

Building Complex Events in Hindi/Urdu

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Workshop on Syntax and Predication

ZAS, Berlin, November 2–3

1 Overview

Main points of the proposal:

- Different event semantics correlated with different syntax, i.e. Tenny's (1994) AIH is correct.
- Complex predicate constructions
 - Represent the decomposition of event structure (aktionsart).
 - Are not simply functional heads that encode 'viewpoint aspect' (unlike auxiliaries).
- This is what makes light verbs unique and seems to give them properties intermediate between 'lexical items' and 'auxiliaries or inflections'.

2 Syntacticizing Event Structure

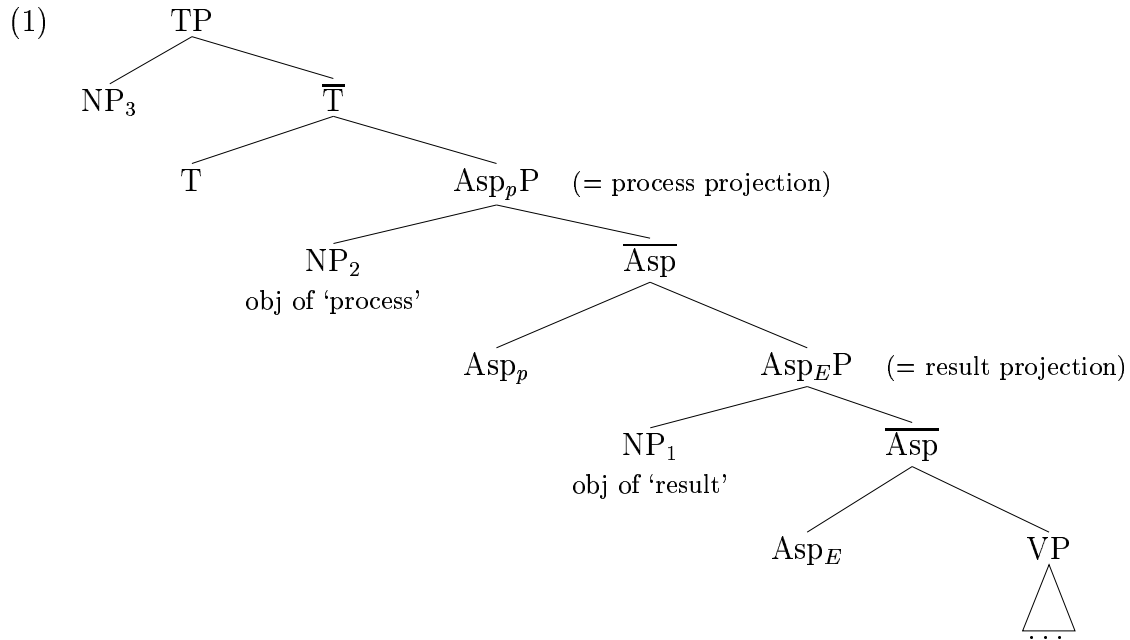
Many related proposals exist which seek to correlate the morphosyntax and the semantics of event structure in an intimate way.

Our proposal is related to this work and builds on many of the ideas, but makes some assumptions which are crucially distinct.

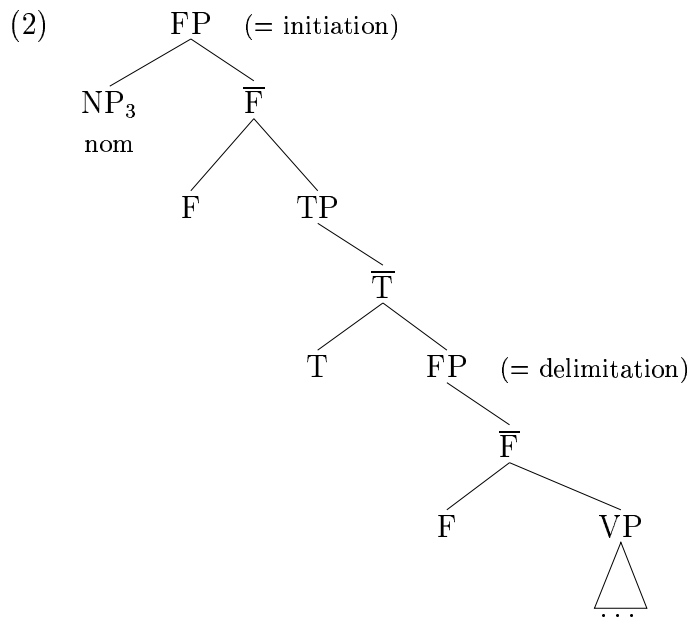
- Neo-Davidsonian Event Semantics can be decomposed in an interesting and restrictive way in the syntax.
- Three functional projections (not two) are needed above the root:
 - i. causing projection
 - ii. process projection
 - iii. result projection.

