Cross-linguistic Influence in the L3 Acquisition of English Adjective Properties by Azeri-Persian Bilinguals

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The present study sought to uncover the effect of previously acquired languages, Azeri and Persian, on the acquisition of English adjective properties of bilingual learners. It further investigated the role of L3 general proficiency and its interaction with the effect of previously acquired languages on the development of English adjective properties. More specifically, the aim of the study was to discern which of the theories in the field of third language acquisition (Cumulative-enhancement Model, Flynn & Foley, 2004; L2 Status Factor Hypothesis, Bardel & Falk, 2007; and Typological Primacy Model, Rothman, 2010, 2011, 2013, 2015) could account for the acquisition of adjective placement and order in L3 English. To fulfill so, 180 bilingual and monolingual university students from Miyandoab and Arak took a general English proficiency test, a background questionnaire, and a grammaticality judgment test. The data, then, were analyzed through descriptive statistics, multivariate ANOVA and post-hoc comparison tests. The obtained results indicated the effect of Persian L2 on the acquisition of English L3 adjective placement. Regarding adjective order, however, none of the theories could support the findings. Further investigation in this area will definitely lead to better theory building especially in the context of foreign language learning and instruction.

Keywords: third language acquisition, cross-linguistic influence, adjective placement, adjective order, typology, L2 status

INTRODUCTION

In the last two decades, a new line of research has emerged which seeks to investigate the acquisition of third language (L3) as an independent field of study (Bardel & Falk, 2007; Bouvy, 2000; Falk & Bardel, 2010; Leung, 2005; Rothman, 2010, 2011; Vinnitskaya, Flynn, & Foley, 2003). A central goal of much research within the realm of third language acquisition (L3A) has been to develop insight into the effect that previously acquired languages can have on the process of third language learning.

The study of cross-linguistic influence (CLI) in L3A is complex since there are a number of factors which can be associated with transfer and many possible interactions. The main areas of investigation have focused on the effects of these factors. Although many studies show that L1 plays a role in L3 learning (Hermas, 2010), some recent studies indicate that L2 can take on a stronger role than L1 in the acquisition of L3 (Bardel & Falk, 2007; Falk, 2010; Falk & Bardel, 2010, 2011; Leung, 2005; Rothman & Cabrelli Amoro, 2010). In addition to L2 status factor, other factors have also been discussed in the research on L3 learning. Proficiency in both L2 and L3 (Bardel & Lindqvist, 2007; De Angelis, 2007), context (Dewaele, 2001); recency of use of a particular language (Hammarberg, 2001), degree of formality and age of onset (Celaya &Torras, 2001; De Angelis, 2007; Falk & Bardel, 2010), and typological similarity between the previously learnt languages and the third one (Cenoz, 2001; De Angelis & Selinker, 2001; Rothman, 2010, 2011, 2015).

The typology factor which has received most attention in the field implies different meanings: on the one hand it could be understood as the relatedness between the background languages and the target language (TL), or as particular structures being similar in a background language and the target language, disregarding the language relatedness. It can also be evaluated by a researcher on linguistic grounds or be perceived by a learner; i.e., psychotypology in Kellerman's (1983) terms.

L3A research in general and CLI studies in adult contexts in Iran in particular, to date, have been insufficient (Moghtadi, 2014). CLI research has not resulted in defensible, robust, and conclusive findings and the findings of such studies have at times turned out to be contradictory (Gooniband Shooshtari, 2009; Jabbari & Salimi 2015; Khodabandeh, 2013; Modirkhamene, 2011; Moghtadi, 2014; Shahmoradi, Jabbari, & Rezaei, 2014; Talebi, 2013). This is especially true when it comes to the investigation of the effects of first and second languages on the development of syntactic knowledge of EFL learners and when the learners are at differing levels of proficiency. Consequently, the question shrouded in mystery is whether L1 or L2 can play a privileged role in the acquisition of adjective properties by L3 learners with different proficiency levels.

REVIEW OF LITERATURE

The growing realization that L3A is different from L2A has produced three generative models of Cumulative-Enhancement Model (CEM) (Flynn, Foley, & Vinnitskaya, 2004), the L2 Status Factor Hypothesis (LSFH) (Bardel & Falk, 2007), and Typological Primacy Model (TPM) (Rothman, 2010, 2011, 2015). Despite the growing body of literature on generative aspects of L3 acquisition in the world (e.g. Bardel & Falk, 2007,

2012; Cenoz & Jessner, 2000; Flynn, Foley, & Vinnitskaya, 2004; Hermas, 2015; Slabakova & Garcia, 2015; Westergaard et al., 2016), the number of L3A related studies conducted in Iran has been very infinitesimal. L3A research, in more precise words, has been assumed under the umbrella term of L2A except for very few studies. The present study seeks to determine the source of CLI in the L3 acquisition of English adjective properties based on the models of CEM, LSFH, and TPM. The related studies will be discussed under each proposal.

