Iranian EFL learners’ perception of the English verbs’ argument structure and their language proficiency: A semantic-syntactic approach

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Abstract: Acquisition of verbs and their syntactic and semantic properties can act as the core of any sentence across languages. EFL learners encounter learnability problems in the perception of English verbs’ argument structures manifested by different verbs. The current study aimed at investigating and diagnosing the problems Iranian EFL learners face when perceiving English verbs argument structures. A sample of 75 students majoring in English took part in this study. In order to answer the research questions, an Oxford Placement Test was conducted first to obtain three different proficiency levels: elementary, lower intermediate, and upper-intermediate. A Grammatical Judgment Test was administered one week after the test of proficiency to assess the learners’ perception of English verbs argument structures. The data then were analyzed using descriptive statistics and also One-way ANOVA. The obtained results revealed that students had encountered severe problems in perceiving transitive verbs, and the accomplishment type was the most problematic semantic categories in Iranian EFL learners’ perception. Also, the learners’ comprehension of argument structures improves as their proficiency increases. Findings of this survey may prove useful to teachers in teaching English grammar.

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PUBLIC INTEREST STATEMENT
Despite the time and energy dedicated to teaching grammar in L2/FL programs, foreign language learners still face difficulties in comprehending English verbs’ argument structures. Since argument structures play a crucial role in grammar; thus, there is a need to investigate and diagnose the problems Iranian EFL learners encounter when perceiving argument structures. The obtained results revealed that students had encountered severe problems in perceiving transitive verbs, and the accomplishment type was the most problematic semantic categories in Iranian EFL learners’ perception. Also, the learners’ comprehension of argument structures improves as their proficiency increases. Findings of this survey may prove useful to teachers in teaching English grammar.
levels perceived English verbs’ argument structure differently and also they have encountered severe problems in perceiving transitive verbs, and the accomplishment type was the most problematic semantic categories in Iranian EFL learners’ perception. More exposure to language input, explicit teaching of the argument structures along with their semantic and syntactic categories, and practicing in different contexts can improve the learners’ knowledge of argument structures.

Subjects: Educational Research; Education Studies; Classroom Practice

Keywords: English verbs’ argument structures; semantic categories; syntactic categories; proficiency level

1. Introduction
The study of the acquisition of argument structure has long figured prominently in debates about learning and abstractness (Viau & Bunger., 2016, p. 3). Jackendoff (2002) has claimed that the problem of argument structure is a key to any theory of grammar. An understanding of argument structure is central to the understanding of predication; hence, for the understanding of how events and states are construed through linguistic expressions, the most typical kind of lexical item that supports predication is the verb. Thus, an analysis of how argument structure is realized in a given language is ultimately an analysis of how verbs will behave in that language when they express events and states by way of the patterning of clauses.

The linguistic realization of arguments may be regarded as the transition between mental representations of concepts and the manifestations which emerge from them in morph-o-syntactic structures. Therefore, the semantics of argument realization is of crucial importance, and argument structures can be understood as a component of grammar in which there is an accurate interface account between semantic and syntax. Thus, on analyzing English argument structures, it is useful to draw a theoretical distinction between a semantic and a syntactic argument.

Harley’s (2006) approach is a hand framework that helps readers and addresses first the notions of non-relational and relational meanings, or concepts. The former can be defined as concepts which do not depend on other concepts to be construed, such as the concept of “boy” and the concept of “apple”, the latter can only be appropriately construed by simultaneous mental activation of accompanying concepts, or concepts they have a relationship with. One such concept, taken from Jackendoff’s (2002) presentation of argument structure is the concept expressed in English by the verb “devour.” To conceptualize the meaning of this verb, the concepts of a “devourer” and a “devouree” must also be present as participating concepts. Because of this property, relational concepts such as the meaning encoded by the verb “devour” are referred to as predicators. When events and states are construed, the concepts that participate in the predication are referred to as the predicator’s arguments.

