A Study of the Pronunciation of English by Chinese Learners in Japan

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1. Introduction

English is now considered an international language; many countries use English as a primary educational language and students in those countries are required to go through years of formal English classes. China is one of those countries, which vigorously focuses on English education. The number of Chinese students learning overseas was estimated at 699,400 in 2012, which is the largest number in the world. More than 100,000 Chinese students studied in Japan in 2017. Even though Mandarin Chinese is the most spoken language in the world (including native speakers of Chinese, approximately 1.1 billion use the language), English is taught and used in the school system in China (Hu, 2008). China has become the second biggest economy in the world; however, international business still requires English as the most common communication tool. It is often said that economy has been influencing language education, not just cultural interest or political necessity.

This paper will discuss the English pronunciation of Chinese speakers and any common errors, when producing English sounds in their speech. The common errors will be generalized for the subject of this research.

2. The Chinese Language

Although many languages are used in China, Mandarin is the most widely used language. Mandarin and the other dialects of Chinese use a logographic system of writing. It is made up of thousands of phono-semantic characters. Chinese students learn about 2,500 characters in elementary schools, which are enough characters so that students can read a newspaper of average difficulty. If they intend to graduate from university, students will have to learn over 3,500 characters (Chen,1999).

There are two types of characters in ordinary usage today in China. The first one is simplified characters in China (jiǎnhuàzì). The second one is traditional characters in Hong Kong and Macau (fántǐzì). The meanings are the same between traditional and simplified characters. However, the simplified characters have different forms with fewer strokes. Each Chinese character when used for Chinese represents one syllable and is either a word by itself or a morpheme in a multi-character word (Tse, Marton, Ki, & Loh, 2007). The other dialects of Chinese use the same set of characters. However, they assign different sounds to each character since the words are pronounced completely differently in dialects like Cantonese, although the character and meaning are the same.

2.1 Writing system

The Chinese writing system is briefly explained in this section. There are also phonetic representations that are used to describe the pronunciation of characters. They are used for children who have not learned enough characters to read and write yet. Pinyin is the official representation which describes the Chinese pronunciation of characters using the alphabet and accents for tones. Cantonese also uses a pinyin system. However, pinyin in Cantonese is changed slightly to account for different sounds in that dialect. Each character is made up of pieces which are put together to make more complicated characters. The simplest characters originally came from pictographs or abstract representations of objects (e.g.山).

However, the pictographs have changed to a point where they don't look like the original object. More concrete images have extra strokes added to them in order to form more complicated or abstract concepts. People used the basic pieces and made more characters by combining basic pieces in different configurations (e. g.休). This was done in a systematic way which includes a semantic piece and a phonetic piece. This originally allowed the meaning and pronunciation of new characters to be guessed. However, the sound changes in Chinese, so this is not an effective strategy like it originally was (Chen, 1999). Since Mandarin is the most widely used language in China, I chose the phonology of Mandarin here. Then the phonology of Mandarin will be described briefly in the next section. However, Mandarin in Chinese has many dialects, so Standard Mandarin will be described in general.

2.2 Phonology

Standard Mandarin is based on the dialect which is spoken in Beijing, China. One of the most noticeable differences is that the Beijing dialect uses rhotacized forms of words in order to show a difference in meaning and shortens words (Chen, 1999). Mandarin is a monosyllabic language where each morpheme is made up of one syllable. It is represented as one character in writing. Each syllable has to have a nuclear vowel which may have an initial consonant or a final nasal consonant (Hayes, 2010). Each syllable has a relatively simple structure (C V) V (V/N) (Comrie, 2018). There is a diphthong or triphthong in the nucleus of the syllable. The syllable structure is simple; however, the underlying and surface sounds which make up these syllables are complicated. Since the pronunciation of Chinese speakers of English will be analyzed in this paper, the syllable structure of Mandarin should be compared to English.