Cumulative Enhancement Model

Flynn, Foley, and Vinnitskaya (2004) studied the acquisition of restrictive relative clauses by L1Kazakh, L2 Russian learners of English as L3. Their findings revealed that L1 Kazakh was not the mere source of CLI at the level of syntactic features and functional categories, but L2 could be the source as well. Based on such finding, they proposed that language learning is cumulative and all previously experienced languages may influence the development of subsequently acquired ones. Their new theory, that is, CEM, argued that any prior language knowledge could enhance later language development or remain neutral.

L2 Status Factor Hypothesis

The second theory (LSFH) was proposed in 2007 based on a study conducted by Bardel and Falk. They examined the acquisition of negation by two groups of learners with different L1s and L2s acquiring Dutch and Swedish as third languages. They found a strong effect of L2 in the learning of L3 negation not only in the initial state but also in the subsequent states of L3 learning.

A number of L3 studies (e.g., Bardel & Falk, 2007; Bohnacker, 2006; Falk & Bardel, 2011; Williams & Hammarberg, 2009), showed that if a learner had more than one background language at his disposal, the L2 could in some situations outrank the L1 and become a more important transfer source.

Falk and Bardel (2011), for instance, studied two groups of learners at an intermediate level of German L3, one with L1 French and L2 English and one with L1 English and L2 French. The study concerned the learning of the placement of object pronouns in German. Results of grammaticality judgment test indicated a negative transfer effect from the L2. In Falk and Bardel (2011), the L2 status factor was discussed in terms of a hypothesis, the L2 status factor hypothesis, which would predict CLI from L2 (and not L1) in L3 learning.

Ghezlou, Koosha, Lotfi (2018) conducted a study on the acquisition of English attributive adjectives by 90 Persian monolinguals and 90 Azeri-Persian bilinguals from Arak and Miyandoab. For the structural similarity between bilingual learners' L1 and L3, that is, the pre-nominal positioning of attributive adjectives, the bilingual learners were expected to have a better performance on the translation test as the comprehension test. They, however, found contrary results. It appeared from their study that there was an effect of Persian L2 independent of linguistic similarity between the bilinguals' first

and third languages. Persian L2 had, indeed, a non-facilitative effect on the acquisition of attributive adjectives among Azeri-Persian bilingual learners.

Typological Proximity Model

TPM (Rothman, 2010, 2011, 2015), like CEM, assigns no privileged role to the first or second language in the acquisition of L3 properties. The determining factor, based on this new theory is the (psycho) typological similarity of the previously acquired languages and the third or new one. TPM further offers the possibility of non-facilitative transfer in the process of third language acquisition. The data in Rothman's (2010) research was gathered through a study in which the acquisition of DP structure of L1 Italian/L2 English learners of Spanish as L3 was compared to that of L1 English/L2 Spanish learners of Portugese L3. Rothman found that L3 learners of Spanish had transfer patterns from their L1 Italian while the L3 Brazilian Portugese learners transferred from their L2 Spanish which both revealed to rely on the (psycho) typological similarity of the languages involved.

In another attempt, Rast (2010) examined the acquisition of Polish L3 by a group of native French speakers with English as an L2. They recorded and transcribed the input provided to the learners from the moment of first exposure. The methodology allowed them to analyze learners' use of prior linguistic knowledge when performing tasks of translation, grammaticality judgment and rearranging words in sentences. Their results not only suggested an important role for both typology and psychotypology at that level of proficiency, but they also revealed that even minimal knowledge of a background language could be the source of CLI of various types.

In a recent work, Moghtadi, Koosha and Lotfi (2015) probed the learning of English relative clauses (RC) by Persian monolinguals and Azeri-Persian bilinguals. Participants included 200 monolingual and bilingual female students. Results of grammaticality judgment and cloze tests demonstrated better performance of bilinguals on both syntactic tests. Their results confirmed TPM theory on the ground that:

> Azeri-Persian bilinguals may benefit from their L2 Persian since prior post-nominal RC development of post-nominal RC structure when learning L3 English. Moreover, in line with TPM theory, the results indicate non-facilitative transfer based on the distribution of the acceptance and rejection responses (p. 97)

In line with the above-mentioned studies, the current research aimed to test the L3 theories as well as the effect of Azeri L1 and Persian L2 on the acquisition of English adjective properties by Azeri-Persian bilingual learners.

Target Structure

In the present study, English language knowledge is only limited to the knowledge learners had of English L3 adjective order and adjective placement. Persian assigns a totally different position (place) to the adjectives (post-nominal position) whereas Azeri and English share the same position (pre-nominal position).

