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Lingua xxx (2004) xxx–xxx
Lingua
www.elsevier.com/locate/lingua

Determinants of event type in Persian complex predicates

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Received 15 September 2003; received in revised form 2 June 2004; accepted 2 June 2004

Abstract

In this paper we analyse the interdependence of Persian nonverbal (NV) elements and the light verb (LV) in determining the syntactic properties, the event structure, and the alternation possibilities of the entire complex predicate (CP). We argue that these properties provide strong evidence for a constructionalist approach to such phenomena, like that of Hale and Keyser (1993, 2002), and that the combination of compositionality and syntactic independence effects observed in these constructions, are difficult, if not impossible, to deal with in a projectionist approach.

Keywords: Light verbs; Complex predicates; Selectional properties; Persian

1. Introduction

It has been argued in the literature that the argument and event structures of Persian *complex predicates* (CPr), as well as syntactic properties such as control, cannot be simply derived from the lexical specifications of the *nonverbal* (NV) *element* or the *light verb* (LV), therefore suggesting that the syntactic and semantic properties of these elements must be determined post-syntactically rather than in the lexicon (Karimi, 1997). In this paper, we show that the event structure of the LV is not always the same as the event

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0024-3841/$ – see front matter © 2004 Published by Elsevier B.V.
doi:10.1016/j.lingua.2004.06.002

(1) Table 1 Event Structures		
Category of NV	**Telic**	**Atelic**
Non-eventive Noun	*	√
Eventive Noun	Either, depending on the noun	
A/Adv Particle/PP	√	*

structure of its heavy counterpart. Furthermore, although the LV determines the *agentivity* (*xordan* 'collide' versus *zadan* 'hit') and the eventiveness of the CPr, it fails to completely determine its event structure and the telicity. Thus, depending on the NV element, the same LV may occur in different types of event structure. For example, the LV *xordan* 'collide' may occur in both *accomplishment* and *achievement* complex predicates, while the LV *zadan* 'hit' can occur in *activity*, *accomplishment*, and *semelfactive* complex predicates, when combined with different NV elements. We argue that when the LV allows for event type variation (as in the case of *xordan* 'collide'), it is the category of the NV element that determines the event structure of the whole CPr. That is, if the NV element is a noun, the CPr is *atelic* (activity or semelfactive), unless the noun is itself eventive (see Section 5), in which case the CPr may be *telic* (accomplishment)). If the NV element is an adjective, an adverbial particle, or a prepositional phrase, the CPr is *telic* (accomplishment or achievement). This is summarized in (1):

However, there are also cases where the event type of the complex predicate is determined by the LV alone, and not the NV element. This is the case of *shodan* 'become' which gives rise only to accomplishments and achievements, due to its inherently telic meaning which does not allow for aspectual variation (see Section 4.3.3). (This inherently telic meaning may turn out to be reducible to *shodan*'s selectional properties, if the current proposal is on the right track.)

We go on to show that the semantics of the NV element determines whether it can combine with particular LVs. Finally, we discuss certain predictions that follow from our analysis of Persian CPr.

As it can be inferred from these very preliminary considerations, the interdependence and systematicity of the NV element and LV's contributions to determining the event structure and alternation possibilities of the entire CPr seem to be evidence against a Lexicalist approach to such phenomena. Accordingly, in this paper we show how these facts may be naturally accommodated within a syntax-based approach to argument structure, and argue that the combination of compositionality and syntactic independence effects observed in these constructions are difficult, if not impossible, to deal with in a projectionist approach.

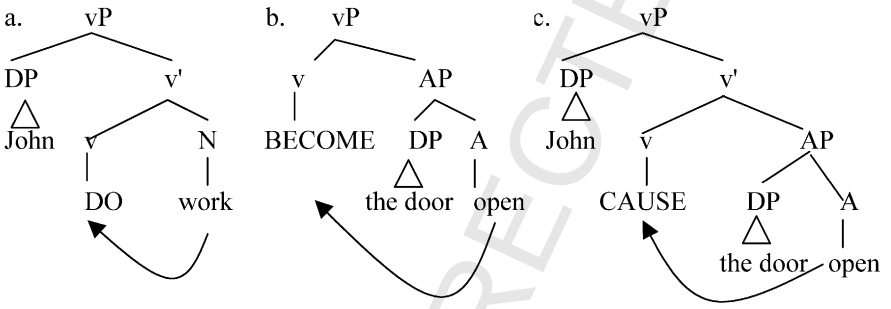
The traditional GB-style approach to projection involves representing verbs complete with their argument structures in the lexicon, which then project into the syntax. Accordingly, the Projection Principle (Chomsky, 1986: 84) states that lexical information must be syntactically realized. The argument structures of the verbs are linked via universal principles to particular syntactic positions.

In such a theory, argument-structure alternations, whether morphologically marked or not, are accomplished via a separate generative process that occurs within the lexicon, prior to projection. For instance, a transitive verb may be mapped to an intransitive verb

via the lexical rule of Passive, which alters both the argument structure and the morphology of the relevant verb. The altered lexical entry then projects in accordance with the linking principles, thereby indirectly giving rise to the altered syntax of passives. The same kind of explanation has then been adopted by various lexicalist analyses (Jackendoff, 1990 et seq.; Levin and Rappaport-Hovav, 1995 et seq.) to explain not only active/passive alternations, but also many other kinds of alternations that verbs display in languages like English.

Beginning with Baker et al. (1989), and realized most fully in the work of Hale and Keyser (1993 and subsequent work), however, a sustained effort has been made to eliminate lexical rules and generate all argument-structure alternations in the syntax, greatly simplifying the model of the lexicon. In such ''constructionalist'' theories, the verb is inserted into a particular complex syntactic structure, which determines the location and interpretation of each of the arguments in the verb phrase. Argument-structure alternations then become a matter to be treated in the syntax, rather than in the lexicon. The BJR treatment of passive, for instance, involved treating the passive morpheme as an argument of the verb, which saturated the verb's external argument position and was then suffixed to the verb in the syntax. Hale and Keyser's approach is even more radical. Unergative verbs are created by incorporating the object in a transitive structure into an abstract verbal head, which then appears to be intransitive. *Work* is underlyingly transitive: ''do work'', as in (2a) below. Argument-structure alternations are created when the same root appears in different syntactic structures (see (2b–c)).[1]

(2).



"John worked" = "John did work"

"The door opened" = "The door became open"

"John opened the door" = "John caused the door open"

In this paper, we show that two of the Hale and Keyser-type structures above map naturally onto the Persian CPr constructions, accounting for their varying event structure and agentivity. Evidently, the Persian CPr constructions in many cases look like an obvious one-to-one match with the underlying syntactic representations of argument-structure,

[1] The structure in (2c) is actually somewhat different than that proposed for adjectival causatives by Hale and Keyser, who use a layered pair of VPs that correlated with the separate 'causing' and 'becoming' sub-events of such causatives. We reject the layered vP approach for such causatives; see Section 7.3 for discussion.

assuming that incorporation of the NV element into the LV does not take place (and allowing for the verb-final nature of Persian).

The article is organized as follows. In Section 2 we look at the phrase structure of Persian in general and the way the language forms Complex Predicates in particular. We show that a number of pieces of evidence can be adduced in support of the independent syntactic nature of the LV and the NV element. In Section 3 we briefly summarize Hale and Keyser's framework for deriving argument-structure and verb alternations. In Section 4 we analyze the effect of each element of the complex predicates in determining the aspectual properties of the whole and we discuss different types of complex predicates, depending on the categorical nature of the NV element. The phrase structure of eventive NV elements is discussed in Section 5. The compatibility of the NV element with the LV is discussed in Section 6. Finally in Section 7 we look at some other cases of possible and impossible alternations that our analysis is able to predict. Section 8 concludes this paper.

2. Phrase structure of Persian

2.1. General background

Persian is a verb final language that exhibits the following unmarked word order in a double object construction:

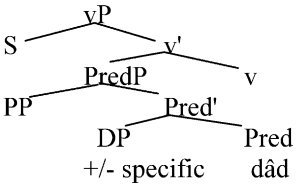
(3). a. S $O_{specific}$ PP V
b. S PP $O_{nonspecific}$ V

The specific direct object appears in a higher position, preceding the indirect object. The nonspecific object is adjacent to the verb, following the indirect object. This is a property seen in many other languages such as Hindi, Turkish, German, and Dutch. Examples illustrating (2a) and (2b) are provided in (3a) and (3b), respectively.[2]

(4). a. Kimea ketâb-ha ro be Papar dâd
K book-pl râ to Papar gave
'Kimea gave the books to Papar.'
b. Kimea be Paper ketâb dâd
Kimea to Paper book gave
'Kimea gave book(s) to Papar.'

[2] Abbreviations: râ = Specificity Marker for Accusative Case; pl = plural; sg = singular; dur = durative; emph = Emphatic; neg = negation; Ez = Ezafe particle; Pred=Predicate. The Ezafe construction involves a DP consisting of a head noun (an element with the feature [+N] such as N or A), its modifier(s), an optional possessive DP, and the Ezafe particle e that is structurally utilized as a link between the head and its modifiers (and the possessive DP). For recent analysis of Ezafe constructions see Ghomeshi (1997a).

(5) exhibits the phrase structure underlying both (4a) and (4b) (Karimi, in press):[3] (5).



The surface order in (3a) is obtained by movement of the [+specific] object, which is followed by the specificity marker *râ*, to the edge of vP. Accusative Case on the object is checked in that position. The nonspecific object remains in situ, directly generating the word order in (3b).[4]

2.2. Complex predicates

2.2.1. Overview

Complex verbs have gradually replaced simple verbs in Persian since the 13th century. The tendency to form complex verbs has resulted in the existence of two sets of verbs, simple and complex, for a number of verbal concepts. In many cases, the application of the simple verb is restricted to the written and elevated language.[5] A few examples of simple/complex pairs appear in (6) (see Dabir-Moghaddam, 1995; Karimi, 1997, for more examples). The productivity of CPr formation is such that it has completely replaced the former morphological rule of simple verb formation in this language (Bateni, 1989).

