

Identification of English words embedded in sentences by Japanese professional interpreters with different language experiences

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Abstract

The present study aims to examine perceptual differences in the identification of English words between Japanese professional interpreters educated in English in childhood in a foreign country (returnee interpreters) and Japanese professional interpreters educated in Japanese in childhood in Japan (non-returnee interpreters). We conducted an identification test of English words in sentences with returnee interpreters and non-returnee interpreters. In the test, the participants were asked to listen to recordings including English words and to identify the words. The results showed that the returnee interpreters identified the English words significantly better than the non-returnee interpreters. Also, we found some commonalities in phonetic perception (listening skills) between the returnee and non-returnee interpreters.

1. Introduction

The purpose of the present research is to examine perceptual differences in the identification of English consonants and vowels between Japanese returnee professional interpreters and Japanese non-returnee professional interpreters. According to one of the most prestigious Japanese dictionaries, *Koojien* (Shinmura 1998), the definition of a returnee (*kikoku-shijo*, in Japanese) is “a child who spent a few years

outside Japan due to his or her parents' job and returned to Japan". One with such experiences is widely believed to be bilingual in Japan. In this paper, we focus on interpreters who are returnees (hereafter, referred to as returnee interpreters) and interpreters who are not returnees (hereafter referred to as non-returnee interpreters). The definition of a returnee interpreter in the present paper is a Japanese professional interpreter who was educated in English in a foreign country when s/he was a child. A number of students and even teachers in Japan believe that only a returnee can become an interpreter or that a returnee is more qualified to become an interpreter, though there are almost no statistics to indicate the exact number of returnee interpreters. Their belief is attributed to the anecdotal assumption that returnees have "good ears" (good listening skills). In order to examine perceptual differences in the identification of English consonants and vowels between returnee and non-returnee interpreters, we conducted an identification experiment (listening test). In this experiment, the participants (the interpreters) were asked to listen to recordings including English words and to identify the words that they had heard. The words used for the experiment included minimal pairs of the following contrasts: /l/-/r/ (e.g. lane/rain), /s/-/θ/ (sink/think), /b/-/v/ (boat/vote), /dz/-/z/ (cards/cars), /ar/-/r/ (farm/firm), /o/-/ou/ (ball/bowl) and /i/-/I/ (sheep/ship).¹

The present research was motivated by some claims made by the participants in the study undertaken by Takahashi (2010), on student interpreters' performances and by the results of a study on the phonetic perception of English words by students and professional interpreters (see Takahashi and Ooigawa 2009). The aims of the present research are to examine the identification of English words in sentences by Japanese returnee and non-returnee professional interpreters and to identify differences in phonetic perception (i.e. listening skills) between the two groups. The ultimate goal of our studies is to establish the relationship between phonetic perception and interpreting performance. This study can hopefully contribute not only to interpreters' education and training but also to research into bilingualism.

2. Previous studies and research questions for the present research

In Takahashi (2010), nine student interpreters were asked to interpret English materials into Japanese, and their interpretations were analyzed to identify the common problems in their interpretations. This study found that problematic omissions were one of these. In this case, omissions do not mean simple summarization. Due to partial omissions,

1 In order to avoid some technical problems (i.e. garbling, or symbol coding troubles), we use these phonemic transcriptions instead of IPA fonts.

the meaning of the original material (source text) was distorted. In Takahashi (2010), after the participants had completed an interpreting task, they were asked the reason why the problematic omissions had occurred. Eight out of nine students answered that they had difficulties in identifying English words phonetically. Some said that it was easy for them to understand the meaning of the words when they saw the words, but they could not identify the words or sentences easily by listening. We wondered whether their claims were true. However, no empirical studies answered our question on the relationship between listening skills and interpreting performance (or comprehension). Therefore, we conducted our own research (Takahashi and Ooigawa 2009). Seven student interpreters and five professional interpreters were asked to identify English consonants (/l/-/r/ & /s/-/θ/) included in isolated single words by listening. However, the results showed that there was no significant difference between the two groups. Rather, the results suggested that there was a distinctive difference in phonetic perception (listening skills) between returnees and non-returnees. This suggestion led us to focus on the possible difference in phonetic perception between returnees and non-returnees. Our research then turned to professional interpreters: that is, professional returnee interpreters and professional non-returnee interpreters.

