

Fossilization in Interlanguage and Its Implications for Foreign Language Teaching

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Abstract—Fossilization in interlanguage is a common phenomenon in second language acquisition. This paper delves into the nature of interlanguage fossilization and explores its significance in the context of foreign language teaching. It begins by defining interlanguage and examining its key features, followed by an indepth analysis of the concept and characteristics of fossilization. The study investigates multiple factors contributing to fossilization from various theoretical perspectives. Subsequently, it analyzes the multifaceted impacts of fossilization on second language acquisition. Based on these findings, the paper proposes implications for foreign language teaching, aiming to address fossilization effectively and foster learners' adaptation to new linguistic forms. These recommendations offer new perspectives to enhance both language instruction and research on second language development.

Keywords—cognitive science, fossilization, interlanguage, foreign language learning

I. INTRODUCTION

Language acquisition is a complex and multifaceted process. One widely discussed phenomenon in this process is the emergence and development of interlanguage, a transitional linguistic system developed by learners as they attempt to acquire a new language [1]. Interlanguage reflects learners' evolving understanding of the target language and plays a critical role in second language acquisition (SLA) [2]. However, over time some learners may reach a state known as fossilization, marked by linguistic stagnation and the failure to progress beyond their interlanguage [3].

The paper first defines interlanguage and outlines its characteristics. As a transitional linguistic system, interlanguage represents learners' approximate attempts to imitate the target language during their learning journey. It is characteristically incomplete in grammar, vocabulary, and pragmatics, reflecting the learner's stepwise progression toward nativelike competence.

The concept of fossilization is then discussed and defined as a developmental plateau in which learners become unable to move beyond their interlanguage stage [4]. This condition represents a major barrier to language learning and contributes to longterm stagnation. This study intends to analyze the causes of fossilization from multiple perspectives—including psychological, biological, sociocultural, and cognitive approaches. It then examines the effects of fossilization on various dimensions of foreign language development, such as skill stagnation, persistent errors, reduced learning efficiency, and a decline in learner confidence [5]. Building on this comprehensive analysis, the paper provides pedagogical implications aimed at overcoming fossilization. Suggestions include emphasizing sociocultural elements in language instruction, utilizing

modern learning technologies, addressing fossilization among instructors themselves, developing constructive attitudes toward learner errors, and guiding learners in effective learning strategies [6]. Ultimately, this study seeks to deepen the understanding of fossilization and present actionable insights for improving foreign language teaching and research.

II. INTERLANGUAGE AND FOSSILIZATION

A. Definition and Characteristics of Interlanguage

The concept of interlanguage was introduced by American linguist Larry Selinker in 1969. As shown in Fig. 1, interlanguage refers to the unique linguistic system constructed by second language learners during the learning process, based on language input from the target language [7]. Interlanguage can refer to either a learner's stable linguistic system at any given time (as a static concept) or, as shown in Fig. 2, the dynamic developmental trajectory from the learner's native language toward the target language.

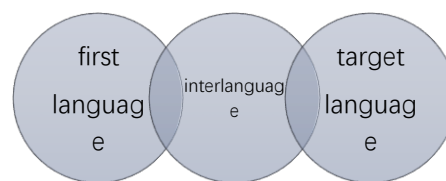


Fig. 1. Relationship among native language, interlanguage, and target language.

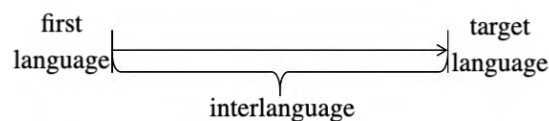


Fig. 2. Interlanguage as a continuum.

Interlanguage is distinct from both a learner's native language and the target language, but it possesses its own systematic features. Selinker outlined three major characteristics of interlanguage:

- 1) **Permeability:** The rules learners construct are not fixed and are open to modification and refinement over time.
- 2) **Dynamism:** Interlanguage is in a constant state of flux and evolves as learners acquire more input and experience.
- 3) **Systematicity:** Although incomplete, interlanguage follows consistent rules, often developed through simplification, transfer, and restructuring mechanisms.

B. Concept and Characteristics of Fossilization

Fossilization refers to a stagnated state in which learners cease to make progress in acquiring the target language, resulting in a rigid and persistent interlanguage system that resists change. When learners enter this phase, their ability to improve decreases, and their language use may become characterized by entrenched errors and inflexible structures.

