The Effect of L1 and L2 on L3 in Grammar Learning from the Perspective of Language Transfer

---University Students with Chinese as L1, English as L2, Learning L3 Spanish Subjunctive Mood

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Abstract: Third language acquisition (TLA) research, as a novel area of study both domestically and internationally, has garnered significant attention from scholars worldwide in recent years. Previous studies on third language acquisition have extensively focused on interlingual transfer, but there has been limited attention given to grammatical transfer, especially related to the subjunctive mood. Additionally, Spanish has received less discussion than other languages. This present study aimed to investigate the language transfer of Chinese and English on learning Spanish subjunctive mood in a Spanish writing test conducted by 20 Chinese university students. The data were analyzed using frequency analysis and descriptive analysis in SPSS. The study revealed the following major findings: (1) Chinese transfer affects Spanish through changing verb form and the choice of tenses. (2) English transfer affects Spanish through the wrong verb form in the adverbial clause of purpose. Thus, the negative transfer from L2 to L3 is stronger than the one from L1 to L3.

Keywords: Third language acquisition, Language transfer, Subjunctive mood, Spanish

1.   Introduction

For a considerable period, the linguistic community has primarily concentrated on bilingualism when conducting multilingual research. Nevertheless, the swift advancements in science, technology, and society have heightened individuals' communication requirements, which often involve crossing regions, languages, and cultures. Consequently, the significance and necessity of multilingual research have become increasingly apparent.

The research on third language acquisition (TLA) or multi-language acquisition has been conducted using the same guidelines as second language acquisition (SLA) [1]. However, SLA lacks the metalinguistic skills and meta-cognitive strategies developed from prior language learning knowledge [2], given that SLA is achieved through the first language. In contrast, all the previously acquired languages influence TLA [3]. While various hypotheses and theories have been suggested, the Markedness Differential Hypothesis (MDH) and Contrastive Analysis Hypothesis (CAH) have been widely applied in the research of language transfer in SLA. CAH suggests that differences

between languages impede acquiring a new language. There are three versions of CAH: the strong version, the weak version, and the moderate one. The moderate version is the most accurate predictor of outcomes [4]. According to Eckman's research on MDH, unmarked sounds are more accessible to learn than marked sounds. Therefore, learning a target language that is more marked than previously acquired languages requires more effort [5].

Studies over the past few years have yielded important insights on the language transfer of TLA. Two main types of errors, interlingual and intralingual, arise from the transfer between different languages. Interlingual errors refer to the negative influence of one language on another, while intralingual errors result from interference errors within the language, which are caused by an inaccurate or incomplete understanding of the target language [6]. Learner's problems in the target language can be explained by errors of these two kinds, which are involved in second and foreign language learning as an indispensable part [4].

Due to the growing interest in language learning and the development of TLA as an independent field of study, numerous hypotheses have emerged. The Cumulative Enhancement Model argues that all previously acquired languages inherently affect subsequent language learning [7]. According to Rothman, the Typological Primacy Model suggests that the proximity of language typology plays a significant role in multilingual transfer with consistent results [8]. These studies open new paths in the TLA and give new perspectives for the research. Recently, there has been a greater emphasis on various aspects of language, including grammar, vocabulary, etc. However, most studies on L3 language transfer with Chinese as L1 primarily focus on French, Russian and Japanese, with few considering Spanish. Therefore, this study intends to address the existing gap.

Centering on the subjunctive mood, this study is aimed at exploring the negative grammatical transfer from L1(Chinese) and L2 (English) to L3 (Spanish). The following questions have been proposed:

Q1: How does L1 affect the use of L3 subjunctive mood?

Q2: How does L2 affect the use of L3 subjunctive mood?

Q3: What are the differences in the effect between L1 and L2 on using L3 subjunctive mood?

This research is expected to provide some new insights into negative grammatical transfer in TLA, particularly in Chinese as L1 and Spanish as L3. The findings will offer new information that can be used as suggestions and instructions for teachers' language teaching and students in their TLA.

The essay has been organized in the following way. To begin with, it will provide a summary of the previous studies. In the next section, it will discuss the research method and instruments. By employing both quantitative and qualitative research methods, the author attempts to illustrate the transfer from L1 and L2 to L3. Lastly, the results will be presented and the findings will be discussed.

2. Literature Review

A growing body of study has paid attention to the interlingual transfer in L3 acquisition. The study of Umejima et al. shows multilinguals' high activation levels in different brain sections under exposure to a new language, suggesting that better knowledge accumulation leads to higher efficiency in L3 language acquisition [7]. Besides, L1 is the sole recourse for L2 transfer, whereas L3 has both L1 and L2, contributing to their more successful acquisition [8]. Therefore, accumulating previously acquired languages plays a significant role in transferring and acquiring L3. In the case of Chinese as L1, the subjunctive mood shares a similar concept without the changes in verb forms. Consequently, subtle grammatical influence can occur in L3 acquisition. However, the negative transfer could be amplified due to the complex nature of the subjunctive mood, which differs from that of the Chinese.