(6).

Simple	Complex		
lasidan	las zadan	(flirtation doing)	'to flirt'
raghsidan	raghs kardan	(dance doing)	'to dance'
agahanidan	agah kardan	(informed making)	'to inform'
aghazidan	aghaz kardan	(start doing)	'to start'

[3] Here, we use 'PredP' rather than 'VP' as the complement to v° to reflect the fact that in the CPr construction, the main predicative meaning is carried by a nonverbal element. This is consistent with the central claim of the Distributed Morphology framework (Halle and Marantz, 1993) that no element that is not incorporated into a v° is categorically verbal; category itself is syntactically derived.

[4] Karimi (2003) suggests two distinct underlying object positions: the nonspecific object is base-generated as a sister to the verb, and the specific one in the Spec of VP. The structure in (5) differs from that proposal in that the specific object and its nonspecific counterpart are both base generated in the same position (as in the analysis of Browning and Karimi, 1994; Ghomeshi, 1997b). The two proposals have one important property in common: the specific object receives its interpretation in its surface position, that is in a position preceding the indirect object. In the spirit of Baker (1988, 1996), it is assumed that the nonspecific object, being inside the predicate construction, does not need Case. For detailed analysis see Karimi (in press).

[5] Complex verb constructions have been discussed by Moyne (1970), Bashiri (1981), Barjesteh (1983), Karimi (1987, 1997), Heny and Samiian (1991), Mohammad and Karimi (1992), Sadeghi (1993), Massam and Ghomeshi (1994), Vahedi-Langrudi (1996), and Dabir-Moghaddam (1997), among others. See Dabir-Moghaddam (1997) for a thorough discussion of the literature as well as an extensive list of corpus based examples.

The LV of Persian CPr ranges over a number of simple verbs, as shown by Karimi (1997). A sample of LVs employed in CPr constructions is provided in (7).

(7).	a.	*kardan*	'to do'	l.	*budan*	'to be'
	b.	*shodan*	'to become'	m.	*chidan*	'to arrange'
	c.	*xordan*	'to collide'	n.	*gereftan*	'to catch, to take'
	d.	*zadan*	'to hit'	o.	*keshidan*	'to pull'
	e.	*dâdan*	'to give'	p.	*nemudan*	'to show'
	f.	*dâshtan*	'to have'	q.	*oftâdan*	'to fall'
	g.	*âmadan*	'to come'	r.	*pâshidan*	'to scatter'
	h.	*andâxtan*	'to throw'	s.	*raftan*	'to go'
	i.	*âvardan*	'to bring'	t.	*sepordan*	'to entrust'
	j.	*bastan*	'to tie'	u.	*shostan*	'to wash'
	k.	*bordan*	'to carry'	v.	*gozashtan*	'to pass, to cross'

The light verb *kardan* 'to do/make' has almost entirely lost its heavy interpretation, and is the most productive LV. The LV *shodan* 'to become' is systematically used in so-called passive or unaccusative constructions.

Another characteristic of Persian CPr is that their NV elements range over a number of phrasal categories, as exemplified by (8) (see Karimi, 1997 for additional examples).

(8). a. **N + LV**

kotak zadan/xordan	(beating hitting/colliding)	'to beat, to get beaten'
xar kardan/shodan	(donkey doing/becoming)	'to fool, become fooled'
dust dâshtan	(friend having)	'to love'

b. **A + LV**

sabok kardan/shodan	(light making/becoming)	'to degrade' (tr & intr)
pahn kardan/shodan	(wide making/becoming)	'to spread, to widen' (tr & intr)
derâz keshidan	(long pulling)	'to lie down, to take a nap'

c. **Particle + LV**

birun kardan	(out doing)	'to dismiss, to fire (someone)'
bâlâ âvardan	(up bringing)	'to vomit'
bâlâ keshidan	(up pulling)	'to steal'

d. **PP + V**

be yâd dâshtan	(to memory having)	'to have in memory'
bejâ âvardan	(to place bringing)	'to recognize'
be bâd dâdan	(to wind giving)	'to waste'

Finally, the NV element of Persian CPr may also be a complex phrasal element, as in (9):

(9).	Complex NV element		
	dast o pâ kardan	(hand and foot doing)	'to try (hard)'
	sar o kâr dâshtan	(head and work having)	'to be involved'
	dast be dast kardan	(hand to hand doing)	'to hesitate'

We will not discuss this type of NV element in this paper.

2.2.2. The syntactically independent nature of the LV and the NV element in Persian

A Persian CPr cannot be considered a lexical unit since its NV element and LV may be separated by a number of elements, including (a) negative and inflectional affixes, (b) the auxiliary verb for future tense, and (c) emphatic elements (Mohammad and Karimi, 1992). (Lexicalist treatments like that of Goldberg, in press have to introduce extra apparatus to account for these properties; see the discussion of her analysis in Section 6. On a syntactic approach, they fall out naturally as part of the normal syntactic processes of the language.)

Furthermore, the NV element of Persian CPr allows limited modification, as in (10).

(10). a. Kimea az ra'is-e edâre [$_{CV}$ [$_{NV}$ da'vat-e *rasmi*] kard]]
Kimea of boss-Ez office invitation-Ez formal did
'Kimea extended a formal invitation to the boss of the office.'

b. Kimea barâye in xune [$_{CV}$ [$_{NV}$ chune-ye *xubi*] zad]]
Kimea for this house chin-Ez good hit
'Kimea performed a good negotiation for this house.'

The adjective *rasmi* 'formal' modifies the nominal NV element in (10a), while *xubi* 'good' modifies the NV element *chune* in (10b).

Gapping is also allowed in the case of Persian CPr:

(11). Kimea faghat man-o da'vat karde, to-ro ke __ na-karde
Kimea only me-râ invitation did, you-râ emph __ neg-did
'Kimea has only invited me, not you.'

Finally, Persian NV elements can be scrambled out of the CPr (Karimi, 2003) provided that they contain a quantificational element and receive heavy stress, as attested by the contrast in (12). This shows that the NV element is to some extent syntactically independent.[6]

(12). a. Kimea [*che zamin-e saxti*]i diruz [$_{CV}$ t_i xord]
Kimea what earth-Ez hard yesterday collided
'What a hard fall Kimea had yesterday.'
Lit. Kimea what a hard earth yesterday collided.

b. *Kimea *zamin* diruz xord
Kimea earth yesterday collide

These examples suggest that the LV and the NV element in Persian CPr are separately generated and combined in syntax, and become semantically fused at a different, later level. The two parts of the CPr enjoy syntactic freedom to a certain degree; nonetheless,

[6] The fact that the scrambling of NV elements is very limited follows, in our analysis, because they are in general inherently non-specific; further for those NV elements which take an internal argument the NV element will not be a maximal projection. Therefore, we would not expect them to undergo phrasal movement for independent syntactic reasons.

their semantic properties are the same as those of single word elements elsewhere in Persian and in the grammars of languages like English. These conflicting properties can be easily accomodated in a constructionalist theory (like, for instance, Distributed Morphology or other radical constructionalist theories like that proposed by Borer, 2002), where all interpretation occurs post-syntactically. (This approach to Persian CPrs is prefigured somewhat by the work of Ghomeshi and Massam, 1994.) These properties of CPrs pose a more serious problem for projectionist accounts, which essentially need to claim that Persian Complex Predicates are instances of 'idioms', receiving a separate entry in the lexicon complete with their syntactic structure. As noted by Marantz (1997), there is no principled independent way of distinguishing between the meanings of so-called 'idioms' and the meanings of single-word elements like 'cat' or 'pacify'. For further discussion see Section 6.

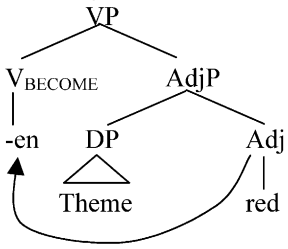
3. Introduction to Hale and Keyser's syntactic argument structure

As outlined above, Hale and Keyser (1993 et. seq., esp 2002; henceforth H&K) propose a radical new approach to argument structure. Verbs, even in English, are not syntactically simplex items, but rather are composites of a light verb and a non-verbal syntactic element. The surface form of the verb results from incorporation of one or more heads in the non-verbal constituent with the light verb.

Their analysis deals with three main kinds of non-verbal constituent: bare N heads, adjectival heads, and prepositional small clauses. Their analysis draws its primary inspiration from English, where the categorial status of adjectival and nominal verb roots is very clear. They propose that denominal and deadjectival verbs are derived from three primary underlying structures:

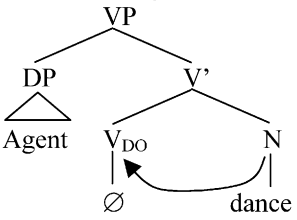
(13).

a. Deadjectival verbs



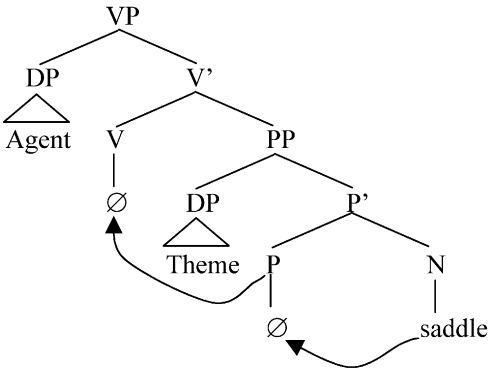
(e.g. *The sky reddened*)

b. Denominal unergative verbs



(e.g. *Bill danced*)

c. Denominal location/locatum verbs:



(e.g. *The cowboy saddled the horse*)

This approach immediately explains many puzzles, both theoretical and empirical. Among other things, it makes the difference between unergative and unaccusative verbs depend on more than the X-bar notation. It explains the morphological properties of English verbs of these classes. Further, in many languages, the verbalizing part of the structure is visibly morphologically realized as an affix, as in these examples from Jemez, taken from H&K (1993):

(14).	a.	sáae'-a	b.	záae'-a	c.	se-/a
		work-do		song-do		word-do
		"work"		"sing"		"speak"

Here, the V portion, so often a zero morpheme in English, is realized as the suffix *-a*, 'do', attached to a clearly nominal element. Even in English, the various V heads are often overtly realized; the *-en* suffix is arguably such a morpheme, as are *-ize* (as in *criminalize*), *-ify* (as in *clarify*), and *-ate* (as in *marinate*).

