

**Cross-Linguistic Influences in Multi-Lingual
Educational Systems: The Case of English
Prepositions for Turkish-Persian Bilinguals**

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Abstract

On the continuum of approaches to Teaching English as a Foreign Language, the Iranian educational system falls in the Grammar Translation extreme of the continuum rather than the Communicative extreme. Thinking in the first language forms the building blocks of language learning in Grammar Translation Method, mainly through bi-directional translation from and to the first language. Among the many questions in such educational systems is how the knowledge of the previous languages affects the subsequent languages. The question becomes more influential when the first two languages fall into different morphological and syntactic categories. This study is going to see how the Turkish- Persian bilinguals engaged in the Iranian educational system learn English. Since one difference between Persian and Turkish lies in the position of prepositions, the main focus of this study is on this aspect of learning. The hypothesis of the study is that the mother tongue (L1) is more influential in learning the subsequent languages.

Key words: first language, second language, third language; Iranian system of education; coefficient of correlation, coefficient of determination; Turkish; Persian

1. Introduction

The issue of cross-linguistic influence during second language acquisition has long been an important topic in Second Language Acquisition (SLA) research. During the last decade, however, there has been an increased interest in a relatively under-explored field: third language learning. From the point of view of cross-linguistic influence, the question arises as to how the three languages interact with one another during the language learning process. Approaches to dealing with trilingualism mostly follow the approaches to second language acquisition or as Hoffmann (2001) points out: “Most studies involving trilingualism have been carried out within the theoretical framework of bilingualism research. (P.1)

According to Dawwari (2004, p.3),

The research on the learning of a language other than the mother tongue is so dominant by SLA that when any issue of foreign language learning rises, many, especially in educational systems, do not assume any role for the first local language spoken by the people in bilingual communities.

In such systems, the standard national language is taken as the first language at the expense of the huge reservoir of language knowledge the students have. Even in their curriculum

preparations, these systems leave no space for the first language; instead, they base the curriculums on the differences between the second language of the learners and the target language to be taught. As bilinguals in the world form a noticeable number of people, it is not only relevant, but also crucial to investigate such issues as third language acquisition.

Iran is a country in which bilingualism is very common, but the educational program is still a monolingual one. It makes this specific educational program such an interesting case to be studied in regard with the influences of first and second languages of bilinguals when they try to learn a third language through one of the languages they have mastered already. Since Turkish/Persian bilinguals form the greatest bilingual communities in Iran, it makes the present study a considerably crucial issue to tackle with.

Turkish and Persian are two languages with typologically different syntactic and morphological structures. Given that Turkish is head-last and Persian head-first, it is clear that the relative positioning of heads with respect to their complements is one word-order parameter along which the two languages differ. Prepositions as inseparable elements of every language can play a key role in discriminating languages as they are used in different positions regarding their complements. In Turkish, preposition

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changes into postposition and is glued¹ to the noun before it. But in Persian, like in English, prepositions precede their complements. When learning English, Turkish / Persian Iranian bilinguals display instances of ungrammatical applications of prepositions, an issue which sheds more light on such cross-linguistic differences. Below are instances of ungrammatical sentences produced by L1 Turkish students of English:

*I go to school *to*.

*I see a boy on the car *behind*.

Apart from their semantic deviations, these sentences have a high degree of similarity with postpositions in the first language (Turkish) of the observed learners. The suggested Turkish equivalents of the sentences above can make this claim clearer:²

Ben gediram maktab-e.

I go school **to**.

*Ben bir oglan mashin **ardenda** geriram.*

I one boy car **behind** see.

Language dominance is another issue to be taken into account in such bilingual communities as the Iranian ones in which either of the languages may be used by bilinguals when encountering different situations. Here, by dominance we mean which language is used more frequently and causes more linguistic interference. (Heredia and Brown, 2005) Language

1. In Turkish which is an agglutinative language, relationship between words in a sentence are indicated by bound morphemes joined together so loosely that it is easy to determine where the boundaries between morphemes are. (Fon, 1998)

2. These equivalents are presented in the same order as they were in the examples above.

dominance, however, differs among the students in that the situations in which they have to switch from one language to the other are not the same for all. Hence, structural difference and language dominance are the two factors we have resorted to in this study to gain insights on the role played by L1 and L2 of the learners when trying to learn English in a monolingual educational environment which makes use of their second language as the language of instruction.³

Furthermore, the educational program we have dealt with doesn't assume any other approaches to teaching English but the Grammar Translation Methodology (GTM),⁴ building blocks of which are focusing on grammatical rules as the basis for translation (Brown, 1994, p.16).

