The role of Persian causative markers in the acquisition of English causative verbs

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Abstract

This project investigates the relationship between lexical semantics and causative morphology in the acquisition of causative/inchoative-related verbs in English as a foreign language by Iranian speakers. Results of translation and picture judgment task show although L2 learners have largely acquired the correct lexico-syntactic classification of verbs in English, they were constrained by the morphological patterns of their first language (L1) when learning zero morphology, especially with causative/inchoative verbs. Results also show the lack of the learners' proficiency level in all causative/inchoative contexts and in almost all contexts in grammatical judgment task.The transitivity errors documented are analogous to the overgeneralization errors reported in the L1 and L2 acquisition literature of English and other languages. In this study, we also suggest that L2 learners are atuned to the rich morphology of Persian and that the acquisition of derivational morphology and lexical semantics are not dissociated in these interlanguage grammars.

Keywords: Persian causative\inchoative, English causative\inchoative, morphology, Lexical Semantics.

1. Introduction

The theory of UG has led to important theoretical and empirical advances in both L1 and L2 acquisition. Much research on L2 acquisition in the 1980s explored whether or not L2 grammars are subject to the constraints imposed by UG on L1 grammars. Among others, there are mainly two opposing views with regard to the "UG-accessibility" problem. For the proponents of a UG-based L2 model, similar to L1 learners, L2 learners also make use of UG-based knowledge in acquiring a second language (e.g. Hawkins, et al 2006;Flynn 1987; Schwartz 1991, 1992; Thomas 1993; White 1985, 1989, 1990/91). For others, (adult) L2 acquisition is fundamentally different from L1 acquisition and is mediated by general problem-solving strategies, but these strategies are not necessarily linguistic-specific (e.g. Bley-Vroman 1989, 1990; Clashen&Muysken 1986; Schachter 1990).

What is important, however, is that no matter what theoretical position L2 researchers adopt, there are certain facts on which they all agree. Perhaps it is uncontroversial to assume that some of the processes which characterize L1 acquisition may not apply to L2 in the same way, as L2 learners have previous instantiations of another language and might tend to transfer abstract properties of their L1 to the L2. Moreover, with respect to the issue of ultimate attainment, it is generally assumed that while L1 learners reach a perfect mastery of their language, (adult) L2 learners do not. In other words, unlike L1 acquisition, the end result of L2 acquisition is rarely native-like.

Although much work within principle and parameter framework has focused on adult L2 acquisition, several studies have examined the acquisition of English by child learners (e.g. Hilles 1986, Hilles 1991; Lakshmanan 1994, Lakshmanan 1993/94; Lakshmanan&Selinker 1994).

The L2 acquisition of causative/inchoative has attracted some researches within the framework of generative grammar (Juffs, 1996; White et al., 1999 among others). This has been not only due the overall interest related to ongoing development of lexicon theories but also because of the fact that the acquisition of lexical items a very complex knowledge about lexical items contrary to what some structuralists thought (Bloomfield, 1933).

In this project, we focus on the L2 acquisition of the English causative/inchoative alternation in Persian L1 by Iranian EFL. In Persian causative/inchoative alternation is marked overtly with causative morphology and zero morphology with inchoative verbs. This project investigates whether overt morphology with causative in Persian facilitates English lexicon zero morphology or inchoative Persian zero morphology supports the acquisition of English inchoative contexts.

The general question guiding this study is whether causative morphology in Persian helps Persian learners of English to acquire English causative/inchoative verb classes. More specifically, we investigate (i) the role of the native language in the acquisition of change-of-state verbs that enter a causative/inchoative relationship and (ii) whether L1 and L2 acquisition show similar developmental paths in the acquisition and potential overgeneralization of this relationship, as existing studies appear to indicate. In this study, we show that although L2 learners are successful at figuring out the correct lexico-syntactic representation changing morphology of change-of-state verbs in English, some learners may still accept morphological errors with these verbs that can be traced back to their respective L1s. Because causative morphology is explicitly marked with causative verbs in Persian, these errors indicate that L2 learners rely on the lexico-syntactic representation of change-of-state verbs ([x CAUSE [y BECOME *predicate*]]).

