First Phase Syntax of Persian Complex Predicates: Argument Structure and Telicity

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Abstract

In this paper, I propose an analysis of Persian complex predicates, based on the First Phase Verbal syntax developed by Ramchand (2008). I suggest that the light verbs lexicalize the subevent heads into which the verbal phrase is decomposed, while the preverbal element occupies the Rheme position and semantically unifies with the light verb to build one joint predication. Further, I propose a feature specification for some of the most productive light verbs. I discuss the role of the light verb and the preverb in determining the argument structure of the entire predicate and show how the aspectual properties of the complex predicate depend on the interaction between the preverb and the light verb.

1 Introduction

Persian is a language that makes extensive use of the so called complex predicates (CPr) — a predicate which consists of a non-verbal part, often referred to as *preverb* (Lazard 1957) and a semantically bleached verb, called *light verb*. The preverb and the light verb together build one predicate.[1]

(1) mina reza-ro[2] dust dare.
Mina Reza-om friend has
'Mina loves Reza.'

The preverb can represent different syntactic categories: noun, adjective, adverb, preposition, or prepositional phrase. Interestingly, certain light verbs tend to take preverbs belonging to certain categories. In Table 1, I present some of the most common light verbs and the preverb categories they productively combine with.[3]

An issue that has been the cause of much debate in the literature relates to the role of the two elements in the complex construction with respect to the aspectual properties of the complex predicate and its argument structure (Karimi-Doostan 1997, Karimi-Doostan 2005, Megerdoomian 2001, Megerdoomian 2002a, Folli et al. 2005). A common view is that the light verb is responsible for the projection of the external argument and, according to Karimi-Doostan, it also determines

[1] Abbreviations in glosses used in this paper are as follows: 1, 2, 3 – first, second and third person; cl – clitic; class – classifier; ez – Ezafe linker; om – object marker; pl – plural; pp – past participle.

[2] The clitic *–ro* (*-ra* is the formal/written form), commonly termed *object marker* attaches to all direct objects that are construed as specific.

[3] At the end of the paper, I have given examples for the complex predicates included in the charts.

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Light Verb		N	P/PP	Adj/Adv
kærdæn	'do'	ok		
aværdæn	'bring'	ok	ok	ok
amædæn	'come'	ok	ok	ok
gereftæn	'take'	ok	ok	
dadæn	'give'	ok	ok	
keshidæn	'pull'	ok		ok
xordæn	'collide'	ok		
zædæn	'hit'	ok		
kærdæn	'make'	ok		ok
shodæn	'become'	ok		ok
oftadæn	'fall'	ok	ok	
ændaxtæn	'throw'	ok	ok	

TABLE 1: Preverb and light verbs combinations

the aspect of the complex predicate. Folli et al. (2005), however, claim that the (un)boundedness of the event is dependent entirely on the type of preverb the light verb combines with. The goal of the present paper is to discuss this issue and provide insight into the ways telicity arises in complex predicates. More specifically, I am going to show how each of the two elements contributes to the telicity of the entire predicate and will investigate the ways in which they interact.

The analysis of Persian complex predicates I propose is based on the First Phase Syntax research program developed in Ramchand (2008). According to her theory, events are decomposed into three subevents (*init*, *proc* and *res*), each corresponding to a distinct head in the verbal projection and introducing an event participant. Applying this system to the Persian data, I will investigate the question of what the contribution of the two components of the complex predicate is when it comes to its argument structure and telicity.

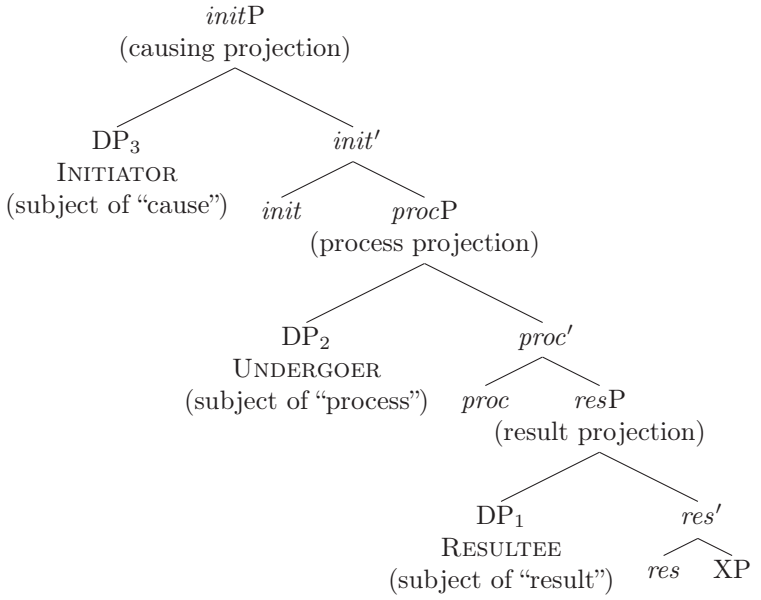
The paper is organized as follows. In Section 2, I briefly introduce the First Phase Syntax system. In Section 3, I apply the system to Persian complex predicates and lay out the proposal concerning the syntactic structure that underlies them. Section 4 deals with the feature specification of the light verbs according to the model described in Section 2. In Section 5, I handle the question of telicity of events by means of the tools provided by the system. Section 6 summarizes and concludes.

2 First Phase Syntax of Persian complex predicates

2.1 A quick guide to the Verbal First Phase Syntax

Ramchand's (2008) First Phase Syntax is characterized by the decomposition of the verbal domain into three distinct heads, each corresponding to a primitive element of events. The internal structure of the verbal phrase contains the following three subevent projections: *init*[iation]P, *proc*[ess]P, and *res*[ult]P. The first (*init*) and the third (*res*) are stative heads, while the second – *proc* – is the hallmark of dynamicity. Every dynamic verb, then, contains the *proc* head in its decomposition. The stative *init* and *res* heads, however, can be missing in the case of dynamic verbs. Each subevent head enters in a predicational relation with its specifier position, where we find the "subject" of the event. In (2), I present the maximal decomposition of the verb phrase.