On such an approach, the thematic properties of a particular verb are dependent on the syntactic and semantic properties of the verbalizing functional element and of the non-verbal constituent which make it up. On the interpretation of H&K's work adopted by Harley (1995) and Marantz (1997), changing the properties of the verbalizing element – the *light verb* – results in a change in Agent selection: the light verb is responsible for the presence or absence of an external argument.[7] (Hence, on this approach, Passive is naturally seen as the result of a change in choice of light verb, not as a result of a lexical operation. Similarly, the causative/inchoative alternation in pairs like *John opened the door/The door opened* is also the result of varying the light verb, although the morphological consequences of this variation are invisible in English.)

[7] For Hale and Keyser, the external-argument selecting V was independent of the inchoative-creating V in adjective-based causatives, as outlined in footnote 2 above. The semanticized version of their approach that we adopt does not require such a layering of vPs; for discussion see Harley (2001). In addition, H&K originally viewed their proposal as representing a 'lexical' syntax, situated in some level of the lexicon, rather than as part of syntax proper. Nearly all work in the framework since, however, assumes that the syntactic structures they proposed are in fact fully 'syntactic'.

Harley (2001) argued that the syntactic and semantic properties of the non-verbal constituent are responsible for the internal event structure of the final composed predicate. Simple N complements, as in the denominal unergative verbs, behave as Incremental Themes, measuring-out the event by virtue of their inherent boundedness properties (hence, e.g. *dance* is atelic, but *foal* is telic). Predicative complements, as in the verbs based on adjectival and prepositional non-verbal constituents, function as a resultative small clause, measuring-out the event by virtue of the inherent boundedness or lack thereof of their scalar structure. Hence, e.g. *redden* is atelic, because a thing can continue to become more intensely red for an arbitrary period, but *clean* is telic, since once something is clean, it cannot get cleaner—cleanliness is inherently bounded (see Hay et al., 1999; Wechsler, 2001; Folli and Harley, 2002). Finally, the properties of the nonverbal constituent determine the number of internal arguments present: 0 (as in unergatives), 1 (as in unaccusatives and transitives) or 2 (as in ditransitives).

Below, we will show that each of H&K's proposed underlying structures for English verbs, above, have natural non-incorporated counterparts in Persian complex predicate constructions, where the light verb and non-verbal element are realized separately. Further, we will show that the agentivity of a particular CPr is dependent on the light verb involved, and the telicity of the CPr is dependent on the non-verbal element involved, in a very transparent fashion. Persian, therefore, is a language in which the complex syntactic nature of verbs is very easily discerned, and in which Hale and Keyser's proposals concerning the structure of the verb phrase find striking confirmation, despite the fact that they were originally designed to account for the facts of a typologically extremely dissimilar language.

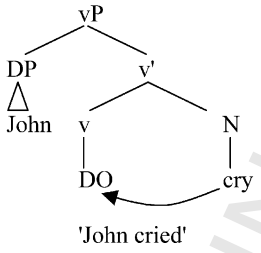
4. Determinants of event structure in CPr

4.1. Deriving unergative, inchoative, and causative argument structures

In the previous section we saw that unergatives are formed when a nominal element is incorporated into a light verb which selects for an external argument. Similarly, inchoatives result when an adjectival element is incorporated into a light verb which does not select for an external argument. These structures translate naturally to Persian CPr. Consider the representation of a CPr like *gerye kardan*, 'weeping doing', that translates as a typical unergative like *cry*. (Because Persian is verb-final, the structures in English and Persian are represented as linearly reversed; we assume that this linearization happens post-syntactically at Spell-Out, the structures are syntactically equivalent):

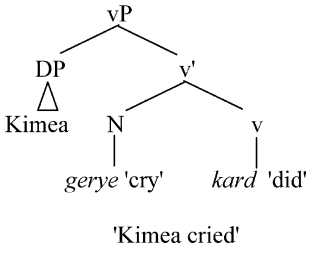
(15).

a.



'John cried'

b.

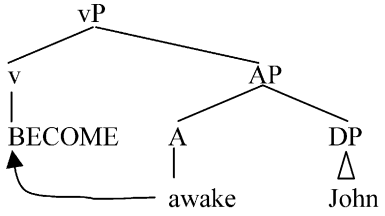


'Kimea cried'

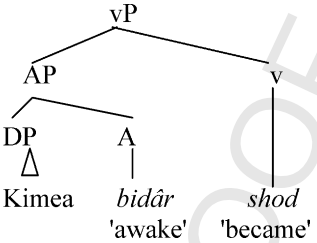
Similarly, consider the syntax of a CPr that translates as a typical inchoative, like *bidâr shodan* 'awake becoming':

(16).

a. 'John awoke'



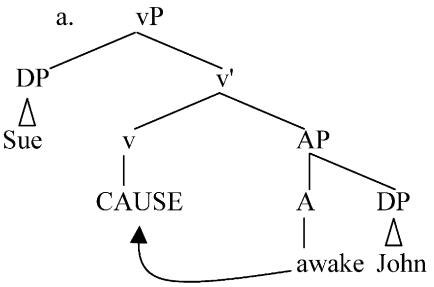
b. 'Kimea awoke'



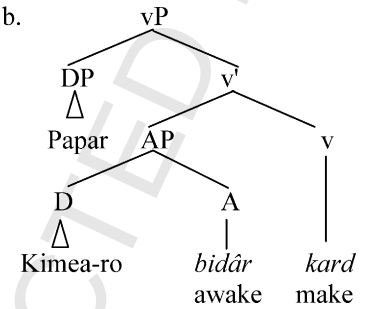
Just as hypothesized by Hale and Keyser for the English causative/inchoative alternation, the alternation between the inchoative and the causative of *awake* in Persian is accomplished by changing the light verb from the equivalent of 'become' (*shodan*) to the causative 'make' (*kardan*).

(17).

a.



b.



It should be clear from the above that the Persian case constitutes the strongest possible evidence for the syntactic nature of l-syntax.

Above, we have seen that altering the particular light verb in a Persian CPr can affect the appearance or absence of an Agent argument, as expected on a vP-shell theory of argument structure. We show below that this is a general property of the LV in the CPr, following Megerdoomian (2002a). Further, we demonstrate the tight relationship between event type and the category of the NV element in the CPr. That is, the category of the complement to v° determines the event type of the CPr, when the LV itself is not inherently telic.

4.2. What the LV can do

4.2.1. Agentivity and causativeness

The choice of LV determines whether or not the CPr selects for an agent (Karimi, 1997; Megerdoomian, 2002a). This is shown in the following contrasts.

(18). a. tim-e mâ unâ-ro shekast *dâd*
team-EZ we they-râ defeat gave

'Our team defeated them.'

b. tim-e mâ az unâ shekast *xord*
team-EZ we of they defeat collided
'Our team was defeated by them.' (lit. our team got defeat from them.)

As in the case above, the alternation between an agentive and non-agentive structure is accomplished by selecting a different light verb; we have moved from a causative to an inchoative argument structure with the shift from agentive *dâdan* ('give') to inchoative *xordan* ('collide'). A similar pair can be seen in (19) below:

(19). a. Minu bachcha-ro kotak *zad*
Minu child-râ beating hit
'Minu hit the child.'

b. bachche kotak *xord*
child beating collided
'The child got hit.'

If we go back to our list of LVs in (7), we see that the Agent-selecting properties of any given light verb are consistent across all Complex Predicates formed with that LV. We can show this because the grammaticality of an agentive adverbial such as *amdan* 'intentionally' remains constant even when the NV element's category is manipulated. In (20) and (21) below we give evidence for this with respect to two LVs *zadam* 'to hit' and *xordan* 'to collide' (HV stands for Heavy Verb).[8]

(20). *zadam* 'to hit'

a. Kimea amdan bachcha-ro *zad* HV
Kimea intentionally child-râ hit
'Kimea hit the child intentionally.'

b. Kimea amdan be ghazâ dast *zad* LV
K intentionally to food hand hit
'Kimea intentionally touched the food.'

c. Kimea amdan dâd *zad* LV
K intentionally yell hit
'Kimea yelled intentionally.'

d. Kimea amdan dast *zad* LV
K intentionally hand hit
'Kimea clapped intentionally.'

[8] As in English, this is only grammatical on a coercion reading, where the subject agentively did some action that resulted in his/her purposeful defeat. If we substitute a subject which is incapable of having intentions, we can see that the result will be ungrammatical:

(i) *asb-e sefid amdan shekast xord;
horse-Ez white intentionally defeat collided;
(lit. *The white horse got defeat intentionally).