In this study, we show although Iranian learners of English are successful at acquiring the causative/inchoative alternation in English, the role of the proficiency groups of the learners is almost lacking between the lower intermediate, upper intermediate and advanced groups. That is, whether some of the learners accept the constructions such as passive voice instead of active inchoative in the translation task or the misjudgment of peripheral causative instead of inchoative construction.

2.Research Hypotheses

1. EFL Iranians are less accurate in both causative non-psych and causative psych verbs than inchoative non-psych and inchoative psych verbs because causative verbs are morphological marked in Persian while inchoative ones are not.

2. EFL Iranians are more accurate in both Labile causative psych/non-psych than causative psych/non-psych because Labile psych and Labile non-psych verbs like their English counterparts are morphologically zero.

3. EFL Iranians are less accurate in both equipollent causative psych/non-psych verbs and Inchoative causative psych/non-psych because in Persian both equipollent causative and equipollent inchoative verbs are morphologically marked while they are morphologically zero in English. That is, in Persian causative equipollents are marked with 'kardan' "do" while the inchoatives are marked with 'sodan' "become".

3. Causative/inchoative in English & Persian
3.1 Causative/inchoative in English

It is well established in the linguistic literature on theoretical morphology that lexical entries of verbs contain information about argument structure; that is, what thematic roles (Agent, Theme, Goal, Experiencer, etc.) a particular verb subcategorizes for (Williams, 1981; Di Sciullo& Williams, 1987). Following a compositional approach to semantics and syntax, primitives of meaning like Dowty's (1979) CAUSE, BECOME, and BE predicates have been viewed as combining with each other and contributing compositionally to different lexical–aspectual meanings of verbs. It has also been proposed that the argument structure of verbs can better be expressed in terms of aspectual structure: the Agent is the argument of a CAUSE predicate, the Theme is the argument of a BECOME or BE predicate, and so on. For example, the lexical entry of the single word *break* will contain something like:

(1) a.(X (CAUSE (BECOME (Y broken)))

(1) b. John broke the vase.

The verb 'break' can alternate in two forms: a transitive form with an agent and theme causative (1a & b) and an intransitive form (the inchoative (2a &b)) with the argument which underwent change, the theme NP, in subject position:

(2) a.(Y(BECOME (broken))

(2) b. The vase broke.

3.2 Causative/inchoative in Persian

Persian is an SOV language. The way the Persian language expresses the relationship between causative and inchoative verbs distinguishes three main morphological patterns: causative, 'nondirectional' alternation of 'labile', equipollent and suppletive types. The suffix morpheme (-an) is attached to the stem of some verbs of

change of state and psych verbs to change inchoative into causative verbs. Concerning nondirectional alternation, there are some Persian verbs that they do not alternate between causative and inchoative. That is, they are labile. Moreover, some verbs may be called suppletive equipollent. They are actually light verbs. They include an adjective or noun which provides the conceptual interpretation of verbs plus 'Šodan' (become) forming compound verbs indicating inchoative and 'kardan' (do) indicating causative. Finally, suppletive verbs have different verb roots. What we conclude is that Persian causative   and   suppletive   equipollent   verbs   alternate morphosyntatically.

3.2.1Argument Structure of Causatives/non-Causative Psych-verbs in Persian

   Most causative psychological verbs in Persian are formed by a Pre-Verbal (PV) adjective and *kardan* 'to make' to form compound psych-verbs. The difference between causatives formed by causative – *a:n(i)d-an* added to the present stem of simple verbs and by using the auxiliary 'kardan' 'to make' to adjectives on one hand and non-causative non-psychological verbs formed by PV and *kardan* 'to do' on the other hand is crucial to identify the constraints of psychological verb classes. These verbs are called suppletive equipollent.

(3) Negaran kardan (Lit: DO worry+ Make) 'to worry'

(4)Foutkardan (Lit: death + TO DO) 'to die'

 (5) a.   kardan 'to make'[AS< x,>]

b. kardan   'to do' [AS< >]

3.2.1.1 Subject Nominals

A test to make a distinction between simple and complex causative psych-verb, and Light Verb (LV) is subject nominals. The agentive morpheme *–ande* 'er' is added to the stem of simple causative psych-verbs form subject nominals, while the LV *kardan* 'to do' and causative psych-verb with *kardan* 'to make' cannot be subject to this operation.

