Language Transfer in Third Language Acquisition: Examining the Impact of L3 Korean/Japanese on L2 English of Native Chinese Speakers

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Abstract. This research focused on the negative aspects of reverse transfer from Japanese and Korean to English and contributes to the field of research on cross-language influence. Section 1 includes an introduction providing the abstract form of the whole study. It then opens Sect. 2 which is the study of the work that has already been done in the field of a third language, its acquisition, and the impacts produced in this process. Section 3, the methodology applied for this study, is quantitative research analyzing the language proficiency in pre-test and post-test of similar participants. The results in Sect. 4 are then created and assessed through the SPSS. Section 5 deals with the discussion of the results and the shortcomings found in the end. Finally in Sect. 6 the researcher concludes the overall gust of the research and highlights the inquiries and limitations for further researchers.

Keywords: cross-linguistic influence · contrastive analysis · error analysis · third language acquisition · language transfer · teaching strategies

1 Introduction

With the rapid growth of the global economy, mastery of two languages (native and English) seems insufficient to meet the needs of society, so a trend has emerged of learning a third and even a fourth language. To enhance students' competitiveness and employment opportunities after graduation, many universities offer bilingual majors. The author experienced such a situation as a Korean-language major who had to study Japanese as a third foreign language. In learning both languages, the author encountered negative transfer in the reverse direction, which great hindered English acquisition. With this initial motivation, the author conceived this research in the hope of finding solutions for students with similar experiences.

Language transfer has a long tradition and is considered to be a central area of research in applied linguistics, especially in second language acquisition (SLA). A large body of research has considered the effects of native language transfer on SLA, in terms of both learning and teaching, but little information is available on third language acquisition

(TLA), especially in regard to reverse transfer. TLA is a relatively new branch of language acquisition studies that is gradually drawing increased interest from language acquisition researchers.

1.1   Research Background

Language transfer describes the effects of similarities or differences between the target language and an acquired (or incompletely acquired) language [1]. While there has been a considerable amount of research conducted on forward language transfer in the direction of L1 to L2 or L1/L2 to L3 acquisition over the last few decades, a review of the literature reveals that relatively little research has been conducted on reverse transfer, i.e., the impact of a later learned language on a previously acquired one. To make up for this research blank, this paper aims to analyze the possible reverse transfer effects of L3 Korean/Japanese by Chinese Mandarin L1 learners on L2 English in terms of pronunciation, vocabulary, syntactics, and pragmatics.

1.2   Research Design

This research is conducted with 100 participants with the Chinese language as their native or first language. They already have learned the English language as their second and now they are acquiring a bachelor's degree in the Korean language. The impact of third language acquisition is going to be checked in this research by conducting a pre-test and a post-test after one year of their degree. The research question is given below.

   Q: Does the acquisition of a third language L3 has an impact on the already acquired second language L2?

   The pre-test and post-test data of these students have been collected and analyzed through SPSS. Research on language transfer and SLA has achieved great results, producing relatively complete, systematic and in-depth studies in both theoretical research and the practice of teaching Chinese as a foreign language. In contrast, research on trilingual acquisition (i.e. TLA) remains in its infancy.

2   Literature Review

Although it is common for people in many countries to speak three or more languages, third language (L3) acquisition has received relatively little attention compared to the extensive literature on second language (L2) acquisition. The process of L3 acquisition has also been proposed to be distinctly different from L2 acquisition in terms of (a) the order of acquisition, (b) sociolinguistic factors (e.g., the mobility of the population, the use of the target language in the community, ethnic identity), and (c) the psycholinguistic processes (e.g., different aims, metalinguistic awareness) involved [2]. Since L3 acquisition is a complex phenomenon which requires learners to utilise a complex pattern of prior linguistic knowledge and can be influenced by complex factors and effects associated with the interactions of multiple languages, it establishes itself as a distinct branch in acquisition language acquisition research.

