

Typology of Complex Predicates in Persian

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1 Introduction

- Strategies for marking transitivity alternations:

- (1) a. John **opened** the door.
b. The door **opened**.
- (2) a. Jean **a ouvert** la porte.
Jean has opened the door
b. La porte **s'est ouverte**.
the door self-is opened-AGR.FEM
- (3) a. Humæn dær-ro **baz kærd**.
Human door-OM open made
b. dær **baz šod**.
door open became
- (4) a. Ara-n dur-ə **bats-ets**.
Ara-NOM door-ACC open-AOR.3SG
b. dur-ə **bats-v-ets**.
door-NOM open-PASS-AOR.3SG

Question: How do natural languages encode events?

- Do languages differ significantly in how they represent the verbal category?
- Despite variation across languages, can we isolate the main (universal) concepts of verbal meaning?

Proposal:

- Lexical category of *verb* is not a predetermined unit in the lexicon.
- Decomposition: meaning of the verb is derived from contribution from various constituents of the predicate.
- Underlying structure is same across languages but overt realization (morphology, vocabulary) differs.

(5) Underlying structure for “open” (Levin and Rappaport Hovav 1986)

- a. Transitive: [x CAUSE [y BECOME open]]
 b. Intransitive: [y BECOME open]

(6) Complex predicates in Persian

ab	šodæn	(water become)	‘to melt’ (intr.)
ab	kærdæn	(water make)	‘to melt’ (tr.)
ab	dadæn	(water give)	‘to water’ (flowers)
ab	oftadæn	(water fall)	‘to water’ (as in mouth)
ab	ræftæn	(water go)	‘to shrink’
ab	gereftæn	(water take/catch)	‘to juice’/‘to rinse’

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

- **Event structure and verb representation**

1. Events have internal structure

- events are not unanalyzable units but are composed of more primitive elements
 → decomposition of verbal structure
 (Levin and Rappaport Hovav 1986, Pustejovsky 1995, Hale and Keyser 1993, etc.)

2. Universal primitives

- primitive concepts of grammar: causation, change, state, time, ...

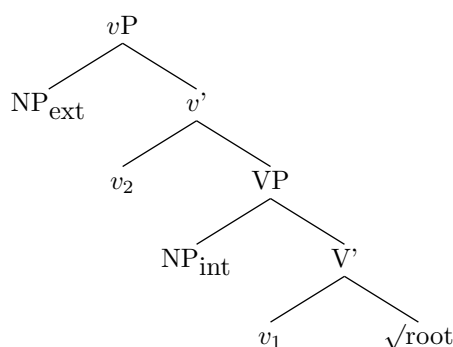
3. Structural representation of meaning

- semantics of events correspond to syntactic structure (e.g., Perlmutter 1978)

(7)

[outer event	[inner event]]
	↓		↓		
	causation		change of state		
	agency		affectedness		
			temporal boundedness		

(8) A split-*v*P analysis:



• Light verb constructions correspond to either inner event or outer event

(9) a. dær baz=šod.

door open=became

‘The door opened.’

b. Humæn dær-ro baz=kærd.

Human door-OM open=made

‘Human opened the door.’

(10) a. dærd=kešidæn

pain=pull

‘hurt’ (unbounded)

b. dærd=gereftæn

pain=catch

‘(start to) hurt’ (bounded)

2 Light Verb Constructions

(11) Noun + LV

telefon	kærdæn	(telephone do)	‘to telephone’
šane	zædæn	(comb hit)	‘to comb’
ney	zædæn	(flute hit)	‘to play the flute’
dærd	kešidæn	(pain pull)	‘to hurt (intrans.)’
hæmam	kærdæn	(bathing do)	‘to bathe’
šekæst	dadæn	(defeat give)	‘to defeat’
duš	gereftæn	(shower take)	‘to shower’
vojud	daštæn	(existence have)	‘to exist’
zendegi	kærdæn	(life do)	‘to live’

(12) Adjective/Past Participle + LV

delxor	kærdæn	(annoyed make)	‘to annoy’
delxor	šodæn	(annoyed become)	‘to be annoyed’
tælx	kærdæn	(bitter make)	‘to make bitter’