Despite the use of L2 as the medium of teaching English, the deviations observed in the English performance of Turkish students give some clues to the investigation of the influences of their Turkish L1 in learning English L3. According to Talebinejad and Mehrabi (2003), many first language researchers claim that multilingual people's first languages play a privileged role in the acquisition of subsequent languages.

3. Iranian system of education makes use of L2 (nationally assumed as the first language) of the learners in teaching English.

4. There have been many attacks on this method. Richards and Rodgers (2001, p.7), for example, put their attack in this way: "It has no advocates. It is a method for which there is no theory. There is no literature that offers a rationale or justification for it or that attempts to relate it to issues in linguistics, psychology or educational theory. Despite attacks on GTM, "it remains a standard methodology for language teaching in educational institutions." (Brown, 1994, p. 16)

The framework within which this study is designed is inspired by one of Cummins's theories: Interdependence Hypothesis. When explaining his Interdependence Hypothesis, Cummins (1981, p.19) pointed out that: "To the extent that instruction in Lx is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in school or in the environment) and adequate motivation to learn Ly."

Relating this hypothesis to L3, Hodal (2005, p.10) asserts that:

Many scholars (Cenoz, 2000; Herdina and Jessner, 2000; Hoffmann, 2001; Lasagabaster, 2000) refer to this theory when dealing with L3 acquisition, albeit they do it in slightly different ways. . . . Because of this relationship of interdependence between language systems, each individual language development depends on the other language systems in the multilingual learner. Therefore, it makes more sense to look at the overall language system of the multilingual learner.

The hypothesis of this study goes the way in favor of Turkish L1 of the students, i.e. it is hypothesized that the learners' first language when dominant plays a more influential role in their learning of a third language.

2. Project

2.1. Participants

In this research 30 sampled bilingual students were selected randomly from third grade students of a Guidance School in

Shahrekian town in Chaharmahal-o-Bakhtiari province. They aged between 13 and 14 and were all native speakers of Qashqaei Turkish (which is a dialect of Azeri). They all learned Persian formally in the years of schooling and used it as a means of communication whenever they went to the city center.

2.2. Materials and Instrumentation

The elicitation tasks used for gathering the needed information consisted of four main parts: 1) a set of colorful pictures chosen randomly from *English Today* series; 2) two translation tasks, one from Persian (L2) and the other from Turkish⁵ (L1) to English (L3) (see appendixes A and B); 3) an open-ended set of 3 questions (see appendix C) to gather the needed data to develop a close-ended questionnaire; and 4) a close-ended questionnaire (see appendix D) on L1 dominance of the learners.

2.3. Procedure

The data collection procedure comprised four main stages: administering a pictorial test, an open-ended questionnaire, a close-ended questionnaire, and two translation tasks.

The first stage was accomplished by first asking the learners to identify the pictures through using the two languages they had already mastered (L1 and L2). L1 and L2 were used disorderly and rapidly not to let the students think in any one of the languages. The language the learners used was regarded as their

5. Turkish sentences were transcribed in Persian and read aloud to the learners.

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dominant language. Then, the researcher repeated the abovementioned process to make sure that the language the learners used in identifying the pictures was their dominant language. In other words, it was assumed that if the learners used the same language in identifying the pictures during the two phases, the claim that the language used by the learners was the dominant one would be verified. Finally, in regards with the scoring procedure, the answers given by the learners in Persian got 0 and the ones given in Turkish 1.

The questionnaire, like the pictorial test was also used to collect data on the dominant language of the students. First, a set of 3 open-ended questions (see appendix C) was developed through utilizing the sources and materials on language dominance in TEFL (Teaching English as a Foreign Language).

The content and language of these questions were cross-validated by three professors of TEFL and psychology. This set of questions was administered to the 30 students participating in this study to collect the needed data to develop a language dominance scale. The gathered data were content analyzed. The content analysis of the data revealed a number of 13 concepts. Then, these concepts were changed into items and each item received a five-point Likert scale response format, ranging from 1=never, 2=rarely, 3=sometimes, 4=mostly to 5=always. The content and language of this scale were cross-checked by the three professors of TEFL and psychology. Finally, the 30 sampled bilingual students were asked to fill in the questionnaire.

