Subjacency Access by Afghan Learners of English

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Abstract—The present study aimed to investigate the question of availability of universal grammar (UG) to Afghan learners of English in terms of Subjacency Condition. To achieve this goal, two groups of Afghan learners of English were classified as high and low in line with a General Proficiency Test (GPT). The participants were then tested on Subjacency Condition in English. The performance of the high group was much better than that of the low group. However, compared with the performance of the native speakers of English, the high group was ranked lower. Considering the level of Subjacency availability, the cards are stacked in favor of a partial access to UG by English foreign language (EFL) learners.

Index Terms—UG, Subjacency Condition, GPT, EFL learners

I. INTRODUCTION

It has long been claimed that there are so many things in life which we human beings have never had any experience of, but can make sense of. This is usually encapsulated in a principle known as *Plato's problem*. This intriguing lack of balance between knowledge and experience has led lots of scientists to be constantly in search of a convincing explanation for the phenomenon. Language is no exception in this regard. To date, lots of suggestions have been made, but probably none has been as intriguing as Chomskyian explanation, attributing the phenomenon to a language faculty known as language acquisition device or LAD (Cook & Newson, 1996).

In recent years, researchers have associated this innate device with a universal grammar (UG) (Brown, 2000). They have argued that language is universally acquired in the same manner, and moreover, the deep structure of language and its deepest level may be common to all languages (Catell, 2000).

Although it was originally developed for L1, UG is not exclusively limited to L1. Conversely, UG-based second language acquisition (SLA) investigations abound in the field of language, and their implications for SLA can also be investigated (Schachter, 1990). These investigations usually focus on the role of knowledge of a UG principle in L2, and try to find evidence in support of UG in SLA. The main question facing scholars in the field is availability and applicability of UG principles to SLA. One interesting area of interest within which researchers can investigate the role of UG in SLA is the *Subjacency Condition* (Newmeyer, 1991).

The main purpose of this study was to investigate the question of the availability of UG to Afghan learners of English in terms of Subjacency Condition. Given the state-of-the-art in UG-based research, the answer to this question might be of great importance to L2 pedagogy.

The Subjacency Condition states that a constituent cannot be moved (in any single application) across more than one bounding node (Radford, 2004). Bounding nodes are not the same in every language. They are nodes that immediately dominate a domain in which a transformation can be applied. Bounding nodes in English include S, NP, and CP. Take the following examples:

(1) a. Faez believes that Ahmad knows the story.

- b. What does Faez believe that Ahmad knows?
- c. Faez believes the fact that Ahmad knows the story.

d.* What does Faez believe the fact that Ahmad knows?

In (b), the wh-word has crossed only one bounding node (i.e., IP) both in the first movement and in the second movement; (b) does not violate the condition because the requirement for Subjacency Condition is met. So, it is considered a grammatical sentence. However, in (d), although the wh-word has crossed only one bounding node (i.e., IP) in the first movement (i), it has crossed two bounding nodes (i.e., NP and IP) in the second movement (ii). It is a violation of Subjacency Condition, and it is deemed ungrammatical.

The following diagram is illustrative of the abovementioned explanation about the wh-movement and the resulting violation of the Subjacency Condition:



Unlike (2a) and (2b), the wh-word *what* in (3) cannot land in the place of the specifier of the CP because it is already filled by another wh-word, that is, *where*. Therefore, *what* has to make one long movement, which results in crossing two bounding nodes (i.e., two IPs).

II. BACKGROUND TO THE STUDY

A number of studies (e.g., Johnson & Newport, 1991; Uziel, 1993; White & Juffs, 1998) have been conducted into the possible involvement of UG role in SLA and FLA. The findings are not clear-cut, in the sense that there are conflicting views regarding the possible position of UG in SLA and FLA.

White (as cited in White, 2003) enumerates three different rival positions on the question of the availability of UG in SLA and FLA:

1. UG is not available in SLA and FLA.

2. UG is fully available in SLA and FLA.

3. UG is partially available in SLA and FLA through L1.

In support of the first position, Schachter (1989) investigated the Subjacency access to Indonesian, Korean, and Chinese learners of English. He made use of both a syntax test and a Subjacency test. The results of the research corroborated the first view. In spite of their excellent performance on the syntax test, almost all of the subjects performed poorly on the Subjacency test. The results were suggestive of a lack of UG principle in FLA. Also, Johnson and Newport (1991) conducted the same line of inquiry, this time with a focus on critical period hypothesis (CPH). The subjects were Chinese speakers of English. This time again, the findings supported the first position. The adults had a poor performance on a grammaticality judgment task. The researchers found that UG access by the adult learners was limited with the increase of age.