However, it should be noted that an argument structure is more than the specification of participating arguments. The structuring of argument realization in English also seems to imply specific linking constraints in the choice of syntactic configurations which will satisfy requirements imposed by the argument structure. Considering again a verb such as “devour,” this can be exemplified in the prompt semantic acceptability of the utterance, “the boy devoured the apple.” In this utterance, “boy” and “apple” are NPs semantically compatible with the concepts of “devourer” and “devouree,” fine compatibility that would not be easily achieved had the utterance been “the apple devoured the boy.” In the second utterance, there seems to be a violation of a required distribution of arguments that can be formally sketched as X DEVOUR Y, where X must be “devourer,” and Y “devouree.” If instead of the highly specific labels “devourer” and “devouree” we choose the more general labels agent and theme, it is not difficult to realize that the argument structure of “devour” can be stated as X(agent) VERB Y(theme). Furthermore, it
is not difficult to realize that this generalization captures a remarkable grammatical similarity between the meaning of devouring and that of a vast array of other English verbs, the meanings typically associated with “sweep,” “fix,” and “carry” being but a few examples.

A semantic argument can thus be described as a linguistic unit bearing a semantic representation that makes it compatible with the concepts necessary for the construal of relational concepts, then leading to the construal of states and events. The selection of arguments of a given predicator is, to a considerable extent, determined by the semantics of that predicator is a fact captured by theories of lexical semantics that claim that verbs specify semantic roles will constrain the possible linguistic units they will co-occur with. Such semantic roles have been labeled thematic roles (theta-roles) (e.g. Jackendoff, 1972) or participant roles (e.g. Van Valin & La Polla, 1997). Theta-role labels such as “agent,” “patient” or “theme,” “experience,” “instrument,” and “beneficiary” illustrate the claim that specific semantic properties are mandatory for an attempted realization of argument structure to be licensed.

As seen above, in the linguistic expression of events and states, semantic arguments must map onto syntactic arguments. Syntactic arguments can be roughly defined as the constituents that will enter in the predication pattern marked as the semantic arguments required by the event or state construal. For example, the sentence “the boy devoured the apple” illustrates a grammatical structure where the semantic argument “agent” maps onto the NP “the boy,” rendering it the status of a syntactic argument, realized as the grammatical relation “subject.” The semantic argument “theme” maps onto the NP the apple, which is also a syntactic argument, realized as the grammatical relation “object.”

According to Allen (2015, p. 217), arguments can be identified in two ways: syntactic roles such as Subject, Object, and Indirect Object and semantic roles like Agent (an entity that instigates an action) and Patient (an entity that undergoes an action) of the verbs. An argument structure is the specification of the number and types of arguments required for a verb in that structure to be well-formed. Traditional grammar classifies verbs according to the number of arguments they select. Furthermore, conventional syntax refers to arguments with the function that they have in the sentence, such as subject, object, and an indirect object. According to traditional grammar, we have intransitive verbs (with one argument, notably the subject), transitive verbs with two arguments (subject and object), ditransitive verbs with three arguments (subject, direct object, indirect object).

The primary task that EFL learners have to accomplish in learning argument structure is determining which verbs can appear in which argument structures. The task of the acquisition of argument structure, including transitive, intransitive, di-transitive complements can be among the learnability problems faced by L2 learners. Therefore, the aim of this study was to find out an order of difficulty in the perception of English verb argument structures among Iranian EFL learners, the potential problems Iranian EFL learners face when trying to perceive English argument structures, and the scope of the knowledge Iranian EFL learners at different proficiency levels have on the argument structures. It seems that different kinds of English argument have not adequately been addressed in the educational system. Reviewing the related literature on argument structures, a few studies have been done on argument structures among EFL learners. Therefore, the current research focused on how EFL learners perceive English argument structures across different proficiency levels.

1.1. Theoretical framework of the study
There are various theories of argument structure (e.g. Pinker, 1989; Rapport & Levin, 1988; Zubizarreta, 1987). These theories have assumed that argument realization is determined to a large extent by the lexical-semantic properties of verbs and verb meaning is compositional and that some parts of meaning, which are recurrent in many verbs, determine their grammatical behavior. These authors have proposed that agentive activity verbs, such as the English examples run, dance, cry, write, paint, and sew contain in their lexical meaning the manner of acting of the agent argument, being all represented by a lexical-semantic structure such as [X ACT<MANNER>].
The authors argue that manner verbs may be intransitive, since manner roots modify a monadic predicate, even when they present an “apparent argument” in object position. The claim is that, in such cases, the object would be an argument of the root <MANNER>, not an argument of the verb per se, since it need not be expressed. This study was based on Grimshaw’s (1990) model since it formulates an original and highly predictive theory of argument structure that accounts for a large number of syntactic phenomena. The argument structure is “a lexical representation of grammatical information about a predicate” (Grimshaw, 1990, p. 1), and is a level of representation which maps lexical conceptual/semantic structure onto D-structure. Under Grimshaw’s theory, argument structure represents prominence relations among arguments, and prominence is determined by both thematic and aspectual properties of the predicate. Concerning thematic prominence, Grimshaw (p. 8), assumed the thematic hierarchy determines which argument will be the external argument, and thus the grammatical subject (See Figures 1 and 2).

