

A Review of Interlanguage Fossilization in English Learning

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Abstract. The phenomenon of interlanguage fossilization, which is commonly observed during the process of acquiring a foreign language, signifies a barrier to further progress in language proficiency. This paper presents a comprehensive review and analysis of the phenomenon of interlanguage fossilization in the context of second language acquisition. Interlanguage fossilization refers to the stagnation of language learning progress, hindering further linguistic development in foreign language acquisition. The paper explores the defining characteristics, various types, and current research status related to interlanguage fossilization. It investigates the specific causes and manifestations of this phenomenon in second language acquisition, focusing on English language learning. The study further proposes practical measures to address interlanguage fossilization and enhance learners' proficiency. These measures include continual upgrading of teachers' knowledge base in fundamental English concepts, communicative skills, linguistic understanding, and knowledge of Anglo-American cultural backgrounds. Additionally, learners are encouraged to adopt a correct mindset, recognizing language learning as a long-term, continuous process requiring consistency and systematicity. The paper emphasizes the importance of vocabulary memorization, progressive learning approaches, repetition, and extensive practice to internalize the language and achieve effective and accurate language output. By implementing these strategies, learners can overcome interlanguage fossilization and make significant progress in their English language proficiency.

Keywords: Interlanguage, fossilization of interlanguage, domestic and international research, overview.

1. Introduction

With the continuous development of linguistic theories, people gradually recognize the positive role of the theory of second language acquisition that can guide language learning and application. However, in the process of second or foreign language learning, there exists a phenomenon in which the further development of the learners' linguistic ability is hindered after they have reached a certain level of language learning, presenting a kind of linguistic items, grammatical rules and linguistic sub-systems of the language. This is the interlanguage proposed by British linguist Selinker in 1972 [1]. In the process of second language acquisition, excluding objective factors such as mother tongue Selinker defines this phenomenon as "mother-tongue productive structure", which is the process of acquiring a target language in which the learner's language structure is repeatedly accompanied by native language-related forms. Selinker defines this phenomenon as "fossilization of interlanguage". This concept has received wide attention in the decades after it was introduced, and the research on this phenomenon has been further developed in the last 20 years. In this paper, the authors will explain the phenomenon of interlanguage fossilization of interlanguage from the definition, causes and classification of interlanguage in foreign and domestic studies, and try to propose the significance of interlanguage in teaching and learning.

2. Overseas Research

2.1. Interlanguage

The phenomenon of fossilization of interlanguage refers to the fact that after many second language learners have reached a certain level of learning of the second foreign language, their language progress is far less than that in the early and middle stages, and no matter how hard they try to learn, they will not improve, or even stagnate or regress. The concept of "Interlanguage (IL)" was introduced by Selinker in 1972. It defines interlanguage as the learner's independent language system, separate from their native language (NL) and target language (TL). Interlanguage is used to characterize the lack of grammatical development in L2 learners during their past second language acquisition (SLA) journeys, wherein grammar remains underdeveloped [1]. An intermediate language is a hybrid language used by the learner that contains features of both the first language and the target language. IL is considered to be an intermediate stage experienced by the learner in the gradual acquisition of the target language, in which the learner may develop some incorrect linguistic constructions and continue to use them, i.e., "fossilization".

2.2. Fossilization Contents

In 1972, Selinker developed the concept of interlanguage, analyzed its relation to underlying structures, analyzed the main processes involved in the formation of interlanguage competence in second language acquisition, and focused on the phenomenon of fossilization of interlanguage in second language acquisition [1]. Selinker and Lamendella redefined fossilization as the permanent cessation of internal language learning until the learner reaches the norms of the target language at all levels of linguistic structure and in all domains of discourse, in spite of the learner's active ability and motivation to learn and integrate into the target society [2]. Larry Selinker and John T. Lamendella offer two very different perspectives on the process of fossilization, with Selinker arguing that fossilization is a "mental selection process" and that fossilization represents a "mental choice process" in which learners consciously or unconsciously choose to continue using their alternate language structures [1]. According to Selinker, petrification is a "mental selection process" and petrification represents a conscious or unconscious choice of learners to continue using their alternate language structures [2]. On the other hand, Lamendella argues that fossilization is caused by communication difficulties, which may be caused by learners' performance deficits or lack of adequate knowledge of the target language [2]. The paper analyzes the various linguistic features associated with fossilization and proposes a theoretical explanation as to why these features may be "fossilized" in the learner's alternating language system [2].

