Pronunciation Patterns of Japanese Learners and their Implications or Teaching

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Abstract

In order to better teach pronunciation to students, it is necessary to gain a better appreciation of the types of pronunciation patterns and issues that Japanese speakers encounter when attempting to speak in English. To highlight some of these issues, a sample dialogue between two Japanese learners was recorded and analyzed for segmental and suprasegmental features. The analysis revealed that pronunciation issues are mainly due to very different tongue placement as a result of interference from L1 and also due to the absence of certain sound production features in L1 that are required in L2. Carefully guided pronunciation practice may help to gradually shift learners' pronunciation away from L1 patterns and be more representative of standard L2 pronunciation and sound production.

Key terms: phonology, pronunciation, articulation, manner, case study,

Introduction

Many factors have been blamed for pronunciation difficulties which Japanese learners of English typically encounter. The large number of differences between Japanese and English pronunciation and sound patterns along with the relatively weak emphasis on speaking or production skills when learning English in high school English classes, as well as the adoption of katakana to simulate English sounds, are all important contributing factors for maintaining this problem. Due to the gradual shift in Japanese educational settings away from traditional grammar-translation "yakudoku" teaching methods towards a more communicative method, the issue of English pronunciation by Japanese learners may become more prominent as speaking takes on a more important role in classroom activities and goals. As Celce-Murcia (1996) argues, the issue of pronunciation should not be understood as a need to make learners sound like native speakers but rather to achieve a "threshold level" of speaking ability where their sound production in the L2 is intelligible to most listeners.

To help achieve this goal of attaining threshold level, however, it is first necessary to gain a more detailed understanding of exactly how Japanese learners' pronunciation differs in sound production from standardized pronunciation (such as General American). To this end, both segmental and suprasegmental aspects of pronunciation should be studied and compared phonemically in an attempt to discover how articulation and sound production are managed by the learner and how differences in sound production might be caused by L1 interference or misunderstandings about how certain sounds are created. Provided that the latter argument is indeed correct, a small-scale study of how learners attempt to produce English words and syllables would be a starting point for discovering what needs to be taught in order to help learners improve overall pronunciation.

In order to illustrate the types of problems that Japanese learners face in terms of pronunciation, the researcher recorded two Japanese male students performing a scripted English dialogue. Both students were first year Japanese university students in a pre-intermediate English class. They had studied English for 6 years in the Japanese public school

system before attending a small private university in western Japan with a relatively large number of international students, mostly from Asia. Neither of the students had traveled outside of Japan and they reported very little contact with native English speakers. One student was judged to be 'very proficient' by his current teacher while the other student was described as 'satisfactory' in terms of overall course work and English speaking ability.

Analysis of Learners' Dialogue Performance: Segmental Features

In English phonology, segmental features of English refer to "one underlying unit, one meaningful contrastive shape, in the phonology of English." (McCully, 2009, p.21) More specifically, this refers to the smallest level of meaningful sound that can be contrasted (by using a minimal pairs test, for example) with other sounds. The two smallest meaningful segments that can be contrasted in English are vowels and consonants. I will first examine and contrast the learners' vowel segments with General American pronunciation and afterwards I will do the same with the consonants.

Segmental Features: Vowels

A vowel is an unobstructed sound produced by unimpeded airflow that moves up from the larynx and out through the lips (Roach, 2009, p. 10). Two important features of English vowels are that they are voiced and they also have length.   Jones (1918) established eight reference points called "Cardinal Vowels", which are based on the distinct vowel sounds produced depending on the position of the tongue, the rounding of the lips and the "openness" of the jaw.

Due to interference from Japanese pronunciation of vowels (Basson, 1988, p. iii), the learners preferred the use of high back and rounded vowels over more central and lower to mid vowels. Their nearly consistent choice of high back vowels is due mainly to the relatively limited number of vowel sounds in Japanese compared to English (5 vowels with 10 sounds in Japanese compared to 5 vowels with 14-20 sounds in English). The Japanese vowel positions are high back, high front, mid-front, mid-back and low central (Tsujimura, 2007, p. 17). Many of the differences in the pronunciation of vowels in the recorded dialogue were due to the use of L1 tongue positions for producing vowels in the L2. This is most notable in the lack of central vowels. As a result, the learners tended to use /u:/ instead of /ʊ/ and /oʊ/ in place of /ə/ and /ɑ:/, which I will now discuss in more detail.

