An Analysis on the Storage Model of L2 Mental Lexicon for College Students

Chunxia Zhang

Foreign Languages School, Jingchu University of Technology, Jingmen, Hubei, 448000

568273258@qq.com

Abstract: Vocabulary is an extremely important part of second language learning. With the importance of vocabulary, More and more researchers are studying the mental lexicon through vocabulary association tests. Nearly half a century's investigation of the representational structure of the bilingual mental lexicon has produced dozens of studies. This study analyzes the way theL2 mental lexicon are stored for college students from the perspective of the research object, the research method, the research result and the research significance.

1. Introduction

Everyone has a mental lexicon in his or her brain, which refers to the connected storage of vocabulary knowledge in his or her brain. Psychological dictionary is quite different from ordinary dictionary. The vocabulary in dictionary is arranged in alphabetical order and has a strong regularity. Everyone's mental lexicon is different. Psychological vocabulary is connected according to phonetic, morphological or semantic connections, which exist in the human brain like a network. In each person's brain, the most frequently used words are placed at the top of the network for easy extraction. Compared with ordinary dictionaries, mental lexicon stores more information outside the language. With the further development of psycholinguistics, the study ofL2 mental lexicon has gradually developed.

Since the 1980s, vocabulary acquisition and its research have gradually become one of the focuses for language educators and psychologists (Zhang Wenzhong, Wu Xudong, 2003). Lewis (1993) believes that vocabulary acquisition is the central task of second language acquisition. In recent years, theoretical discussions and empirical studies on the acquisition of second language vocabulary have become increasingly active, showing characteristics of multi-level and multi-discipline intersection. Among them, the deepening of psychological lexicon research provides theoretical basis and guidance for the vocabulary teaching of mother tongue and second language. In China, the researches on the second language psychological lexicon have been completed in recent years. For example, studies on the representational structure of second language mental lexicon (Xiao xuyue 2001;Dong Yanping, Gui Shichun, 2002; Wang Xuewen, Sun Lan 2004;Gong rong 2007), research on the structure and construction of second language mental lexicon (Zhang jingshu 2005), research on the depth of knowledge of second language lexicon (Zhang ping 2009) and vocabulary extraction from bilingual mental lexicon (Hu Kaibao 2005); (Zhang qi, Liu shaolong,2011) l.

However, it is not feasible for most researchers to carry out physiological reaction experiments with precise testing instruments, thus word association has become a common research method used by many psychologists, psycholinguists and linguists. Word association paradigm can make second language learners pay attention to the vocabulary of the language. The system is an interconnected whole, in which there is a vocabulary at different stages of acquisition, and there are various semantic relationships between new words and words already learned, which should be incorporated into classroom teaching. Unfortunately, few studies have been conducted in this area. On the basis of the previous research, this paper establishes the associative network system, which based on the construction model of mental lexicon, to figure out the storage model ofL2 mental lexicon for college students.

2. The Research Methods

2.1 The Subject of Study.

All of the 10 English majors from 2 classes in Jingchu University of Technology took part in the study. The 10 students were taught by the author herself. All of the 10 subjects took the vocabulary level test. From the pretest, the subjects' vocabulary levels are the same.

2.2 Research Methods and Means.

30 high frequency words were selected from the teaching requirements of college English course, and these stimulating words were randomly shuffled. Participants will be given an association test, in which they will be given access to a mental lexicon during the test.

Before and after the test, the "look-write" free association test was adopted. The test was conducted in the multimedia classroom. The subject looked at the words appearing on the slide at the same time, and wrote down the words that could be thought of after 5 seconds, which was the response words of the subject. Finally, these response words are statistically analyzed to answer the question raised in this study: What is the mental lexicon connection mode of second language learners?(1.Semantic or formal collection? 2. Is semantic connection vertical or Horizontal connection? Or Encyclopedic connection?)

The experimental tools used in this study include English word association test, vocabulary familiarity questionnaire and retrospective interview.

This study intends to use WordNet to identify the longitudinal aggregation relationship of words. WordNet is a vast vocabulary repository designed by psychologists, linguists and computer engineers at Princeton university. Its characteristic is that it is in accordance with the words in the meaning rather than to organize the information of vocabulary and in WordNet, nouns, verbs, adjectives and adverbs are in accordance with the synonym set organization, each Synset said a basic vocabulary concept, and has established including synonymous relationships between these concepts (synonymy, antonym relations (antonymy), a relationship (hypernym&hypony), part of the up and down (meronym) and so on many kinds of semantic relations. For the horizontal combination relationship between response words, we can use the corpus tool BNC. BNC can not only use its matching SARA retrieval software, but also support a variety of general retrieval software, and can directly search online, which is convenient and fast.

A pretest is conducted before the formal word association test to predict the time needed to complete the test and to improve the experimental process and indicator language. Before the beginning of the word association test, the researchers clearly explain the test requirements in English and Chinese, and enumerate examples to make each participant understand how they should complete the association test.

After getting the associative test paper, the participants were required to provide response words for each stimulus word as soon as possible (no limit on the number), and could not modify the written content. The test should be completed within 30 minutes. After the word association test, the word familiarity questionnaire was conducted. Within three days after the end of the word association response test, the researchers conducted interviews with the participants and asked them to recall as much as possible the psychological process in which they gave some response words. After data collection, the researchers input the original data into the table, and classify the response words to analyze the scores of the subjects.

