



Acquisition of L3 English Attributive Adjectives by Arabic-Persian and Persian-Arabic Bilinguals

Elham Reisian¹, Ali Akbar Jabbari^{2*} , Ali Mohammad Fazilatfar³,
Mohammad Javad Rezai²

¹ PhD Candidate, Department of English, Faculty of Foreign Languages, Yazd University, Yazd, Iran

² Associate Professor, Department of English, Faculty of Foreign Languages, Yazd University, Yazd, Iran

³ Professor, Department of English, Faculty of Foreign Languages, Yazd University, Yazd, Iran

Received: 2023/06/18

Accepted: 2024/01/21

Abstract: The goal of the present study was to realize whether L1 (first language) or L2 (second language) affects the third language (L3) learning. Three mirror-image groups learning English were compared, as early learners of sequential Persian-Arabic bilinguals. The first group used L1 Persian-L2 Arabic languages. The second and the third groups used L1 Arabic-L2 Persian languages. Moreover, the first and the second groups used Persian, and the third group used Arabic as a language of communication. The Oxford Quick Placement Test (OQPT) was administered to select initial L3 English learners. Sixty English learners participated in the study. The translation task and Grammaticality Judgment Test were administered to elicit English attributive adjectives. To compare the performances of the three groups, the non-parametric equivalent of One-Way ANOVA, which was the Kruskal-Wallis test, was used. Mann-Whitney U tests were applied to recognize the probably significant differences among groups. None of the Cumulative Enhancement Model (CEM), the L1 Factor Hypotheses, the L2 Status Factor, and the Typological Primacy Model was confirmed. However, the influence of the dominant language of communication on L3 learning supported data. Groups one and two had better performances in the comprehension and production of attributive adjectives. Group three obtained the lowest mean score. This study lets us determine the influence of earlier

* Corresponding Author.

Authors' Email Address:

¹ Elham Reisian (elhamreisiyan2014@gmail.com), ² Ali Akbar Jabbari (jabbari@yazd.ac.ir), ³ Ali Mohammad Fazilatfar (afazilatfar@yazd.ac.ir), ⁴ Mohammad Javad Rezai (mrezai@yazd.ac.ir)



acquired languages, Persian and Arabic, on the initial stage of learning L3 English attributive adjectives. The results indicate that the language of communication has a substantial effect on transferring from the first and second languages into the L3 language.

Keywords: Cross-linguistic Influence, English Attributive Adjectives, Third Language Learning; Language of Communication, Language Transfer.

Introduction

During the last two decades, a growing body of studies has shown that transfer can occur from a first or second language to (a) third language. The study of a cross-linguistic effect is complicated because different factors are involved. The factors may be the level of proficiency that students have in different languages that they know, psychotypology, and similarities between languages. Nowadays, about this issue that students transfer one or two previous languages to a third, there is little agreement among L3 theories (Jensen & Westergaard, 2023). According to some studies (e.g., Jamali et. al., 2021; Salimi et. al., 2022), only one of the previous languages is transferred to the L3. However, Jensen et. al. (2021) and Kolb et. al. (2022) suppose that both previously learned languages are transferred to the third one. Therefore, the analysis of multilingual acquisition is more complex than second language acquisition because the interaction between previous languages should be considered. The purpose of this research is to recognize the most prominent factor influencing third language learning.

Third language acquisition has five significant hypotheses, such as the Cumulative Enhancement Model (Flynn et. al., 2004), the L2 Status Factor Hypothesis (Bardel & Falk, 2007), the L1 Factor Hypothesis (Håkansson et. al., 2002; Hermas, 2010), the Typological Primacy Model (Rothman, 2010, 2011), and the Dominant Language in the Environment (Fallah et. al., 2016).

This study intends to explore that L3 English is affected by either early acquired languages or only one of the languages, i.e. Arabic or Persian, and it is wholesale. In addition, transferring can be facilitative or non-facilitative. It is facilitative if the structures of Persian are transferred to English, and it is non-facilitative if the structures of Arabic are transferred to English. Therefore, our study investigates acquiring L3 English by mirror-image groups of sequential Persian-Arabic bilinguals.

To more comprehensively understand whether L1 and L2 affect third language (L3) learning, the following research questions are as follows:

RQ1. Does Cross-Linguistic Influence (CLI) occur according to L1 or L2?

RQ2. Does CLI occur according to both L1 and L2?

RQ3. Does CLI occur facilitatively in the L3 English?

The number agreement between attributive adjectives and their head nouns in English is based on a model in which the transfer takes place. If the result is based on the Persian language, then the transfer is positive, and otherwise, the result of the transfer is negative.

Review of the Literature

In the learning of the third language, the question arises whether the learner in the initial stages of learning the third language understands and produces the structures in the third language from the first language, the second language, or a mixture of the previous languages. The explanation for the main hypotheses related to CLI is mentioned below.