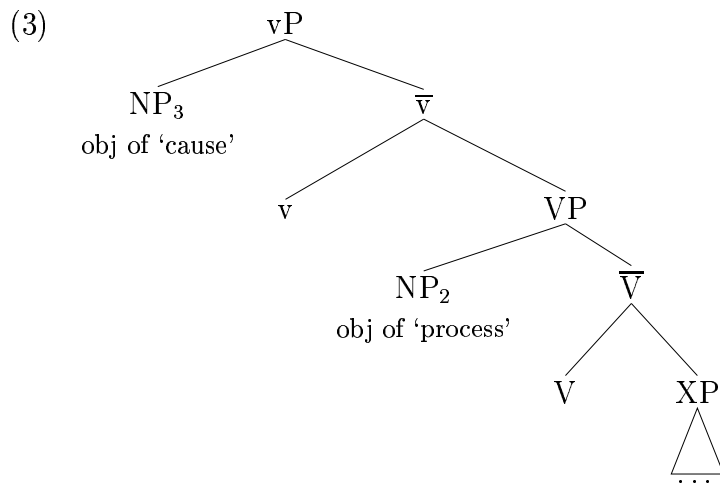
2.1 Related Proposals

Borer (1996) — supports (ii) and (iii)



Ritter and Rosen (1998) — support (i) and (iii)





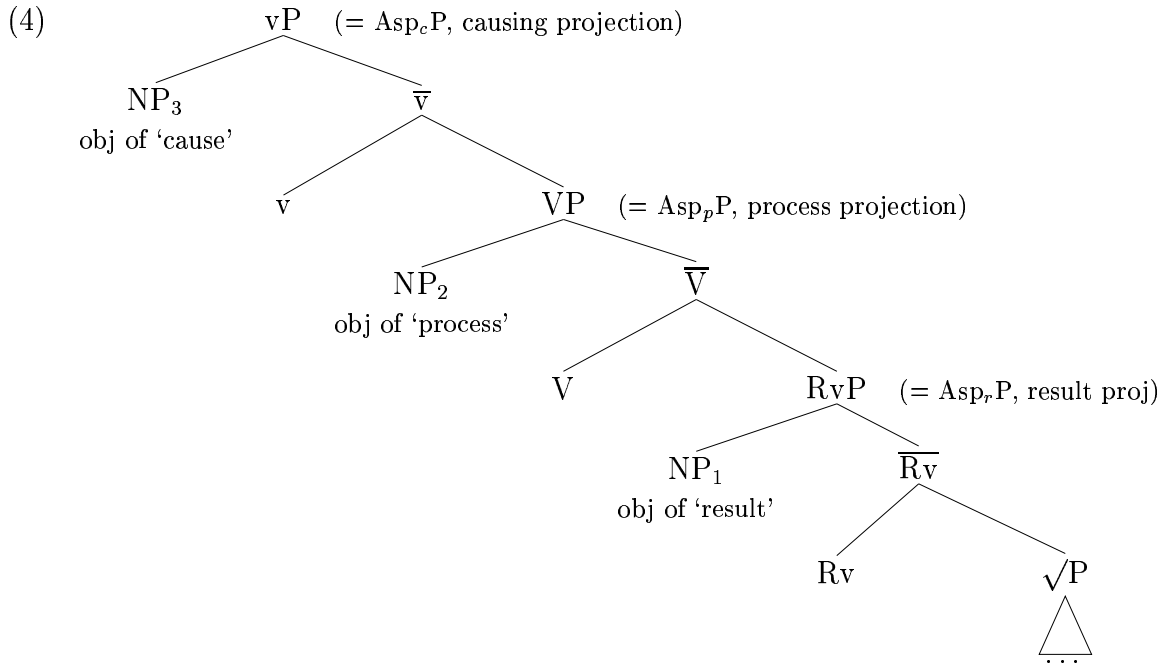
2.2 Our Proposal

Our proposal builds on Ramchand (1993, 1997)

Different syntactic object and subject positions are correlated with differences in semantic interpretation (data from Scottish Gaelic and Bengali).

Ideas which are important for what is to come

- ‘Aspectual roles’ are the ones that are explicitly related to the atomic time structure of the verb, ones that crucially rely on the existence of individual conceptual moments (a ‘time-line’) within the event structure for their definition.
- Aspectual roles are not directly determined by the verbal ‘vocabulary item’ but by the functional heads that they are embedded within (cf. Borer 1998).
- Vocabulary items may contain features which determine/constrain the functional structure that can be built using them.
- Complex verbal structures that are licensed by single lexical items in one language can be built up compositionally from distinct (and more abstract) lexical items in another.



2.3 Event Semantics

We adopt a Davidsonian semantic representation
(Davidson 1967, Higginbotham 1985, Parsons 1990).

The following notions are assumed to be *primitives* of the metalanguage:

$e = e_i \rightarrow e_j$: e consists of two subevents, e_i , e_j such that e_i leads to or causes e_j
(see Hale and Keyser 1993)

$e = \langle e_i, e_j \rangle$: e consists of two subevents, e_i , e_j such that e_i and e_j form an accomplishment event structure where e_i is the process portion and e_j is a state interpreted as the result state of the process (see Parsons 1990 and Higginbotham 1999, cf. also Levin and Rappaport's 1998 notion of template augmentation).

- (5) 'build the house' ($e = e_1 \rightarrow \langle e_2, e_3 \rangle$)
 where e_1 = the causing, intentional impulse
 e_2 = the process of house-building
 e_3 = the state of the house having been built.

3 Complex Predicates in Hindi/Urdu

Complex Predicates provide an ideal area of investigation with respect to the interaction between event semantics and morphosyntax.

Complex predicates of the A-V, N-V and V-V type are an areal characteristic of South Asia.

We focus on two types of V-V constructions in Hindi/Urdu.

