

## Complex Predicates in Persian

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### 1 Introduction

#### Theories of Argument Projection

(i) Meaning of the verb determines argument structure

(Jackendoff 1990, Levin & Rappaport Hovav 1996, Alsina 1993, Grimshaw 1990, Pustejovsky 1995, among others )

- richly annotated lexical entries
- no interaction between the lexicon and the syntax
- argument structure changing operations in lexicon or in syntax, but determined by lexical semantics of the verb

(ii) Structure determines verb meaning

(Borer 1994, Ghomeshi & Massam 1994, Hale & Keyser 1993, Marantz 1997, among others)

- lexical entry alone doesn't determine argument structure
- event construal subject to syntactic principles
- syntactic configuration and the meaning of the verb are derived from contribution from various constituents of the predicate

⇒ What constitutes a lexical item?

- (i) Complex lexicon with formal properties projected deterministically
- (ii) Minimal lexicon - Computational system derives the formal properties

#### Evidence and Proposal

- Complex Predicates in Persian:
  - transitivity alternations
  - contribution of parts; decompose into primitive elements ⇒ event structure
  - extend to unergative verbs
- Predicate-based approach to verb formation
  - syntactic/semantic properties can be derived from the structure and don't need to be listed as a lexical entry
  - lexicon: roots and functional elements

### 2 Event Structure

*Complex Predicates*: predicates that are composed of more than one grammatical element but behave as a simple predicate.

- Complex predicates in Persian consist of a preverbal element and a light verb.

- |     |                  |                   |                      |
|-----|------------------|-------------------|----------------------|
| (1) | shekast dâdan    | (defeat give)     | 'to defeat'          |
|     | gul zadan        | (deceit hit)      | 'to deceive'         |
|     | xoshk kardan     | (dry make)        | 'to dry (tr.)'       |
|     | e'lâm kardan     | (announcement do) | 'to announce'        |
|     | âsib didan       | (damage see)      | 'to be damaged'      |
|     | pâyân yâftan     | (end find)        | 'to end (intr.)'     |
|     | na're keshidan   | (yelling pull)    | 'to yell'            |
|     | e'teqâd dâshtan  | (belief have)     | 'to believe'         |
|     | pas dâdan        | (back give)       | 'to return'          |
|     | be gerye oftâdan | (to cry fall)     | 'to start crying'    |
| (2) | imeyl zadan      | (email hit)       | 'to email'           |
|     | klik kardan      | (click do)        | 'to click (a mouse)' |

- Light verbs do not have the same argument structure as their heavy counterpart

- (3) nâder ketâb- ro be hushang dâd  
Nader book - Obj to Hushang gave  
'Nader gave the book to Hushang.'

- (4) a. *nâder estefâ' dâd*  
Nader resign gave  
'Nader resigned.'
- b. *nâder in pesar-ro neJât dâd*  
Nader this boy - Obj rescue gave  
'Nader rescued this boy.'
- c. *nâder ketâb-ro ruy-e miz qarâr dâd*  
Nader book - Obj on-Ez table setting gave  
'Nader put the book on the table.'

- ⇒ Preverbal elements provide the substantive information to the complex predicate.  
⇒ Preverbal elements affect the internal arguments of the verbal predicate.

*Past proposal:* All argument structure is contributed by the preverbal element (Mohammad and Karimi 1992, Karimi-Doostan 1997, Vahedi-Langrudi 1996, among others).

- Light verbs affect the presence of the external argument (Transitivity alternations).

- (5) a. *pezeshk mariz-ro shafâ dâd*  
doctor patient-Obj cure gave  
'The doctor cured the patient.'
- b. *mariz shafâ yâft*  
patient cure found  
'The patient was cured.'
- (6) a. *hushang mâni - ro gul zad*  
Hushang Mani - Obj deceit hit  
'Hushang deceived Mani.'
- b. *mâni gul xord*  
Mani deceit ate/collided  
'Mani was deceived.'
- (7) a. *hushang dar-ro bâz kard*  
Hushang door-Obj open made  
'Hushang opened the door.'
- b. *dar bâz shod*  
door open became  
'The door opened.'

- Light verbs contribute to the aspectual interpretation of the CP (Karimi-Doostan 1997)

- (8) a. *dast-e dâryush dar yek sâniye /?\*sâ'at-hâ dard gereft* [bounded]  
hand -Ez Dariush in one second / hour-Plur pain caught  
'Dariush's hand (started to) hurt in one second / ?\*for hours.'
- b. *dâryush ?\*daryek sâniye / sâ'at-hâ dard keshid* [unbounded]  
Dariush in one second / hour-Plur pain pulled  
'Dariush hurt ?\*in one second / for hours.'