The learners consistently preferred to use /u:/ in place of /ʊ/ throughout the dialogue. For example, in Appendix B line 2, Learner A pronounces "good" and "would" as /gu:d/ and /wu:d/ in the second line of the dialogue. The /u:/ is a high close back and rounded cardinal vowel while the /ʊ/ is slightly more towards the front and slightly less rounded (usually termed a "near-close near-back vowel"), with a tongue and mouth articulation somewhere between a schwa and the long vowel /u:/. The Japanese learners are probably unable to pronounce the /ʊ/ sound due to the absence of a similar /ʊ/ sound in the Japanese language. The relative lack of high central vowel sounds in the Japanese language means that the learners are faced with one of two options when trying to pronounce this phoneme. They may move the tongue to the high back position and pronounce a /u:/ or they could drop the tongue and open the mouth slightly more and pronounce a schwa. Since the /ʊ/ sound is slightly closer in position to the /u:/ (and therefore approximates the /ʊ/ sound slightly better) the learner chooses the /u:/ sound.

The learners also show a marked preference for the use of high back position over low back or schwa position in their use of /oʊ/ sound throughout the dialogue. This preference is clearly seen, for example, in lines 3, 6, and 7 of the recorded dialogue (see Appendix B). In line 3 (Appendix B), Learner A offers Learner B some "coffee", pronounced /koʊfiː/, in contrast to the "o" vowel sound which would normally be pronounced in standard accents in a low back position as /kɑːfi/. The same is true of line 7 (Appendix B) when Learner B says he will put the kettle "on", which is pronounced as /oʊn/ rather than /ɑːn/. In line 6, Learner B pronounces "of" as /oʊv/, which is always pronounced with a schwa as /əv/ in standard accents. Again, these pronunciation choices are made due to the relatively small number of vowels in Japanese and the places of articulation in the mid to low central area (Tomita, Yamada, Takatsuka., 2010, p. 376). While English speakers pronounce the /ɑ:/ sound in the low back area of the mouth, Japanese speakers pronounce the same sound in the low central area, which Japanese speakers also commonly use to emulate the English schwa sound. This produces a dilemma of sorts for the Japanese speaker who, upon reading the letter "o", is unsure of whether to use a schwa or an /ɑ:/ sound, may decide to "play it safe" by choosing a consistent pronunciation of the letter "o" near the close-mid back-rounded position in an attempt to make the English sound of "o" discrete for both themselves and the listener (Tomita et al., 2010).

Segmental Features: Consonants

A consonant is defined in contrast to the articulation of a vowel, meaning that a consonant is a phoneme with an articulation that "involves some audible obstruction in the oral cavity" (Giegerich, 1992, p. 9). Meaningful contrasts among consonants are made through variations in voicing, manner, and place of articulation and are thus primarily classified through these variations (McCully, 2009, pp. 38-39). Minimal pair tests reveal that there are 24 consonant phonemes in English (McCully, 2009, p.46) while there are only 14-16 consonants in Japanese (Suski, 1931, p. 66). Although many of the consonants in Japanese are produced in the same manner as in English, there are key differences in terms of aspiration and tongue position that result in some significant points of contrast between standard American English versus Japanese pronunciation of English. The recorded dialogue highlights the results of these differences in the expression of plosives and in the expression of /l/ and /r/.

The students' use of plosives in the final word position differed significantly from that of native speakers, most notably in the case of /d/ and /t/ as well as /k/. For example, Learner B pronounced "bad" as "bæt" and missed the final "t" in "just" by pronouncing it "dʒəs". Learner B pronounces the final "d" in "good" as a "t", thus giving us "guːt". He also fails to pronounce the final /k/ sound in "like" when asking, "Would you like something to drink?" This problem likely stems from interference from the L1. Although Japanese shares similar plosive sounds as English /t/ and /d/, aspiration for these plosives is typically only weakly made in word- initial positions and unaspirated elsewhere (Vance, 2008, p. 75). Another significant factor is that consonants, /d/, /t/, and /k/ are never found in the final position in Japanese, which would instead be followed by a vowel. Without any vowel sound to follow these plosives, however, the students must work extremely hard to halt their speech and for this reason, they may be exaggerating aspiration or stifling it. This issue highlights one of the major differences between English and Japanese phonotactics.

