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Acquisition of English Modality by Persian EFL Learners

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Abstract – The acquisition and application of modal auxiliaries in appropriate contexts are among the essential aspects of second language acquisition. The current study was carried out to investigate the acquisition of English simple and perfect modal auxiliary verbs by adult Persian EFL learners. The effect of L1 transfer and proficiency level on learner's performance in various contexts was explored in the study. In order to fulfill the intended objectives, 30 intermediate and 30 advanced participants were assessed on their perception of the modal auxiliaries. The data analysis revealed that both groups had an acceptable performance in epistemic contexts and primary application of modal auxiliaries. However, they suffered inability in the perception of simple and perfective forms of dynamic modal auxiliary *would*, due to the lack of such constructions in their L1. Meanwhile, the distinction among deontic modal auxiliaries *should*, *must*, and *have to* constituted another area of difficulty even at higher levels of proficiency. Persian EFL learners faced some ambiguities identifying the appropriate deontic auxiliary due to the lack of such distinction in L1. Moreover, the contextual functions such as *may* (indicating permission) and *must* (indicating logical guess) can cause learnability problems. Comparing the performance of the two groups, it was revealed that proficiency level may not have any significant effect on learners' performance.

Keywords: deontic, epistemic, modality, auxiliary verbs, Persian EFL learners.

I. INTRODUCTION

One of the basic aspects of linguistics has been concerned with the description and analysis of verbs. The verbs of any particular language play the most prominent role in specifying the action or attitude conveyed through an utterance (Abdul-Fatttah, 2011; Aijmer, 2002; Cowper & Hall, 2007; Steedman, 1992). Moreover, regarding the syntactic role of these constructions, verbs can be divided into two categories of main verbs and auxiliaries. Main verbs are mostly applied in a context to denote an action or an attitude in an utterance. On the other hand, as it is inferable from the name allocated, auxiliary verbs are mainly used to add functional or grammatical meaning to the sentences (Carme Picallo, 1990; El-hassan, 1990; Mason, 1994). *Modals* can be specified as a group of auxiliaries that determine the attitude and position of the

speaker concerning a particular situation. Modal auxiliary verbs can express possibility, predictability, necessity, obligation, permissibility, ability, or desire.

Any particular modal auxiliary verb may have a specific function depending on the context in which it is applied. Such a property besides their significant role in any language (being used in various kinds of structures) provides a good ground for investigation. However, linguists, course designers, researchers, and teachers tend to ignore the significant role of auxiliaries in general and modal auxiliary verbs in particular. This problem is due to the fact that such verbs usually accompany a main verb, and the main verb provides the basic semantic content of the utterance. As a result of this ignorance, not every aspect of these kinds of verbs is explored (Leech and Svartvik, 2003; Parodi, 2000; Wang, 2009). In fact, there is not adequate research exploring the potential problems that EFL learners encounter, and the underlying reasons behind these troublesome issues.

L1 transfer may lead to various challenges for the learners. Aijmer (2002) considered L1 transfer as explanation for learners' overuse and misuse of modal markers. As it is observable in the following examples, in Persian, there is just one deontic modal marker *bayad*; on the other hand, in English, *have to*, *must*, and *should* can all be considered as deontic modal auxiliaries. Iranian EFL learners may not distinguish the difference between these three modals due to lack of this distinction in their mother tongue.

You should stop smoking.

باید سیگار کشیدن را ترک کنی.

I must study hard.

باید به سختی درس بخوانم.

You have to clean this room by 7:00 o'clock.

باید تا ساعت هفت این اتاق را تمیز کنی.

In another case, EFL learners may not know the context of application for modal auxiliary *would*. This structure does not exist in Persian, and they may face problem applying this modal in a correct sentence. There are some other L1 interferences that can cause problems for learners, and they need to be investigated carefully. However, there is not that much research in this regard.

Taleghani (2006), in her Ph.D. dissertation, describes modality in Persian. This investigation can be considered as the most comprehensive work done in this area for describing Persian modality. Her research was not concerned with the process of modal verbs' acquisition; however, she classified modals morpho-syntactically and semantically. Morpho-syntactically, modals have been classified into adverbial and verbal varieties. Adverbial modals are the adverbs used in the structure of an utterance in order to denote one of the meanings of necessity, possibility, obligation, etc. On the other hand, according to her, verbal modals can be divided into auxiliary modal verbs and complex verbs.

Eli Hinkel (2009), on the other hand, explored the application of modal auxiliary verbs by native and non-native speakers of English, in written contexts. However, none of these studies are concerned with the acquisitional issues posed by such verbs. Even some studies (Hirts and Weil, 1982; Papafragou, 1998; Shatz and Wilcox, 1991) which are thought to be concerned with the acquisition of such constructions are mainly descriptive. In fact, it is hard to find studies which have been concerned with EFL learners' acquisition of modal auxiliaries.

Thus, the current study was carried out in order to investigate the acquisition of English modal auxiliary verbs by adult Persian EFL learners. The study was intended to identify to what extent the participants could acquire the functional properties of modal auxiliaries. The second issue explored in this investigation was to identify the most challenging parts in the area of modal auxiliary acquisition. L1 transfer as one of the main reasons underlying a large number of problems in second language acquisition cannot be ignored in L2 studies. The last goal of this study was to shed more light on the effect of proficiency level on learners' performance in acquiring modal auxiliary verbs. In order to fulfill these purposes, the following questions were proposed:

1- To what extent can Iranian EFL learners acquire the functional aspects of English modal auxiliary verbs?

2- Which modal auxiliary verbs are more challenging for EFL learners?

3- What is the role of L1 transfer in the acquisition of English modal auxiliary verbs by EFL learners?

4- What is the role of language proficiency in the acquisition of English modal auxiliary verbs by EFL learners?

A. Models on Modality

Concerning the proposed research questions, a review of the classifications and models on modality posed by the scholars is presented below.

Lyons (1977) classifies modal verbs into epistemic and deontic. However, some auxiliaries such as "*will*" (volition) and "*can*" (ability) could be included in neither of the two categories. So, this classification does not provide a comprehensive account of modal auxiliary verbs. It is worth noting that bidirectional classification does not take into consideration volition, intention, and ability.

