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Sequential Probability as a Segmentation Cue for Cantonese

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Introduction

Listeners appear to use sequential probability in the segmentation of Cantonese continuous speech. Because there are some sounds appear more frequently at the beginning or ending of Cantonese syllables than the others, and these kinds of probabilistic information within syllables may cue the locations of possible syllable boundaries in continuous speech signal. Three syllable-spotting experiments were conducted to examine the role of sequential probability in recognition of Cantonese syllables in the continuous speech.

Experiment

In the syllable-spotting experiment, listeners were presented with a nonsense syllables strings [si:l~~l~~Qj4] which involved a high SP onset consonant or [si:lkwQj4] which involved a low SP consonant onset; and then listeners were instructed to spot any real Cantonese syllables [si:l], literally means lion, embedded on the basis of the acoustic alternations and the phonological information provided by the sound strings by pressing a response key and then named aloud the spotted target syllable.

Results and Discussion

Response latencies for each target syllables shown that listeners are actually sensitive to the sequential probability on a syllable's onset during online speech segmentation. But these effect was absent on the syllable's final portion (neither the whole rime or only the final consonant). These results implied that the likelihood of a syllable's onset seems to be more important than the likelihood of a syllable's offset, that is in line with other psycholinguistics studies whose also emphasizing the importance of a syllable's onset in the fast recognition of words in continuous speech (Connine, Blasko & Titone, 1993; Grosjean, 1980; Li & Yip, 1998; Yip, in press). In addition, the absence of probabilistic effects on syllable-final may be due to the fuzzy phonotactic structure of Cantonese syllables (Yip, 2000).

Finally, together with other related research findings from other languages (Gaygen, 1999; van der Lugt, 1999), it is argued that sequential probability is an useful source of information in the segmentation of spoken language.

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