(21). *xordan* 'to collide'

a.	*Kimea amdan be divâr *xord*	HV
	K intentionally to wall collided	
	'Kimea intentionally hit the wall.'	
b.	*ghazâ amdan dast *xord*	LV
	food intentionally hand collided	
	'Food became intentionally touched.'	
c.	Kimea amdan shekast *xord*	LV
	K intentionally defeat collided	
	'Kimea intentionally got defeated.'	

We consider this strong evidence for the contention that Agents are selected for by a different predicate than other arguments, cross-linguistically. This has been argued for by Kratzer (1996) and Marantz (1997), on purely semantic grounds (the unavailability of idiomatic interpretations of agents + verb, to the exclusion of the object) in languages where the complex vP structure is morphologically invisible. Here in Persian, the complex structure is transparent, and it is clear that agentivity is a property of the LV in the CPr, and never depends on the nature of the NV element selected.

The only cases where choice of NV element appears to affect the projection of an Agent argument is with verbs of motion, like *pass* and *come*, as illustrated in (22) and (23) below.

(22). *gozashtan* 'to pass'

a.	Kimea amdan az xiyâbun *gozasht*	HV
	K intentionally of street passed	
	'Kimea intentionally crossed the street.'	
b.	*Kimea amdan dar *gozasht*	LV
	K intentionally away passed	
	'Kimea intentionally passed away.'	

(23). *âmadan* 'to come'

a.	Kimea amdan *âmad*	HV
	K intentionally came	
	'Kimea intentionally came.'	
b.	*Kimea amdan be donyâ *âmad*	LV
	K intentionally to world came	
	'Kimea was born intentionally.'	

Verbs of motion in many languages alternate between an agentive/unergative and an inchoative/unaccusative reading. Compare the following German sentences:

(24). a. Johann ist nach Hause gefahren
John is to house driven
'John went home (by car, someone else drove the car).'

b. Johann hat nach Hause gefahren
John has to house driven
'John drove home.'

In (24a) the perfect form of *fahren*, 'drive' is marked with the *to be* auxiliary, a standard diagnostic for unaccusativity in German, while in (24b) the *to have* auxiliary is used, as it is with unambiguous unergatives. We consider this alternating behavior to be characteristic of verbs of motion also in Persian.

Similarly, the causativity of CPr is also determined by the LV, as suggested by Megerdoomian (2002b). In (25) and (26) below we consider two examples:

(25). a. âb be jush âmad
water to boil came
'The water boiled.'

b. Nimâ âb-ro be jush âvard
Nima water-râ to boil brought
'Nima boiled the water.' (Megerdoomian, 2002b)

(26). a. Homa be gerye oftâd
Homa to crying fell
'Homa started to cry.'

b. Nima Homa-ro be gerye andâxt
Nima Homa-râ to crying dropped
'Nima made Homa (start to) cry.' (Megerdoomian, 2002b)

In both cases, the non-verbal element is the same (*jush* 'boil' and *gerye* 'crying'), but the CPr changes from the inchoative *âmadan* 'to come' in (25) to the causative *andâxtan* 'to throw/drop' in (26).

4.2.2. States and events

In addition to determining whether the CPr is causative and its external argument is agentive, the light verb distinguishes between eventive and stative CPr. In the examples below we see that *dashtan* is stative (both in its heavy (27) and light form (28)) and therefore it is ungrammatical in the progressive form, as typical of statives.

(27). *Have* as a heavy verb

a. Kimea ye sag *dâr-e*
K one dog have-3sg
'Kimea has a dog.'

b. *Kimea dâr-e ye sag *dâr-e*
K. have-3sg one dog have-3sg
Lit. *Kimea is having a dog.

(28). *Have* as a light verb

a. Kimea Papar-o dust *dâr-e*
K. P. -râ friend have-3sg
'Kimea loves papar.'

b. *Kimea dâr-e Papar-o dust *dâr-e*
K. have-3sg P.-râ friend have-3sg
Lit. *Kimea is having love Papar.

If we alter the LV while keeping the nonverbal element constant, we see that the stativity of the construction changes, suggesting that normally the eventiveness of a complex predicate depends on the light verb involved and not on the non-verbal element. We can see this in (29) below:

(29). a. Kimea esm-e un-o be yâd *dâr-e*
K. name-Ez her-râ to memory have-3s
'Kimea has her name in her memory.'

b. *Kimea esm-e un-o dâr-e be yâd *dâr-e*
K. name-Ez her-râ have-3sg to memory have-3sg
Lit. *Kimea is having her name in her memory.

c. Kimea esm-e un-o be yâd *mi-yar-e*
K. name-Ez her-râ to memory dur-bring-3sg
'Kimea remembers her name.'

d. Kimea esm-e un-o dâr-e be yâd *mi-yâr-e*
Kimea name-Ez her-râ have-3sg to memory dur-bring-3sg
'Kimea is remembering her name.'

4.2.3. Duration

Another property that partially depends on the LV is the duration of the CPr, as noted by Megerdoomian (2002a). In (30) the light verb *keshidan* 'to pull' implies duration of the event, while the light verb *zadan* 'to hit' contributes punctuality to the meaning of the complex predicate. In (31), although both Complex Predicates mean 'to yell', (31b) implies duration.

(30). a. dast zadan (hand hitting) b. dast keshidan (hand pulling) 'to touch'

(31). a. dâd zadan (yell hitting) b. dâd keshidan (yell pulling) 'to yell'

4.2.4. Summary

The following chart summarizes what the LV determines within a CPr.

32. Table 2

The role of LV in CPr
1. Agentivity/Causativity
2. Eventiveness
3. Duration

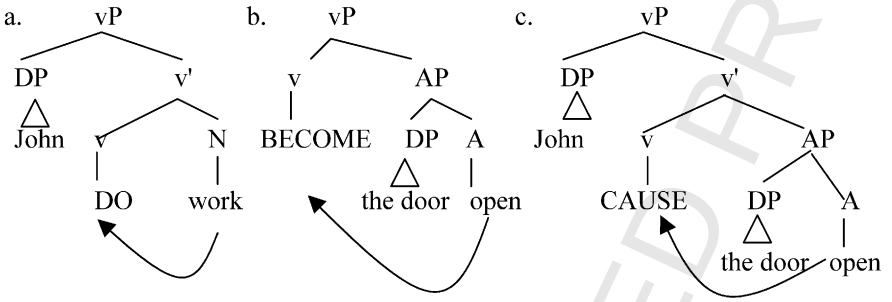
4.3. What the NV element can do

In this section we discuss the role of the NV element and its contribution to the aspectual interpretation of the whole CPr. An overview is presented in Section 4.3.1, followed by data in Section 4.3.2. The summary of this section is provided in Section 4.3.3.

4.3.1. Overview

In a constructionalist system like the one adoped here, there is a correspondence between the type of embedded structure below the vP and the Aktionsart of the whole predicate. Consider the structures for unergatives, inchoatives and causatives above, repeated here:

(33).



"John worked" = "John did work"

"The door opened" = "The door became open"

"John opened the door" = "John caused the door open"

The unergative predicate is characteristically an Activity, in Vendlerian terms, while the inchoative and causative are Accomplishments. We can see this using the standard tests for event structure below:[9]

(34).
a. John worked — for 3 hours /#in 3 hours
b. The screen cleared — #for 3 minutes[10]/ in 3 minutes
c. John cleared the screen — #for 3 minutes/ in 3 minutes

(35).
a. John is working ∴ John has worked
b. The screen is clearing ∼∴ The screen has cleared
c. John is clearing the screen ∼∴ John has cleared the screen

[9] Of course, in these constructions and in their Persian counterpart, there is a grammatical reading of 'for an hour' that modifies the result state that is syntactically represented by the adjectival phrase. The ungrammatical reading is one in which the actual event of becoming open goes on for an hour. The result-modification reading of 'for an hour' is in fact predicted on the syntactic decomposition approach, as the PP may adjoin directly to the AP [door open], and express the length of time that the open state lasted.

The crucial difference between the two classes seems to be the type of phrase that appears in the complement of v: when the verb denotes a telic Accomplishment, the lower phrase is a predicate and its subject—a small clause indicating a change of state; when the whole predicate denotes an Activity, the lower phrase incorporating into the verbal shell is a nominal expression.

Turning to Persian, let's consider the contrast between *bidar shodan* 'awake' (intr) and *bidar kard* 'awake' (tr), illustrated below. In the alternation between the causative and the inchoative form, the LV changes from *kardan* to *shodan*, but the Aktionsart is not affected, because the complement of the LV is an adjectival small clause in both cases. In contrast, the same LV *kardan* is used in *awake* (tr) and *cry* (unergative), and yet the Aktionsart of the two constructions is different, as we can see using the tests below (see examples (45) and (46) for a parallel pair of cases with non-agentive *xordan*, 'collide'):

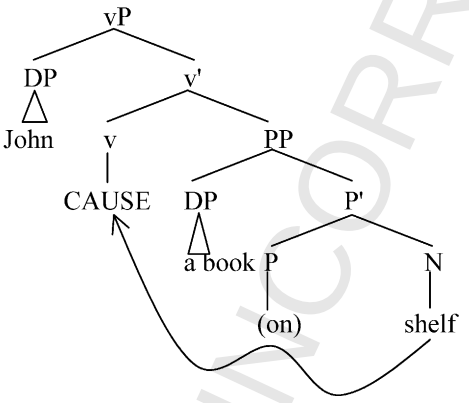
(36). a. Kimea ye sâ'ate/* barâye ye sâ'at *bidâr shod*
K. one hour/for one hour awake became
'Kimea became awake within an hour.'

b. Kimea ye sâ'ate/ *barâye ye sâ'at Papar-ro *bidâr kard*
K. one hour/for one hour P.-râ awake made
'Kimea woke Papar up within an hour.'

c. Kimea *ye sâ'ate/ barâye ye sâ'at *gerye kard*
K. one hour/for one hour cry did
'Kimea cried for one hour.'

