Research Paper

Investigating the Role of First Language in EFL Students' English Errors: A Contrastive Analysis on Prepositional Constructions

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Abstract: *This study aims to predict the errors Iranian EFL learners of English might make when using prepositional constructions. To this end, firstly, a contrastive analysis on 30 prepositional constructions (including 15 adjectives/prepositions and 15 verbs/prepositions) was conducted to compare the two languages and predict errors based on the differences in constructions between the two languages. Secondly, an experiment was done on 67 students to evaluate to what extent our predictions were correct in reality. The findings indicate that a significant portion of the errors made by Persian-speaking learners of English in prepositional constructions were anticipated in advance. Over 50% of these errors can be reliably predicted through a contrastive analysis. The results also show that the errors were a bit more predictable in the female group than the male one. Additionally, Persian speakers of English may encounter difficulties in using accurate prepositional constructions, especially concerning the use of verbs/prepositions. These findings can be valuable for language instructors, curriculum developers, test designers, and other stakeholders, as they provide insights into the potential challenges learners face, helping to inform material development.*

I. Introduction

The term Contrastive Analysis (CA) was introduced by Charles Fries in 1952. Later in 1957, Robert Lado expanded its description considering cultural linguistic issues. CA is a subdiscipline of applied linguistics which is concerned with comparison of two or more languages in order to determine differences and similarities between them. The descriptive comparison results can be so useful in language teaching, learning and translation. In teaching language, the native language and the second language are compared to find about learner's errors in pedagogical ways and to adjust teaching methods and materials considering those errors in advance and based on a scientific description of the language to be learned and have carefully been compared with a parallel description of the learners' native language (Nickel, 1971). By detailed analysis and comparison of the structures of the two languages, it is possible to predict where the L2 learner will most probably make errors (Morsali, 2016). Also, the differences between the two languages can make some difficulties in translations which can be predicted and analyzed using CA.

According to Yarmohammadi and Rashidi (2009), there are two types of contrastive studies:

- *Theoretical contrastive analysis* which is the theoretical and scientific study of differences and similarities between languages.

- *Applied contrastive analysis* which is using a theoretical CA for some specific purposes like pedagogy and translation. It provides information about the target language, identifies similarities and differences between the two linguistic systems, evaluates the suitability of contrastive analysis, predicts some major learning difficulties, and establishes the hierarchy of difficulties to facilitate teaching, learning, and translation (Yarmohammadi & Rashidi, 2009).

Contrastive analysis hypothesis (CAH) has two major versions. In the strong version of CAH, Lado emphasizes that all second language learners' errors are because of the differences between their first language and their second language. Later, it was critisized because there were some findings on which, some learners' errors were not because of the mother tongue. So, its popularity decreased however it is still useful for second language errors predictions and explanations. Wardhaugh (1970) believes that weak version sees linguistic difficulties as posteriori rather that a predicted priori. So, in the weak version, there is no prediction of errors but, it explains errors after they happen.

All in all, CAH is based on two fundamental assumptions: first, it is believed that the degree of difference between the two languages under analysis corresponds to the degree of difficulty. Second, the degree of similarity is advocated to correspond to the degree of difficulty (Hayati, 1997).

Language learners need to overcome their errors and change their first language lisnuistic behaviors to reach the mastery level of the second language. The results of research in CA help both learners by prediction of their potential errors during the learning process and teachers and syllabus designer to help learners overcome those problems.

Prepositions

The preposition is a part of speech (word class) in language which shows the relationship between people, places or things in a sentence. Based on the relationships, there are different types of prepositions such as spatial, temporal (e.g. *in*, *under*, *towards*, *before* and comparative or even for marking different semantic roles (e.g. of, for) (Huddleston & Pullum, 2005; Quinn, 2011).

A preposition usually comes with a noun or pronoun or better to say, a noun phrase in terms of complement. A preposition comes before its complement and they make a prepositional phrase. English language typically has prepositions but in some languages such as Urdu, Turkish, Hindi, Korean, and Japanese, there are postpositional phrases in which, the postpositions come after their complements. There are also some cases where the function is performed by two parts coming before and after the complement; this is called a circumposition. Prepositions, postpositions and circumpositions are collectively known as adpositions (Huddleston & Pullum, 2005).