(6) simple causative:

atarsa:ndan   'to   frighten'   tars   (Stem)+ande--->tarsa:nande 'one who frightens'

(7) causative psych-verb with *kardan*
kardan 'to make' *kon (Stem)+ande --->?konande
'causer'

(8) LV:

kardan 'to do' *kon (Stem)+ande --->?konande 'doer'

kardan in both (7) and (8) seem odd and incomplete, while the simple causative verb with this morpheme is grammatical. Only full predicate can undergo this morphological process with LV and causative psych-verb with *kardan* 'to make':

(9) PV + Causative Psych-Verb with *kardan* 'to make'

motanafer + kardan + ande ---> motanafer konande 'one who disgust

(10) PV + LV:

emza: + kardan + ande ---> emza konande 'signer'

signiture + to do + -er --->signiture doer

The aim of our study is to investigate whether the Persian learners of English whose L1 causative/inchoative alternation is morphosyntactically instantiated or not. In other words, do the learners' background language variations in the instantiation of causative

morphology have any effect on English L2 causative acquisition?

We collected our data crosslinguistically from two groups of intermediate and advanced levels of Iranian speaking of Persian. We did two tasks: picture judgment task and translation task. We found the picture judgment task first-language-constrained variability in the second-language acquisition of argument-structure-changing morphology with causative verbs" interesting.

4. Method
4.1 Participants

The number of participants taking part in the current study was 59 all of whom were students of English literature and TEFL at undergraduate and graduate level at the University of Yazd, Iran. None of the subjects had any experience living in an English speaking country. The subjects' bio data is presented in Table 1.

Table1.*Participants' information*

	N.	Age range	Age mean	OQPT range
Lower Intermediate	24	18-25	21	28-36
Upper Intermediate	25	18-27	22	39-46
Advanced	10	21-28	23.5	48-59

In order to determine the subjects' proficiency level, they were asked to complete the Oxford Quick Placement Test (OQPT) (2001) which is a timed test and should be completed in 30 minutes. The test

consists of 60 items of vocabulary, grammar and cloze test. Based on the instructions given by the test organizers, the subjects who scored between 28 up to 36 were placed at the lower intermediate proficiency level. Those who scored between 39 up to 46 were placed at the upper intermediate level. Additionally, those whose score was within the range of 48 and 59 were categorized as the advanced proficiency level. The current study offers the results of the subjects' performance at all three proficiency levels.

4.2 Instruments

Two tasks were designed for the current study. The first task was a picture judgment task in which the subjects were required to express their judgment as to the acceptability of a given sentence on the basis of the given picture. The test included 30 pairs of sentences. Each pair compared the normal structure with the periphrastic one. Different contexts were tested in the task. Table 2 tabulates the different contexts along with the relevant tokens and examples.

Table 2 .*Distribution of types and tokens in the Picture Judgment Task*

	Type of Context	Tokens	Example
1	Causative non-psych verbs	Burn, boil, fry, run	Franco burned the letter.
2	Inchoative non-psych verbs	Burn, boil, fry, run	The letter burned.
3	Causative psych verbs	Frighten, annoy	The lion frightened the hunter.
4	Inchoative psych verbs	Frighten, annoy	The hunter was frightened.
5	Labile transitive verbs	Break, cook, cut	The thief broke the window.
6	Labile inchoative verbs	Break, cook, cut	The window broke
7	Equipollent transitive non-psychverbs	Open, melt, sink, fire	Tom opened the door.
8	Equipollent inchoative non-psychverbs	Open, melt, sink, fire	The door opened.
9	Equipollent transitive psych verbs	Surprise, tire	Mary surprised Tom.
10	Equipollent inchoative psych verbs	Surprise, tire	John was surprised.

The second task was a translation task in which the subjects were required to provide an English translation for 15 pairs of sentence.

Each pair assessed the relevant context in both transitive and inchoative case.

4.3 Procedures

Following the classification of the subjects into three proficiency groups, they completed the two tasks of picture judgment and translation.

In the picture judgment task, the subjects were presented with a picture in one of the above-mentioned context. Next to the pictures, there was a pair of sentences in the normal and periphrastic context. The subjects were required to judge the acceptability of the sentences using a Likert scale ranging from -3 to 3. An example is provided below where the subjects assess the degree of the acceptability of the sentences in terms of the given picture.