1.1.1. Thematic hierarchy
(Agent (Experiencer (Goal/Source/Location (Theme))))

According to Grimshaw, transitive and intransitive verbs are thought to assign an external theta role. The element to which the external theta role is attached is most often realized as the subject of the clause. Transitive verbs subcategorize for minimally one internal argument, most often understood as the object of the clause. Assuming the VP internal hypothesis (Koopman and Sportiche, Subjects 12; Sportiche 21, among others) which generates the external argument VP-internally at the underlying level of the syntax, by Larson’s (1988) clausal structure in which verb phrases are composed of shells or layers to accommodate the number of arguments, a mono-transitive structure will appear as follows at the underlying level of the syntax:

An intransitive verb phrase will be comprised of only the upper shell to accommodate the external argument, but will not contain the lower shell given that intransitive verbs do not subcategorize for an internal argument. Unaccusative verbs subcategorize for an internal argument, which may be realized as the surface subject. They do not assign an external theta role. Within the structural framework, the underlying structure of an Unaccusative verb parallels that of the intransitive verb except for the argument which appears in the specifier VP is an internal, not an external argument, as shown in the diagram below:

Vendler (1967) divided verbs into 1) state, 2) activity, 3) achievement, and 4) accomplishment. Activities and accomplishments are distinguished from achievements and states in that the former allows the use of continuous and progressive aspects. Activities and accomplishments are
distinguished from each other by boundaries: Activities do not have a terminal point (a point before which the activity cannot continue, for example, “John drew a circle” whereas accomplishments do. Of achievements and states, achievements are instantaneous, whereas states are durative. Achievements and accomplishments are distinguished from one another in that achievements take place immediately (such as in “recognize” or “find”) whereas accomplishments approach an endpoint incrementally (as in “paint a picture” or “build a house.”

1.2. Literature review

For second language learners of English, the acquisition of English argument structures is a challenging task (Hejazian Yazdi & Rezai, 2015). Montrul (2000) tried to investigate transitivity alternations in the L2 acquisition by using a cross-linguistic language, including Turkish, Spanish, and English. The study was organized to find the effect of universal grammar (UG) and L1 on the acquisition of L2 transitivity alternations (causative/inchoative). The results showed that although L1 and UG influenced L2 acquisition, the effect of each of them was not the same on the L2 acquisition.

In another study, Can (2009) tried to diagnose the acquisition of ergatives by Turkish EFL learners by comparing the (partial) results of the study carried out in 2000 with the results of its replication conducted in 2007. In both studies, all the variables were the same. The participants were 50 EFL learners randomly selected among the first-year students of the ELT Department of Faculty of Education at Uludag University, Turkey, in 2000 and 2007. Their proficiency levels were determined via a cloze test, and a grammaticality judgment test with various subclasses of intransitive was administered. Results of the study revealed that the participants’ proficiency levels have increased through these seven years; on the other hand, paired ergative verbs were the most problematic subclass of intransitive in both studies.

Atay (2010) attempted to find out the effects of instruction on Turkish EFL learners’ acquisition of causative/inchoative structures. In this study, 101 Turkish EFL learners, who were freshmen in their English learning, were selected as the participants to find if there were any differences between the learners who received contrastive form-focused instruction and those who received no instruction concerning their knowledge on transitivity alternations in English. The final results displayed that there was a significant difference between the students who received direct instruction and those who did not receive any instruction on causative/inchoative alternations. Conclusively, the study showed that more direct instruction is needed for grammatical features of English argument structures.

Luk (2012) carried out a cross-linguistic study and focused on causality for transitive and intransitive constructions between English and Japanese. Intransitive verbs have one argument which is the agent of the sentence in English, but in other languages such as Japanese, they have two arguments, including agent and patient. Such a difference in causality was the primary purpose of the study. Two experiments were conducted in this study; in the first experiment, pairs of sentences were distributed among 20 native English speakers and 20 native Japanese speakers to rate how logical those structures were based on their knowledge. In the second experiment, 42 native English speakers and 46 native Japanese speakers were asked to read the equivalent sentence pairs and answer to causality each of them one by one. The time of each answer was calculated with E-prime software. The results demonstrated that the rate of agent-implying intransitive verbs was much higher than that of non-agent-implying intransitive verbs. Furthermore, the taken time for non-agent- implying verb pairs was faster than that of agent implying verb pairs.