(2)



As can be seen, the three core projections are:

- InitP: introduces the causation event and licenses the external argument (the Initiator)
- ProcP: specifies the process or the nature of the change and licenses the internal argument (the Undergoer)
- ResP: introduces the result state and licenses the holder of the result state (the Resultee)

Apart from the three thematic roles above, there exist *composite* roles which arise when the same DP argument occupies two (or more) specifier positions. This happens when a DP raises from the specifier of a lower subevent head to the specifier of a higher subevent head. In such cases, we have the roles of Initiator-Undergoer, Undergoer-Resultee, and Initiator-Undergoer-Resultee. The first one arises when the same argument is the holder of the initiational stage and undergoes the process/change (e.g. the sole argument of the verb *run*). The second one arises when the same argument undergoes the process/change specified by the *proc* head and holds the result state (e.g. the direct object of *break*). The third one arises when the same argument initiates the event, undergoes the process/change and is the holder of the result state (e.g. the argument of *arrive*). The composite thematic roles of the participants in the event are encoded in the lexical entry of the verb, that is, the verb determines whether a certain DP will raise from one specifier to another or not.

Crucially, a verb can lexicalize more than one head in the verbal phrase. Thus, in this model, verbs come in the lexicon with a categorial feature specification which determines which subevents they lexicalize. For example, a verb specified as $< init, proc >$ will spell out both the *init* and the *proc* head simultaneously. Depending on which subevent heads a verb lexicalizes, it belongs to a particular verb class. Thus, there is the class of $< init, proc >$ verbs, the class of $< init, proc, res >$ verbs, the class of $< proc, res >$ verbs, etc. If we are to connect these classes to the traditional aspectual classes, then activities are characterized by the features $< init, proc >$ or only $< proc >$, achievement verbs are specified as $< init, proc, res >$ or $< proc, res >$, statives have only the feature $< init >$, etc. When it comes to argument structure, unergatives are verb that are specified with the feature $< init >$, while unaccusatives lack this feature.

Concerning the semantic interpretation of the verbal phrase, the system employs compositional semantic rules that interpret the embedded predication via a causational semantics. Thus, in the verbal decomposition, we have two stative heads (*init* and *res*), the first one "leads to" the process subevent and hence is interpreted as initiation, the second one is "caused" by the process, and is therefore interpreted as result.

Clearly, the advantage of this system is that it allows for many different types of verbs to be put together by means of a fairly impoverished set of primitives, some general principles of lexical association and a compositional semantic rule based on the relation "leads-to."

A subevent descriptor is not restricted to taking another subevent phrase as a complement. An event head can also have non-verbal material (DP, AP, PP, etc.) occupying its complement position. Such non-verbal complements are called RHEMES (e.g. the XP in (2)). RHEMES are not subjects of events but part of the description of the predicate. Hence, there is an important difference between a DP in the RHEME position and a DP occupying the specifier of a subevent head. Namely, the first one builds one joint predication with the verb, while the latter is a verbal argument.

It is important to note that the (un)boundedness of the macro-event does not necessarily entail that there is a *res*P in the stucrure. The RHEME plays an important role in determining the telicity of *proc* verbs that do not instantiate *res*. As the material in the RHEME and the verb unify, a bounded RHEME makes the entire predication bounded. Examples for such bounded RHEMES are closed scale gradable adjectives, bounded Path PPs, and quantized nouns. Hence, whenever a $< proc >$ verb has such a bounded RHEME, a telic interpretation will arise for the entire macro-event, despite the fact that there is no *res* head in the structure.

3 Assembling the complex predicate

3.1 The role of the light verb

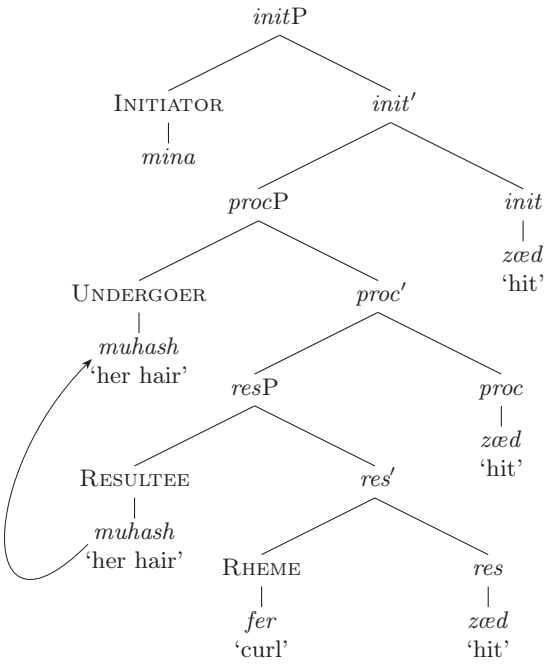
Butt (2003) argues that light verbs always have a main verb counterpart in the language. I take this to mean that there is no syntactic difference between light and heavy verbs. It is then logical to assume that light verbs lexicalize the subevent heads in the decomposed VP, just like heavy verbs do. The distinction between light and heavy verbs can be then due to the fact that the former have a very abstract semantics, while the latter have full lexical meaning. Take, for example, the verb *zædæn*, which, as a heavy verb, is agentive and punctual and means roughly "cause x to come into contact with y, quickly and forcefully," and can be best rendered by the English verb *hit* (see (3a)). The light verb *zædæn*, according to Family (2006, 60), also participates in agentive complex predicates that, in general, denote instantaneous actions, with the possibility of being iterated. The action usually involves change of state either of the agent herself, or of another entity. Thus, the light verb *zædæn* is impoverished semantically, however, it is not totally deprived of content. The semantic content of the heavy verb and the light verb *zædæn* share some meaning components, but the heavy verb carries a richer conceptual content. Note that the meaning of "hitting" is not preserved in the complex predicate in (3b), where there is no notion of impact whatsoever. Still, in both examples, the event is bounded and we have an agent.

(3) a. mina sæng-ro be divar zæd.
Mina stone-OM to wall hit
'Mina hit the stone at the wall.' (heavy verb *zædæn*)

b. mina mu-ha-sh-ro fer zæd.
Mina hairs-PL-3CL-OM curl hit
'Mina curled her hair.' (CPr with light verb *zædæn*)

As the reader can observe, the meaning of the complex predicate *fer zædæn* (curl hit) in (3b) is very specific, although, as I just argued, the light verb contributes to the predicate only a very abstract meaning. Hence, it is logical to conclude that the main conceptual-intentional content of the CPr comes from the preverb. With respect to the syntactic position of the preverb, I suggest that it occupies the RHEME position and semantically unifies with the light verb to build one joint predicate. The syntactic structure of the complex predicate *fer zædæn* (curl hit) 'to curl' in (3b) will be then as in the tree diagram in (4).

(4)



In the tree structure above, the light verb *zædæn* spells out all three subevent heads, thus projecting all three specifier positions in the VP. The direct object *muhash* 'her hair' is first merged in the lowest one as a Resultee and subsequently moves to Spec,*proc*P. As a consequence, the argument *muhash* acquires the composite role of Undergoer-Resultee, that is, it undergoes the process and holds the result state of having curls.[4] The subject *Mina* is merged directly in the specifier of *init* where it is interpreted as the Initiator of the event. The third noun element — the preverb *fer* 'curl' in the Rheme — is interpreted as part of the entire predicate.