After Selinker, researchers defined the fossilization of interlanguage from different perspectives. Richard viewed fossilization as a bilingual form that is consistently accompanied by errors in the learner's oral and written expressions [3]. Pronunciation, vocabulary, and grammar are the most common forms of fossilization in learners' alternating language systems [3]. Phonological, lexical and grammatical forms of errors can be stereotyped or fossilized. Ellis on the other hand, through his research, argues that fossilization can be done in both correct and incorrect ways [4]. A learner's fossilization occurs when his/her language has reached a critical stage of development where the form of interlanguage and the form of the target language are the same, so that the correct form of fossilization is produced. If the learner does not reach the same stage of fossilization of interlanguage and the target language, then the incorrect form of fossilization will be produced. According to Ellis's study, it can be understood that fossilization is in fact a neutral word, there is a difference between correct and incorrect fossilization, correct fossilization is a successful language acquisition, and the phenomenon of fossilization cannot be simply considered as a language error [4].

Han proposed a new conceptual framework for the study of fossilization [5]. Han's framework argues that fossilization can occur at the macro or micro level, is a process rather than a product, and involves permanent and selective failure [5]. Han argues that biological and cognitive constraints do not fully account for differences in learning outcomes, and that micro-level analyses are needed [5].

However, some researchers have criticized Han's definition of fossilization and her exclusion of complete success (attainment of native level) as an SLA outcome. In summary, conceptual agreement is needed to design acceptable empirical studies and to interpret their results. Han advocates treating stabilization and fossilization as two distinct but related theoretical and empirical entities rather than equivalents [5]. Han argues that in the absence of clear evidence, people should continue to follow the traditional view and distinguish between stabilization and fossilization [5]. Han addresses these conceptual differences by posing and discussing five central questions: (1) Is fossilization global or local? (2) Is the final attainment of a second language isomorphic to fossilization? (3) Is fossilization a product or a process? (4) Is stabilization synonymous with fossilization? (5) Should empirical studies of fossilization span five years or more? Han argues that a more reasonable approach to these questions would be to establish a longitudinal perspective of length, depending on the characteristics of the target language features as well as the learner's history of learning and conditioning, and that this would consist of at least four stages of the study: (1) determining whether subjects are in an externally and internally advantageous position to make progress; (2) determining which features exhibit stabilization; (3) identifying the underlying processes; and (4) analyzing these processes and presenting an informed judgment about whether stabilized language features lead to fossilization [5].

2.3. Causal Factors of Fossilization

Selinker suggests several of these causal factors [1].

2.3.1 Language Migration

Learners are often constrained by the level of language learning and resort to the linguistic structure of their mother tongue when they use the target language to communicate, which is the phenomenon of mother tongue migration. Native language transfer is divided into positive and negative transfer. Positive transfer occurs when the linguistic structure or pattern of the mother tongue is the same or highly consistent with that of the target language, and learners can acquire knowledge of the target language more quickly and easily with the help of their mother tongue. Negative transfer occurs when there is a big difference between the language structure or rules of the mother tongue and the target language, i.e., the knowledge structure of the mother tongue prevents learners from acquiring further knowledge of the target language.

2.3.2 Training transfer

Due to the lack of formal English teaching, learners may have formed their own intermediary language system, the rules of which are quite different from those of standard English. Training transfer arises from the learner's misinterpretation in the process of language acquisition. Training transfer occurs early in language learning, and the most common training transfer is phonological entrenchment. The learner's English phonology is deeply influenced by early learning and is difficult to correct later in the learning process. Irrational or outdated language teaching materials can also cause training transfer, preventing students from acquiring correct, systematic and authentic English expressions, and creating a disconnect between learning content and practical application.

2.3.3 Over-generalization

Over-generalization refers to the generalization of language knowledge and rules by learners, which usually occurs in the process of optimizing and analyzing knowledge structures. During the acquisition of the target language, learners can easily confuse or generalize similar linguistic knowledge. The most common over-generalization among English learners is the conflation of third-person singular and noun plural. Learners will extend their existing second language knowledge to new mediator forms without making appropriate exceptions. This will lead to learners' inability to detect errors, which in turn leads to fossilization.

2.3.4 Other factors

There are a number of other environmental, cognitive, neurobiology and social-emotional factors that contribute to fossilization, but there is no consensus on these factors.