In another study, Rezai and Ariamanesh (2012) explored the acquisition of English un-ergative and un-accusative structures. A number of 55 studied English literature, and 23 were MA students studied English teaching at Yazd University were participated in this research. All participants took a placement test then, based on the results, they were divided into three groups based on their levels of proficiency, including lower intermediate, upper-intermediate, and advanced. Then, the researchers gave three kinds of tests, including slide-show pictures, a production test, and a grammatical judgment test. The results showed that the participants had learning problems.
associated middle variants with un-accusative predicates as well as the intransitive (inchoative Paired Ergative verbs). Additionally, the role of L1 (Persian) was detected in the acquisition of un-ergative and inchoative more clearly when the learners experienced learning difficulties as the result of negative transfer from L1. In the case of un-accusatives, the challenges are attributed to the lack of L2 intuitive knowledge of the learners.

Abbasi Bagherianpoor, Hosseini, and Rohani (2015) investigated the role of causativization in over-passivization of un-accusative verbs by Iranian students of English major. The participants were 139 students whose majors were English Literature and Translation. An Oxford placement test selected them and then categorized into three groups based on their test score including: lower intermediate, upper-intermediate, and advanced. In the first session, the subjects took a short constructed response task, and their rate of causativization of un-accusatives was checked. In the second session, a grammatical judgment task was given to the three groups to comprehend correct un-accusative, causativization errors, and also over-passivization. After analyzing the data, the results revealed that causativization mistakes with non-alternating un-accusatives were common errors among Iranian English Majors. Level of language proficiency was a significant factor in the learners’ performance at both comprehension and production levels. Besides, there was a statistically significant correlation between the participants’ performances in the causativization and passivization errors with non-alternating verbs. The obtained results made it clear that language learners encounter severe problems in the acquisition of the verbs, and also more exposure to language input, explicit teaching of the verbs structures, and practice in different contexts can improve the situation.

Alotaibi and Alajmi (2015) attempted to test whether fifty advanced Kuwaiti EFL learners have acquired the English passive alternation. A Grammaticality Judgment Task (GJT) was used to check whether the participants would be able to distinguish between alternating and non-alternating verbs. The verbs used in the test were chosen based on their frequency in the Corpus of Contemporary American English (COCA). The results demonstrated that positive transfer from L1 played an essential role in the participants’ correct answers on the test, especially concerning the verbs that passivize. Moreover, the participants may have provided wrong answers on the GJT due to their unfamiliarity with some of the verbs. However, the participants faced various difficulties with the verbs that do not passivize. These difficulties could be ascribed to over-generalizing the passivization rule or confusing the non-causative with passive construction. Their overall score suggests that they have not acquired the English passive alternation (total mean = 45%).

Hejazian Yazdi and Rezai (2015) tried to explore into language learnability of the argument structures of English transitivity constructions by EFL learners. The Oxford Quick Placement Test was given to 130 BA and MA students of Yazd University after which 99 students were selected and classified into three levels of proficiency including, elementary, intermediate, and advanced groups. A Completion Task also was conducted to measure the participants’ production of the argument structure of transitivity constructions. The results showed that the participants had the highest performance in producing transitive structures. Moreover, the role of L1 was detected in the acquisition of those verbs which were optionally transitive in English, but mono-transitive in Persian and the majority of EFL learners preferred to use transitive structures.

Dehghan and Rezvani (2016) examined the degree to which similarities and mismatches between English and Persian influence the use of unaccusative and unergative verbs by Persian-speaking learners of English. Seven verb categories were identified as the basis for comparison based on different verb types in English and Persian. A forced-choice elicitation test, including 48 items, was developed based on these seven verb categories. A proficiency test was also used to divide 116 undergraduate students of English into high and low proficiency groups. The results revealed findings more in line with a transfer at the morphological rather than the argument structure level. Alternating unaccusatives with similar equivalent structures for transitive/intransitive pairs in Persian and non-alternating unaccusatives with different structures for transitive/
intransitive pairs in Persian seem to be the most challenging verb categories for learners. The effect of proficiency level was also significant on the recognition of correct structures.