As to the second position, White and Juffs (1998) questioned the results of the research by Felix and Weigl (1991). They carried out their experiment with Chinese-speaking learners of English. The results rejected the first position. The findings revealed that the Chinese group outperformed the Canadian group. The Chinese group even had almost the same performance as that of the native subjects in the control group. In the same way, Yusa (1999), exploiting Japanese learners of English, investigated the availability of UG principle to FLA in terms of reflexing binding. Again, the end result was in favor of UG playing a definite role in FLA. The subjects attributed the same references to the reflexives as those attributed by the native control group.

And finally, White (1985) explored Subjacency with the help of bounding nodes. He chose French and Spanish speakers of English with different ability levels. The subjects transferred the relevant L1 parameter. However, curiously enough, they showed improvement with increase in their level of proficiency. Following the same line, Uziel (1993) investigated the Subjacency access by speakers of Hebrew and Italian. Compared with the performance of the native control group, the other two groups had a poor performance on the grammaticality judgment test. The researcher justified the results by resorting to the need on the part of the learner for a parameter-value reassignment.

Given the above conflicting views regarding the role of UG both in SLA and FLA as well as the supported availability of UG in some languages, evident from the above brief discussion, it makes good sense to investigate the existence of such linguistic phenomenon in other languages of the world and see how consistent the results are with the previous ones. Can UG be also applicable to SLA and FLA? If so, is it also the case for Afghan learners of English? These are the questions that prompted the present researchers to undertake this research. It is hoped that conducting this research and its following results will pave the way for the related lines of inquiry in future. At the same time, it is hoped that the findings will increase our understanding and awareness, as English teachers, of the nature of human language in general in order to help L2 learners of English to experience a much easier and smoother learning task. The study, therefore, sought answers to the following questions:

1. Do Afghan learners of English have knowledge of the Subjacency Condition in English?

2. If they do have knowledge of the Subjacency Condition in English, is there a significant difference in this knowledge across learners with different levels of English ability, namely high and low groups?

3. Does the high group mean score on the Subjacency grammaticality judgment significantly differ from that of native speakers of English?

4. Does the low group mean score on the Subjacency grammaticality judgment significantly differ from that of native speakers of English?

III. METHODOLOGY

A. Participants

The participants were 30 Afghan male students, aged 19 to 21, studying at Kavesh Language Institute in Esfahan. The participants were taking summer English classes at the time of the experiment, August, 2009. They were taking classes at the intermediate (both pre- and post-intermediates) and advanced levels. The rationale for the choice of this miscellaneous ability levels was to focus on the second hypothesis of the study: to examine the probable impact of general English proficiency on Subjacency judgment. All the participants had the same linguistic background, Afghani, as their L1, with no formal education except such summer English classes at their leisure time. The control group in this study were the present researchers' e-pals from the United Kingdom.

B. Materials

The tests consisted of a General Proficiency Test (GPT) and a Subjacency Test (see sample items in the Appendix). The GPT was used to divide the participants in two ability groups: high and low. It gauged the grammar skill in the form of 80 multiple-choice items. The Subjacency Test, on the other hand, consisted of 50 test items which consisted of both 23 ungrammatical items violating Subjacency Condition in wh-movement and 27 grammatical sentences sticking to the Subjacency Condition.

C. Procedure

At the first stage of the experiment, the GPT was given to the 30 participants to screen them based on their current proficiency level. The participants who scored above one standard deviation were placed into the high group and those who scored below this were placed into the low group.

At the second stage of the experiment, the participants were tested on the Subjacency Condition through the second instrument, the Subjacency Test. It took the form of a grammaticality judgment task. In this second sitting, the participants were asked to judge the 50 items as grammatical or ungrammatical, along with explanations in case of ungrammatical sentences. The selection of the items for the Subjacency Test was based on the items chosen by researchers in previous studies (e.g., Bley-Vroman, Felix, & Ioup, 1998; Johnson & Newport, 1991).

IV. DATA ANALYSIS

In order to test the first hypothesis, a *t* test was calculated. Each mean score of the low group and the high group was compared independently with chance performance, 50%, 12.5 in raw scores. Both groups performed significantly better than chance (the low group, t = 4.026, p < .05; the high group, t = 19.987, p < .05). Therefore, the first null hypothesis was rejected.