Palmer (1979) compensated this shortcoming by adding a new branch into this category (Papafragou, 1998; Hinkel, 2009). He classified modals into three groups: deontic, dynamic, and epistemic. He defined deontic verbs as a way to denote desires, wants, commands, permission, and obligation. "*Must*" for obligation and "*may*" for permission can be the modals conveying a deontic meaning. Dynamic modals imply an action or a change in a particular state. "*Can*" of ability and possibility and "*must*" of obligation are included in this category. As a result of being

agent-oriented, deontic and dynamic modal verbs are grouped together under an umbrella term, root modals (Bybee and Fleischman, 1995; Bybee, Perkins, Pagliuca, 1994). Epistemic modals are grouped separately since they are speaker-oriented. Therefore, the branches of modality are represented in the following form:

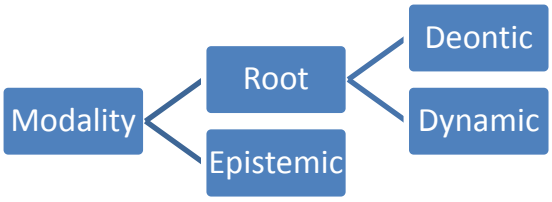

Figure 1: Modality Classification Proposed by Palmer (1979)

Moreover, Von Fintel (2006), in his article on modality, proposed six terminologies acting as different categories for the semantic functions of modal verbs. In fact, he collected different categories proposed by other scholars, put them together, and introduced a model of collective thoughts. His classification can be displayed in Figure 2 presented below:

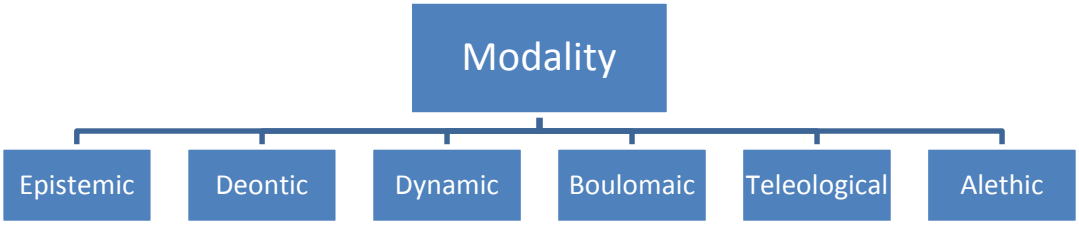

Figure 2: Modality Classification Adapted from Von Fintel, 2006, P 13-14

Of course, this model is not flawless. As it is apparent, some of the classifications provided are vague in a sense that they may overlap with other categories. For example, boulomaic modals can be considered as one of the underlying branches of dynamic category. Teleological modals can also be used in epistemic context. In fact, all the modal verbs presented in any language are used to achieve a purpose. Another problem can be raised in the definition provided for Alethic modality. Furthermore, there is no reason to include in the model such a kind of category that has no actual representation in the real world.

B. Interactive Model

Taking into consideration the shortcomings of previously developed models, the present researchers have developed a new model in order to compensate for the pitfalls mentioned for hierarchical models. As figure 3 illustrates, different modal auxiliary verbs in this proposed model are not assigned to different branches. Each and every modal auxiliary is located in a specific position in one of the particular circles presented. As the modal auxiliaries get farther from the central point of each circle, it is more probable that they get the functions presented in the other circles. In fact, in this model, the relationship between different categories of modality is illustrated by merging the circles together (i.e. it is possible for modal markers to have the properties of other groups, too). The intended model can be illustrated as the following figure:

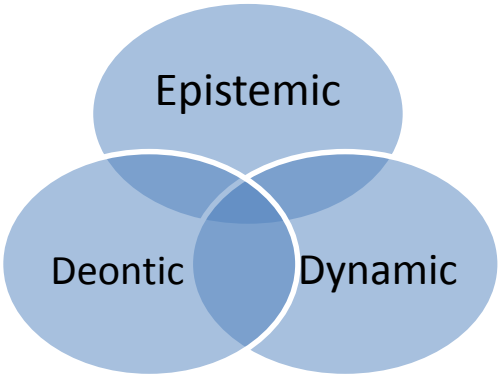

Figure 3: Interactive Model

While the models proposed by the scholars have not taken into account the overlap between the functions fulfilled by different modal auxiliary verbs, the interactive model has shown the position of each modal auxiliary in relation to other ones. Moreover, in this model, the ambiguous and complex terms used in recent models are avoided. In addition, while the difference between the closely related modal auxiliaries was not identified in the previous models, this model has shown the distinction between such auxiliaries. For example, there is a big difference concerning obligation in three modal auxiliaries *must*, *should*, and *have to*. The Modal verb *must* can also be used in the contexts of logical guess (predicting an event based on some evidence). This property of *must* is presented in this model by the overlap between deontic and epistemic categories. On the other hand, modal auxiliary *should* can also be applied in recommendation context; however, the other models cannot explain such properties. The overlap between deontic and dynamic categories, in this model, can explain this property.

Taking into consideration the research questions and the models, section 2 explains about the participants, materials, procedures used during data collection, and data analysis of the study. Section 3 presents the analysis of data and interpretations of the results obtained from the collected data using SPSS software. Finally, the conclusion and the overview are presented.

II. METHODOLOGY

A. Participants

The participants in this study were chosen carefully out of one hundred EFL learners studying English literature and TEFL at Yazd University. An Oxford Quick Placement Test was administered to the freshmen of B.A. and the M.A. students to determine their proficiency level. Thirty four students scoring between 30 and 40 were labeled as intermediate, and 33 students scoring between 45 and 55 were considered to be advanced. All the participants aged between 18 and 33. Considering gender, there were both male and female participants performing in each group.

B. Instruments

In order to conduct the current study, two different kinds of tests were employed. First of all, an Oxford Quick Placement Test was administered to identify the participants' proficiency level. Then, a perception test in the form of a forced choice elicitation task was developed to measure the comprehension of modal auxiliary verbs by EFL learners. The test consisted of 36 items. Each item was composed of a text providing the intended context. The options were selected thoughtfully to be in some way applicable to the text provided. The participants were supposed to consider a particular degree of appropriateness for each of the included options. The degrees of appropriateness to be selected were totally elaborated for the students. One of the items in perception test is provided below as an example:

3. I am an experienced person in this area. I don't know why she didn't ask me how to do it as I ------ have helped her.

	100%	*75%*	*50%*	*25%*	*0%*
could					
must					
should					
can					

C. Procedure

As mentioned before, first, an Oxford Quick Placement Test was used in order to identify the proficiency level of the participants. Before carrying out the main research, a pilot test was conducted to find out the flaws and shortcomings of the designed forced choice test. The tasks were administered to three intermediate and three advanced learners. After modifying the defective items, the selected participants (30 intermediate and 30 advanced) could answer the questionnaire.

Then, the forced choice task was administered to measure perception. This task was composed of 36 items. The participants were supposed to assign a degree of appropriateness for each of the items provided in the forced choice task. Assigning degrees of appropriateness for different modal auxiliaries in various contexts brought up a precise view on the competence of the participants in this area.