- (6) a. naadyaa=nee saddaf=koo xat **lik^h-nee** **dii-yaa**
 Nadya.F.Sg=Erg Saddam.F.Sg=Dat letter.M.Nom write-Inf.Obl give-Perf.M.Sg
 ‘Nadya let Saddam write a letter.’
- b. naadyaa=nee cor=koo **duubaa dii-yaa**
 Nadya.F.Sg=Erg thief.M=Acc dunk give-Perf.M.Sg
 ‘Nadya drowned the thief (dunked him completely).’

Run-of-the-mill causatives are expressed morphologically.

- (7) anjum=nee saddaf=see xat **lik^h-vaa-yaa**
 Anjum.F=Erg Saddam.F=Inst letter.M.Nom write-Caus-Perf.M.Sg
 ‘Anjum had the letter written by Anjum/had Anjum write the letter.’

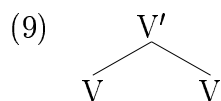
With certain verb classes, these causatives give rise to aspectual distinctions which are connected with case marking, compare (8) with (7).

- (8) anjum=nee saddaf=koo xat **lik^h-vaa-yaa**
 Anjum.F=Erg Saddam.F=Acc letter.M.Nom write-Caus-Perf.M.Sg
 ‘Anjum had the letter written for Saddam/taught Saddam to write the letter.’

Butt (1998) treats these by considering aspectual information in the mapping (linking) from thematic roles to grammatical functions.

3.1 Characteristics of Complex Predicates (Butt 1995)

Light verbs must be considered as a type of co-head or co-predicator (cf. Baker 1999).



This co-predication is expressed in terms of *Argument Fusion* at the level of argument structure (thematic roles).

The complex predicate only has a single *subject*: There is no evidence for an embedded or controlled subject.

3.2 Accounting for Predicational Differences

Hitherto Unresolved Questions:

- (6a) and (6b) differ in the “tightness” of predication.
- The two V-V complex predicates differ in morphological appearance and syntactic separability.

- Other constructions like (10) exist which look like (6a), but which are not complex predicates (evidence comes from control, anaphora and agreement) and which show an even “looser” degree of predication.

- (10) anjum=nee saddaf=koo xat **lik^h-nee=koo** **kah-aa**
 Anjum.F=Erg Saddam.F=Dat letter.M.Nom write-Inf.Obl=Acc say-Perf.M.Sg
 ‘Anjum told Saddam to write the letter.’

Idea: This distribution of properties can receive a natural explanation in an account which takes event semantics to be part of the syntax.

3.3 Some Background on Urdu/Hindi

- SOV with relatively free word order
- Rich system of case marking
 - Non-nominative subjects
 - Object case alternation unmarked (glossed as Nominative) vs. marked (glossed as Accusative) signals a difference in specificity
- Roughly morphologically split ergative (in association with perfect morphology)
- **Agreement:** The basic generalization for Urdu agreement is that (Mohan 1994):
 - If the subject is nominative, the verb agrees with it ((11a)).
 - If the subject is non-nominative and the object is nominative, then the verb agrees with the object ((11b)).
 - If the subject and the object are non-nominative, then the verb shows “default” masculine singular agreement ((11c)).

- (11) a. **adnaan** gaarii **calaa-taa** hε
 Adnan.M.Nom car.F.Nom drive-Impf.M.Sg be.Pres.3.Sg
 ‘Adnan drives a car.’
- b. naadyaa=nee/adnaan=nee **gaarii** **calaa-yii** hε
 Nadya.F=Erg/Adnan.M=Erg car.F.Nom drive-Perf.F.Sg be.Pres.3.Sg
 ‘Nadya has driven a car.’
- c. naadyaa=nee gaarii=koo **calaa-yaa** hε
 Nadya.F=Erg car.F=Acc drive-Perf.M.Sg be.Pres.3.Sg
 ‘Nadya has driven the car.’

3.4 Type 3: V1_Infinitive+Case V2 — Event Complementation

V-V: V1_Infinitive+Case V

- The infinitive or gerund bears a case marker identical to those found on nominals.
 - The infinitive behaves like a verbal noun (Butt 1995).
 - The oblique inflection of the infinitive is the same as on nouns ending in *-aa* (masculine nouns).

- (12) anjum=nee saddaf=koo [xat **lik^h-nee**]=koo **kah-aa**
 Anjum.F=Erg Saddaf.F=Dat letter.M.Nom write-Inf.Obl=Acc say-Perf.M.Sg
 ‘Anjum told Saddaf to write the letter.’

3.5 Diagnostics of Predicational Structure

These constructions are biclausal according to the available diagnostics, but do not constitute separate tense domains.

Agreement: No Object Agreement — therefore biclausal.

- (13) anjum=ne saddaf=ko [**ciṭṭ^hii** lik^h-ne]=ko **kah-aa**
 Anjum.F=Erg Saddaf.F=Dat note.F.Nom write-Inf.Obl=Acc say-Perf.M.Sg
 ‘Anjum told Saddaf to write the note.’

Control: *kar* ‘having’ clauses only allow subject control. Here there are two possible controllers, therefore the structure is biclausal.

- (14) **anjum=nee_i** **saddaf=ko_j** [—_{*i,j*} darvaazaa k^hol kar]
 Anjum.F=Erg Saddaf.F=Dat door.M.Nom open having
 samaan=ko kamre=mēē rak^h-nee=ko kah-aa
 luggage.M=Acc room.Obl.M=in put-Inf.Obl=Acc say-Perf.M.Sg
 ‘Anjum told Saddaf to put the luggage in the room, after having opened the door.’

