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NON-NATIVE ENGLISH SPEAKERS' USE OF PREPOSITIONS IN SAUDI ARABIA: A COGNITIVE LINGUISTICS STUDY

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ABSTRACT

Prepositions have a significant role in languages as users of language depend on them to produce sentence meanings and structures. This study investigates the non-linguistic factors like cognitive, social context and experiential that are beyond linguistics and affect the use of English prepositions by Saudi non-native speakers of English. As the student's psychology to comprehend language and the centrality of the cognition are bases of cognitive linguistics, this research aimed to analyze factors that validate the use of English prepositions by examining a variety of background and personal information, to find out whether Arabic negative pragmatic transfer resulted in the choice of the simple English prepositions used by Saudi non-native speakers of English, explore if the choice of a preposition was affected by social or geographical factors as it is hypothesized that they have an effect on the production of prepositions, and to examine if gender affected the use of prepositions. Using a sample of 50 non-native English speakers aged 19–25 years, the research instrument consisted of two tests. The first test investigated the use of prepositions through multiple choices and the second consisted of descriptive questions. Independent sample t-tests, linear regression tests, and ANOVA tests were used to compare the results. Results revealed that age and reading time were two social factors that affected the use of prepositions. There were no significant gender differences in the prepositional use, while geographical factors that may intervene had a negative effect.

Contribution/ Originality: The study contributes in the existing literature as it attempts to find out whether Arabic negative pragmatic transfer results in the choice of the simple English prepositions used by Saudi non-native speakers of English, and to explore whether the choice of prepositions is affected by social or geographical factors.

1. INTRODUCTION

Prepositions present "a relation between two entities, one being that represented by the prepositional complement, the other by another part of the sentence" (Quirk, Greenbaum, Leech, & Svartvik, 1985). Learning prepositions is thus an essential part of learning a language. As a foreign language learner, learning English prepositions is particularly difficult because of their large number. Loke, Ali, and Anthony (2013) state that the use of prepositions is the most challenging to master in English language learning because they are "extremely polysemous and complex in defining their variegated senses in contexts with a lot of difficulties in semantics and syntax fields" (Huu, Tat, & Tin, 2019). Pinker (1995) states that these function words are causes of grammatical

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differences between languages and that they "delineate larger phrases into which NP's [noun phrases] and VP's [verb phrases] and AP's [adjectival/adverbial phrases] fit, thereby providing scaffolding for the sentence." Strom (2014) states that preposition selection in EFL involves (i) the learner's native language and its transfer, (ii) the EFL learning context, and iii) learners' exposure to the English language (see also Håkansson (2003)).

Many recent studies have focused on the difficulties faced by foreign learners learning English prepositions and the most common errors they find between their native language and the second language (Gass & Selinker, 2001). When native language and second language learners share similarities, this is referred to as positive language transfers, whereas when their systems differ, it is referred to as negative language transfers (Ellis, 1996). When learners assume there is semantic equivalence between their native language and the foreign language, a prepositional error has a greater chance of occurring (Lam, 2009).

However, while prepositions in various languages have been investigated by many researchers from semantic aspects, such as Shakir and Yaseen (2015); Al-Bayati (2013); Al Khotaba (2013) and Tahaineh (2010), the cognitive linguistics of EFL learners' use of prepositions is underexamined in the areas of both applied linguistics and psycholinguistics. In the field of cognitive linguistics, Kissling, Tyler, Warren, and Negrete (2018) claim that acquiring a new language is considered to be a gradual process that starts with the learner acquiring an understanding of the basics of the language and then having lessons, practicing it, and being tested on it. Since few researchers have focused on what lies beyond the system of linguistics, studies should aim to bridge the gap in the body of knowledge on acquiring prepositions from a cognitive linguistics aspect to understand what affects the English language preposition acquisition of Saudi EFL learners.

To bridge this gap in the literature, following Huu et al. (2019) who examined the non-linguistic factors in the context of Vietnamese native speakers' use of prepositions from a cognitive perspective, this study attempted to investigate the factors that affect Saudi Arabic native speakers learning English prepositions in the cognitive, social, and experiential contexts based on their age, gender, leisure time, location, sports, favorite colors, and other factors.

The primary objective of this research was to find out if the choice of simple English prepositions by Saudi non-native speakers of English was affected by the negative pragmatic transfer from the Arabic language. It also aimed to see if the social or geographical factors had an effect on the choice of the English prepositions. The last objective of the research was to determine if the use of English prepositions was affected by gender. This study therefore investigated the cognitive factors that affect English preposition learning by Saudi EFL learners.

In order to attain these objectives, the major research question of this study was to examine factors from the perspective of cognitive linguistics that intervene in the EFL learners' use of English prepositions negatively. In particular, the following three research questions were framed:

1. RQ1: Do Arabic negative pragmatic transfers result in the choice of the simple English prepositions used by Saudi non-native speakers of English?
2. RQ2: Is the choice of English prepositions affected by social or geographical factors?
3. RQ3: Does gender affect the use of English prepositions?

