

On Influencing Factors of Lexical Attrition

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Abstract

One of the key research issues of language attrition is lexical attrition. There have been a great number of empirical studies investigating the influencing factors of second language lexical attrition for more than 40 years. This article aims at clarifying the concept of language attrition and discuss the main influencing factors of lexical attrition, and suggesting potential directions for future research. After analyzing the relevant studies, we find the influencing factors of lexical attrition can be roughly divided into two categories, including objective factors such as attrition time, language acquisition methods, influencing factors related lexis, etc. and subjective factors of learners such as learners' age, gender, emotional factors and so on. Combined with the factors that affect lexical attrition, this paper finally talks about the enlightenment on foreign language vocabulary teaching for China.

Keywords: lexical attrition, language attrition, influencing factors, review article

1. Introduction

For more than forty years, the study of language attrition has developed into an independent discipline which has great inspiration for language attrition, applied linguistics, language teaching and language planning. Second language attrition is considered a sub-discipline of language attrition and the reverse process of second language acquisition. Freed (1982) defined second language attrition as the loss of language ability that learners have learned but have not used in a second language for the first time. Pavlenko (2012) redefined second language attrition as "a decrease in the level of activation due to the discontinuation of the use of second language, mainly manifested by lexical reduction, structural simplification and disfluency." Look at China, Yang (2011) defined

language attrition as "the phenomenon that due to a reduction or cessation of using a language for a long period of time, bilingual or multilingual individuals or groups who receive language instruction gradually decline or even lose their ability to use a language over time". In general, second-language attrition has two salient features: (1) It is caused entirely by the disuse of the second language, which is a psychological rather than pathological factor (such as aphasia); (2) It only occurs during the life cycle of the L2 learners, which means it occurs intragenerationally rather than intergenerationally (e.g., language death). Recent second-language attrition studies have been focusing on what is attrition, how it happens and why it happens (Welton, 1987; Hanson, 2001; Ni, 2007).

One of the important components of language is lexis, as a result, language attrition can be expressed through lexical attrition. Language attrition occurs when the language of individuals or groups will be lost to some degree, language-related information may still be stored in memory but cannot be obtained normally, resulting in information extraction failure (Weltens, 1987). Unlike language loss, the latter refers to the complete disappearance of linguistic information from memory. But language attrition is merely the decline of language skills, which is the reverse process of language acquisition (Cohen, 1974). Lexical attrition includes the loss of lexical meaning, loss of semantic discrimination ability, and loss of vocabulary use and expression ability. Among them, semantic discrimination ability is manifested in the change of the referent, meaning and application scope of vocabulary, which can increase the use of polysemy words and overview words, and the loss of application and expression ability mainly refers to the delay or failure of vocabulary extraction and difficulty in judging the meaning of vocabulary. Since the University of Pennsylvania held the "Language Skills Loss Conference" (Murtagh, 2003) in 1980, language attrition has become one of the research hotspots in academia. As part of language ability, the study of lexis is of great significance for the study of second language acquisition (McCarthy, 1987). Lexis promotes the existence and development of second languages, and the smooth progress of second language communication relies on lexis to convey meaning, otherwise communication is like chicken and duck talking. Studies have shown that lexical attrition bears the brunt of learners' attrition of language ability (Weltens, 1987; Ross, 2002). During the development of more than 40 years, lexical attrition has received extensive attention from many scholars, including sociolinguistics, psychology, neurology, cognition and physiology, etc., showing an interdisciplinary nature. The international academic community has achieved fruitful results in both theoretical and empirical research, showing the characteristics of "multiple causes, multiple contexts, and multiple channels", and forming a research pattern of "multiple angles, multiple levels and multiple modes" (Jin, 2008). However, domestic attrition research is still in the exploratory stage, and there are few relevant empirical studies on lexical attrition. This paper

attempts to comprehensively introduce the research status of the influencing factors of lexical attrition in order to provide relevant support for the theoretical construction of lexical attrition, and offer suggestions for the development of foreign language vocabulary teaching to improve the level of language teaching at home and aboard.