The concept of fossilization was first introduced by Selinker in his seminal work on interlanguage. He defined it as “a phenomenon in which certain linguistic items, rules, and subsystems in a foreign language learner’s interlanguage become stabilized and resistant to change [8], regardless of the learner’s age or the amount of exposure to the target language.” Since then, fossilization has attracted widespread attention from researchers and has been the subject of extensive studies.

Although there is still considerable debate surrounding the exact definition of fossilization, it is generally understood as a phenomenon in which second or foreign language learners, after reaching a certain level of proficiency, no longer show the kind of clear and continuous improvement observed in the early stages of learning. Instead, they enter a plateau where stagnant progress is accompanied by persistent use of non-target-like language forms in both spoken and written communication. Learners struggle to reach the ideal goal of native-like proficiency. Fossilization can occur at any level of linguistic structure, including phonology, lexis, syntax, and discourse.

Among these, phonological fossilization is often the most noticeable. Many foreign language learners, even at high levels of proficiency, retain traces of their native accent and intonation when speaking the target language.

At the lexical level, fossilization is frequently reflected in the incorrect selection or usage of near-synonyms. Learners may struggle to distinguish subtle differences between words with similar meanings. For example, both “small” and “little” mean “small in size”, but their appropriate use can vary by context, leading to frequent misuse. Likewise, learners may rely excessively on basic vocabulary, such as using only “good” to express anything positive, or “make” for all causative actions, overlooking more appropriate alternatives.

At the levels of grammar and punctuation, instances of fossilization are also common. For example, in high school and college English writing exams in China, students often replace complex structures like attributive clauses with two simpler, juxtaposed sentences [9]. Additionally, many learners confuse Chinese full stops with the English period, misusing punctuation as a result of first language interference.

In terms of pragmatic use, fossilization often manifests as rigid, formulaic expressions that lack contextual flexibility. A classic example is the default response of many Chinese learners to the greeting “How are you?”—namely, “Fine, thank you, and you?”—regardless of the situation. In contrast, native speakers typically respond with more varied, context-sensitive expressions.

Scholars have proposed various explanations for the causes of fossilization. Selinker approached it from a psychological perspective, probing the internal factors that contribute to its emergence. He argued that second or foreign language learning involves different psychological mechanisms than

those used in first language acquisition, which can lead to the establishment of distinct linguistic systems.

The psychological basis of fossilization lies in what he termed latent language structure, a concept initially introduced by Lenneberg. This concept bears similarities to universal grammar, but with a stronger biological orientation. It refers to a pre-formed linguistic blueprint in the brain—an arrangement—that enables children to develop language-specific grammatical structures as they grow. According to Selinker, once learners pass the critical period for language acquisition, they can no longer activate this latent structure in the same way that children do [10]. Instead, they must rely on general cognitive processes based on their native language, using L1-based thinking to acquire L2 knowledge. Fossilization, in this view, is the inevitable result of this shift in learning mechanism.

Drawing upon both domestic and international research, fossilization can be characterized by the following five features:

- 1) **Learning Plateau:** Learners cease improving beyond a certain proficiency level, a phenomenon observed in both child and adult learners.
- 2) **Resistance to Correction:** Learners show difficulty in modifying fossilized errors, even when presented with accurate language input.
- 3) **Grammatical Rigidity:** Learners exhibit overreliance on certain grammatical or lexical forms, reducing flexibility in language expression.
- 4) **Self-Restriction:** Fear of error or dependence on fossilized forms may discourage learners from experimenting with new structures.

Resistance to Feedback: Learners in a fossilized state may reject corrective feedback, making it harder to internalize more appropriate linguistic forms [11].

III. CAUSES OF FOSSILIZATION

Based on the foundational analysis of interlanguage and fossilization, this section investigates the underlying causes of fossilization through five major theoretical lenses: Selinker’s psychological perspective, biological explanations, interactionist theory, sociocultural approaches, and Krashen’s input hypothesis.