The research questions of the present paper are as follows: 1) Are there any significant differences in the phonetic perception (listening skills) of English consonants and vowels between Japanese returnee and non-returnee professional interpreters? 2) If any, what differences are there in their phonetic perception?

3. Experiment

3.1. The purpose of the experiment

The purposes of the experiment was to compare the results of the identification of English words embedded in sentences by returnee interpreters with those of non-returnee interpreters and to identify the differences between the two groups. The stimuli and procedures of the present experiment are the same as in Takahashi and Ooigawa (2010).

3.2 Stimuli

The stimuli were produced by native speakers of American English. In the research only American English was targeted because it is the most widely learned form of English in Japan.

3.2.1. Speakers

Two male and one female native speakers of American English participated in the recording. One of the male speakers was 20 years old and from the state of California (Speaker 1). The other was 21 years old and from the state of Washington (Speaker 2). The female speaker was 20 years old and from the state of Kentucky (Speaker 3). They asserted that they had no difficulties in speaking and hearing.

3.2.2. Words and sentences

We used paired words, each of which included a pair of the following contrasts: /l/-/r/ (e.g. lane/rain), /s/-/θ/ (e.g. sink/think), /b/-/v/ (e.g. boat/vote), /dz/-/z/ (e.g. cards/cars), /ar/-/r/ (e.g. farm/firm), /o/-/ou/ (e.g. ball/bowl), and /i/-/I/ (e.g. sheep/ship). Each of the paired words was embedded in the same passage or sentence. We used passages and single sentences that make sense with either word's selection. For example, in the case of 'ball/bowl', the sentence was "Would you pass me the ball/bowl?". As the aim of the research was to examine phonetic perception, it was decided to eliminate contextual information that might possibly help the listeners identify the target words through inferring. The paired words, the passages, and the sentences are shown below. All the materials were proofread by a native speaker (a university lecturer of English language in Japan) and a Japanese university professor of English teaching. The list of the materials (stimuli) is as follows:

Contrasts of the consonants

I. /l/-/r/

lane & rain

I like driving very much, but while I was driving, the *lane* got on my nerves that night.

I like driving very much, but while I was driving, the *rain* got on my nerves that night.

long & wrong

He was anxious to know the answer very much. But as the answer was *long*, he got mad.

He was anxious to know the answer very much. But as the answer was *wrong*, he got mad.

flight & fright

The last time I had a *flight*, I watched a movie on the plane.

The last time I had a *fright*, I watched a movie on the plane.

play & pray

Don't study too much on Sunday. You should *play* a little bit.

Don't study too much on Sunday. You should *pray* a little bit.

pleasant & present

My family came to visit. So they were *pleasant*.

My family came to visit. So they were *present*.

II. /s/-/θ/

sink & think

He seemed to be very depressed. He was *sinking* in the pool while swimming.

He seemed to be very depressed. He was *thinking* in the pool while swimming.

pass & path

The *pass* over the mountain was open again after the snow.

The *path* over the mountain was open again after the snow.

III. /b/-/v/

boat & vote

All you need is one more *boat*; otherwise you wouldn't be able to win the race.

All you need is one more *vote*; otherwise you wouldn't be able to win the race.

IV. /dz/-/z/

cards & cars

When he passed by the store, he saw a lot of *cards* inside the store.

When he passed by the store, he saw a lot of *cars* inside the store.

Contrasts of the vowels

V. /ar/-/ɪr/

farm & firm

I would like you to come and see what I am doing, so please visit our *farm*.

I would like you to come and see what I am doing, so please visit our *firm*.

VI. /o/-/ou/

ball & bowl

Would you pass me the *ball*?