The translation phase of the experiment consisted of 16 sentences, 8 sentences to be translated from Turkish to English and 8 to be translated from Persian to English. The sentences included prepositions the students had learned before, with no explicit teaching about their uses. Some words the meanings of which they didn't know in English were also included in sentences to decrease the possible effects of memorization or association of the sentences in their books. During the tasks, the meaning of the new words the students asked for were given. Then, the translated sentences were examined and corrected by the researcher. As to scoring procedure, the use of prepositions in their normal position (before noun) was given 3, no use of prepositions was given 2, and use of prepositions in their abnormal position (postposition) was given 1.

Finally, SPSS was used, in line with current research on different aspects of social sciences. Two of the measurements generated by SPSS were used for this analysis: correlation coefficient to measure the degree of relationship between the two sets of data gathered on language dominance, and coefficient of determination to calculate the degree of importance of language dominance in predicting the learners' use of prepositions.

2.4. Data Analysis

In this study the dependent variables, i.e. the variables to be measured and explained, are the scores given to the students through implementing the translation tasks, whereas the

independent, predictor or explanatory variable, i.e. the variable which explains the answers, is the dominant language of the learners.

2.4.1. Content Analysis

According to Franzosi (2004), content analysis can be carried out through two major approaches: Conceptual Analysis and Relational Analysis. The former considers the existence and frequency of different concepts in a text, while the latter investigates the relationship existing among concepts.

Therefore, what the present study followed was the conceptual analysis of the answers given to open-ended questions by the participants. According to the open-ended questions (see appendix C), a number of content categories were determined and the text was probed based on these categories. In doing so, a certain number of meaningful units of information based on which a list of important concepts covered throughout the text was prepared. Going through this process the content analysis of the answers introduced 13 main concepts, and these concepts were changed into items and incorporated into the language dominant scale.

3. Results

3.1. Correlation Coefficient

Biserial Correlation was the statistical measurement used in this phase to calculate the relationship between two sets of data we

gathered on language dominance. Kaplan (1987) asserts that: "the biserial correlation expresses the relationship between a continuous variable and an artificial dichotomous variable." The correlation value came out to be a highly significant one ($R=0.713^{**}$).⁶ It gives more validity to the information gathered regarding language dominance. The table below illustrates the results clearly.

Table1. Correlation Coefficient between the results on the picture test and the results on the questionnaire

		Results of the picture test	Results of the questionnaire
Results of the picture test	Biserial Correlation	1	.713**
	Sig. (2-tailed)	.	.000
	N	30	30
Results of the questionnaire	Biserial Correlation	.713**	1
	Sig. (2-tailed)	.000	.
	N	30	30

The highly positive correlation between the two sets of data indicates that the information obtained on language dominance of the learners is valid enough to be used in this research.

6. the symbol ** indicates a high significance.

3.2. Regression Analysis

Regression Analysis is another statistical technique for estimating or predicting a value for a dependent variable from a set of independent variables (Mousavi, 1999, p. 320). The value given, the “Coefficient of Determination” or “R square”, indicates the importance the corresponding independent variable (IDV) has in determining the predicted value of dependent variables (DV).

Coefficient of Determination between different DVs and the IDV was measured to be analyzed and compared with one another. Tables below can give us some comprehensive understanding of the results.

Table2. COD between language dominance of the learners and their use of prepositions before nouns in P/E translations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.006	.000	-.043	6.62002

Table3. COD between language dominance of the learners and their use of prepositions before nouns in T/E translations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.112	.013	-.030	6.87261

Table4. COD between language dominance of the learners and their non-application of prepositions in P/E translations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.004	.000	-.043	4.27243

Table5. COD between language dominance of the learners and their use of prepositions before nouns in T/E translations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.088	.008	-.035	2.87792

Table6. COD between language dominance of the learners and their misuse of prepositions as postpositions in P/E translations

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.101	.010	-.033	1.290

The values achieved from the measurements above showed a very little effect from language dominance on uses of prepositions. As table2 indicates, the Correlation of