Persian: yek kif-e **siyah**

Azeri: bir **garaa** kif

English: a **black** bag

With respect to the order of adjectives, while English offers an approximately fixed rule for the positioning of several adjectives of different types before a noun, Azeri and Persian do not possess such feature. Such variations pave the way for emergence of cross-linguistic influence in the acquisition of a third language, so it is feasible to pinpoint the source of transfer.

English: It is a heavy old wooden table (weight, age, material)

Persian: aan yek miz-e gadimi-e choobi va sangin ast (order can vary)

Azeri: o bir agir, tahta, kohna mizdi (order can vary)

METHOD

Research Questions

To provide the relevant evidence, the following research questions were formulated:

Q1. Does the knowledge of adjective order and placement in Azeri L1 affect the acquisition of English adjective order and placement by bilingual Azeri-Persian learners more significantly than monolingual EFL learners?

Q2. Do proficiency levels significantly affect the acquisition of adjective properties by monolingual and bilingual learners?

Q3. Do proficiency levels significantly interact with the effect of mother languages?

Participants

A total of 180 students were selected based on convenience sampling technique from two universities in Iran. The bilingual group consisting of 90 students included 30 males and 60 females. They were 20 to 29 years old (M = 24.5, SD = .68) with Azeri as their L1 and Persian as their L2. They were learning English as their third language. Like bilingual group, the monolingual group consisted of 90 students including 30 males and 60 females between the ages of 20 and 28 (M = 24, SD = .65). Unlike the bilingual group, they were learning English as their second language and their native tongue was Persian.

Both bilinguals and monolinguals had received Persian as the language of instruction, and they had been learning English as school and university subject for at least eight years. Bilinguals however did not receive any instruction and schooling in their first language, i.e. Azeri, and just learned it at home. Hence, they had literacy skills in Persian only.

All participants were homogenous in terms of the universities which they were attending (Islamic Azad University), the hours of instruction (three hours per week), and English proficiency. Furthermore, based on PET results, each group of monolinguals and

bilinguals were assigned into 3 subgroups, each representing one level of English proficiency (high, mid, low). There were 30 participants in each level of proficiency.

The Ex post facto method was considered to be suitable for this study since the researcher could not manipulate or control variables under investigation because they had already happened and as the randomization process and application of treatment were not possible.

Research instruments

Preliminary English Test

The PET (2015 version) was used in the current study, first, to ascertain the homogeneity of the participants in terms of English proficiency level, and second, to place the participants at appropriate level of English proficiency, i.e. low, mid, high. It included 50 multiple-choice, true/false, and fill-in-the-blanks items. It was a paper-and-pencil test and participants had to answer the questions on specified answer sheets. Results of Cronbach's alpha revealed high reliability of the test, that is .821.

Questionnaire

In order to elicit the demographic and language background information of participants, a questionnaire previously devised by Moghtadi (2014) was utilized in the current study. The first section required demographic information about the participants while the second section, i.e. 'Language Information' required the subjects to provide some information regarding the educational level of their parents, their families native languages, the number of years that they have received education in their L1, L2 and possibly L3 language (s), and their city of origin. In order to maximize the reliability and validity of the collected data, participants were encouraged to express their actual viewpoints on the items by informing them that their responses had nothing to do with their academic records.

The questionnaire, furthermore, was piloted and some items were deleted or revised prior to the actual administration of the questionnaire to ensure that the meanings of the items were appropriate. It was also written in Persian in order to avoid participants' English proficiency impinging upon their ability to fill in questionnaire.

The Cronbach's alpha coefficient of the questionnaire was found to be .87, which was considered statistically acceptable for the current study.

Grammaticality Judgment Test

A grammaticality judgment test (GJT) was conducted to measure participants' implicit knowledge about English adjective properties. This elicitation technique is just one of the methods that can be used to obtain information about the knowledge learners have. It is the most widespread data-collection methods and provides "information about learner knowledge in a controlled way (the speaker cannot avoid grammatical properties) […] and they eliminate much potential performance interference because the subject does not have to produce the sentences, merely assess them" (Hawkins, 2001, p.24, as cited in

Falk & Bardel, 2011, p.76). There is no question that it provides performance data. " The assumption is that a sentence which is judged to be grammatical is in agreement with the learners' interlanguage grammar and that the evolution of learners' intuitions largely reflects the development of interlanguage knowledge" (Sorace, 1985, as cited in Garcia Mayo, 2003, p. 97)

Quite a number of previous studies have adopted this test to collect data concerning cross-linguistic influence (Jabbari & Salimi, 2015; Montrul et al. 2011; Westergard et al., 2016, to name a few).

The test consisted of 35 sentences on English adjective order and adjective placement, with an even split of five grammatical and five ungrammatical sentences in each category, along with 5 distractors. The distractor sentences were added to ensure that "participants in a study cannot easily guess what the study is about…this would be a threat to internal validity" (Mackey and Gass, 2005, p. 51). The time allotted for the test was 30 minutes.