Zibin and Altakhanieh (2016) carried out a study on acquiring the English causative alternation, 80 advanced Jordanian EFL learners, studying English Language and Literature at the Jordan University, participated in this study. The participants took a grammaticality judgment task in English to determine whether they would be able to distinguish between alternating and non-alternating causative/inchoative verbs. The results showed that the participants faced some difficulties with certain verbs that did not alternate and were used ungrammatically on the Grammaticality Judgment Task. These difficulties could be related to the differences between English and Jordanian Arabic concerning the semantically-based constraints that govern the causative-inchoative alternation in English and JA. The participants transferred the argument structure of verbs in Jordanian Arabic into English without understanding that the two languages are different regarding the verbs which are allowed to alternate and those that are not.

Kim, Hwang, and Rah (2017) tried to investigate the extent to which young EFL learners rely on path-breaking verbs in the comprehension and production of English argument structure constructions. The participants were 82 Korean EFL learners in grades 7 and 10, they sorted English sentences, which were created by crossing four verbs with four constructions, into same groups according to overall sentence meaning and form. The results demonstrated dominant verb-oriented sorting in grade 7, and more construction-biased sorting in grade 10 when the sentence included a path-breaking verb. In a written production task, 29 Korean EFL students from grades 4 to 7 wrote a book report in English after a 4-week extensive reading program. The results showed the more dominant use of path-breaking verbs in the ditransitive and resultative constructions than in the caused-motion construction.

Reviewing several studies carried out on argument structure revealed that most of them have focused on one aspect of the topic neglecting the other properties which were closely related to it. Therefore, this study tried to fulfill this gap focused on different argument structures to find how EFL learners perceive them.

1.3. Purpose of the study
The primary purpose of the present study was to explore whether there is an order of difficulty in the perception of English verb argument structures among Iranian EFL learners. The second objective was to look for the potential problems Iranian EFL learners face when trying to perceive English argument structures. The third objective of the current study was to investigate the scope of the knowledge Iranian EFL learners at different proficiency levels have on the argument structures in which the English verbs, which are syntactically and semantically loaded and categorized, are used. Following the above objectives, the present study attempted to answer the following research questions:

(1) Can an order of difficulty be established in the perception of English verbs’ argument structures among Iranian EFL learners utilizing syntactic-semantic dichotomies?

(2) Which types of English verbs (intransitive, transitive, or di-transitive) pose more learning difficulties for Iranian EFL learners?

(3) Which of these three types (transitive, intransitive, and di-transitive) pose more difficulty for Iranian EFL learners using Vendlerian four semantic dichotomies?

(4) Does Iranian EFL learners’ proficiency affect their performance in perceiving English argument structures?

2. Method

2.1. Participants
Participants of the present study were 75 undergraduate BA students, including both female and male majoring in English translation and literature at Jahad University located in Ahvaz, Iran. Their
age ranged between 18 and 25. They took part in an Oxford Quick Placement Test (Allan, 2001); based on its results, they were categorized into three levels of proficiency: 30 students were placed at the elementary (scores between 18–29), 30 participants as the lower intermediate (scores between 30–39), and 15 participants at the upper intermediate (scores between 40–47).

2.2. Instrument
A standard Oxford Quick Placement Test (Allan, 2001) was utilized in this study to categorize the participants into three proficiency levels, as mentioned above. The test consisted of two integrated parts with 60 multiple-choice items, which measured the learners’ knowledge of grammar and vocabulary. To find out how Iranian EFL learners perceive English argument structure, a grammatical judgment test was used. This test consisted of 48 items including 16 transitive verbs, 16 intransitive verbs, and 16 di-transitive verbs, the score for each correct answer was considered to be 1; for each wrong answer, 0 was assigned. The verbs in these tests were selected based on their frequency in the Corpus of Contemporary American English (COCA), meaning that these verbs frequently occur in contemporary speech and also semantic categories which express “activity”, “accomplishment”, “achievement”, and “state” based on Vendler’s (1967) proposed dichotomies.