Construction Grammar

Construction grammar is a theoretical perspective related to the language grammar which believes form and function (semantic and pragmatic meaning) of the language are not seperable and they are combined together. Each construction is a pairing of form and meaning for example morphemes, words, phrases, idioms and sentences can be considered as a construction. Each construction is called a sign in which, a particular meaning is mapped onto a particular form. The formal phase of construction includes syntax and phonology (e.g. prosody and intonation) and the functional phase includes semantic and pragmatic meanings. There is a requirement of the knowledge of prototypes to understand construction grammar in which, the linguist is supposed to compare a construction with all other similar constructions to clarify that specific construction. In construction grammar, grammar is a network of constructions that are linked together.

Constructionist approaches and generative approach are somehow the same in the way that both approaches:

- Consider language as a cognitive (mental) system;
- Acknowledge that we should combine structures to create novel utterances;
- Recognize that an important theory of language learning is needed;

In other ways, constructionist approaches contrast generative approach. Generative said form of a language is independent and seperated of its meaning. Only the semantic meaning is taken into consideration and pragmatics is largely ignored. It also said that the complexity of language cannot be learned inductively and so learners must have an innate knowledge of language (also known is universal grammar and language faculty). It also maintains that language faculty has three components of syntax, semantic and phonology. Each component has its own categories and rules that are independent from the other and syntax can be analyzed without any reference to meaning. In addition, this theory believes that by knowing an infinite number of rules, a person can produce an infinite number of sentences.

In 1977, George Lakoff published "Linguistic Gestalts," a reaction to Chomsky's generative grammar. He mentioned that children learn grammatical rules and form-function construction from their environment by hearing them frequently. Languages are constructed through receiving inputs.

Based on Lakoff and Goldburg's construction theoretical framework, we are going to do contrastive analysis and compare the prepositional construction in Persian with that in English. On the next step, we predict what errors might be made by learners of a foreign language and finally, we do an experimental study to find out to what extent our predictions are true. So, the study is conducted to answer the following research questions:

1- What errors are predicted to be made by Persian learners of English when producing prepositional construction?

2- To what extend our predictions are true across different gender classes and based on the empirical findings?

Contrastive Analysis

According to the basic assumption of contrastive analysis hypothesis, learners of any language tend to transfer the structure of their native language into the target language while coming across such differences. Consequently, due to the differences mentioned below, it seems that Persian speakers learning English may face difficulties in using the correct prepositional constructions. The following are some general predictions derived from the contrast made between the two languages in question.

In this section, we are going to analyze and predict second language learners' errors on two types of prepositional constructions:
1- Verb and prepositions
2- Adjectives and prepositions

Verb and preposition

1- **Marry** somebody: this verb doesn't get any preposition in English. However, it gets the preposition 'ba' in Persian (means 'with').
English: Alex marries Sara.
Persian: Alex ba Sara ezdevaj mikonad.
Error prediction: Alex marries with Sara.

2- Help somebody **with** something: this verb gets the proposition 'with' in English.
However, it gets the preposition 'baraye' which means 'for' in Persian. In addition, in Persian, this verb gets the preposition 'be' (means 'to') before the object 'somebody'.
English: Alex helps Sara with her luggage.
Persian: Alex be Sara baraye chamedanhayash komak mikonad.
Error prediction: Alex helps to Sara for her luggage.

3- **Believe in** something: this verb gets the preposition 'in' in English. However, it can get the prepositions 'beh' (means 'to') or 'bar' (means 'on') in Persian.
English: Alex believes in ghosts.
Persian: 1- Alex beh rooh eteghad darad; 2- Alex bar rooh motaghed ast.
Error prediction: Alex believes to/on ghosts.

4- **Apologize to** somebody: this verb gets the proposition 'to' in English. However, it gets the preposition 'az' which means 'from' in Persian.
English: Alex apologizes to Sara.
Persian: Alex az Sara mazerat mikhahad.
Error prediction: Alex apologizes from Sara.
5- **Accuse** somebody **of** something: this verb gets the proposition 'of' in English.
However, it gets the preposition 'be' which means 'to' in Persian.
English: Alex accuses Sara of murder.
Persian: Alex Sara ra be ghatl motaham mikonad.
Error prediction: Alex accuses Sara to murder.

6- **Complain about:** this verb gets the proposition 'about' in English. However, it gets the preposition 'az' (means 'from') in Persian.
English: Alex complains about Sara.