2. LITERATURE REVIEW

2.1. Cognitive Linguistics and the Differences between English and Arabic

A component of the mental process which is responsible of how language is perceived and acquired is referred to as cognition. Chomsky (1959) did a critical review of Skinner (1957) work *Verbal Behavior* which resulted in the cognitive revolution. Cognitive linguistics is a branch of cognitive science. It integrates parts of linguistics theory and the learning process with the science of cognition Al Emam (2019). It is based on the interaction between the language and cognition of an individual, representing how learners comprehend language depending on their psychology and knowledge. This includes the knowledge and the experience that they built their whole life on and that they were exposed to. Ungerer and Schmid (2001) mention that cognitive linguistics is considered an approach

based on how we perceive and conceptualize our experience of the world. When a foreign language learner is introduced to aspects of languages cognitively, he/she can semantically understand the differences between the foreign language being learned and his/her native language. Kissling et al. (2018) mention that studies in cognitive psychology have shown that complexes of information are easy to retrieve if there was an organizing systematic structure offering specifications of items and their relation. This links to the aim of this research which is to find out what non-linguistics aspects affect the prepositional usage of Saudis. Because cognitive linguistics factors may affect preposition learning in EFL, understanding them better can guide researchers, linguists, language teachers, and foreign language learners about the aspects to which they should pay attention when teaching and learning the language in addition to the linguistic system.

Hung, Vien, and Vu (2018) state that part of the process of learning a language is translation from the foreign to the native language as a cognitive enhancement. In the context of this study, English and Arabic belong to different families (Arabic is a Semitic language and English is a Germanic language), which suggests that the differences between them, especially in the prepositional system, are major. These different systems of prepositions explain the difficulties faced by learners in forming accurate sentences. Indeed, Catalán (1996) states that a learner cannot depend on his/her knowledge of prepositions in the native language.

A complement usually follows the preposition in a sentence. This is called the prepositional phrase. The role of the preposition here is to connect the complement or direct object to a noun, verb, or adjective. The English language has almost 100 prepositions (Leacock, Chodorow, Gamon, & Tetreault, 2014) divided into simple and complex groups. A simple preposition is a one-word preposition such as *in*, *at*, *on*, and *before*, whereas a complex preposition has two or three words like *contrary to*, *in addition to*, *with reference to*, and *by mean of*. Grubic (2004) and Macková (2013) cited in Almahameed (2018) state that English prepositions are not limited, as new combinations are always formed, which is why they are treated as an open class. Specifically, English prepositions have seven classifications according to Quirk et al. (1985): (i) prepositions indicating a time relationship; (ii) prepositions indicating spatial relationship, divided into prepositions of location and prepositions of direction; (iii) prepositions denoting cause or purpose relations (e.g., cause, reason, motive, purpose, destination, target); (iv) prepositions indicating the relation of the manner, means, instrument, agentive, and stimulus; (v) prepositions indicating accompaniment relations; (vi) prepositions showing the relation of support or opposition; and (vii) prepositions showing the relation of concession and respect (cited in Almahameed (2018)).

By contrast, the Arabic prepositional system consists of 20 prepositions (Aldahesh, 2013). They are classified as a closed class, which means that they do not accept additions unlike those in English (Almahameed, 2018). Arabic prepositions are grouped into semi-prepositions and true prepositions. Semi-prepositions are known for their language structure and are multifunctional because of their ability to function as prepositions, nouns, and adverbs (Almahameed, 2018). True prepositions, on the contrary, can only function as prepositions. These are divided into two groups based on their number of letters. The first group is referred to as separable prepositions; these prepositions take the biliteral or triliteral form such as *fi*, which means *in* in English (Almahameed, 2018). The second group, referred to as inseparable prepositions, consist of a consonant and a short vowel and usually function as prefixes to their complement (Almahameed, 2018). An example is *Li*, which is equivalent to *to* in English. Arabic prepositions have six usages according to Al-Marrani (2009): (i) prepositions denoting a time relationship, (ii) prepositions denoting a spatial relationship, (iii) prepositions expressing the notion of resemblance, (iv) prepositions expressing the notion of cause, (v) prepositions expressing the notion of accompaniment, and (vi) prepositions expressing the notion of exception (cited in Almahameed (2018)). The functions of Arabic prepositions are relationship-revealing, as they link adjectives with noun phrases or nouns. They can also join a noun phrase or noun to a verb and an adjective to a noun phrase or noun.