Mandarin does not have consonant clusters in the syllables or non-nasal syllable final consonants. On the other hand, many words in English contain consonant clusters. Therefore, a native speaker of Mandarin might have to figure out how to deal with consonant clusters and syllable final consonant sounds. Standard Mandarin has many differences when it is compared to English consonants. The biggest difference is that pairs of consonants are distinguished with respect to aspiration rather than voicing. It might cause problems when Chinese people learn English. If an unaspirated [p] is used instead of a voiced [b], there is a possibility that it could sound like an aspirated [ph] or unreleased [p]. That might change the meaning of some words. This might be more noticeable in word final sounds where there is no vowel to mask the lack of voicing. Therefore, it is hypothesized that Mandarin speakers may devoice word final sounds if they don't insert another vowel after that sound. Another difficult set of sounds for Mandarin speakers is the interdental fricatives /θ/ and /ð/. For these sounds, the common replacements are alveolar /s/ and /z/. (Rau, Chang, & Tarone, 2009). Standard Mandarin has a simple set of underlying vowels, and a few more vowels on the surface. However, there are less than in English. The biggest problem Mandarin speakers might cope with is the distinction between tense and lax vowels /i/ and /I/. Therefore, it is hypothesized that Mandarin speakers replace /i/ with /I/.

One very important suprasegmental of Standard Mandarin is tone. There are four main tones in Mandarin with a fifth neutral tone that falls on unstressed syllables (Chen, 1999). These tones are the high tone, rising tone, falling and rising tone, and falling tone. The tones are phonemic. If the tones are changed, a word's meaning changes. Each syllable is assigned a tone rather than an overarching string of tones that covers phrases and sentences. Tone is completely different from English intonation. This might raise a problem for Mandarin speakers who are learning English. One hypothesis is that Mandarin speakers will assign tones to English syllables. They will break the string of intonation that a native speaker of English would have.

3. Hypotheses

These are the questions raised and hypotheses in the research after looking over the phonology of Standard Mandarin and comparing it to English.

● Mandarin tones might influence an intonation-based language, English.
● The lack of phonemic voiced sounds might affect native Mandarin speaker's pronunciation of English voiced sounds.
● They might replace the interdental fricatives /θ/ and /ð/ with alveolar /s/ and /z/.
● The monosyllabic nature of Chinese might affect native Mandarin speaker's speech rhythms in English.
● The difference in vowel phonemes might affect native Mandarin speaker's pronunciation of English vowels.

4. Methods

The participants in this research included three native Chinese speakers who were born and raised in China. The participants in the study were three Chinese learners of English in their 20s, three females who are currently studying at a university in Japan. Participant A majors in English at graduate school. Participants B and C are also graduate students whose majors are not English, but they learned English in China. All of them have had formal English classes in school since an early age; participant A started English lessons at the age of nine. None of the participants have ever been to English speaking countries for any amount of time. One native speaker of English who teaches at university also participated in order to compare the pronunciation.

An elicitation paragraph (Appendix A) which includes most of the phonemes existing in the English language was used. The elicitation paragraph was taken from the Speech Accent Archive. Each of the subjects was recorded while reading the elicitation paragraph aloud and then the recording was analyzed using the International Phonetic Alphabet. As a comparison, phonetic transcription retrieved from the Speech Accent Archive was also prepared using Standard English pronunciation. Further analysis of the speech sample was done with Wave Surfer (Appendix B).

5. Results

There are some common errors that fit the hypothesis after examining the transcriptions and comparing them to the hypothesis. Some major errors were seen in the participants' speech samples. The first common error is that voiced sounds, at the end of the word, were often devoiced (cheese [tʃíːz] was [tʃíːs]) in participants B and C. This occurred throughout the speech samples in participants B and C. Another common error is the deletion of final consonant sounds in participants B and C. All subjects had common errors in using the correct tense and lax versions of the vowels /i/ and /I/. There were some errors with the other vowels. One specific problem was seen in Participant B's speech sample. Participant B tended to add more schwas in between consonants of consonant clusters or at the end of words. Participant A had problems with the liquid /l/ or /ɹ/ sounds and she sometimes switched them ([p'ɹ æstɪk] for plastic). All of the speakers used the correct interdental fricatives /θ/ and /ð/ most of the time, which I did not anticipate.

Correcting pronunciation of segments is important when learners speak in any language. However, a suprasegmental, like intonation is also important and should be worked on. Each of the participants had a similar rhythm and intonation when they spoke English. The stress on the words was throughout all the words and most of the syllables were given equal amount of time. It might be common in syllable-timed languages, but English is a stress-timed language. That could give a distinct sound to these speakers which makes them distinct from a native speaker. It could even be considered an error if learners put lots of emphasis on suprasegmental. It seems as though the polysyllabic nature of English is broken down into monosyllabic sounds to make it easier to pronounce. That might cause learners' speech to be choppy rather than fluid.