Persian: Alex az Sara shekayat mikonad.
Error prediction: Alex complains from Sara.

7- **Congradulate** somebody **on** something: this verb gets the proposition 'on' in English. However, it gets the preposition 'baraye' (means 'for') or 'babate' (means 'about') in Persian. In addition, in Persian, this verb gets the preposition 'be' (means 'to') before the object 'somebody'.
English: Alex congradulates Sara on her wedding.
Persian: Alex be Sara baraye/babate arusish tabrik miguyad.
Error prediction: Alex congradulates to Sara for/about her wedding.

8- **Convict** somebody **of** something: this verb gets the proposition 'of' in English.
However, it gets the preposition 'be' which means 'to' in Persian.
English: Alex convicts Sara of murder.
Persian: Alex Sara ra be ghatl mahkum kard.
Error prediction: Alex convicts Sara to murder.

9- **Gaze at:** this verb gets the proposition 'at' in English. However, it gets the preposition 'be' which means 'to' in Persian.
English: Alex gazes at Sara.
Persian: Alex be Sara khireh mishavad.
Error prediction: Alex gazes to Sara.

10- **Hope for:** this verb gets the proposition 'for' in English. However, it gets the preposition 'be' which means 'to' in Persian.
English: Alex hopes for the winning.
Persian: Alex be bordan omidvar ast.
Error prediction: Alex hopes to the winning.

11- **Call:** this verb doesn't get any prepositions in English but it gets the preposition 'be' (means 'to') in Persian.
English: Alex calls Sara.
Persian: Alex be Sara zang mizanad.
Error prediction: Alex calls to Sara.

12- **Pay for:** this verb gets the proposition 'for' in English. However, verb doesn't get any prepositions in Persian.
English: Alex pays for the bills.
Persian: Alex ghabz ha ra pardakht mikonad.
Error prediction: Alex pays the bills.

13- **Result in:** this verb gets the proposition 'in' in English. However, it gets the preposition 'be' which means 'to' in Persian.
English: high speed in driving results in an accident.
Persian: Soraateh bala dar ranandegi monjar be tasadof mishavad.
Error prediction: high speed in driving results to an accident.

14- **Vote for:** this verb gets the proposition 'for' in English. However, it gets the preposition 'be' which means 'to' in Persian.
English: Alex votes for Sara.
Persian: Alex be Sara raay midahad.
Error prediction: Alex votes to Sara.

15- **Search for:** this verb gets the proposition 'for' in English. However, it doesn't get any prepositions in Persian.
English: Alex searches for Sara.
Persian: Alex Sara ra josteju kard.
Error prediction: Alex searches Sara.

Adjectives and prepositions
1- Disappointed with: this adjective always comes with the preposition 'with' in English. However, it comes with the preposition 'az' (means 'from') in Persian.
English: Alex is disappointed with Sara.
Persian: Alex az Sara naomid ast.
Error prediction: Alex is disappointed from Sara.

2- **Satisfied with:** this adjective always comes with the preposition 'with' in English.
However, it comes with the preposition 'az' (means 'from') in Persian.
English: Alex is satisfied with Sara.
Persian: Alex az Sara razi ast.
Error prediction: Alex is satisfied from Sara.

3- **Interested in:** this adjective always comes with the preposition 'in' in English.
However, it comes with the preposition 'be' (means 'to') in Persian.
English: Alex is interested in painting.
Persian: Alex be naghashi alaghemand ast.
Error prediction: Alex is interested to painting.

4- **jealous of:** this adjective always comes with the preposition 'of' in English. However, it comes with the preposition 'be' (means 'to') in Persian.
English: Alex is jealous of Sara.
Persian: Alex be Sara hesadat darad.
Error prediction: Alex is jealous to Sara.

5- **polite to** somebody: this adjective always comes with the preposition 'to' in English.
However, it comes with the preposition 'ba' (means 'with') in Persian.
English: Alex is polite to Sara.
Persian: Alex ba Sara moadat ast.
Error prediction: Alex is polite with Sara.

6- **proud of**: this adjective always comes with the preposition 'of' in English. However, it comes with the preposition 'be' (means 'to') in Persian.
English: Alex is proud of Sara.
Persian: Alex beh Sara eftekhar mikonad.
Error prediction: Alex is proud to Sara.