2.3 Discussion and Analysis.

Firstly, the author collected the total number of reaction words in 10 test papers. It can be seen from the statistical data that among the three categories of response words, semantic response accounts for the largest proportion (49.38%), followed by formal response(28.57%), phonetic response (21.65) and other reactions (0.0%), indicating that the second language words of the subjects are mainly stored in the mental lexicon by means of semantic association, which supports the semantic theory of the organization mode of mental lexicon.

According to the above data, the number of reaction words in horizontal combination, vertical

polymerization and encyclopaedia respectively in semantic response words. The proportion of longitudinal polymerization reaction (47.34%) is much higher than that of transverse combination reaction (35.30%). Independent sample test was conducted with SPSS19.0, and the results showed that the significant value was 0.000, indicating that there was a significant difference between the longitudinal polymerization reaction and the transverse combination reaction, that is, learners' knowledge of the horizontal combination of vocabulary was far behind that of the longitudinal polymerization. Wolter(2006) believes that it is much more difficult for learners to establish horizontal connection between two languages than to establish vertical connection. The reason is that vertical connection can be acquired and mastered by relying on native language knowledge, while horizontal connection needs to be established by recombining existing semantic systems. On the one hand, vocabulary recombination requires the classification of words according to their relevance; on the other hand, it requires the complex matching between vocabulary and concepts. For native speakers, word recombination is spontaneous and unconscious, while for second language learners, it is difficult to spontaneous word recombination due to less language input.

The lack of mental lexicon semantic connection of second language learners is related to the intervention and interference of mother tongue. In traditional vocabulary learning, learners mainly rely on word lists and Chinese meaning to find and memorize new words. The author also finds that most learners only care about the Chinese interpretation of new words when looking them up, and pay little attention to their English interpretation and collocation. Memorizing new words in the mother tongue can help learners to memorize new words in the second language in a relatively short time. However, the disadvantage of this method is that it reduces the opportunities for learners to contact with the second language. Learners no longer use context clues to obtain the meaning of words, leading to their inability to establish word-to-word connections in the second language. Many of the words in theL2 mental lexicon of learners are related to the concepts or semantic knowledge of their mother tongue, which leads to many irrelevant or incorrect response words.This phenomenon weakens the semantic connection of the second language mental lexicon, which leads to the direct result that learners can recognize the basic meaning of words, but cannot accurately and quickly extract the words from the lexicon, thus affecting the accuracy and fluency of second language use. In addition, encyclopedic knowledge reflects that words are obviously affected by the semantic system of learners' mother tongue, indicating that learners have not fully acquired the semantic features of some words they know, and their understanding still relies on the semantic system of their mother tongue as an intermediary. Therefore, the method of mother tongue translation can only be used in the primary stage of second language learning. For college students majoring in English, they need to contact with a large amount of language materials through reading, listening, speaking, etc., and rely on the context to memorize the collocation of words, common phrases, grammatical features, etc., so as to accumulate knowledge and establish vocabulary connections.

3. Conclusion

The research of mental lexicon is of great significance to the cultivation and improvement of English learners' vocabulary application ability. In classroom teaching, students are guided to carry out word association and help students build their own network system ofL2 vocabulary association, which can help students better acquireL2 vocabulary. However, like any other learning strategies, associative network has its own limitations -- it cannot be applied to learners of all levels of vocabulary. For this reason, teachers should cultivate students' habit of using and remembering single words silently, and make full and proper use of this cognitive learning strategy.

Acknowledgments

References

[1] Dong YanPing, Gui Shichun. On the representational structure of bilingual mental lexicon, J. Foreign languages. (2002)(4): 23-29

[2] Gong Rong. From the perspective of college English learners' lexical errors, the influence of cognitive factors on the representation of two-word lexicon, J. Foreign language world.(2007)(1): 39-4

[3] Hu kaibao. Historical texts and bilingual mental lexicon, J. Foreign language studies. 2005(3): 57-61

[4] Lewis, M.1993.The Lexical Approach [M].Hove &London, England: Language Teaching Publications.1993

[5] Wang Xuewen, Sun Lan.2004.Analysis of English spelling mistakes of Chinese students [J].Foreign language teaching and research.2004 (4): 299-304

[6] Wolter b. Lexical Network Structures andL2 Vocabulary Acquisition: The Role of L1 Lexical/Conceptual Knowledge [J]. Journal of Applied Linguistics, 2006, 27 (4)

[7] Xiao Xuyue. The application of phonetic representation in the spelling process of Chinese students' English spelling mistakes: a psycholinguistics analysis [J].Foreign language teaching and research.2001 (6): 422-429

[8] Zhang Ping. Vocabulary association and mental lexicon: research status of vocabulary depth knowledge [J].Theory and practice of foreign language teaching. 2009 (3): 71-82

[9] Zhang Qi, Liu Shaolong. Research on the mechanism of lexical extraction in bilingual translation--a cognitive reflection based on the theory of bilingual language extraction[J].Foreign language studies.2011 (1): 38-46

[10] Zhang Shujing. The association between mental words in second language from association test [J].Journal of PLA foreign language institute. 2005(2): 53-57

[11] Zhang Wenzhong, Wu Dongxu. Cognitive psychological model of second language vocabulary development in classroom environment [J].Modern foreign languages.2003 (4): 373-384