

The Effects of Sentential Context on Compensation for English Assimilated Speech by L2 Listeners

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Speech is inherently variable, and phonological processes such as assimilation, deletion, and substitution render many relevant distinctions obscure in connected speech. Perceptual ambiguity caused by phonological processes must be compensated for by the perceptual system. Previous studies have shown that surface variations in speech were perceptually tolerated when modifications occurred in phonologically viable contexts, and that the phonological compensation is moderated by language experience with native assimilation rules [1, 2, 4, 5, 6]. Previous research on L2 acquisition of phonological assimilation has presented the significant effect of L2 proficiency level in perception [2, 3].

The aims of this study were to examine the effect of sentential context on compensation for English place assimilation and to compare compensation patterns between native English listeners and native Korean listeners with a high proficiency level in English. To these ends, we conducted two experiments (i.e. discrimination and identification tasks) for English and Korean listeners. In the discrimination experiment, two types of stimuli (i.e. compound words and sentences) were presented involving English coronal place assimilation. In the discrimination task involving compound words, a target token was embedded in one of three phonological contexts (i.e. no change, unviable change, and viable change), and in the task involving sentences a target token was presented in the viable change context. In compound words, the participants listened to 90 test items and 20 filler items, and were asked to indicate whether a priming target token and the first syllable of a compound word were the same or different (e.g. beat, bea[t] sound/ bea[t^h p] note/ bea[t^h p] box). In sentences, the participants listened to 60 test items and 20 filler items, and were asked to discriminate between a priming target token and the first syllable of a compound word presented in a sentence (e.g. bea[t], The bea[t^h p] box battle finished). In the identification experiment, the participants listened to 80 test items and 40 fillers, and were requested to identify target tokens in sentences. A target token including a coronal or non-coronal consonant in coda was embedded in a sentence that provided the semantically neutral context for the two types of target tokens (e.g. Jane found the ca[t]/ca[p] by the front door).

The results of the discrimination experiment showed a strong effect of the sentential context and listener group. When comparing the three contexts in compound words, the two listener groups demonstrated the highest mean detection rates in the no change context and the lowest rates in the unviable change context. When the detection rates in the viable change context in words were compared with those in sentences, both listener groups demonstrated higher detection rates for sentences than for words. Thus, the two listener groups showed a similar compensation pattern for English coronal place assimilation. However, statistical differences in the factor of listener group were also revealed. The Korean listeners' higher detection rates in the unviable context in words than the English listeners' detection rates indicated that Korean listeners had difficulty perceiving phonetic differences between the original form and the assimilated form of coronal codas in the context in which assimilation was not conditioned. In addition, the boxplots displayed more variations in detection rates for Korean listeners than for English listeners. The results of the identification experiment showed a significant effect of coda type of target tokens (i.e. coronal vs. non-coronal coda consonants). Both listener groups revealed a strong sensitivity to phonetic differences between the assimilated form of coronal consonants and original bilabial or velar consonants in coda. In addition, the results of the identification experiment did not find any effect of listener group. The general results from the two experiments indicated that the Korean listeners with a high level of proficiency in English showed similar perceptual compensation patterns to native English listeners' patterns. A strong effect of sentential context was found in terms of

compensation for assimilation for both L1 and L2 listeners.

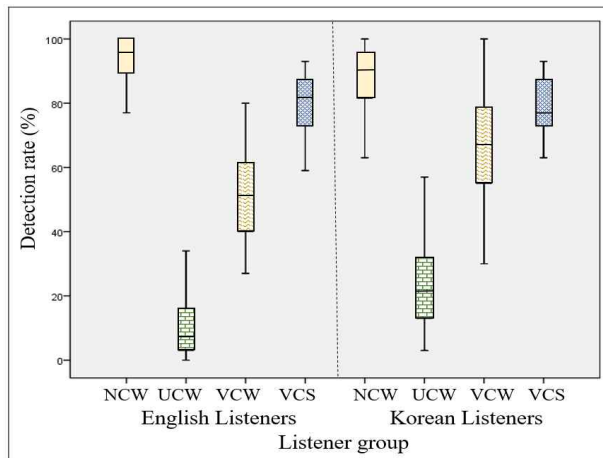


Fig. 1 Mean detection rates in three contexts of words and one

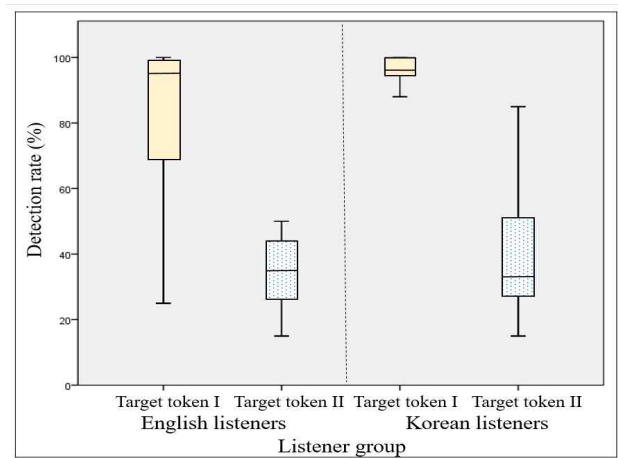


Fig. 2 Mean response rates in the identification task by two listener groups

Note. NCW=no change_word, UCW=unviable change_word, VCW=viable change_word, VCS=viable change_sentence

Table 1 Statistical results in the discrimination task

Factor type	Post-hoc comparisons		
Phonological context (UCW vs. VCW vs. VCS) $p < .0001$	English listener	UCW vs. VCW	$p < .0001$
		VCW vs. VCS	$p < .0001$
Listener group (English vs. Korean) $p < .05$	Korean listener	UCW vs. VCW	$p < .0001$
		VCW vs. VCS	$p < .05$

Note. NCW=no change_word, UCW=unviable change_word, VCW=viable change_word, VCS=viable change_sentence

Table 2 Statistical results in the identification task

Factor type
The effect of coda type of target tokens (coronal vs. non-coronal) $p < .0001$
The effect of listener group (English vs. Korean) $p > .05$

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