Anaphora: The reflexive in Urdu/Hindi is subject-oriented. Here the matrix object is an antecedent of the reflexive. So matrix object = embedded subject and the structure must be biclausal with a subject PRO.

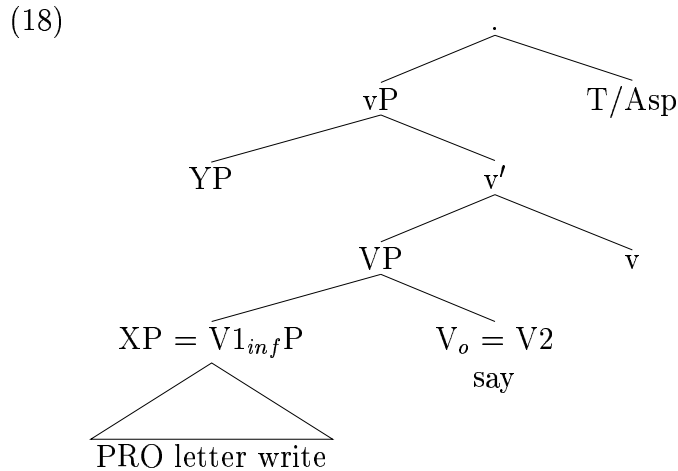
- (15) anjum=nee_{*i*} **adnaan=ko_j** [**apn-ii_{?*i,j}** gaari calaa-nee=ko]
 Anjum.F=Erg Adnan.M=Dat self-F car.F.Sg.Nom drive-Inf.Obl=Acc
 kah-aa
 say-Perf.M.Sg
 ‘Anjum told Adnan to drive self’s (Adnan’s) car.’

3.6 Analysis

- (16) anjum=nee saddaf=koo [xat lik^h-nee]=koo kah-aa
 Anjum.F=Erg Saddaf.F=Dat letter.M.Nom write-Inf.Obl=Acc say-Perf.M.Sg
 ‘Anjum told Saddaf to write the letter.’

Syntax and Semantics for (16):

- (17) V1 = writing (e₁; ‘letter’) V2 = saying (e₂; ‘Anjum’, ‘Saddaf’, event)
 V1 (e₁) + V2 (e₂) = V1_{inf}-acc V2 (e₂; ‘Anjum’, ‘Saddaf’, e₁)
 ‘Anjum is the agent of a saying event to Saddaf which brings about Saddaf writing the letter.’



3.7 Type 2: V1_Infinitive.Oblique V2 — Modes of Causation

The main verb is in the oblique infinitive form. The infinitive never carries a case marker.

Predicational Structure: These constructions are monoclausal from the point of view of agreement, control and anaphora, but give evidence of separability with respect to scrambling, negation and adverbial modification.

- (19) a. naadyaa=nee saddaf=koo xat lik^h-nee dii-yaa
 Nadya.F.Sg=Erg Saddaf.F.Sg=Dat letter.M.Nom write-Inf.Obl give-Perf.M.Sg
 ‘Nadya let Saddaf write a letter.’
 b. naadyaa=nee anjum=koo nikal-nee dii-yaa
 Nadya.F=Erg Anjum.F=Dat emerge-Inf.Obl give-Perf.M.Sg
 ‘Nadya let Anjum get out.’

Causation: In all these cases, the arguments related to V1 include everything but the subject. The subject, on the other hand, is the external agent or causer of the whole V1 event.

Moreover, the specific mode of causation (facilitation in the examples above) depends on the specific choice of V2.

Hindu/Urdu also possesses explicit derivational morphemes (*-aa/-vaa*) which indicate general causation. Morphological causativisation gives rise to the same case marking patterns and argument addition that Type 2 does. Compare (20a) with (19a), and (20b) with (19b).

- (20) a. anjum=nee saddaf=koo xat lik^h-vaa-yaa
 anjum.F=Erg saddaf.F=Acc letter.M.Nom write-Caus-Perf.M.Sg
 ‘Anjum had the letter written for Saddaf/taught Saddaf to write the letter.’
- b. naadyaa=nee anjum=koo nikaal-aa
 Nadya.F=Erg Anjum.F=Acc emerge.Caus-Perf.M.Sg
 ‘Nadya pulled Anjum out.’

3.8 Diagnostics of Predicational Structure

Agreement: There is object agreement, just as in normal monoclausal structures.

- (21) a. anjum=ne saddaf=ko xat lik^h-ne di-yaa
 Anjum.F=Erg Saddaf.F=Dat letter.M.Nom write-Inf.Obl give-Perf.M.Sg
 ‘Anjum let Saddaf write a letter.’
- b. anjum=ne saddaf=ko ciṭṭ^hii lik^h-ne d-ii
 Anjum.F=Erg Saddaf.F=Dat note.F.Nom write-Inf.Obl give-Perf.F.Sg
 ‘Anjum let Saddaf write a note.’

Control: *kar* ‘having’ clauses only allow subject control. Here there is only one possible controller, therefore there is no embedded PRO subject and the structure is monoclausal.

- (22) anjum=nee_i saddaf=ko_j [—_{i,*j} darvaazaa k^hol kar]
 Anjum.F=Erg Saddaf.F=Dat door.M.Nom open having
 samaan=ko kamre=mēē rak^h-nee dii-yaa
 luggage.M.Acc room.M.Obl=in put-Inf.Obl give-Perf.M.Sg
 ‘Anjum, having opened the door, let Saddaf put the luggage in the room.’

