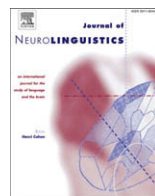




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The pragmatic meanings conveyed by function words in Chinese sentences: An ERP study

Baolin Liu^{a,*}, Zhixing Jin^a, Wenjun Li^b, Yanli Li^b, Zhongning Wang^a

^aDepartment of Computer Science and Technology, Tsinghua University, Beijing 100084, P.R. China

^bDepartment of Biomedical Engineering, Tsinghua University, Beijing 100084, P.R. China

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ABSTRACT

In the study, we aimed to investigate the cognitive processing of the Chinese sentences utilizing the function words “CAI” or “JIU” through ERP methods, and to provide further evidence to the theory of function word in Chinese linguistics. In the experiment, we constructed four types of materials (Type 1–Type 4): simple sentences, complex sentences without numerals, complex sentences with numerals and sentences with fixed expressions. There were corresponding correct and incorrect sentences in each type. It was observed that the incorrect sentences of the first two types elicited significant N400 and P600 effects, and the complex syntactic structures in the second type made their amplitudes larger. This result suggests that “CAI” and “JIU” can constrain sentence meanings within certain boundaries, and the contrast between the preset context and actual context can be further distinguished when the preset context is described explicitly. The unexpected “CAI” or “JIU” in the sentences in Type 3 elicited a larger P3b as compared with the expected ones. This indicates that the relationship between the preset and actual contexts in quantity is constrained and such a constraint is further converted to the direct quantitative comparison between the numerals. Moreover, the widely distributed and sustaining CPS (closure positive shift) evoked by the violations of fixed expressions denotes that the fixed prosodic boundaries are broken. These results suggest that in certain conditions, the function words “CAI” and “JIU” can also convey pragmatic meanings beyond their syntactic functions. It further confirms the theory of function word in Chinese linguistics.

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* Corresponding author. Tel.: +86 10 62781789; fax: +86 10 62771138.

E-mail address: liubaolin@tsinghua.edu.cn (B. Liu).

1. Introduction

Function words generally refer to words that have obtained a syntactic function and a structural status but that have no individual meaning. However, in certain situations, the function words can also convey specific pragmatic meanings, which are the meanings generated by the interactions between the language symbols and the contexts, and are different from the literal meanings (Lu, 2005). As such, many function words can also express the subjective attitudes or emotions if there are preset contexts (a preset context means the context or condition designed or expected for the implementation of the predicate, and an actual context means the context in which the predicate will take effect on). This feature is unique to the Chinese language. Additionally, Chinese is an analytic language, where there are few changes in the morphological structure of the words. Unlike synthetic languages, where the semantic meaning or syntactic structure of words is changed by the deformation of content words (through bound morphemes like affixes), in Chinese, it is often completed by the use of function words. Therefore, function words in Chinese play a more important role in syntax when compared with other languages (Zhang, 2000). However, previous studies on function words were mainly focused on their syntactic roles, and studies on their contextual meanings and pragmatic meanings were scant. Although from a syntactic logic perspective, there are some studies which validate that function words can convey certain concepts (Chen, 1996; Li, 2005; Sun, 1987), the evidence at the pragmatic level is still lacking. In the Chinese language, the words “CAI” (才) and “JIU” (就) are function words (Zhu, 2007). Therefore, in this paper, we focused on them, and sought to investigate the role, especially the pragmatic role, of function words in the Chinese language, and to further provide evidence at the electrophysiological level to the theory of function word in Chinese linguistics.

The contextual meaning of function words was first proposed after the birth of Pragmatics (Li, 2005). In certain contexts, Chinese function words may depart from their syntactic functions, and convey some pragmatic meanings which cannot be totally expressed by content words. Another feature of Chinese function words is that their specific pragmatic functions in certain contexts do not usually correspond to the appropriate words in other languages, unless descriptions of the backgrounds are added. For example, one of the pragmatic meanings of the word “CAI” is to indicate that the actual condition or quantity is stricter or larger than the preset (normal), which is opposite to what “JIU” means. These are additional reasons for the study of sentences containing “CAI” or “JIU”.

In linguistics, the imparting of pragmatic meanings of Chinese function words is usually observed in sentences stating personal attitudes or criticisms. The words “CAI” and “JIU” (their targets normally referred to as subjective quantities) will cause the sentences with them to be more subjective than normal statements. Many investigations from different perspectives revealed that “CAI” and “JIU” can express subjective attitudes at many levels, such as time, quantity, scope, condition, and so on (Zhou, 2004). Also, the usage of the words “CAI” and “JIU” are varied. In some specific sentences, their meanings are similar, while in other sentences, their meanings are the reverse of each other. This study was based on the sentences in which the meanings of these two words are the opposite of each other, to investigate the cognitive processing of sentences containing “CAI” or “JIU”, and to further provide evidence for relevant theories in linguistics.

Recent studies have found that several ERP (event-related potential) components are sensitive to different processes during language comprehension, such as N400 and P600.

The N400 component (observed at about 400 ms after the critical words) is sensitive to the consistency of the semantics. In 1980, Kutas and Hillyard observed that semantically incorrect words elicited a larger N400 component as compared with the semantically correct ones (Kutas & Hillyard, 1980). Semantically correct but unexpected words will evoke a greater N400 effect as compared with semantically correct and expected words (Kutas & Hillyard, 1984). Words which are semantically consistent with the sentences but incorrect according to background knowledge also elicit N400s (Hagoort, Hald, Bastiaansen, & Petersson, 2004). Furthermore, the N400 effect relates to semantics at the discourse level (van Berkum, Hagoort, & Brown, 1999). Generally speaking, the N400 represents the difficulty in semantic integration of the lexical meaning to the context, that is, its amplitude increases when the semantic integration is more difficult.

Another important component in the study on language comprehension is P600, which is a positivity existing at about 600 ms after the onset of a critical word. This component is usually considered

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