A. Selinker’s Psychological Explanation

Selinker’s psychological model highlights the internal cognitive processes of the learner. He suggests that fossilization arises due to ingrained psychological habits developed during interlanguage formation. These are classified into five categories:

- 1) Native language transfer
- 2) Transfer of training
- 3) Second language learning strategies
- 4) Second language communication strategies
- 5) Overgeneralization of target language rules

Native language transfer refers to the phenomenon in which foreign language learners rely heavily on the linguistic forms of their first language during the early stages of learning, resulting in clear influence across pronunciation, grammar, syntax, and vocabulary. Lamendella (1977) noted that in the initial stages of foreign language learning, due to the lack of adequate knowledge of the target language and the

underdevelopment of its subsystems, learners often rely on the existing subsystems of their native language to construct linguistic forms in the foreign language. This borrowing process gives rise to an interlanguage—a linguistic system that falls between the native and target languages—which can lead to the onset of fossilization.

Transfer of training mainly refers to deficiencies in the input of correct language forms during the learning process. This includes issues such as unnatural language usage in textbooks, inaccurate teacher pronunciation, inappropriate or incorrect language used in classroom instruction, and inappropriately leveled learning materials. These factors can result in learner miscomprehension or misuse of language. This problem is particularly evident in English education in China, especially in economically underdeveloped regions where there is a lack of adequate teaching resources, qualified English instructors, and supportive language-learning environments. Learners predominantly rely on imitating their teachers' pronunciation, and when the teacher's pronunciation is substandard, incorrect pronunciations are likely to become fixed over time, ultimately leading to phonological fossilization.

Second language learning strategies are psychological responses adopted by learners to aid memory or overcome difficulties encountered during the language learning process. Effective learning strategies allow learners to engage in deeper cognitive processing of the foreign language input, resulting in more comprehensive learning outcomes. However, learning strategies can both succeed and fail. Suboptimal strategies can easily result in fossilization. This is particularly evident in learners' use of sentence structures—for instance, foreign language learners often favor simplified learning strategies and tend to avoid complex sentence structures, which hinders linguistic development over time.

Second language communication strategies are techniques employed by learners to overcome communicative obstacles caused by their limited language proficiency. These include the use of gestures, synonyms, or other compensatory devices. When learners notice that certain errors do not hinder communication with native speakers—and when native speakers prioritize understanding over linguistic accuracy—incorrect language forms can become habitual and eventually fixed, contributing to fossilization.

Overgeneralization of target language rules often occurs when learners have some knowledge of the target language but are not yet proficient. They tend to apply known rules and usages indiscriminately to new contexts based on assumption rather than understanding. Such misapplications may also lead to fossilization if left uncorrected.

Selinker deemed negative transfer from the native language the most critical source of fossilization. He argued that as learners form interlanguage habits, they may develop resistance to new forms that contradict their existing interlanguage system. Empirical studies support this view, indicating that interlanguage formed early in the learning process can harden into a cognitive habit, leading to fossilization over time.

B. Biological Explanation

The biological perspective focuses on changes in brain development and learning capacity that affect language

acquisition. It notes that learners may form stable neural connections to particular language structures once they reach certain developmental stages.

Neural plasticity enables learning, but once connections supporting specific language forms stabilize, they become increasingly difficult to change. Personal biological differences and prior learning experiences influence the likelihood and degree of neural entrenchment, providing a partial explanation for why some learners are more prone to fossilization than others.

C. Interactionist Perspective

The interactionist perspective concentrates on the role of learner interaction with teachers, peers, and the environment. Social dynamics can either facilitate or hinder progression beyond the fossilized interlanguage stage.

Overreliance on interlanguage in social communication may offer a sense of security but can also lead to entrenchment. Additionally, instructional methods and classroom environments influence fossilization patterns; innovative and open classroom settings are more likely to help learners avoid fossilization.

D. Sociocultural Factors

Schumann argued that significant sociocultural gaps between a learner's background and the target language culture require cultural and psychological adaptation to avoid fossilization.

According to the acculturation model, successful language acquisition depends on learners' ability and willingness to engage with the target culture. Cultural attitudes, social identity, and languageuse habits influenced by native culture may limit the acceptance of new grammatical structures. Learners who identify less with the target language culture may show reduced motivation, making fossilization more likely.

E. Krashen's Input Hypothesis

According to Krashen, comprehensible input is central to language acquisition. Thus, insufficient input is considered a major cause of fossilization. He identified five contributing factors:

- 1) Insufficient quantity of input
- 2) Poor quality of input
- 3) Affective filter
- 4) Output filter
- 5) Acquisition of nonstandard target language varieties

Among these, low quantity and low quality of language input are especially relevant to Chinese learners. Limited exposure to authentic language environments and native speakers restricts pragmatic development and fosters early fossilization—often from elementary and secondary school instruction dominated by nonnative English teachers.

