

Causative-Inchoative Alternation in Persian

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1. Background and Introduction:

1.1 COS verbs in causative-inchoative alternation:

The first thorough analysis of change of state (COS) verbs and their behaviour in causative-inchoative alternation is attributed to Jespersen (1927). In a chapter discussing transitivity, he asserts that it is impossible to sharply divide English verbs into transitive and intransitive since many verbs participate in both constructions. He analysed these often alternating verbs in five major categories of “move and change”, de-adjectival, substantives, causative-inchoative and activo-passives.¹ He defined the “move and change” class as “semantically related verbs each with two meanings: (1) to produce a movement or change in something and (2) to perform the same movement or undergo the same change.” (Jespersen, 1927)

- (1) a. move a stone.
b. the stone moves.
- (2) a. break the ice.
b. the ice breaks.
- (3) a. improve an invention.
b. his health improved. (Jespersen, 1927)

Although behaviour of COS verbs in transitive and intransitive constructions was studied by many later linguists (Lakoff 1965; Hall 1965; Halliday 1967; Anderson 1968; Chomsky 1970; Fillmore 1970), it was Smith (1970) who proposed the semantic features of “external control” and “independent activity” to account for their syntactic properties. He argued that while transitive verbs need external agents controlling the activity and cannot happen independently (4), intransitive verbs denote activities that happen independently and refuse an external agent (5).

- (4) a. The soldiers destroyed the city.
b. *The city destroyed.
- (5) a. *The green monster shuddered Mary.
b. Mary shuddered. (Smith, 1970)

On the other hand, COS verbs can both denote events controlled with external agents (6) and events with relative independence (6). This explains the “double-facedness” of this class noted by Jespersen(1927).

- (6) a. Kim broke the vase.
b. The vase broke. (Koontz-Garboden, 2009)

Smith (1970)’s analysis was summarized in the following table:

¹ “move and change” and deadjetival verbs under Jespersen’s classification were later on grouped to form the COS verbs.

Verb \ Feature	Independent Activity	External Control
Transitive	-	+
Intransitive	+	-
Change of State	+	+

Table 1: Smith (1970)'s feature distinction

Levin (1993) provided a comprehensive list of alternating COS verbs with prototypes such as *break*, *roll*, *bend* and *cook*. Later on and following Smith's general line of reasoning, Levin and Rappaport Hovav (1995) argued that it seems more plausible to distinguish between internally and externally caused eventualities rather than using the notion of "control" since many internally caused eventualities are non-agentive and thus internally uncontrollable.²

They explained that the nature of a verb like *break* implies the existence of an "external cause" like an agent or an instrument that brings about the change of state in the entity while a verb like *bloom* describes a change of state with internal source and coming about naturally for the intrinsic properties of the entity. It is true that some intrinsic properties of a vase make it "breakable" or we can imagine an external cause for the action of blooming (a gardener), but it is argued that the lexical encoding of a verb imposes certain stereotypical construal on events rather than describing all the ways we can imagine that event happening.

They also suggested that externally caused COS verbs like *break* participate in causative-inchoative alternation whereas the internally caused COS verbs do not. Consequently a verb like *bloom* is expected to be used intransitively while a verb like *break* appears in both transitive and intransitive constructions. This claim was tested by McKoon and Macfarland (2000) using a corpus analysis of approximately 180 million words.

They examined 21 internally caused COS verbs listed by Levin and Rappaport Hovav (1995) in corpus sentences and calculated the probability of such verbs' occurrence in a transitive construction. Surprisingly, the majority of these verbs had transitive uses and in fact for some of them like *corrode* the probability was higher than 0.5. On the other hand, another analysis showed that many externally caused COS verbs like *explode* have a probability of less than 0.1 to appear in transitive sentences. These results showed that participation in transitive constructions cannot be a distinguishing factor for externally vs. internally caused COS verbs.

They also demonstrated that, contrary to what Levin and Rappaport Hovav (1995) claimed, the subject of intransitive sentences with internally caused COS verbs and object of transitive sentences do not show any significant or systematic thematic restriction. However, when internally caused COS verbs appear in transitive constructions, their subjects seem to be thematically restricted.

In this paper, I investigate causative-inchoative alternation in Persian and compare Persian data against empirical results from McKoon & MacFarland (2000). Of course a thorough and insightful analysis and comparison of Persian causative-inchoative alternation and the data from studies mentioned, is beyond the scope of this essay. Therefore I rather seek to briefly introduce Persian in

² I do not think that as Levin and Rappaport Hovav (1995) claim Smith (1970) used the notion of "internal control"; Smith's original paper clearly states "independent activity". Nevertheless I follow Levin and Rappaport Hovav's terminology.

the next section and then explain the behaviour of the language in regards to the causative-inchoative alternation in section 2. In the third section I will compare the data from Persian with McKoon & MacFarland's corpus search and finally, I will suggest some conclusions and implications of this study.