2.2. Cognitive Studies of the usage of English prepositions

Although studies of the difficulties that non-native speakers of English face when learning prepositions are numerous, little is known about the cognitive linguistics aspects of learning those prepositions. Song and Sardegna (2014) investigate an approach to teaching English language prepositions cognitively based on Johnson (1987) image notions schemas, Langacker (1987) theory of domains, and Lakoff and Johnson (1980) theory of conceptual metaphors. They applied an inspired cognitive linguistics approach to teach prepositions. The participants were students with different proficiency levels in the medium and higher tracks. The results revealed that the cognitive linguistics approach significantly enhanced students' performance more than the traditional approach. In particular, the findings showed that extensive reading can make a positive contribution to the acquisition of English language prepositions.

Wijaya and Ong (2018) investigated the application of cognitive linguistics in EFL classrooms for teaching English prepositions to examine the effect of linguistically grounded cognitive instructions. Three prepositions (*in*, *at*, and *on*) were chosen because of their polysemous nature and language-specific features. The participants were 44 adolescent learners in a school in Indonesia divided into two groups. The first group was given prepositions in pictorial representations. The second group was given only rules. The findings of the study revealed that the cognitive group scored better results in the tests. This showed the importance and benefits of cognitive linguistics applications when teaching foreign language prepositions. It also revealed that the theory of cognitive linguistics can be applied to second language teaching.

Hung et al. (2018) investigated the effectiveness of teaching English language prepositions by applying the cognitive linguistics method. Participants were chosen based on their eagerness to study, out-of-class exposure, previous learning experience, and results of the pretest. They were divided into a cognitive linguistics approach group and a traditional approach group and taught the metaphorical and spatial meanings of the following prepositions: *at*, *above*, *among*, *behind*, *between*, *in front of*, *on*, *in*, and *under*. The results revealed that the cognitive linguistics group outperformed the traditional approach group. The researchers concluded that the cognitive linguistics approach improves learners' knowledge of prepositions unlike the traditional approach.

Using a sample of 141 EFL students at the Ho Chi Minh City University of Food Industry, Huu et al. (2019) studied native speakers' use of prepositions and the non-linguistic factors that affect it using a 70 multiple-choice questionnaire and questions with five pictures that required descriptive answers. The results revealed that favorite colors, negative pragmatic transfers, and locations influenced data more than gender, leisure activities, reading habits, and outdoor activities.

3. METHODOLOGY

3.1. Participants

Fifty randomly chosen non-native English speakers participated in this study (25 male and 25 female). Our participants were EFL learners from different universities and English language teaching institutions in Saudi Arabia aged 19–25 years. Because Saudi Arabia is a large country, each region has its own history, geography, environment, and traditions.

The eastern region, for example, has one of the largest oil companies in the world, ARAMCO, where many foreigners work. By contrast, the western region had two holy cities, Makkah and Madinah, where millions of foreigners visit each year. This study was authorized by the institutional review board of Princess Nourah Bint Abdulrahman University. Participants gave their consent to participate in this research. This was presented to them on the test cover page. Participants were also informed that participation in this study was voluntary and that their results would be anonymized.

3.2. Instrument

The research instrument was a questionnaire consisting of a multiple-choice test and a description test, identical to that used by Huu et al. (2019). It aimed to collect personal information from participants including their nationality, age, religion, location, time management, favorite colors, qualifications, and time spent. Before participants started the test, they were asked to answer questions about themselves. The multiple-choice test consisted of 70 questions, with one point for each incorrect answer. Participants filled the blanks with appropriate prepositions. The description test consisted of five pictures with a question for each one. Here, they wrote sentences to describe the pictured object. Because of the size of Saudi Arabia, using an online instrument via Google Forms was more convenient to recruit as many participants as possible from across the country.

3.3. Pilot Study

A pilot study was carried out to ensure that the study was feasible for Saudi EFL learners. The test was administered to eight female EFL learners and seven male EFL learners. The results of the pilot study revealed that the instrument was clear and feasible. Hence, its reliability was confirmed by the pilot study participants. Its validity was also assured by asking colleagues who were specialized in linguistics to complete and comment on it.

3.4. Data Analysis

Following Huu et al. (2019) the data gathered from participants were analyzed in a descriptive analysis to compare their scores on each factor. Independent sample t-tests, linear regression tests, and ANOVA tests were used to compare the results. The t-test was used to find out if there were differences of significance between the two main groups. The independent sample t-tests were analyzed by coding correct answers as 0 and incorrect answers as 1. By contrast, a four-point scale was used in the linear regression tests and ANOVA tests based on the proximity of the respondent's answer to the correct answer. The aim here was to analyze the difficulties of using English prepositions and their sources.

4. RESULTS

4.1. Results of the Multiple-Choice Test

Table 1 shows that the minimum score on the multiple-choice test was 23 out of 70 and the maximum was 57. The mean score (39.22 out of 70) shows that the knowledge of participants was quite low. Further, the difference among participants' results was extremely high (standard deviation = 8.756).

Table-1. Descriptive statistics of participants' total scores.