L1 Transfer

Based on the L1 Factor hypothesis (Schwartz & Sprouse, 1996; White, 2003), L1 affects L3 acquisition, so the properties in L1 are transferred to L3. This performance might result in either correct or wrong structures in the target language. Thus, the transfer might be positive or negative. Much exertion has been done to analyze the impact of L1 or L2 on the L3.

Some studies claimed that L1 is transferred into the L3 (e.g., Jabbari & Salimi, 2015; Stadt et. al., 2018). For instance, in the study done by Jabbari and Salimi (2015), Turkmen-Persian bilingual learners' performance in L3 English simple present and present progressive tenses was investigated. They proved that the L1 has a major effect on acquiring the L3, which is related to the L1 Factor Hypothesis.

Stadt et. al. (2018) examined the data obtained from bilingual learners of L3 French whose L1 was Dutch and L2 was English. The results showed that L3 learners transfer much from their first language into L3 French in the initial stage.

In addition, Salimi et. al. (2022) investigated two groups of monolinguals and bilinguals. Monolingual learners used Persian as the L1 and English as the L2. Also, bilingual learners were Turkmen bilingual learners of English (L3) who learned Persian as their L1, Turkmen (L2), and English (L3), both languages have a similar structure in the placement of adjectives. However, Salimi et. al. (2022) claimed that the L1 factor has a significant role in learning L3 English adjective placement by Turkmen-Persian bilingual learners.

The L2 Status Factor Hypothesis (LSFH)

According to Bardel and Falk (2007), L2 properties are transferred to L3 acquisition based on the L2 Status Factor. Some studies showed that the second language was the main source of transferring into the L3 (e.g., De Angelis, 2005; Ghezlou et. al., 2018, 2019; Lindqvist, 2009).

For example, Ghezlou et. al. (2019) investigated the L3 acquisition of English adjective placement. Results indicated that Azeri-Persian bilinguals transferred Persian L2 to acquire the L3 adjective properties in L3 English.

The Cumulative Enhancement Model (CEM)

The idea of full transfer from only one of the previous languages was discarded (Flynn et. al., 2004). The notion is that property-by-property learning is the basis for the L3 interlanguage (Berkes & Flynn, 2012). It means that when the L3 interlanguage grammar is learned by the bilinguals, each primary language, the L1 or L2, may be transferred positively whenever the pertinent structure is needed. Therefore, when at least one of the previous languages has the feature same as the L3, this transfer will occur. Therefore, a transfer is both developmentally incremental and facilitative.

Kolb et. al. (2022) investigated learning four grammar points in L3 English by Russian-German child bilinguals and concluded that learners transferred positively from both previously acquired languages.

The Typological Primacy Model (TPM)

The TPM is almost the same as the CEM (Rothman, 2010, 2011, 2013, and 2015), because, in both theories, the transfer does not restrict to any specified, the L1 or the L2. Therefore, the TPM claims for general, wholesale transfer from the first or the second language to the initial L3 grammar. The typologically more similar language is transferred into the L3. TPM further claims the chance of detrimental transfer in learning the third language.

Ortin and Florez (2019) analyzed two groups of bilingual learners of L3 Portuguese at the initial stage. Their first and second languages were English and Spanish and vice versa. The focus of the investigation was variable subject pronoun expression. The result showed that Spanish transferred into Portuguese. As anticipated by a holistic model of L3 transfer (TPM), Spanish and Portuguese had less typological distance, so the transfer happened from Spanish and not from English into L3 Portuguese.

Jamali et. al. (2021) investigated the learning of noun adjuncts and attributive adjectives by L3 learners of German and French. Two groups of L3 learners participated in the study. Students transferred L2 English and not L1 Persian into L3 learning for two groups because the Typological Primacy Model states that the more typologically similar language that learners have already acquired is transferred into L3.

Dominant Language in the Environment

Another recent theory is the dominant language of communication that learners use in the society (Fallah et. al., 2016), no matter whether this language is an L1 or L2. According to Paradis (2004, 2007), when a language is used, this language becomes more activated in the learners' brains. Khezri et. al. (2021) investigated the learning plurality agreement rule in L3 English by Arabic-Persian bilinguals. The language of contact instruction, whether L1 or L2, was transferred into L3.

To fill the gap in the literature, attributive adjectives were chosen to analyze in the present study. The reason for selecting this structure is as follows. Persian and English have a similar pattern in attributive adjectives i.e., both of them use singular attributive adjectives for singular and plural nouns. People in most areas of Iran learn English as their third language at schools. This condition makes third language acquisition one of the most significant and complicated concerns in educational contexts. Therefore, teachers need to be conscious of the precise difficulties that bilingual learners might face.

Cross-linguistic Variation in English, Arabic, and Persian

In the present study, there is one structural property in which the L3 is similar to Persian, notably attributive adjectives. English and Persian patterns are the same (in contrast to Arabic) concerning attributive adjectives.