(11) a. The thief broke the window.   –3   –2   –1   0   1   2   3.
b. The thief made the window break.* –3   –2   –1   0   1   2   3.
The participants were instructed to read each pair of sentences task and select the appropriate point in the scale. Written instructions for the completion of the task were given and once each participant had read the instructions the researcher then asked each of them if they had clearly understood what they were being asked to do. The subjects were asked to put a circle around their preferred number. They were asked not to take too long in deciding which point should be selected in the scale.The task was not timed and the average amount of time to complete the task was 15 minutes.

The second task was a translation task where the subjects translated 15 pairs of sentences from Persian into English. No periphrastic items were included; however, the subjects could use the periphrastic patterns instead of the normal ones in their translations. All of the contexts in the previous task, i.e. picture judgment task, were used in this part. The key verbs in the sentences were presented in parentheses so as to make sure the subjects are

using the intended verbs. The subjects were asked to write their responses next to the Persian sentences. The translation task was not a timed task and the participants could complete the task in an average of 15 minutes.

4.4 Data Analysis

The variables investigated in the current study included a between subject factor, namely proficiency with three levels of low intermediate, high intermediate and advanced. The context was considered as a within-subject factor as all the learners went through each context.

Having collected the intended data, the researchers entered the raw data into the SPSS software (version 16). The positive points in the scale were collapsed into the value 1 whereas the negative points were collapsed into 0 for statistical purposes. The mean performance of the subjects in different proficiency levels were then calculated to serve as the basis for inferential statistics.

The data in the translation task were coded into SPSS as 1 or 0 corresponding to the correct and incorrect translations. The data were partially recoded to find out the distribution of different responses in the translation task. For instance, for the inchoative context, the subjects had different ways of rendering such structures including transitive and periphrastic construction.

The data in the study were analysed using the inferential statistics of mixed between-within subjects ANOVA. The post-hoc comparison of the results was carried out using Bonferoni adjustment. First, the results of the translation task will be presented along with the distribution of the subjects' preferences in rendering causative constructions into English. Then, the results obtained from the picture judgment task will be analyzed across different contexts as well as proficiency.

4.4.1. Results of the Translation task

In what follows, the subjects' responses in all causative and inchoative contexts will be presented both descriptively and inferentially. The contexts are discussed in terms of the type of the distribution of answers in causative, inchoative, periphrastic and passive conditions. The role of proficiency was not significant in any of the contexts in the translation task. Each context is discussed in turn below.

4.4.1.1 Causative and inchoative non-psych verbs

To find out if there was a significant difference between the causative and inchoative contexts, a mixed between-within ANOVA was carried out. There was a statistically significant main effect for the context [$F(1,56)4.655$, $p=0.035$, Wilk'slamda$=0.923$]. However, the effect size was moderate (0.07).

Proficiency did not play any role in the subjects' production of causative non-psych verbs ($p=0.557$) although there was a higher accuracy score for the advanced compared to the lower intermediate L2 learners (Mean difference$= .15$).

4.4.1.2 Causative and inchoative psych verbs

The results of the subjects' performance in causative psych verbs (e.g. frighten) were measured. The accuracy rate was .92 indicating that the learners experienced no problem in the production of causative psych verbs. About 4% of the subjects opted for the periphrastic context.

In order to compare the causative and inchoative psych verb contexts, a mixed between-within subjects ANOVA was conducted. The statistical results revealed a significant main effect of context [$F(1,56)8.336$, $p=0.006$, Wilk's Lambda$= 0.870$] with a large effect

size (Eta squared .13). No interaction effect was observed for proficiency and context (p=.425).

4.4.1.3 Labile transitive and inchoative verbs

Labile transitive and inchoative verbs such as *break* and *cook* are treated similarly in both Persian and English with no morphological markers.

In order to compare the transitive and inchoative labile constructions across the three proficiency groups, a mixed between-within subjects ANOVA was carried out. The results clearly revealed a significant main effect [F(1,56)1.619, p=0.001, Wilk's Lambda=0.257] with a large effect size (Eta squared .74). No interaction effect was observed between the context type and proficiency. Additionally, there was no significant effect for the between group variable of proficiency [p=0.081].

4.4.1.4 Equipollent transitive and inchoative non-psych verbs

As discussed in chapter two, the equipollent transitive and inchoative non-psych verbs such as *open* are treated differently in Persian. The transitive variant is associated with the light verb *kardan* (to do) whereas the inchoative variant can appear with the light verb *shodan*(to become). This is not the case in English where there is no morphological marker in this regard. .