- Preverbal elements also contribute to the verbal aspect.

- (9) a. *hâle \*dar nim sâ'at / sâ'at-hâ gerye kard* [unbounded]  
hale in half hour / hour-Plur crying did/made  
'Hale cried \*in half an hour / for hours.'
- b. *hâle dar nim sâ'at / #sâ'at-hâ qofl-e dar-ro baz kard* [bounded]  
hale in half hour / hour-Plur lock-Ez door-Obj open did/made  
'Hale opened the door lock \*in half an hour / for hours.'

**Preverbal element:**

- substantive information
- internal arguments

**Light verb:**

- external arguments
- aspect & event information  
(causation, change of state, duration, inception)

### 3 Transitivity Alternations

- The Causative/Inchoative alternation: *shodan* (become) vs. *kardan* (do / make)

- (10) a. âdam barfi *âb shod*  
 snowman water became  
 'The snowman melted.'  
 b. âftâb âdam barfi -ro *âb kard*  
 sun snowman-Obj water made  
 'The sun melted the snowman.'
- (11) a. dar *bâz shod*  
 door open became  
 'The door opened.'  
 b. hushang dar-ro *bâz kard*  
 Hushang door-Obj open made  
 'Hushang opened the door.'
- (12) a. pesar-e kuchak dar daryâ *qarq shod*  
 boy-Ez small in sea drown became  
 'The little boy drowned at sea.'  
 b. mi-guyand ke in mard pesar-e kuchak-ro *qarq kard*  
 Imp-say-3pl that this man boy-Ez small - Obj drown made  
 'They say that this man drowned the little boy.'

• Causative alternation verbs in English: open, sink, dry, redden, break...

- (13) *open*: (Levin and Rappaport Hovav 1995, Dowty 1991)  
 a. [ y BECOME Open ]  
 b. [ x CAUSE [ y BECOME Open ] ]
- (14) *open*: (Harley 1999)  
 a. [ BECOME [ y Open ] ]  
 b. [ x CAUSE [ y Open ] ]

- ▶ Inchoative: {*v<sub>become</sub>*} - State ⇒ *bâz shodan* (open become)  
 ▶ Causative: {*v<sub>cause</sub>* · *v<sub>become</sub>*} - State ⇒ *bâz kardân* (open make)

- (15) a. âb *be Jush âmad*  
 water to boil came  
 'The water boiled.'  
 b. Nimâ âb -ro *be Jush âvard*  
 Nima water-Obj to boil brought  
 'Nima boiled the water.'  
 ▶ *âvardan* (bring) = causative of *âmadan* (come)
- (16) a. Homâ *be gerye ofâtad*  
 Homa to crying fell  
 'Homa started to cry.'  
 b. Nimâ Homâ -ro *be gerye andâxt*  
 Nima Homa - Obj to crying threw  
 'Nima made Homa (start to) cry.'  
 ▶ *andâxtan* (throw) = causative of *oftâdan* (fall)

⇒ *kardan* (make) = causative of *shodan* (become)

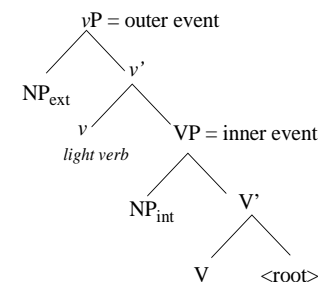
### 4 Causative Alternations and VP-Structure

A split-VP analysis where a *vP* projection is added on top of the base VP (Larson 1988, Chomsky 1995, Hale and Keyser 1993):

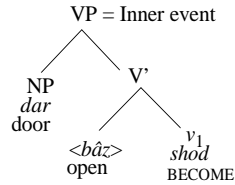
- VP projection: responsible for projecting the internal arguments; contains a lexical root (Marantz 1997) or encyclopedic item (Borer 2000).

- *vP* projection: projects the *light verb*, which represents the functional information in the verbal construction (Chomsky 1995) and projects the external argument.