Analysis also revealed that learners had some difficulty with pronouncing /l/ and /r/ sounds as in the case of "delay", which is pronounced "du:reɪ" and also in pronouncing the final "l" in "real" as /r/ as well as the final /l/ in "kettle". Note also the pronouncing of /l/ as /r/ in "pleasure" by Learner B. This issue stems from the lack of a separate /r/ and /l/ sound and the difference in place of articulation between Japanese and English /r/ sounds. Whereas the English /l/ is a alveolar lateral or approximant and the /r/ is a post-alveolar approximant, the Japanese produce a single liquid voiced consonant that combines the two sounds of /l/ and /r/ as it is produced by a very quick tap (also called a "flap") of the tongue tip on the alveolar ridge (Suski, 1931,, p. 70), which can clearly be heard in the /r/ of "drink" when Learner A says, "Would you like something to drink?". The very different places of articulation in the oral cavity for the /l/ and /r/ sounds create a great deal of difficulty for Japanese speakers both in producing and distinguishing between the sounds.

Analysis of Learners' Dialogue Performance: Suprasegmental Features

In terms of production, stress is defined as those sounds which require more articulatory effort than unstressed words. They are usually perceived as longer, louder, or higher in pitch than other sounds and these features are referred to as prominence (Roach, 2009, p.74). Word stress refers to the pattern of stressed and unstressed syllables within a word, while sentence stress refers to stressed and unstressed words within a sentence. English is regarded as having a stress accent, meaning that stress plays an important role in how meaning is both conveyed and understood. Japanese, on the other hand, is a pitch accent where meaning is usually transmitted through the use of high and low tones (Vance, 2008, p.7).

There are some interesting examples of pronunciation contrasts in the dialogue, especially in regards to words in the dialogue that are two or more syllables in length. For example, Learner B in Line 2 very clearly stresses the second syllable of "Manchester" whereas a General American accent would tend to place primary stress on the first syllable. In the last line of the dialogue, Learner B places equal stress on the first and last syllable of "happening" in contrast to a General American accent with primary stress placed on the first syllable or, at most, secondary stress on the last syllable. Learner A also places stress on both syllables of "kettle", where the first syllable only would be stressed in standard General American pronunciation. This issue is due to the difference in how stress is placed between Japanese and English and the lack of features such as secondary stress makes it difficult for Japanese learners to understand where and how to use stress in English words (Tsujimura, 2007,, p.70).

In terms of sentence stress, the dialogue provides several examples where words that would normally be stressed in standard pronunciation are left unstressed, which produces a very flat-sounding dialogue at times. This is most evident when Learner B remarks in Line 7 (Appendix B), "Oh, let me put the kettle on." Although the learner does place stress on an expression of surprise, "Oh", this line is spoken without any differentiating stress between content and non-content words. An analysis through an audio editor revealed no change in loudness or pitch after "Oh" is spoken. The reason for the lack of stress in this and other sentences performed in the dialogue is that, in Japanese sentences, stress can be placed on words grammatically through the use of particles, by putting words (such as "ga") at the start of an utterance (syntactics), and through intonation or pitch (Vance, 2008, p. 195).

Implications for Teaching Pronunciation to Japanese Learners

Analysis of the dialogue (Appendix B) revealed that Japanese students need help particularly in regards to place and manner of articulation as well as understanding how to effectively employ word and sentence stress. To help students make more and more accurate and distinctive production of the various back cardinal vowels (namely /ʊ/ versus /u:/ and /oʊ/ versus /ɑ:/) , it would be helpful to improve their awareness of the various ways to pronounce the letter "o" and "u" in English words. This may be taught through minimal pairs practice where the students are able to discover and notice the difference between words such as "good" and "food" or "coat" and "cot". Celce-Murcia (1996, pp. 115-129) recommends the use of carefully guided practice with minimal pairs, broadening out to gradually less controlled practice where students use communicative activities in the classroom to help them both produce and distinguish between the various sounds. Tomita et al.'s (2010) analysis of Japanese students of English reveals that much of the confusion surrounding back vowels and near back vowels is related to the learners' uncertainty of which tongue positions are occupied by the schwa. It might therefore be helpful to also contrast the schwa sound with other back vowels so as to create "distinct" spaces in the learner's understanding of the cardinal vowel area. This would help to make output choices less ambiguous for the learner and possibly reduce L1 interference.

In order to teach the /l/ and /r/ sound to Asian learners, Celcia-Murcia (1996, pp. 52-68) recommends making the tongue positions and sound differences very distinct for the learners. Charts and diagrams of tongue positions should be used to make the differences in tongue positions clear. Again, Celce-Murcia recommends tightly controlled practice at first and then loosening this control with an eventual focus on more communicative activities. She also stresses using communication activities based around first recognizing these sounds as distinct and then slowly learning to produce the sounds using different places of articulation.