2.3. Data analysis
The following steps were taken to collect the necessary data: First, the Oxford Quick Placement Test was given to 75 students of Jahad University through which they were categorized into three levels of proficiency: elementary, lower intermediate and upper-intermediate. After the one-week interval, the grammaticality judgment test was administered. The students took these two tests in the group as they attended their regular and weekly scheduled classes at their universities. The statistical techniques in this study consisted of descriptive to compare the mean of both syntactic and semantic categories and also, One-way ANOVA, Scheffe test to see whether there was a significant difference between the three groups or not.

3. Results
The following results were obtained by the analysis of the data using the SPSS software (version 24). The results are presented and analyzed in the order of the research questions (RQ).

3.1. RQ1: Can an order of difficulty be established in the perception of English verbs’ argument structures among Iranian EFL learners?
To answer this question and examine if an order of difficulty can be established in the perception of English verbs’ argument structures among Iranian EFL learners utilizing syntactic-semantic dichotomies, the grammaticality judgment test was used, and the obtained data were analyzed. In other words, the order of difficulty of argument structures: transitive, intransitive and di-transitive and their semantic categories as state, activity, achievement, and accomplishment, was examined. The total frequency of the correct and wrong answers to each syntactic and semantic groups for all participants was calculated separately to determine the hierarchy order of syntactic-semantic categories. What follows is the order of difficulty established for the three syntactic categories developed and presented in Table 1.

Tables 1 and 2 present the hierarchy of difficulty among argument structures of syntactic categories of all the participants in the grammaticality judgment test.

| Verb Types     | Right | Wrong | Total |
|----------------|-------|-------|-------|
| Transitive     | 206   | 604   | 810   |
| Intransitive   | 453   | 546   | 999   |
| Di-transitive  | 679   | 521   | 1200  |
Table 1 shows that transitive verbs with 604 wrong answers were the most problematic argument structure and di-transitive verbs with 521 wrong answers were the least problematic argument structure in the perception test. Table 2 represents the difficulty order found for the perception of semantic categories.

Table 2 shows that the semantic category “accomplishment” with 407 wrong answers was the most problematic one and “state” with 338 wrong answers was the least problematic semantic category for all the participants in the grammatical judgment test.

3.2. Results of the hierarchy of English verbs argument structures

The results of data analyses in Table 1, concerning the second research question which asked “which types of English verbs (intransitive, transitive, or di-transitive) pose more learning difficulties for Iranian EFL learners?” shows that transitive verbs were the most challenging argument structures in the perception test. Concerning the third research question asking, “Which of these types pose more difficulty for Iranian EFL learners using Vendlerian four semantic dichotomies?” Table 2 displays that the accomplishment category was the most difficult semantic categories for our students to perceive.

3.3. Results of participants’ performance in the grammaticality judgment test and their proficiency

The fourth research question of this study asked, “Does Iranian EFL learners’ proficiency affect their performance in perceiving English argument structures”? To answer this question, first the mean and standard deviation of the participants’ performance in the grammaticality judgment test was calculated, then the analysis of one-way ANOVA Scheffe statistics was used to check if there were any significant differences between the three proficiency levels.

Table 3 reveals the mean score of the performance of each proficiency group on the three verb types (transitive, intransitive, and ditransitive) in the grammatical judgment test. Transitives were the most problematic for all three groups. Intransitives, along with ditransitives, pose less learning difficulties. The performance of the upper-intermediate participants seemed to be a bit different since they had the best return on intransitive verbs.

| Argument Structures | Proficiency       | Mean           |
|---------------------|-------------------|----------------|
| Transitive          | Elementary        | 6.8000         |
|                     | Lower-intermediate| 8.0000         |
|                     | Upper-intermediate| 10.5333        |
| Intransitive        | Elementary        | 7.0333         |
|                     | Lower-intermediate| 8.6000         |
|                     | Upper-intermediate| 12.7333        |
| Ditransitive        | Elementary        | 8.2000         |
|                     | Lower-intermediate| 9.2000         |
|                     | Upper-intermediate| 9.8333         |
The other statistical test was a mixed between-within groups ANOVA which was conducted to explore the impact of proficiency on the Iranian EFL learners' difficulty order of transitive, intransitive and ditransitive verbs in the grammaticality judgment test. The results of the differences between and within-subjects are presented in Table 4.

Table 4 demonstrates that the p-value for all argument structures is less than 0.05; therefore, it can be concluded that there were significant main differences between the three groups for the three types of argument structures and upper-intermediate participants outperformed the other two groups, while lower-intermediate students outperformed the elementary subjects.