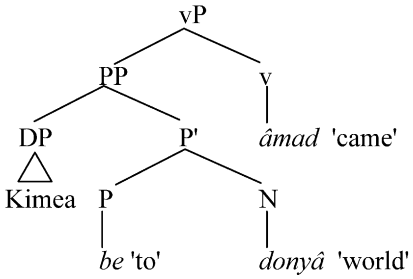
The same picture is true of cases where the small clause contains a prepositional, rather than adjectival, NV element. The preposition functions as the predicate of the small clause which introduces a result to the event structure of the CPr as a whole. Above, we illustrated the structures we assume for adjectival and nominal complements to LVs. We can extend Hale and Keyser's account of denominal location/locatum verbs to CPrs with a prepositional NV element, which will contain a small clause complement to vP, exactly as the adjectival ones do. The only distinction is that the predicate, rather than being adjectival, is prepositional.

(37). "John shelved a book" (H&K, 1993)



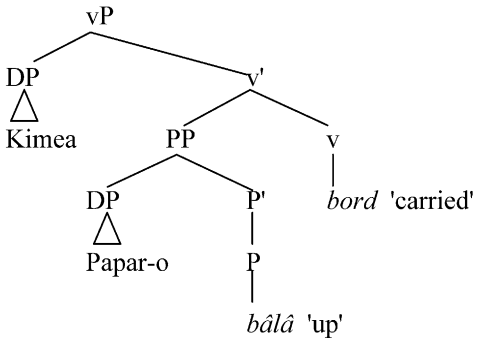
Again, for NV elements that are PPs, the H&K structure will translate directly:

(38). *be donyâ âmadan* (to world coming) 'to be born'



Similarly, in cases where a particle, rather than a full PP, is the NV-element, the same structure will apply:

(39). *bâlâ bordan* (up carrying) 'to promote'



In these cases, as for the adjectival small clause (SC) cases above, it is the presence of the downstairs predication that is responsible for the telic interpretation of the CPr.

4.3.2. Data

The dependence of the Aktionsart on the NV element but not on the light verb is even clearer when we consider the data below. The following tests, using temporal adverbials sensitive to telicity, examine different LVs when used as main verbs ('heavy' verbs), and compare them with their light counterparts. For each LV, different types of NV elements are employed, and we can see in each case that a change in the category of the NV element results in a change in the event structure of the complex predicate. The data is summarized in the table in (54).

In (40), we see the HV behavior of *âmadan*, when intransitive is atelic (a–b), but when provided with a PP Goal phrase becomes telic (c–d). In (40d), we see that the PP Goal + *âmadan* combination is an Accomplishment, since the progressive gets a true 'in progress' interpretation:

(40). HV *âmadan* 'to come'

a. Kimea *âmad*.
K came.
'Kimea came.'

b. *Kimea kâmelan *âmad*
K completely came

c. Kimea *barâye ye sâ'at/ ye sâ'ate be kelâs *âmad*
K for one hour/in an hour to class came
'Kimea came to class for one/in one hour hour.' OK as 'she spent one hour in class.'

d. Kimea dâr-e be kelas *mi-yâ-d*
Kimea have-3sg to class dur-come-3sg
'Kimea is coming to class.'

In (41), we see the same verb in its LV use, with a PP nonverbal predicate. As expected, it is telic, (41b), but it is not an Accomplishment; rather it's an Achievement, as shown by the pre-event interpretation of the progressive (41c):

(41). PP + LV *be donyâ âmadan* (to world coming) 'to be born.'

a. Kimea diruz *be donyâ âmad*.
K yesterday to world came.
'Kimea was born yesterday.'

b. Kimea *kâmelan/*barâye ye sâ'at/? ye sâ'ate *be donyâ âmad*
K completely/for an hour/within one hour to world came
'Kimea was born within one hour.'

c. Kimea dâr-e *be donyâ mi-yâ-d*
Kimea have-3sg to world dur-come-3sg
'Kimea is about to be born.'

In (42), we see the HV use of *zadan*, 'to hit'. Event-structurally, it is a semelfactive, in the terminology of Smith (1991): an event that is punctual and interpreted iteratively in the progressive and with a durative adverbial. These are like Activities in that they are incompatible with a bounded temporal adverbial (42a).

(42). HV *zadan* 'to hit'

a. Minu ?kâmelan/ barâye ye sâ'at/*ye sâ'ate Papar-o *zad*
M completely/for an hour/within one hour P-râ hit
'Minu hit Papar for an hour.'

b. Minu dâr-e Papar-o *mi-zan-e*
M. have-3sg P-râ dur-hit-3sg
'Minu is hitting Papar.'

In (43), we see a LV use of *zadan*, with the NV element *dast*, 'hand'. Here, a durative adverbial is infelicitous (43a), and the progressive form can get an pre-event interpretation, as shown in (43b). It has become an Achievement.

(43). N + LV *dast* + *zadan* (hand-hitting) 'to touch'

a. Kimea *kâmelan/ *barâye ye sâ'at/*ye sâ'ate be ghazâ *dast zad*
K completely/for an hour/within an hour to food hand hit

b. Kimea dâr-e be ghazâ *dast mi-zan-e*
K have-3sg to food hand dur-hit-3sg
'Kimea is (about to) touch the food.'

In (44), we see the HV use of *xordan*, 'collide', which is an Achievement, according to the standard tests:

(44). HV *xordan* 'to collide'

a. Kimea kâmelan/ *barâye ye sâ'at/*ye sâ'ate be divâr *xord*
K. completely/for an hour/within an hour to wall collided
'Kimea completely hit the wall.'

b. Kimea dâr-e be divâr *mi-xor-e*
K have-3sg to wall dur-collide-3sg
'Kimea is about to hit the wall.'

A CPr with *xordan* as the LV, however, can be an Accomplishment, when combined with an appropriate NV element, as in (44) below.

(45). N + LV *shekast xordan* (defeat colliding) 'to be defeated'

a. Kimea kâmelan/ *barâye ye sâ'at/ye sâ'ate *shekast xord*
K completely/for an hour/within an hour defeat collided
'Kimea got completely/within an hour defeated.'

b. Kimea dâr-e *shekast mi-xor-e*
K have-3sg defeat dur-collide-3sg
'Kimea is about to get defeated.'

Choosing a different NV element, but keeping *xordan* as the LV, we can see that the final Aktionsart of the CPr may be different again. With *kotak*, 'punishment', the CPr is an Activity (of the semelfactive type).

(46). LV *xordan* 'collide', with *kotak*, 'punishment' as the NV element:

a. Kimea ??kâmelan/ barâye ye sâ'at/*ye sâ'ate kotak xord
K completely/for an hour/within an hour punishment collided.
''Kimea was beaten for an hour.''

b. Kimea dâr-e kotak mi-xor-e
K have-3sg punishment dur-collide-3sg
''Kimea is being beaten.''

Next, we see the HV use of *dâdan*, 'give', which, like its English counterpart, is an Achievement.

(47). HV *dâdan* 'to give'
a. Kimea *kâmelan/*barâye ye sâ'at/*ye sâ'ate ketâb-ro be Papar *dâd*
K completely/for and hour/within an hour book-râ to P. gave
b. Kimea dâr-e ketâb-ro be Papar *mi-d-e*
K have-3sg book-râ to P. dur-give-3sg
'Kimea is giving the book to Papar.'

Depending on the NV element combined with it, a CPr containing LV *dâdan* can be an Accomplishment as in (48) or an Activity as in (49):

(48). N + LV *shekast dâdan* (defeat giving) 'to defeat'
a. Kimea kâmelan/ *barâye ye sâ'at/ye sâ'ate Papar-o *shekast dâd*
K completely/for an hour/within an hour P.-râ defeat gave
'Kimea defeated Papar completely/within an hour.'
b. Kimea dâr-e Papar-o *shekast mi-d-e*
K have-3sg P.-râ defeat dur-give-3sg
'Kimea is defeating Papar.'

(49). N + LV *dâdan*, 'give', with *dast* 'hand' as the NV element:
a. Kimea *kâmelan/ barâye ye sâ'at/*ye sâ'ate bâ Papar *dast dâd*
K completely/for an hour/within an hour with P. hand gave
'Kimea shook hands with Papar for an hour.'
b. Kimea dâr-e bâ Papar *dast mi-d-e*
K have-3sg with P. hand dur-give-3sg
'Kimea is shaking hands with Papar.'

In (50), we see the HV use of *andâxtan,* 'to throw', which, again like its English counterpart is an Achievment; it is incompatible with any adverbial denoting duration, and receives a pre-event reading in the progressive:

(50). HV *andâxtan* 'to throw'
a. Kimea *kâmelan/ *barâye ye sâ'at/*ye sâ'ate gol-ro *andâxt*
K. completely/for an hour/in an hour flower-râ threw
'Kimea threw the flower.'
b. Kimea dâr-e gol-ro *mi-y-andâz-e*
K have-3sg flower-râ dur-throw-3sg
'Kimea is about to throw the flower.'

With *dast* 'hand' as a NV element, however, a CPr containing *andâxtan* denotes an Activity:

(51). N + LV *dast andâxtan* (hand throwing) 'to mock'
a. Kimea kâmelan/ barâye ye sâ'at/*ye sâ'ate Papar-o *dast andâxt*
K. completely/for an hour/within an hour P.-râ hand threw
'Kimea completely/for an hour mocked Papar.'

b. Kimea dâr-e Papar-o *dast mi-y-andâz-e*
K. have-3sg P.-râ hand dur-throw-3sg
'Kimea is mocking Papar.'