	N	Minimum	Maximum	Mean	Std. Deviation
Total score	50	23	57	39.22	8.756
Valid N (listwise)	50				

Table-2. Paired samples' correlation: Questions 35 and 70.

		N	Correlation	Sig.
Pair 1	Total score & question 35	50	−0.105	0.431
Pair 2	Total score & question 70	50	−0.286	0.029

Participants found a large number of questions difficult to answer. However, the correlation varied considerably from .431 to .029 for questions 35 and 70 (Table 2). Question number 70 asked about the correct preposition to use in sentences like *After several minutes we located the key (off − away − for − out) the door*. Question number 35 asked about the correct preposition to use in the sentence: *Small pox has been eradicated (in − from − within - out of) India*. The high standard deviation around the mean showed the low scores of the survey. This meant that participants gave answers that were not close to the correct answers.

Table-3. Descriptive statistics by gender.

		N	Mean	Std. Deviation	Std. Error Mean	Sig.
Total score	Male	25	38.84	9.086	1.817	0.573
	Female	25	39.60	8.583	1.717	

Table 3 shows the performance of participants by gender. The p-value is .573 (p>.005), which means that there is no statistically significant difference in total scores between genders based on the results of the chi-square test. Hence, no evidence was found to predict the relation between gender and performance. The survey results thus confirmed that gender plays no role in determining the sources of using English prepositions.

Table-4. Total score: Gender cross-tabulation.

Score obtained/70	Gender		Total
	Male	Female	
23	1	0	1
24	1	1	2
25	1	0	1
27	1	2	3
28	0	1	1
29	1	0	1
30	1	1	2
31	0	1	1
32	1	0	1
33	1	1	2
34	1	0	1
37	1	3	4
38	2	1	3
39	1	0	1
41	0	2	2
42	1	2	3
43	2	1	3
44	1	1	2
45	1	3	4
46	1	1	2
47	0	1	1
48	1	1	2
49	1	0	1
50	3	0	3
52	1	0	1
55	0	1	1
57	0	1	1
	25	25	50
Chi-square = 21.333	Sig = .725		

Looking back into the minimum score on the multiple-choice test of 23 and maximum of 57, Table 4 highlights the p-value of the correlation between gender and total score was found to be .725 (>.05), which again shows that gender does not influence scores; on the contrary, there is a difference between the total scores of male and female.

Table-5. Independent sample t-test results: Questions 1, 4, and 7.

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q1 We met a lot of people…. our holiday?	Equal variances assumed	2.243	0.141	2.172	48	0.035	5.911	2.722	0.438	11.383
	Equal variances not assumed			1.876	16.820	0.078	5.911	3.150	0.741	12.562
Q4 He is addicted ……smoking.	Equal variances assumed	2.410	0.127	4.591	48	0.000	13.060	2.845	7.340	18.779
	Equal variances not assumed			6.424	15.598	0.000	13.060	2.033	8.741	17.378
Q7 There is a bridge …..the river.	Equal variances assumed	2.213	0.143	1.971	48	0.055	5.553	2.818	-0.113	11.218
	Equal variances not assumed			2.346	25.946	0.027	5.553	2.367	0.687	10.418

Three questions in the multiple-choice test (1, 4, and 7) showed significant differences between male and female performance (p<.005) (see Table 5). This indicates some degree of difference between female and male performance. These questions were closely related to phrasal verbs, showing complex correlations with each other.

Table-6. Correlation between age and total score: Independent sample t-test.

		Age	Total Score
Age	Pearson Correlation	1	0.332*
	Sig. (two-tailed)		**0.018**
	N	50	50
Total score	Pearson Correlation	0.332*	1
	Sig. (two-tailed)	0.018	
	N	50	50

Note: * Correlation is significant at the .05 level (one-tailed).

Table 6 shows the relationship between age and total score, with a significant value of .018 (p<.05), indicating a significant positive but weak relation between age and total score.

Table-7. Correlation between total score and other factors: ANOVA test.

	Sum of Squares	df	Mean Square	F	Sig.
Age					
Between groups	330.853	26	12.725	1.488	0.169
Within groups	196.667	23	8.551		
Total	527.520	49			
Gender					
Between groups	70.167	26	7.079	0.078	0.781
Within groups	63.833	23	90.706		
Total	134.000	49			
Location					
Between groups	519.345	4	129.836	1.507	0.214
Within groups	4567.276	53	86.175		
Total	5086.621	57			
Favorite color					
Between groups	70.167	26	2.699	0.972	0.531
Within groups	63.833	23	2.775		
Total	134.000	49			
Time spent reading books					
Between groups	48.703	26	1.873	2.278	0.025
Within groups	18.917	23	0.822		
Total	67.620	49			
Education background					
Between groups	7.480	26	0.288	1.323	0.250
Within groups	5.000	23	0.217		
Total	12.480	49			
Starting time to learn English					
Between groups	9.000	26	0.346	0.692	0.818
Within groups	11.500	23	0.500		
Total	20.500	49			

To test which factor affected the choices of using proper English prepositions the most, we used an ANOVA test (see Table 7). Only the relationship between total score and time spent reading books was significant (0.025). None of the other factors showed significant relationships.