A mixed between-within subjects ANOVA was conducted to compare the two contexts across proficiency groups. The results revealed a significant main effect of the context [F(1,56)1.521, p=0.001, Wilk's lambda=0.269] with a large effect size (Eta squared .73). No interaction effect was observed between the context type and proficiency (p=0.08). Additionally, there was no significant effect for the between group variable of proficiency [p=0.195].

4.4.1.5 Equipollent transitive and inchoative psych verbs

Equipollent psych verbs such as *surprise* have similar representations to the equipollent non-psych verbs in Persian. The English counterpart also varies in that the equipollent inchoative psych verbs require *to be*verbs before the participial form of the psych verb.

A mixed between-within subjects ANOVA was conducted to compare the two contexts across proficiency groups. The results revealed a significant main effect of the context [F(1,56)24.393, p=0.001, Wilk's Lambda=0.697] with a large effect size (Eta squared .30). No interaction effect was observed between the context type and proficiency (p=0.571). Additionally, there was no significant effect for the between group variable of proficiency [p=0.491].

4.4.1.6 Causative versus inchoative psych and non-psychverbs

As mentioned in the methodology chapter, the researchers predicted that EFL Iranians are less accurate in both causative non-psych and causative psych verbs than inchoative non-psych and inchoative psych verbs because causative verbs are morphological marked in Persian while inchoative ones are not. In order to verify such a prediction, the two contexts of causative psych and non-psych verbs on the one hand and the two contexts of inchoative psych and non-psych verbs on the other hand were merged. The results, as displayed in Table 3, show that the subjects performed better on the causative psych and non-psych verbs. The mean difference between the two contexts was 16.3.

Table 3 .*Subjects' performance in causative and inchoative verbs*

	N	Minimum	Maximum	Mean	Std. Deviation
Causative verbs	59	.38	1.00	.8729	.15131
Inchoative verbs	59	.25	1.00	.7097	.18633

A paired sample t-test was conducted to compare the causative and inchoative contexts irrespective of the proficiency factor as it did not turn out to have a significant difference. The t-test results revealed a statistically significant difference between the two contexts [t(58)=5.916. p=0.001] implying that the L2 learners can perform more satisfactorily in the causative than the inchoative context. The degree of the accuracy of the subjects indicated that the L2 learners fared better in the transitive psych and non-psych verbs than the inchoative counterpart. Although the subjects had a better accuracy rate in the inchoative form of the psych verbs, it was significantly different from the transitive variants. Given the above points, the first hypothesis indicating less accuracy in the transitive psych and non-psych verbs is rejected.

4.4.1.7 Labile versus causative psych and non-psychverbs

The second hypothesis addressed in this study was that the EFL learners are more accurate in Labile non-psych than causative psych/non-psych because Labile non-psych verbs like their English counterparts are morphologically zero. In order to test the hypothesis, the subjects' performance in labile causative constructions on the one hand and causative psych and non-psych constructions on the other hand was compared. The results, as displayed in Table 4, indicated

that the subjects had a better performance in the labile transitive context (Mean difference = 0.042).

Table 4 .*Subjects' performance in labile and causative constructions*

	N	Minimum	Maximum	Mean	Std. Deviation
Causative verbs	59	.38	1.00	.8729	.15131
Labile transitive verbs	59	.33	1.00	.9153	.17057

A paired sample t-test was carried out to compare the subjects' performance in the two contexts regardless of the proficiency factor. The inferential results revealed no statistically significant difference between the two contexts [t (58)=1.855, p=0.069] implying that the labile context does not have a superior effect compared to the causative psych and non-psych verbs. Given the above point, it can be concluded that the second hypothesis indicating the higher accuracy rate in labile constructions is rejected.