III. RESULTS

A. Perception Test Analysis

This study was an investigation measuring subjects' ability in perception of simple and perfect modal auxiliary verbs such as *can, could, may, might, should, must, have to, would,* and *will.* Therefore, the forced choice elicitation task (perception test) was administered to measure EFL learners' correct comprehension of modal auxiliary verbs. After data collection, they were statistically analyzed.

First of all, a descriptive analysis was carried out to provide a general view about the results. A general descriptive analysis of participants' performance on simple modal auxiliary verbs is provided in Table 1. Modal auxiliaries indicating simple ability (can), simple permission (can), and simple external obligation (must) exhibit the highest accuracy with their means percentage being higher than 90. In fact, these modal verbs were fully acquired by Persian EFL learners, their means being 91.79% for simple ability (can), 92.91% for simple permission (can), and 92.72% for simple external obligation (must) .On the other hand, simple external obligation (have to) and simple permission (may) possessed lower accuracy values (50.93% and 62.12%, respectively). Actually, they were not fully acquired by the participants as indicated by their low performance means.

Table 1: Descriptive Statistics of Simple Modal Auxiliary Verb Perception

	N	Mean%	Std. Deviation
Simple ability (can)	67	91.79	17.75
Simple possibility (can)	67	74.06	27.11
Simple permission (can)	67	92.91	14.95
Simple possibility (may)	67	77.42	26.93
Simple permission (may)	67	62.12	23.33
Simple logical guess (must)	67	76.86	27.54
Simple external obligation (must)	67	92.72	17.01
Simple internal obligation (must)	67	67.72	25.85
Simple recommendation (should)	67	85.82	20.74
Simple external obligation (have to)	67	50.93	37.45
Simple habitual act (would)	67	69.02	29.70
Simple intention (will)	67	87.31	18.52
Simple prediction (will)	67	88.99	21.81

Table 2 displays the descriptive statistics for the perception of modal auxiliary verbs in perfective contexts. As the results demonstrate, perfect ability (can) with the mean percentage of 96.45 and perfect intention (would) with the mean percentage of 92.53 showed the highest means of performance which can establish the acquisition of such structures. However, the lowest mean scores belong to perfect possibility (can) and perfect internal obligation (should) with their accuracy means being 71.08% and 64.73% respectively.

Table 2: Descriptive Statistics of Perfect Modal Auxiliary Verb Perception

	N	Mean%	Std. Deviation
Perfect ability (can)	67	96.45	9.68
Perfect possibility (can)	67	71.08	27.10
Perfect permission (can)	67	88.43	20.56
Perfect possibility (may)	67	78.73	23.73
Perfect logical guess (must)	67	76.86	27.11
Perfect internal obligation (should)	67	69.73	27.17
Perfect external obligation (should)	67	89.17	21.08
Perfect recommendation (should)	67	88.61	21.06
Perfect intention (would)	67	92.53	18.21

In order to account for the differences between different contexts and different proficiency levels (intermediate and advanced), a number of mixed between – within subjects ANOVAs were administered. The performance of intermediate and advanced participants was explored concerning various modal verbs and their correct application in various modality contexts.

Analysis of the Same Modal Auxiliaries with Different Functions. In this section, modal auxiliary verbs were investigated based on various functions that they fulfill in different contexts. The performance of the participants in simple and perfective modes was explored. Moreover, the intermediate and advanced groups were compared based on their performance in each of these contexts.

The Application of "Can". Table 3 demonstrates the performance of the two proficiency groups on different applications of modal auxiliary verb can. The results indicated that in all cases except the case of simple permission, the advanced participants outperformed the intermediate ones. Moreover, out of the three roles of modal auxiliary can, two of them were fully acquired (simple and perfect modes) by the advanced participants (with the means being

higher than 90%). The findings obtained by the mixed between-within subjects analysis of variance showed no significant interaction between the different roles of can and proficiency level, Wilks Lambda = .864, F (5, 61) = 1.92, p = .104. There was a substantial difference concerning the performance of the participants on various functions of auxiliary can, Wilks Lambda = .386, F (5, 61) = 14.4, p = .000, partial eta squared = .541 indicating a large effect size. In other words, the EFL learners performed better in some contexts of application of this auxiliary. Moreover, the statistical analysis showed that there was no significant difference between the performances of the intermediate and advanced groups in these contexts, F (1, 65) = 1.97, p = .164.

Table 3: Mean of Correct Perception of Modal Auxiliary Verb *Can* Across Proficiency Groups

	Proficiency	Mean%	Std. Deviation	N
simple ability (can)	Intermediate	88.24	21.08	34
	Advanced	95.45	12.81	33
	Total	91.79	17.75	67
perfect ability (can)	Intermediate	95.22	9.73	34
	Advanced	97.72	9.60	33
	Total	96.45	9.68	67
simple possibility (can)	Intermediate	71.32	29.27	34
	Advanced	76.89	24.82	33
	Total	74.06	27.11	67
perfect possibility (can)	Intermediate	70.95	26.60	34
	Advanced	71.21	28.03	33
	Total	71.08	27.10	67
simple permission (can)	Intermediate	95.22	7.54	34
	Advanced	90.53	19.77	33
	Total	92.91	14.95	67
perfect permission (can)	Intermediate	81.98	24.84	34
	Advanced	95.07	12.07	33

The actual performance of the intermediate and advanced participants on different roles of *can* is illustrated in Figure 4. As it is demonstrated in this figure, the performance of the two groups of participants concerning the various applications of modal verb *can* has been similar.