3.2 The role of the preverb

Given that it is the light verb that lexicalizes the verbal heads, the argument structure of the whole complex predicate will depend on the feature specification of the light verb. By argument structure I mean the projection of the specifier positions of subevent heads, or, put in other words, the presence of the "subjects" of the subevents: Initiator, Undergoer, and Resultee. Thus, if we want to have an agentive complex predicate, we need to choose a light verb that has the feature $< init >$, so that the *init* head is spelled out and the Initiator position is projected. This is very much in accordance with the complex predicate analysis of Megerdoomian (2001) and Folli et al. (2005), who convincingly show that the light verbs in Persian determine the agentivity/causativity of the predicates they form, regardless of the preverb. Further, the presence of Undergoer and Resultee positions is also dependent on the light verb, and these are the positions occupied by the internal argument. Thus, in a sense, the presence of a direct object depends on the light verb. This suggestion is in line with Megerdoomian's claim that the light verb projects the internal argument of the complex predicate (Megerdoomian 2001, 2002a). However, this goes against some analyses of Persian complex predicates, according to which it is the preverb that contributes the internal argument (see, for instance, Karimi-Doostan 1997, 2005). This disagreement can be, however, resolved, as the system

[4]The *-ro* marker on the direct object *muhash* 'her hair' is due to the fact that it is construed as specific. I assume that specific direct objects (i.e., specific Undergoers, Resultees, and Undergoer-Resultees) undergo a movement to a position higher in the tree. This is in line with analyses proposed by various researchers, according to whom specific direct objects appear in a higher position than their non-specific counterpart and argue that this is the result of a syntactic movement. For instance, Browning and Karimi (1994) propose that specific DPs move to a VP-external position for case reasons. Karimi (2005) also shares the view that all direct objects are merged in the same position in the verbal phrase, but the specific objects move to the specifier of *v*P to receive interpretation.

proposed here provides a way to unify the two approaches. Consider the following examples:

(5) a. mina gusht-ro næmæk zæd.
Mina meat-OM salt hit
'Mina salted the meat.'
b. mina chærx zæd.
Mina turn hit
'Mina turned (around).'

The light verb in both sentences remains constant, still, the a-example features an external and an internal argument, while the b-example appears to have just an external argument. Since the element that varies in the two sentences is the preverb (*næmæk* 'salt' versus *chærx* 'turn'), an option is to conclude that the preverb *næmæk* contributes the internal argument in (5a). The logical question is how the preverb in the RHEME position can add an argument, given that it is the light verb that projects the subevent head and consequently also the specifiers thereof, where we find the arguments of the predicate.

Recall that under the approach assumed here, one DP can raise through multiple specifiers of subevents, thus acquiring a composite thematic role. Maintaining the proposal that the INITIATOR, UNDERGOER and RESULTEE positions are contributed by the light verb, a solution of this problem will be if we assume that certain preverbs require the DP to undergo movement to a particular specifier (or specifiers), while other preverbs do not. Thus, the preverb in a complex predicate conditions the raising of a DP argument in the same way as a heavy verb does. Applied to the data in (5), this would mean that the preverb *næmæk* 'salt' prohibits the DP *gusht* 'meat' to raise to the INITIATOR position, thus enforcing the merge of a distinct DP, *Mina*, in Spec,*init*P. The preverb *chærx*, on the contrary, requires the DP *Mina* to go through all specifiers, which results in there being just one argument but with the composite role or INITIATOR-UNDERGOER-RESULTEE. Hence, in a way, both the light verb and the preverb play a role in determining the presence of an internal argument: the light verb contributes the syntactic position for it, and the preverb says whether it is going to be a distinct DP from the external argument or not. A consequence of this proposal is that light verbs differ from heavy verbs in that the latter determine whether the DPs occupying the specifiers of subevent heads are distinct or not, while the former do not have this information encoded in their lexical entry.

The proposal that preverbs indirectly affect the argument structure of the complex predicate by determining the raising of DPs from one specifier position to another leads to a prediction. The prediction is that when a given preverb combines with two distinct light verbs with the same feature specification (but different abstract semantic contents), the argument structure of the complex predicate will be the same. Take as an example the light verbs *zædæn* 'hit' and *kærdæn* 'make,' which participate in resultative complex predicates (i.e., both have the feature *res*) with agents (i.e., both light verbs have the feature *init*). We expect the same number and thematic roles of the arguments of the complex predicates constructed by combining the same preverb with one of these two light verbs. This is illustrated by the example in (6).

(6) a. mina mu-ha-sh-ro ræng zæd.
Mina hair-PL-3CL-OM paint hit
'Mina dyed her hair.'
b. mina mu-ha-sh-ro ræng kærd.
Mina hair-PL-3CL-OM paint made
'Mina dyed her hair.'

Thus, in (6) we have the same preverb *ræng* and two distincts $< init, proc, res >$ light verbs — *zædæn* in (6a) and *kærdæn* in (6b). The argument structure of the complex predicates is the same in the (a) and (b) example: there is an external argument (*Mina*) and a distinct internal argument

(*muhash* 'her hair'). What differs is the semantic interpretation because of the different abstract semantic contents of the two light verbs. The nuances in the meaning are somewhat difficult to define in a precise way, but they doubtlessly exist. The complex predicates in the minimal pair *ræng zædæn* (paint hit) and *ræng kærdæn* (paint make) are synonymous in that they both express the transitive event of painting/dyeing something. When we use the light verb *zædæn*, however, the implication is that the result state of the hair being dyed persist longer, and the change inflicted on the patient is more accentuated. In other words, the choice of the light verb *zædæn* leads to a complex predicate that focuses on the change of state and the following result state. With *kærdæn*, on the other hand, the main stress falls on the activity of dyeing, that is, on the process part of the event, and the result state is less emphasized.

3.3 Preverb modification

Preverb modification lends support to the hypothesis that preverbs occupy the rhematic position. The point is that modification of a preverbal noun element differs from the cases when a direct object is modified. Compare the (a) and (b) example in the data set below.

(7) a. mina do-ta shune gereft.
Mina two-CLASS comb got
'Mina received two combs.'
b. mina mu-ha-sh-ro do-ta shune zæd.
mina hair-PL-3CL-OM two-CLASS comb hit
'Mina combed her hair twice.'
(modified from Megerdoomian 2006)

In (7a), the noun *shune* 'comb' is an UNDERGOER-RESULTEE direct object of the verb *gereftæn* and thus the number of combs received by Mina is two. In example (7b), featuring a complex predicate, however, the numeral does not scope over the noun but is interpreted as modifying the whole event. The reason for this is that the numeral is inside the RHEME, where it gets interpreted as part of the whole predication.[5]

A similar generalization extends to adjectival modification of noun preverbs. Consider, for instance, the data in (8).