2. Studies on Influencing Factors of Lexical Attrition

By classifying and sorting empirical research on lexical attrition at home and aboard, we can find that there are many influencing factors affecting lexical attrition. These influencing factors can be roughly divided into objective factors such as attrition time, the way of language acquisition, influencing factors related lexis, etc. and subjective factors of learners including learners' age, gender, emotional factors and so on.

2.1 Objective Factors

2.1.1 Attrition Time

One of the decisive factors affecting the degree of attrition in a foreign language is attrition time (Ni, 2006). A great number of empirical studies have proved that the pattern of lexical attrition is "fast in the early stage, slow in the middle stage, and fast again in the later stage", which indicates that the early lexical attrition speed is very fast after stopping foreign language learning, the speed is slightly slower then, and the speed in the later stage accelerates. The degree of lexical attrition is also similar in different time spans, and the longer the attrition time, the more severe the attrition. For example, Li (2012) surveyed in-service staff who stopped learning English and separated from English for one year, and found that the attrition time can be divided into three stages based on the sensitivity of attrition, of which most learners are most sensitive to foreign language attrition in 1-4 years. Lei (2013)'s study using college graduates with English proficiency level 4 as the research subjects, when compared with subjects who did not reach level 4, found that the degree of attrition of subjects who reached level 4 was significantly lower than that of those who did not reach level 4, and it proved that the attrition time and degree of attrition were positively correlated. We believe that although the attrition time factor does not play a decisive role in lexical attrition, studying attrition time is conducive to learners to prevent lexical attrition. It enlightens learners to review during the

critical period of attrition in order to slow down the speed of lexical attrition, and teachers can also innovate review methods (word guessing games, etc.) to help students review and consolidate the vocabulary they have learned.

2.1.2 The Way to Language Acquisition

Zhu (2008), through the study of foreign language acquisition of senior college students, pointed that because the current foreign language proficiency test still focuses on lexical acquisition, students are affected by this test method and are forced to memorize words to cope with the test, but ignore the overall improvement of their foreign language knowledge and ability. Weltens (1987) argued that isolated lexes are simply more prone to attrite than systematic lexical knowledge for lexical attrition. Watching American dramas, listening to foreign language music and foreign language news, reading foreign books frequently are all effective ways to improve foreign language word-base by putting words in context. The author believes that a variety of ways, such as role-play, watching foreign language movies, etc., can be used to improve the learning of foreign language vocabulary in future foreign language teaching and learning, which is of great significance.

2.1.3 Influencing Factors Related to Lexis

Influencing factors related to lexis affecting lexical attrition include linguistic characteristics of vocabulary, frequency of lexical use, part-of-speech, homology, and specificity. In the linguistic characteristics of lexis, it is found that words with similar shape and sound are more likely to be lost; long words are more susceptible to loss than short words; in terms of chapter coverage and word selection index, words with low chapter coverage and low word selection index are more likely to attrit. Weltens (1989) investigated the lexical attrition of Dutch middle school students after they stopped learning French, and divided words into four categories according to frequency and core vocabulary, and found that low-frequency words experienced significant attrition. Anderson (1982) argued that sentences with low-frequency words, low functional loads, and high-markup language characteristics were more vulnerable to damage. Verkaik & Van de Wijst (1986) studied the lexical attrition of two groups of students who received four years of French training just after the end of the training and two years after the end of the

training, finding that low-frequency non-core vocabulary not only had the most significant loss, but also had the highest error rate. Ecker (2004)'s research confirmed that low-frequency words differ significantly from high-frequency words in terms of extraction speed and quantity. Looking back to domestic studies, Liu (2014) found that people are easy to learn high-frequency words because of their high occurrence rate and frequent use, on the contrary, the lexical attrition of high-frequency words was relatively difficult. Li (2008)'s study, concluding the opposite results, found that subjects had difficulty in extracting high-frequency words that were easily confused because they had a firm grasp of low-frequency words and were difficult to attribute. It shows that the frequency of lexis use affects lexical attrition, and the degree of lexical attrition at different frequencies is not the same, but most studies show that high-frequency words have less attrition than low-frequency words.