Anaphora: The reflexive in Urdu/Hindi is subject-oriented. Here the matrix subject is the only antecedent of the reflexive. So there is no embedded PRO subject and the structure must be monoclausal.

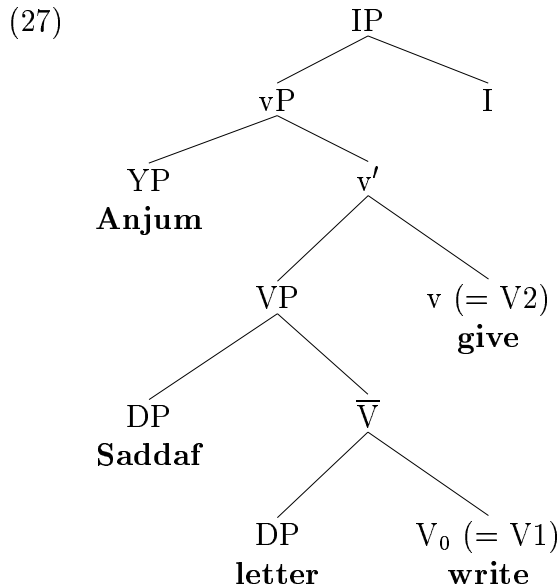
- (23) anjum=nee_i adnaan=ko_j apn-ii_{i,*j} gaarīi calaa-nee
 Anjum.F=Erg Adnan.M=Dat self-F car.F.Sg.Nom drive-Inf.Obl
 d-ii
 give-Perf.F.Sg
 ‘Anjum let Adnan drive self’s (Anjum’s) car.’

Separability: Although the two verbs form a primary predication complex, they are separable (adjacency is not a diagnostic for complex predicates).

- (24) a. [anjum=nee] [saddaf=ko] [ciṭṭʰii] [lik^h-nee d-ii]
 Anjum.F=Erg Saddaf.F=Dat note.F.Nom write-Inf.Obl give-Perf.F.Sg
 ‘Anjum let Saddaf write a note.’
- b. anjum=nee **d-ii** saddaf=ko [ciṭṭʰii **lik^h-nee**]
- c. anjum=nee [ciṭṭʰii **lik^h-nee**] saddaf=ko **d-ii**

3.9 Analysis

- (25) naadyaa=nee saddaf=koo xat **lik^h-nee dii-yaa**
 Nadya.F.Sg=Erg Saddaf.F.Sg=Dat letter.M.Nom write-Inf.Obl give-Perf.M.Sg
 ‘Nadya let Saddaf write a letter.’
- (26) $V1=V=\text{write}(e; y, z)$ $V2=v=\text{Cause}_{allow}(e'; x, e'')$
 $\exists e: e = e_2 \rightarrow e_1 [\text{write}(e_1; \text{‘Saddaf’}, \text{‘letter’}) \& \text{Cause}_{allow}(e_2; \text{‘Anjum’}, e_1)]$
 ‘Anjum is the causer/allower of a subevent of Saddaf writing a letter.’



Features of the Analysis: The permissive ‘give’ is a natural v:

- Its semantics are consonant with the semantics posited for v in general.
- We assume that when v is overtly instantiated, particular semantics result: the permissive is a particular instantiation of a causative semantics.
- It introduces event structural complexity (subevents).

The process phrase (VP) is embedded under vP: There is only one clausal nucleus.

3.10 Type 1: V1_Stem V2 — Getting Results

V-V: V1_Stem V2

These V-V structures are formed from an inflecting light verb and what looks like the stem form of the main verb.

Predicational Domain: The constructions are monoclausal from the point of view of agreement, anaphora, and control. The verbs are separable (topicalization, adverbial modification), but do not show the scrambling possibilities of Type 2.

Semantics: The semantic contribution of the light verb is difficult to characterize. It indicates a range of meanings from completion, inception, benefaction, force, suddenness, etc. (see Hook 1974 for a detailed study). The light verb does not predicate its own event — rather: it serves to modify the event semantics of the main verb (Butt and Geuder 2001).

The light verb also determines the case of the subject: compare (28b) with (28c).

- (28) a. naadyaa=nee xat **lik^h lii-yaa**
Nadya.F=Erg letter.M.Nom write take-Perf.M.Sg
'Nadya wrote a letter (completely).'
- b. naadyaa=nee makaan **banaa dii-yaa**
Nadya.F=Erg house.M.Nom make give-Perf.M.Sg
'Nadya built a house (completely, for somebody else).'
- c. naadyaa makaan **banaa par-ii**
Nadya.F.Nom house.M.Nom make fall-Perf.F.Sg
'Nadya fell to building a house.'
- d. naadyaa **gir par-ii**
Nadya.F.Nom fall fall-Perf.F.Sg
'Nadya fell (down, suddenly).'
- e. naadyaa **gir ga-yii**
Nadya.F.Nom fall go-Perf.F.Sg
'Nadya fell (down).'
- f. naadyaa **bool ut^h-ii**
Nadya.F.Nom speak rise-Perf.F.Sg
'Nadya spoke up/broke into speech (suddenly, forcefully).'

This construction provides evidence for the result projection.

3.11 Diagnostics of Predicational Structure

Agreement: There is object agreement, just as in normal monoclausal structures.

- (29) a. naadyaa=nee **makaan** banaa **dii-yaa**
 Nadya.F=Erg house.M.Nom make give-Perf.M.Sg
 ‘Nadya built a house (completely, for somebody else).’
- b. naadyaa=nee **kursii** banaa **dii**
 Nadya.F=Erg chair.F.Sg.Nom make give-Perf.F.Sg
 ‘Nadya built a chair (completely, for somebody else).’