4.2. Results of the Description Test

The description tests posed participants three questions and then asked them to describe two pictures. These two pictures could be described in any way. If participants decided to write a sentence using a preposition, it was marked with the preposition used, whereas sentences that did not include a preposition were marked as other.

Table-8. Prepositions used by participants in the description test.

Question	Preposition used	Frequency	Percent
1. Where is the small house?	*above*	24	48.0
	at	2	4.0
	in	3	6.0
	on	15	30.0
	over	6	12.0
	Total	50	100.0
2. Where is the fan?	*above*	4	8.0
	at	5	10.0
	from	1	2.0
	in	16	32.0
	on	23	46.0
	to	1	2.0
	Total	50	100.0
3. Where is the bike?	*behind*	6	12.0
	beside	8	16.0
	between	1	2.0
	down	1	2.0
	in	6	12.0
	near	4	8.0
	next	19	38.0
	under	5	10.0
	Total	50	100.0
4. Write a sentence to describe the picture.	*in*	2	4.0
	on	3	6.0
	other	42	84.0
	over	3	6.0
	Total	50	100.0
5. Write a sentence to describe the picture.	*above*	1	2.0
	at	10	20.0
	in	5	10.0
	on	9	18.0
	other	24	48.0
	to	1	2.0
	Total	50	100.0

Table 8 shows that for question 1 (Where is the small house?), the most used preposition was *above* and the least used was *at*. For the second question (Where is the fan?), the most used preposition was *on* and the least used were *from* and *to*. The answers to the third question (Where is the bike?) showed that the highest used preposition was *next* and the lowest were *between* and *down*. For the final two questions, the highest preposition used by participants was *in* and the lowest was *of* (question 4) compared with *next* (highest) and *on*, *near*, and *at* (lowest) for question 5.

Table-9. Question 1: Difference by gender.

Gender		Where is the small house?					Total
		above	*at*	*in*	*on*	*over*	
Male	Count	14	1	2	5	3	25
	%	56.0%	4.0%	8.0%	20.0%	12.0%	100.0%
Female	Count	10	1	1	10	3	25
	%	40.0%	4.0%	4.0%	40.0%	12.0%	100.0%
	Count	24	2	3	15	6	50
	%	48.0%	4.0%	6.0%	30.0%	12.0%	100.0%
Person Chi-Square = 2.667a			Sig = 0.615				

Table 9 shows that we found no significant differences in the use of English prepositions by gender for the first question of the description test (.615, p>.05).

Table-10. Question 2: Difference by gender.

Gender		Where is the fan?						Total
		above	*at*	*from*	*in*	*on*	*to*	
Male	Count	3	1	0	7	13	1	25
	%	12.0%	4.0%	0.0%	28.0%	52.0%	4.0%	100.0%
Female	Count	1	4	1	9	10	0	25
	%	4.0%	16.0%	4.0%	36.0%	40.0%	.0%	100.0%
Total	Count	4	5	1	16	23	1	50
	%	8.0%	10.0%	2.0%	32.0%	46.0%	2.0%	100.0%
Pearson Chi-Square = 5.441a			Sig = .364					

Likewise, for question 2, the results in Table 10 show no gender differences in the use of English prepositions (.364, p>.05).

Table-11. Question 3: Difference by gender.

Gender		Where is the bike?								Total
		behind	*beside*	*between*	*down*	*in*	*near*	*next*	*under*	
Male	Count	2	3	1	1	4	2	10	2	25
	%	8.0%	12.0%	4.0%	4.0%	16.0%	8.0%	40.0%	8.0%	100.0%
Female	Count	4	5	0	0	2	2	9	3	25
	%	16.0%	20.0%	.0%	.0%	8.0%	8.0%	36.0%	12.0%	100.0%
Total	Count	6	8	1	1	6	4	19	5	50
	%	12.0%	16.0%	2.0%	2.0%	12.0%	8.0%	38.0%	10.0%	100.0%
Pearson Chi-Square = 4.086a			Sig = .770							

Again, Table 11 shows that there were no gender differences in the English prepositions used for question 3 (.770, p>.05).

Table-12. Question 4: Difference by gender.

Gender		Write a sentence to describe the picture				Total
		in	*on*	other	*over*	
Male	Count	2	2	20	1	25
	%	8.0%	8.0%	80.0%	4.0%	100.0%
Female	Count	0	1	22	2	25
	%	.0%	4.0%	88.0%	8.0%	100.0%
Total	Count	2	3	42	3	50
	%	4.0%	6.0%	84.0%	6.0%	100.0%
Pearson Chi-Square = 2.762				Sig = .430		

Note: Other refers to sentences that were grammatical and described the picture with no use of prepositions.

