Language Transfer of English Majors in L3 German Learning from the Perspective of Dynamic Systems Theory

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Abstract: As the cultures of the world's peoples interact and merge, language is an important vehicle for their development and will inevitably influence and intermingle with each other. English and German belong to the same language family, and both languages have commonalities and similarities in phonology, vocabulary and grammar. Based on this, from the perspective of dynamic systems theory, this paper focuses on the positive and negative transfer of L2 (English) knowledge in the acquisition of L3 (German) vocabulary and investigates the difficulties of trilingual learning of English majors in Guangzhou, China by means of questionnaires and interviews. The contents of the questionnaire included the different trilingual categories chosen by English majors and the influence of second language in the trilingual learning process. Through the questionnaire survey, the author found that second language had a significant transfer effect on third language acquisition in phonetics and vocabulary. Through the classification of trilingual and the analysis of transfer categories, it is expected to effectively improve the learning effect of German and strengthen the understanding of English majors on trilingual acquisition.

Keywords: trilingual acquisition, bilingual acquisition, dynamic systems theory, language transfer

1.   Introduction

With the rapid growth of economic globalization, the links between regions are getting increasingly intimate, and the demand for cross-language communication is gradually expanding. Only studying a second language can no longer suffice to meet communication needs, hence learning three languages has gradually gained popularity in society. However, for a very long time, many people simply viewed trilingual learning as a subset of second language acquisition, and language acquisition scholars frequently ignored the study of trilingual and multilingual acquisition in favor of concentrating primarily on the acquisition of one or two languages. According to some academics, the only difference between learning a third language and learning a second language is the quantity—going from two to three languages.

According to Cenoz, trilingualism is the acquisition of a language by a trilingual after mastering a first or second language [1]. Third language acquisition is not a subfield of second language acquisition but rather has to be viewed as its own area of study. In contrast, trilingual acquisition adds many languages, making its linguistic phenomenon more complicated and deserving of in-depth study. Much literature points out that the acquisition of a third language differs significantly

from the acquisition of a second language in many ways. It is important to examine trilingual acquisition independently from the development of second language acquisition in order to understand how it affects one and two languages.

At the same time, a second foreign language is also made available to English major universities under the compound bilingual talent training model of "English major + second foreign language" in addition to professional courses. This study examines the necessity of offering trilingual courses to 120 English majors in Guangdong province through questionnaire and interview methods. In order to explore the cross-language influence, this paper uses German as the third language and English as the second language. Due to the similarities between German and English, which are members of the same Germanic language family, many English majors opt to take German as a second language. The first mother tongue and the long-term acquisition of English will both have some impact on trilingual learning at the beginning. And this influence has significant implications in both theory and practice. The multilingual dynamic theory can theoretically be used to expand the research on trilingual acquisition. This study has practical applications that help lessen the negative effects of trilingual use on second language competency. By understanding the dynamic model system, language learners can study the development and interdependence between individual language systems in a multilingual context and lay the foundation for cognitive multilingual learning and development from a systems and dynamics perspective.

2.   Theoretical Framework

Dynamic systems theory, firstborn in the field of mathematics, studies complicated structures in the process of time [2,3]. Larsen-Freeman added it into the area of applied linguistics and pointed out that language structures are dynamic, complex, and non-linear [4,5]. The dynamic system theory holds that the improvement of second or multilingual learning is non-linear and is affected with the aid of many elements such as motivation and wear. Nonlinearity capability that the impact and motive are now not proportional in the system. The process of language acquisition emphasizes the interaction of one-of-a-kind ranges and variables of language, and varieties of an impartial language system from phonology, morphology, syntax, semantics, and pragmatics, while more than one language shapes a large language system. This theory regards language as a complicated and dynamic system, and its constituent factors are all interrelated, which makes the total system feature as a whole, and no issue can exist independently from the system. If one variable changes, all different variables in the system will additionally change. Dynamic systems theory is broadly used in quite several scientific fields, inclusive of computer control, neuroscience, biology, physics, and stereotyped mathematics [2]. The theory of dynamic systems presents a research perspective, which holds that all matters are interconnected and impact every other, and it is not possible to learn about an individual in isolation [6]. Herdina and Jessner argue that the normally used universal grammatically-oriented language acquisition theory lacks interest in variables such as individual, social, and psychological differences, and must undertake an extra holistic method to learn about multilingualism. A major feature of dynamic systems theory is the self-organizational nature of language systems [2]. Under the perspective of dynamic systems theory, the change and development of a system comes not only from the interaction with external variables, but also from the self-organization within the system [7]. By self-organization, it means a spontaneous generation of patterns and modalities that change in an open, dynamic system.

The thoughts contained in dynamic system theory are regarded to be incredibly consistent with the complicated improvement process of trilingual acquisition and are additionally a superb guiding approach for analyzing trilingual acquisition. From this theoretical perspective, language development is viewed as a complicated and dynamic process. With the increase in the number of languages acquired by learners, the language resources already mastered will affect the language

being acquired in a range of methods that are hard to precisely estimate, and the resulting changes are no longer linear. Compared with second language acquisition, third language acquisition entails extra language resources [2]. Therefore, in the method of third language acquisition, learners' language system turns into greater complicated, and the adjustments are more elusive.