In general, the causes of fossilization are multifaceted, mainly including language transfer, training transfer, over-generalization and some other factors. These factors can cause learners to produce erroneous mediated language structures and make these errors solidify over time and difficult to correct. In order to avoid fossilization of interlanguage, it is recommended that learners' interlanguage structures should be error-corrected and appropriate formal instruction should be provided. At the same time, learners are encouraged to develop communication and learning strategies that balance the development of accuracy and communication skills.

Selinker also believes that fossilization occurs due to age, lack of desire to be culturally appropriate to the target language [1].

2.4. Classification of Fossilization

According to Selinker, there are two types of fossilization in language acquisition, individual fossilization and community fossilization [1]. The former refers to the stagnation of individual language development of individual learners, while the latter refers to the overall stagnation of community language development [2].

Generally, individualized fossilization can be divided into two types: error reproduction and fossilization of language skills. Error reproduction refers to inappropriate acquired language structures that are thought to have been corrected but still occur frequently. This phenomenon is usually found in the language of beginners or low-level learners. Fossilization of language competence refers to L2 learners who reach a standstill in the development of phonological, grammatical, lexical and pragmatic competence. This phenomenon occurs in learners who have been learning the target language for a long time and have reached a relatively high level of proficiency. In fact, the repetition of errors is often an indication of fossilization of language skills.

Selinker also divides fossilization into temporary fossilization and permanent fossilization [1]. Temporary fossilization, also known as stabilization, refers to the fossilization of linked languages that contain learning platforms, i.e., the development of a given target language feature is simply "halted" or "inhibited" for a shorter or longer period of time. Permanent fossilization is the result of social, psychological and interactional factors.

2.5. Types of Fossilization

Fossilization is a linguistic phenomenon that manifests itself in a form different from the target language. It occurs at all levels, from the phonological level to the pragmatic level.

Phonological fossilization refers to the repetition of phonological errors due to the learner's incorrect acquisition of the pronunciation of the second language. Many pronunciations in English do not exist in Chinese, so Chinese learners have difficulty pronouncing them correctly. Phonetic fossilization occurs when such phonological errors are repeated and eventually remain in the wrong way.

Morphological fossilization is mainly found in articles. Coronals are a big problem for Chinese students because there is no corresponding word or expression in Chinese. It remains a mystery as to when and where to use which article, even for those learners with a high level of proficiency.

Different languages have their own syntactic rules, and the most typical manifestation of syntactic fossilization among Chinese students is in tenses. Chinese does not have a clear distinction between tenses, while English usually has a present tense and a past tense, which can be further categorized into sixteen types. Students are forced to rely on their intuition when they cannot clearly distinguish between correct and incorrect tenses, resulting in fossilization.

Semantic fossilization refers to the use of linguistic forms that exist in the target language but do not represent what the L2 learners want to express in the context.

Due to the close relationship between pragmatics and semantics, the two aspects of fossilization are interrelated and overlap. Pragmatic bias is also referred to as "pragmatic failure" by Thomas [6]. According to her, pragmatic failure occurs in cross-cultural communication and refers to "the inability to understand the meaning of what is being said". Inappropriate language use can lead to

misunderstanding, embarrassment and even insults. In conclusion, fossilization is a complex linguistic phenomenon that involves multiple levels and may be affected by a variety of factors.

3. Domestic Research

3.1. Interlanguage

At present, China's research on interlanguage in Chinese and English still remains at the level of literature and empirical evidence; however, with the introduction of relevant theories from abroad, domestic empirical research in this field has gradually become active and played an important role in it.

Domestic Chinese mediator research began in the 1980s, and the concepts of mediator and bias analysis were introduced for the first time in 1984 in Lu Jianji's "Mediator Theory and Phonological Bias Analysis of Foreigners Learning Chinese"[7]. He pointed out that mediator language, refers to a language system that is created in the process of foreign language learning due to the interference or influence of the relationship between the learner's native language and the foreign language, and this language system is different from both the learner's native language and the target language he learns. It is created neither by the learner himself nor by the teacher, but as a result of incorrect generalizations and inferences about the laws of the target language made by the learner of a foreign language in the process of learning. In terms of phonetics, the mediated language is characterized by complex phonetic changes, complex changes in phonetic rhythm and complex changes in tones; in terms of vocabulary, it is characterized by diversified word meanings and usages, morphological and lexical diversity; in terms of grammar, it is characterized by diversified syntactic structures; and in terms of script, it is characterized by diversified fonts. However, the mediating language is not fixed, but gradually approaches the correct form of the target language with the development of learning.