There were no differences by gender for questions 4 or 5 either (Tables 12 and 13).

Table-13. Question 5: Difference by gender.

Gender		Write a sentence to describe the picture.						Total
		above	*at*	*in*	*on*	*other*	*to*	
Male	Count	0	6	4	2	13	0	25
	%	.0%	24.0%	16.0%	8.0%	52.0%	.0%	100.0%
Female	Count	1	4	1	7	11	1	25
	%	4.0%	16.0%	4.0%	28.0%	44.0%	4.0%	100.0%
Total	Count	1	10	5	9	24	1	50
	%	2.0%	20.0%	10.0%	18.0%	48.0%	2.0%	100.0%
Pearson Chi-Square = 7.144						Sig = .210		

5. DISCUSSION

The findings of the study revealed significant differences in the results between participants. It was clear that participants faced difficulties answering most of the test questions, not only the difficult ones. This agrees with the findings of Shakir and Yaseen (2015) who state that EFL learners face problems using prepositions because of the interference of the first language. However, in our study, gender did not affect the answers given by participants to both the multiple-choice questions and the description test questions. This contradicts the findings of Al Yaari and Almaflehi (2013) who show that female EFL students are better at translating English prepositions into Arabic than male EFL learners. That said, some gender differences between the use of prepositions were found in the results for questions 1, 4, and 7, which were related to phrasal verbs with complex correlations. This relates to the cognitive linguistic enhancement that Hung et al. (2018) claim mentioned earlier, which says that part of the process of learning a language is the translation that happens from the foreign to the native language.

Age was a significant factor because we found a positive relationship between the total score and age. This concurs with the findings of Taliancich-Klinger, Bedore, and Pena (2018) who claim that age is a factor in prepositional proficiency. As for the other factors, the results revealed that time spent reading was related to test score, which agrees with the results of the study by Song and Sardegna (2014) who show a positive relationship between extensive reading and the acquisition of English prepositions. This is also related to the cognitive linguistic side of the learner as mentioned previously where he/she perceive and conceptualize all the experience they went through in the world (Ungerer & Schmid, 2001). However, such factors as gender, location, qualifications, and habits did not show relationships with positive test scores. This agrees with Huu et al. (2019) who also find no relation between high preposition test scores and these factors.

The description test questions revealed no gender differences in the use of prepositions. The results to question 1 showed that negative pragmatic transfer was apparent in the use of the preposition *on* in the answers of 15 participants (10 women and five men), as this was a literal translation from the Arabic preposition equivalent *ala*. This finding concurs with those of Hamdallah and Tushyeh (1998) and Zughul (1973) who find that native Arabic speakers, when using English prepositions, make the mistake of using the preposition *on* instead of *over, above, at*, and *onto*. Only five participants used *in* and *at* in their descriptive sentences, and *in* is considered to be a negative pragmatic transfer because of the limited number of prepositions in the Arabic language compared with English. When we translated the answers given by participants, we found they wrote them by translating the sentence from the Arabic form to English. For example, "*in top of the closet*" translates as "*fi aala addoulab*" and in Arabic this is considered to be a grammatical sentence. The other prepositions were accurate. This is also related to the knowledge which is part of cognitive linguistics that the learner has built through the years.

In question 2, negative pragmatic transfer was apparent in the answers of 16 participants, as they used the English preposition *in* (e.g., "*in the ceiling*"), which translates as "*fi assaqf*." Male participants had less negative pragmatic transfer, as they used this preposition seven times, while female participants used it nine times. The other prepositions were used in an accurate grammatical form. For question 3, the results revealed no negative pragmatic transfer in the prepositions used. Only one of the 50 answers given showed negative pragmatic transfer, and this

was given by a male participant. The preposition used was *down* in the sentence "*down the window,*" which translates as an ungrammatical Arabic sentence "*taht elnafethah.*" Finally, the answers to questions 4 and 5 revealed no negative pragmatic transfer. The knowledge that learners hold cognitively from the native language or the language being learned may also have resulted in previous cases of negative pragmatic transfer.

This research makes the following contributions. First, it highlights the non-linguistic factors that affect the process of preposition learning by Saudi EFL learners. In particular, it sheds light on the points to which language teachers, language learners, linguists, and researchers have paid insufficient attention, as most research has focused on the mistakes and weaknesses of EFL learners when learning prepositions. These aspects include gender, social factors, geographical factors, and the occurrence of negative pragmatic transfer from the EFL learner's native language. Here, negative pragmatic transfer means transferring the native language rules and language knowledge to the language being learned, which results in errors and low foreign language performance.