3. Research Method

According to the transfer phenomenon of trilingual acquisition theory and the author's daily English and German bilingual learning experience, the trilingual survey questionnaire was compiled, and 120 undergraduates majoring in English were collected.

3.1. Research Object

The subjects of this study are 120 undergraduate English majors from universities in Guangdong Province, China. They are mainly in their junior year, and they all have at least two years of trilingual learning. Their ages range from 18 to 22 years old, with 5 students learning French, 85 Japanese, and 30 German as their third language.

3.2. Investigation Process

The data of selected topics are from two parts: a questionnaire survey and an interview. Part of the questionnaire is distributed through the questionnaire platform. Subjects can answer by clicking the questionnaire link or scanning the questionnaire QR code, and the statistics will be automatically stored in the heritage of the questionnaire account. The question setting of the questionnaire part is based on an anonymous questionnaire on the Internet, with a total of 10 questions, of which the first 9 are multiple-choice questions and the last one is an essay question. The questionnaire investigates learners' personal situation, their attitude toward trilingualism, and their difficulties in bilingual learning. The questions of the questionnaire include understanding the third language chosen by English majors in colleges and universities, and whether students think it is necessary to carry out trilingual courses for English majors. At the same time, it also collects the students' opinions on the influence of second language on third language, including both positive and negative aspects.

The interview section was followed up by a one-on-one interview. At the same time, the author selected 3 subjects from 120 participants in the questionnaire and conducted one-on-one interviews with them. The interview consists of but is no longer confined to the following three points.

(1) Do college English majors recognize that second language has an impact on third language acquisition?

(2) Which aspects do college English majors assume the influence of second language on third language acquisition is mainly concentrated in?

(3) The phenomenon of language transfer in L2 to L3 acquisition of college English majors.

4. Results and Discussion

According to the results of the questionnaire survey, most college English majors believe that trilingual does have an impact on second language acquisition, and 77% of students believe that it is necessary to carry out trilingual courses for English majors. Among them, the majority (56.3%) believed that trilingualism had both positive and negative effects on second language acquisition. The positive effect of trilingual recognition on second language acquisition (22.69%) was higher than that of the negative effect (6.72%). However, more than 14.29% of the subjects still believe that trilingualism has no effect on second language acquisition (Attached Table 1).

Table 1: Transfer of second language to third language acquisition.

Options	Total	Proportion
Positive	27	22.69%
Negative	8	6.72%
Both	67	56.30%
None	17	14.29%

4.1. The Influence of Second Language on Trilingual Acquisition

According to the results of the questionnaire survey, college English majors indicated that the impact of trilingualism on second language acquisition occurred at the three levels of pronunciation, vocabulary, and grammar, especially at the level of pronunciation and vocabulary (Attached Table 2 and 3). 60.64% of the subjects stated that it had an effect on the phonetic level, 73.4% on the lexical level, while solely 48.94% and 1% of the subjects thought that it had an increased impact on grammar or other levels.

Table 2: Different aspects of bilingual positive migration.

Options	Total	Proportion
Phone	46	48.94%
Vocabulary	69	73.4%
Grammar	67	60.64%
Meaning	1	1.06%

Table 3: Different aspects of bilingual negative migration.

Options	Total	Proportion
Phone	42	56.00%
Vocabulary	39	52.00%
Grammar	44	58.67%
Meaning	2	2.36%

To sum up, college English majors generally believe that the influence of trilingual on second language acquisition focuses on vocabulary and phonetics. The following will take the instance of trilingual German students, focusing on the phenomenon of language transfer in vocabulary and the phenomenon of self-reorganization of students' language systems.

4.2. Positive Transfer of Vocabulary

Both German and English are members of the Indo-European Germanic language family, which means they share many characteristics in common. It is obvious that the case and order of letters 1-26 are same between the English and German alphabets. Many words in German share exactly the same meaning and letter structure as words in English, while some words in German only differ from English words by a few letters [8]. Even if learners have not studied the new German terms in advance, they can nevertheless recognize these German words by using their L2 knowledge and make educated guesses about their meaning, demonstrating the beneficial role that English plays in the learning of German as a second foreign language. There are two categories in which language transfer can occur: the identical category and the cognizable partial identical category (Attached Table 4) [9].

Table 4: Categories in which bilingual migration can occur.

