A visual half-field study for meaning process of Korean ambiguous eojeol

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Introduction

So far, there has been controversy that the roles of the left and right hemispheres in word semantic processing may differ through visual half-field studies of normal people and brain functions of brain damage patients (Burgess, & Simpson, 1988; Beeman, & Chiarello, 1998). In addition, previous studies have assumed that the sub-semantics of a word with a semantic meaning in each hemisphere are activated and that the process of selecting the specific meaning of the word is different (Beeman et al., 1994; Jung-Beeman, 2005). For example, in interpreting a sentence containing a word with a semantic meaning, the left hemisphere selected a contextually appropriate meaning without considering the frequency of the various semantics of the word (Faust, & Gernsbacher, 1996), on the contrary, the right hemisphere has difficulties in choosing contextually appropriate meanings (Coney, & Evans, 2000). Although the functions of the hemispheres have not been consistently shown yet, it can be seen that the function of the hemispheres on the semantic processing of the words with the ambiguous meaning remains a very important issue.

The purpose of this study is to investigate the functions of both hemispheres in semantic processing of a eojeol, which is the basic unit of Korean sentences. In the case of Korean sentences, in particular, it is important to interpret contextually appropriate meaning of a ambiguous eojeol.

Methods

Participants

A total of 33 participants participated in this study. The average age of the participants was 26.5 years (range: 21-37 years), 22 males and 11 females.

Experiment task

Eojeol decision task: The eojeol decision task used in this study is a lexical decision task that uses a word instead of a lexical decision task. In addition, participants performed visual segmentation task with a distance of 4 cm based on the center of the screen and a stimulus was presented on the left and right side, and the distance between the monitor and the nose was maintained at 80 cm. The scheme for this experimental procedure is shown in Fig. 1.

Results

The effect of the ambiguous advantage effect appears to be present when the ambiguous eojeol is presented in the left visual field (right hemisphere), which translates into activation of the subordinate meanings of the ambiguous eojeol in the right hemisphere. The frequency effect of the lower meanings of the subordinate meanings of the ambiguous eojeol in the right hemisphere was found when the ambiguous eojeol were presented in the left hemisphere (right hemisphere). The graphs are shown in Fig 2.

Discussion

The results of this study support that the left and right hemispheres have different functions in the process of selecting the words with the meanings and the meanings of the activation of the sub-semantics of the word with the semantic meaning (Beeman et al., 1994; Jung-Beeman, 2005; Burgess and Simpson, 1988; Tompkins et al., 2000).

References