- (13) Prepositional phrase + LV
 be donya amædæn (to world come) 'to be born'
 æz beyn ræftæn (from between go) 'to vanish'
 æz beyn bordæn (from between take) 'to destroy'
 be xun kešidæn (to blood pull) 'to kill, to massacre'
 be yad daštæn (to remembrance have) 'to remember'
- (14) Adverbial + LV
 bær daštæn (up have) 'to pick up'
 piš ræftæn (front go) 'to advance'
- (15) Complex Nominal + LV
 sær o kar daštæn (head and work have) 'to be involved'
 dæst be dæst kærdæn (hand to hand do) 'to hesitate'

• Contribution of light verb and preverbal element

- argument structure
- aspect of verb phrase
- temporal properties (duration)
- eventive properties (causation)
- interpretation of arguments (undergoer vs. agent)

3 Decomposing Complex Predicates

3.1 *šodæn* 'become'

- Change of state verb

- (16) adæm=bærfi ab=šod
 man=snowy water=became
 'The snowman melted.'

- Intransitive
- Subject to causative alternation

- (17) aftab adæm=bærfi-ro ab=kærd
 sun man=snowy water=made
 'The sun melted the snowman.'

- Bounded aspect

- (18) *dær sa'æt-ha baz=šod.
 door for hours open=became
 'The door opened for hours.'

Analysis: *šodæn* = [_{VP} y BECOME STATE]

3.2 *kærdæn* ‘do’, ‘make’

- gives rise to different complex predicates

- (19) dær-ro yævaš baz=kærd-æm
 pro door-OM slowly open=made-1SG
 ‘I opened the door slowly.’
 → bounded, causative (transitive), causer subject

- (20) doxtær-æk dær guše-i gerye=mi-kærd
 girl-DIM in corner-INDEF cry=DUR-did
 ‘The little girl was crying in a corner.’
 → unbounded, activity (intransitive), agentive subject

1. Causation of change of state

- (21) aftab adæm=bærfi-ro ab=kærd
 sun man=snowy water=made
 ‘The sun made the snowman melt.’

- Causative light verbs do not just replace the Intransitive counterpart but include them

- (22) a. Ab be=juš=amæd
 water to=boil=come.PAST.3SG
 ‘The water boiled.’
 b. Nima ab-ro be=juš=aværd.
 Nima water-OM to=boil=bring.PAST.3SG
 ‘Nima boiled the water.’

→ *aværdæn* (bring) = causative of *amædæn* (come)

- (23) a. Homa be=gerye=oftad.
 Homa to=crying=fall.PAST.3SG
 ‘Homa started to cry.’
 b. Nima homa-ro be=gerye=ændaxt.
 Nima Homa-OM to=crying=throw.PAST.3SG
 ‘Nima made Homa (start to) cry.’

→ *aændaxtæn* (throw) = causative of *oftadæn* (fall)

- (24) a. jæng be=payan=resid.
 war to=end=reach.PAST.3SG
 ‘The war came to an end.’

- b. soqut-e rejim jæng-ra be=payan=res-and.
 fall-EZ regime war-OM to=end=reach-CAUS.PAST.3SG
 ‘The fall of the regime brought the war to an end.’

→ *resandæn* (make reach) = causative of *residæn* (reach)

(25) **Analysis:** *kærdæn* (make)

- a. [_{vP} X CAUSE [_{VP} Y BECOME STATE]]
 b. [_{vP} X CAUSE-BECOME [_{VP} Y STATE]]

2. Activity Verb

- (26) kar kærdæn (work do) ‘to work’
 bazi kærdæn (play do) ‘to play’
 motale’e kærdæn (study do) ‘to study’
 fekr kærdæn (thought do) ‘to think’

- Dynamic events

(27) *kærdæn* ‘do’ vs. *daštæn* ‘have’

<u>dynamic</u>	<u>stative</u>	
bavær=kærdæn	bavær=daštæn	‘to believe’
qæbul=kærdæn	qæbul=daštæn	‘to accept’

- Unbounded Aspect

- (28) a. gonješk *dær yek sa’æt / sa’ætha pærvaz=kærd
 sparrow *in one hour / hours flight=did
 ‘The sparrow flew *in an hour / for hours.’
 b. mani *dær yek sa’æt / sa’ætha kar=kærd
 Mani *in one hour / hours work=did
 ‘Mani worked *in an hour / for hours.’