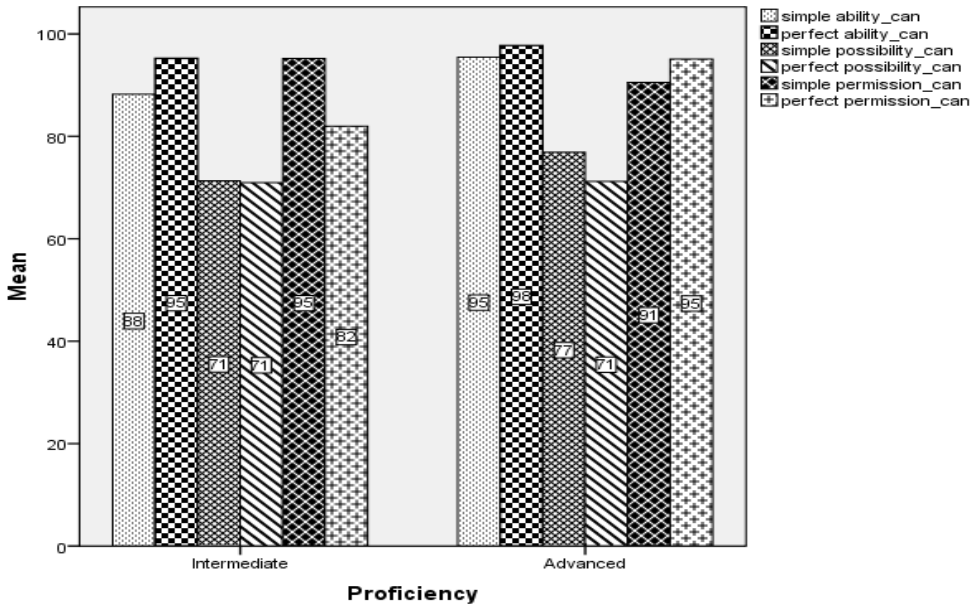

Figure 4: Participants' Performance on Different Roles of *Can*

The Application of "must". The second modal auxiliary verb, with more than one function investigated in this study was modal auxiliary must. This modal auxiliary verb can be used in order to obtain the status of external obligation, internal obligation, and logical guess. In academic contexts, EFL learners are mostly exposed to a vague function of this verb simply called obligation. A mixed between-within subjects analysis of variance was conducted in order to assess the performances of the two proficiency groups in different contexts of application of modal auxiliary must.

The results showed that a significant interaction existed between the different functions of auxiliary *must* and proficiency level, Wilks Lambda = .871, F (3, 63) = 3.1, p = .033, partial eta squared = .129 indicating a large effect size. Moreover, as demonstrated in Table 4, the two groups of participants performed better in external obligation contexts than in other contexts. In other words, there was a significant effect for different functions of *must*, Wilks Lambda = .529, F (3, 63) = 18.67, p = .000, partial eta squared = .471 indicating a large effect size. Comparing the performances of the two groups considering the means displayed in the following table, it was revealed that no significant difference existed between intermediate and advanced groups, F (1, 65) = .015, p = .903.

Table 4: Mean of Correct Perception of Modal Auxiliary Verb Must Across Proficiency Groups

	Proficiency	Mean%	Std. Deviation	N
simple logical guess (must)	Intermediate	76.83	25.77	34
	Advanced	76.89	29.66	33
	Total	76.86	27.54	67
perfect logical guess (must)	Intermediate	69.85	27.19	34
	Advanced	84.09	25.44	33
	Total	76.86	27.11	67
simple external obligation (must)	Intermediate	95.22	8.15	34
	Advanced	90.15	22.69	33
	Total	92.72	17.01	67
simple internal obligation (must)	Intermediate	71.32	22.51	34
	Advanced	64.01	28.76	33
	Total	67.72	25.85	67

Figure 5 demonstrates the differences between the performance of the two groups of intermediate and advanced participants on the different functions of *must*. As it is manifested, there is no significant difference between the performances of the two groups.

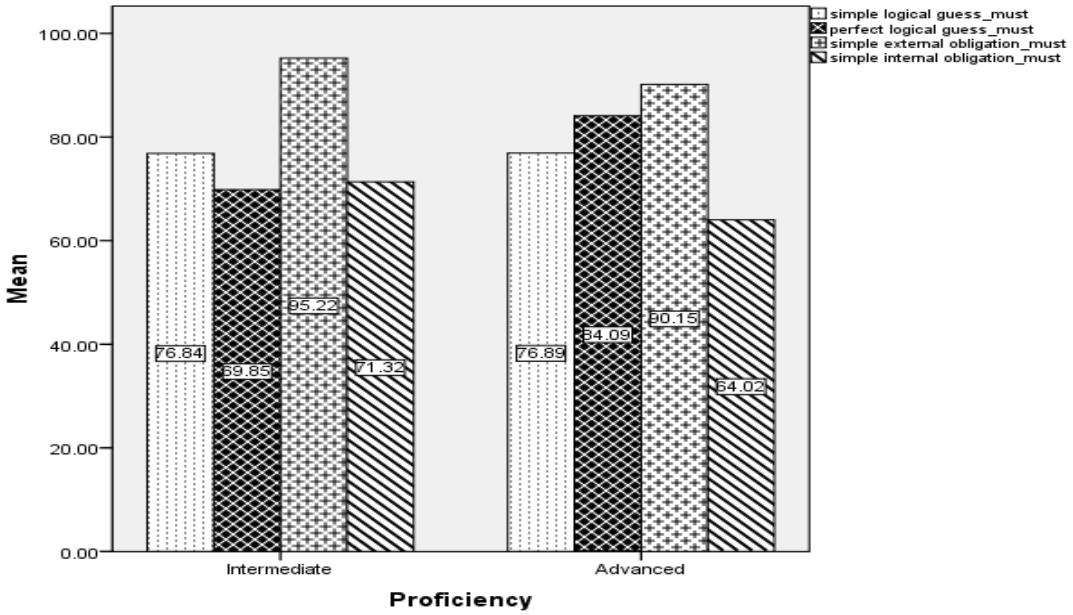

Figure 5: Participants' Performance on Different Roles of M*ust*

The Application of "May". Another modal auxiliary verb with more than one function in English is may. Modal auxiliary may can be used in order to express possibility (simple and

perfective modes), and permission in simple mode. A mixed between-within subjects analysis of variance was employed to compare the two groups.

The results demonstrated that no interaction existed between proficiency level and different functions of *may*, Wilks Lambda = .935, F (2, 64) = 2.236, *p* = .115. As it is inferable from the means displayed in Table 5, both groups of the participants performed less accurately in permission contexts. Thus, it can be concluded that different functions of modal auxiliary *may* can affect the performance of the participants, Wilks Lambda = .743, F (2, 64) = 11.055, *p* = .000, partial eta squared = .257 showing a large effect size. In addition, the results illustrated that the proficiency level had no significant effect on the performance of the participants, F (1, 65) = 1.1, *p* = .298.