(8) reza kotak-e bædi xord.
Reza beating-EZ bad collided
'Reza was beaten badly.'

The adjective in this example is interpreted as modifying the whole event. Still, it clearly is part of the RHEME, as evidenced by the presence of the Ezafe linking morpheme. Ezafe appears on a noun whenever it is modified by an adjective. Thus, we can conclude that the adjective in (8) indeed modifies the noun preverb and is therefore inside the RHEME.

3.4 The distinction between direct objects and noun preverbs

Before concluding this section, it is worth investigating how the approach advocated here can handle one widely discussed issue in the literature on Persian complex predicate — the status of the noun preverb or, more precisely, the question of how noun preverbs differ from bare direct objects. The reason for this interest in noun preverbs is that they, like all other preverbs, invariably precede the light verb. As Persian is an SOV language, direct objects, too, are placed before the verb. Very often then it is not easy to decide whether a given noun is a preverb or an internal argument

[5] An anonymous reviewer suggested the possibility that the numeral is adjoined and scopes over *res*P. However, the presence of the classifier *-ta* indicates that the numeral is part of the extended projection of the noun *shune* 'comb' (in the sense of Cinque 2005). In addition, if *do-ta* really were an adjunct, nothing would prevent it from adjoining to the VP in (7a) thus giving rise to a reading where Mina receives a comb twice. This reading is, however, unavailable for (7a).

of the verb. This question has triggered much debate in the literature concerning the relation of the nominal element in CPrs and the light verb. The result is a two-way split: according to some researchers, noun preverbs are just like (bare) direct objects (Samvelian 2001, 2004). According to others, most notably Megerdoomian (2006), noun preverbs differ from direct objects and occupy a different position in the syntactic structure. This is also the hypothesis maintained in this paper.

In the syntactic decomposition of verbs adopted here, the arguments of the verb occupy one or more specifiers of the subevent heads. Hence, this is where we find the noun *sæng* 'stone' in the example in (9a), where *zædæn* is a heavy verb. Preverbs, as suggested above, are in the rhematic positions of the VP, therefore, the preverb *ræng* 'paint' in (9b) is hosted by the RHEME.

(9) a. mina be divar sæng zæd.
Mina to wall stone hit
'Mina hit a stone/stones at the wall.'
b. mina be divar ræng zæd.
mina to wall paint hit
'Mina painted the wall.'

Complex predicates with noun preverbs are then structurally different from direct object+verb constructions: in direct object+verb construction the noun is in the UNDERGOER and/or RESULTEE position, while in complex predicates, the noun is in the RHEME. Thus, in the case of complex predicates, there can be an internal argument occupying the specifiers of *proc* and *res*. This will result in a direct object+complex predicate combination, like the one in (10). (10) is a different way to say (9b), where instead of the PP *be divar* 'to the wall,' we have *divar* 'wall' as direct object, as evidenced by the object marker *-ro*.[6]

(10) mina divar-ro ræng zæd.
Mina wall-OM paint hit
'Mina painted the wall.'

If we try to introduce *divar* 'wall' as a direct object in (9a), the result will be ungrammaticality (see (11)). The reason is that the noun *sæng* 'stone' already occupies Spec,*proc*P and Spec,*res*P and these positions are not available for the intended direct object *divar* 'wall.'

(11) *mina divar-ro sæng zæd.
Mina wall-OM stone hit
Intended: 'Mina hit the wall with stones.'

Thus, the proposed position of preverbs in the RHEME allows us to draw a distinction between noun preverbs and direct objects, which arises due to the different structural position they occupy.

3.5 Summing up

To recapitulate this section, I proposed that the light verb in Persian complex predicates lexicalize the subevent heads in a decomposed verbal phrase. The preverbal element is hosted by the RHEME and semantically unifies with the light verb to form one predicate.

Light verbs are like heavy verbs in that they are specified for the same verbal features in the lexicon. Still, there are two differences: (i) light verbs have a bleached and abstract semantics, and (ii) light verbs do not determine how high a DP can raise from one specifier of a subevent head to another. That is, light verbs have no bearing as to whether a given DP will have a composite thematic role or not.

I suggested that it is the preverb which determines the raising of argument DPs. This led to the prediction that a given preverb should form complex predicates with identical argument structure,

[6]There are syntactic and semantic differences between the construction in (9b) and (10), which are discussed in Pantcheva (2008).

provided it combines with light verbs with the same feature specifications. Proving or disproving this hypothesis requires an extensive corpus study, which I leave for future research.

Finally, the syntactic structure of complex predicates proposed in this paper allows us to take a stand on the issue of whether bare objects and noun preverbs are the same thing or not. I suggested that they occupy different positions in the decomposed VP, which accounts for their different properties and behavior (see also Pantcheva 2008).

4 Light verb classes

In the preceding section, I proposed that the light verbs in Persian complex predicates lexicalize the subevent heads in the verbal phrase. Hence, light verbs can be classified into types according to their feature specification just like ordinary "heavy" verbs. Given that all light verbs examined in this paper are dynamic, they will all be specified for the feature $< proc >$.[7] The two feature that are left to investigate, then, are $< init >$ and $< res >$. In the subsections to follow, I focus on these two subevent heads and propose a feature specification of some of the most commonly used light verbs in Persian, thus grouping them into classes.

4.1 Light verbs & init

Let us start with the *init*[iation] subevent and see which light verbs are endowed with this feature. Consider first the example below.

(12) mina gul xord.
Mina deceit collided
'Mina got deceived.'

In this example, *Mina* experiences a deceit and carries the role of a proto-Patient, or, put in the terminology of the Verbal First Phase, the role of Undergoer. Crucially, *Mina* cannot be seen as the person initiating the deceit, hence, she is not the Initiator. This is further evidenced by the fact that the complex predicate in (12) is incompatible with agentive adverbials such as *æmdæn* 'intentionally.'

(13) #mina æmdæn gul xord.
Mina intentionally deceit collided
('Mina got deceived intentionally.')

Moreover, the unavailability of an Initiator position in the sentence in (12) gains support from the impossibility to add a Causer (i.e., an Initiator).

(14) *reza mina-ro gul xord.
Reza Mina-om deceit collided
('Reza deceived Mina.')