4.4.1.8 Equipollent causative versus inchoative psych and non-psych verbs

Table 5 below displays the results of equipollent causative and inchoative verbs in both psych and non-psych contexts merged. The L2 learners fared much better in the transitive variant than the inchoative one (Mean difference=0.31). The results of the paired-sample t-test revealed that there was a statistically significant difference between the two contexts regardless of the proficiency factor [t (58)=8.551, p=0.001]

Table 5.*Subjects' performance in equipollent causative and inchoative contexts*

	N	Minimum	Maximum	Mean	Std. Deviation
Equipollent causative	59	.50	1.00	.8326	.17465
Equipollent inchoative	59	.12	1.00	.5254	.22478

4.4.1.9 Equipollent versus labile verbs

In the third hypothesis, it was predicted that Persian L2 learners would be less accurate in both equipollent causative psych/non-psych verbs and Inchoative causative psych/non-psych because in Persian both equipollent causative and equipollent inchoative verbs are morphologically marked while they are morphologically zero in English. In order to test the hypothesis, the causative and inchoative contexts were compared separately.

Table 6 offers the descriptive results of the subjects' performance in the equipollent and labile transitive verbs. Although the L2 learners performed satisfactorily in both contexts, they had a better accuracy rate in the labile transitive context (Mean difference=0.08).

Table 6 .*Subjects' performance in equipollent and labile causative contexts*

	N	Minimum	Maximum	Mean	Std. Deviation
Equipollent causative	59	.50	1.00	.8326	.17465
Labile causative	59	.33	1.00	.9153	.17057

A paired sample t-test was conducted to see if the subjects' differences in the two contexts were statistically significant. The results turned out to be significant [t (58)=3.029, p= 0.004] implying that the L2 learners are less accurate in equipollent causative constructions.

Furthermore, the results of the subjects' performance in the equipollent inchoative context were compared to those of the labile inchoative context. Table 7 below offers the descriptive results. Unlike the equipollent transitive context, the subjects had a better performance in the equipollent inchoative constructions (Mean difference= 0.26).

Table 7.*Subjects' performance in equipollent inchoative and labile inchoative contexts*

	N	Minimum	Maximum	Mean	Std. Deviation
Equipollent inchoative	59	.12	1.00	.5254	.22478
Labile inchoative	59	.00	1.00	.2655	.34341

The results of the paired sample t-test revealed a statistically significant difference between the two contexts [t (58)= 5.325, p=0.001]. This implies that the L1 is not playing a role in this context.

Given the above points, it can be concluded that third hypothesis is confirmed in the case of equipollent transitive. This is not the case for the equipollent inchoative verbs where the subjects have a higher accuracy rate in the equipollent constructions. This can be partly due to the fact that in the equipollent inchoative context, the results of both psych and non-psych verbs were merged. Furthermore, such a merge included the equipollent inchoative psych verb in which the passive structure such as *John was surprised* was deemed to be licit.

4.2 The results of the picture judgment task

Table 8 tabulates the descriptive data of all the ten contexts studied in the picture judgment task. The learners' judgments were compare both in terms of the normal transitive/inchoative contexts and the

periphrastic ones (e.g. *John made the window break*). The results showed that the subjects generally had a better performance in the normal transitive and inchoative contexts than the periphrastic ones. This was more vivid in non-inchoative cases where the subjects categorically fared much better in the normal contexts.

As to the inchoative context, the subjects' performance in the normal contexts was generally better than the periphrastic contexts in the case of non-psych verbs. Nonetheless, this was not the case with the psych verbs where a reverse effect was observed. The subjects fared much better in the case of periphrastic contexts. This can be attributed to the frequency of exposure to the sentences such as *He got frightened* rather than *The window got broken.*

Table 8 .*Subjects' performance in normal and periphrastic contexts*

	N	Mean	SD	periphrastic	SD
Causative non-psych verbs	59	**.74**	.20	**.52**	.25
Inchoative non-psych verbs	59	**.84**	.18	**.41**	.24
Causative psych verbs	59	**.89**	.25	**.52**	.41
Inchoative psych verbs	59	**.51**	.43	**.75**	.37
Labile Transitive verbs	59	**.93**	.15	**.27**	.31
Labile Inchoative verbs	59	**.49**	.36	**.69**	.31
Equipollent transitive non-psychverbs	59	**.90**	.17	**.52**	.32
Equipollent inchoative non-psychverbs	59	**.67**	.27	**.63**	.30
Equipollent transitive psych verbs	59	**.76**	.35	**.56**	.38
Equipollent inchoative psych verbs	59	**.65**	.41	**.86**	.29

A mixed between-within subjects ANOVA was conducted to compare the performance of different proficiency groups in normal and periphrastic contexts. Table 9 tabulates the inferential results for different transitive and inchoative contexts.