Would you pass me the *bowl*?

hall & hole

When I entered the garden, I was very surprised, because I saw a huge *hall* in the garden.

When I entered the garden, I was very surprised, because I saw a huge *hole* in the garden.

VII. /i/-/I/

sheep & ship

The *sheep* I saw while traveling along the coast in Northern France was white.

The *ship* I saw while traveling along the coast in Northern France was white.

3.2.3. Recording

The native speakers of American English mentioned in 3.2.1 produced these stimuli in the soundproof room belonging to the Phonetics Laboratory of Sophia University. The speakers were asked to read out the materials in a random order at least five times. The utterances were recorded onto a digital recorder (Sony Linear PCM Recorder PCM-D50) through a microphone (Sony ECM-MS957) and digitized at 48 kHz with 16 bits. Two tokens per type (the passages or sentences) were selected from the recorded materials.

3.3. Listeners (participants)

The listeners were five Japanese returnee professional interpreters (39-46 years old) and six Japanese non-returnee professional interpreters (42-49 years old). They were English-Japanese interpreters and their length of interpreting service was 5-11 years. All the listeners asserted that they had no difficulties in speaking and hearing. Each returnee interpreter had spent 1.5-6 years outside Japan before they reached 12 years old, mostly due to his/her father's overseas job assignment and was educated in English either at local schools or international schools.

3.4. Procedures

The perception experiment was conducted in the same soundproof room where the stimuli had been recorded. We used a computer software program Praat Ver.5.1.17 (Boersma and Weenink 2009) as an interface. The listeners individually participated in the experiment. First, they sat at the lap top personal computer wearing headphones. They saw two buttons on the screen that indicated the paired words (e.g. lane/rain) included in the forthcoming recording. 0.5 seconds later they listened to the short spoken passage or the single sentence on the headphones which were connected to the computer. The listeners were asked to click the button indicating the word that they thought had been included in either a single sentence or passage. Also they were asked to click either a "Difficult" button or an

“Easy” button below the words on the display. When the listeners were unable to make an instant decision, they had to click the “Difficult” button.² Conversely, when they were able to make a choice without a moment of hesitation, they had to click the “Easy” button. The listeners repeated the same procedure in each trial. They were allowed to make a correction to their responses before clicking the “OK” button to proceed to the next trial. Once they clicked “OK”, they were not allowed to return to the previous trial. When one play was not convincing enough to make a choice, they were permitted to play the recording one more time by clicking the “Repeat” button for each trial. The experiment included 176 trials (26 words x 2 tokens x 3 speakers + 20 distracters).³ The listeners were asked to take a short break after finishing 44 trials. The stimuli were presented in a random order.