Accordingly, we can conclude that the Initiator position is not projected in the examples just discussed, which in turn implies that there is no *init* head in the structure. The lack of the *init* head can be straightforwardly explained if we assume that the light verb *xordæn* is not endowed with the feature *init*.

In order to express the Causer of Mina's deception, one need to substitute the light verb *xordæn* 'collide' for the light verb *zædæn* 'hit.'

(15) reza mina-ro gul zæd.
Reza Mina-om deceit hit
'Reza deceived Mina.'

[7] In this paper, I will abstract away from the stative light verb *dashtæn* 'to have,' which forms stative complex predicates.

In (15), the light verb *zædæn* 'hit' enables the expression of a INITIATOR, which was impossible with *xordæn*. This leads to the conclusion that *zædæn* has the feature *init* and thus projects the necessary specifier position, while *xordæn* does not have the feature *init*, hence the non-agentive interpretation of CPrs with *xordæn*. In other words, I suggest that the two light verbs *zædæn* 'hit' and *xordæn* 'collide' have roughly the same abstract semantic content, expressing a (rather quick) change of state. They are also specified for the same syntactic features, modulo the feature $< init >$. When they appear with the same preverb, the difference in the meanings of the two complex predicates thus derived is due to the different underlying syntactic structures and the entailments they have for the interpretation of the predicate. More specifically, complex predicates with *zædæn* will have an external argument, most commonly a causer (in the case of a transitive predicate – cf. (15)), or a volitional agent (in the case of an intransitive predicate – cf. (16a)).

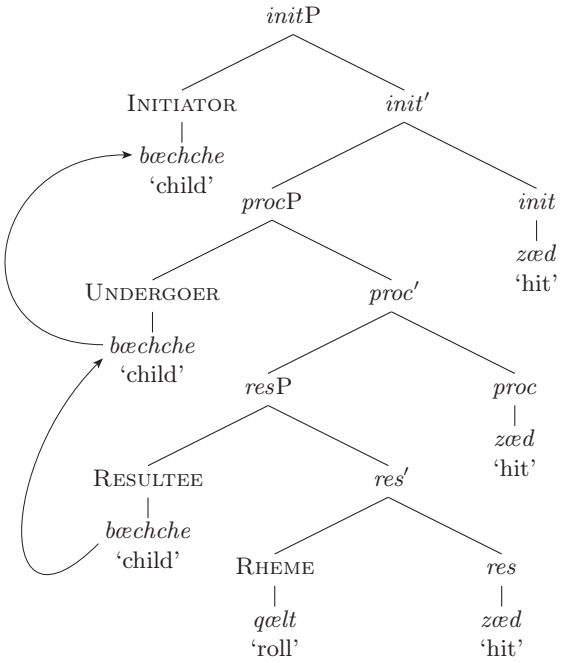
(16) Data from Samvelian (2004)

a. bæchche qælt zæd.
child roll hit
'The child rolled.' (intentionally)

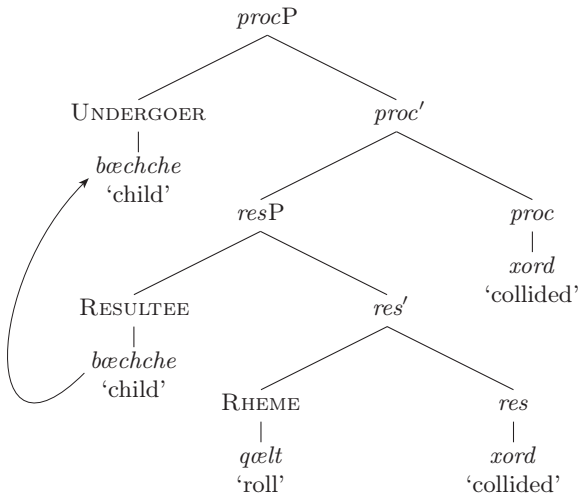
b. bæchche qælt xord.
child roll collided
'The child rolled.' (unintentionally)

The complex predicate formed by the verb *xordæn* will lack a causer/volitional agent because of the absence of the feature $< init >$ (see (12) and (16b)). The tree diagrams corresponding to the each of the sentences in (16) are presented in (17).

(17) a.



b.



Persian, in fact, provides a fairly systematic way to transform a complex predicate with no external argument to one with it by simply exchanging a light verb with no *init* for a light verb that can lexicalize *init* and therefore offers a Spec,*init*P position to be occupied by the Initiator.

This fact relates directly to Karimi-Doostan's (1997) classification of the dynamic light verbs in Persian into two groups called *initiatory* and *transition* light verbs, respectively. The former allow the expression of an Agent or Causer, while the latter do not. Translated into the terminology of the First Phase Syntax, the former lexicalize *init*, while the latter are not endowed with this feature. In Table 2, I present an overview of the most common light verbs with respect to the feature $< init >$. The verbs are arranged in the rows in such a way that they reflect the most often encountered alternating light verbs to form transitive-intransitive pairs.[8]

light verbs with $< init >$		light verbs without $< init >$	
zædæn	'hit'	*xordæn*	'collide'
kærdæn	'make'	*shodæn*	'become'
aværdæn	'bring'	*amædæn*	'come'
dadæn	'give'	*gereftæn*	'get'
ændaxtæn	'throw'	*oftadæn*	'fall'

table 2: Classification of Persian Light Verbs with respect to *init*

Given this pairing, the pattern of preverb distribution, as presented in Table 1 does not seem surprising. The table is repeated below as Table 3 and rearranged so that the symmetry of light verb+preverb combinations becomes clearer. Thus, if we regard the light verbs in the left column simply as the causative versions of the verbs in the right column, it is reasonable that they will combine with the same type of preverbs.

So, causativization of complex predicates in Persian consist of replacing the light verb of an inchoative light verb by its causative peer (the one specified for *init*), as further illustrated for

[8]The pairs given in Table 2 represent the most often encountered alternations. The relation between alternating light verbs is in reality many-to-many. For instance, the causative CPr *atish zædæn* (fire hit) 'set on fire' forms its inchoative counterpart by the verb *gereftæn* 'catch': *atish gereftæn* (fire catch) 'catch fire,' arguably because the light verb *gereftæn* has an additional meaning component of inception, which lacks in *xordæn*. Likewise, the inchoative light verb in the CPr *shekæst xordæn* (defeat collide) 'to be defeated' alternates with the causative light verb *dadæn* 'give': *shekæst dadæn* (defeat give) 'defeat' and the form **shekæst zædæn* (defeat hit) is ungrammatical. Another example of a verb that has more than one possible inchoative counterparts is the light verb *dadæn* 'give.' It alternates with the verbs *gereftæn* 'get', *ræftæn* 'go', and *shodæn* 'become'.