Control: *kar* ‘having’ clauses only allow subject control. Here there is only one possible controller, therefore there is no embedded PRO subject and the structure is monoclausal.

- (30) **anjum=nee_i** saddaf=ko_j [—_{i,*j} darvaazaa k^hol kar] andar bulaa
 Anjum.F=Erg Saddaf.F=Acc door.M.Nom open having inside call
 dii-yaa
 give-Perf.M.Sg
 ‘Anjum, having opened the door, called to Saddaf to come in.’

Anaphora: The reflexive in Urdu/Hindi is subject-oriented. Here the matrix subject is the only antecedent of the reflexive. So there is no embedded PRO subject and the structure must be monoclausal.

- (31) **anjum=nee_i** saddaf=ko_j apn-ee_{i,*j} g^har kee andar bulaa
 Anjum.F=Erg Saddaf.F=Acc self-Obl house.M.Sg Gen.Obl inside call
 dii-yaa
 give-Perf.M.Sg
 ‘Anjum asked Saddaf into self’s (Anjum’s) house.’

Separability: The two verbs are also separable, but not as freely as Type 2. Here is a topicalized example.

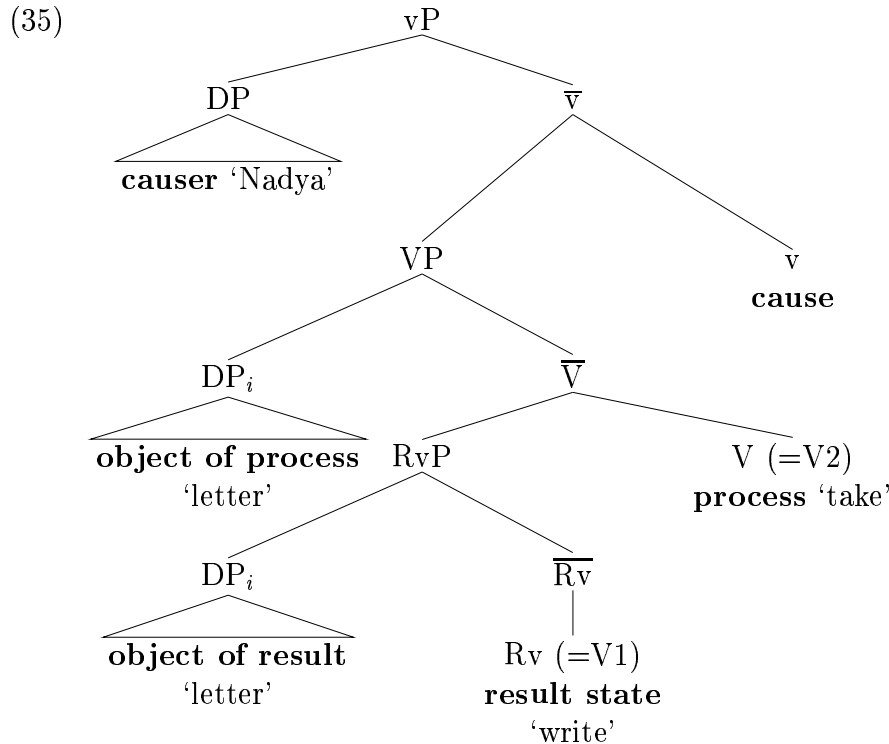
- (32) a. **lik^h** to naadyaa xat=ko **lee-gii**
 write Top Nadya.F.Nom letter.M=Acc take-Fut.F.Sg
 ‘Nadya will not be able to write a letter.’
- b. * naadyaa **lik^h** xat=ko **lee-gii**
 Nadya.F.Nom write letter.M=Acc take-Fut.F.Sg
 ‘Nadya will not be able to write a letter.’

3.12 Analysis

- (33) naadyaa=nee xat **lik^h lii-yaa**
 Nadya.F=Erg letter.M.Nom write take-Perf.M.Sg
 ‘Nadya wrote a letter (completely).’

Syntax and Semantics for (33)

- (34) $V1 = Rv = \text{written}(e; y)$ $V2 = \text{CAUSE-PROCESS}(e' (=e_1 \rightarrow e_2); x, y)$
 $\exists e: e = e_1 \rightarrow \langle e_2 e_3 \rangle [\text{Cause-Process}(e_1 \rightarrow e_2; \text{‘Nadya’}, \text{‘letter’}) \& \text{written}(e_3; \text{‘letter’})]$
 ‘Nadya instigates a process affecting a letter which has the result that the letter comes to be written.’