Table 5 shows the mean score of the performance of each proficiency group on the semantic categories (state, activity, achievement, and accomplishment) in the grammatical judgment test. Accomplishments were the most problematic for all three groups. States, activities, and achievements pose less learning difficulties. The performance of the upper-intermediate participants seemed to be a bit different since they had the best return on state and accomplishment verbs.

The other statistical test was a mixed between-within group ANOVA which was conducted to find the effect of proficiency on the Iranian EFL learners’ difficulty order of the state, activity, achievement, and accomplishment verbs in the grammaticality judgment test. The results of the differences between and within-subjects are presented in Table 6.

Table 6 demonstrates that the p-value for state and accomplishment is less than 0.05; therefore, it can be concluded that there were significant main differences between the three groups for the two types of argument structures (state and accomplishment) and upper-intermediate

| Argument Structures | df | Mean Square | F   | Sig. |
|---------------------|----|-------------|-----|------|
| Transitive Between groups | 2 | 69.707 | 13.844 | 0.000 |
| Within groups | 72 | 5.035 |
| Total | 74 | 501.947 |
| Intransitive Between groups | 2 | 163.450 | 36.880 | 0.000 |
| Within groups | 72 | 4.432 |
| Total | 74 | 36.320 |
| Ditransitive Between groups | 2 | 20.210 | 3.877 | 0.25 |
| Within groups | 72 | 5.213 |
| Total | 74 | 415.787 |

| Argument Structures | Proficiency | Mean |
|---------------------|-------------|------|
| State | Elementary | 5.9000 |
| | Lower-intermediate | 8.1333 |
| | Upper-intermediate | 9.5333 |
| Activity | Elementary | 5.4667 |
| | Lower-intermediate | 8.0667 |
| | Upper-intermediate | 8.0000 |
| Achievement | Elementary | 5.7667 |
| | Lower-intermediate | 7.5333 |
| | Upper-intermediate | 9.4000 |
| Accomplishment | Elementary | 5.0000 |
| | Lower-intermediate | 7.0667 |
| | Upper-intermediate | 7.8000 |
participants outperformed the other two groups, while lower-intermediate students outperformed the elementary subjects. As the table shows that the p-value for activity and achievement is higher than 0.05; thus it can be concluded that there were not significantly main differences between the three groups for the other two types of semantic categories.

4. Discussion

Having reviewed the main results of the grammatical judgment test, we now would address the questions of the study in turn. The first research question was related to the order of difficulty in perceiving English verbs’ argument structures, the second and third were related to the difficulty that learners encounter in using these structures using semantic dichotomies, the last question was related to the effect of proficiency levels in learners’ perception.

The results in Table 1 revealed that the answer to the first research question posed above was “yes.” The hierarchy difficulty starts with the perception of transitive with 604 as the most problematic structure syntactically, followed by intransitive carrying 546, and di-transitive with 521 wrong answers. Answering the second research question looking for the three types of English verbs (intransitive, transitive, or di-transitive) posing more learning difficulties for Iranian EFL learners, it was found that transitive type was the most problematic argument structure to perceive by our participants, Table 1. As for the third research question, which of these four types posed more difficulty for Iranian EFL learners using Vendlerian four semantic dichotomies, the results showed that the learners experienced problems with accomplishments in the perception test containing 407 wrong answers, Table 2.

The last research question related to the possible influential role of EFL learners’ proficiency level in perceiving English argument structures, the results showed that the upper intermediate performed better than the other two groups, Table 3.

All in all, the results of the hierarchy difficulty of the perceived syntactic categories show that there was an order of difficulty in understanding the English verbs’ argument structures starting with transitive, then intransitive followed by di-transitive verbs. No study has dealt with comparing the three types of argument structures, including transitive, intransitive, and di-transitive types. The result of this study is more or less in line with Atay’s (2010) and Zibin and Altakhanieh’s (2016) study, which showed that learners had difficulties in learning causative verbs. This congruity between the findings of this study and the other two is because the causative type of verbs is associated with transitivity. The finding of the current study is not consistent with Hejazian Yazdi and Rezai (2015), who claimed that EFL learners had the highest performance in producing transitive structures. This distinction between the two studies can be explained because of the distinction existing between the two different modes, i.e. production and perception.