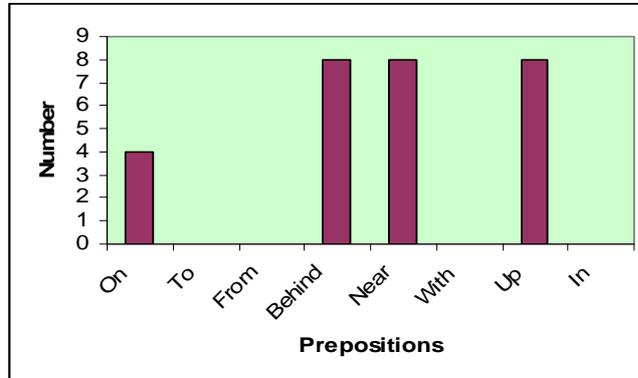
Determination (COD) between the use of prepositions before noun in Persian/English (P/E) translations and the dominant language of the learners gives a value equal to zero ($R^2 = .000$). It is to imply that the use of prepositions in P/E translations seem to be completely independent of language dominance. Table3 demonstrates a value not significantly different from the one in table2 ($R^2 = .013$). It suggests that the use of prepositions in T/E translations have about 1percent of dependence on language

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dominance of the learners, and about 99 percent of dependence on predictors other than language dominance. After the analysis of the results obtained from those who had not used prepositions in their translation tasks, it was demonstrated that the measured values of CODs ($R^2 = .000$ in P/E translation task and $R^2 = .008$ in T/E translation task) were to give the possibility of independence of both series of translations from language dominance, that is, there is no relationship between the learners' non-application of prepositions and their dominant use of a specific language. Tables 4 and 5 are in the responsibility of illustrating these results.

Apart from the results achieved above, the results relating to the students' use of prepositions after nouns need to be paid more attention: The COD between the learners' use of prepositions after noun in P/E and language dominance gave a value as insignificant as $R^2 = .010$ (table6). It means that the use of prepositions after nouns has a very little dependence on language dominance. The information regarding the individual prepositions shows that just 14 percent of the prepositions were used after nouns (which occurred only in the Turkish / English translation task). Among the eight prepositions under discovery, four had the chance of being used as postpositions. The graph below gives more information on the English prepositions used as postpositions.

Graph1. Use of English prepositions as postpositions in T/E translations



4. Results, Discussion and Conclusion

The present study reports the findings of an experiment on cross-linguistic influence in a multi-lingual educational system with Turkish as the L1, Persian as L2, and English as the L3.

The data clearly showed that L1 influenced the learners when dealing with the Turkish-English translation task, that is, 64 percent of the learners appeared to have used prepositions as postpositions, at least once, when they were translating from Turkish to English but not when dealing with the Persian-English translation task. The answers were free from any deviated use of prepositions in favor of Turkish structure when the learners were dealing with the Persian-English task. Coefficient of Determination values ($R^2 \sim .010$ in all cases) made it clear that the learners' language dominance had no or a very little influence on their misuse of prepositions as

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postpositions in either of the tasks. It can be concluded that neither those who used their first language more frequently nor those who used it less frequently were influenced by their first language structure.

Regarding the hypothesis of the research, it must be mentioned that the results appeared to reject it, that is, first language dominance had no influence in learners' performance when dealing with prepositions. But what is more interesting is that even those whose second language was more dominant did not outperform those with dominant L1 in translation tasks, indicating that language dominance has nothing to do with L3 performance.

Iranian educational system is another factor we considered in the framework of this research. Translation tasks were completely in line with this educational system and the Grammar Translation Methodology it utilizes in teaching English. As the learners misused prepositions when translating from Turkish into English but not when translating from Persian, it can be concluded that learners when dealing with the language of instruction (L2 in this system) have no reference to their L1 system. However, when the learners deal with their L1 and L3 they have misuses which can be directly related to their L1 system.

To sum up, in this study, two possible factors were considered to influence the Turkish/Persian bilingual learners of English: language dominance and educational system. The first factor came out not to be such an influential one in learners'

learning of English L3, but the latter seemed to influence the learners' performance especially when dealing with their language of instruction. This latter conclusion, however, needs to be verified thorough more researches in the field.