Extensive studies have taken the factor of typological distance into consideration, as it has shown a strong relation to L3 acquisition. The study by Kuai aims to compare the negative transfer of French

and Japanese (L3) separately on English (L2) acquisition. The proximity of language distance results in more significant challenges in English acquisition for those learning French, particularly in phonetics, vocabulary, grammar and semantics [9]. However, it is important to note that the dominance of typological distance is not always the case. According to a study by Luan et al. on language grammatical transfer of groups whose language acquisition happens along different sequences, closer sentence structure brings more influential grammatical transfer in L3 acquisition than its typological proximity [10]. Besides, the transfer tends to be achieved property-by-property in this context. As a result, the dichotomous outcomes persist in the kindred interlanguage transfer. The study of Sun et al. probes into the interlingual and intralingual transfer errors of vocabulary from English to Spanish in terms of its usage, meaning and form. He discovered that the closer the typological distance, the greater the involvement of L2 in the learning process, and the negative attitudes towards language learning worsened the language transfer errors in vocabulary [11]. However, the study's Chinese (L1) influence isn't ruled out as a control variable. Few studies focus on grammatical transfer in L3 acquisition despite much research on languages such as Japanese and French. Much less is known about Spanish especially since Chinese is L1.

3. Methodology

3.1. Participants

Ten university students (4 male and 6 female) from various disciplines have Chinese as their first language (L1), English as their second language (L2) and Spanish as their third language (L3). The participants between 19 and 23 passed the CET-4 or an equivalent test and achieved at least level B1 in Spanish or an equivalent test. None of the participants are familiar with other languages, nor have they studied them systematically or seriously apart from Chinese, English and Spanish.

3.2. Instruments

The data in the study were gathered via an English subjunctive mood test and a Spanish writing test, as described below. Different data were collected to complement each other and answer the research questions.

Online English Subjunctive Mood Test. The English subjunctive mood test is derived from Bo Bin's Exercise book of practical English grammar (2003) and was utilized in Wang's study [12]. The test was administered online and comprises four sections with explicit instructions: sentence judgement with 10 questions of 2 marks each, multiple choice questions with 15 questions of 2 marks each, blank-filling questions with 10 questions of 2 marks each, translation with 10 questions of 2 marks each. Performance in the test is evaluated globally on a scale of 0-100.

Online Spanish Writing Test. The Spanish writing test was conducted online and consisted of only one composition. The title of the composition is *Si yo fuera el líder de la Tierra (If I were the leader of earth)*. Participants should address the following points (1) If you had been the leader of Earth, what actions would you have taken to improve the world? (2) If you were the leader of Earth, what would you do now and in the future? Please explain the rationale behind your decisions and how they would impact the world. Participants had 40 minutes to write an essay with a minimum of 120 words. Performance in the test was scored globally on a scale of 1-20 with the criteria that only grammatical errors related to the subjunctive mood were considered.

4. Data Collection and Analysis

The participants were simultaneously assigned an online English subjunctive mood test and an online Spanish writing test. These tests were collected two weeks later. The Spanish subjunctive

mood writing test results were analyzed through textual analysis. A descriptive analysis was then performed.

Two raters examined the written test essays written online in Spanish. One rater is the instructor of the same course with teaching experience of at least three years. The other rater is AI. The compositions were then analyzed, quantified and categorized as interlingual errors based on their inner connections with L1 and L2. The statistics were then analyzed using SPSS. Descriptive analysis was adopted to present the general profiles of the L1 and L2 transfer errors and their types.

The English subjunctive mood test was examined in two ways. The objective questions were graded by computer according to the reference answers that had been reviewed to ensure accuracy. One university English teacher with at least 10 years of teaching experience examined the subjective questions. The quantitative data generated by the English subjunctive mood test were analyzed using SPSS. Descriptive analysis was used to demonstrate the general profiles of the test performance. Mean and standard deviations of interlingual errors were calculated to identify patterns in the student's writing. The analysis of English subjunctive mood test results references participants' proficiency in English subjunctive mood.