For assessing the internal consistency reliability, the Cronbach's alpha coefficient was used. The coefficient of the GJT was found to be .547 which was considered statistically acceptable for the current study.

Data Collection Procedures

The data collection procedure consisted of presentation of a questionnaire, a general English proficiency test, and three syntactic structure tests. After carrying out the sampling procedure and choosing groups, as the first step, the researcher used oral description to explain the study to the students, giving brief instructions for all phases of the study. She reiterated that participants should not see the experiment as a 'test'. The questionnaire was then distributed.

As the next step, during the second week, both monolingual and bilingual participants took the general proficiency test. The test was administered according to the test instructions including strict time limits (80 minutes). Based on the results of PET, each group was further divided into low, mid, and high proficiency groups.

Presentation of the grammaticality judgment test happened in the following week in which both groups were asked to judge the grammaticality or ungrammaticality of the sentences in the GJT as quickly as possible within a 30-minute time limit.

FINDINGS

A multivariate ANOVA (MANOVA) was run to investigate the effect of mother language (monolingual and bilingual), proficiency levels and their interaction on the knowledge of adjective order and placement in English. Based on the results displayed in Table 1, it can be concluded that in general there was a significant difference between the overall mean scores of the monolingual and bilingual groups' means on adjective order and placement in English (F (2, 173) = 4.30, p = .015, Partial η^2 = .047 representing an almost moderate effect size). Based on these results, it can be concluded that the first null-hypothesis as the knowledge of Adjective order and placement in Azeri

L1 did not affect the acquisition of English adjective properties by bilingual Azeri-Persian learners more significantly than monolingual EFL learners was rejected.

Table 1
Multivariate Tests; Adjectives Order and Placement by Mother Language and proficiency Levels

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.981	4421.515	2	173	.000	.981
	Wilks' Lambda	.019	4421.515	2	173	.000	.981
	Hotelling's Trace	51.116	4421.515	2	173	.000	.981
	Roy's Largest Root	51.116	4421.515	2	173	.000	.981
Group	Pillai's Trace	.047	4.307	2	173	.015	.047
	Wilks' Lambda	.953	4.307	2	173	.015	.047
	Hotelling's Trace	.050	4.307	2	173	.015	.047
	Roy's Largest Root	.050	4.307	2	173	.015	.047
Profi	Pillai's Trace	.100	4.579	4	348	.001	.050
	Wilks' Lambda	.900	4.679	4	346	.001	.051
	Hotelling's Trace	.111	4.778	4	344	.001	.053
	Roy's Largest Root	.111	9.663	2	174	.000	.100
Group * Profi	Pillai's Trace	.028	1.248	4	348	.290	.014
	Wilks' Lambda	.972	1.249	4	346	.290	.014
	Hotelling's Trace	.029	1.251	4	344	.289	.014
	Roy's Largest Root	.029	2.520	2	174	.083	.028

Point of proficiency, results indicated a significant difference between the overall mean scores of the high, mid and low proficiency groups' means on adjective order and placement in English (F (4, 348) = 4.57, p = .001, Partial η^2 = .050 representing an almost moderate effect size). Based on these results, it can be concluded that there were significant differences between the three groups' overall mean scores on adjective order and placement, thus the second null-hypothesis stating that the English proficiency level would not affect the acquisition of adjective properties by participants was rejected

In spite of the significant differences between the two groups on the effect of mother tongue and proficiency level, no significant interaction between the effect of mother language and proficiency levels on the English adjective order and placement (F (4, 348) = 1.24, p = .290, Partial η^2 = .014 representing a weak effect size) was discerned. Thus it can be claimed that the third null-hypothesis as proficiency levels did not significantly interact with the effect of mother languages was supported.

The above mentioned results were related to the effect of mother language and proficiency levels on the overall mean scores on English adjective order and placement. The results depicted in the next section will investigate the effect of the independent variables on each of the two dependent variables separately.

Based on the results displayed in Table 2 and 3 it can be concluded that there was not any significant difference between the mean scores of the monolingual (M = 7.63) and bilingual (M = 7.25) groups on the English adjective order (F (1, 174) = 2.49, p = .114, Partial η^2 = .014 representing a weak effect size).

Table 2
Descriptive Statistics; English Adjective Order and Placement by Mother Language

Dependent Variable	Group	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Order	Bilingual	7.256	.169	6.922	7.589
	Monolingual	7.633	.169	7.300	7.967
Placement	Bilingual	8.256	.136	7.987	8.524
	Monolingual	8.811	.136	8.543	9.079

The monolingual (M = 8.81) group, on the contrary, had a significantly higher mean than the bilingual (M = 8.25) groups on the English adjective placement (F (1, 174) = 8.36, p = .004, Partial η^2 = .046 representing an almost moderate effect size).