In addition to the frequency of lexical use, part of speech also has an impact on lexical attrition. Among them, Cohen (1975) found that nouns in second language were easy to attrite, especially when learners need to remember a great number of words at once; Ghasemi (2005) studied the attrition of English lexis in summer vacation among 25 Iranian high school students. The results showed that verbs and adjectives were more susceptible to attrite than nouns, and that words learned at the beginning of the semester remained relatively better than words learned at the end of the semester, which is consistent with Cohen (1975)'s findings. Ross (2002) studied the attrition of French verbs and nouns in four subjects, and concluded that verbs are less likely to be lost than nouns. Ellis & Beaton (1993) showed that verbs and adverbs were difficult to grasp and easily depleted, while nouns were better maintained. In addition, children also learned nouns first. It can be seen that the degree of attrition of different parts of speech is not the same, and the noun is relatively well maintained.

When discussing learners' word-base or lexical ability, researchers distinguished receptive vocabulary from productive vocabulary. The former refers to lexes that can be understood in receptive language activities such as listening and reading, and the latter refers to lexes that can be used in expressive language behaviors such as speaking and writing. Morshedien (2008)

conducted an empirical study on the attrition and retention of productive and receptive vocabulary on Iranian foreign language learners at different language levels. The results showed that three months after the participants stopped using English, their productive vocabulary was significantly attrited compared with the receptive vocabulary. Cohen (1989) surveyed two young children who had lived in Brazil for a year. After the first, three, and nine months after stopping using Portuguese, they underwent a productive vocabulary knowledge test. The results showed that the attrition of productive vocabulary knowledge, especially nouns, was serious. Olshtain (1989)'s study came to the same conclusion. He studied lexical attrition in Israeli children aged 5-14. The participants lived in an English-speaking country for two years. The results showed that their productive vocabulary was severely depleted. But Grendel et al. (1996) did find that there was no loss of productive skills and receptive function in the 20 years after the end of the language course. We can make a conclusion from the above studies that there is still no consensus in the academic community on the attrition of productive words and receptive words, but most of the research results show that productive words are more prone to loss than receptive words. Also, we can get some inspirations from this conclusion. It can inspire teachers to take appropriate measures in teaching, such as contrasting words that are similar in shape and sound; For those long, easily depleted words, it would be better if teachers can increase the frequency of use or spelling competitions to strengthen students' memory, etc. After a certain interval of the learned words, at the appropriate time, that is, when the student's words are about to be forgotten (damaged), teachers can prepare some quizzes and dictations to help students review words in time. Also, foreign language learners are supposed to consolidate and review the lexical knowledge as frequent as possible to form long-term memory.

2.2 Subjective Factors

2.2.1 Learners' Motivation

Liu (2010) pointed out through experiments that most students spent a lot of time and energy simply memorizing words, and then mechanically practiced to cope with the exam, while ignoring the improvement of overall foreign language communication ability, these students learn foreign languages out of

instrumental motivation, but this method of mechanical memorization of lexis isolates the lexis from the overall language. Once language learning stops, lexical attrition begins. Zhong & Sun (2012)'s study showed the influencing factors of lexical attrition also included personal learning motivation and emotions. When people with a good learning attitude learn foreign languages, they can learn the language actively and subsequently can promote the learning of vocabulary and even language. At the same time, Li (2013)'s experiment found that variables such as learners' motivation and attitude, language input and teacher's explanation all had an impact on lexical attrition. Ouyang (2007) also pointed out that foreign language learners should deal with emotional factors. Learning motivation and emotions affect both language acquisition and attrition. As a result, we believe that in foreign language teaching, teachers can use vivid and innovative teaching methods, such as VR technology, multimedia animation, role-playing games to simulate real-life scenes, gradually guiding students to form a mode that learning by doing and playing, which actively mobilize learners' motivation and positive emotions to learn language. This can arise students' interest in learning language to some extent, and promote motivation and emotion to play an active role in foreign language learning and minimizes lexical attrition.