In English, for plural nouns, the attributive adjectives are stated singular, as shown in (1a). It is similar to Persian (1b) attributive adjectives. In Arabic, in contrast, the attributive adjective is plural (1c). For singular nouns, all three languages use singular attributive adjectives.

(1) Attributive adjectives

- a. kind students help their friends. (Singular attributive adjective)
- b. Daneshamoozane mehraban doostaneshan ra komak mikonand. (Singular attributive adjective)

Students kind friends their help.

"Kind students help their friends."

c. Atolab atayeboon yosaedoon asdeghaahom. (Plural attributive adjective)

Students kinds help friends their [sic].

"Kind students help their friends".

Therefore, attributives are not pluralized in Persian and English in accordance with their head nouns, while they are in Arabic.

Methods

Design of the Study

A quasi-experimental design was adopted to check the effects of prior languages on the L3 since the learners were not randomly assigned. Therefore, an ex post facto design was used to explore the differences among the scores of students. The independent variable had happened and could not be manipulated.

Participants

The learners in this study were chosen from different high schools in Ahvaz. Their ages ranged from 13 to 14. They took part in the study voluntarily. The data was gathered via three experimental groups learning L3 English. Each group consisted of twenty students. The first group was: L1 Persian-L2 Arabic using Persian as a language of communication (n = 20, 13 males and 7 females). The second group was: L1 Arabic-L2 Persian learners whose language of contact was Persian (n = 20, 14 males and 6 females). The third group was: L1 Arabic-L2 Persian learners using Arabic as a language of communication (n = 20, 15 males and 5 females). The participants were examined at the early stage of their English acquisition. From 150 learners, 60 participants' data were analyzed. The following table shows the participants' characteristics.

Table 1. Participants' Characteristics

Groups	Group 1	Group 2	Group3
Gender	65% male	70% male	75% male
	35% female	30% female	25% female
Age of L2 Acquisition	4.6	4.55	4.7
Current age	13.25	13.40	13.45
L2 self-rated proficiency	4.35	4.45	4.55

Hours of formal instruction in English	24	23.75	23.85
--	----	-------	-------

Instruments

The L3 learners were supposed to complete a language-based self-report questionnaire, i.e., a Language and Social Background Questionnaire (LSBQ), take the Oxford Quick Placement Test, a Grammaticality Judgment Task (GJT), and a translation task.

Language and Social Background Questionnaire (LSBQ)

According to Anderson et. al. (2018), to depict bilingual experience and categorize learners, LSBQ can be used. Therefore, this questionnaire was selected to collect data about the participants, such as information about their exposure to Persian and Arabic. It was also used to elicit data about the gender, language backgrounds, way of language acquisition, age, place of birth, the length of time they had been learning English when they first began learning English, the kind of instruction they had received, and learners' approximate levels of proficiency in the previous languages based on their self-evaluation.

Oxford Quick Placement Test

OQPT is a standard test proposed by Oxford University and Cambridge, so it has been used as a placement test (Geranpayeh, 2003). The results of Cronbach's alpha showed high reliability of the test, which was 0.85. L3 learners took part in an Oxford Quick Placement Test to certify their homogeneity. The test comprises 60 multiple-choice items to check students' reading and structure abilities in about 30-45 minutes. The responses were documented on the answer sheet. The answer sheets were quickly marked using the answer key provided. Only beginner students participated in the next processes.

Timed Grammaticality Judgment Task (TGJT) and Correction Task

In TGJT, the participants were requested to assess the English sentences by selecting one of these items: grammatical, ungrammatical, and I do not know. The task contained 24 sentences; six sentences were grammatical in English, and six sentences were ungrammatical based on the English attributive adjectives indicating negative transfer. In addition, there were 12 sentences, six correct distractors, and six incorrect distractors, related to other grammatical structures. They were mixed in order that students ignored the aim of the study. The time assigned for the task was 25 minutes. The Cronbach Alpha coefficient calculated

the internal consistency reliability = 0.81. A pilot group was chosen to fill out the questionnaire. An intact class involving 10 students, was selected from two of the allocated schools. Learners had the same features as those of students in the final study. Furthermore, two university professors with a Ph.D. degree in teaching English as a foreign language were requested to evaluate whether content validity exists. They were invited to offer any comments concerning the relevance of items to the aim of the questionnaire, the wording, interpretation problems, and the guidelines. In addition, students were asked to write the correct word for every wrong word that they thought was false. For each type, an example is provided below. The test items are provided in Appendix A.

Target structures:

- (1) Tall boys play basketball. ✓
- (2) Carefuls drivers drive slowly. ✗

Distractors:

- (3) I read the book. ✓
- (4) She buy the car. ✗

Translation Task

In this task, there were 24 sentences that students were supposed to translate. Among these 24 sentences, six of them were related to grammatical English attributive adjectives, and six of them were related to ungrammatical negative background language transfer into English attributive adjectives. In addition, there were 12 other sentences that were distractors. Cronbach's alpha for 24 items was 0.76. Three groups of students were supposed to translate sentences written in Persian and Arabic to English, so the impact of their L1 and L2 on the L3 was identified. Examples of each type of sentence are written below. Appendix B provides a complete list of all sentences.