Light verb				N	P/PP	Adj/Adv
zædæn	'hit'	*xordæn*	'collide'	ok		
kærdæn	'make'	*shodæn*	'become'	ok		ok
aværdæn	'bring'	*amædæn*	'come'	ok	ok	ok
dadæn	'give'	*gereftæn*	'get'	ok	ok	
ændaxtæn	'throw'	*oftadæn*	'fall'	ok	ok	

TABLE 3: Preverb and light verb combinations (modified and repeated from Table 1)

amædæn–aværdæn 'come–bring' and *oftadæn–ændaxtæn* 'fall–throw' in (18) and (19), respectively (examples from Megerdoomian 2002b).

(18) a. ab be jush amæd
water to boil came
'The water boiled.'
b. nima ab-ro be jush aværd
Nima water-OM to boil brought
'Nima boiled the water.'

(19) a. homa be gerye oftad
Homa to crying fell
'Homa started to cry.'
b. nima homa-ro be gerye ændaxt
Nima Homa-OM to crying threw
'Nima made Homa (start to) cry.'

Further support comes from the passive. In the First Phase Syntax system, only verbs that project and identify *init* can passivize. In Persian, deriving passive from complex predicates is quite rare but it can be done with *init* light verbs, (20), while with *init*-less light verbs this leads to ungrammaticality, (21).

(20) a. reza xunæ-ro atish zæd.
Reza house-OM fire hit
'Reza set the house on fire.'
b. xune atish zæd-e shod.
house fire hit-PP PASS
'The house was set on fire.' (adapted from Mace 2003)

(21) a. xune atish gereft.
house fire caught
'The house caught fire.'
b. *xane atish gereft-e shod.
house fire catch-PP PASS

Summing up, the light verbs called "initiatory" by Karimi-Doostan can all be characterized by the presence of the feature $< init >$ in their specification. The "transition" light verbs lack this feature and lead to non-agentive complex predicates. Thus, the conclusion in this section is very much in line with the claim made in Folli et al. (2005) concerning the role of light verbs in complex predicates in determining agentivity.

4.2 Light verbs & res

Now that I have established that some light verbs have the feature $< init >$, while others lack it, in this subsection I will try to determine which light verbs are to be endowed by the feature $< res >$.

Since, in the First Phase Syntax, telicity arises as the result of complex interaction between different factors and, crucially, does not depend solely on the presence of a *res*P in the verbal decomposition, I will not make use of telicity tests in order to diagnose a *res*P. However, telicity is an important property of events and I will take up this discussion in Section 5.

The diagnostic I will be using in order to determine whether a certain light verb is endowed with $< res >$ is the availability of a punctual reading for a complex predicate which it is part of. Here, I follow Ramchand's (2008) suggestion that an event is punctual when a verb identifies both *proc* and *res*.

I will start out with an observation made by Megerdoomian (2002b) concerning different types of events expressed by the complex predicates. Consider the verbs in (22).

(22)

a.	dad zædæn	dad keshidæn	'to shout'
	cry hit	*cry pull*	
b.	næfæs zædæn	næfæs keshidæn	'to breathe'
	breath hit	*breath pull*	

Megerdoomian notes that the verbs in the first column have a punctual reading, whereas the verbs in the second column have a durative reading. Hence, the difference between *dad zædæn* and *dad keshidæn* is that the former denotes an event of one (sudden) uttering of a cry, while the latter denotes a prolonged production of a shout.[9] Similarly, for *næfæs zædæn* and *næfæs keshidæn*, the first one means roughly "to take a breath," while the second denotes a prolonged event of taking breath.

This distinction allows me to draw two conclusions. First, it is the light verb that carries the $< res >$ feature, since the noun in the pairs remains the same. Second, *zædæn* is endowed with it, whereas *keshidæn* lacks it.

However, this cannot be the whole story for *zædæn*, since complex predicates with this verb (shown in (23)) can give rise to durative (atelic) readings.

(23)

a. chækosh zædæn
   hammer hit
   'to hammer'

b. lægæd zædæn
   kick hit
   'to kick'

c. dad zædæn
   shout hit
   'to shout'

The behavior of the verbs in (23) very much resembles the behavior of semelfactives, which are punctual, on one hand, but systematically give rise to a durative (indefinitely iterated) reading, on the other. Since, this is presumably what happens with the verbs in (23) above, I believe that it is not incorrect to ascribe the $< res >$ feature to *zædæn*. I further believe that, just like all semelfactives in the First Phase Syntax, *zædæn* can be seen to be ambiguous between $< init, proc, res >$ and $< init, proc >$, in the former case, giving rise to punctual events and in the latter case – to durative events. Thus, I directly adopt the way semelfactives are treated by Ramchand, namely, as being specified in the lexicon as $< init, proc, (res) >$.[10]

[9] To help the reader understand the (untranslatable in English) distinction between the two Persian verbs, I provide a context where the different uses become clear: imagine children having a "shouting competition" with a prize for the one who can shout the loudest and the one who can shout the longest. In the first case, the verb *dad zædæn* will be used, in the second — the verb *dad keshidæn*, since here it is implied that the shout should last long time.

[10] A proposal along these lines is made by Megerdoomian (2005), who derives the different properties of *zædæn* by decomposing the predicate into different sets of primitive units of meaning.

4.3 Classes of light verbs

In this subsection, I present the lexical types of some of the light verbs in Persian. An important assumption is that the transitive-intransitive pairs, as shown in Table 2, differ only with respect to the availability of the *init* subevent. In other words, the feature specification of a verb from the left column will be identical, modulo $< init >$, to its peer in the right column.

In Table 4 below, I present my proposal regarding the feature specification of some of the light verbs in Persian.

kærdæn	'make'	$< init, proc, res >$	*shodæn*	'become'	$< proc, res >$
ændaxtæn	'throw'	$< init, proc, res >$	*oftadæn*	'fall'	$< proc, res >$
aværdæn	'bring'	$< init, proc, res >$	*amædæn*	'come'	$< proc, res >$
zædæn	'hit, strike'	$< init, proc, (res) >$	*xordæn*	'collide'	$< proc, (res) >$
dadæn	'give'	$< init, proc >$	*gereftæn*	'get'	$< proc >$
keshidæn	'pull'	$< init, proc >$	—		
kærdæn	'do'	$< init, proc >$	—		

TABLE 4: Light verb classes

A couple of comments are due here regarding the Table 4. First, the motivation for the different treatment of the light verbs *make*, *throw* and *bring*, on the one hand, and *hit*, on the other hand, lies in the fact that the first three are not semelfactive (but still resultative) verbs, while *hit* is semelfactive, as discussed above. Second, the fact that the light verb *kærdæn* is listed twice reflects its ambiguity between an activity verb, roughly corresponding to English *do* (24) and a causative verb *make* (cf. Megerdoomian 2001, Megerdoomian 2005). It is only in the latter meaning that *kærdæn* alternates with *shodæn*, as shown in (25).