Table 3
Tests of Between-Subjects Effects; Adjectives Order and Placement by Mother Language and proficiency Levels

Source	Dependent Variable	Type III Sum of Squares	Df	Mean Square	F Sig. Partial Eta Squared
Group	Order	6.422	1	6.422	2.497.116.014
	Placement	13.889	1	13.889	8.360.004.046
Profi	Order	38.811	2	19.406	7.545.001.080
	Placement	18.633	2	9.317	5.608.004.061
Group * Profi	Order	9.678	2	4.839	1.881.155.021
	Placement	5.211	2	2.606	1.568.211.018
Error	Order	447.533	174	2.572	
	Placement	289.067	174	1.661	
Total	Order	10478.000	180		
	Placement	13434.000	180		

Based on the results displayed in Table 4, Table 5 and Table 6, it can be concluded that there were significant differences between the high (M = 7.98), mid (M = 7.50) and low (M = 6.85) groups' means on the adjective order (F (2, 174) = 7.54, p = .001, Partial η^2 = .080 representing a moderate to large effect size).

Table 4
Descriptive Statistics; English Adjective Order and Placement by Proficiency Levels

Dependent Variable	Profi	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Order	High	7.983	.207	7.575	8.392
	Mid	7.500	.207	7.091	7.909
	Low	6.850	.207	6.441	7.259
Placement	High	8.900	.166	8.572	9.228
	Mid	8.583	.166	8.255	8.912
	Low	8.117	.166	7.788	8.445

The results of the post-hoc comparison tests (Table 4.5) further revealed that there was not any significant difference between high (M = 7.98) and mid (M = 7.50) proficiency groups' means on the adjective order (MD = .48, p = .101). The high proficiency group (M = 7.98), however, had a significantly higher mean than the low proficiency group (M = 6.85) on the adjective order (MD = 1.13, p = .000).

Table 5
Multiple Comparisons; English Adjective Order and Placement by Proficiency Levels

Dependent Variable	(I) Profi	(J) Profi	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Order	High	Mid	.48	.293	.101	-.09	1.06
		Low	1.13*	.293	.000	.56	1.71
	Mid	Low	.65*	.293	.028	.07	1.23
Placement	High	Mid	.32	.235	.180	-.15	.78
		Low	.78*	.235	.001	.32	1.25
	Mid	Low	.47*	.235	.049	.00	.93

* The mean difference is significant at the .05 level.

The post-hoc comparison also showed that the mid proficiency group ($M = 7.50$) had a significantly higher mean than the low proficiency group ($M = 6.85$) on the adjective order ($MD = .65$, p = .028).
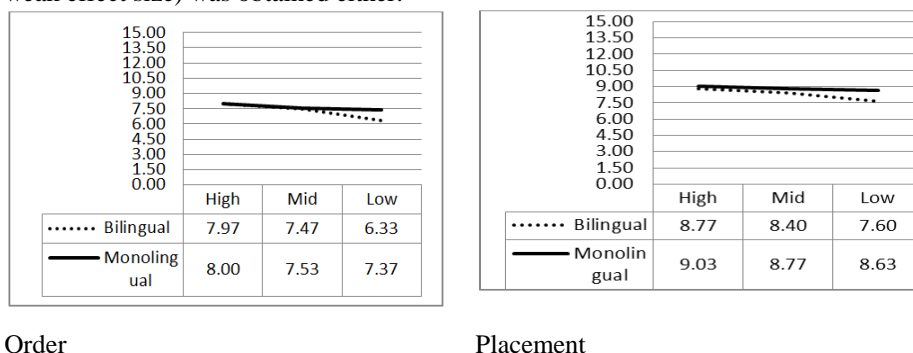
Concerning adjective order, there were significant differences between the high ($M = 8.90$), mid ($M = 8.58$) and low ($M = 8.11$) groups' means on the adjective placement (F (2, 174) = 5.60, p = .004, Partial η^2 = .061 representing a moderate effect size). The results of the post-hoc comparison tests (Table 4.8) indicated no significant difference between high ($M = 8.90$) and mid ($M = 8.58$) proficiency groups' means on the adjective placement ($MD = .32$, p = .180). Though the high proficiency group ($M = 8.90$) had a significantly higher mean than the low proficiency group ($M = 8.11$) on the adjective placement ($MD = .78$, p = .001). The mid proficiency group ($M = 8.58$) also had a significantly higher mean than the low proficiency group ($M = 8.11$) on the adjective placement ($MD = .47$, p = .049).

Based on the results displayed in Table 3 and 6 and Figure 4.1, it can be concluded that there was not any significant interaction between the effects of mother language and proficiency levels on adjective order (F (2, 174) = 1.88, p = .155, Partial η^2 = .021 representing a weak effect size).