An example of Arabic target structures to be translated to English:

- (5) Nahno nosaedo jiran alfoghara.

We help neighbors poors.

"We help poor neighbors."

An example of Persian target structures to be translated to English:

- (6) Anha pesarhaye khoobi hastand.

They boys good are.

"They are good boys."

An example of Arabic distractors to be translated to English:

(7) Gharato alketab.

Read book.

"I read the book."

An example of Persian distractors to be translated to English:

(8) Moalem amad.

Teacher came.

"The teacher came."

Procedure

One hundred and fifty female and male English learners were chosen from different schools in Ahvaz in the southwest of Iran. The data were gathered in a classroom context. The participants were supposed to complete a self-report questionnaire to tap into their L1 and L2 proficiency. Meanwhile, having taken the OQPT, they were assigned to the beginner level. Therefore, some of the participants were omitted because they did not have the possible criterion. For example, they knew more than three languages, their OQPT scores were high, or their self-evaluation of L2 was very low. Therefore, 60 participants were selected to complete the TGJT and the translation task. Afterward, they participated in accomplishing a translation task and a Timed Grammaticality Judgment Task (TGJT).

Data Analysis

Based on participants' answers, we determined whether their judgment was a negative transfer or a positive one. For each correct answer, the participant got a score of 1 for that specific question, and for each wrong choice, they obtained a score of 0 in SPSS. In addition, if their responses were "I do not know", they did not get any score.

For comparing the performances of three groups in GJT and TT, the non-parametric equivalent of One-Way ANOVA, which is the Kruskal-Wallis test, was applied to compare the three groups' performance in both tasks since the data violated the assumption of normality. Then Mann-Whitney U tests were used to realize the probably significant differences among groups.

Results

At first, the normality of the data was examined. The value significance of the Shapiro-Wilk was below 0.05 since the data violated the assumption of normality.

Table 2. Results of the Tests of Normality

Tests	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistics	df	Sig.
GJT Attributive	.205	60	0.000001	.869	60	0.000012
TT Attributive	.169	60	0.000187	.892	60	0.000067

Descriptive statistics of the learners' performance on GJT are shown in Table 3. The highest mean was obtained by group 1, whose L1 was Persian, L2 Arabic, L3 English, and Persian as their language for contact communication. Group 2 obtained the second-highest mean ($M= 9.5$). This group was L1 Arabic and L2 Persian learners of English who had Persian as their language of contact communication. Group 3 used L1 Arabic and L2 Persian and they used Arabic as their language of communication and obtained the lowest mean ($M= 2.7$).

Table 3. Mean Accuracy of Three Groups on Attributive Adjectives in GJT

Groups	N	Attributive	
		Mean	SD
Group 1	20	10.15	2.2
Group 2	20	9.5	1.53
Group 3	20	2.7	2.3

Regarding the performances of the three groups in GJT, the Kruskal-Wallis test revealed a statistically significant difference $\chi^2(2, N = 60) = 37.8, p = .000000005$.

Based on the data in Table 4, Mann-Whitney U tests did not reveal a significant difference among groups one and two ($z=-1.5, p= .11$) in this test. In contrast, group one performed significantly differently from group three ($z=-5.21, p=.00000001$). The performances of groups two and three were also significantly different from each other ($z=-5.24, p= .0000001$).

Table 4. Findings of the Mann-Whitney U Tests Attained from the GJT

Groups	Group 1		Group 2		Group 3	
	z	p	z	p	z	p

Group 1	-1.5	.11	-5.21	.00000001*
Group 2			-5.24	.00000001*

As shown by Table 5, group one obtained the highest mean among the three groups regarding their performance on the translation test ($M=10.6$). Group 2 obtained 9.4, and Group 3 obtained 3.4.

Table 5. Mean Accurateness of Three Groups on Attributive Adjectives in TT

Groups	N	Attributive	Adjectives
		Mean	SD
Group 1	20	10.6	1.3
Group 2	20	9.4	1.8
Group 3	20	3.4	2.4

A significant difference between groups one and two ($z=-2.08$, $p=.037$) was not shown by Mann-Whitney U tests; However, between groups one and three, a significant difference was shown ($z=-5.41$, $p=.000000001$), and also two and three ($z=-5.14$, $p=.00000002$).

Table 6. Results of the Mann-Whitney U Tests Gained from the TT

Groups	Group1		Group 2		Group 3	
	z	p	z	p	z	p
Group 1			-2.08	.037*	-5.41	.000000001*
Group 2					-5.14	.00000002*

The results in Table 7 show that based on the Kruskal-Wallis test, a significant difference $\chi^2(2, N = 60) = 39.7$, $p=.000000002$ was revealed among the performances of three groups in TT.