- Formed on eventive noun (or verbal noun)

- (29) a. *xænd* + -e → *xænde* ‘laughter’ [*xændidæn* ‘laugh’]
 b. *ændiš* + -e → *ændiše* ‘thought’ [*ændišidæn* ‘think’]
 a. *gery* + -e → *gerye* ‘crying’ [*geristæn* ‘cry’]

- (30) pærvaz-e hævapeyma
 flight-EZ airplane
 ‘The flight of the plane.’

- (31) a. kuh=næværdi kærdæn
 mountain=hiking do
 ‘to mountain-climb’
- b. rah=peymayi kærdæn
 road=measuring do
 ‘to walk (in protest)’

- Intransitive
- No transitivity alternation

(32) **Analysis:** *kærdæn* (do)

- a. [_{vP} DO [_{nP} n_{nom} [_{VP} y √root]]]
- b. [_{vP} y DO [_{nP} n_{nom} [_{VP} √root]]]
- c. [_{vP} y kærdæn [_{nP} -e [_{VP} √gery]]]

Summary

- Distinct aspect of *kærdæn* ‘make’ vs. *kærdæn* ‘do’ can be derived from the structural configuration

kærdæn ‘make’:

- causation → cause+become
- causer subject argument
- bounded aspect → change of state

kærdæn ‘do’:

- activity → do+eventive noun
- agentive subject argument
- unbounded aspect

- *Note:* Different types of verbal nouns used with *kærdæn* ‘do’

- (33) a. pærvaz-e hævapeyma
 flight-EZ airplane
 ‘The flight of the plane.’ → intransitive
- b. bombaran-e šæhr-ha-ye felestini (tavvasote esrayil)
 bombing-EZ city-PL-EZ palestinian (by Israel)
 ‘The bombing of Palestinian cities (by Israel).’ → passive, transitive

c. pærdaxt-e pul be saheb=xune (tavvasote æli)
 payment-EZ money to owner=house (by Ali)

‘The payment of money to the landlord (by Ali).’ → passive, ditransitive

- Transitivity of verbal noun plays a role in determining final argument structure
 - Arabic verbal noun derived from intransitive or reflexive verb + Transitive LV ⇒ Intransitive CP
sæ’y kærdæn ‘try’
 - Arabic verbal noun derived from transitive verb + Transitive LV ⇒ Transitive CP
motalæ’e kærdæn ‘study’
 - Substantive noun + Transitive LV ⇒ Intransitive CP
šademani kærdæn ‘celebrate’

3.3 *kešidæn* ‘pull, drag’ and *gereftæn* ‘catch, take’

- *kešidæn*: Verbs of inhaling/exhaling

- (34) sigar kešidæn (cigarette pull) ‘to smoke’
 teryak kešidæn (opium pull) ‘to smoke opium’
 næfæs kešidæn (breath pull) ‘to breathe’
 bu kešidæn (smell pull) ‘to smell’

- *gereftæn*: Verbs of obstruction

- (35) seda gereftæn (voice catch) ‘to lose one’s voice’
 næfæs gereftæn (breath catch) ‘to lose one’s breath’

- Verb phrase aspect

- (36) a. kar-æš *dær nim sa’æt / sa’æt-ha tul=kešid.
 work-CLIT.3SG in half hour / hour-PL length=pull.PAST.3SG
 ‘His/her work lasted *in half an hour / for hours.’ (i.e., ‘His/her work took hours to finish.’)
- b. u sal-ha / *dær yek sal entezar=kešid.
 he/she year-PL / in one year expectation=pull.PAST.3SG
 ‘He/she waited for years / *in one year.’
- (37) a. kar-æš dær nim sa’æt / *sa’æt-ha ænjam=gereft.
 work-CLIT.3SG in half hour / hour-PL accomplish=catch.PAST.3SG
 ‘His/her work was taken care of in half an hour / *for hours.’

- b. jængæl dær ye ruz / *sa'æt-ha ateš=gereft.
 forest in one day / hour-PL fire=catch.PAST.3SG
 'The forest caught fire in one day / *for hours.'