Table 6
Descriptive Statistics; English Adjective Order and Placement Interaction Terms

Dependent Variable	Group	Profi	Mean	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Order	Bilingual	High	7.967	.293	7.389	8.545
		Mid	7.467	.293	6.889	8.045
		Low	6.333	.293	5.755	6.911
	Monolingual	High	8.000	.293	7.422	8.578
		Mid	7.533	.293	6.955	8.111
		Low	7.367	.293	6.789	7.945
Placement	Bilingual	High	8.767	.235	8.302	9.231
		Mid	8.400	.235	7.936	8.864
		Low	7.600	.235	7.136	8.064
	Monolingual	High	9.033	.235	8.569	9.498
		Mid	8.767	.235	8.302	9.231
		Low	8.633	.235	8.169	9.098

No significant interaction between the effects of mother language and proficiency levels on adjective placement (F (2, 174) = 1.56, p = .211, Partial η^2 = .018 representing a weak effect size) was obtained either.

	High	Mid	Low
······· Bilingual	7.97	7.47	6.33
—— Monolingual	8.00	7.53	7.37

	High	Mid	Low
······· Bilingual	8.77	8.40	7.60
—— Monolingual	9.03	8.77	8.63

Order   Placement

Figure 1
Interaction between by mother language and proficiency

DISCUSSION

With regard to the adjective placement, as was pointed out above, despite typological dissimilarity between Azeri (L1) and English (L3), both languages share the same structural similarity in the placement of adjectives pre-nominally. The results, however, did not reveal superiority of bilinguals over monolinguals in both tests. Such unexpected finding can be explained underneath each hypothesis separately.

In general, the results from the acquisition of adjective placement in GJT indicated a non-facilitative effect from bilingual learners' second language, i.e. Persian. Such finding rules out the first introduced generative theory of L3A, CEM, which predicts only positive effect of either L1 or L2. According to the CEM (Flynn et al. 2004), language acquisition is gradual and cumulative; and any prior language can either enhance subsequent language acquisition or have no effect. In other words, non-facilitative or negative transfer should never occur. Evidence for this model came from a study which examined the production of restrictive relative clauses with L3 learners of English with Kazakh as their L1 and Russian as their L2. Learners' L2 and L3 were similar in the structure whereas their L1 was different. Findings revealed a positive transfer from Russian L2.

As the findings of the present study revealed, for the non-facilitative effect of the Persian L2, bilingualism did not show any advantage in the acquisition of English adjective placement despite the structural similarity between Azeri L1 and English L3.

For the structural similarity of Azeri and English in placing the attributive adjectives, a facilitative effect was predicted from the mother tongue of the bilinguals, but as the results revealed, bilinguals were heavily under the influence of their second language and their L1 played no role in the acquisition of adjective placement. TPM, henceforth, could not account for the lower performance of bilingual learners. Point of genetic

relatedness, as the other facet of the TPM, Azeri and English do not belong to the same language family (Altaic vs. Indo-European respectively), as a result, L1 did not play a significant role in the successful acquisition of a third language.

On the basis of the results obtained in the present study, one could claim that L2 had a stronger role than L1 in L3 acquisition of adjective placement. The reason for that could be this fact that in cases where L2 and L3 are learned in formal setting, as Giancaspro, Halloras, and Iverson (2015, p.13) put forward, the learning situation might be a further rationale for the L3 learner to classify her languages according to native language versus non-native languages (Heine, 2001; Williams & Hammarberg, 2009). As pointed out by Meisel (1983, p. 18):

> Previously learned second languages interfere with the learning of another foreign language" especially in the classroom setting. He further adds that there might be " a difference in the neuropsychological basis for storing and processing first and second languages" and that if and when such difference can be shown, the distinction "first language" versus "other than first language" must be taken as crucial. (p. 18)

In a similar vein, De Angelis (2005, 2007) accounts for a higher degree of activation of an L2 than the L1 using the two psycholinguistic constraints of perception of correctness and association of foreignness:

> Perception of correctness predicts that multilinguals resist incorporating L1 information into the target language as L1 information is perceived to be incorrect from the start […]. Association of foreignness refers to the cognitive association that learners establish between non-native languages, which are assigned the common status of 'foreign languages'. (p. 29)

Regarding adjective order, neither Azeri nor Persian exhibit particular structural similarity with the customary ordering of adjectives in English L3. Based on this, we predicted equal performance of both groups on this aspect of adjectives. The prediction came true with the approximately equal performance of monolinguals and bilinguals on GJT (7.26 vs. 7.63). The reason why no significant difference was found between the groups could be attributed to the difficulty level of the structure and its absence in the structure of participants' L1 and L2. That is, the learners seem not to have already acquired the exact order of several adjectives in English completely, and even no facilitative effect of Persian, for its genetic relatedness with English (Indo-European family) can be traced back in the findings. So based on this result, TPM is not supported, since there is not any evidence of a facilitating effect of Persian neither in the group of bilinguals nor in the group of monolinguals. With respect to CEM, we did not find any facilitating effect from L1 or L2, in that no group was advantaged over the other one in general. But, in groups' performance on grammatical and ungrammatical items of GJT, a weak difference between groups with slightly higher performance of monolinguals was obtained, though its significance was very infinitesimal.