2.2.2 Gender

Li (2012)'s study found that the attrition of female was less than that of male; Li (2016)'s study showed the opposite result: the attrition level of female was higher than that of the male. The previous results of Ni (2009) were also like this, but Lei (2013)'s experiments found that the effect of gender differences on foreign language lexical attrition was not obvious. The main reason why the above researchers reached different conclusions is the limitations in subjects and scope of the study. The factors affecting lexical attrition are complex, which inspires future researchers to pay attention to universality when doing relevant research in this regard. Also, future studies can increase the breadth and number of survey subjects, and select research objects at different levels of foreign language proficiency to improve the universality of gender-related research, then provide theoretical and empirical support for the gender influencing factors of lexical attrition.

2.2.3 Age

Some studies at home and abroad have found that children's lexes are abraded faster than adults. For example, Hansen (1980) conducted an in-depth study of the second-language Indo-Urdu depletion of two preschoolers in the United States and compared it with the second language depletion of their mothers. It turned out that both children were considered native Indo-Urdu speakers during three periods of residence in India and Pakistan, meaning that their second language fluency was almost indistinguishable from that of native speakers, while their mother's second language was much worse. But after a few months of each return to the United States, the children's second language (including vocabulary) was almost completely attrited, while their mother's second language was not. And more than 20 years after leaving India and Pakistan, they can't hear a word about their childhood Hindi-Urdu conversations, while their mother can understand a lot. This study noted foreign language attrition (including lexical attrition) in adults and children. In addition, many researchers have come to a common conclusion based on empirical research: for children, younger learners are more likely to attrit their second language than older learners or we can say that the younger the child, the faster the rate of lexical attrition. There are exceptions, such as Kuhberg (1992)'s study of the attrition of second-language German in Turkish children aged 7 and 9, found that older children were associated with faster attrition, but very few studies came to such results.

2.2.4 Foreign Language Proficiency Before Attrition

Foreign language proficiency before attrition is a key factor affecting foreign language attrition and is the first factor affecting students' ability to maintain foreign languages. Foreign literature studies have found that "the higher foreign language proficiency before attrition, the lower the attrition rate"; Domestic researchers have done a great number of empirical studies to try to verify the relationship between language proficiency before attrition and attrition, and most of the conclusions basically support that "language proficiency before attrition is negatively correlated with attrition degree". So we can conclude that higher second-language proficiency learners have a lower degree of lexical attrition than lower second-language proficiency learners. Foreign language proficiency before attrition can also affect the

degree of or the order of attrition at various levels of the language (e.g., phonetics, lexis, morphology-syntax, etc.). Studies have found that grammatical structures are more vulnerable to attrit than lexis for lower second-language proficiency learners and more vulnerable to attrit than grammatical structures for higher second-language proficiency learners. The study of Ouyang (2007) pointed out that foreign language proficiency before attrition is inversely proportional to the amount of attrition and the speed of the mode. This showed that the learner's foreign language proficiency will only remain relatively stable when it reaches a certain level. Li (2008)'s study also pointed out that the foreign language proficiency pattern was roughly negatively correlated with foreign language attrition. Li (2012) also made the same conclusion. However, the empirical results of Yu (2014) were inconsistent with their results: there was no serious attrition in the two stages of foreign language attrition, and even in the middle and late stages, the level of attrition was significantly lower than in the previous period, which indicated that the order of attrition does not fully conform to the regression hypothesis of language. The results of the above studies are diverse, so more empirical researches are needed to determine the authenticity of the regression hypothesis, and future research can also explore the state of the subjects at different levels of foreign language proficiency and their levels before and after attrition from the perspective of complex dynamic system theory. In view of complex dynamic system theory emphasizes that learners' language development is dynamic and non-linear development, in the same way, we can also infer that language attrition is also dynamic, so researchers can use the paradigm of complex dynamic system theory to explore the trajectory of language attrition of learners.