Current research on the reverse transfer of L3 is mainly done in the domains of phonology and morphosyntax. For example, Griessler (2001) proves the existence of positive effects of L3 French acquisition on the proficiency levels of L2 English in a study comparing the lexical diversity and verbal morphology under different English teaching approaches [3]. Cabrelli Amaro (2013) enrolled two mirror-image groups of successive bilinguals in their initial stage of L3 BP acquisition and found that L2 is more susceptible to the influence of L3 than L1 due to the relatively less stable L2 system [4].

In Asia, among the few existing substantial studies of L3 acquisition, there are two which involve English as L2 in L3 acquisition. Hui (2010) employed a picture elicitation task with a Cantonese-English-French L3 group and a Cantonese-English L2 group and found significant backward transfer in morphosyntactic production [5]. Cheung (2011) finds evidence for backward transfer from L3 German to L2 English of native Chinese speakers in both perception and production data in a study designed to compare the uses of tense-aspect. He argues that the backward transfer from L3 German to L2 English can probably be driven by a closer language distance between these two languages, as well as high frequency of language use and language exposure [6]. In another research on the English number agreement among L3 learners, Tsang (2015) used a grammaticality judgment-correction task and a free writing task and found that there was a possible reverse transfer from L3 French to L2 English among the Cantonese-English-French participants [7]. He proposes that the transfer effect from L3 French to L2 English can only take place when a learner's L3 proficiency has reached a certain threshold [8].

This paper aims to contribute to the study on third language acquisition by exploring the influence of L3 Korean/Japanese on L2 English of native Chinese speakers.

3   Research Methodology

3.1   Participants and Setting

For the current study, 100 university freshers who were enrolled in a four-year BA Program in Japanese/Korean Studies (50 for each program) at the Beijing Foreign Studies University were recruited. Before entering college, all of them have been studying English as their L2 for an average of 12 years and reached an intermediate level. Furthermore, they had no previous learning experience with Japanese/Korean which would later become their L3. The participants were followed longitudinally over a time span of 3 years of their L3 study in which we tested their L2 English proficiency 2 times: a pre-test during their first year at university (before starting the L3) and a post-test using IELTS questions of the same difficulty at the end of their third year at university (after three years of studying the L3). During the period, learner's use of their L2 and L3 was virtually limited to the classroom which comprised an average of 10 h of Korean/Japanese and 2 h of English learning per week. Both the pre-test and post-test contained four sections: listening, speaking, reading and writing. By the end of the study, students have reached an advanced level of their L3 (not lower than Korean TOPIK5 or Japanese N2).

The students were explained the purpose of the study and signed the Informed Consent for participation.

3.2 Data Collection and Data Analysis

Participants' linguistic output in the pre-test and post-test was first examined at the sentential level and then coded according to four variables: pronunciation errors, vocabulary errors, syntax errors and pragmatic errors. The data were then analysed quantitatively (using SPSS) and qualitatively. Interlanguage ('Konglish' and Japanese English) output influenced by the participants' native language was recorded. Targeted interviews were conducted with subjects whose pre- and post-test data differed significantly.

4 Results

The findings from this research reveal the relationship between linguistic errors in English (L2) and the interference of studying the Korean or Japanese language (L3) (Figs. 1 and 2).

    A: the number of pronunciation errors.
    B: the number of vocabulary errors.
    C: the number of syntactic errors.
    D: the number of pragmatic errors.
    N: number of participants.

According to the numbers in the pre-test and post-test data collected, errors quantified according to the four variables have increased in the post-test compared with the pre-test. The number of errors was noticeably amplified after the Korean or Japanese language interfered. Therefore, the insertion of learning L3 is effective based on the data collected.