1.2 Phrase structure and compound verbs in Persian:

Persian is an SOV language with standard Nominative-Accusative case marking in which only the object of the transitive sentence is marked. The verb normally agrees through inflections with number and person of the subject. (Mahootian 1997; Lambton 1967)

- (7) to livân-râ³ shekast-i
 you glass-ACC broke-2.Sg (Mahootian, 1997)
 "You broke the glass (container)"

Persian verb inventory is almost entirely⁴ comprised of a rather small number of simple verbs and a large number of complex predicates. These complex predicates contain a light verb (LV) and a preverbal element which can be a noun (8), an adjective (8), an adverb (8) or a preposition phrase (8). (Megerdooian, 2001)

- (8) a. N + LV:
 xar kardan⁵ (donkey doing) 'to fool'
- b. A + LV:
 pahn kardan (wide doing) 'to widen, to spread'
- c. Adv + LV:
 bâlâ âvardan (up bringing) 'to vomit'
- d. PP + LV:
 be bâd dâdan (to wind giving) 'to waste'
- (Follia et al. 2005)

2. Causative-Inchoative alternation in Persian:

2.1 Passive vs. Inchoative:

Whether Persian uses passive, inchoative or both constructions, has been a matter of debate among linguists. However, the core argument seems to be whether "passive" and "inchoative" can be differentiated in the language. Karimi (2005) and Follia et al. (2005) following Moyne (1974) argue that there is no passive construction similar to what is

³ Modern Persian is highly diglossic. While Mahootian (1997) uses the colloquial **o** as the object marker, I have changed it to the high variety **ra** for consistency.

⁴ There are few verbs equivalent to English phrasal verbs too.

⁵ *an* at the end of the verbs is the infinitival marker.

observed in English and that the “so-called passive in Persian” is nothing but the unaccusative complex predicate. On the other hand, Tabib-Zadeh (2006) places the supposed inchoative forms under the passive category and distinguishes only between active and passive voice. Palmer (1971) and Dabir-Moghaddam (1985) argue that while Persian has inchoative complex predicate forms, there is a clear passivisation procedure producing passive constructions in the language.

Rasekh-Mahand (2007) explains that although many Iranian linguists consider inchoative construction as voice along with active and passive, causativity and voice should be differentiated in Persian. Following Haspelmath (2002) he asserts that while passivisation affects the syntactic structure of the language and keeps the argument structure intact, causativity influences the argument structure directly.

- (9)
- | | | | | |
|----|--------------------------------|-----------------|----------|--------|
| a. | Ali | goldân-râ | shekast | |
| | Ali | vase-ACC | broke | |
| | 'Ali broke the vase' | | | |
| b. | goldân | (tavassote Ali) | shekaste | shod |
| | vase | (by Ali) | broken | became |
| | 'The vase was broken (by Ali)' | | | |
| c. | goldân | shekast | | |
| | vase | broke | | |
| | 'The vase broke' | | | |
| d. | * goldân | tavassote Ali | shekast | |
| | vase | by Ali | broke | |
| | 'The vase broke by Ali' | | | |

The Persian verb *shekastan* ‘to break’ normally requires an agent and a patient (10.a). By a syntactic procedure⁶, the patient can sit as the subject of the passive sentence (10.b) but whether the agent is present in a PP or not, the verb still indicates that the action has had an agent. However, in an inchoative construction (10.c), the argument structure is changed so that the verb appears agent-less. Therefore adding the agent in a prepositional phrase makes the sentence ungrammatical (10.d).

The Persian grammarian Phillott (1911) seems to have the best description of passive in Persian:

“The Passive Voice is much less used than in English. The general rule is not to use it, if it can be avoided; in other words, the passive is used only for some special signification, or if the subject is unknown, or if known it is desired to avoid mentioning it. Only transitive verbs have a passive voice.”

⁶ Moving the patient to subject position, adding *e* to the past tense root of the verb (*shekast* → *shekast-e*) and adding *shod* to the resulting form (*shekaste shod*). (Lambton, 1967; Mahootian, 1997; Tabib-Zadeh, 2006)

Rasekh-Mahand (2007) concludes that Persian distinguishes between active-passive voice and causative-inchoative constructions. While passive form exists in the language, it is inactive and avoided as long as an inchoative or even active form can carry the message. This has made causative-inchoative alternation highly active and productive in Persian.