In (52), we see the HV *keshidan*, 'pull', which again like its English counterpart, is an Activity:

(52). HV *keshidan* 'to pull'
a. Kimea kâmelan/ barâye ye sâ'at/*ye sâ'ate dast-esh-ro *keshid*
K. completely/for an hour/within an hour hand-her-râ pulled
'Kimea completely/for an hour pulled her hand.'
b. Kimea dâr-e dast-esh-ro *mi-kesh-e*
K. have-3sg hand-her-râ dur-pull-3sg
'Kimea is pulling her hand.'

In (53), however, we see that a CPr containing the LV *keshidan* with a PP nonverbal element is an Accomplishment:

(53). PP + LV *be âtash keshidan* (to fire pulling) 'to put on fire'
a. Kimea xuna-ro kâmelan/* barâye ye sâ'at/ye sâ'ate *be âtash keshid*
K house-râ completely/for an hour/within an hour to fire pulled
'Kimea completely/in an hour put the house on fire.'
b. Kimea dâr-e xuna-ro *be âtash mi-kesh-e*
K. have-3sg house-râ to fire dur-pull-3sg
'Kimea is putting the house on fire.'

4.3.3. Summary

The summary of the event structures of the CPrs, some of them presented in this section, is as follows:

(54). Table 3	
TELIC	ATELIC
PP + LV Ex: *be donyâ âmadan* (to world coming) 'to be born' *be âtash keshidan* (to fire pulling) 'to put on fire'	N + LV Ex: *dast xordan* (hand colliding) 'to get touched' *kotak xordan* (punishment colliding) 'to get beaten' *dâd zadan* (scream hitting) 'to yell' *dast dâdan* (hand giving) 'to shake hands' *dast andâxtan* (hand throwing) 'to mock'
Particle + LV Ex: *kenâr âmadan* (side coming) 'to get along, agree' A + LV Ex:	

derâz keshidan (long pulling) 'to take a nap'
Eventive Nominal + LV Ex:
shekast xordan (defeat colliding) 'to be defeated'
shekast dâdan (defeat giving) 'to defeat'

As mentioned in the introduction, if the LV is inherently telic, such as *shodan* 'become', the NV element will not have an effect on the telicity of the whole CPr. The example in (55b) illustrates this:

(55). a. xorshid barf-ro âb kard
sun snow-râ water made
'The sun melted the snow.'
b. barf âb shod
snow water became
'The snow melted.'

If the above treatment of telicity is on the right track, the apparent 'inherent telicity' of a verb like *shodan*, 'become', boils down to a selectional restriction: it selects for a predicative small clause complement. The telicity of the whole CPr is then still determined by the complement to the LV, not the LV itself. The problem for the purely category-based treatment here, however, is the fact that above we are assuming that only Adjectives and PPs may function as NV predicative elements. Here, however, a nominal NV element *âb* 'water' is able to act as a predicate. Apparently, while NV elements of category Adjective and P *must* function as predicates (leading to the generalization we present above), NV elements of category N may function as predicates in (a very limited number of) cases, as here.

5. An exception: eventive nominals

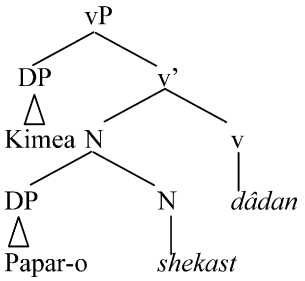
In the chart in (54), there are three cases with NV elements that are nominal and yet in which the event structure of the CPr in which they occur is telic—in fact, it is an Accomplishment. Two of them are repeated here:

56. *shekast dâdan* (defeat giving) 'to defeat'
Kimea dar ye sâ'at/ ye sâ'ate Papar-o *shekast dâd*
K. in one hour/within an hour P.-râ defeat gave
'Kimea defeated Papar in one hour.'

57. *shekast xordan* (defeat colliding) 'to be defeated'
Kimea ye sâ'ate *shekast xord*
K one hour defeat collided
'Kimea got defeated in an hour.'

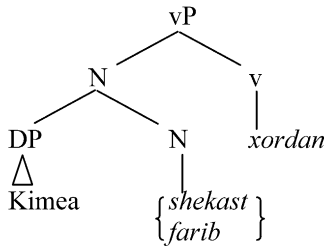
While these seem to be counterexamples to our observation above that NV elements of category N always produce an atelic (activity or semelfactive) reading, in fact, we think they can be accommodated within the framework. Most elements of category N are either themselves unbounded or instantaneous, which leads to the generalization above. These event-denoting Ns can themselves be telic accomplishments. The following phrase structure represents the CPr consisting of *shekast dâdan* in (56):

(58).



The corresponding unaccusative CPr *shekast xordan*'s underlying structure is presented in (58), created by varying the LV only, of course, as usual. This structure represents other unaccusatives such as *farib xordan* 'to be deceived' as well.

(59).



In these cases, the nominal NV element itself denotes an event which happens to be an Accomplishment. The event properties of the NV element, then, are inherited by the entire CPr, along the lines proposed by Harley (2001) for bounded and unbounded nominal elements in English. Compare, for example, the properties of the verb derived from the eventive nominal *work* (Activity, −bounded N) and *knock* (Semelfactive, +bounded N). Here, the boundedness of the whole event is therefore expected.

An alternative account of these verbs would involve proposing that they contain a covert PP small clause (in a standard analysis of *give/get* in languages like English, see Harley, 1995; Pesetsky, 1995); however, since Persian shows no overt morphology that would confirm this proposal, and the present paper is attempting to provide the most morpho-syntactically transparent possible account, we do not consider that possibility here (although see Section 7.3).

6. What determines the compatibility of an NV element with a given LV?

Although CPr formation is clearly a syntactic process, it is equally clearly not completely productive. Certain LVs may not combine with certain NV elements, while others, of course, may. Above, we argued that some such restrictions are syntactic in nature; *shodan*, 'become', for example, selects for a predictive small clause complement, while *kardan*, 'do', can select for either a nominal complement (when it gets a 'do' meaning) or a small clause complement (when it gets a 'make' reading). This accounts for the success of a *kardan/shodan* alternation in examples like (60), with a predicative NV element, and the failure of alternation in examples like (61) below, with a nominal one, as noted by a reviewer:

(60). a. miz-o tamiz kard-am
table-râ clean made-1SG
'I cleaned the table.'
b. miz tamiz shod
table clean became
'The table got/became clean.'

(61). a. bachcha-ro hamum kard-am
child-râ bath did-1SG
'I bathed the child.'
b. * bachche hamum shod
child bath became
'The child became bathed.' (only possible reading: 'The child became a bath')

It seems likely to us that other, similar restrictions reflect general effects arising from the compositionality of the CPr construction. The following data, for instance, seem to show the effects of the importance of the concepts of internal vs. external causation, along the lines of Levin and Rappaport's (1995) proposal concerning the difference between alternating inchoative/unaccusatives (like *open*) and non-alternating ones (like *blush*). Consider the examples below:

(62). a. Kimea sorx shod
Kimea red became
'Kimea blushed'
b. *Papar Kimea-ro sorx kard
Papar Kimea-ro red made
*Papar made Kimea blush
('Papar fried Kimea')

Because *blushing* may only be internally caused (semantically speaking), *sorx* 'red' may not receive the 'blush' meaning when it occurs in combination with causative *kardan,* despite being syntactically unaccusative when it occurs in the intransitive form with *shodan* 'become', and despite the availability of a *shodan/kardan* inchoative/causative

alternation for many CPrs illustrated earlier. Similarly, certain NV elements may not be combined with the unaccusative *xordan*, 'collide', because the events that they denote can only be caused agentively—they are, in essence, inherently unergative. Accordingly, the ill-formedness of the (b) examples is not syntactic, but semantic.

(63). a. dâd zadan (scream hitting) 'to yell'
b. *dâd xordan (yell colliding) 'yelling happened'
(intended impersonal meaning)

(64). a. kâr kardan (work doing) 'to work'
b. *kâr xordan (work colliding) 'work happened'
(intended impersonal meaning)

Where general syntactic and semantic principles like those above can explain failure of productivity, we do not need to resort to 'listedness' or 'idiomaticity' for CPrs. Further, even for cases of CPrs which are clearly non-compositional and idiomatic in the language, we have argued that certain formal interpretive consequences of their syntactic structure continue to hold. That is, whatever aspectual properties are the consequence of having a particular syntactic category as the NV element, those aspectual properties continue to hold, whether the NV element combines with the LV in a transparently compositional way (as in *tamiz kardam*, 'clean make') or in a patently idiomatic way (as in *be âtash keshidan*, 'to fire pulling', i.e. 'to ignite'). The claim here, then, is that there are semantic consequences of certain syntactic configurations which are independent of what we might call 'encyclopedic' idiomaticity. This position has already been argued for in English by McGinnis (2002). Persian CPrs can be idiomatically interpreted or not, but their phrasal syntactic structure continues to exert its influence.

It may be useful at this point to pause and compare the present analysis with a recent Lexicalist analysis. Goldberg (in press) analyzes Persian CPrs as X°s (specifically, V°s) 'by default', proposing a default inheritance hierarchy of more specific constructions to explain the ways in which they appear to be syntactic in nature. We reviewed in Section 2.2.2 above several arguments from Karimi (1997) for considering CPrs to be made up of two or more syntactically independent heads. Megerdoomian (2001) also argues fairly thoroughly against a V° approach to CPrs. Here, we will just briefly consider some of Goldberg's arguments, referring readers to these two works for further discussion.

In Persian CPrs in the simple past, stress falls on the NV element, not the LV, while in a simple past HV main stress falls on the final verb (Ghomeshi and Massam, 1994):

(65). a. Ali mard-râ ZAD
Ali man-râ hit.1sg
''Ali hit the man''
b. Ali bâ Babak HARF zad
Ali with Babak word hit
''Ali talked with Babak''.