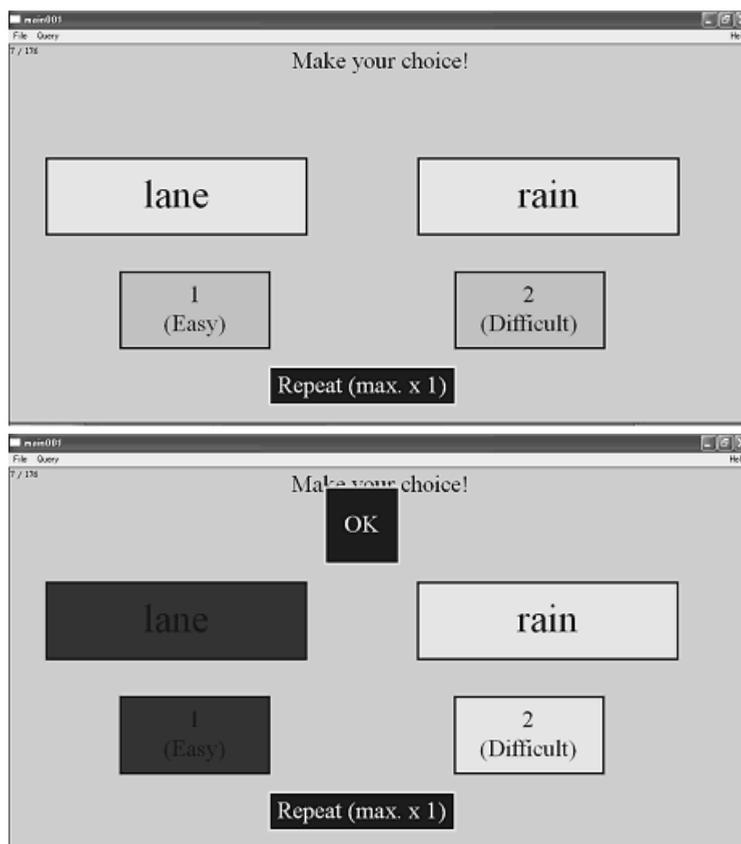


Figure 1. The displays used for the experiment in the case of lane/rain. After clicking “lane” and “Easy”, the “OK” button appears.

- 2 We do not report the results of the Easy/Difficult buttons as analysis of them is still underway.
- 3 These distracters were used for other preliminary studies.

Prior to the experiment, the listeners were provided with a warm-up session consisting of 12 trials with a break after six trials. The contrasts used for the warm-up session were not included in the materials used in the experiment. During the warm-up session, the volume was adjusted to a comfortable listening level for each listener.

Examples of the displays used for the experiment are shown in Figure 1. In order to ensure the validity of the test, we asked three native speakers of American English (20-21 years old) who had not participated in the recordings to try the same experiment individually before the study. They answered all the questions correctly.

4. Results

4.1. Overall results

Figure 2 shows the overall results of the non-returnee interpreters and returnee interpreters. The mean rate of accurate identification of the former is 72.4% and that of the latter is 89.0%. The Mann-Whitney U test showed that the difference is significant between the scores of the two groups ($U = 3.0, p < .05$).

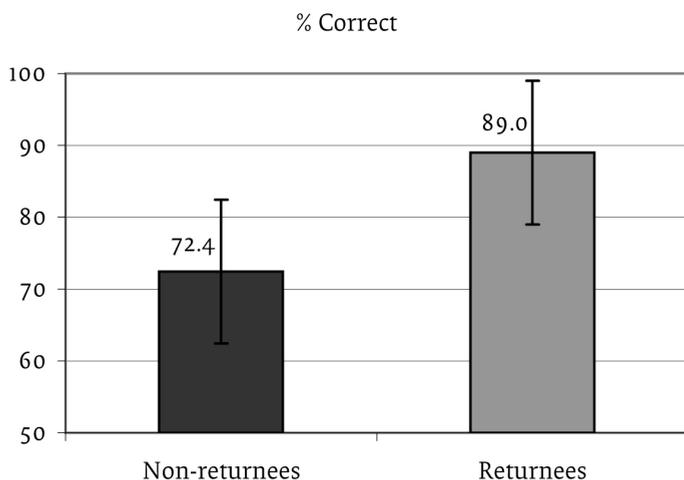


Figure 2. The overall mean rates of accurate identifications of the non-returnee interpreters and returnee interpreters. The error bars indicate the standard deviations.

4.2. Contrasts

Figure 3 displays the results of each contrast. All the correct rates of returnee interpreters (/l/-/ɾ/: 94%, /s/-/θ/: 87%, /b/-/v/: 98%, /dz/-/z/: 77%, /ɑr/-/ɾ/: 98%, /o/-/ou/: 75%, /i/-/I/: 92%) are higher than those of

non-returnee interpreters (/l/-/r/: 69%, /s/-/θ/: 78%, /b/-/v/: 81%, /dz/-/z/: 58%, /ar/-/r/: 86%, /o/-/ou/: 64%, /i/-/I/: 89%). However, there are contrasts that do not show significant difference. The Mann-Whitney *U* tests indicated that the difference is significant only in /l/-/r/ ($U = 2.0, p < .05$), /b/-/v/ ($U = 4.5, p < .05$) and /ar/-/r/ ($U = 4.5, p < .05$), but not in the other contrasts. Note that the number of stimuli, the segmental/suprasegmental context and the position of the target word in the sentence are different for each contrast. However, it is interesting that not all the contrasts show significant differences. The results may have revealed the weak contrasts of the returnee interpreters.