| Argument Structures | Sum of Square | df | Mean Square | F | Sig. |
|----------------------|--------------|----|-------------|---|------|
| State Between groups | 150.820      | 2  | 75.410      | 4.365 | .016 |
| Within groups        | 1243.900     | 72 | 17.276      |     |      |
| Total                | 1394.720     | 74 |             |     |      |
| Activity Between groups | 119.653 | 2  | 59.827      | 3.052 | .053 |
| Within groups        | 1411.333     | 72 | 19.602      |     |      |
| Total                | 1530.987     | 74 |             |     |      |
| Achievement Between groups | 62.687 | 2  | 31.343      | 1.641 | .201 |
| Within groups        | 1375.233     | 72 | 19.100      |     |      |
| Total                | 1437.920     | 74 |             |     |      |
| Accomplishment Between groups | 200.080 | 2  | 100.040     | 5.492 | .006 |
| Within groups        | 1311.467     | 72 | 18.215      |     |      |
| Total                | 1511.547     | 74 |             |     |      |
comprehension. Likewise, lack of harmony between the results of the present study and those of Can (2009) and Rezai and Ariamanesh (2012) who found out that intransitive were the most problematic verbs maybe because those studies just focused on two types of argument structures including transitive and intransitive and the production of the transitive verbs.

Among the semantic categories, the result showed that accomplishments were the most difficult semantic categories bearing 407 errors, Table 2. Regarding the participants’ perception of this semantic category, the result is in line with Farsidoust’s (2008) study which explored that accomplishments were the most problematic semantic categories for Iranian EFL learners.

Another critical, independent variable of the present study was the proficiency level of the participants that proved to be significant, serving necessary implications. The proficiency of participants was recognized to be a significant factor in the Grammaticality Judgment test. It might be concluded that the number of right and wrong answers varied as the proficiency level increases or decreases, Table 3. The level of proficiency or amount of language input had a role in the learners’ performance. In this regard, the result of the current study is in line with Bagherianpoor, Hosseini and Rohani’s (2015) study claiming that the level of language proficiency was a significant factor in the learners’ performance in both comprehension and production levels; whereas, it does not corroborate the results of Can’s study (2009) who showed that proficiency had a negative effect on the behavior of the L2 learners dealing with English ergative (inchoative and middle) structures.

5. Conclusions and implications
The results of the current study showed that EFL learners experienced problems in perceiving transitive verbs. Accomplishments were the most problematic semantic categories in their perception. Moreover, the upper-intermediate group outperformed the other two groups. The administered grammaticality judgment test revealed that proficiency was found to be a significant variable since the results supported that fact that the more the learners are exposed to the target language input, the better they will perform on English argument structures. The findings imply that more exposure to the English language input and more knowledge in the English verbs argument structures result in more satisfactory performance in using the language being acquired. Learners need to be exposed to sufficient input of English verb classes in different syntactic structures to be oriented more with the syntax/semantics interface levels. The knowledge of English verbs argument structures with their semantic categories is very beneficial, which help the EFL learners to avoid notorious mistakes in their inter-language representations.

The results of the study may be taken into account both in the selection of texts for teaching English grammar and the trends applied for the process of teaching English argument structures. Furthermore, the results of the present task show that even the upper-intermediate learners who have spent several years studying English at the university level have problems with English verbs' argument structures. This may convey that such structures have received insufficient attention in the curriculum. It seems that more attention must be paid to these structures at the lower levels of English language instruction. Likewise, teachers need to be thoroughly familiar with the knowledge of syntax/semantics interface to fully understand the probable errors committed by their students and provide the necessary feedback to them for more orientation and practice.

Schmidt (1990), in his noticing hypothesis, pointed out that language learners acquire a grammatical form just through noticing and explicit attention to its kind. Moreover, Ellis (1990) suggested that teachers should use Consciousness Raising in teaching grammar. In this approach, language learners are made explicitly aware of the grammatical form, which is more helpful for them than providing them with repeated practice. The recommended activities are discovery-learning ones such as problem-solving tasks in which, for example, the teacher can give a set of sentences to the students and ask them to formulate the related grammatical rule.
As the final remarks, textbooks, class activities, and interactions are the primary sources of input exposure and familiarity with the syntax/semantics links of verbs in L2 (Juffs, 1998). Being exposed to enough verbs input is an essential condition for the EFL learners; on the other hand, lack of comprehension input prevents them from mastering grammar. Conclusively, challenging verb categories with their semantic types is suggested to be used and chosen by experience and be focused upon during the teaching process.

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