (F [2, 68]) = 10.84, $p<.01$). A post-hoc analysis using paired-sample t-tests with Bonferroni adjustments revealed statistically significant differences among two of three combinations of groups. The Tamil group outperformed the Mandarin group ($p<.01$), and the Malay oriented group also outperformed the Mandarin group ($p<.01$). However, there were no significant differences between the Malay and Tamil group ($p>.05$).

Table 2
Descriptive analysis

Linguistic Groups	*n*	*M(%)*	*SD*
Mandarin	30	33.32	15.96
Tamil	28	49.54	17.87
Malay	10	57.67	16.31
Total	68	46.84	16.71

Discussion

This study aims to investigate how well English with mora-timed rhythm is understood by a multilingual community in the framework of English as an International Language. Informed by past research findings, this study used shadowing tasks to replace the transcription tasks that had previously been used in research. The findings of this study match the findings of the transcription study involving English NSs conducted by Suenobu et al. (1992). This implies three possibilities. The first is that shadowing could be used as an alternative task for investigating intelligibility. The second is that English with mora-timed rhythm might be understood by NNSs to the same extent as by NSs. The third is that, as the Malay and Tamil listeners' performances were better than the Chinese listeners, listeners' L1 might influence the intelligibility of speech. This has raised another important finding of this study. First, although this study suggests that heavily Japanese-accented English speech may be understood by NNSs to the same extent as NSs, intelligibility is still below 50%. More research is therefore needed on how Japanese English speech could be made more intelligible for not only NSs but also NNSs. This could be a pathway for improving Japanese EFL methodology for pronunciation, as well as providing opportunities for Japanese to be more confident in their English pronunciation and reconsider what their goals for learning English should be.

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