In order to test the second hypothesis, two t tests were calculated for each group. Looking at Table 1, one could easily find out that the mean scores of the high group were significantly better than those of the low group in both grammatical and ungrammatical sentences. The results confirm that the difference between the two Afghan groups is significant—the high group outperformed the low group:

TESTS ON THE MEAN SCORES OF GRAMMATICAL AND UNGRAMMATICAL SENTENCE						
Variable	N	Mean	Std.	t	sig.	
Grammaticality (low group)	12	15.5	3.76	3.70	002	
Grammaticality (high group)	12	19.88	1.90		.002	
Ungrammaticality (low group)	12	17.33	1.54	3.96	002	
Ungrammaticality (high group)	12	18.23	0.32		.003	
	* p < .	0.01	•			

TABLE 1. T TESTS ON THE MEAN SCORES OF GRAMMATICAL AND UNGRAMMATICAL SENTENCES

In order to test the third and fourth hypotheses, four z-tests were calculated for each group. As Table 2 indicates, the mean scores of both high and low group regarding Subjacency violations and grammatical sentences are significantly different from those of native speakers of English. Therefore, the hypothesis of no difference is rejected, too:

 TABLE 2.

 Z TESTS ON THE MEAN SCORES OF GRAMMATICAL AND UNGRAMMATICAL SENTENCES

Variable	N	Mean	Std.	z
Grammaticality (low group)	12	15.5	3.76	4.93
Grammaticality (high group)	12	19.88	1.90	5.3
Ungrammaticality (low group)	12	17.33	1.54	4.89
Ungrammaticality (high group)	12	18.23	0.32	2.6

V. DISCUSSION AND CONCLUSION

This research program investigated UG availability in SLA using Afghan speakers learning English in Iran. The Subjacency Condition was chosen as the UG principle under investigation. The two experimental groups, high and low, took the GPT and the Subjacency Test. The GPT measured the participants' general grammar knowledge, and the Subjacency Test measured their knowledge of wh-movement constraints in English. The first null hypothesis was that Afghan learners would not perform on the grammaticality judgment task significantly better than chance. The performance of both high and low groups was significantly better than chance, rejecting the first null hypothesis. Furthermore, the difference across the two groups was statistically different. Therefore, the hypothesis of no difference was also rejected. Finally, regarding the last two questions, the mean scores of Subjacency violations and grammatical sentences both for the high and low groups differed significantly from the native speakers of English.

As discussed before, White (as cited in White, 2003) assumes three conflicting views regarding UG position in SLA and FLA. Position A, stating UG is not available in SLA and FLA, is rejected because the high group was successful and the low group performed significantly better than chance on the Subjacency Test. Therefore, the commonsense approach to this problem does not give credit to the first position. As for the second position, full-access hypothesis, the results of the present study in all probability rejects it. If UG was fully available in L2, as the position claims, the performance of, at least, the high group would be tantamount to that of the control group. The statistical results of the study do not make such a claim.

However, considering the fact that all the participants in the high group were advanced-level students studying in the advanced level, and all those in the low group were students of pre- and post-intermediates, we can make out the case for the third position-partial access hypothesis. Because the performance of the low group was significantly inferior to that of the high group and also the control group, we can attribute this to the high group having received more instruction in English and the control group having more exposure to the natural language. Also, in case of the two Afghan groups having the same linguistic background, their significantly lower performance can be justified through their L1. The performance of the low group and the relatively better performance of the high group can be attributed to the partial existence of UG in L2.

As the final note, the present researchers, considering the findings of the study, should remind L2 teachers, particularly those teaching English, to be aware of the fact that resetting the values of parameters in UG will not happen overnight. It requires time for L2 learners to reset these values after receiving adequate level of instruction in the L2. Also, due to the fact that we cannot find such explicit instruction in the case of Subjacency Condition (Ozaki, 1998), we encourage such consciousnesses-raising on the part of L2 teachers.

APPENDIX A SAMPLE ITEMS

Instruction: Please decide whether each sentence is grammatically correct or not and mark it in the space provided for you.

If you think that the sentence is grammatically incorrect, please make it correct.

- Who does M Correct	aryam want to see? □	Incorrect				
- What did Reza believe the fact that Ali had bought?						
Correct						
- What did Ah Correct	mad wonder who woul	d break? Incorrect □				
- Who should I give the pen to?						
Correct		Incorrect				

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