What Goldberg doesn't point out, however, is that if the object in a transitive HV sentence is non-specific, it is the non-specific, non-case-marked object which receives main stress, not the HV:

(66). man DAFTAR xarid-am
I note book bought-1sg
"I bought note books."

Main stress here is falling on an element which cannot be thought of as part of a V°, and which is in a position directly comparable to that of the NV element in our analysis. Case-marked specific objects, like *mard-râ*, 'man-acc' in (65a) are usually analyzed as having moved out of the VP to a higher case-marking position (see discussion following example (67) below). Non-specific objects, on the other hand, remain in situ within the VP, as we claim the NV element in a CPr does—and when we consider such an example, we see that such objects receive main stress.

Consequently, it is clear that stress placement cannot be used as a diagnostic for X° status in CPrs. Megerdoomian (2001) suggests that main stress usually simply falls on the lowest element in the syntactic structure. In the approach to CPrs we have adopted here, like Megerdoomian's, the NV element will be lower than the LV, and will receive stress. Additional evidence supporting the analysis advanced in this work is provided by Kahnemuyipour (2003). Analyzing stress in Persian syntactic categories, he claims that the first phonological word (PWord) in the phonological phrase (PPhrase) is assigned main stress. Not only the nonspecific object, but also a wh-phrase in situ receives main stress, as in *Ali KOJA na-raft* 'where did not Ali go' where the main stress falls on *kojâ* 'where' (Kahnemuyipour, 2003: 362). It should be clear that stress placement on Persian verbs can and should be treated without requiring an X° treatment of CPrs.

CPrs can also be the input to derivational morphological processes like nominalization: *bâzi kardan*, 'game do' (i.e. 'play') ~ *bâzikon*, 'game-doer' (i.e. 'player'). Again, within a post syntactic approach to morphological phenomena, like that adopted by Megerdoomian and the present authors, such processes are not evidence for X° status. Rather, they have the same status as synthetic compounds in English (*quick-growing*, *lawn-mower*, *truck-driver*) or mixed nominalizations (*Mary's reading of Pride and Predjudice*), etc. See Kratzer (1996), Harley and Noyer (1998), Embick (2003) and Harley (in press) for additional discussion.

Another of Goldberg's arguments for X° status of CPrs is also problematic once one looks a little deeper at general properties of Persian syntax. She notes that in general, adverbs may not intervene between a LV and the NV element in a CPr (67a), and asserts that this demonstrates that the CPr is more like a V° than a VP, since adverbs may generally intervene between a verb and its object (67b). However, she neglects to mention the fact that adverbs may generally intervene only between a verb and a *case-marked*, specifically-interpreted object (like that in (a)). An Object-Verb sequence with a nonspecific object may *not* be interrupted by an adverb (67c).[10]

[10] The non-specific object may precede the adverb only if contrastively focussed (Karimi, in press).

(67). a. mashq-am-râ tond neveshtam
homework-1sg-acc quickly wrote.1sg
"I did my homework quickly"

b. (tond) rânandegi (*tond) kardam
(quickly) driving (quickly) did.1sg
"I drove quickly"

c. (tond) mashq (*tond) neveshtam
(quickly) homework (quickly) wrote.1sg
"I did homework quickly"

As noted above, much literature on Persian syntax (Browning and Karimi, 1994; Karimi, in press) takes facts such as these to argue for a process of overt Object Shift to a Case-marking position for specific objects in Persian, like similar processes in German and Yiddish (see Deising, 1997, for example). Indeed, the failure of adverbs to intervene between the LV and the NV element could be taken as evidence that CPrs are *similar* to Persian VPs. Object shift of the NV element away from the verb is not possible for many reasons: (a) they are inherently non-specific, (b) many of them are not nominals, and (c) at least for NV elements that take a complement, they are not maximal (XP) categories, all of which are prerequisites for undergoing movement to a Case-marking specifier. See Section 2.2.2 for arguments demonstrating the syntactic independence of the NV element and the LV that do not rely on adverb placement.

Given the default V° status for CPrs that she proposes, Goldberg then must account for the many respects in which only the LV component of the CPr behaves like a true verbal category. The LV is inflected like a true verb; prefixes like the durative marker *mi-* or the negative marker *ne-* must appear attached to the LV, not the NV predicate, as would be expected if the whole CPr were a V°. Auxiliary verbs precede the LV, not the NV element. All of these properties violate the 'Lexical Integrity Principle' for Goldberg—the principle that X°s are syntactic atoms, 'invisible to syntactic processes such as insertions of inflected forms'. Consequently she has to adopt the mechanism of a default construction inheritance hierarchy to capture them. On the present approach, however, these facts fall out naturally as a consequence of independent properties of Persian grammar. Indeed, we are somewhat confused by Goldberg's invocation of X°s at all, given that in her framework, phrases may be stored in the 'constructicon', which can contain elements as small as a morpheme and as big as a sentential idiom. Such stored idiom phrases are inflected according to the syntactic principles of the language—the past tense of *kick the bucket* is *kicked the bucket*, not *kick the bucketed*; similarly for *looked up*, not **look upped*—and one would think that the inflection facts about CPrs alone would lead Goldberg to treat them in the same way. Presumably she wants to offer an account of the stress-marking, nominalization and adverb-placement facts—but if all such facts are treatable within a syntactically complex analysis of CPrs, as we suggest they are, the empirical gain from an X° treatment of them becomes negligible, and the theoretical cost (inheritance hierarchies) prohibitive.

Goldberg does address one set of facts that might, at first sight, pose a problem for our analysis of CPrs. They pose as big a problem for her analysis, however,

although for different reasons. In Persian, object pronominal clitics follow the HV in simple verb sentences, but follow the NV element (not the light verb) in CPr constructions.

(68). a. didam-ash
see.1sg-3sgO
"I saw it."

b. roshan-ash kard
light-3sgO did.3sg
"S/he turned on the lights."

Again, these are problematic for Goldberg in that the object clitics are syntactic elements intruding into what on her analysis is an X°. They are problematic for our analysis in that it is not immediately clear why the object clitics appear attached to the NV element in the CPr constructions, rather than the LV; if this cliticization process were like that of, e.g., Romance object clitics, it shouldn't matter whether the verbal element they attach to is a LV or a HV. Nonetheless, we think our analysis of CPrs allows for a fairly simple treatment of object clitic placement.

We suggest that the object clitic originates inside the vP, either as sister to the NV element or as head of some intervening object agreement projection (Koizumi, 1993). In the case of a simple HV construction, it attaches itself to the root and becomes part of the verbal complex as the root head-moves up to v°, and hence appears cliticized to the main verb. In the case of a CPr construction, on the other hand, the NV element containing the root remains within the PredP, failing to head-move to v°. Consequently, the object clitic also remains below, and cliticizes happily to the NV element in situ. We leave further exploration of the consequences of this account for future work.

7. Some consequences and predictions

In this section, we discuss some predictions of our proposal. We start with resultative constructions, continue with passives, and finish with a discussion of location/locatum CPr constructions.

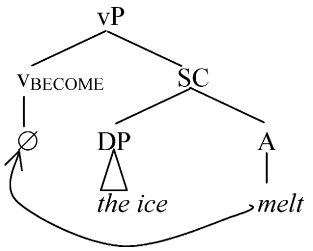
7.1. Resultatives

In a Hale and Keyser-style system, most Accomplishment-denoting verbs are structurally covert resultatives: a null causative or inchoative light verb combines with a predicative small clause that denotes the Result (*The ice melted*). The formation of a true resultative, with a secondary Result predicate (*The ice melted away*), in a language like English, is the product of an exceptional process whereby a verb root like *melt* is merged in the place of the causative light v, and the secondary predicate forms the result-denoting predicative small clause (Harley, 2001; Mateu, 2002; Folli and Harley, 2004). The structures of each of these two sentences in the present framework are illustrated

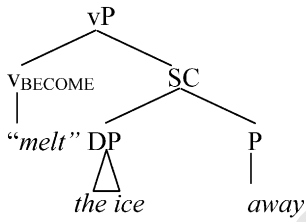
below:

(69).

a. *The ice melted*



b. *The ice melted away*



As is well known, the availability of this sort of 'manner incorporation' operation varies parametrically across languages (Talmy, 1985); English and the Germanic languages generally allow it, while Romance languages do not. Whatever the account of the Germanic/Romance variation, it seems clear that the present analysis predicts that Persian should *not* allow the formation of such resultatives.

If resultatives result from the 'merge' of an ordinarily predicative root in the light verb position, combined with the insertion of a new resultative predicate low in the structure, resultatives in general should only be possible with NV predicates which are potentially verbal in nature. In Persian, change-of-state CPrs are made up of a light verb plus a resultative NV element. Two predictions about resultative formation ensue: (i) Persian should not allow the addition of a secondary predicate to a CPr construction, since the result-predicate slot is already occupied by the NV element; (ii) Persian should not have the option that English does, of merging a result-denoting Root in the LV position in order to make room for a resultative secondary predicate, because in Persian, the set of light verbs is tightly constrained, limited to a few dozen elements at the most.

That is, our analysis thus far predicts that resultatives with complex predicates should not exist in this language since there is no room for complex structure for the secondary result-denoting predicate. This prediction is borne out as the following contrast indicates.

(70). a. Kimea felez-ro chakkosh zad
K metal-râ hammer hit
'Kimea hammered the metal.'

b. *Kimea felez-ro sâf chakkosh zad
K metal-râ staight hammer hit
The intended meaning: 'Kimea hammered the metal straight.'