5. Results

Table 1: Basic Index of English Sunjunctive Mood Test Result

ame	Sample Size	Minimum	Maximum	Average	Standard Deviation	Median
English Subjunctive Mood Test Result	10	32.000	81.000	48.600	15.116	46.500

As can be seen from Table 1, Participants' English subjunctive mood test grades are generally low with an average of 48.6 and an median of 46.5. It means that participants has poor command of English subjunctive mood despite that their English proficiency is at an average level, ranging from B1 to C1. However, the poor performance doesn't show strong negative transfer on Spanish subjunctive mood use, which could be evidenced through the data from Table 2.

Table 2: Spanish Subjunctive Mood Error Type

Title	Error Type			Total
	L1 Transfer		L2 Transfer	
	A	B	C	
Amount	4.000	5.000	3.000	12.000

Notes: A = Unchanged Verb Form; B = The Use of Wrong Tenses; C = Wrong Verb Form in the Adverbial of Purpose

Table 2 shows that a total of 14 subjunctive mood errors are found in the Spanish written test samples. 9 of them are affected by L1 transfer, while L2 transfer could explain 3 errors. L1 transfer consists of two sub-categories showing the error types, and L2 transfer of only one. This suggests that L1 and L2 are responsible for TLA's transfer effect. And the identified 3 types play their roles in the language transfer.

Table 3: The Correct Usage of Spanish Subjunctive Mood

Title	Correct Usage						Total
	A	B	C	D	E	F	
Amount	8.000	2.000	2.000	13.000	1.000	1.000	27.00

Notes: A = Express Certain Meanings (eg. suggestion, fear, order, wish...); B = Negative Thinking; C = Non-specifically Referred Things; D = "Si" Adverbial Clause of Condition; E = Adverbial Clause of Purpose; F = "Cuando" Adverbial Clause of Time

Table 3 shows that 27 cases of correct subjunctive mood usage are identified in the Spanish written test samples. Those correct usages take place in 6 different Spanish subjunctive mood scenarios while type A and type D account for most of them. This indicates that students have relatively solid command of subjunctive mood applying in these two scenarios, expressing certain meanings and "Si" adverbial clause of condition.

6. Discussion

According to the study, students' poor performance is evident in the English subjunctive mood test results. Several reasons can be found to explain this phenomenon. Firstly, some participants major in Spanish and use Spanish more frequently in their daily lives than English, which increases their exposure to Spanish. As a result, they tend to neglect the study of English. Additionally, all of the participants are university students who focus more on the integrated ability of English rather than just one aspect, which may lead to the oversight of subjunctive mood study.

It should be noted that all error types identified in the test samples are common in both the English and Spanish subjunctive mood, allowing for transfer. Due to nuances in grammatical rules that learners fail to identify, errors are more likely to occur. Among these errors, L1 transfer makes a greater difference, which can be explained by study Spanish in Chinese rather than English. This also explains why the low English subjunctive mood performance had little impact on L2 transfer. In terms of the transfer errors, L1 negative transfer focuses on the verb form and tenses since, in Chinese, there's no change in verb form following different tenses. Meanwhile, L2 negative transfer concentrates on the adverbial clause of purpose. In Spanish, subjunctive mood require verb to be in the subjunctive, but this does not apply to English.

When it comes to the correct use of the Spanish subjunctive mood, it can be observed that, in most cases, the grammatical rules do not apply in English or Chinese but only in Spanish. As a result, students tend to focus more on the differences, while teachers emphasize teaching these aspects. Thus, despite the significant differences, students can use them correctly in most scenarios.

These findings indicate that L1 and L2 play an important part in L3 acquisition. Suggestions for third language acquisition can be formulated based on this research. It is important to note the differences between the new language and previously acquired languages to facilitate the learning process. However, teachers should also emphasize the similarities while addressing the nuances simultaneously. This approach can help minimize mistakes.

7.   Conclusion

Data analysis showed that L1 is predicted to contribute to more negative transfer on L3 subjunctive mood transfer than L2. Meanwhile, the study revealed that L1 transfer affects L3 by changing verb form and the choice of tenses. And L2 transfer affects L3 through the wrong verb form in the adverbial clause of purpose. Moreover, the transfer effect from English to Spanish isn't stronger despite the closer typological distance and language distance.

The present study collected a number of Spanish written test samples and English subjunctive mood test results from a group of Chinese university students. It examined the language transfer of Chinese and English on Spanish subjunctive mood learning, contributing to a better understanding of the roles of L1 and L2 in TLA. A key strength of the study was its focus on subjunctive mood transfer as there had been limited research conducted on this topic. Thus, it filled the gap in understanding grammatical transfer in TLA. Nevertheless, the sample size was too small to generalize the findings to other similar TLA contexts. Future studies of language transfer in third language acquisition should collect more samples. Another issue with this approach is that it fails to take L1 proficiency into account. In light of these limitations, future research is expected to pay more attention to L1 proficiency in the TLA context and increase the sample size.

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