3.2. Fossilization Contents

Citing the definition given by Selinker, Li Jong-ying points out that the phenomenon of fossilization of interlanguage is proposed as a state in which those linguistic items, grammatical rules, and linguistic sub-systemic knowledge related to the target language tend to become stereotyped in the intermediary language of a second language learner, rather than changing as the learner grows older and learns more of the target language [8]. Chen Huiyuan called the phenomenon of "language rigidity", which was found to be difficult to change and persisted for a long period of time in learners' mediated language, limiting their language use and making it difficult for them to improve their language proficiency. Hu Rong pointed out in his article that since Selinker proposed the concept of "rigidity", scholars at home and abroad have different understandings and interpretations of "rigidity" [9]. There are many different interpretations of a stereotypical definition. So far, the phenomena and concepts that are generally considered to be closely related to the meaning of "rigidity" include: retrospection; stereotyped errors; learning plateaus; typical errors; long-term use of a language without a target; stagnation of learning; errors that cannot be corrected by negative feedback; language acquisition; habitual lapses; long periods of freedom of change, and so on. With the deepening of its research, the understanding of its connotation has become more and more profound, and its connotation has become more and more rich. Hu also quotes Selinker and Lamendella who define "rigidity", saying: "Without the development of a target language, the learner's acquisition of a transitional language will be permanently stagnant, and this phenomenon occurs at all levels"[9]. According to Hu Rong, this definition is a development of the earlier definition in that previous studies have always regarded ossification as a subsystemic stagnation of mediated language [9]. But fossilization is not just a persistent, repeated stagnation of some mediated language forms; it is a phenomenon belonging to the whole system of mediated language, which eventually develops into the stagnation of language competence; ossification is not just the persistence of certain forms of language during a certain period of time, but more importantly. It emphasizes the view of cessation of learning as a cognitive process, and it is also an emphasis on the cognitive process. It is more

important to emphasize that the cessation of learning is regarded as a cognitive process [9]. Since then, many scholars have defined the concept of "fossilization" basically according to the above definition. In these cases, most of them refer to the definition of "fossilization" by foreign scholars, and then add their own understanding, but not many people can really put forward their own unique viewpoints and interpretations, so the definition of "fossilization" has not yet reached a consensus [10].

3.3. Causal Factors of Fossilization

Domestic scholars also have different opinions on the causes of mediational rigidity. For example, some believe that it is caused by learners being influenced by native language transfer in the learning process, while others believe that it is caused by learners' lack of correct knowledge of the target language [10]. Most scholars in China, such as Weidong Dai, Qiang Niu, Juan He, Yun Gao, Jingmei Zhu, etc., start from Selinker's theory and classify the causes of fossilization into five categories, namely, "mother-tongue transfer, transfer of training, learning strategy, communication strategy, and the phenomenon of target-language overgeneralization", and elaborate on them with concrete cases. In addition, there is no lack of other insights [10]. Chen Huiyuan made a more comprehensive analysis of the three aspects of the phenomenon of "rigidity"[11]. She pointed out that, from the viewpoint of internal factors, the phenomenon of "rigidity" is caused by the developmental obstacles of internal factors; from the viewpoint of external factors, the phenomenon of "rigidity" is caused by the influence of external factors on the results of language learning [11]. According to this line of thought, this paper further explores the interaction theory of the rigidity phenomenon on the basis of previous studies. Its main content is: "internal cause theory", also known as "biological theory", whose basic point of view is that various phenomena and laws in language are regarded as the products of biological evolution. It examines and explains various phenomena and laws in language from the perspective of biological evolution. Therefore, it emphasizes the influence of the internal factors of the language system on the outcome of language learning, while according to the viewpoint of "external factors", "external factors" have a great influence on the outcome of language learning. On this basis, it is further explored how the feedback received by the learners in the learning and communication process affects or influences the learners [11]. Those who hold this view are not only Chen Huiyuan, but also Guo Suihong, Zhao Junwei and so on [12]. Regarding the reasons for the fossilization of interlanguage, scholars in China have explored it from many angles and at many levels. For example, they explain it from the perspectives of learning strategies, language input, social-cultural factors, and learners themselves, or from the perspectives of learners' own factors, native language interference, and the choice of learning strategies. However, these studies are basically premised on English as a second language, while there are very few papers exploring the causes of its formation with Chinese as a second language[10].

