

## Abstract

Chinese speech production was investigated based on Levelt's stage model of speech production. In the first part of the study, three experiments using the differential frequency paradigm were conducted to study the role of morphemes and syllables in Chinese speech production. Experiment 1 showed a morpheme frequency effect (MFE) and a syllable frequency effect (SFE) in a picture-naming task. There are three different processes involved in picture naming: object identification, conceptualization and lexical access. Experiments 2 and 3 were designed in attempt to exclude the possible contributions from object identification and conceptualization using a picture word matching task and picture categorization task. No MFE and SFE were found in these two experiments, hence the MFE and SFE obtained in experiment 1 were contributed by the processes of lexical access. It was asserted that morpheme and syllable were the processing units in the lexical access stages of Chinese speech production. This finding was consistent with the two stages of lexical access in Levelt's model. In the second part of the study, two experiments using picture-word interference tasks were conducted to investigate the time-course of semantic, phonological and orthographic activation of speech production. Five stimulus onset asynchronies (SOAs), from -200ms (word first) to 200ms, in steps of 100ms were used. Semantic interference was found at SOA of -200ms (word first) to 0ms,

phonological facilitation was found at SOA of 0ms to +200ms, and orthographic facilitation was found at SOA of -100ms to +200ms. The results were explained by the stages of lexical selection and word-form encoding of Levelt's model. In addition, it was proposed that orthographic information was activated during the word-form encoding stage in speaking a Chinese word.