Table 7. Test Statistics^{a,b}

	GJT sum	Translation sum
Kruskal-Wallis H	37.866	39.726
df	2	2
Asymp. Sig.	.000000005	.000000002

^a. Kruskal Wallis Test

^b. Grouping Variable: Groups

The learners' comprehension and production of attributive adjectives are compared in Figure 1.

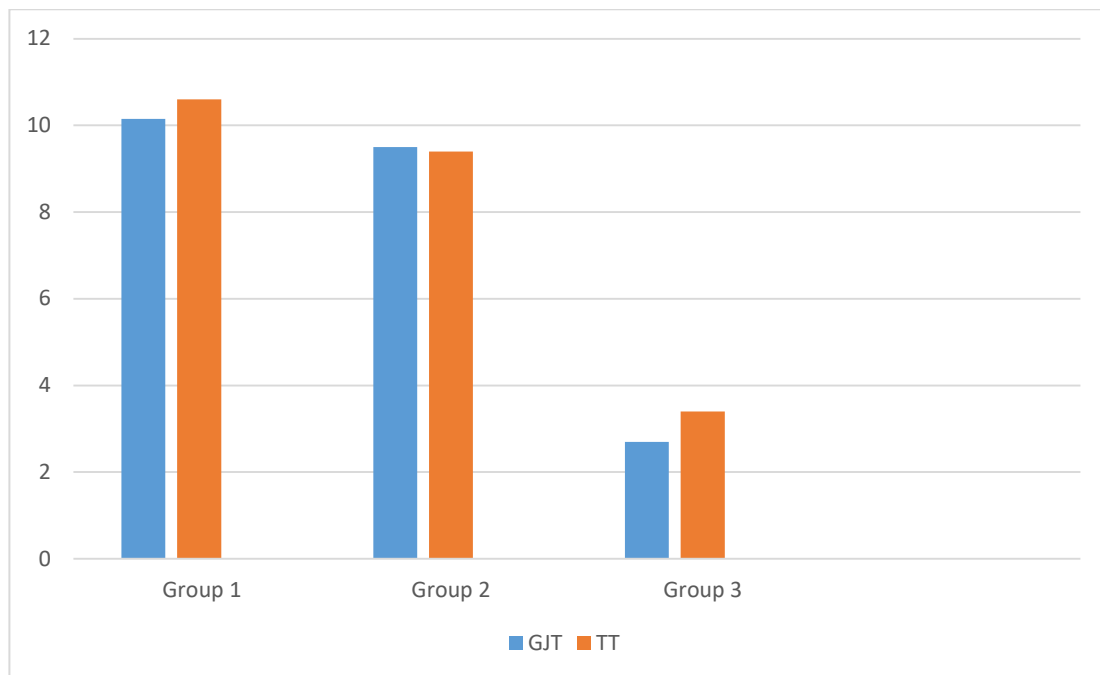


Figure 1. Comparison of the Performance of the Three Groups on the Two Tasks

Discussion

The statistical analyses obtained in this study revealed that the performances of groups one and two from that of the third group on GJT and TT were meaningfully different in the study. Nevertheless, the mean accuracy of the first and the second group performance on GJT was not significant, and there was a marginally significant one on TT. Therefore, the Persian language can be considered as the main reason for transferring in L3 acquisition for the first group and the second one using Farsi as an everyday communication language, causing positive transfer. In contrast, the third group preferred Arabic as the fundamental transfer source in the L3 acquisition of English attributive adjectives, bringing about detrimental effects.

The results mentioned above are discussed here in light of finding whether previously acquired structures are transferred according to the major L3 acquisition hypotheses. Based on the L1 Factor, the critical factor for transferring in L3 acquisition is L1 properties (Hermas, 2010). Consequently, it forecasts that just the first group should obtain a high mean. However, group one used Persian as their L1, and group two used Arabic as their L1 and appropriately used attributive adjectives in English. Because the second group transferred this

property from Persian (L2), the anticipation of the L1 Factor is not confirmed. Thus, the results are not in line with the studies supporting the L1 factor hypothesis (Håkansson et. al., 2002; Hermas, 2010; Jabbari & Salimi, 2015).

The L2 Status Factor states that the second language of the learners is the leading cause affecting L3 (Falk & Bardel, 2011). According to this theory, groups two and three were predicted to produce and comprehend this property correctly since their second language is Persian, and group one was predicted to misuse it since their second language is Arabic. Results from statistical analysis of the data gathered from GJT and TT showed that group three applied this property inaccurately while groups one and two used it correctly. The L2 Status Factor is again rejected by these results. Therefore, the results do not support the L2 factor hypothesis proposed by Bardel and Falk (2007), Falk and Bardel (2011), and Ghezlou et. al. (2018, 2019).