7- **Bored with:** this adjective always comes with the preposition 'with' in English.
However, it comes with the preposition 'az' (means 'from') in Persian.
English: Alex is bored with Sara.
Persian: Alex hoseleash az Sara sar miravad.
Error prediction: Alex is bored from Sara.

8- **Angry with:** this adjective always comes with the preposition 'with' in English.
However, it comes with the preposition 'az' (means 'from') in Persian.
English: Alex is angry with Sara.
Persian: Alex az Sara asabani ast.
Error prediction: Alex is angry from Sara.

9- **Guilty of**: this adjective always comes with the preposition 'of' in English. However, it comes with the preposition 'be' (means 'to') in Persian.
English: Alex is guilty of murder.
Persian: Alex moghaser be ghatl ast.
Error prediction: Alex is guilty to murder.

10- **Capable of:** this adjective always comes with the preposition 'of' in English.
However, it comes with the preposition 'dar' (means 'in') in Persian.
English: Alex is capable of driving.
Persian: Alex dar ranandegi tavana ast.

Error prediction: Alex is capable in driving.

11- **Amazed at/by:** this adjective comes with the prepositions 'at' or "by" in English.
However, it comes with the preposition 'az' (means 'from') in Persian.
English: Alex is amazed at/by the beauty of the house.
Persian: Alex az zibayi khaneh motehayer ast.
Error prediction: Alex is amazed from the beauty of the house.

12- **disgusted with/by:** this adjective comes with the prepositions 'with' or "by" in English.
However, it comes with the preposition 'az' (means 'from') in Persian.
English: Alex is disgusted with/by fish.
Persian: Alex monzajer az mahi ast.
Error prediction: Alex is disgusted from fish.
13- **generous with:** this adjective comes with the preposition 'with' in English.
However, it comes with the preposition 'dar' (means 'in') in Persian.
English: Alex is generous with his money.
Persian: Alex dar pool e khod sekhavatmand ast.
Error prediction: Alex is generous in his money.

14- **surprised by/at:** this adjective comes with the prepositions 'by' or "at" in English.
However, it comes with the preposition 'az' (means 'from') in Persian.
English: Alex is surprized by/at the news.
Persian: Alex az akhbar ghafelgir ast.
Error prediction: Alex is surprised from the news.

15- **keen on:** this adjective comes with the preposition 'on' in English. However, it comes with the preposition 'be' (means 'to') in Persian.
English: Alex is keen on art.
Persian: Alex moshtagh be honar ast.
Error prediction: Alex is keen to art.

Experiment
      Many Iranians were expected to use prepositional constructions correctly. Yet, in some cases, it was predicted that Iranian speakers learning English may wrongly follow the Persian prepostional construction patterns while producing English prepositional constructions. Because the idea of interference is being focused on this study, an experiment was conducted to evaluate the degree of interference of Persian language on learner's production of prepositional constructions in English. This experiment is done to answer the research questions presented in the introduction.

a. Participants
Following a cluster sampling procedure, 67 English students of a prive English institute whose level of proficiency is intermediate were chosen to participate in the study. The participants are 35 females and 32 males ranging from 12 to 18 years old.

b. Administration
The prepositional constructions which were presented in the previous parts including verb and prepositions and adjectives and prepositions were writen on a piece of paper and students were expected to fill in the blanks with the most appropriate prepositions in a specific amount of time.

c. Results and Data analysis
The result of the exam is presented in the following table. As it is shown in table1 and table2, around 0.54 of errors (603 out of 1104) made by male and female participants were predictable. Particularly, about 0.56 of errors made by females and 0.52 of errors made by males were predictable. Taking a brief look at table 2 shows that almost 50% of all errors made by participants were predictable using contrastive analysis.

Table.1. A Contrastive Analysis of Prepositional Constructions across genders and preposition types

Prepositional constructions	Total number of incorrect answers			Total number of incorrect answers similar to the prediction		
	Male	female	Total	male	Female	Total
verb and prepositions	256	350	606	160	175	335
adjectives and prepositions	288	210	498	128	140	268
total	546	560	1104	288	315	603

Table.2. Proportion of errors similar to the prediction

Prepositional constructions	Proportion of incorrect answers similar to the prediction		
	male	female	Total
Verb and preposition	0.62	0.50	0.55
Adjectives and prepositions	0.44	0.66	0.53
total	0.52	0.56	0.54

According to the result table, in the case of verbs and propositions, 55% of all the errors were predicted by CA and in the case of adjectives and prepositions, 53% of the errors were predicted by CA.