Table 9 .*Inferential statistics for the comparison of normal and periphrastic contexts*

	Wilks' lambda value	F	p-value for context	Partial Eta squared	P-value for proficiency
Causative non-psych verbs	.770	16.75	**0.000**	.23	**.920**
Inchoative non-psych verbs	.315	1.21	**0.000**	.68	**.180**
Causative psych verbs	.651	30.06	**0.000**	.35	**.888**
Inchoative psych verbs	.807	13.43	**0.001**	.19	**.617**
Labile Transitive verbs	.213	2.06	**0.000**	.79	**.332**
Labile Inchoative verbs	.943	3.36	**0.072**	.05	**.217**
Equipollent transitive non-psychverbs	.484	59.63	**0.000**	.52	**.763**
Equipollent inchoative non-psychverbs	.970	1.71	**0.196**	.03	**.010**
Equipollent transitive psych verbs	.851	9.82	**0.003**	.15	**.426**
Equipollent inchoative psych verbs	.846	10.16	**0.002**	.15	**.001**

The above table shows that there was a significant main effect of context for all causative (transitive) contexts in both psych and non-psych verbs (p<0.05) indicating that the subjects had a more definitive judgment as to the grammaticality of causative verbs compared to the periphrastic ones.

The comparison of the results in the inchoative context showed that there was no statistically significant difference between the two normal and periphrastic contexts in labile inchoative (p=0.072) and equipollent inchoative non-psych conditions (p=0.196).

Proficiency did not play a significant effect in 8 out of 10 contexts. The proficiency groups were significantly different from each other in the two equipollent inchoative contexts where the lower intermediates were significantly different from the upper intermediate and advanced subjects; however, there was no significant difference between the upper intermediates and advanced group.

The results from both the production and picture judgment tasks will be discussed in detail in the next chapter.

5. Discussion & Conclusion
5.1 The Role of Persian Causative/inchoative Lexico-morphology

There are a lot of researches on the mother tongue acquisition of the causative/inchoative alternation both in English (Pinker, 1989; Braine *et al.,* 1990; Gropen*et al.,* 1996; Brooks and Tomasello,1999) and in morphologically complex languages (Figueira, 1984; Aksu-Koç&Slobin, 1985; Morikawa, 1991; Berman, 1993; 1994; Pye, 1994; Allen, 1996; Borer, 1997). This project is designed to determine the role of both Persian L1 explicit morphological, i.e., causative Persian morphology and lexical, i.e., Persian labile verbs in the L2 English acquisition of causative/inchoative verbs. The causative verbs with explicit morphology determines the role of L1 causative morphology on the acquisition of English causative constructions, while some inchoative verbs in Persian which are morphological zero will shed some light on the role of L1 lexicon on the acquisition of their counterparts in English.

Almost the ANOVA test results of all causative/inchoative contexts against the learners' proficiency were not statistically significant. The discussion below then focuses on the causative/inchoative contexts in both translation and grammatically judgment tasks.

The obtained results in the previous chapter showed that overt causative morpheme enhanced the chance for the higher correct application of causative construction than the inchoative form. Persian is a morphologically complex language. In Persian the split between causative and inchoative is explicitly marked on causative verbs. In English this morphological distinction is zero. The reason that the subjects in causative non-psych contexts performed statistically better than those of inchoative counterparts was that Persian causative morphology facilitates English causative contexts.

5.2 Causative/Inchoative Psychical change of State verbs

The researchers working on the acquisition of causative vs. inchoative are classified into two groups. Some experts claim that morphological markers distinguishing causatives from inchoatives play a major role in the acquisition of causative\inchoative verbs, while others believe that the type of lexicon regardless of explicit causative morphology determine the L2 acquisition. Kellerman (1978; 1985) and Montrul (1999a,b; 1999b; 2001) have carried out some researches on the acquisition of causative/inchoative verbs. They concluded that L2 learners had more problems with the inchoative form than with the causative one.