- Unaccusative/Unergative distinction

- (38) Daryuš ?*dær yek saniye / sa'æt-ha dærd=kešid.
 Dariush in one second / hour-PL pain=pull.PAST.3SG
 'Dariush hurt ?*in one second / for hours.' → unbounded, external argument
- (39) Dæst-e daryuš dær yek saniye / ?*sa'æt-ha dærd=gereft.
 hand-EZ Dariush in one second / hour-PL pain=catch.PAST.3SG
 'Dariush's hand (started to) hurt in one second / ?*for hours.' → bounded,
 internal (affected) argument

- *kešidæn* alternates with *zædæn* 'hit': it denotes a prolonged event, focus on duration

- (40) *kešidæn* 'pull' vs. *zædæn* 'hit'

<u>iterative/sudden</u>	<u>prolonged</u>	
næfæs=zædæn	næfæs=kešidæn	'to breathe'
dæst=zædæn	dæst=kešidæn	'to touch'
dar=zædæn	dar=kešidæn	'to string up on the gallow, hang'
dad=zædæn	dad=kešidæn	'to shout'

- (41) **Generalization:** *kešidæn* (pull)

- unbounded, intransitive, external argument, focus on duration of event → unergative properties

- (42) **Generalization:** *gereftæn* (catch)

- bounded, intransitive, internal argument, focus on start or endpoint of event → unaccusative properties

3.4 *zædæn* 'hit'

- This light verb is used to form various classes of verbs

- (43) 1. Verbs of artifice:
 alternates with *xordæn* 'eat, collide'
- | | | | |
|---------|-------|--------------|--------------|
| hile | zædæn | (trick hit) | 'to trick' |
| gul | zædæn | (fool hit) | 'to fool' |
| neyrang | zædæn | (deceit hit) | 'to deceive' |

(44) 2. Verbs of surface contact

rowqæn zædæn (oil hit) 'to oil'
 ræng zædæn (paint hit) 'to paint'

(45) 3. Iterative verbs with inalienable object:
 alternates with *xordæn* 'eat, collide'

kotæk zædæn (beating hit) 'to beat (up)'
 lægæd zædæn (kick hit) 'to kick'
 sili zædæn (slap hit) 'to slap'
 lis zædæn (lick hit) 'to lick'

(46) 4. Iterative verbs with alienable object:
 some can also be used with *kærdæn* 'do'

čækoš zædæn (hammer hit) 'to hammer'
 jaru zædæn (broom hit) 'to sweep'
 šane zædæn (comb hit) 'to comb'

(47) 5. Verbs of emission of sound (with alienable object)

ney zædæn (flute hit) 'to play flute'
 buq zædæn (horn hit) 'to honk'
 violon zædæn (violin hit) 'to play violin'

(48) *kešidæn* 'pull' vs. *zædæn* 'hit'

<u>alienable object/instrument</u>	<u>inalienable object</u>	
sut=zædæn	sut=kešidæn	'to whistle'

(49) 6. Verbs of communication

telefon zædæn (telephone hit) 'to phone'
 telegraf zædæn (telegraph hit) 'to telegraph'
 imeyl zædæn (email hit) 'to email'
 hærf zædæn (letter/speech hit) 'to speak'

(50) 7. Punctual verbs

dæst zædæn (hand hit) 'to touch'
 zæbæn zædæn (tongue hit) 'to touch with the tongue'
 ængošt zædæn (finger hit) 'to finger'
 sær zædæn (head hit) 'to check on'

(51) a. kimya be qæza dæst=zæd.

kimya to food hand=hit

'Kimia touched the food.' → punctual, bounded

b. bæčče-ha bæraye mo'alem dæst=zædænd.

child-PL for teacher hand=hit

'The children applauded the teacher.' → iterative activity, unbounded

• *zædæn* verb categories can be rearranged

- Instrument is used (verb class 2, 4, 5, 6, 3, 7?)
- Internal argument is an Experiencer and participates in transitivity alternation (verb class 1, 3)
- Locatum verbs: bell, gas, oil, grease, harness, saddle, honk, hook, saddle, ink, paint, salt, pepper, powder, spice (verb class 2)
- Iterative activity