Table 5: Mean of Correct Perception of Modal Auxiliary Verb *May* Across Proficiency Groups

	Proficiency	Mean%	Std. Deviation	N
simple possibility (may)	Intermediate	70.95	32.08	34
	Advanced	84.09	18.55	33
	Total	77.42	26.93	67
perfect possibility (may)	Intermediate	78.67	24.52	34
	Advanced	78.78	23.27	33
	Total	78.73	23.73	67
simple permission (may)	Intermediate	62.13	22.92	34
	Advanced	62.12	24.10	33
	Total	62.12	23.33	67

Figure 6 further demonstrates the performances of the two groups of intermediate and advanced participants on different functions of modal auxiliary verb *may.*

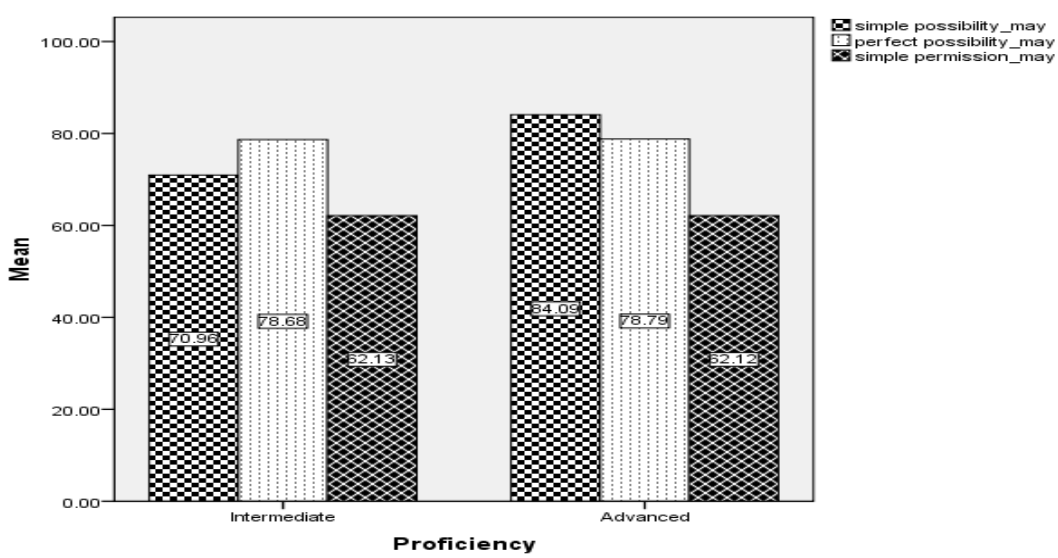

Figure 6: Participants' Performance on Different Roles of *May*

Analysis of the Same Functions with Different Modal Auxiliaries. Another kind of comparison made between the variables in this study is the comparison made between the application of various modal auxiliary verbs in a particular kind of context. The contexts of modality with different modal auxiliaries are represented below.

Possibility Context. One of the contexts in which different modal auxiliary verbs can be applied is the area of possibility. Both may and can are applicable in this context. However, due to the EFL pedagogical programs, most often, may is considered as demonstrating possibility, and the EFL learners acquire the possibility application of can in later stages, when they are exposed to more authentic input. In this study, a mixed between-within subjects analysis of variance was employed in order to evaluate the performance of the two groups of participant in possibility contexts. The results are expressed below.

Table 6 demonstrates the application of modal auxiliary verbs *can* and *may* in possibility context by the intermediate and advanced participants. A comparison was made between the performance of the EFL learners both in simple and perfect tenses. The statistical results show that no substantial interaction existed between the participants' performance in possibility contexts and their proficiency level, Wilks Lambda = .945, F (3, 63) = 1.224, p = .308. Moreover, it was revealed that the proficiency level of the participants had no significant effect on their performance, F (1, 65) = 1.771, p = .188.

In addition, the results of the pair-wise comparison showed that there was no significant difference between the performances of the participants using various possibility modals. Another considerable point worth mentioning was that the participants' performances on simple and perfect modes were not different. In fact, the EFL learners used simple and perfect modal auxiliaries with the same range of accuracy.

Table 6: Mean of Correct Perception of Possibility Modals by Proficiency Groups

	Proficiency	Mean%	Std. Deviation	N
simple possibility (can)	Intermediate	71.32	29.27	34
	Advanced	76.89	24.82	33
	Total	74.06	27.11	67
perfect possibility (can)	Intermediate	70.95	26.60	34
	Advanced	71.21	28.03	33
	Total	71.08	27.10	67
simple possibility (may)	Intermediate	70.95	32.08	34
	Advanced	84.09	18.55	33
	Total	77.42	26.93	67
perfect possibility (may)	Intermediate	78.67	24.52	34
	Advanced	78.78	23.27	33
	Total	78.73	23.73	67

Figure 7 represents the performance of intermediate and advanced participants on simple and perfective modal verbs indicating possibility. Comparing the bars demonstrating the participants' performance on modal auxiliaries, there is no significant difference concerning the two proficiency levels.

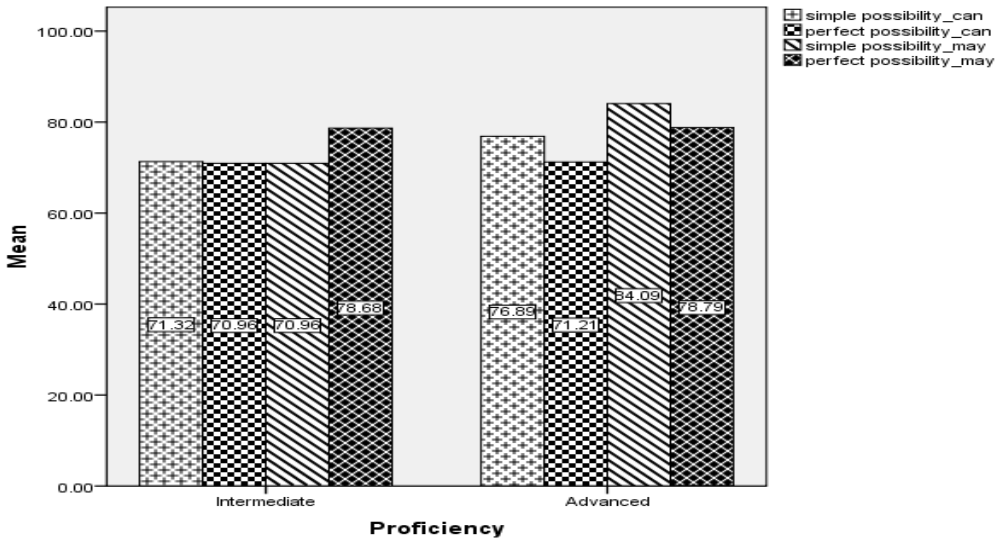

Figure 7: Participants Performance in Possibility Context

Permission Context. Regarding the context of permission, there are two modal auxiliary verbs can and may which can be used in order to denote such a kind of meaning. Table 7 represents the performance of both intermediate and advanced proficiency groups on modal auxiliaries denoting permission. As it is observable, both groups acquired the application of modal auxiliary can in the contexts of simple permission. Of course, concerning the use of can in a perfect permission context, the advanced participants performed better than the intermediates. The advanced learners enjoyed the mean of 95. 07%, while the intermediates yielded the mean of 81.98%.

