

**Running Head: Problems and Solutions for JLEs**

**Phonetics for Life: Strategies to Improve  
Problems Specific to Japanese Listeners of English**

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### **Targeted and Holistic Strategies to Improve the Distinct Problems of Japanese Listeners of English**

The perceptual sound categories infants acquire influence their L2 listening comprehension later in life (Werker et al., 2008, p. 148), and sensitivity to phonetic differences in other languages weakens (Best & McRoberts, 2003, as cited in Werker et al., 2008, p. 148). As a result, Japanese listeners of English (JLEs) struggle to identify English sounds, letter clusters, and word boundaries; fortunately, these and other listening problems can be improved through targeted and holistic approaches.

#### **Problems for Japanese Listeners of English**

##### ***Identifying Particular Sounds***

JLEs' L1 and L2 phonology interact in a complicated way. For example, in accordance with Best et. al's (1988) Perceptual Assimilation Model that demonstrates the tendency for "mature listeners... to perceptually assimilate non-native phones to the native phonemes they perceive as most similar" (as cited in Best & McRoberts, 2003, p. 186), Japanese listeners have difficulty distinguishing between /r/ and /l/, "probably because these phonemes are perceptually assimilated to one phonemic category of the Japanese language" (Ueda et al., 2007, p. 251). Voiceless fricatives, such as "/f/, /s/, /sh/, /[theta]/, and /h/" as well are assimilated (Lambacher et al., 2001, p. 335), with /[theta]/ identified correctly in Lambacher et al.'s study only 55% of the time (p. 336). Common confusions, regarding vowels, include [æ], [ɑ], [open mid back-rounded vowel], [open mid back-unrounded vowel], and [open mid back-central] (Lambacher et al., 2005, as cited in Nishi & Kewley-Port, 2007, p. 1497), probably because only five vowel sounds exist in Japanese. Moreover, both vowel and consonant environments affect listeners'

perception, so that identifying /θ/ when spoken with /e/, as in *theft*, is most prone to assimilation, “/sh/ and /s/ [are] most confusable when spoken with the /i/ vowel, and /f/ and /h/ [are] most confusable when spoken with the /u/ vowel” (Lambacher et al., 2001, p. 336). As a result of these “numerous small misperceptions... [there is a] a cumulative effect [which can] slow down learners’ ability to do top-down processing” (Field, 2003, pp. 341-342).

### ***Identifying Consonant Clusters***

Another problem for JLEs is being able to distinguish consonant clusters. Most *kana*, as “syllabograms” (Iwata, 2007, p. 253), follow a consonant-vowel pattern, i.e. 40 out of 46, and “are restricted to C(y)V, V, and C(y)VN” (Dupoux et al., 2001, p. 493), so Japanese non-listeners of English have little experience in “intra-word component... computational analysis” (Akamatsu, 1998, p. 20). When presented with English letter clusters, they may commit “vowel epenthesis”; that is, they hear “an illusory vowel between adjacent consonants in order to conform to [L1 patterns]” (Dupoux et al., 2001, p. 493). As an example of consonant epenthesis, English L1 listeners may hear a /p/ sound within the word, *hamster*. Dupoux et al. (1999, as cited in Dupoux et al., 2001) demonstrated that “Japanese listeners perceive an /u/ vowel between consonants forming illegal clusters in Japanese (e.g., between /b/ and /z/)” (p. 493). This epenthesis also relates to Best’s (1994) Perceptual Assimilation Model, (as cited in Dupoux et al., 2001, p. 503), except, instead of assimilating individual phonemes, “whole syllables... are used as prototypes” (Dupoux et al., 2001, p. 503). As a result, without consonant cluster identification training, when JLEs hear *hot dog* and *McDonalds*, they may recognize them, instead, as *hotto doggu* and *Makudonarudo*.