Disappointing as that may be, the fact that none of the L3 generative models tested can fully account for the results obtained, our findings seem to be more consistent with

Cummins' (1976, 1979) theory of *Threshold hypothesis* in which he proposes the existence of two different threshold levels of linguistic competence. Learners must reach the first level in order to avoid the cognitive disadvantages associated with bilingualism, and must reach the second level to enjoy the benefits of improved cognitive functioning. Although Cummins did not discuss the hypothesis in relation to multilingual speakers, others (De Angelis, 2007; Lasagabaster, 2001) have discussed them in relation to multilinguals. De Angelis (2007), for instance, believes that:

> When we refer to the second level [of threshold hypothesis], the underlying assumption is that proficiency positively correlates with intellectual development. If a certain level of competence must be achieved for learners to cognitively benefit from their bilingualism, then we may consider the possibility that those who have attained a high level of competence in three or more languages may display superior cognitive functioning than those who have not attained a similar competence. (p.116)

The findings can further be described through new research studies conducted by Ullman (2001), Paradis (2007), and Bardel and Falk (2012) in the field of neurolinguistics. They make a distinction between explicit metalinguistic knowledge, which is sustained by declarative memory, and implicit linguistic competence, which is sustained by procedural memory. Phonology, morphology and syntax are sustained in L1 by procedural memory and words by declarative memory. But when it comes to the acquisition of L2 and L3 grammars, they are believed to be learned explicitly by declarative knowledge. By taking this distinction between different memory sources, as Falk (submitted) suggests: 'can contribute to the understanding of the L2 status factor's strong impact on the L3 acquisition of syntax' (p.113).

Results revealed significant difference between the three groups' overall mean scores on adjective order and placement. Nonetheless, there was not any significant interaction between the effect of mother language and proficiency levels on the English adjective order and placement.

This finding may suggest that, in general, participants were progressively more accurate as proficiency in the L3 increased. This can imply a type of direct relation that one can draw between L3 proficiency and the restructuring of L3 grammar. Such relation in turn can affect the CLI rate among both groups. Most researchers maintain that CLI is more likely to occur at the early stages of acquisition, when learners' knowledge of the target language is still weak and fragmentary and the need to fill knowledge gaps in the target language is more pressing (Naves et al., 2005; Odlin, 1989; Sikogukira, 1993). As was discussed in the previous section, participants were highly influenced by the Persian as an L2 rather than their Azeri L1 and the kind of transfer was negative and non-facilitative. In line with the studies mentioned above, lower level participants had a lower performance compared to that of high participants due to the negative transfer of L2 syntactic properties into the L3. This finding is also consistent with Ortega (2008) who believed that the effect of prior language decreases as proficiency in the target language increases. In his study on the factors (language distance, L2 status, proficiency, and recency of use) influencing syntactic transfer in L2 English and L3 Catalan, the L2

and L3 production of two multilingual speakers with similar knowledge of background languages were analyzed. Participants were interviewed twice in an informal environment. The results showed that the L1 was the main source of transfer, both in L2 and L3 production, but its influence decreased as proficiency in the target language increased.

CONCLUSION

The main purpose of the current research was to ascertain which of the previously acquired languages of the L3 learners would influence the acquisition of English adjective properties. For the structural similarity of bilingual learners' L1 Azeri and L3 English, they were expected to benefit from such similarity and perform better on the syntactic test of grammaticality judgment. Results were, however, contradictory since they signified the outperformance of monolinguals. Findings were tested based on the predictions of current theories proposed in the field of L3A.

The results did not support the CEM which predicts that both the L1 and L2 can supply the L3 with the appropriate feature value, in order to yield target-like structures. Nor did they support the TPM, which posits that for the structural similarity between Azeri and English, bilingual learners will be advantaged. In contrast, the data did support the LSFH, which predicts that "the L2 will be favored as a source for CLI in L3 acquisition, even if transfer from L1 would lead to target-like structures. The LSFH therefore predicts that transfer can both facilitate and hamper the acquisition of an L3" (Falk, submitted, p.113). As the results of this study revealed, the L2 acts like a filter in the acquisition of adjective placement and as a detriment does not permit the positive transfer of L1 structures into the L3. In general, L2 has played a non-facilitative role in this situation, and has proved to be stronger than the typology factor in L3 acquisition.