2.2 Formal Types:

Following formal types of causative-inchoative verb pairs proposed by Haspelmath (1993), Persian uses all types of alternations except “anticausative”. (Rasekh-Mahand, 2007) Persian alternation types with examples are as follows:

- I. Causative: The inchoative form is basic and the causative form is derived. Jespersen (1927), under causative-inchoative in his verb categories mentioned in the introduction section, explains that Old English used *-jan* for this purpose resulting in modern pairs as sit/set or lie/lay. In Persian this is achieved by adding the suffix *ân* to the inchoative form (Rasekh-Mahand, 2007) :

(10)	Base (inchoative)		Derived (Causative)	
	jooshidan	‘to boil’	jooshândan	‘to boil’
	tarsidan	‘to scare’	tarsândan	‘to scare(frighten)’
	poosidan	‘to corrode’	poosândan	‘cause to corrode’
	khandidan	‘to laugh’	khandândan ⁷	‘cause to laugh’

- (11) a. bache tarsid
child scared
‘The child scared (was frightened)’
b. sag bache-râ tarsând
dog child-ACC scared
‘The dog scared the child’

- II. Labile: the same verb is used both in the causative and inchoative sense (10.a and c). English predominantly uses this format while it is relatively rare in Persian :

- (12) a. Ali ghazâ-râ pokht (Rasekh-Mahand, 2007)
Ali food-ACC cooked
‘Ali cooked the food’
b. ghazâ pokht
food cooked
‘The food is cooked’

⁷ ‘laugh’ is commonly argued to be a verb that cannot release control to an external agent and therefore become causative. (Haspelmath, 1993; Levin & Rappaport Hovav, 1995) This is certainly not the case in Persian.

(13) a. bache âb-râ rikht (Rasekh-Mahand, 2007)
 child water-ACC spilled
 ‘The child spilled the water.’

b. âb rikht
 water spilled
 ‘water spilled’

III. Suppletive: different verb roots are used for these alternations. An example in English and as Haspelmath (1993) claims most languages would be ‘to kill’ and ‘to die’:

(14) a. saratân Ali-râ kosht
 cancer Ali-ACC killed
 ‘Cancer killed Ali’

b. Ali mord
 Ali died
 ‘Ali died’

(15) a. bâd sib-râ andâkht
 wind apple-ACC dropped
 ‘The wind dropped the apple’

b. sib oftâd
 apple dropped
 ‘The apple dropped’

IV. Equipollent: both form are derived from the same stem but with different affixes. This is the most frequent and productive alternating form in Persian. Instead of affixes, two light verbs, often *kardan* ‘to do’ and *shodan* ‘to become’, are added to the preverbal element to make the causative or inchoative complex verb respectively.⁸ (Rasekh-Mahand, 2007)

(16) a. âftâb âdam-barfi-râ âb kard (Megerdooimian, 2001)
 sunlight man-snowy-ACC water did
 ‘The sunlight thawed⁹ the snowman’

⁸ Some other light verb pairs which participate in the alternation: *zadan* (to hit) / *khordan* (to receive a hit) – *dadân* (to give) / *yâftan* (to get or find)

⁹ Megerdooimian (2001) translates the verb as ‘to melt’ but I believe since âb *shodan/kardan* is mainly used for ice, snow, etc. ‘to thaw’ is a more accurate translation.

- b. âdam-barfi âb shod
man-snowy water became
'The snowman thawed'
- (17) a. Ali kêr-râ tamâm kard
Ali work-ACC complete did
'Ali finished the work'
- b. kêr tamâm shod
work complete became
'The work finished.'

3. Comparison with English verbs:

In this section I will compare a list of non-alternating COS verbs provided originally by Levin & Rappaport Hovav (1995) and further analysed and narrowed down for corpus search by McKoon & Macfarland (2000), against their Persian equivalents to see if the data from Persian match McKoon and Macfarland's results.

Here is the list of internally caused COS verbs investigated by McKoon and McFarland (2000) sorted by the probability of occurrence in transitive constructions:

Verb	Probability	Verb	Probability
tarnish	0.98	rot	0.08
erode	0.67	germinate	0.06
corrode	0.63	wilt	0.06
ferment	0.54	stagnate	0.02
swell	0.37	deteriorate	0.01
sprout	0.26	bloom	0.00
blister	0.22	blossom	0.00
rust	0.14	decay	0.00
wither	0.12	flower	0.00

Table 2: McKoon & Macfarland (2000)'s non-alternating verb list and their probability of occurrence in transitive constructions

I have divided the table into two groups of high probability (>0.5) and Low probability (<0.5) verbs and I will show that equivalent Persian verbs of these groups show different behaviour. The equivalent Persian verbs of the high probability group participate in the causative inchoative alternation of some sort or they are originally causative while the equivalent Persian verbs of the low probability group have only an inchoative form.

