Thesis Abstract

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Title of Thesis:

Phonological Representations of the Japanese Language:

Levels of Processing and Orthographic Influences

   Phonological representations of the Japanese language were explored in terms of the orthographic influences at the different levels of attention, one at the level of phonological awareness in which listener's attention was paid to speech sounds at maximum and the other at the preattentive level functioning for unattended speech being analyzed only passively. Phonological representations of sublexical units including phonemes, which had been little studied, were explored in the population of Japanese adults who have already acquired both Japanese and alphabetic writing systems. The study employed cognitive psycholinguistic experimental approach.

   The first research work examined the nature of the units of phonological awareness. In three experiments, participants were asked to perform a reversal task. The results show that morae are the most prominent units in spontaneous reversal. On the other hand, the participants were perfectly able to manipulate phonemes under request. Yet, detailed analysis of their introspective reports reveals that, most subjects used an interchange of written kana characters instead. The use of such a strategy implies the ability to analyze a kana consisting of a consonant and a vowel into their internal CV constituents. Thus, whereas the nature of the first acquired writing system seems to exert a strong, pervasive influence on the native speaker's metaphonological procedures, such language-specific procedures amount to the ability to perform metalinguistic operations at the phonemic level.

   The second research work explored the functional units of speech segmentation in Japanese using dichotic presentation and a detection task requiring no intentional sublexical analysis. Indeed, illusory perception of a target word might result from preattentive migration of phonemes, morae or syllables from one ear to the other. First, Japanese listeners detected targets presented in hiragana and/or kanji. Phoneme migrations did occur, suggesting that orthography-independent sublexical constituents play some role in segmentation. However, syllable and especially mora migrations were more numerous. This pattern of results was not observed in French speakers, suggesting that it reflects native segmentation in Japanese. Further, to control for the intervention of kanji, Japanese listeners were presented with target loanwords that can be written only in katakana. Again, phoneme migrations occurred, while the first mora and syllable led to similar rates of illusory percepts. Overall, these findings suggest that multiple units, such as morae, syllables, and even phonemes, function independently of orthographic knowledge in Japanese preattentive speech segmentation.

   The role of the above basic research works is to contribute to facilitating the acquisition of

alphabetic spelling in foreign language learning and teaching for Japanese as well as its application to the computer aided instruction. Another contribution is expected for remediation and support for the dyslexics and persons with reading disabilities.

Keywords:

phonological awareness, preattentive processing, speech segmentation, phoneme, mora, syllable, orthographic influences, Japanese