Further data analysis from a quantitative perspective is based on Statistical Package for Social Science (SPSS). Additionally, the linguistic features of the four variables among participants will be analyzed from a qualitative perspective.
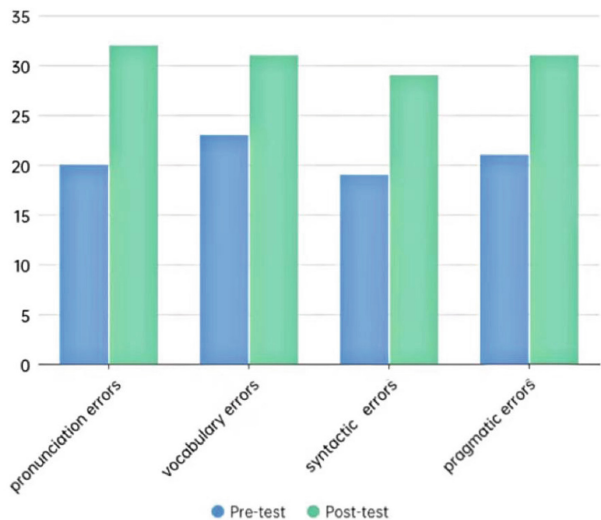
Fig. 1. Comparison between Pre-Test and Post-Test Average Number of errors in Group Korean (Photo credit: Original).
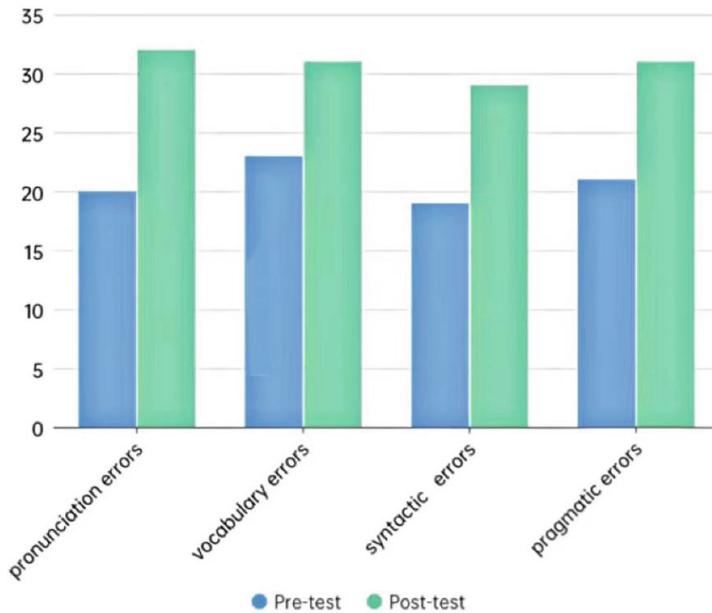
Fig. 2. Comparison between Pre-Test and Post-Test Average Number of errors in Group Japanese (Photo credit: Original).

Table 1. Data analysis based on SPSS-- The 50 students majoring in Korea. (Table credit: Original).

Variables	N	Pretest	Posttest	t	p
A	50	17.5 ± 8.922	33.74 ± 5.706	− 12.084	0.000
B	50	16.06 ± 8.615	36.88 ± 8.58	− 13.769	0.000
C	50	16.18 ± 7.064	36.7 ± 6.947	− 14.236	0.000
D	50	15.78 ± 6.018	33.08 ± 8.425	− 11.058	0.000

Givens that many factors affect students' exam results, this paper uses SPSS25.0 to conduct a significant test of difference in the sample data to evaluate teachers' teaching quality and teaching methods. The following Table 1 presents the data analysis based on SPSS.

Since the analysis was conducted for the pre-test and post-test of the Korean group regarding the four aspects of ABCD, a paired samples t-test was used to analyze the t-values of the pre-test. The A, B, C, and D post-tests were −12.084, −13.769, −14.236, and −11.058, respectively, which corresponded to a p of 0.000, which was less than 0.05. This indicates a significant difference between the Korean group's pre-test and post-test of ABCD. The differences were substantial and reached a statistically significant difference. It means the considerable effect of the interference, with the positive and

Table 2. Data analysis based on SPSS-- The 50 students majoring in Japanese. (Table credit: Original).

Variables	N	Pretest	Posttest	t	p
A	50	20.12 ± 5.389	31.76 ± 9.018	-9.115	0.000
B	50	22.78 ± 7.937	31.48 ± 7.149	-8.643	0.000
C	50	19.2 ± 5.718	28.66 ± 5.52	-11.547	0.000
D	50	21.22 ± 7.525	30.64 ± 5.122	-7.936	0.000

Table 3. Analysis of differences between Korean and Japanese groups in pretest. (Table credit: Original).