Identical type	Part same type
name&name	Salat&salad
taxi&taxi	Vokabel&vocabulary
warm&warm	Tomate&Tomato

It is clear from these examples that nouns make up the majority of German terms that are precisely the same as or comparable to their English counterparts. The German language has unavoidably been impacted by foreign words throughout its evolution. The main influences on German are Latin, French, and English. Due to British influence in manufacturing, trade, transportation, and the media, during the period of the Industrial Revolution in Britain in the 19th century, Numerous words from these domains, including "Partner", "Tunnel", "Express", "Reporter", "Interview" and others, entered and became part of German. In the 20th century, the impact of English on German was amplified and under the strong cultural influence of the United States, Germany adopted many American words [10]. At the same time, these words started to appear in everyday German conversation and were accepted by all social classes.

English majors frequently choose German as their third foreign language because of the language's influx of foreign vocabulary and affiliation with the Germanic language family. By understanding these foreign words and learning the same word forms, the vast English vocabulary of English majors will be helpful when learning German.

4.3. Negative Transfer of Vocabulary

4.3.1. The Difference of Articles and Prepositions Between English and German

Despite joining the same family of Germanic languages, English and German have a very different vocabulary. People frequently confuse German with English when learning the coronals, feminine, masculine, and neutral nouns, as well as the conjugation of adjectives. The definite article and the indefinite article are the two principal types of articles in both English and German. The "the" definite article in English can be used to refer to the majority of nouns without regard to the feminine or masculine neuter. But the definite article in German has three genders: masculine ("der"), neuter ("das"), and feminine ("die"). In English, "the" can be used with most nouns without altering the definite article's position or spelling in accordance with the noun's attributes. In contrast, the definite article in German is inseparable from the noun, and if the noun changes position in a sentence, the definite article must also alter position and form.

It is interesting to be aware of how English vocabulary and collocations have a strong impact on English majors, who have had more than nine years of English schooling. English majors frequently disregard the gender, number, and case of German nouns when learning the language, as well as being required to memorize noun gender, since these concepts do not exist in English.

This will lead to an inability to determine the definite article form, and therefore most students tend to learn German with missing or incorrectly conjugated definite articles, and thus are unable to express sentences correctly. The same applies to the use of prepositions. For example, the preposition "in" is used in English for "in a certain year", but in German it is "im Jahr(e)". The German word "Jahr" for "year" is neuter because of the sexual distinction of the nouns in German. Therefore, the word "das" in "in das yahr" should be written as "dem", which is abbreviated with "in" as "im". Likewise, German adjectives differ significantly from English. German adjectives are used in conjunction with nouns with the same coronary as the noun. Verbs are conjugated in

sentences according to the person, and verbs have either divisible or indivisible prefixes, and strong or weak conjugations. Depending on the masculine, feminine, or neuter of the noun, adjectives added before the noun used in a sentence need to be conjugated according to the situation.

4.3.2. Self-Organization Phenomenon of Language Systems and Inter-Language

It is worth mentioning that according to the dynamic systems theory, which is characterized by self-reorganization, the sequence of language development changes comes from self-reorganization and adjustment. Language learners develop their own independent language system based on the input of the language, forming some kind of inter-language. The inter-language is a target language system that is unique to the second language learner. This language system is different from both the learner's native language and the target language in terms of phonology, vocabulary, grammar, culture, and communication, but is a dynamic language system that gradually converges to the correct form of the target language as learning progresses [7]. Each person has his or her own unique interlanguage, and each person's interlanguage is in a constant state of flux.

In fact, the interlanguage has a unique set of phonological, grammatical and lexical rules that allow for a systematic linguistic analysis. As English majors continue to trilingualize, new forms of language are being introduced and new rules are being infiltrated into their language systems, creating each individual's own interlanguage system. Interlanguages have the instability inherent in dynamic systems theory and can be seen as a complex and dynamic system [11]. For example, in English, the word "sympathy" is often used to indicate a caring, understanding emotional response to the suffering of others. While in German words to express the same meaning, learners will always unconsciously use "sympathie" to express the same meaning due to the lack of understanding of the target language vocabulary and the rigid thinking influenced by bilingualism, while Germans will use "Mitleid" to express that layer of meaning. At this point "sympathie" acts as a mediator for English learners in learning German, which is not accurate, but can eventually be corrected through continuous practice and consolidation by learners. This results in a dynamic process of language change.

5. Conclusions

Chinese students tend to be much more influenced by their second language than their native language in the process of learning a third foreign language. English majors have a deep-rooted English mindset and inevitably encounter many difficulties when learning a trilingual language. By using their knowledge of English to learn German, they can think about how English deals with a new grammatical phenomenon in German, and whether they can find commonalities with English. By consolidating the knowledge of German through repeated practice, learners can reduce the negative transfer from second language to third language.

In this paper, the author analyzes the transfer that occurs when English learners learn German by investigating the difficulties that English majors encounter when learning a trilingual language. At the same time, the author found that most of the students formed their own interlanguage system when learning trilingualism. This system helps second language learners to have a good transition process when learning trilingualism. Through the continuous change of the language system, a better trilingual learning effect is eventually achieved, thus reducing the negative transfer of the second language to the third language. Finally, the author will continue to focus on how the L1 to L2 language transfer pattern differs from the L2 to L3 language transfer pattern in the future project process.

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