On the other hand, regarding *may*, which is often taught and mostly used in other contexts such as possibility, there was a lower mean of correct performance for both intermediate (62.13%) and advanced participants (62.12%). Thus, this property of *may* was not fully acquired by Persian EFL learners. In order to assess the participants on their performance in such a context, a mixed between-within subjects analysis of variance was conducted. The aforementioned findings are confirmed by the statistical results found, Wilks Lambda = .372, F (2, 64) = 53.975, p = .000, partial eta squared = .628 showing a large effect size. Thus, the statistical findings showed that the participants did not apply the permission modal auxiliaries with the same range of frequency. In addition, it was revealed that proficiency level had no significant effect on the performance of the participants, F (1, 65) = .978, p = .326.

Table 7: Mean of Correct Perception of Permission Modals by Proficiency Groups

	Proficiency	Mean%	Std. Deviation	N
simple permission (can)	Intermediate	95.22	7.54	34
	Advanced	90.53	19.77	33
	Total	92.91	14.95	67
perfect permission (can)	Intermediate	81.98	24.84	34
	Advanced	95.07	12.07	33
	Total	88.43	20.56	67
simple permission (may)	Intermediate	62.13	22.92	34
	Advanced	62.12	24.10	33
	Total	62.12	23.33	67

Concerning the mean differences obtained by pair-wise comparison, there was no significant difference between the performance of the participants for the contexts of simple and perfect permission *can*. However, regarding *may*, the performance of participants (either intermediate or advanced) differed significantly from their performance on different forms of modal auxiliary *can*. The details are provided in Table 8.

Table 8: Mean Differences of Learners' Performance in Possibility Context

(I) permission	(J) permission	Mean D	Std. E	Sig.[a]
simple permission (can)	perfect permission (can)	4.345	3.098	.497
	simple permission (may)	30.749*	2.937	.000
perfect permission (can)	simple permission (can)	-4.345	3.098	.497
	simple permission (may)	26.404*	3.964	.000

The performance of the intermediate and advanced participants on simple and perfective modal auxiliary verbs indicating permission is illustrated in Figure 8. Comparing parallel bars in the graph, the most similar performance of the participants is the one concerning *may* indicating permission, while the most different statistic refers to perfect application of *can*.

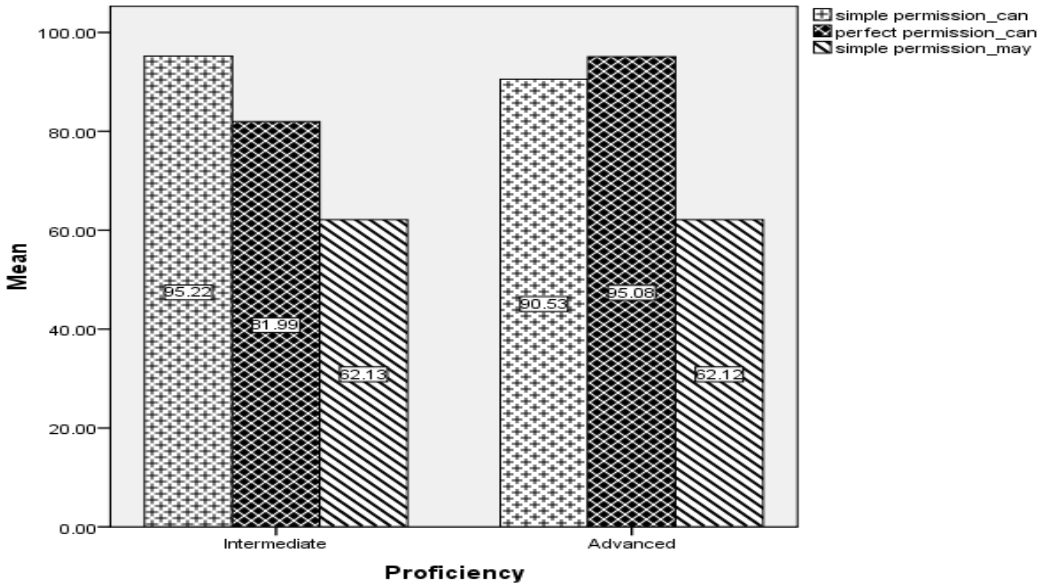

Figure 8: Participants' Performance in Permission Context

Obligation Context. Another comparison made between the intermediate and advanced participants, in this study, was the one between different modal auxiliary verbs indicating obligation. Conducting a mixed between-within subjects analysis of variance was informative in this area. Table 9 provides the means of correct performances of these modal auxiliary verbs by the two groups of intermediate and advanced participants. As it is illustrated, there was no significant interaction between context and proficiency level, Wilks Lambda = .95, F (6, 60) = .48, p = .815. On the other hand, context also had a significant effect on the participants' performance, Wilks Lambda = .23, F (6, 60) = 32.34, p = .000, partial eta squared = .764 indicating a large effect size. Moreover, there was no significant difference between the correct perception of intermediate and advanced EFL learners regarding obligation modal verbs. Thus, proficiency level had no substantial effect in the performance of the participants, F (1, 65) = .484, p = .489.

Table 9: Mean of Correct Perception of Obligation Modals by Proficiency Groups

	Proficiency	Mean%	Std. Deviation	N
simple external obligation (must)	Intermediate	65.22	8.15	34
	Advanced	60.15	22.69	33
simple internal obligation (must)	Intermediate	71.32	22.51	34
	Advanced	64.01	28.76	33
simple internal obligation (should)	Intermediate	65.44	22.62	34
	Advanced	64.01	31.52	33
perfect internal obligation (should)	Intermediate	65.44	22.62	34
	Advanced	64.01	31.52	33

perfect external obligation (should)	Intermediate	87.50	23.43	34
	Advanced	90.90	18.55	33
simple recommendation (should)	Intermediate	84.55	22.41	34
	Advanced	87.12	19.13	33
perfect recommendation (should)	Intermediate	86.39	23.51	34
	Advanced	90.90	18.29	33
simple external obligation (have to)	Intermediate	50.73	41.04	34
	Advanced	51.13	33.99	33

The performance of the two groups of the intermediate and advanced Persian EFL learners in different obligation contexts is presented in Figure 9.