Variables	Group Korean	Group Japanese	t	p
A	17.5 ± 8.922	20.12 ± 5.389	-1.777	0.079
B	16.06 ± 8.615	22.78 ± 7.937	-4.057	0
C	16.18 ± 7.064	19.2 ± 5.718	-2.35	0.021
D	15.78 ± 6.018	21.22 ± 7.525	-3.992	0

negative signs of the t-values showing higher errors in the post-test than in the pre-test. This denotes that the interference increased pronunciation, vocabulary, syntactic, and pragmatic errors (Table 2).

Similarly for Japanese group, a paired samples t-test was used to analyze the t-values of the pre-test. The A, B, C, and D post-tests were -9.115, -8.643, -11.547 and -7.936 respectively, which corresponded to a p of 0.000, which was less than 0.05. This indicates a significant difference between the Japanese group's pre-test and post-test of ABCD. The differences were substantial and reached a statistically significant difference. It means the considerable effect of the interference, with the positive and negative signs of the t-values showing higher errors in the post-test than in the pre-test. This denotes that the interference increased pronunciation, vocabulary, syntactic, and pragmatic errors (Table 3).

The Korean and Japanese groups were analyzed on the four aspects of ABCD on the pre-test, with the introduction of an independent samples t-test. The t-values for the Korean and Japanese groups of B, C, and D were: -4.057, -2.35, and -3.992, respectively, and their corresponding p's were: 0.000, 0.021, and 0.000, all of which were less than 0.05. This indicates that the difference between the BCD's Korean and Japanese groups was statistically significant. Therefore, L3 instructional intervention had a significant effect. The positive and negative signs of the t-values show that the post-test results were higher than the pre-test results, indicating that the L3 instructional intervention increased BCD errors (Table 4).

The Korean and Japanese groups were analyzed on the four aspects of ABCD on the prosttest, with the introduction of an independent samples t-test. The t-values for the Korean and Japanese groups of B, and C were 3.419 and 6.407 respectively, and their

Table 4. Analysis of differences between Korean and Japanese groups in posttest. (Table credit: Original).

Variables	Group Korean	Group Japanese	t	p
A	33.74 ± 5.706	31.76 ± 9.018	1.312	0.193
B	36.88 ± 8.58	31.48 ± 7.149	3.419	0.001
C	36.7 ± 6.947	28.66 ± 5.52	6.407	0.000
D	33.08 ± 8.425	30.64 ± 5.122	1.75	0.084

corresponding p's were: 0.001 and 0.000, both of which were less than 0.05. This indicates that the difference between the BC's Korean and Japanese groups was statistically significant. Therefore, L3 instructional intervention had a significant effect. The positive and negative signs of the t-values show that the post-test results were higher than the pre-test results, indicating that the L3 instructional intervention increased BC errors.

5   Discussion

In this research, using SPSS 25.0 to analyse the pre-test and post-test data samples inspired the conclusion that reverse negative transfer does exist in students' TLA. The following discussion demonstrates that the degradation of English proficiency is due to the effects of L3. This effect is manifested in four linguistic aspects: phonological transfer, vocabulary transfer, syntactic transfer and pragmatic transfer, all of which will be discussed in detail below.

5.1   Phonological Transfer

Pronunciation errors usually take place as a result of sounds not existing in the speaker's first language. From the study the participants were examined on the Pronunciation of English consonants and English vowels based on their first languages. From the results the affected individuals had several pronunciation problems including stressing the wrong words in a sentence and pronouncing certain consonant sounds incorrectly. The phonological errors of Japanese/Korean (L3) and English (L2) trilinguals were most obvious and were manifested mainly as consonants, vowels, and tone. Firstly, confusion existed between f and h, between r and l, between n and ng and between sh, s and x. Apical affricates (zh, ch, z, c) were read as lingual surface affricates (j, q). Aspirated sounds were mispronounced as non-aspirated sounds. Secondly, the main errors among monophthongs involved ü[y], the retroflex vowel er[ɚ] and errors in -i[ɻ], -i[ɭ] and i[i]. The errors in the diphthongs were relatively complex, due mainly to the incoherence of most of the diphthongs. Some diphthongs were reduced and some lost the head vowel. Thirdly, the errors mainly comprised mispronunciations of the falling-rising tone (the third tone in modern Mandarin) as the rising tone (the second tone in modern Mandarin).