(24) a. bæchche bazi kærd.
child game did
'The child played.'
b. *bazi shod.
game became

(25) a. reza mina-ro bidar kærd.
Reza Mina-OM awake made
'Reza woke up Mina.'
b. mina bidar shod.
Mina awake bicame
'Mina woke up.'

What is to be noted concerning the ambiguity of the verb *kærdæn* is that when it is a $< init, proc, res >$ verb, there are two distinct argument: an INITIATOR and an UNDERGOER-RESULTEE, as in (25). When *kærdæn* is a $< init, proc >$ verb, there is one single argument carrying the composite role of INITIATOR-UNDERGOER, as in (24). In this latter case *kærdæn* is what is traditionally called an unergative verb and it is not suprising that it does not have an inchoative counterpart. Interestingly, the two varieties of *kærdæn* also appear in combination with different preverbs – the unergative one takes eventive nouns, while the causative one takes adjectival preverbs and non-eventive nouns. For this reason, I do not list *kærdæn* as an $< init, proc, (res) >$ verb, as it is clearly different from *zædæn*, which appears with the same preverb, no matter whether it is $< init, proc >$ or $< init, proc, res >$.

I now turn to the light verb *keshidæn* 'pull', which is marked in Table 4 as having no inchoative peer. As already discussed in Section 4.2, the light verb *keshidæn* contributes duration to the complex predicates it participates in. It is similar to the unergative *kærdæn* 'do,' as it often forms intransitive

complex predicates (e.g. *tul keshidæn* (length pull) 'take a long time,' *chopoq keshidæn* (pipe pull) 'smoke a pipe'). *Keshidæn* can also form transitive complex predicates, like *færahæm keshidæn* (together pull) 'assemble,' or *jaru keshidæn* (broom pull) 'sweep.' Even in such cases, though, *keshidæn* does not seem to have an inchoative counterpart, that is, a corresponding light verb specified for the feature $< proc >$ and with the same abstract semantic content. It is true that there exist complex predicates like *færahæm shodæn* (together become) 'be assembled,' and *jaru xordæn* (broom collide) 'be swept,' but these CPrs are more likely to be the counterpart of *færahæm kærdæn* (together make) 'assemble,' and *jaru zædæn* (broom hit) 'sweep,' as they have the same aspectual properties and, crucially, lack the durative component of *keshidæn*.

5 Deriving telicity

In this section, I will outline how the temporal (un)boundedness of the macro-event can be accounted for by using the tools made available by the system. I will apply the *in an hour/for an hour*-test to diagnose telic and atelic predicates, respectively.

In Persian, there exist numerous ways to form the corresponding temporal phrases and sometimes speaker vary with respect to their interpretation.[11] To avoid confusion, I will use the expression *dær yek sa'æt* 'in one hour' and *bemodæte yek sa'æt* 'for one hour'[12] to diagnose telic and atelic sentences, respectively.

5.1 Rhematic material

As already mentioned in Section 2, the boundedness of the macro-event does not necessarily arise from the presence of *res* in the subevent decomposition of the VP. A telic interpretation can be the result of an $< init,\ proc >$ verb combining with a Rheme complement that is a bounded path PP, a closed scale adjective, or a quantized NP (in the sense of Kennedy and Levin 2008). I argued in Section 3 that the preverb in a complex predicate occupies the Rheme position. Therefore, the system predicts that the preverb will have impact on the telic/atelic interpretation of the complex predicate. The prediction is borne out, as illustrated in the data set below, where the light verb is the same but the interpretation nevertheless differs. When the $< init, proc >$ verb *kærdæn* 'do' (noted to lack $< res >$ when combining with a noun preverb) combines with a non-quantized nominal preverb, the predicate is atelic (26a). If we exchange the preverb for a quantized noun, the predicate becomes telic (26b).

(26) a. bæchche bemodæte /*dær yek sa'æt gerye kærd.
child for / in one hour crying did
'The child cried for an hour /*in an hour.' (atelic)

b. bæchche dær /*bemodæte yek sa'æt hæme-ye geryæ-sh-ro kærd.
child in / for one hour all-ez crying-3cl-om did
'The child did all its crying in an hour /*for an hour.' (telic)

Megerdoomian (2005) presents some data which offer convincing evidence that an analysis like the one argued for in this paper might be on the right track. She discusses complex predicates which give rise to telic/atelic readings depending on the noun preverb. A sample of these verbs is presented in Table 5 below.

Folli et al. (2005) discuss this set of data and suggest that the reason the complex predicates in the first column are telic is that the noun element is bounded. The noun preverb in the second column is unbounded and therefore gives rise to an atelic reading. I will adopt this proposal without further discussion, since it is perfectly compatible with the First Phase Syntax and the facts are

[11] For example, as pointed out by Karimi-Doostan (1997), for some speakers the non-durative adverbial *zærfe yek sa'æt* 'in one hour' has a durative meaning when stressed.

[12] The expression *bemodæte yek sa'æt*, roughly translated as 'in the course of one hour,' belongs to the formal style. A much more common way to convey the same meaning is to drop the preposition. *yek sa'æt* expresses the same notion of 'for one hour.'

Telic		Atelic	
æfsar zædæn harness hit	'to harness'	*næmæk zædæn* salt hit	'to put salt'
palan zædæn blanket hit	'to saddle'	*rouqæn zædæn* oil hit	'to oil'
zæng zædæn bell hit	'to ring'	*gærd zædæn* powder hit	'to powder'

TABLE 5

exactly what the system predicts. Below, I briefly summarize the properties of *zædæn* with respect to the different event types it can give rise to, when it is an $< init, proc >$ verb.

(27) *zædæn* as $< init, proc >$
  a. telic - *palan zædæn* 'to saddle' (when the RHEME is bounded)
  b. atelic - *rouqæn zædæn* 'to oil' (when the RHEME is unbounded)

Since the intransitive counterpart of *zædæn* is *xordæn* 'collide' and I assumed that it has the same categorial specification as *zædæn* without the $< init >$ feature, it is expected that complex predicates with *xordæn* will allow atelic readings of the type in (27b). This is the case with the complex predicate *qosse xordæn* (worry collide) 'to worry,' which is atelic according to Megerdoomian (2006). Another example comes from Megerdoomian (2002a):

(28) mærdom sal-ha æz dowlæt færib xord-ænd.
  people year-PL from government fool ate-3PL
  'People have been fooled by the government for years.'