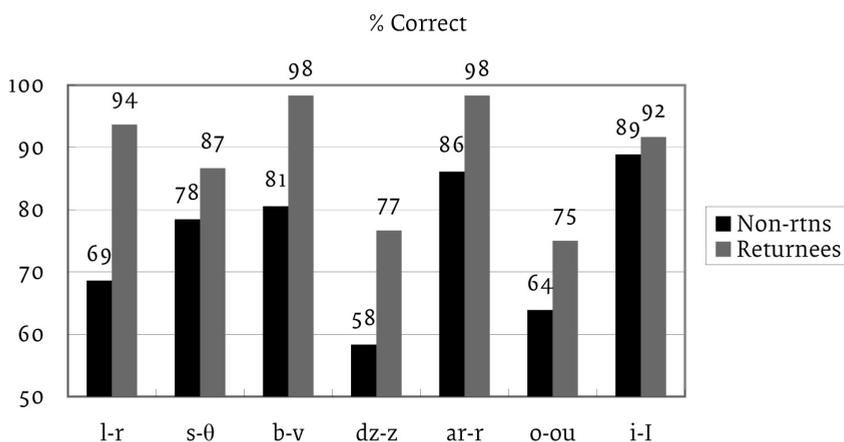


Figure 3. Comparisons among the contrasts. The black bars and grey bars indicate the mean rates of accurate identifications of the non-returnee interpreters and returnee interpreters respectively.

4.3. Speakers

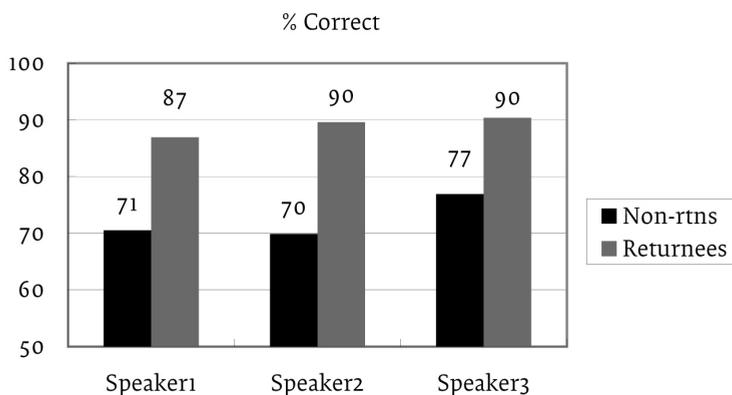


Figure 4. Comparisons among the respective correct identification rate of the stimuli produced by three native speakers.

As was noted in 3.2.1, the stimuli had been produced by three native speakers. Figure 4 shows the respective correct identification rates of the stimuli produced by three speakers of American English. All the correct rates of the returnee interpreters (Speaker 1: 87%, Speaker 2: 90%, Speaker 3: 90%) are higher than those of non-returnee interpreters (Speaker 1: 71%, Speaker 2: 70%, Speaker 3: 77%).

For the non-returnee interpreters, the graph shows that there are differences in the scores depending on the speakers. The differences are significant according to the results of the Friedman test ($\chi^2 = 6.5$, $df = 2$, $p < .05$). On the other hand, the scores of the returnee interpreters did not show such a phenomenon, and the Friedman test indicates that the difference is not significant ($\chi^2 = .0$, $df = 2$, $p = 1.0$). In other words, the difficulties in identification did not vary depending on the speakers.

5. Discussion

The results show that the returnee interpreters identified the English consonants and vowels better than the non-returnee interpreters, and that there were differences and commonalities in the identifications between the two groups.