### ***Distinguishing Word Boundaries***

Another struggle for JLEs involves lexical segmentation, or “the identification of words in connected speech” (Field, 2003, p. 327) - a seemingly “continuous signal in which physical cues are rarely present (Rost, 2002, p. 21). As “speech input immediately activates potential word candidates concurrently” (Moss et al., 1997, as cited in Broersma & Cutler, 2008, p. 24), and these candidates “compete with one another for recognition” (McQueen et al., 1994, as cited in Broersma & Cutler, 2008, p. 24), L2 listeners must be flexible enough to redistribute “word boundaries once disambiguating information becomes available” (Field, 2008, p. 38). Even though JLEs may successfully segment broadcasts and other read texts, “recognition performance drastically decreases for spontaneous speech” (Nakamura et al., 2008, p. 171), since it has less “spectral distribution as a result of continuously spoken vowels or syllables in-between words (Nakamura et al., 2008, p. 171). Moreover, an insufficient vocabulary will inhibit listeners from relying on “co-text to support uncertain word recognition” (Field, 2008, p. 38). In summary, without the ability redistribute misinterpretations, adapt to less spectral space, or rely on co-text, L2 listeners will mistakenly distinguish word boundaries and apply misinformation to new information.

### **Helping JLEs Improve**

Fortunately, many suggestions exist regarding how to help JLEs improve, including how to distinguish English sounds and word boundaries. As many remedies address multiple listening problems, holistic strategies are presented as well.

### ***Identifying Particular Sounds***

JLEs must develop their sensory knowledge in order to distinguish the “physical similarity” of L1 and L2 sounds (Lambacher et al., 2001, p. 334). To do this, Ueda et al. (2007) suggest that listeners, during practice, stop depending on top-down approaches to recognize words (p. 251). Although comprehension suffers, the “blocking effect on developing phoneme identification” (Ueda et al., 2007, p. 252) gets reduced. This idea coincides with the belief that “learners’ ultimate aim is to rely less on contextual guesswork, and more on hearing what is actually said” (Wilson, 2003, p. 336). With this in mind, /r/ and /l/ word pairs may be most effectively taught in isolation. Similarly, Nishi and Kewley-Port (2007) found that by exposing students to minimal pairs that contain vowels absent from listeners’ “phonemic inventory” (p. 1507), such as the American English monophthongs, as in /ɪ/sit, and /e/, as in *bed*, JLEs can improve their listening perception. They suggest that “an effective vowel training protocol should present a large set of vowels” (p. 1508), as opposed to a set that contains only problematic vowels. Through activities that require intensive listening, i.e. listening for “precise sounds” (Rost, M., 2002, p. 138), JLEs may improve their comprehension of nonnative Japanese sounds.

### ***Lexical Segmentation Strategies***

There are several ways to help JLEs notice word boundaries, including teaching how to revise original interpretations, notice stressed syllables, and contend with low spectral distribution, modifications, and fillers. Since listeners are “notoriously reluctant to revise” (Field, 2003, p. 325) their “initial segmentation preferences” (Field, 2008, p. 37), instructors should help students realize that “perceptual evidence might match more

than one segmentation candidate” (Field, 2008, p. 49). By providing “simple transaction tasks” that cause “retroactive processing” (p. 49), e.g. “T dictates: a nice cream . . . dress. S writes ‘an ice cream’ and has to revise it” (p. 49), students may become more comfortable revising their original interpretations. Another method for determining word boundaries, and even sentence boundaries (Furui et al., 2005, p. 213), as Cutler et al. (1990) suggest, is to use a “‘*strong-syllable strategy*’ based on the premise that each stressed syllable marks the beginning of a new word” (as cited in Field, 2003, p. 328). There is some merit to this approach as Cutler and Carter (1987) calculated that “85.6% of all content words in running speech are either monosyllabic or stressed on the first syllable” (as cited in Field, 2003, p. 328). In fact, “infants acquiring English appear to use rhythm in the same serendipitous way to crack the code of connected speech” (Jusczyk, 1997, as cited in Field, 2003, p. 329). An “awareness-raising exercise [using Cutler et al.’s strategy] might involve playing recordings on low volume, and asking learners to transcribe the more salient syllables” (Field, 2003, p. 329). Another way to improve lexical segmentation is to understand how words can be modified. “Reduction, assimilation, elision, resyllabification, and cliticization” (Field, 2003, p. 329) are all natural occurrences of connected speech. Students can be told, for example, that *and* is often reduced to *an* (p. 330), *ten cars* becomes assimilated to *teng cars* (Gimson, 1994, pp. 257-60, as cited in Field, 2003, p. 331), *didn’t* gets elided to *dint*, and *next Spring* to *nekspring* (p. 331), *went in* gets resyllabified, because of the effects of rhythm, to *when tin*, and *go to bed* gets cliticized to *gotuh bed* (p. 332). Students should also be taught that the “spectral distribution of spontaneous speech is significantly reduced compared to that of read speech (Furui et al., 2005, p. 218), since “the articulatory organs cannot move as