More data illustrating the fact that telicity can be due to *proc* light verbs with bounded RHEME preverbs are shown below:

(29) a. mehmani do sa'æt tul keshid.
  party two hour length pulled
  'The party lasted for two hours.' (atelic)
  b. reza xane-ro dær yek sa'æt be atish keshid.
  Reza house-OM in one hour to fire pulled
  'Reza set the house on fire in one hour.'
  (Bounded TO path → telic)

Here, we have the *proc* light verb *keshidæn* 'pull', which combines with an unbounded noun *tul* 'length' and forms an atelic predicate. When *keshidæn* appears with a bounded preverb, like in the case of the bounded PP *be atish* 'to the fire' in (29b), the entire complex predicate is telic.

5.2 More remarks on telicity

Folli et al. (2005) discuss various important issues concerning Persian complex predicates. One of the conclusions they reach is that while the light verb determines the agentivity/causativity, the eventiveness and duration of the CPr, the preveb determines the Aktionsart of eventive CPrs. In other wors, whether the CPr will be telic or atelic depends entirely on the preverb. The event structure they propose for Persian is presented in Table 6, where, they argue, there is no relation between the boundedness of the event and the light verb.

There are two observations to be made concerning the table above. First, a complex predicate with a noun as a preverb can be either telic or atelic. This is captured by the system and discussed in the beginning of this section, so it does not come as a surprise. Second, according to this table, it

preverb	telic	atelic
noun	ok (if eventive)	ok
Adj/Adv	ok	*
P/PP	ok	*

table 6: Folli et al. (2005)

is never the case that a complex predicate with an adjectival, adverbial, prepositional or PP preverb is atelic. If we now go back to Table 1 in Section 4.3, and have a look at which light verbs combine with the aforementioned preverbs, it turns out they are mainly $< res >$ verbs, with two exceptions. Therefore, the natural interpretation of these predicates is a bounded one, because $< res >$ verbs by default lead to telic predicates, no matter the Rheme (i.e., the preverb). The facts are repeated in Table 7 below.

light verb			P/PP	Adj/Adv
aværdæn	'bring'	$< init, proc, res >$	ok	ok
keshidæn	'pull'	$< init, proc >$	ok	ok
amædæn	'come'	$< proc, res >$	ok	ok
gereftæn	'take'	$< proc, res >$	ok	
oftadæn	'fall'	$< proc, res >$	ok	
ændaxtæn	'throw'	$< init, proc, res >$	ok	
dadæn	'give'	$< init, proc >$	ok	
kærdæn	'make'	$< init, proc, res >$		ok
shodæn	'become'	$< proc, res >$		ok

table 7

Let us now examine the cases when a *proc* verb combines with preverbs which are not nouns (*dadæn* 'give' and *keshidæn* 'pull'). In the system adopted in this paper, whenever the Rheme of a *proc* verb is bounded/closed scale, the predicate will be interpreted as telic. If the Rheme is unbounded/open scale, the event will be atelic. Applied to adjectival Rhemes, whenever a *proc* light verb combines with gradable, closed scale adjectival preverb in the sense of Kennedy and Levin (2008), the interpretation should be telic and whenever a *proc* light verb combines with a gradable, open scale adjectival preverb, the interpretation should come out as atelic. Thus, the system predicts that there can exist complex predicates with a *proc* light verb and an adjectival preverb that are atelic. The prediction is borne out, as shown by the sentence below with the complex predicate *deraz keshidæn* (long pull) 'to take a nap.'

(30) madær yek sa'æt deraz keshid.
mother one hour long pulled
'Mother had a nap for one hour.'

In other words, the First Phase Syntax model correctly captures the telicity facts. To a certain extent the way telicity is accounted for in the present paper and in Folli et al. (2005) overlaps in the sense that under both approaches the preverb has a role to play in detemining the boundedness of the event. However, I disagree that telicity depends exclusively on the type of the preverb.

6 Conclusion

In this paper, I presented an analysis of Persian complex predicates in the framework of the verbal First Phase Syntax, as developed in Ramchand (2008). I suggested that the subevent heads are lexicalized by the light verb and that the preverbal material occupies the rhematic position and semantically unifies with the light verb to build one joint predication. Under this account, the light verb plays a role in determining the argument structure of the entire predicate in that it projects the specifier positions where we find the participants in the event. The preverb can indirectly affect argument structure by determining how high a DP can raise from one specifier to another and thus what composite role a DP can have.

I examined some of the most productive light verbs and proposed a feature specification for them. Thus, I divided the light verbs in classes according to their feature specification. I also showed how each of the two components of the complex predicate affects the boundedness of the macro-event. Namely, light verbs with *res* feature participate in bounded complex predicates. But also *proc* light verbs can be bounded, as the preverb in the RHEME induces a telic reading when it is bounded.

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N	PP/P	Adj/Adv	N	PP/P	Adj/Adv
$< init, proc, res >$			$< proc, res >$		
lule kærdæn		baz kærdæn	lule shodæn		baz shodæn
tube make		*open make*	*tube become*		*open become*
'roll up' (tr.)		'open' (tr.)	'roll up' (intr.)		'get opened'
churuk ændaxtæn	æz pa ændaxtæn		churuk oftadæn	æz pa oftadæn	
wrinkle throw	*from foot throw*		*wrinkle fall*	*from foot fall*	
'wrinkle' (tr.)	'wear out'		'get wrinkled'	'run out of energy'	
yad aværdæn	be donya aværdæn	gærd aværdæn	yad amædæn	be donya amædæn	gærd amædæn
memory bring	*to world bring*	*round bring*	*memory come*	*to world come*	*round come*
'remind'	'give birth'	'assemble' (tr.)	'recall'	'be born'	'assemble' (intr.)
$< init, proc, (res) >$			$< proc, (res) >$		
gereh zædæn			gereh xordæn		
know hit			*knot collide*		
'tie in a knot'			'get tied in a knot'		
$< init, proc >$			$< proc >$		
bu dadæn	æz dæst dadæn		bu gereftæn	æz dæst ræftæn	
smell give	*from hand give*		*smell get*	*from hand go*	
'emanate a smell'	'lose'		'become smelly'	'be lost"	
qæd keshidæn		deraz keshidæn		no inchoative counterpart	
size pull		*long pull*			
'grow taller'		'take a nap'			
fekr kærdæn				no inchoative counterpart	
thought do					
'think'					

TABLE 8: Appendix: Examples of complex predicates discussed in the charts

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