Implications for future studies:

Interaction between languages is such a wide area for multi-lingual studies in the field of foreign language acquisition. This study focused on one of the grammatical aspects of three languages involved in translation tasks. To have more valid findings in respect with those of the present study, we could have included a group of monolingual Persian speakers and a group of monolingual Turkish speakers for their results to be compared with those cited earlier in this paper, but unfortunately no Turkish monolingual at the same level of education was available. Moreover, this study could have been applied to students with higher levels of education and also students who master languages other than Turkish and English. However, they can be appropriate subjects for future studies.

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Appendix A

A sample of the Persian sentences to be translated into English

جملات زیر را به انگلیسی ترجمه کنید.

1. علی از آرایشگاه می‌آید.
2. مریم به لندن می‌رود.
3. ما در خانه روزنامه می‌خوانیم.
4. کامران به بالای درخت می‌رود.
5. من همیشه با بهرام بازی می‌کنم.
6. مسواک‌ها روی میزاند.
7. یک گربه پشت ماشین می‌بینم.
8. مسجد نزدیک آن خانه است.

Appendix B

A sample of the Turkish sentences to be translated into English

جملات زیر را به انگلیسی ترجمه کنید.

- 1 . اُلا اُکیشی دُن بیر کینگ آیلله .
- 2 . باجیم گدیر تهرانه .
- 3 . بو قزله ایدّه درس اُخیله .
- 4 . بو اُقلان گدیر دیفاردن یُخاری .

5. سعید نَن گدیرَم اَوَه .
6. بیر بلک باشوم ایسنَد در .
7. سو اوشاق یاخوننَد دِه .
8. پیشیگ قاپی آردنَدِه در .

Appendix C

A sample of the open-ended questions

1. در چه مکان‌هایی ترکی صحبت می‌کنید؟
2. با چه کسانی ترکی صحبت می‌کنید؟
3. صحبت به چه زبانی برای شما لذت بخش‌تر است؟

Appendix D

A sample of the questionnaire used in this experiment

- سوالات زیر را به دقت بخوانید و خانه مورد نظرتان را سیاه کنید.
1. با پدرم ترکی صحبت می‌کنم.

<input type="radio"/> همیشه	<input checked="" type="radio"/> بیشتر اوقات	<input type="radio"/> بعضی اوقات
به ندرت	هیچ وقت	
 2. با مادرم ترکی صحبت می‌کنم.

همیشه بیشتر اوقات بعضی اوقات
 به ندرت هیچ وقت

3. با اعضای دیگر خانواده ترکی صحبت می‌کنم.

همیشه بیشتر اوقات بعضی اوقات
 به ندرت هیچ وقت

4. در مدرسه با معلمان ترکی صحبت می‌کنم.

همیشه بیشتر اوقات بعضی اوقات
 به ندرت هیچ وقت

5. با همشهریان ترکی صحبت می‌کنم.

همیشه بیشتر اوقات بعضی اوقات
 به ندرت هیچ وقت

6. وقتی با دیگران ترکی صحبت می‌کنم راحت‌ترم.

همیشه بیشتر اوقات بعضی اوقات
 به ندرت هیچ وقت

7. زبان ترکی به من اجازه می‌دهد تا با افراد بیشتری در ارتباط باشم.

همیشه بیشتر اوقات بعضی اوقات
 به ندرت هیچ وقت

8. وقتی ترکی صحبت می‌کنم دیگران با من برخورد بهتری دارند.

همیشه بیشتر اوقات بعضی اوقات
 به ندرت هیچ وقت

9. در مدرسه با دوستانم ترکی صحبت می‌کنم.

همیشه بیشتر اوقات بعضی اوقات
 به ندرت هیچ وقت

10. از این که می بینم دیگران ترکی صحبت می‌کنند لذت می‌برم.

همیشه بیشتر اوقات بعضی اوقات
به ندرت هیچ وقت

11. پدر و مادرم مرا تشویق می‌کنند تا بیشتر ترکی صحبت کنم.

همیشه بیشتر اوقات بعضی اوقات
به ندرت هیچ وقت

12. دوست دارم زبان انگلیسی را با زبان ترکی یاد بگیرم.

همیشه بیشتر اوقات بعضی اوقات
به ندرت هیچ وقت

13. ترکی را بهتر از فارسی صحبت می‌کنم.

همیشه بیشتر اوقات بعضی اوقات
به ندرت هیچ وقت

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