The current study examines the relationship between phonology and orthography, and their interaction in terms of a well-documented auditory–visual habituation phenomenon: Korean listeners’ perception of English voicing contrasts. This phenomenon is known to be represented in both phonology and orthography. However, contrasts in coda position underwrite vowel identity in the phonology. This neutralization is not reflected in the orthography. The current study investigates perceptual responses by Korean listeners to repetitive speech where repeated English coda-consonant pairs were used. These stimuli were produced by American speakers at different rates and recorded by American amusements. Two groups of listeners were asked to identify voicing of stops with two different orthographic displays: 1) English and 2) Korean. Results show 1) Syllable final stops, due to the phonological neutralization rule, were not well distinguished, and there was a bias towards /p/ over /b/. 2) The Korean code neutralization seems to neutralize people’s perception of the voicing contrasts and its orthographic representations as well. In addition, a strategy of one-to-one orthographic correspondence between English and Korean may be the listeners’ bias for /b/-perception of coda contrasts. 

P05. Effects of Coda Neutralization and Orthography on Perception of Voicing Contrasts in English: A case study of Korean learners of English

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Abstract

The current study examines the relationship between phonology and orthography, and their interaction in terms of a well-documented auditory–visual habituation phenomenon: Korean listeners’ perception of English voicing contrasts. This phenomenon is known to be represented in both phonology and orthography. However, contrasts in coda position underwrite vowel identity in the phonology. This neutralization is not reflected in the orthography. The current study investigates perceptual responses by Korean listeners to repetitive speech where repeated English coda-consonant pairs were used. These stimuli were produced by American speakers at different rates and recorded by American amusements. Two groups of listeners were asked to identify voicing of stops with two different orthographic displays: 1) English and 2) Korean. Results show 1) Syllable final stops, due to the phonological neutralization rule, were not well distinguished, and there was a bias towards /p/ over /b/. 2) The Korean code neutralization seems to neutralize people’s perception of the voicing contrasts and its orthographic representations as well. In addition, a strategy of one-to-one orthographic correspondence between English and Korean may be the listeners’ bias for /b/-perception of coda contrasts.

Purpose of Study

To examine effects of Korean code neutralization on perception of English voicing contrasts using repetitive speech tasks.

Introduction

1) Korean code neutralization: an underling long vowel distinction merge into homorganic stop in code.
2) Transparent mapping between characters and sounds
3) Characters encoded into syllabic units
4) Non-native vs. native

Hypothesis

H1: “/p/-like” due to coda neutralization
H2: “/b/-like” due to /p/ perception.

Experiment

1) Perception of voicing in “pee’
2) Perception of voicing in “bee’

Results

1) Perception of voicing in “pee’
2) Perception of voicing in “bee’

Discussion

1) Speech rates and perceptual patterns
2) Effects of prosodic structure on perception of voicing
3) Relationship between phonology and orthography in Hangul

References


Acknowledgements

This work was supported by NSF & NIH grants. We would like to thank Kyoko Okamura and Sean McLennan for valuable comments.

Summary

1) All listeners’ general perceptual tendency: /p/ in ‘pee’ tends to be perceived as /p/ as speech rate increases.
2) Koreans with Korean display show more /b/-like responses than English listeners.
3) Relatively consistent perception of voicing in ‘eee’ unlike ‘pee’. English listeners use different perceptual cues to voicing contrasts depending on position, syllable-initially by the presence or absence of aspiration, syllable-medially by the presence or absence of prevoicing. Therefore, Korean listeners may not use the perceptual cues to distinguish between English voicing contrasts.
4) Koreans with Korean display show more /b/-like responses than English listeners.

Phonetic category of voicing contrasts on VOT continuum of Korean vs. English Gronau, 1991

Result

Korean
English
VOT
Mean (ms)
Median (ms)
Stdev (ms)
VOT
Mean (ms)
Median (ms)
Stdev (ms)
/p/
85.0
72.8
44.3
8.9
76.9
70.0
19.1
/b/
-85.0
-72.8
44.3
-8.9
-76.9
-70.0
-19.1

Procedure

1) Onset identification tests