5.2 Vocabulary Transfer

Vocabulary errors usually take place as a result of wrong action attributable to bad judgement. From the study participants' interaction skills were examined and from the results vocabulary errors occurred when individuals were quick to point out errors or they were ignorant about a certain statement. As for vocabulary transfer, almost all popular foreign terms in Japanese and Korean are related to English promotes a tendency to be misled by their pronunciation in L3 when spelling those words in L2. As discussed earlier, the students might have different backgrounds and exposure to a language which makes differences on the basis of learning. The similarities in students' exposure are also needed to have accuracy in results.

5.3 Syntactic Transfer

Syntax errors occur when one uses a language that involves organizing words and phrases that don't make sense. From the study the participants were examined into a writing practice and their results analysed based into their presentations. The results revealed that syntax errors resulted from mistakes like missing a comma, quotation mark or misspelling a word. The structural and semantic differences between Japanese and English with regard to the passive voice were the main cause of deviations from the native variant of English. The syntax is a very important and confusing part at the same time. Tackling the difference in sentence structure can be a tiring activity sometimes. The syntactic basis generated while acquiring the English language as their second language has an influence on their third language acquisition. Prepositions were also an important area of syntactic and semantic interference. These students made frequent errors in L2 with (1) preposition deletions, (2) preposition additions and (3) incorrect use of prepositions.

5.4 Pragmatic Transfer

From the study the participants' linguistic output was first examined at the essential level and syntactic failures were mainly comprised of grammatical mistakes. From the analysis such mistakes occurred as a result of misunderstanding of some cultural and contextual aspects. For pragmatic transfer, this study shows that the sensitivity of Japanese and Korean people to the status of their interlocutors is clearly reflected in various discourse strategies. It is generally accepted that East Asian countries enforce a strict hierarchy or separation of power in superior-subordinate, elder-younger and parent-child relationships. Evidence of pragmatic transfer was found in the post-test of linguistic communication topics; equally importantly, such pragmatic conventions were virtually absent in the pre-test. Tradition and culture are important to be noticed while discussing pragmatic errors. A value that is acceptable in one culture might be offensive in other. So the contextual information needs to be fetched and process properly in this type of research.

6 Conclusion and Future Research

It can be noticed that the learners have made errors on different levels of language as phonological, vocabulary, syntactic, and pragmatic levels. Several of the factors listed

below contribute to various types of errors. For example, pronunciation errors are produced because of misleading and misunderstanding of the words. The influence of a second language can be seen clearly while discussing syntactic errors. The sequence of subject, verb, and object is not the same in the Korean language as that in the English language [9]. Thus it produces errors. Similarly, the contextual background and knowledge of new vocabulary have also played important roles in categorizing the errors. Generally these errors occurred as a result of simplification, faulty teaching, avoidance and overgeneralization [10].

This research employed comparative linguistics and experimental phonetics, questionnaire design, a survey and its analysis to offer a tentative study of phonological transfer in trilingual acquisition. While progress has been made, this paper has the shortcoming that the phonetic discrimination in this research relied mainly on the researcher's sense of hearing, understanding of speech and exploration and analysis of the pronunciation of Japanese and Korean. The results would have been more accurate if a commercial speech analysis software, Praat, had been used.

This paper focuses on trilingual acquisition, specifically the study of trilingual transfer in East Asian languages, to draw the attention of scholars in East Asian language studies and other fields to the increasing number of multilingual learners and to the effects of transfer so as to encourage the development of teaching materials that are suitable for multilingual learners so that more people can join the ranks of those learning Japanese and Korean. The gaps and shortcomings described above will be the subject of the author's future academic research.

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