In addition, all subjects had a similar pattern in their intonation which is slightly different than that of native speakers. Wave Surfer was used to analyze the tones in the speech samples. Participants B and C had a slight drop in tone at the end of words. Participant A had the most natural intonation. To ensure this was something common in Mandarin speakers' speech, a native speaker of English's speech was recorded as well.

6. Discussion and Conclusion

The hypothesis I mentioned previously has been partially supported in this research.

Voiced sounds seem to be difficult for Mandarin speakers learning English, so there needs to be more research into this and how to help them learn how to properly voice their consonants. The interdental fricative sounds ended up being a small issue in the overall speech of these individuals. It might have been given so much attention in school that it is a smaller issue than it might have been. In China, English education starts in the first grade of elementary school in the big cities such as Beijing and Shanghai; other areas start it in the third grade. The participants in this research started English lessons in the third grade.

The big issue that was seen in this research was the affect of Mandarin tones and monosyllabic nature in the overall pronunciation of the sample text. It is important to analyze the segments of the language; however, in order to obtain a better accent in a foreign language, the suprasegmental needs to be mastered as well. All participants started English lessons in the first grade, which is important to acquire the native-like accents in speaking. Although Participant A is majoring in English and currently studying it in Japan, none of them ever lived in English-speaking countries so they have yet to be immersed in a culture that uses English all the time. It is expected that participants' intonation will improve when they spend time in an English-speaking country, but there should still be some focus on intonation in the classroom and individually.

The significant differences in phonological acquirement were not observed in this research. The main reason was that only three participants' speech was collected. More research needs to be done on a large group of people from different areas to see if the similarity in intonation is in Mandarin speakers in general or just this group. If it is common for Mandarin speakers to have dropping tones in their speech rather than a more even tone, then there might need to be methods created to help Mandarin speakers of English students to obtain a more natural intonation and rhythm.

Considering there are English vowels and consonants which raised some issues with Chinese learners of English, visualized information like diagrams and several systematic pronunciation practices would be recommended. Avery & Ehrlich (1992) suggested some useful pronunciation exercise.

Appendix A

Elicitation sentences: Retrieved from *Speech Accent Archive*
Please call Stella.
Ask her to bring these things with her from the store:
Six spoons of fresh snow peas, five thick slabs of blue cheese, and maybe a snack for her brother Bob.
We also need a small plastic snake and a big toy frog for the kids.
She can scoop these things into three red bags, and we will go meet her Wednesday at the train station.
Did you write all that down?

The questions given to the subjects: Retrieved from *Speech Accent Archive*
1. Where were you born?
2. What is your native language?
3. What other languages besides English and your native language do you know?
4. How old are you?
5. How old were you when you first began to study English?
6. How did you learn English? (Academically or naturalistically)
7. How long have you lived in an English-speaking country? Which country?
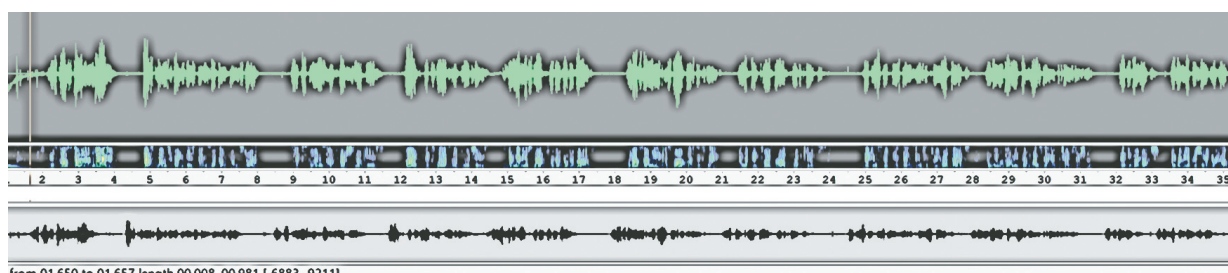
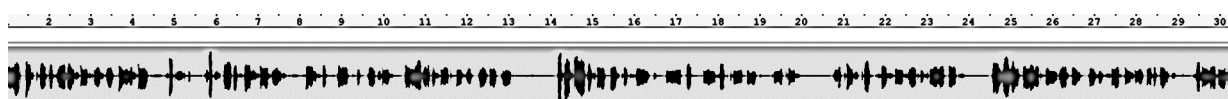## Appendix B

Figure 1.1　1 Native speaker of English

Figure 1.2　Participant A

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