The CEM states that L1 and L2 have the primary effect on learning the L3. However, it assumes the facilitative role of transfer. Therefore, this hypothesis anticipates that all three groups must not transfer from Arabic because this transfer causes negative transfer for the use of attributive adjectives. Since there was a non-facilitative transfer for the third group from Arabic, the CEM expectations are not supported. The results are in contrast with the idea of CEM suggested by Berkes and Flynn (2012), Flynn et. al. (2004), and Kolb et. al. (2022).

Based on the TPM (Rothman, 2010), a more similar language is transferred to L3 in the L3 learning procedure. Concerning this theory, there are positive effects for all groups in L3 English acquisition if Persian is the primary source of transfer. The result of the present study does not support the prediction of the TPM, because the third group used the Arabic structure to transfer to the L3 structure, causing detrimental effects. The results of this study disconfirmed the Typological Proximity Model offered by Ortin and Florez (2019).

The reason for the non-alignment of the results of this research with other researchers in other countries can have several reasons. The first reason can be pointed to the difference in the way of learning a second language. Some learners learn the second language in a natural environment. The common language of the native people is the same language that the learners are learning, Like Arab speakers who learn Arabic in Iran in Ahvaz city. On the other hand, there are second language learners who learn the second language as a foreign language, such as learning English by Iranians living in Iran. In many studies of third language learning, the learners learn the second language naturally and like the first language

(bilingual learners) (Falah et. al., 2016; Fallah & Jabari, 2018), or in some studies, students learn a second language as a foreign language (Bardel & Sanchez, 2017). Therefore, this factor makes differences in the effect of the first and the second languages on the third languages.

The second reason is that in this study, the learners are at the early stage of the third language acquisition. However, some researchers have investigated advanced or proficient L3 learners in previous studies. The third reason regarding these results in the present study is that the learners were children at high school; however, L3 learners in some previous studies were adults studying at universities.

If the dominant language of contact has the central role of transfer, we should expect the performances of groups one and two in English should be without difficulty. In addition, we also predict that the third group comprehends and produces incorrect property since their dominant language of communication is Arabic. Learners mostly used the contact language, so it became more activated in their brains. As the findings showed, all three groups transferred their language of communication into L3 acquisition of English; therefore, it can be rational to infer that the importance of the language of communication is supported.

Fallah et. al. (2016), Ghobadirad and Jabbari (2021) claimed that the prominent factor of transferring in the area of L3 acquisition can be the dominant language of communication, so the findings of this study are in line with the findings of Fallah et. al. (2016), Ghobadirad and Jabbari (2021). Therefore, according to the first research question, CLI just happens according to the language of communication. In addition, CLI occurs facilitatively because the property of attributive adjectives in English is similar to that of the language of communication for groups one and two. Also, CLI occurs non-facilitatively in L3 English because the structure of attributive adjectives in English is different from that of the language of communication of the third group.

Conclusion

The current research investigated the learning of attributive adjectives by Arabic-Persian and Persian-Arabic bilingual learners acquiring L3 English. Generally, three groups participated in the study, and all of them were learning L3 English. The study results showed that four main hypotheses were not supported; however, the fifth hypothesis, the dominant language of communication (Fallah et. al., 2016), was realized as the chief basis of transfer in L3 acquisition. CLI occurred facilitatively for groups one and two because the property of

attributive adjectives in English was similar to Persian and non-facilitatively for the third group since their language of communication was Arabic.

Based on the results of this study, some pedagogical implications can be suggested. Teachers and students ought to be aware of the similarities and differences that may exist between Arabic, Persian, and English, which can be problematic in learning L3. L3 teachers can provide valuable and additional materials and tasks to remove the errors by identifying these problems.

Nonetheless, for further study, a larger sample population and gender-based analyses are suggested. If advanced learners of the English language participate in the study, the effects of L1 and L2 on L3 acquisition are discovered more precisely. Though this research used interesting linguistic features, the range of examination was constrained to only one structure among three languages. Thus, the results should be inferred with caution concerning the generalizability of the findings. In order to create the real nature of cross-linguistic influences in language acquisition, more studies similar to this are required in the field. Therefore, further studies with different grammatical features as well as diverse language pairings should be done to improve the understating of the precise source of cross-linguistic effects in third language acquisition

Acknowledgments

The authors are grateful to the participants and professors who participated and cooperated in this study and the two experts who examined the validity of the instrument designed. They also express deep gratitude to the reviewers for their insightful comments.

Declaration of Conflicting Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding

No funding was received for the present study.