Here *sâf*, 'straight', cannot be a secondary resultative predicate. (It can function as a subject depictive, modifying *Kimea*, a reading which is also available in English. The resultative predicate reading, however, is completely impossible.) A resultative reading can be obtained only by adding a resultative clause, as in (71).

(71). Kimea felez -ro chakkosh zad tâ *pro* kâmelan sâf shod.
K metal-râ hammer hit till completely straight became
'Kimea hammered the metal till it became completely straight.'

7.2. *Passives*

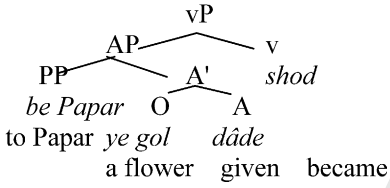
Whether or not there is syntactic passive construction in Persian has been highly controversial. Some linguists have argued that there is a structural passive construction in Persian, similar to that observed in English (Palmer, 1971; Soheili-Isfahani, 1976; Hajati, 1977). Moyne (1974), in contrast, suggests that Modern Persian lacks passive constructions, and all those cases that have been considered passive are in fact constructed with the inchoative verb *shodan* 'become'. Dabir-Moghaddam (1985) disagrees, suggesting that the inchoative *shodan* is not the same as the passive *shodan*, and joins the first group, arguing that Persian does exhibit structural passive constructions.

Given our analysis of Persian complex predicates, it could be argued that the passive construction is just an instance of CPr, with a past participle serving as its NV element (Karimi, in press).

(72). ye gol be Papar dâde shod
a flower to Paper given was
"A flower was given to Papar"

The past participle *dâde* has adjectival properties. The phrase structure of (72) is provided in (73). The complement of the verbal adjective moves to the subject position.

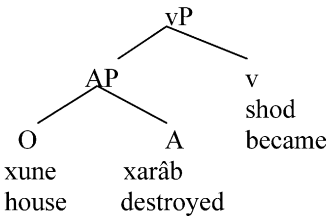
(73).



This structure is identical to the regular unaccusative CPr consisting of an adjective as the NV element of LV. Consider the example in (63) and its phrasal structure in (0).

(74). xune xarâb shod
house destroyed became
'The house was destroyed.'

(75).



Our analysis predicts that there is no 'passive' of CPrs with a nominal NV element, because there is no predicative form of these nominal NV elements. As discussed above, the 'passivizing' light verb *shodan* 'become', selects for a predicative small clause complement. This prediction is in fact borne out as shown by the following data:

(76)	a.	hol dâdan	(push doing)	'to push'
	b.	*hol dade shodan	(push given become)	'be pushed' (intended)

(77)	a.	kise keshidan	(brush pulling)	'to brush (body)'
	b.	*kise keshide shodan	(brush pushed become)	'be brushed' (intended)

In (76) and (7), we see that the LV which creates the 'passive' in combination with a deverbal adjective small clause cannot co-occur with both the deverbal adjective of the appropriate LV AND a nominal NV element, which would be necessary in order to form a passive of a CPr with a nominal complement. If the deverbal adjective of heavy verbs is truly functioning as a NV element in the Persian passive, this is expected: CPrs can contain only one NV element.

There is also no unaccusative alternation with these nominal-based CPrs, where their normal agentive light verb is simply switched for a non-agentive one; this is presumably for the semantic reasons outlined in Section 6 above.

7.3. Location/locatum: Megerdoomian (2002a)

Megerdoomian (2002a) makes a proposal concerning aspect in CPrs that is in general very compatible with the view proposed here. She argues, as we have argued above, that the event structure of a CPr is the compositional result of the combination of the LV and the NV element, contra the view of Karimi-Doostan (1997) that it depends entirely on the LV. However, our final conclusion that telicity is present when a predicative SC is present, i.e. with PP and Adj NV predicates, is significantly different from that of Megerdoomian. She argues that it is the presence of a 'become' predicate that ensures telicity, whether or not the 'become' predicate is overt. (For adjectival change-of-state CPrs, this proposal is more isomorphic to Hale and Keyser's original double-VP structure than our own is.) In causative change-of-state predicates, she assumes that her 'become' light verb is present but morphologically invisible. Given the persistent complementary distribution of the

inchoative and causative LVs, however (see (25a and b) and (26a and b), as well as (56) and (57), and (76) and (77) above, for example) we feel that the structure of the NV element is the crucial determinant of Aktionsart, rather than the presence of any covert inchoative v° in telic causatives; there is no overt morphosyntactic evidence for such an embedded inchoative v° in causative Persian CPrs.

There is one class of cases discussed by Megerdoomian, however, which at first glance appear to go against our proposal here: a set of CPrs which can be telic despite having NV elements which are unambiguously Ns. These are CPrs with meanings like those of the English denominal predicates that Hale and Keyser dub 'location/locatum' verbs: *shelve*, *box*, *saddle*, *paint*, *oil*, *corral*, etc. A subset of Megerdoomian's examples are presented in (78) and (79) below:

(78). a. afsâr zadan 'to harness'
harness hit

b. pâlân zadan 'to saddle'
blanket hit

c. zang zadan 'to bell'
bell hit

(79). a. roqan zadan 'to oil'
oil hit

b. namak zadan 'to salt'
salt hit

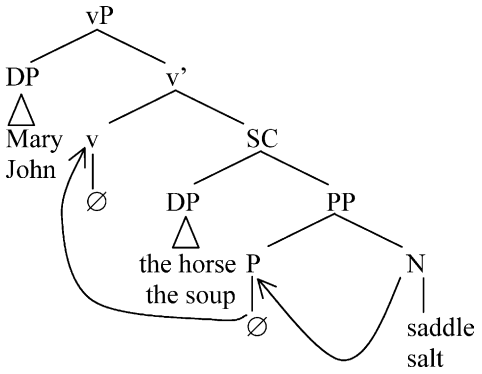
c. gard zadan 'to powder'
powder hit

These CPrs have interesting properties which parallel the properties of their English counterparts. According to our proposal above, they should all be atelic, since they are CPrs with nominal NV elements. However, the first group, but not the second are necessarily *telic*—exactly like their English counterparts.

This fact about the English predicates was first noted in Harley (1998, 2001), who argued that for location/locatum verbs, the telicity of the denominal verb was correlated with the boundedness of the nominal: if the nominal was unbounded ('mass') as *sand*, *powder*, *salt*, etc., the verb was unbounded; if it was bounded ('count'), as *saddle*, *bell*, *bag*, etc., the verb was bounded. Megerdoomian points out that the dependence of the telicity of the CPr on the boundedness of the nominal NV root appears to be true in Persian location/locatum verbs as well.

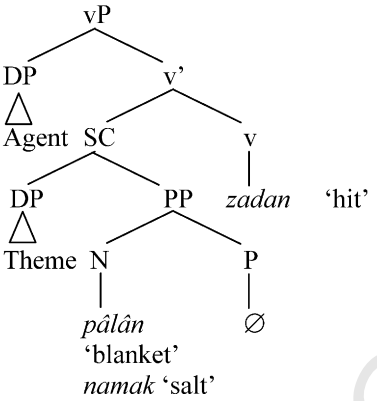
We can account for this in the system presented here if we allow for the presence of a covert resultative predicate in the NV element—a preposition—in just this limited class of cases. Hale and Keyser, recall, propose that location/locatum verbs have the following structure, with a SC headed by a null preposition:

(80).



Recall that we asserted above that the boundedness of a CPr with a SC within it was determined by whether or not the SC denoted a scalar state—whether it provided a definite endpoint (result) or allowed for indefinite increases in the degree of the state. Harley (2001) argued that the boundedness of the state denoted by the covert PPs in locatum verbs depended on the boundedness of the locatum itself. Megerdoomian has shown that, for the class of CPrs with locatum meanings, this is true in Persian as well: *pâlân*, 'saddle', is inherently bounded, while *namak*, 'salt', is not. Consequently, we assume that there is a covert prepositional predicate present in these CPrs, providing the locative component: the structure of *pâlân zadan*, 'to saddle', and *namak zadan*, 'to salt', is given in (81).

(81). Structure of *pâlân zadan* ('saddle') and *namak zadan* ('salt')



This is another case in which Persian does not seem to provide a direct morphological realization of every component in Hale and Keyser's proposed l-syntax. However, the clues provided by the aspectual properties of these CPrs, and their locative meaning, combine to suggest that the analysis proposed by H&K for English should in fact be extended to Persian in these cases as well.

8. Conclusions

In this paper we have argued that Persian CPrs are syntactically derived from two independent elements: a non-verbal element and a light verb. We have considered in turn the contribution of each element and shown that while the light verb determines the agentivity/causativity, the eventiveness and the duration of the CPr, the NV element determines the Aktionsart of eventive CPrs. These conclusions support a syntax-based approach to verbal composition, as the event structure and agentivity of the CPr are direct functions of its individual parts. This division of labor is not predicted by projectionist approaches, which are further faced with the problem of accounting for the syntactic independence of the two elements. Persian CPrs directly show the complex structure proposed for independent syntactic and semantic reasons in the literature for languages like English. Not only do they realize the individual sub-events of verbal structure as separate morphemes, they realize them as independent syntactic elements, rather than as dependent pieces of morphology attached to verbs. Projectionist approaches, which can argue that complex predicates in many languages should be derived in the lexicon since they are single phonological words, cannot take that tack with Persian.

Uncited reference

Kahnamuipour (2001).

Acknowledgements

We would like to thank the participants of the Kostanz Workshop on Sub-Events (October 2002) for interesting discussions on a previous version of this paper, and two anonymous reviewers for insightful comments on how to improve this work. An earlier version appeared in COPiL (Cambridge Occasional Papers in Linguistics), Vol1. Folli's work was carried out under a British Academy Post-Doctoral Fellowship.

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