(52) Locatum verbs

benzin	zædæn	(gas hit)	‘to gas’
roqæn	zædæn	(oil/grease hit)	‘to oil, to grease’
æfsar	zædæn	(harness hit)	‘to harness’
palan	zædæn	(blanket hit)	‘to saddle/blanket’
qolab	zædæn	(hook hit)	‘to hook’
ræng	zædæn	(paint hit)	‘to paint’
felfel	zædæn	(pepper hit)	‘to pepper’
næmæk	zædæn	(salt hit)	‘to salt’
pudr	zædæn	(powder hit)	‘to powder’
gerd	zædæn	(powder hit)	‘to powder’
ædviye	zædæn	(spice hit)	‘to spice’
zæng	zædæn	(bell hit)	‘to ring (a bell)’

- Distinct properties correspond to different internal structures

(53) **Analysis:** *zædæn* (hit)

- a. Locatum: [_{vP} X CAUSE [_{VP} Y BE with *oil*]]
- b. Instrumental: [_{vP} X DO [_{VP} Y [BY-MEANS-OF *broom*]]]
- c. Instrumental Experiencer: [_{vP} X CAUSE [_{VP} Y EXP [BY-MEANS-OF *stick*]]]

3.5 *PP preverbs*

- Goals in a verb phrase give rise to telic predicates by providing an endpoint

- (54) a. John ran (activity)
 b. John ran to the store (accomplishment)

- Goal PPs in a complex predicate also provide an endpoint and delimit the event

(56)

be donya	amædæn	(to world come)	‘to be born’
be huš	amædæn	(to consciousness come)	‘to recover consciousness’
be juš	amædæn	(to boil come)	‘to boil (intr)’
be dæst	amædæn	(to hand come)	‘to come by’
be yad	amædæn	(to memory come)	‘to be remembered’

- (56)
- | | | | |
|----------|---------|--------------------------|-----------------------------|
| be donya | aværdæn | (to world bring) | ‘to give birth’ |
| be huš | aværdæn | (to consciousness bring) | ‘to bring to consciousness’ |
| be juš | aværdæn | (to boil bring) | ‘to boil (tr)’ |
| be dæst | aværdæn | (to hand bring) | ‘to obtain’ |
| be yad | aværdæn | (to memory bring) | ‘to remember’ |

(57) **Analysis:** *amædæn* (come) and *aværdæn* (bring)

- a. Intransitive: [_{VP} y COME to GOAL]
 b. Transitive: [_{vP} x CAUSE-COME [_{VP} y to GOAL]]

4 Conclusion

- (Preliminary) decomposition of Persian complex predicates into primitive units of meaning → Structural representation of meaning¹

- (58)
- šodæn* (become): [_{VP} y BECOME STATE]
 - kærdæn* (make): [_{vP} x CAUSE-BECOME [_{VP} y STATE]]
 - kærdæn* (do): [_{vP} y DO [_{nP} n_{nom} [_{VP} √root]]]
 - Locatum *zædæn*: [_{vP} x CAUSE [_{VP} y BE with *oil*]]
 - Instrumental *zædæn*: [_{vP} x DO [_{VP} y [BY-MEANS-OF *broom*]]]
 - Instr. Exp. *zædæn*: [_{vP} x CAUSE [_{VP} y EXP [BY-MEANS-OF *stick*]]]
 - amædæn* (come): [_{VP} y COME to GOAL]
 - aværdæn* (bring): [_{vP} x CAUSE-COME [_{VP} y to GOAL]]
 - kešidæn* (pull): unbounded, intransitive, external argument, focus on duration of event → unergative properties
 - gereftæn* (catch): bounded, intransitive, internal argument, focus on start or endpoint of event → unaccusative properties

• Lexical Categories

1. Lexical category is a property of roots and stems listed in the lexicon and then projected into the syntax determining the inflectional and syntactic possibilities
2. Lexical category is determined by context: categorial identity is determined by the syntactic (structural or functional) environment of the root or stem (Marantz 1997, Borer 2000, Halle and Marantz 1993)

¹Data from Bashiri (1981), Barjasteh (1998), Mohammad and Karimi (1992), Ghomeshi (1996), Dabir-Moghadam (1997), Karimi (1997), Karimi-Doostan (1997), Vahedi-Langrudi (1996), Megerdooomian (2002), Kahnemuyipour (2004), Folli, Harley and Karimi (forthcoming), among others.

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