Bengali

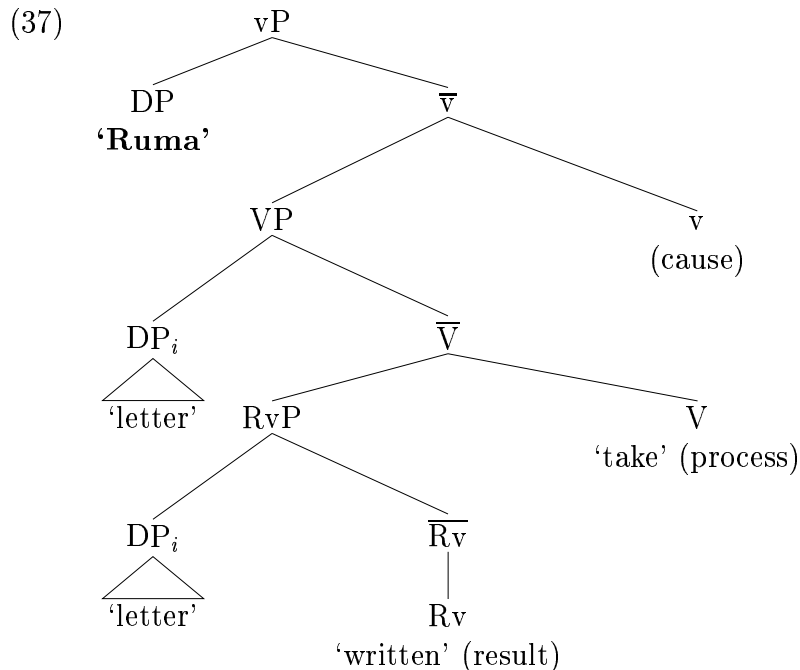
This type of V-V construction in Bengali is exactly parallel to the Urdu/Hindi case.

However, here the main verb carries a piece of morphology (-e), and is identical in form to the perfective participle form of the verb in the language (‘having V-ed’).

We take this to indicate that the main verb is actually a resultant state, thus providing more support for our analysis.

- (36) ruma cit^hi-ṭa **lek^h-e** **p^hello**
 Ruma letter-DEF write-PERFPART threw-3RDPAST
 ‘Ruma wrote the letter completely.’

In (37) we assume a copy-theory of movement: the ‘letter’ is both the object of process *and* the object of result. The semantics of these two positions unify to give a ‘composite’ θ -role (cf. Neeleman 1994).



4 Iterative Complex Predicate Formation

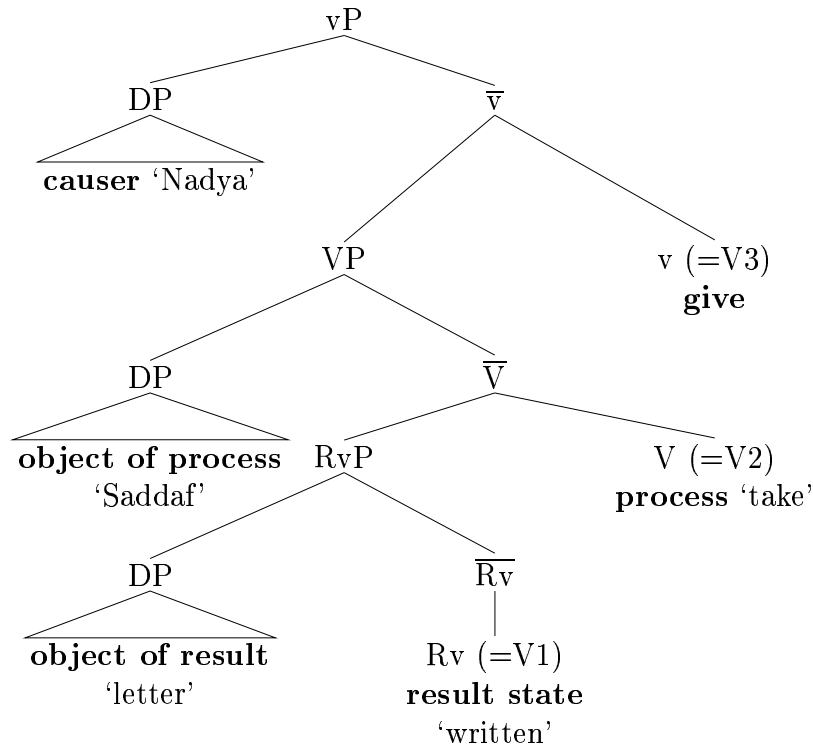
The basic building blocks for complex events introduced above are further motivated by iterative complex predicate formation.

Each of the types discussed: Type 1, Type 2 and the morphological causatives can be combined with one another.

The possible combinations are as predicted by our approach. One example is shown in (38):
V1.Stem V2.Inf.Obl V3

- (38) naadyaa=nee saddaf=koo xat **lik^h** lee-nee **dii-yaa**
 Nadya.F.Sg=Erg Saddaf.F.Sg=Dat letter.M.Nom write take-Inf.Obl give-Perf.M.Sg
 ‘Nadya let Saddaf write a letter (completely).’

(39)



5 The Lambda Dance

Recall that the following notions are assumed to be *primitives* of the metalanguage:

$e = e_i \rightarrow e_j$: e consists of two subevents, e_i , e_j such that e_i leads to or causes e_j
(see Hale and Keyser 1993)

$e = \langle e_i, e_j \rangle$: e consists of two subevents, e_i , e_j such that e_i and e_j form an accomplishment event structure where e_i is the process portion and e_j is a state interpreted as the result state of the process. (see Parsons 1990 and Higginbotham 2000)