References

- Anderson, J. A. E., Mak, L., Keyvani Chahi, A., & Bialystok, E. (2018). The language and social background questionnaire: Assessing degree of bilingualism in a diverse population. *Behavior Research Methods*, 50(1), 250-263.
- Bardel, C., & Falk, Y. (2007). The role of the second language in third language acquisition: The case of Germanic syntax. *Second Language Research*, 23(4), 459-484. <https://doi.org/10.1177/0267658307080557>
- Bardel, C., & Sánchez, L. (2017). The L2 status factor hypothesis revisited: The role of metalinguistic knowledge, working memory, attention and noticing in third language learning. In T. Angelovska & A. Hahn (Eds.), *L3 syntactic transfer: Models, new developments and implications* (Vol. 5, pp. 85-102). John Benjamins.
- Berkes, É., & Flynn, S. (2012). Multilingualism: New perspectives on syntactic development. In W. C. Ritchie & T. K. Bhatia (Eds.), *Handbook of Bilingualism and Multilingualism*, Second Edition (pp. 137-167). Chichester, John Wiley & Sons.
- De Angelis, G. (2005). Interlanguage transfer of function words. *Language Learning*, 55(3), 379-414.
- Falk, Y., & Bardel, C. (2011). Object pronouns in German L3 syntax: Evidence for the L2 status factor. *Second Language Research*, 27(1), 59-82. <https://doi.org/10.1177/0267658310386647>
- Fallah, N., & Jabbari, A. A. (2018). L3 acquisition of English attributive adjectives: Dominant language of communication matters for syntactic cross-linguistic influence. *Linguistic Approaches to Bilingualism*, 8(2), 193-216.
- Fallah, N., Jabbari, A. A., & Fazilatfar, A. M. (2016). Source(s) of syntactic CLI: The case of L3 acquisition of English possessives by Mazanderani-Persian bilinguals. *Second Language Research*, 32(2), 225-245. <https://doi.org/10.1177/0267658315618009>
- Flynn, S., Foley, C., & Vinnitskaya, I. (2004). The cumulative-enhancement model for language acquisition: Comparing adults' and children's patterns of development in first, second and third language acquisition of relative clauses. *The International Journal of Multilingualism*, 1(1), 3-16. <https://doi.org/10.1080/14790710408668175>
- Geranpayeh, A. (2003). A quick review of the English oxford placement test. *Research Notes*, 12(3), 8-10.
- Ghezlou, M., Koosha, M., & Lotfi, A. R. (2018). Acquisition of adjective placement by L3 learners of English: Evidence for the L2 status factor. *International Journal of Applied Linguistics and English Literature*, 7(2), 175-184.

- Ghezlou, M., Koosha, M., & Lotfi, A. R. (2019). Cross-linguistic influence in the L3 acquisition of English adjective properties by Azeri-Persian bilinguals. *International Journal of Instruction*, 12(1), 1299-1318. <https://doi.org/10.29333/iji.2019.12183a>
- Ghobadirad, H. R., & Jabbari, A. A. (2021). The effect of dominant language of communication on L3 learning of present tense by Mazandarani-Persian bilinguals. *Iranian Journal of Learning and Memory*, 4(15), 29-39.
- Håkansson, G., Pienemann, M., & Sayheli, S. (2002). Transfer and typological proximity in the context of second language processing. *Second Language Research*, 18(3), 250-273.
- Hermas, A. (2010). Language acquisition as computational resetting: Verb movement in L3 initial state. *International Journal of Multilingualism*, 7(4), 343-362. <https://doi.org/10.1080/14790718.2010.487941>
- Jabbari, A. A., & Salimi, H. (2015). L3 acquisition of simple and present progressive tenses by Iranian EFL learners. *SAGE open*, 5(4), 1-8. <http://doi.org/10.1177/2158244015615163>
- Jamali, M., Jabbari, A. A., & Razmi, M. H. (2021). Acquisition of attributive adjectives and noun adjuncts by L3 learners of French and German: Further evidence for the Typological Primacy Model (TPM). *International Review of Applied Linguistics in Language Teaching*, 61(3), 851-876. <http://doi.org/10.1515/iral-2020-0013>
- Jensen, I. N., Mitrofanova, N., Anderssen, M., Rodina, Y., Slabakova, R., & Westergaard, M. (2021). Crosslinguistic influence in L3 acquisition across linguistic modules. *International Journal of Multilingualism*, 20(3), 717-734.
- Jensen, I. N., & Westergaard, M. (2023). Syntax matters: exploring the effect of linguistic similarity in third language acquisition. *A Journal of Research in Language Studies*, 73(2), 374-402. <https://doi.org/10.1111/lang.12525>
- Khezri, F., Jabbari, A. A., Fazilatfar, A. M., & Jamshidi, F. (2021). The effect of academic context of learning on L3 acquisition of Iranian bilinguals. *Iranian Journal of Learning & Memory*, 4(13), 7-19.
- Kolb, N., Mitrofanova, N., & Westergaard, M. (2022). Crosslinguistic influence in child L3 English: An empirical study on Russian-German heritage bilinguals. *International Journal of Bilingualism*, 26(2), 1-26.