3. Conclusion

In sharp contrast to the vigorous development of foreign lexical attrition research, China's research in this field is still in its infancy, and only a few scholars have conducted some review studies on lexical attrition, and even fewer empirical studies on lexical attrition for native English learners who speak Chinese as their mother tongue. However, due to the rich results of foreign lexical attrition research, this provides an excellent development environment for domestic lexical attrition research. Therefore,

based on the achievements of previous research, this article aims to provide some enlightenment for the study of language attrition and foreign language teaching in China.

Linguist Tyrell once said: "With enough words, even without much grammar knowledge, foreign language learners can understand foreign languages well and express them in foreign languages." Through the analysis of a great number of empirical studies affecting second-language lexical attrition in China over the past 40 years, this paper finds that the influencing factors of lexical attrition are complex, but they can be roughly divided into two categories, including objective factors such as attrition time, the way of language acquisition, influencing factors related to lexis, etc. and subjective factors of learners such as learners' age, gender, learners' emotional factors and so on. Lexis plays a pivotal role in language learning, so this paper can provide some inspirations for vocabulary teaching in foreign language teaching in China based on the investigation and summary of influencing factors of lexical attrition. In the analysis of objective factors, the attrition time affects lexical attrition presenting a pattern that: it attrits fast in the early stage, slow in the middle stage, and fast in the later stage, and the longer the attrition time, the more serious the attrition, enlightening learners to review in the critical period of attrition in order to slow down the speed of lexical attrition, inspiring teachers to innovate review methods such as word guessing games to help students review and consolidate the vocabulary learned. In the future research of foreign language teaching, a variety of ways such as role-playing, watching foreign language movies, etc. can be used to improve the learning of foreign language vocabulary, which is of great significance for foreign language teaching; Also with regards to the influencing factors related to lexis, the author believes that foreign language learners should often consolidate and review the vocabulary they learnt before, and use the timetable of Ebbinghaus' memory curve to consolidate. Studies of second-language lexical attrition abroad have shown that children lose vocabulary faster, especially in the early grades of primary school. This places higher demands on primary school English teachers. Primary school English teachers should start from the life experience and cognitive level of primary school students, adopt communication and task-based

teaching methods of the learning mode of experience, practice, participation, cooperation in order to stimulate and cultivate the interest of primary school students, enhance the vocabulary memory of primary school student. At the same time, through this kind of way, we can understand the characteristics of children's vocabulary forgetting, and take measures to prevent or reduce lexical attrition. Studies of second-language lexical attrition abroad have shown that children attrit faster, especially in the early grades of primary school. This places higher demands on primary school English teacher who are supposed to start from the life experience and cognitive level of primary school students, adopt the learning mode of experience, practice, participation, cooperation and communication and task-based teaching methods, stimulate and cultivate the interest of primary school students in English learning, enhance the vocabulary memory of primary school students, understand the characteristics of children's vocabulary forgetting, and take measures to prevent or reduce lexical attrition. In terms of learners' internal factors, learners' learning motivation and emotional factors affect lexical attrition and language acquisition. As a result, we believe that in foreign language teaching, teachers can use vivid and innovative teaching methods, such as the use of VR technology, multimedia animation, role-playing to simulate real-life scenes, forming a mode of learning by doing, playing in learning which actively mobilize learners' motivation and positive emotions to learn language, and arise students' interest in learning language. We aim at letting motivation and emotion play an active role in promoting foreign language learning, thereby minimizing lexical attrition.

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