3.4. Classification of Fossilization

There are few studies on the types and characteristics of Fossilization in China, and most of them draw on Selinker's theory of Fossilization and make some explanations and innovations on the basis of it. One of the most representative and influential theories is the article "Fossilization of Transitional Language and its Teaching Implications" published by Weidong Dai and Qiang Niu in 1999, which categorizes fossilization according to Selinker's viewpoint [13]. They argued that fossilization phenomenon can be formally divided into individual fossilization and group petrification. According to its nature, it can be classified into temporary and permanent fossilization [13]. This view is also widely recognized in the academic community, and Guo Suihong, Zhao Junwei and others hold the same view. Drawing on Littlewood's theory, Li Jiongying proposed in 30 Years of Research on the fossilization of Interlanguage that the fossilization of interlanguage can be divided into individual fossilization and community fossilization according to the characteristics of the immigrant's language [8]. This is not essentially different from individual fossilization and community fossilization.

4. Implications for Teaching

At present, there are still some problems in the fossilization of interlanguage, such as the diagnosis of fossilization and the evaluation of intervention effects. In future research, the authors need to explore the mechanism of fossilization and the corresponding intervention measures in depth, so as to have certain guiding significance for the development of English teaching. Meanwhile, due to the continuous development of modern science and technology, English teaching is increasingly using digital, artificial intelligence and other technologies, which provide people with new ways and methods to study and solve the problem of language fossilization. Future research should pay more attention to the impact and practical effect of these new technologies on solving the "fossilization" problem.

From the teaching point of view, the solution to the problem of English fossilization depends not only on the learners' own efforts, but also on the transformation of teaching methods and teachers themselves. Students are prone to fossilization when they memorize vocabulary and learn mechanically and repetitively for the purpose of test-taking. Students must adjust and change their learning attitudes and styles in order to better understand what they have learned, not just a superficial interpretation of Chinese, to better apply the language they have learned, and to build their own English system.

First of all, as an English teacher, one has to constantly improve one's knowledge, both in terms of basic knowledge of English and a certain level of communicative competence in the language, as well as a certain level of linguistic knowledge and the cultural background of both Britain and the United States. English teaching is a multidisciplinary course, including English and American literature, pedagogy, psychology, vocabulary, linguistics, grammar, pragmatics, syntax, etc. Only in this way can teachers recognize English from a big aspect, so that the students can recognize the language from a big aspect, so that they can understand the learning of the language in a more in-depth way, instead of just the derivation of a grammar and a word, and at the same time, it can also improve the teaching efficiency, enhance classroom interest, stimulate motivation and make students achieve better results in English education. Secondly, learners should establish a correct way of thinking and fully realize that language learning is a long-term and continuous process. Language learning is a gradual process, which is difficult to achieve immediate results, and even more unlikely to bring learners an immediate sense of achievement and satisfaction. In this process, learners often face the following two problems: firstly, the learning of English lacks continuity and systematicity, for example, the memorization of vocabulary is only a kind of temporary, casual and short-term. But on the other hand, they want to get the best results from their efforts, and when they find that they are not doing well, they feel frustrated and upset, thinking that it is all because of their poor memory or because English is too difficult. Learners often overlook the fact that learning a coherent language involves constant repetition and practice in a variety of contexts. Only in this way can internalization of the language and effective and accurate output of the language be achieved [12].

5. Conclusion

The phenomenon of fossilization of interlanguage has been widely concerned by domestic and foreign scholars since it was proposed in 1972. Mediated language is a stage that second language learners have to go through in the process of learning, and the phenomenon of fossilization is also a result of this. The authors summarize the definition, causes and types of fossilization of interlanguage by analyzing domestic and foreign scholars, and systematically elaborate the development process of fossilization of interlanguage. Generally speaking, what is most lacking in the research on fossilization is the empirical research tested by time, for the fossilization phenomenon, the authors can't simply think about how to solve it, but to adapt and change the status quo. With the growth of fossilization, there should be a reflection on the teaching methodology in order to have a better way to shorten the process as much as possible, and to provide second language learners with a more efficient and quicker way of learning.

Authors Contribution

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

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