- Lindqvist, C. (2009). The use of the L1 and the L2 in French L3: Examining cross-linguistic lexemes in multilingual learners' oral production. *International Journal of Multilingualism*, 6(3), 281-297.
- Ortin, R., & Fernandez-Florez, C. (2019). Transfer of variable grammars in third language acquisition. *International Journal of Multilingualism*, 6(4), 442-458. <https://doi.org/10.1080/14790718.2018.1550088>
- Paradis, M. (2004). *A neurolinguistic theory of bilingualism*. John Benjamins. <https://doi.org/10.1075/sibil.18>
- Paradis, M. (2007). L1 attrition features predicted by a neurolinguistic theory of bilingualism. In: B. Köpke, M. S. Schmid, M. Keijzer, & S. Dostert (Eds.), *Language attrition: Theoretical perspectives* (pp. 121–133). John Benjamins.
- Rothman, J. (2010). On the typological economy of syntactic transfer: Word order and relative clause high/low attachment preference in L3 Brazilian Portuguese. *International Review of Applied Linguistics in Teaching*, 48(2), 245-273.
- Rothman, J. (2011). L3 syntactic transfer selectivity and typological determinacy: The Typological Primacy Model. *Second Language Research*, 27(1), 107-127. <https://doi.org/10.1177/0267658310386439>
- Rothman, J. (2013). Cognitive economy, non-redundancy and typological primacy in L3 acquisition: Evidence from initial stages of L3 Romance and beyond. In S. Baauw, F. Dirjkoningen, & M. Pinto (Eds.), *Romance languages and linguistic theory* (Vol. 5, pp. 217-247). John Benjamins.
- Rothman, J. (2015). Linguistic and cognitive motivations for the typological primacy model (TPM) of third language (L3) transfer: Timing of acquisition and proficiency considered. *Bilingualism: Language and Cognition*, 18(2), 1-12. <https://doi.org/10.1017/S136672891300059X>
- Salimi, H., Jabbari, A. A., & Ghoorchaei, B. (2022). Third language acquisition of English adjective placement by Turkmen- Persian male and female bilinguals. *Journal of Critical Applied Linguistics Studies*, 1(1), 100-120.
- Schwartz, B. D., & Sprouse, R. A. (1996). L2 cognitive states and the full transfer/ full access model. *Second language research*, 12(1), 40-72.
- Stadt, R., Hulk, A., & Sleeman, P. (2018). The influence of L1 Dutch and L2 English on L3 French: A longitudinal study. *Journal of the European Second Language Association*, 2(1), 63-71. <https://doi.org/10.22599/jesla.42>

White, L. (2003). *Second language acquisition and universal grammar*. Cambridge: Cambridge University Press.

Appendix A. Grammaticality Judgment Task

Correct attributive adjectives

1. Tall boys play basketball.
2. They are hardworking doctors.
3. I saw strong players.
4. I like clever students.
5. Kind students help their friends.
6. Young mothers watch TV.

Incorrect attributive adjectives

1. Carefuls drivers drive slowly.
2. He has smarters sisters.
3. My school has locals teachers.
4. Neats girls clean their tables.
5. She does not talk to rudes waiters.
6. She has selfishes brothers.

Correct distractors

1. I read the book.
2. We must rest.
3. The mobile is expensive.
4. He called the waiter.
5. I can swim.
6. She is playing football.

Incorrect distractors

1. She buy the car.
2. She meet me.
3. There are two pen on the table.
4. I asking you to go.
5. He speaks loud.

6. I drink always water.

Appendix B. Translation Task

Target structures

Arabic to English translation items

١. نحن نساعد الجيران الفقراء.

٢. الطلاب الجيدين يدرسون بجد.

٣. الطلاب المهممين يذهبون إلى المدرسة.

٤. أحترم أجدادى القدامى.

٥. أنا أحب المعلمين المتعاونين.

٦. يحب المشاهير المشهورين.

Persian to English translation items

١. آنها بچه‌های خوبی هستند.

٢. خلبان‌های شجاع هواپیما را کنترل می‌کنند.

٣. من کارگرهای جدید را دیدم.

٤. مهندس‌های ثروتمند در اینجا زندگی می‌کنند.

٥. پرستارهای مهربان به مردم کمک می‌کنند.

٦. من دوست‌های خوبی دارم.

Distractors

Arabic to English translation items

١. قرأت الكتاب.

٢. التلميذ يجلس على الكرسي.

٣. تدخل المعلمة الصف.

٤. نجح المعلمون.

٥. شاهدت تلميذا في الشارع.

٦. الطالب يحترم المعلم.

Persian to English translation items

١. معلم آمد.

٢. من پیاده روی می‌کنم.

٣. او تنیس بازی می‌کند.

٤. او سریع رانندگی می‌کند.

٥. او کتاب داستان می‌خواند.

٦. او به گل‌ها آب می‌دهد.