

# *A Review of Research on Fossilization in Second Language Learning*

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**Abstract:** Language fossilization is the most important feature of interlanguage, and interlanguage is a universal and inevitable phenomenon during the second language learning process. Therefore, it is necessary to study the phenomenon of fossilization. In recent years, there has been more and more researches on language fossilization, but there are different opinions on the causes and manifestation. To comprehend the psychological mechanism underlying fossilization, and explore the possible causes of fossilization and its influence on foreign language teaching strategies. The research on language fossilization needs to be continued. Based on Selinker's main views of fossilization, this paper expounds on the possible causes and the main manifestations of language fossilization followed by a discussion on fossilization by Krashen, Ellis and other scholars, while in view of the problems in the process of Chinese students' English learning and English teachers' teaching methods. This paper also puts forward some corresponding preventive strategies and suggestions.

**Keywords:** language fossilization, interlanguage, Selinker

## 1. Introduction

According to Selinker, a large percentage of the second language (L2) learners (up to 95 percent) could not achieve target language competence, which means, they won't reach the interlanguage continuum's conclusion [1]. When at least some of their interlanguage's rules diverge from those of their final language system, they cease learning. He defined this as fossilization. Most language learners experience fossilization, which cannot be corrected by further training. The notion of fossilization has been investigated theoretically and empirically for more than three decades under a variety of headings, not only by its now prevalent or original name of "fossilization", but also as "plateau", "fossilized variations", "permanent optionality", "endstate", and so far [1-5]. Numerous conceptualizations of fossilization, among other things, underlie the diverse theoretical and empirical endeavors. Even a conceptual mismatch after a brief exploration of the definitions, denotations and explanations that have been suggested for a period, a sense of conceptual disparity could still be raised by learners.

"Fossilization" began to be presented as a concept in 1972 [1]. Schumann proposed the "pidgin hypothesis" on the basis of this in 1978 [6]. In 1985, Krashen discussed the possible reasons for the formation of fossilization from the perspective of language acquisition [7]. In 1994, Ellis attributed the formation of fossilization to internal and external causes [8]. At present, the research on

fossilization discussion is still continuing to develop, so the main purpose of this paper is to make some review and summary of the previous theories and investigations, and give only some suggestions, while this paper could not give qualitative conclusions. Specific empirical research conclusions need to be drawn according to professional experimental results. In the following sections, this paper aims to provide a succinct overview of the background of the fossilization theory. Then the paper will give a general overview of different causes of fossilization phenomena, thus, the theoretical support and reference for other fossilization researchers can be provided.

## **2. Possible Causes and Manifestations**

### **2.1. Background**

It can be seen that although Selinker's definition of language fossilization is considered the mainstream view in the field of foreign language acquisition at present, there are still slight differences in the causes of language fossilization among different scholars, which will lead to the lack of complete consistency in the studies in this field. Therefore, this shows that the field of language fossilization deserves further study.

Structures that have been preserved throughout time, which is also called fossilized structures, may be understood as mistakes or as correct forms in the target language. The proper form will fossilize if, at the time fossilization takes place, the learner has reached a stage in his growth when characteristic X in his interlanguage has taken on the same shape as the target language's form. However, the fossilization will be detected as an error if the learner has advanced to a stage where the feature still lacks the same form as the target language. Selinker lists German time-place order after the verb and French uvular /r/ in English interlanguage as examples of common fossilized mistakes [8].

However, fossilized structures won't last forever. While a learner is meaning-oriented, especially when the subject matter is challenging, he may occasionally succeed in creating the proper target language form, but he will 'backslide' towards his genuine interlanguage norm. Selinker and Lamendella contend that internal and external factors contribute to fossilization mutually [9]. It might happen because the learner feels that he already has enough interlanguage to communicate effectively with anyone or anything or might happen because of aging-related changes to the neural structure of his brain that limit the function of the hypothesis-testing mechanism.

### **2.2. Overview of the Different Discussions of Language Fossilization**

Selinker and Han examined the overall studies on fossilization and discovered that there are several incorrect tendencies in the field: Firstly, most of the research is just empirical hypotheses or explanations; Secondly, most studies categorize experiments simply into "fossilized" and "non-fossilized" phenomena without evidence from longitudinal studies [10]. Therefore, it can be concluded that fossilization research should better focus on empirical and comprehensive research [11].