(17)



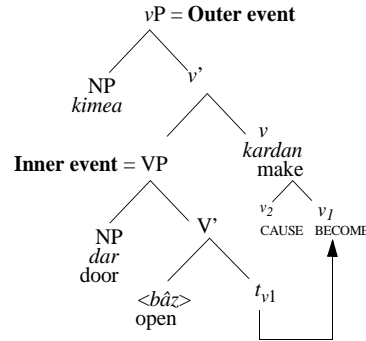
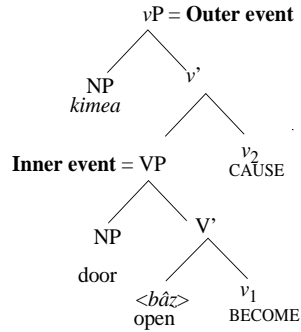
(18) Inchoative:



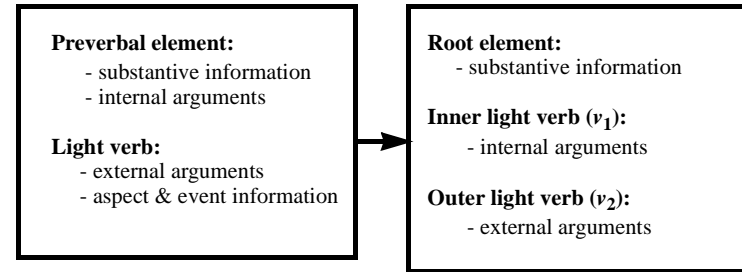
(19) Causative:

a.

b.



- VP = unaccusative ; vP = transitive
- Transitives consist of two functional elements v<sub>1</sub> and v<sub>2</sub>
  - ⇒ One v in each component
  - ⇒ Each v projects a specifier position.
    - The argument can be interpreted as an *internal* (undergoer) or *external* (causer) argument based on its position in the structure.
- Aspect is derived from the resulting structure (Borer 1994, Ritter and Rosen 1998)
  - VP = Achievement; vP = Accomplishment (Vendler 1967)
  - ⇒ No need to pre-classify the verbal projections



### 5 Unergatives

- Intransitives that consist of a noun and the light verb *kardan*

(20)	gerye kardan	(crying do)	'to cry'
	shenâ kardan	(swim do)	'to swim'
	kâr kardan	(work do)	'to work'
	nâle kardan	(moan do)	'to moan'
	fekr kardan	(thought do)	'to think'
	? andishe kardan	(thought do)	'to think'
	parvâz kardan	(flight do)	'to fly'
	bâzi kardan	(play do)	'to play'
	sorfe kardan	(cough do)	'to cough'
	?? xande kardan	(laugh do)	'to laugh'
	tazâhorât kardan	(demonstrations do)	'to demonstrate'

- Unbounded predicates

(21)	a. gonJeshk	*dar yek sâ'at / sâ'at-hâ	parvâz kard	[unbounded]
	sparrow	in one hour / hour-Plur	flight did	
	'The sparrow flew *in an hour / for hours.'			
	b. mâni	*dar yek sâ'at / sâ'at-hâ	kâr kard	[unbounded]
	Mani	in one hour / hour-Plur	work did	
	'Mani worked *in an hour / for hours.'			

c. bache-hâ \*dar yek sâ'at / sâ'at-hâ *gerye kardand* [unbounded]  
 child-Pl in one hour / hour-Plur crying did  
 'The children cried \*in an hour / for hours.'

- Agentive subjects
- Morphosyntactic diagnostics
  - ⇒ These verbs have an external argument.

- (22) -er nominalization
- |                       |                |  |
|-----------------------|----------------|--|
| a. bâzi-kon           | 'player'       | from <i>bâzi kardan</i> (play)             |
| b. tazâhorât konnande | 'demonstrator' | from <i>tazâhorât kardan</i> (demonstrate) |
- (23) adjectival participle formation
- |                         |               |                                |
|-------------------------|---------------|--------------------------------|
| a. *mard-e bazi karde   | 'played man'  | from <i>bâzi kardan</i> (play) |
| b. *pesar-e gerye karde | 'cried child' | from <i>gerye kardan</i> (cry) |
- (24) manner adverb formation
- |                 |               |                                 |
|-----------------|---------------|---------------------------------|
| a. shenâ konân  | 'by swimming' | from <i>shenâ kardan</i> (swim) |
| b. parvâz konân | 'by flying'   | from <i>parvâz kardan</i> (fly) |

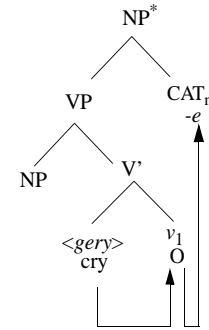
- No transitivity alternations

- (25) a. The children laughed.  
 b. \*The clown laughed the children.