In the present study, neither of bilinguals' first or second languages shared the adjective order with their English L3. It could be argued that none of the L3 models tested carefully could account for the results obtained, which are more consistent with Cummins' (1976, 1979) theory of *Threshold hypothesis* in which he proposes the existence of two different threshold levels of linguistic competence. Learners must reach the first level in order to avoid the cognitive disadvantages associated with bilingualism, and must reach the second level to enjoy the benefits of improved cognitive functioning. Although Cummins did not discuss the hypothesis in relation to multilingual speakers, others (De Angelis, 2007; Lasagabaster, 2001) have discussed them in relation to multilinguals. The data presented here suggest that this theory could be extended to L3 learners' production.

Moving to proficiency level and its interaction with mother tongue, although proficiency in the L3 proved to have a positive effect on the acquisition of adjective properties, it did not confirm to have any effect on the mother tongue. The reason could be the difficulty level of the structures, especially the adjective order, for both monolinguals and bilinguals.

One probable reason for such low performance of bilinguals might be that Persian and English share the same language family (Indo-European), whereas Azeri belongs to a

totally different language family, i.e. Altaic, with no resemblance to English or Persian. As results indicated, Persian for its genetic relatedness with English played the role of the source language in a negative way, that of non-facilitative CLI. The other reason could be the type of bilingualism which is dominant in Iran, i.e. subtractive bilingualism. In our country, Azeri-Persian bilinguals learn their L1 only orally in a naturalistic setting. They do not receive schooling in their mother tongue and their academic language is Persian, the native language of the majority linguistic groups. So it can be argued that Persian is the more dominant language among the bilinguals (Bahrainy, 2007, p. 17). M. Thomas (1990) also argued that language dominance was a crucial factor in her unexpected results.

Based on the findings of this study, teachers will be better able to understand what is happening in the L3 learning process, and therefore teach more effectively. In general terms, a good strategy would be to make use of, and even overuse, actual similarities at early stages of learning. In other words, in case of close relation between the two languages, the teacher certainly needs to briefly outline the correspondences between the languages, and further explicates the possibly existing differences.

When it comes to the proficiency, it is argued that a heightened proficiency in L1 and L2 through formal instruction and the concomitant metalinguistic awareness can undoubtedly lead to higher proficiency level in the L3. In line with those countries which deliberately introduce measures to protect minority language with the intent to encourage the spread of bi/multilingualism within the social environment (De Angelis, 2007), Azeri could be incorporated in the educational system of Iran's primary schools for the betterment of the Azeri-Persian bilingual learners.

Finally, the findings of the study can also enrich the literature of the learners' acquisition of English adjective properties, which will ultimately benefit the teaching of English adjective properties in Iran as well as in other EFL contexts. Students at different levels reflect the differences in the acquisition of adjective properties, which can help English course teachers to design various classroom activities that reveal students' weak points in the acquisition process, so that they can select proper teaching materials and methods to help students proceed smoothly towards language maturity.

The study has certain limitations and many more studies in this area may be worthwhile. The first limitation concerns bilingual learners' L1 and L2 proficiency level consideration of which was really impossible in the current research. Based on Cummins' (1979) Threshold hypothesis, those who attain a high level of competence in three or more languages may display superior cognitive functioning than those who have not attained a similar competence. Upon recognition of bilinguals' competence in Azeri and Persian, results could be attributed to them much easily. Devising and developing such proficiency tests must be attainable in Persian, but its possibility approaches zero when it comes to Azeri since it is not academically worked on in Iran. The second limitation is lack of complementary group of Persian-Azeri bilinguals, as well as native Azeri speakers and native English speakers. Incorporating such groups of participants would definitely lead to better and more reliable results. Finally, as regards the design of

the study, it utilized a quasi-experimental design, thereby lacking experimental group. The finding, hence, might not be generalizable to other EFL populations.

Owing to the limitations, there seems a need for well-designed studies, with particular language pairings, in order to distinguish the factors generally held to be important for the activation of previously acquired languages. Recency of use, length of exposure, L1 and L2 literacy skills, as well as L2 proficiency level are some of those factors which need more investigation.

In order to ensure that no aspect of the L3 interlanguage is overseen, research in the complex area of L3 acquisition would benefit from new combinations of different tasks in the data collection procedure. The current study only presented grammaticality judgment test to the participants. Incorporating newer tasks would contribute to better understanding of CLI in L3 acquisition.

Last but not least, this study only examined two related languages (English and Persian) and an unrelated language (Azeri). Different combinations of the languages involved, such as three totally distant languages, or three closely related languages could be adopted to test whether language genetic relatedness, structural similarity, and psychotypology are really determining factors in the cross-linguistic influence in the process of third language acquisition.

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