#### **2.2.1. Selinker's Theory**

Selinker summarized the phenomenon of ossification into the following five processes: (1) language transfer; (2) transfer of training; (3) learning strategy; (4) communication strategy; (5) over-generalization [1]. Niu adopted Selinker's approach that the causes of fossilization can be attributed to 5 processes, so he introduced and analyzed these 5 processes [12]. In addition, Niu also suggested that there are three key points in foreign language teaching that need to be improved in combination with China's national conditions: (1) emotional factors; (2) mother tongue interference transfer; (3)

teachers and teaching materials [12]. This paper will focus on the theoretical basis of Selinker to summarize the causes of language fossilization.

### 2.2.2. Schumann's Theory

Schumann analyzed the “pidgin hypothesis” and explored the causes of fossilization by trying to distinguish between linguistic functions (including communicative function, synthetic function and expressive function) [13]. However, because the communicators have different native languages, they need to rely on a second language and communicate in simple language forms. These forms of language that are used for long-term use gradually form pidgins. Pidgin language is a simplified language that is produced when people of different languages communicate with each other, while this language has certain forms and characteristics. Schumann believes that the formation of pidgin language is similar to the formation of fossilized interlanguage, and the reasons for their emergence are also similar [14]. Therefore, he attributed the generation of fossilization to the social and psychological distance held by second language learners from the target language, and the repeat of using limited language for communication. This theory addresses the psychosocial factors that contribute to the formation of fossilization. It tacitly acknowledges the indivisibility of language and culture. But it is also just only one of many causes of fossilization and cannot explain the cause of other fossilization phenomena.

### 2.2.3. Krashen's Theory

Beginning from the process of language acquisition, Krashen explained the formation of fossilization in language learning as follows: (1) the insufficient amount of target language input; (2) the low quality of inputting target language; (3) emotional filter; (4) target language output filter; (5) acquisition of linguistic variant forms of the target language [15]. Among them, the first two theoretical foundations have a strong explanation for the rigidity of the stagnant development of language ability and knowledge.

### 2.2.4. Ellis's Theory

Ellis summarized the research of fossilization as follows: Firstly, internal factors: (1) age; (2) lack of desire to integrate with the target language and social culture [8]. Secondly, external causes: (1) communication pressure; (2) lack of learning opportunities; (3) the influence of the nature of feedback on learners' second language usage [8]. Some people regard the second type of internal cause, that is, the social psychological distance from the target language, as the external cause for the formation of fossilization, while Ellis tries to analyze the learner's attitude toward the target language from the perspective of the learner's internal motivation, so as to explore its impact on the formation of fossilization. In this way, the “cultural transfer” pattern can also be regarded as an internal cause.

The nature of feedback proposed by Ellis in external causes is also called “interaction theory”, and its main arguments are as follows: 1) Sometimes incorrect language output between students, instructors, and classmates serves as language input or is employed in that capacity, which causes some errors to be accentuated and fossilized. 2) Interpersonal communication conveys emotion as well as information [8]. Feedback may affect communicators psychologically in a favorable, neutral, or negative way. Different responses can have different degrees of positive, neutral or negative reinforcement on language use, which is another reason for fossilization. This explanation explains the psychological factors of second language learning and the different responses to feedback. For example, Vigil and Oller found that positive cognitive feedback such as “I understand” causes fossilization, while negative feedback such as “I don't understand” helps prevent fossilization [16].

### 2.3. Five Main Manifestation of Language Fossilization Based on Selinker's Theory

According to Selinker, interlanguage fossilization exists at any level of foreign linguistic learners' second language acquisition process, and its two most distinguishing characteristics are permanence and repetition [17]. Fossilization shows shortcomings in the target language acquired by foreign language learners as non-native speaker. According to Selinker's theory, the formation of fossilization is mainly manifested in the following five aspects [17].

#### 2.3.1. Language Transfer

Language transfer is the process that occurs when a person learns a second language while transferring components from their native tongue. Language transfer, according to Selinker, is the transition from one language to another [18].