As it can be seen in the table, *tarnish* has such a high probability that McKoon and Macfarland considered it “misclassified”. The closest Persian equivalent of this verb shows an equipollent alternation¹⁰:

- (18) a. rotoobat talâ-râ keder kard
 moisture gold-ACC tarnished did
 ‘Moisture tarnished the gold.’
- b. talâ keder shod
 gold tarnished became
 ‘The gold tarnished.’

However, for *erode*, Persian uses a causative verb (21a) that has no inchoative form and can only be passivised (21b):

- (19) a. âb sang-râ mi-farsây-ad
 water stone-ACC PRES-erode-3.Sg
 ‘Water erodes the stone.’
- b. sang farsood-e mi-shav-ad
 stone eroded PRES-become-3.Sg
 ‘The stone is eroded.’

Therefore it seems that Persian considers erosion as an action caused by an agent such as “the wind”, “water”, “humans” or even “time”. On the other hand, it uses a causative alternation to incorporate the basically inchoative *poosidan* ‘corrode’ (22a), in a transitive sentence (22b):

- (20) a. felez mi-poos-ad
 metal PRES-corrode-3.Sg
 ‘Metal corrodes.’
- b. âb-namak felez-râ mi-poos-ân-ad
 water-salt metal-ACC PRES-corrode-CAUSE-3.Sg
 ‘Saltwater corrodes the metal.’

For *ferment* also, we can see an equipollent alternation again:

- (21) a. châi-ra takhmir mi-kon-and
 tea-ACC ferment PRES-do-3.PI
 ‘(They) ferment the tea’

¹⁰ Since the causative-inchoative alternation is not much discussed in Persian linguistics literature, it is hard to find relevant examples for the topic. Therefore in this section I will mainly use my own examples. Other than checking with native speakers, the validity of these examples has been confirmed by online search of Persian academic and news websites.

- | | | | |
|----|----------------|---------|------------------|
| b. | châi | takhmir | mi-shav-ad |
| | tea | ferment | PRES-become-3.Sg |
| | 'Tea ferments' | | |

But the pattern suddenly changes when we investigate the low probability verbs. There is no alternating form for these verbs and their only form has an inchoative meaning. However, the form itself is not the usual inchoative but rather the causative form as if the entity undergoing change is the agent and in control of the action. For example *bâd kardan* 'swell' means only inchoatively but using the causative form *kardan* 'to do':

- (22) a. sar-am bâd kard
 head-my swell did
 'My head swelled.'

As explained in the previous section, in an equipollent alternation, normally the inchoative form is marked with the verb *shodan* 'become', while for these verbs *kardan* 'do' is used and there is no causative form. A native Persian would judge 'swelling', as an action that the head itself does and not caused by any external agent. The same pattern and rule applies to some other low probability verbs:

- (23) a. dast-am tâval zad (kard¹¹)
 hand-my blister hit
 'My hand blistered.'
- b. *dast-am tâval shod
 hand-my blister became

- (24) a. derakht e sib shokoofe kard (zad)
 tree of apple bloom did
 'The apple tree bloomed.'¹²
- b. *derakht e sib shokoofe shod
 tree of apple bloom became

- (25) a. derakht e sib gol dad
 tree of apple flower gave
 'The apple tree flowered.'
- b. *derakht e sib gol yâft
 tree of apple flower found

¹¹ In modern Standard Persian LV *zad* is usually used for 'blister' but in different/older varieties *kard* is also used.

¹² The same verb is used for 'blossom' as well

- (26) a. châghoo zang zad
 knife rust hit
 ‘The knife rusted.’
- b. *châghoo zang khord
 knife rust received
- (28) a. gol e roz javâne zad
 flower of rose germinate hit
 “The rose germinated.”
- b. *gol e roz javâne khord
 flower of rose germinate received

Finally, among the low probability verbs, the equivalent of ‘wilt’ and ‘wither’ in Persian is a simple verb which cannot be made causative¹³:

- (29) a. gol e roz pajmord
 Flower of rose withered
 ‘The rose withered.’

4. Conclusion and Implications:

The data from Persian show regularities which match the results of corpus search by McKoon & Macfarland (2000) on the list of verbs provided by Levin and Rappaport Hovav (1995). As explained in the introduction, while further comparison of Persian data with the McKoon & Macfarland’s study yields even more interesting results, it is beyond the scope of this paper. Furthermore, I have not discussed the implications of causative-inchoative alternations in Persian, especially the application of the causative Light Verb in inchoative forms, for the alternating and non-alternating verbs’ general argument structure which is a disputed and vast area of research in its own right. The extensive causative-inchoative constructions and the structure of compound verbs in Persian make this language a potential area of research on causative-inchoative alternations and further research on Persian can certainly help the development of the topic.

¹³ I do not analyse ‘rot’ and ‘decay’ in this section since the Persian equivalent of these verbs seems to have a broader area of application and thus not really equivalent to these verbs.

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