In common with L1 learners, adult L2 learners make overgeneralization errors with the argument complement and with the argument structure physical state morphology. While overgeneralization errors might indicate misanalysis at the argument complement in the two acquisition situations, errors with the morphology are certainly different in the two cases. Studies by Moore (1993), Juffs (1996); Montrul (1999a; 1999b) and Toth (1999) clearly showed that the errors observed in L2 acquisition were constrained by the morphological patterns of the learners' L1s. For example, in the oral production task administered to the participants, Juffs (1996) found that Chinese learners of English uttered more periphrastic forms (*John made the ball rolldown the hill*) than lexical causatives (*John rolled the ball down thehill*) with locative, change of state and causative psych verbs, because causative morphology is expressed overtly in Chinese by the verb *–shi*and zero-morphemes are not possible. Both Montrul (1999a; 1999b) and Toth (1999) have independently shown that English-speaking learners of Spanish initially omit the reflexive morpheme in the inchoative form, accepting and producing errors like *La ventanarompió*('The window broke') instead of the correct form with the reflexive (*La ventana se*

rompió). Montrul (2001) showed that Spanish-speaking learners of English rejected zero-derived forms (*The window broke*) and accepted inchoatives with periphrastic *get (The window got broken*), which the native speakers found more marginally acceptable than inchoatives. In short, these morphological errors can be accounted for by the way in which causation or change of state is morphologically encoded in the learners' L1.

5.3 Causative/inchoative psych-verbs

As for investigations of causative psych verbs, most studies carried out to date have been concerned with the acquisition of the peculiar argument structure (thematic) and syntactic properties of these verbs in English. The few studies that report data related to these verbs in L1 acquisition indicate that these verbs are problematic for children as well. Lord (1979) documents errors in which experiencers incorrectly appear in subject position with these verbs (*You keep on talking to her! And that makes me bother!* [3;11]), an error also reported by Figueira (1984) in BrazilianPortuguese. Similarly, in an experimental study, De Guzman (1992) found that Tagalog children who took a comprehension and an elicited production task performed significantly more accurately in both tasks with psych verbs with topic morphology on the experiencer rather than with topic morphology on the theme, even when theme topics are most common in the language. These findings suggest that, despite the frequency of object experience verbs in the input (at least in English), make errors that are consistent with the operation of a thematic hierarchy, which is a presumed UG component.Within the generative framework, White *et al.* (1999) investigatedthe L2 acquisition of argument structure of psychological verbs such as *fear* (Experiencer–V–Theme) and *frighten* (Theme–V–Experiencer). Results of this study showed that French-speaking and Japanese-speaking learners of English had difficulty with the

argument structure of the *frighten* class because the Theme, rather than the Experiencer, is in subject position.

What emerges from the studies reviewed above is that in L1 acquisition, researchers seem to consider errors of omission or addition of derivational morphology as reflecting an underlying misanalysis of the argument structure properties of the verbal roots. In L2 acquisition, however, the opposite relationship betweenacquisition of morphology and argument structures seems to obtain. That is, while learners also display argument structure errors with change of state verbs and with psych verbs, and researchers have argued that the same linguistic mechanisms as in L1 acquisition might be involved, the errors also appear to reflect superficial problems with the ways in which the argument structure changing morphology is spelled out in the L1 and the target language. What none of the L2 acquisition studies have systematically examined is whether difficulty with non-overt morphology would extend to the two classes of verbs, and whether overt morphology in other languages would ease the task of learning psychological verbs, despite the misalignment problems with thematic roles.

The construction of passive form in inchoative psych-verbs is grammatical while that of non-psych verbs is ungrammatical. The percentage of passive voice in inchoative psych and non-psych verbs exceeds that of causative verbs in general moreover, the percentage of inchoative psych verbs surpasses inchoative non-psych verbs. However, the application of passive form with inchoative non-psych verbs like (The window was broken) is rejected. This sentence is not ungrammatical by itself, it is no longer an inchoative change of state verb. That is, it functions as causative verb which is passivized. The results concerning the mean percentage of passive voice in both causative inchoative psych and non-psych contexts were high (See the tables concerning inchoative in translation contexts). In fact the use of passive voice with inchoative verbs indicates that the learners shift

intransitive inchoative verbs into transitive causative ones and then passivize them to form one place predicate passive voice. They are actually shifting the thematic role of natural external agents like natural forces of the inchoative verbs into real agent of two place transitive converted into passive voice. Concerning grammatical judgment task, we find out that the mean percentage of peripheral 'make' in the context of inchoative verbs is even higher than the correct intransitive inchoative verbs (See tables 7 and 8).

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