Selinker believed that if frequency analysis reveals statistically significant trends in the speaker's native language, there are also significant trends in the speaker's attempts to create foreign language sentences, phonetic features, phonetic sequences and other aspects of substitution [19].

American linguist Odlin in the 1989 publication of *Language Transfer: Interlingual Effects of Language Learning* explained that transfer is the result of similarities or differences between the target language and any other learned (though maybe incompletely acquired) languages [20]. Cummins expanded the concept of language transfer: it refers to the transfer of conceptual knowledge between languages and in some cases at the language level [21]. Language transfer is not only the transfer of the mother tongue itself, but also the transfer of old knowledge. Later, in 2008, two scholars, Jarvis & Pavnko, jointly published the *Interlingual Influence of Language and Cognition* [22]. They defined language transfer in a more concise way as follows: the impact of a person's knowledge of one language on the knowledge or use of another language. Research shows that when L1 (Chinese) learn English, the fossilization is mainly manifested in phonetics and grammar. The fossilization in phonetics is the most obvious, because the language family of Chinese and English is different, resulting in English timing with stress, while Chinese is timed with syllables. These differences form "Chinglish", which makes it difficult for many English learners to break the English rhythm for a while. In terms of grammar, Chinese foreign language learners transfer Chinese thinking to English [23]. The following examples are given:

- She is teacher (Usage of Articles)
- It on the table (Usage of verb)
- The price of book is expensive (collocation)

#### 2.3.2. Transfer of Training

Selinker pointed out that the training transfer is mainly due to the unauthentic transitional language usage of foreign language teachers, or the inappropriate language use, which makes learners misunderstand foreign languages [17]. In addition, the selection of language textbooks and improper teaching methods will also lead to the wrong transfer of training. The following is an example of a typical textbook that is too formal and leads to a transfer of training.

- How are you?
- I'm fine, thank you.

#### 2.3.3. Learning Strategy

Learning strategies cover numerous language-related activities, management techniques, and learning methodologies. It includes cognitive strategy, meta-cognitive strategy and social strategy. Selinker believed that the learner's culture might have an impact on how effective their learning methods are

[23]. The research results of a university in China show that Chinese students are not good at solving problems by communicating with teachers and prefer to learn languages with the help of dictionaries and online tools, which makes it difficult to grasp the essence of language in the process of second language acquisition.

### 2.3.4. Communication Strategy

A communication strategy is a set of attributes that students utilize when they run into communication problems. When learners are unable to communicate in the goal-directed language, they will use synonyms to consciously or unconsciously approximate, forming the interlanguage, among which word creation is the most common communication strategy.

Qiang Niu argued communication strategies include avoidance, prefabricated structure, appealing to authority and language transformation [24]. Kasper and Faerch also divided the communication strategy into Reduction strategy and Achievement strategy [25]. They believe that learners generally do not produce acquisition by adopting a reduction strategy [25]. Research shows that after foreign language learners reach a certain level, they will use avoidance, simplification and other strategies to achieve the purpose of communication, and their learning motivation will be weakened or even completely stopped. Fossilization will be formed for a long time.

### 2.3.5. Over-generalization

Overgeneralization occurs when learners use specific language rules from the target language as if they were general principles, resulting in an interlanguage that neither has the traits of the mother tongue nor the traits of the target language [23]. For example, learners mistakenly apply the learned grammar rules to other contexts. The following are examples of common Over-generalization:

- go- goed
- Speak- speaked

## 3. Conclusion

In this review, Selinker's analysis of the formation of language fossilization is the main part of this paper, which is reflected in five aspects: language transfer, transfer of training, learning strategy, communication strategy, and over-generation. Inspired by the above discussions, many researchers are prompted to constantly consider second language acquisition research and look for fossilization phenomena in the process of language transfer, learning strategy and transfer of training, especially in the field of English teaching. It provides a bridge for English educators to comprehensively analyze the problems existing in language teaching from the above fossilization discussions and take reasonable methods to improve students' strategies. Therefore, it is of practical significance for the collation and research of fossilization theories. Language fossilization is a complex phenomenon, and research on it is still in its early stages, with many unresolved questions. However, based on the existing theories, researchers will continue to explore the field of language fossilization and make breakthroughs in the future.

### Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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