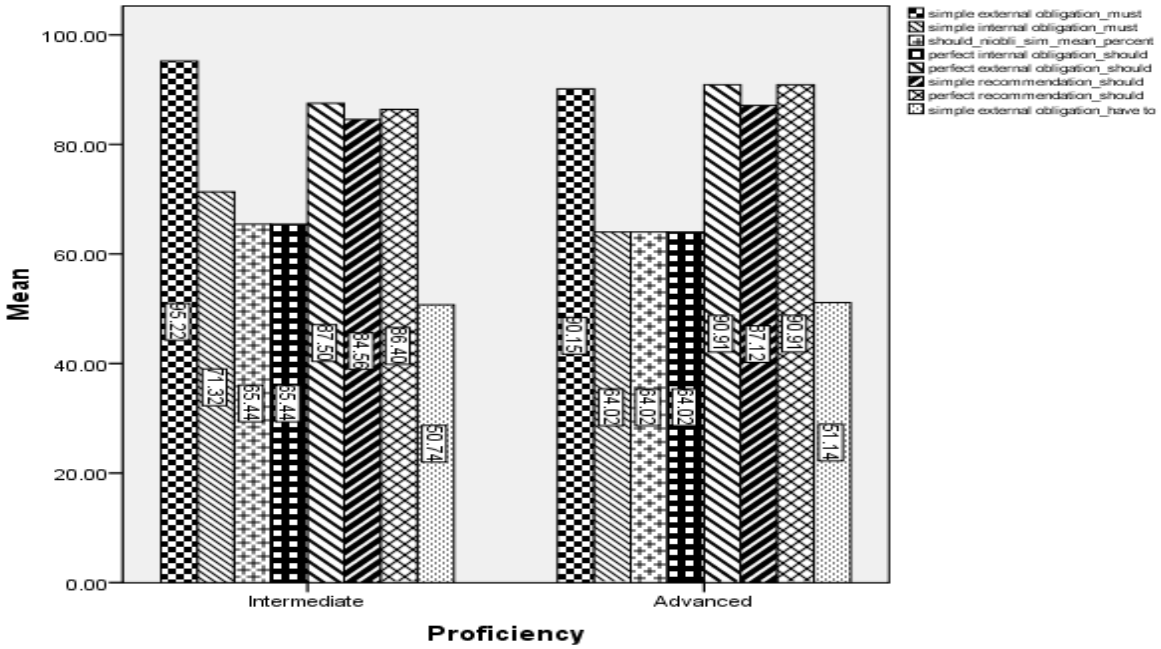

Figure 9: Participants Performance in Obligation Context

As it is apparent in Table 9, and illustrated in Table 10, the performance of the Persian EFL learners is better in simple external obligation (must), perfect external obligation (should), simple recommendation (should), and perfect recommendation (should) contexts. Other modal auxiliary verbs (simple internal obligation (must), simple internal obligation (should), and simple external obligation (have to)) are not fully acquired by either of these groups.

Table 10: Mean Differences of Learners' Performance in Obligation Context

(I) obligation	(J) obligation	Mean Difference (I-J)	Std. Error	Sig.[a]
simple external obligation (must)	simple internal obligation (must)	25.017*	3.438	.000
	simple external obligation (have to)	41.750*	5.160	.000
simple internal obligation (must)	simple external obligation (must)	-25.017*	3.438	.000
	simple external obligation (have to)	16.734	6.064	.210
simple internal obligation (should)	simple external obligation (must)	-27.958*	3.487	.000
	simple internal obligation (must)	-2.941	5.056	1.000
	simple external obligation (have to)	13.792	5.542	.431
perfect internal obligation (should)	simple external obligation (must)	-27.958*	3.487	.000
	simple internal obligation (must)	-2.941	5.056	1.000
	simple internal obligation (should)	.000	.000	.000
	simple external obligation (have to)	13.792	5.542	.431
perfect external obligation (should)	simple external obligation (must)	-3.482	3.054	1.000
	simple internal obligation (must)	21.535*	4.104	.000
	simple internal obligation (should)	24.476*	4.020	.000
	perfect internal obligation (should)	24.476*	4.020	.000
	simple external obligation (have to)	38.269*	5.407	.000
simple recommendation (should)	simple external obligation (must)	-6.846	2.654	.341
	simple internal obligation (must)	18.171*	4.090	.001
	simple internal obligation (should)	21.112*	3.667	.000
	perfect internal obligation (should)	21.112*	3.667	.000
	perfect external obligation (should)	-3.365	2.492	1.000
	simple external obligation (have to)	34.904*	5.092	.000
perfect recommendation (should)	simple external obligation (must)	-4.033	3.404	1.000
	simple internal obligation (must)	20.984*	4.149	.000
	simple internal obligation (should)	23.925*	3.834	.000
	perfect internal obligation (should)	23.925*	3.834	.000
	perfect external obligation (should)	-.551	2.561	1.000
	simple recommendation (should)	2.813	2.766	1.000
	simple external obligation (have to)	37.717*	5.038	.000

Analysis of *will* and *would* Modal Auxiliaries. The last comparison made between different applications of modal verbs is the one for modal verbs would and will. These two modal auxiliaries are not separable due to the connections made between them in simple and perfect tenses. Therefore, they are classified and analyzed in a single category in this study.

Analyzing the data obtained from the two groups, a mixed between-within subjects analysis of variance was conducted. As it is demonstrated in Table 11, the intermediate and

advanced participants performed similarly in different contexts. Therefore, proficiency level had no significant effect on the participants' performance, F (1, 54) = .039, *p* = .844. EFL learners were able to apply modal auxiliary *will* in different contexts of use, ranging from 70 to 88 (except for perfect prediction context). On the other hand, concerning modal verb *would*, the participants could not use it with a high degree of accuracy, except for advanced learners applying this verb in the context of perfect intention. Thus, there is a main effect for context, Wilks Lambda = .611, F (4, 51) = 8.121, *p* = .000, partial eta squared = .389 indicating a large effect size.

Table 11: Mean of Correct Perception of *Will* and *Would* by Proficiency Groups

	Proficiency	Mean%	Std. Deviation	N
simple habitual act (would)	Intermediate	79.34	26.81	34
	Advanced	61.36	29.54	33
	Total	68.75	29.58	67
simple intention (will)	Intermediate	88.58	16.81	34
	Advanced	85.60	20.75	33
	Total	86.83	19.13	67
perfect intention (would)	Intermediate	82.60	27.10	34
	Advanced	98.10	5.52	33
	Total	91.74	19.25	67
simple prediction (will)	Intermediate	84.78	25.54	34
	Advanced	90.15	21.59	33
	Total	87.94	23.22	67
perfect prediction (will)	Intermediate	68.47	29.64	34
	Advanced	71.96	28.13	33
	Total	70.53	28.54	67

General performances of the participants on *will* and *would* modal auxiliary verbs are represented in Table 12. The numbers in this table show that, as a whole, EFL learners' performance in application of *would* in habitual contexts and *will* in perfect prediction contexts differed significantly from their performance in other contexts. Other aspects of these modal auxiliary verbs are considered to be acquirable by learners.