As for the differences, the returnee interpreters identified the contrasts of /l/-/r/, /b/-/v/ and /ar/-/r/ better than the non-returnee interpreters. Among all these contrasts, the largest difference is found in /l/-/r/. According to Ladefoged (2005: 91), these sounds are frequently used consonants in American English. Therefore, these results might indicate that if returnee interpreters are usually able to identify frequent consonants almost correctly, they are able to converge more energy on other tasks in their performance than non-returnee interpreters. Another difference is found in the speakers' phonetic effect that was exerted on the listeners' perception. The non-returnee interpreters had a large gap in identifications depending on the speakers while the returnee interpreters did not have such a gap. The returnee interpreters seem to be advantaged to work as interpreters because interpreters in general have enormous opportunities of being exposed to diverse speakers due to the very nature of their profession.

As for the commonalities, the returnee interpreters did not identify the contrasts of /s/-/θ/, /dz/-/z/, /o/-/ou/ and /i/-/I/ significantly better than the non-returnee interpreters. The result suggests that there are some contrasts that even returnees are not good at identifying. The scores of /dz/-/z/ (77%) and /o/-/ou/ (75%) by the returnees, in particular, are low. These results might indicate some weak points of the returnees. As was noted in 3.4, three native speakers answered everything correctly in the same identification test.

The answer to the first research question "Are there any significant differences in phonetic perception (i.e. listening skills) of English

consonants and vowels between Japanese returnee and non-returnee professional interpreters?" is "Yes". The answers to the second research question "If any, what differences are there in their phonetic perception?" are "Returnee interpreters identify some English consonants and vowels better than non-returnee interpreters" and "Non-returnee interpreters have a large gap in identifications depending on the speakers while returnee interpreters do not".

6. Future Research

There are limitations to the present research. The number of the participants was small, and they came from diverse backgrounds. The country where they resided, the age when they stayed abroad, and the length of foreign residence, were different from participant to participant. Therefore, we need to increase the number of the participants and find ones with the same background. The prospective participants include returnee/non-returnee student interpreters, returnee/non-returnee university students without interpreter training, and novice interpreters.

The ultimate goal of our research is to establish the relationship between phonetic perception and interpreting performance by interpreters and student interpreters from different backgrounds. We would like to apply the results of our research to interpreters' education and training. Also it is our hope that our research will eventually contribute to English education for advanced level students.

7. Conclusion

We conducted an identification test in order to examine perceptual differences in the identification of English consonants and vowels between Japanese returnee professional interpreters and Japanese non-returnee professional interpreters. The results showed that the former identified some English consonants and vowels significantly better than the latter. To our knowledge, this was the first experiment of its kind.

The fact that returnee interpreters are good at identifying /l/ and /r/, which are frequent consonants in American English respectively (Ladefoged 2005: 91), is very interesting. Also, we found that the non-returnee interpreters had a large gap in identifications depending on the speakers while the returnee interpreters did not have such a gap. By looking at these results alone, it seems likely that returnee interpreters are more qualified to work as interpreters than non-returnee interpreters. However, we do not believe that the present study has reached this conclusion. The experiment has not established the relationship between identification and comprehension. Empirically, it is not known whether

those who are able to identify segments correctly are able to establish the meaning more accurately. Another point is the direction of the interpretation. In Japan, the English-Japanese interpreters have to interpret both from English (B language) to Japanese (A language), and from Japanese (A language) to English (B language). Therefore, listening to English is not always dominant in the interpreting assignments of English-Japanese interpreters. They have to listen to Japanese utterances as well. Empirically, it is not known whether returnee interpreters' perception of Japanese segments is better than non-returnee interpreters. Moreover, the experiment did not take contextual and situational information into account. Background information might be very important for the interpreting performance (Seleskovitch 2001: 23). It might be possible that non-returnee interpreters are able to use background information in more efficient ways than returnee interpreters, which enables non-returnee interpreters to compensate for their poorer perception.

Given the fact that this type of experiment has not been conducted before, the present research is significant. In particular it is expected to offer some insights for interpreters who are suffering from listening problems. Therefore, we would like to continue to conduct the experiments with different conditions from those in the present research.

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