6. CONCLUSION

This study investigated the non-linguistic factors that affect the use of English language prepositions by Saudi non-native speakers of English by setting three research questions. In answer to RQ1, we showed negative pragmatic transfer in three of the five description test questions. In question 1, negative pragmatic transfer was apparent in five participants' responses. Although this number is considered to be small, it shows the possibility of negative pragmatic transfer for EFL learners. It was also apparent in question 2 around the use of the *on* preposition. Participants tended to use it in addition to the other prepositions and fell into the mistake of choosing the wrong preposition because of its equivalent meaning in Arabic. The preposition *in* showed negative pragmatic transfer from its equivalent meaning in Arabic, *fi*. In question 3, negative pragmatic transfer arose in one case. Therefore, although not all the questions had negative pragmatic transfer, we still showed that EFL learners fall into the trap of using inaccurate prepositions.

In answer to RQ2, we found that the choice of English prepositions was significantly affected by both age and time spent reading books. Geographical factors, on the contrary, did not have a significant effect on the prepositions used by Saudi EFL learners. In summary, of the examined factors that were hypothesized to intervene in the way EFL learners use English prepositions incorrectly from the perspective of cognitive linguistics, as it includes knowledge of the learner which is related to the experience that he/she went through over the years and this experience is related to the environment they were exposed to and the society they were in, the results revealed that age and time spent reading are social factors that increase the accurate use of English prepositions. However, geographical factors did not have an effect on their use. In answer to RQ3, we found that gender had no major effect on the use of prepositions. Variations were only apparent in three of the 70 questions with complex correlations and phrasal verbs.

The implications of the study that originate from the findings on the non-linguistic factors that relate to cognitive linguistics which affect Saudi EFL learners will help learners, language teachers, researchers, and linguists understand the aspects that could impact the learning process. Given that some aspects of foreign language learning have been given insufficient focus in the literature, this study sheds light on what improvements could enhance individuals' ability to learn English language prepositions. It also explains why Arabic speakers in Saudi Arabia face difficulties when learning English language prepositions. This research also adds to the cognitive linguistics literature in which little research has been conducted on Saudi Arabic EFL learners by showing the English prepositions for which Arabic native speakers have negative pragmatic transfer when forming sentences. This research also presents opportunities and ideas for researchers to explore the area of cognitive linguistics and its relation to EFL learning, teaching, and second language acquisition.

One limitation of this study is that the method of data collection only investigated using prepositions in writing. Because students may insufficiently think about what preposition they intend to use, this may have affected

the data gathered to a certain extent. Future research could thus collect data from real-life situations or by asking students in spoken form where the time delay of the answer would be controlled. Another limitation of this study could be the length of the test given. The questionnaires consisted of 75 questions altogether and this may have affected the data gathered if participants provided random answers to finish the test as quickly as possible. Future research should thus consider minimizing the length of the test.

For further research, it would be interesting to investigate the effect of using the cognitive linguistics approach to teach foreign languages. The use of prepositions spoken by EFL learners could also be investigated and compared with the data of this study. Other parts of speech could further be investigated based on the non-linguistic factors that affect the use of these strategies.

REFERENCES

Al-Bayati, W. A.-W. T. (2013). Errors made by Iraqi EFL undergraduates in the use of prepositions. *Bulletin of the Transilvania University of Braşov, Series IV: Philology & Cultural Studies, 6*(55), 41-56.

Al-Marrani, Y. M. A. (2009). A comparative and contrastive study of preposition in Arabic and English. *Language in India, 9*(7), 47-68.

Al Emam, L. (2019). Applying cognitive linguistics: Preposition acquisition in an ESL context with Arabic learners. Retrieved from https://www.diva-portal.org/smash/get/diva2:1399531/FULLTEXT01.pdf.

Al Khotaba, E. (2013). Errors in the use of prepositions and adverb particles by Arab ESL speakers: Performance analysis perspective. *International Journal of Linguistics, 5*(1), 273. Available at: https://doi.org/10.5296/ijl.v5i1.3310.

Al Yaari, S., & Almaflehi, N. (2013). The problem of translating the prepositions at, in and on into Arabic: An applied linguistic approach. *Macrothink Institute, 1*(2), 256–273.

Aldahesh, A. Y. (2013). Context sensitivity and language specificity of Arabic verb-preposition structure: The case of English learners of Arabic. *International Journal of Linguistics, 5*(3), 177. Available at: https://doi.org/10.5296/ijl.v5i3.3933.

Almahameed, Y. (2018). Prepositions in English and Arabic. A comparative study. Retrieved from https://www.researchgate.net/publication/323258496_Prepositions_in_English_and_Arabic_A_comparative_study.

Catalán, R. (1996). Frequency and variability in errors in the use of English prepositions. *Miscelánea: A Journal of English and American Studies, 17*, 171-187.

Chomsky, N. (1959). Review of skinner's verbal behavior. *Language, 35*(1), 26–58.