Table 12: Mean Differences of Learners' Performance Concerning Modal Verbs *Will* and *Would*

(I) will_would	(J) will_would	Mean Difference (I-J)	Std. Error	Sig.[a]
simple habitual act (would)	simple intention (will)	-16.741*	4.148	.002
	perfect intention (would)	-20.002*	4.262	.000

	simple prediction (will)	-17.111*	4.860	.009
	perfect prediction (will)	.132	5.510	1.000
simple intention (will)	simple habitual act (would)	16.741*	4.148	.002
	perfect intention (would)	-3.261	3.045	1.000
	simple prediction (will)	-.371	3.121	1.000
	perfect prediction (will)	16.873*	4.769	.008
perfect intention (would)	simple habitual act (would)	20.002*	4.262	.000
	simple intention (will)	3.261	3.045	1.000
	simple prediction (will)	2.890	3.355	1.000
	perfect prediction (will)	20.133*	4.776	.001
simple prediction (will)	simple habitual act (would)	17.111*	4.860	.009
	simple intention (will)	.371	3.121	1.000
	perfect intention (would)	-2.890	3.355	1.000
	perfect prediction (will)	17.243*	5.056	.012

Figure 10 is presented here in order to visualize the differences between the performances of the two groups of intermediate and advanced in habitual, intentional, and prediction contexts.

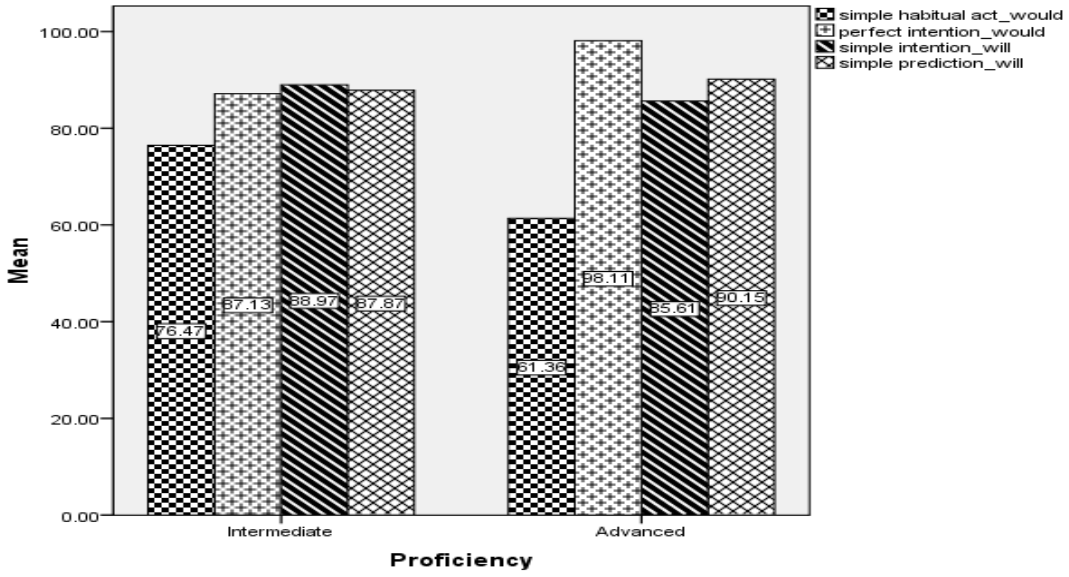

Figure 10: Participants' Performance on Different Roles of *will* and *would*

IV. DISCUSSION

The obtained results demonstrated that EFL learners were more eager to use modal auxiliaries that were learned earlier in the sequence of acquisition. On the other hand, they performed with a lower accuracy rate concerning the application of other modal auxiliaries which were also applicable in such contexts but acquired in later stages of acquisition.

Considering the interactive model, it can be concluded that modals do not have a simple and shallow structure. Moreover, the mastery of a single function does not imply the full acquisition of modal constructions. The L2 learners had more defective performance on modal auxiliaries with original roots in another category, but also possessing features of other categories. For instance, the modal auxiliary *may* puts the students into trouble, since it is also applicable in the dynamic context (as a result of the merge between the two categories). In other words, the participants considered modals to have an accessible structure; however, they missed the multidimensional functions of modal auxiliaries applied in different contexts. Given the above, it seems that the L2 learners need to be made aware of the different functions conveyed by the English auxiliary verbs.

In fact, the previously mentioned models (Lyons, 1977; Palmer, 1979; Von Fintel, 2006) do not identify the most challenging areas regarding modal verbs; however, interactive model can propose an idea that modal auxiliaries with multiple functions in different categories (such as may in epistemic and dynamic categories, and must in deontic and epistemic categories) may result in more problems than the other modals.

V. CONCLUSION

This study was carried out in order to investigate the acquisition of English simple and perfective modal auxiliary verbs by adult Persian EFL learners. In order to fulfill the mentioned objectives, some researchers have raised some questions.

The first research question was concerned with the acquisition of modal auxiliaries. Exploring the pool of obtained data, it was revealed that unlike what might be expected in the first look, the learners' performance on modal auxiliary verbs is not flawless. Thus, these structures are not acquired simply as their superficial simplicity may show.

Considering the second question concerned with the most challenging areas for the Persian EFL learners, it was revealed that the participants in both groups faced ambiguities identifying the appropriate deontic auxiliaries in obligation contexts. Moreover, some dynamic modals such as auxiliary *would* caused much difficulty for both designated groups in simple and perfective contexts. Another source of problem can be traced back to the secondary functions of modals such as *may* (permission context) and *can* (possibility context). Thus, concerning the interactive model proposed (see figure 3), it was revealed that the EFL learners did not take into consideration the complicated underlying aspects of modality such as the functions conveyed by

a modal being merged into another category. This, in turn, necessitates a multidimensional perspective in the acquisition of the grammatical constructions enjoying multiple functions.

On the other hand, the third question addressed the role of L1 transfer on learners' performance. The results show that L1 transfer had significant role on learners' responses. Lack of some structures in Persian resulted in malfunctions on the part of the EFL learners.

Considering the last question concerned with the effect of proficiency level on EFL learners' performance, the analysis of the participants' responses indicated that proficiency level had no substantial effect on the acquisition of the modal auxiliary verbs by Persian learners of English.

Thus, as mentioned previously, along with the complexity of some structures and lack of enough input provision, L1 transfer could also be considered as one of the underlying reasons behind the observed problems. The findings demonstrated that the EFL learners seem to be highly affected with the structures of their L1 at the initial stages of acquisition, and as they get more proficient, they turn to UG.

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