much” (Furui et al., 2005, p. 217). To overcome lower spectral space, students can practice listening to speech with different types of fillers, including “filled pauses, repairs, hesitations, repetitions, partial words [and] disfluencies” (Nakamura et al., 2008, p. 172). Finally, JLEs should practice active listening, i.e. focusing selectively (Rost, 2002, p. 158), as well as self-access listening, i.e. listening to spontaneous speech in “*a massive amount*” (Rost, 2002, p. 168, his emphasis), such as with spontaneous speech featuring websites and videos, e.g. Tse and McQuillan’s (2009) [www.eslpod.com](http://www.eslpod.com). In summary, by revising original interpretations, attending to stressed syllables, noticing modifications and fillers, and making use of multimedia, JLEs will be better able to notice where one word ends and another begins.

### ***Overall Listening Strategies***

There are several ways to improve overall listening, such as by improving reading, practicing ‘discovery listening’, repeatedly listening to authentic texts, and becoming accustomed to other forms of English. These strategies can also address difficult to target problems, such as comprehending consonant clusters.

JLEs can improve listening by improving bottom-up reading skills. Hirai (1999) suggests that, similar to the reading process, “listeners construct meaning from messages and relate it to existing knowledge” (p. 368). The processes of input, decoding, and accessing lexemes and lemmas in order to arrive at concepts, in fact, are all similar - cf. de Bot, Paribakht, and Wesche’s (1997) Lexical Comprehension/ Production Model for Oral and Written Modalities (p. 315). Moreover, after students cross a certain threshold, the listening rate can be predicted by measuring the reading rate, and vice versa (Hirai, 1999, p. 379). Hirai, therefore, concludes that the improvement of one ability (e.g.

reading) will automatically increase the ability of the other (e.g. listening) (p. 379). Beginning L2 readers should, therefore, work to overcome certain problems, such as “fixating on incomprehensible pieces of text” (Bernhardt, 1991, as cited in Hirai, 1999, p. 368), since “word recognition speed is extremely important for fluent listening” (Hirai, 1999, p. 379). Likewise, JLEs can apply their growing knowledge of “non-verb-specific” sentence structures during “online [listening] comprehension” (Thothathiri & Snedeker, 2008, p. 65). As the skills for listening and reading are evidently similar, improving reading skills can benefit listeners.

Another way to develop bottom-up listening skills is through Wilson’s (2003) ‘discovery listening’. Similar to ‘dictogloss’, students listen to a text and take notes, reconstruct the text in groups, and then listen again to notice any differences. This method allows listeners to understand what their shortcomings are, what the possible causes might be, what they prioritize (p. 337), how words and grammar points sound in context, and where top-down or bottom-up approaches might be most effective (p. 340). This activity also fits with Cervantes and Gainer’s (1992) recommendation of listening repeatedly to authentic texts instead of those that have been simplified for ESL learners (p. 769).

Lastly, JLEs should interact with other non-native speakers, so that they can become accustomed to hearing the “phonological characteristics” (p. 187) of other forms of English, both native and non-native. This skill is beneficial even when living in predominantly English-speaking areas, such as North America (Major et al., 2002, p. 174). An emphasis on non-native English forms will help students raise their “perceived comprehensibility” to the level of their “actual intelligibility” (Munro & Derwing, 1995,

as cited in Major et al., 2002, p. 177), so that they can comfortably understand people around them.

### **Conclusion**

As mentioned above, “phonotactic constraints modulate the brain response at a very early processing stage” (Dupoux et al., 2001, p. 502), and as a result, JLEs struggle with specific listening problems, such as identifying English sounds, consonant clusters, and word boundaries. Listening activities that focus only on meaning “will not necessarily solve... listening comprehension” (Wilson, 2003, p. 336), so direct and overall listening activities are necessary. Without these activities, the only alternative may be to increase infants’ sensitivity to L2 phonological categories, so they can “guide, rather than... trail, the establishment of a lexicon” (Werker et al., 2008, p. 160).

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