Final plosive consonants can be taught by physically demonstrating the amount of air produced when ending words with plosive sounds like /p/, /t/, /d/, and /k/. Students should be taught that voiceless word-final plosives are preceded by a shorter vowel sounds than in the case of voiced final plosives. Minimal pairs activities featuring words such as "cat" and "cad" or "cap" and "cab" help learners to understand the difference in aspiration and whether a plosive should be voiced or voiceless. Odisho (2005, p.53) has reported some success in using a pattern of perception, recognition, and reduction for teaching plosives to English and Arabic learners based on intensive modeling and guided practice, which may also work for Japanese learners.

For teaching word and sentence stress, a multitude of approaches are available. Hanhn (2004, pp. 217-218) discusses how stress can be integrated into overall course material by showing how native speakers use stress to provide contrast or for agreeing or disagreeing. Showing examples of how different placements of stress can convey or confuse meaning might also help motivate students to examine this issue independently. Students might also be tasked with identifying stress in recordings of native speakers in order to contrast and analyze their own speech. Hahn (ibid) also recommends using longer discourse recordings than those normally given in textbooks, which will also help learners understand how to de-stress old information. My own method of stress analysis included the use of audio software such as Audacity, which helped immensely in "seeing" where students placed stress on their own words and syllables, which could also be used in a classroom setting to provide visual feedback to learners. Websites and software (see Wang, Higgins, Shima, 2005) that analyze and give feedback

of learners' speech output have recently been developed and show promise in addressing the issue of stress as well as other aspects of pronunciation.

Conclusion

Tongue placement as well as articulation differences account for the vast majority of segmental contrasts between Japanese speakersʾ and standard varieties of spoken English. In addition, a pitch-based L1 tends to interfere with the ability to recognize where and how to use stress in a sentence or in individual syllables. These issues could be addressed in the classroom by helping students to notice these differences and to use visual and auditory material in a communicative manner to help them overcome these issues.

(3,679 words)

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Appendix A: Transcriptions of General American English & Recorded Dialogue

General American English Phonemic Transcription – Based on Standard American Accent Recording

1. A: Did you have a good journey yesterday?

A: dɪdʒuː hæv ə gʊd dʒɝ ː niː jestərdeɪ?

2. B: Not too bad, just one short delay waiting in Manchester.

B: nɑ ː tuː bæd. dʒəst wʌn ʃʊərdəleɪ weɪtɪŋ ɪn mæntʃestər.

3. A: Good. Would you like something to drink? Tea, coffee …..?

A: gʊd wʊdʒuː laɪk sʌmθɪŋ tuː drɪnk? tiː, kɑːfiː…?

4. B: Tea would be lovely. Thank you.

B: tiː wʊbiː lʌvliː . θeɪnk juː.

5. A: It's great that we could meet today.

A: ɪts greɪt ðæt wiː kən miːtədeɪ.

6. B: It's a real pleasure and it's not out of my way at all.

B: ɪts ə riːəl pleʒər ənd ɪts nɑ ː t aʊt əv maɪ weɪ æt ɑːl.

7. A: Oh, let me put the kettle on.

A: oʊ, lemiː pʊt ðə kedəl ɑ ː n.

8. B: Yes, then we can catch up on what's been happening since last time.

B: jes, ðen wiː kən kætʃ əp ɑ ː n wʌts bɪn hæpɪnɪŋ sɪns læst taɪm.

Appendix B: Recorded Dialogue Phonemic Transcription

1. A: Did you have a good journey yesterday?

A: dɪd juː həb ə gʊd ʒɑːni jesedeɪ?

2. B: Not too bad, just one short delay waiting in Manchester.

B: natuː bæt en dʒəs wən ʃoʊt duːreɪ weɪtɪn iːn mɑːntʃester.

3. A: Good. Would you like something to drink? Tea, coffee …..?

A: gʊːt wuːd juː laɪ sʌmθɪn tuː drɪnk? tiː, koʊfiː?

4. B: Tea would be lovely. Thank you.

B: tiː wuː biː lʌvliː θeɪnk juː.

5. A: It's great that we could meet today.

A: its gɾeɪt zæt wiː cuːd miːtədeɪ.

6. B: It's a real pleasure and it's not out of my way at all.

B: ɪts ə riːər preɪʃɜːʳ ænd ɪts naːt æt oʊv maɪ weɪ æt ɑːl.

7. A: Oh, let me put the kettle on.

A: oʊ let miː pʊt ð keter oʊn.

8. B: Yes, then we can catch up on what's been happening since last time.

B: jes den wiː kæn ketʃ ə ketʃ əp oʊn wʌs biːn həpɑːniːng sɪns rəs taɪm.