In the next step, an independant sample t-test was conducted to measure whether the differences among gender classes are statistically significant or not. Considering the fact that t-test is based on the assumption that there is a normal distribution of data, normality test was conducted first. The result of normality test is presented in table 3.

Table.3. Tests of normality

Tests of Normality

	gender	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
proportion	male	.135	32	.148	.964	32	.356
	female	.074	35	.200*	.978	35	.699

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Considering the Sig. part in table 3, it is obvious the data is normally distributed. Hence, the application of independent sample t-test to compare different groups is allowed.

Table.4. Descriptive statistics

Group Statistics

	gender	N	Mean	Std. Deviation	Std. Error Mean
proportion	male	32	.5181	.04468	.00790
	female	35	.5626	.03433	.00580

Table.5. Independant sample T-test

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
proportion	Equal variances assumed	2.141	.148	-4.588	65	.000	-.04445	.00969	-.06379	-.02510
	Equal variances not assumed			-4.535	58.070	.000	-.04445	.00980	-.06406	-.02483

Table 5 presents the result of independant sample t-test. Considering the quantity of sig. There is a significant difference among male and female classes in terms of predictale errors. The results show that the errors were a bit more predictable for women than men (0.56 vs. 0.51)

II.   Discussion and Conclusion

This study aims to forecast the errors Iranian EFL learners may make when using prepositional constructions. To achieve this, a contrastive analysis was first carried out on 30 prepositional constructions (15 adjectives/prepositions and 15 verbs/prepositions) to compare the two languages and identify potential errors based on the differences in constructions. Next, an experiment was conducted with 67 students to assess the

accuracy of these predictions. The results show that a substantial portion of the errors made by Persian-speaking learners in prepositional constructions were predicted beforehand. Over 50% of these errors could be reliably anticipated through the contrastive analysis. The findings also suggest that errors were somewhat more predictable among female learners than male learners. In the case of verbs and propositions, 55% of all the errors and in the case of adjectives and prepositions, 53% of the errors were predicted by CA which seems to be a significant amount to rely on. Moreover, Persian-speaking English learners tend to struggle more with accurate verb/preposition than adjective/preposition usage. These insights are valuable for language teachers, curriculum developers, test creators, and other relevant parties, as they highlight potential learner difficulties to find and locate prolematic parts of teaching/learning and can guide material development.

References

[1].   Chomsky, N. (1956). Three models for the description of language. *IRE Transactions on information theory*, *2*(3), 113-124.
[2].   Fries, C. (1952). *The structure of English*. New York: Harcourt, Brace, & World.
[3].   Goldberg, A. E. (2006). *Constructions at work: The nature of generalization in language*.
[4].   Oxford University Press on Demand.
[5].   Hayati, A.M. (1997). *A contrastive analysis of English and Persian stress.* PSiCL (Pozan studies in contemporary linguistics), volume 32.
[6].   Huddleston, R., & Pullum, G. K. (2005). *A student's introduction to English grammar*.
[7].   Cambridge University Press.
[8].   Lado, R. (1957). *Linguistics across cultures: Applied linguistics for language teachers*.
[9].   University of Michigan Press: Ann Arbor.
[10].   Lakoff, G. (1977). Linguistic gestalts. In *Papers from the... Regional Meeting. Chicago Ling. Soc. Chicago, Ill.* (Vol. 13, pp. 236-287).
[11].   Lakoff, G. (2008). *Women, fire, and dangerous things*. University of Chicago press.
[12].   Morsali, S. (2016). Contrastive analysis of the plurality marking mechanisms of English and Persian. *International Journal of Language Learning and Applied Linguistics World,* 16(3), 53-61.
[13].   Nickel, G. E. D. (1971). *Papers in Contrastive Linguistics*. Cambridge: Cambridge University press.
[14].   Quinn, R. D. (2011). Using visual art to teach prepositional phrases. *Journal for Learning through the Arts*, *7*(1).
[15].   Wardhaugh, R. (1970). The contrastive analysis hypothesis. *TESOL Quarterly*, *4*. TESOL Convention March, 1970. http://dx.doi.org/10.2307/3586182
[16].   Yarmohamadi, L., & Rashidi, N. (2009). *Practical contrastive analysis of English and Persian with special emphasis on grammar*.Rahnama Press :Tehran .