- Krashen emphasized input but underestimated the value of output, arguing that excessive input can overwhelm learners with limited proficiency due to emotional barriers.

IV. IMPACT OF FOSSILIZATION ON SECOND LANGUAGE ACQUISITION

Fossilization poses several serious challenges to effective

second language learning, including developmental stagnation, frequent production errors, inefficiency in learning, and reduced learner confidence. These issues warrant careful consideration in foreign language education.

A. Stagnation of Linguistic Proficiency

Fossilized learners often cannot advance to higher levels of linguistic competence. Selinker's explanation shows that psychological habits formed in the early stages of SLA hinder the acceptance of new forms, leading to longterm stagnation.

B. Errors in Language Production

Fossilization results in persistent syntactic, lexical, and grammatical errors that are difficult to correct. The biological explanation suggests these are tied to neural fixity, causing lowquality output and hindering effective communication.

C. Reduced Learning Efficiency

Fossilized learners often fail to benefit from language input, making their learning process slow and ineffective. Krashen's hypothesis emphasizes how inappropriate input levels diminish learning effectiveness and increase learner frustration.

D. Decline in Learner Confidence

Learners experiencing fossilization may become discouraged, leading to low motivation. From a sociocultural perspective, lower identification with the target language community can reduce selfconfidence, worsening attitudes toward language learning.

V. PEDAGOGICAL IMPLICATIONS FOR FOREIGN LANGUAGE TEACHING

A. Emphasize Sociocultural Factors in Language Acquisition

Educators should account for students' cultural backgrounds when designing instruction. Diverse cultural perspectives can shape receptiveness to certain grammatical structures. Creating inclusive and culturally responsive classroom environments helps learners integrate into the target cultural context and avoid fossilization.

Moreover, opportunities for authentic social interaction promote language immersion and enable students to break free from interlanguage dependence.

B. Leverage Technology to Overcome Fossilization

Teachers can incorporate virtual learning environments, language learning apps, and online interaction platforms to enrich learners' exposure to authentic input. These tools increase accessibility to standard language forms and support customized learning pathways that overcome fossilization bottlenecks.

Adaptive learning software can also provide tailored exercises that address each student's specific weaknesses, offering a more flexible and effective teaching alternative to standardized instruction.

C. Address Fossilization Among Teachers Themselves

Educators should be conscious of their own fossilized language use. Professional development and continuous selfreflection are necessary to maintain high proficiency and effective teaching.

Peer observation, feedback, and collaborative learning can help teachers identify and rectify fossilized forms in their own language use.

D. Adopt a Positive Attitude Toward Learner Errors

Errors should be viewed as natural components of the learning process rather than as failures. Encouraging learners to experiment with new language forms can help them overcome the fear of making mistakes.

Providing individualized feedback aligned with each student's needs fosters correction and improvement while mitigating fossilization.

E. Guide Students to Use Effective Learning Strategies

Teachers can foster learners' metacognitive awareness—helping them set goals, plan their learning, and use resources strategically. Multimodal teaching methods (e.g., visual, auditory, conversational) can address diverse learner needs and enrich the learning experience.

By offering varied learning materials and activities, educators increase learners' engagement and adaptability, lowering the risk of fossilization.

VI. CONCLUSION

This paper provides an indepth analysis of fossilization in interlanguage and its significant impact on foreign language learning. By examining a range of theoretical explanations—including psychological, biological, sociocultural, interactionist, and inputbased models—it identifies key causes and negative effects associated with fossilization.

Furthermore, the paper proposes pedagogical strategies to address and prevent fossilization, aiming to enhance learners' language acquisition capabilities. These insights serve to broaden the scope of language teaching research and offer practical guidance for improving foreign language instruction.

CONFLICT OF INTEREST

The author declares no conflict of interest.

AUTHOR CONTRIBUTIONS

The author solely conducted all aspects of this research. This includes the conceptualization and design of the study, literature review, theoretical analysis, and identification of relevant pedagogical implications. The author was also responsible for writing, revising, and finalizing the manuscript.

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