- Preverbal element is a deverbal noun (Sadeghi and Arzhang 1980)
  - xand* (stem of 'laugh') + '-e' ⇒ *xande* (laughter)
  - gerye* (stem of 'cry') + '-e' ⇒ *gerye* (crying)

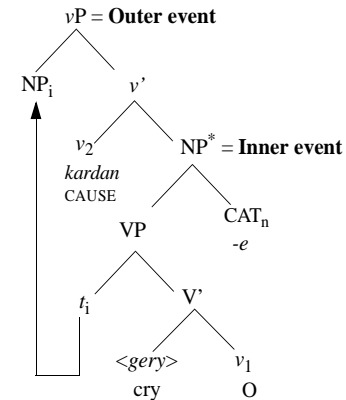
- the nominal element denotes an event and has an argument
- nominalization is syntactic, rather than lexical (Marantz 1997, Harley and Noyer 1998, van Hout and Roeper 1998)

(26) Nominalization:



- (27) a. parvâz-e havâpeyma  
 flight-Ez airplane  
 'the flight of the airplane'  
 b. xande-ye drâkulâ tarsnâk ast  
 laughter-Ez Dracula scary is  
 'Dracula's laughter is scary.'

(28) Unergative: *gerye kardan*

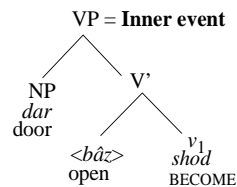


**Unaccusative/Unergative Distinction**

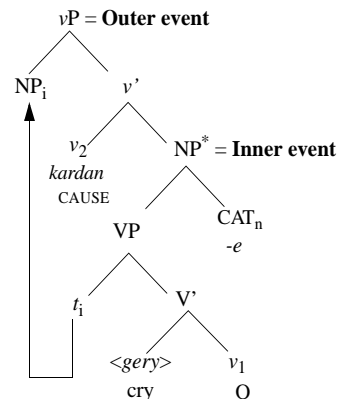
- Transitivity alternation:
  - verbalizing element of the unergative occupies the outer  $v$  position =  $v_2$
  - verbalizing element of the unaccusative occupies the inner  $v$  position =  $v_1$
- Agentivity of subject argument:
  - argument of unergative is in the outer event  $\Rightarrow$  Agentive
  - argument of unaccusative is in the inner event  $\Rightarrow$  Undergoer
- Argument structure of preverbal element:
  - preverbal element in unergatives is a deverbal noun (contains a  $v$  and an argument)
  - preverbal element in unaccusatives is an AP (no  $v$ )

(29)

a. Unaccusative

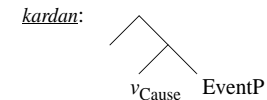
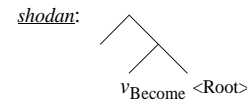


b. Unergative



**Lexicon:**

$\langle Root_i \rangle \dots \langle Root_n \rangle$   
 $Cat_n, Cat_{adj}, \dots$



**6 Level of Formation**

- Word formation
  - complex predicates can be nominalized, form adjectivals and adverbs.
- $\Rightarrow$  Words are formed in syntax (Distributed Morphology)
  - Theory-internal problem: the problem doesn't arise if the system does not have a strict division between the lexical and syntactic components.

- Stress placement
  - complex predicates act as a lexical unit because they have single word stress

(i) Complex predicates don't behave like "real" compounds:

(30) **dar-ro** [<sup>VP</sup> **bâz** kardam ]  
 door-Obj open made  
 'I opened the door.'

(31) dar-baz-**kon**  
 door-open-maker  
 'can-opener'

(ii) Non-specific objects get the main stress as well, but they have very different behavior compared to the preverbal elements (e.g., they can become a specific object, can become subject of passive)

ex. ketâb xaridam

(iii) Main stress can appear on adverbs (33a) or negation (33b)

Do we really want to argue that adverbs form a lexical unit with the complex predicate?

(32) mâni [<sup>vP</sup> shenâ mi-kone ]  
 mani swim Imp-does  
 'Mani swims.'

(33) a. mâni [<sup>vP</sup> **xub** shenâ mi-kone ]  
 mani good swim Imp-does  
 'Mani swims well.'

b. mâni [<sup>vP</sup> shenâ **ne**-mi-kone ]  
 mani swim Neg-Imp-does  
 'Mani does not swim.'

⇒ Stress facts cannot be used to argue for lexical properties of the complex predicates.

Stress seems to be structural: Main stress occurs on the lowest element in the clausal structure (Cinque 1993).

## 7 Conclusion

- event structure of causative alternation verbs and unergatives (in Persian)  
 ⇒ a decomposition of verbal constructions into basic elements
- compositional, syntactic analysis can account for properties of complex predicates
- notion of basic lexical item  
 ⇒ primitive elements of the syntactic configuration

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