Ellis, G. (1996). How culturally appropriate is the communicative approach? *ELT Journal, 50*(3), 213-218. Available at: https://doi.org/10.1093/elt/50.3.213.

Gass, S., & Selinker, L. (2001). *Second language acquisition: An introductory course* (2nd ed.). Oxfordshire: Routledge.

Grubic, B. (2004). *Those problematic English prepositions.* Paper presented at the CFI-Baci Conference.

Håkansson, G. (2003). *Bilingualism in children in Sweden.* Lund, Sweden: Studentlitteratur AB.

Hamdallah, R. W., & Tushyeh, H. Y. (1998). A contrastive analysis of English and Arabic in relativization. *Papers and Studies in Contrastive Linguistics, 34*, 141-152.

Hung, B. P., Vien, T., & Vu, N. N. (2018). Applying cognitive linguistics to teaching English prepositions: A Quasi-experimental study. *International Journal of Instruction, 11*(3), 327-346. Available at: https://doi.org/10.12973/iji.2018.11323a.

Huu, P. T., Tat, T. N., & Tin, N. T. (2019). A cognitive study of nonlinguistic factors affecting the use of prepositions by vietnamese native speakers. *International Journal of Applied Linguistics and English Literature, 8*(1), 147-158.

Johnson, M. (1987). *The body in the mind: The bodily basis of meaning, imagination, and reason.* Chicago: University of Chicago Press.

Kissling, E., Tyler, A., Warren, L., & Negrete, L. (2018). Reexamining por and para in the Spanish foreign language intermediate classroom: A usage-based, cognitive linguistic approach. In What is applied cognitive linguistics: Answers from current SLA research, Eds., Andrea Tyler, Lihong Huang, and Hana Jan (pp. 229–255). Berlin: Walter de Gruyter.

Lakoff, G., & Johnson, M. (1980). *Metaphors we live by.* Chicago: University of Chicago Press.

Lam, Y. (2009). Applying cognitive linguistics to teaching the Spanish prepositions por and para. *Language Awareness, 18*(1), 2-18. Available at: https://doi.org/10.1080/09658410802147345.

Langacker, R. (1987). *Foundations of cognitive grammar* (Vol. 1). Stanford, CA: Stanford University Press.

Leacock, C., Chodorow, M., Gamon, M., & Tetreault, J. (2014). Automated grammatical error detection for language learners. *Synthesis Lectures on Human Language Technologies, 7*(1), 1–170.

Loke, D. L., Ali, J., & Anthony, N. N. Z. (2013). A corpus based study on the use of preposition of time "on" and "at" in argumentative essays of form 4 and form 5 Malaysian students. *English Language Teaching, 6*(9), 128-135. Available at: https://doi.org/10.5539/elt.v6n9p128.

Macková, L. (2013). *A contrastive analysis of the prepositions "to" and "into".* PhD Diss., Masaryk University, Faculty of Arts.

Pinker, S. (1995). *The language instinct: The new science of language and mind.* UK: Penguin.

Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A comprehensive English grammar.* London and New York: Longman.

Shakir, H., & Yaseen, B. (2015). Acquisition of English prepositions among Iraqi secondary school students in Kuala Lumpur-Malaysia. *Advances in Language and Literary Studies, 6*(5), 157–162. Available at: https://doi.org/10.7575/aiac.alls.v.6n.5p.157.

Skinner, B. F. (1957). *Verbal behavior.* New York: Appleton-Century-Crofts.

Song, J., & Sardegna, V. G. (2014). EFL learners' incidental acquisition of English prepositions through enhanced extensive reading instruction. *RELC Journal, 45*(1), 67-84. Available at: https://doi.org/10.1177/0033688214522623.

Strom, V. (2014). *Preposition selection in EFL by Swedish EFL learners: An exploratory study investigating language transfer and the impact of implicit and explicit knowledge in EFL.* Bachelor Degree Project.

Tahaineh, Y. S. (2010). Arab EFL university students' errors in the use of prepositions. *Modern Journal of Applied Linguistics, 1*(6), 76-112.

Taliancich-Klinger, C. L., Bedore, L. M., & Pena, E. D. (2018). Preposition accuracy on a sentence repetition task in school age Spanish–English bilinguals. *Journal of Child Language, 45*(1), 97-119. Available at: https://doi.org/10.1017/s0305000917000125.

Ungerer, F., & Schmid, H. J. (2001). *An introduction to cognitive stylistics.* Beijing: Foreign Language Teaching and Research Press.

Wijaya, D., & Ong, G. (2018). Applying cognitive linguistics to teaching English prepositions in the EFL classroom. *Indonesian Journal of Applied Linguistics, 8*(1), 325-337. Available at: https://doi.org/10.17509/ijal.v8i1.11456.

Zughul, R. (1973). *Teaching English prepositions to Arab students.* PhD Diss., Department of Education, AUB.