State(e) : e is a state

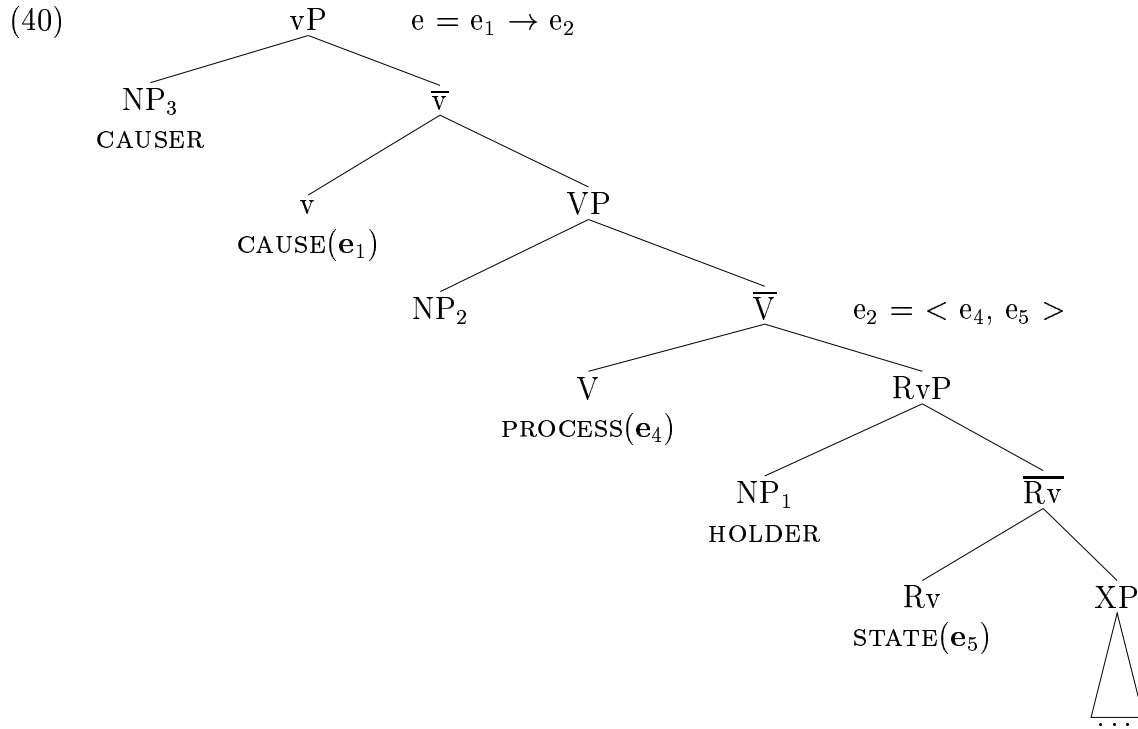
Process(e): e is a process

Causing(e): e is a causing event

Object (x , e) and Causing(e) entails that x is the **Cause** of e .

Object(x , e) and Process(e) entails that x is the **Undergoer** of the process.

Object(x , e) and State(e) entails that x is the **Holder** of the state.



$\llbracket Rv \rrbracket = \lambda P \lambda x \lambda e [P(e) \ \& \ State(e) \ \& \ Object(x,e)]$

will combine with the XP which denotes some predicate of events, Q, to give:

$\llbracket \overline{Rv} \rrbracket = \lambda x \lambda e [Q(e) \ \& \ State(e) \ \& \ Object(x,e)]$

This will combine with the NP₁ in specifier position to give:

$\llbracket RvP \rrbracket = \lambda e [Q(e) \ \& \ State(e) \ \& \ Object(\llbracket NP_1 \rrbracket, e)]$

The V head has the following denotation:

$\llbracket V \rrbracket = \lambda Rv \lambda x \lambda e \exists e_4, e_5 [Rv(e_5) \ \& \ V'(e_4) \ \& \ Process(e_4) \ \& \ e = \langle e_4, e_5 \rangle \ \& \ Object(x, e_4)]$

This combines with the RvP to produce

$\llbracket \overline{V} \rrbracket = \lambda x \lambda e \exists e_4, e_5 [Q(e_5) \ \& \ State(e_5) \ \& \ Object(\llbracket NP_1 \rrbracket, e_5) \ \& \ V'(e_4) \ \& \ Process(e_4) \ \& \ e = \langle e_4, e_5 \rangle \ \& \ Object(x, e_4)]$

This combines with the specifier in VP to give:

$\llbracket VP \rrbracket = \lambda e \exists e_4, e_5 [Q(e_5) \ \& \ State(e_5) \ \& \ Object(\llbracket NP_1 \rrbracket, e_5) \ \& \ V'(e_4) \ \& \ Process(e_4) \ \& \ e = \langle e_4, e_5 \rangle \ \& \ Object(\llbracket NP_2 \rrbracket, e_4)]$

The interpretation of the little v ‘causing’ head is:

$\llbracket v \rrbracket = \lambda Rv \lambda x \lambda e \exists e_1, e_2 [Rv(e_2) \ \& \ v'(e_1) \ \& \ Causing(e_1) \ \& \ e = e_1 \rightarrow e_2 \ \& \ Object(x, e_1)]$

This combines with the VP to produce:

$\llbracket \overline{v} \rrbracket = \lambda x \lambda e \exists e_1, e_2 \exists e_4, e_5 [Q(e_5) \ \& \ State(e_5) \ \& \ Object(\llbracket NP_1 \rrbracket, e_5) \ \& \ V'(e_4) \ \& \ Process(e_4)$

$\& e_2 = \langle e_4, e_5 \rangle \& \text{Object}(\llbracket \text{NP}_2 \rrbracket, e_4) \& v'(e_1) \& \text{Causing}(e_1) \& e = e_1 \rightarrow e_2 \& \text{Object}(x, e_1)]$

Merging in the specifier in spec, vP gives us:

$\llbracket \text{vP} \rrbracket = \lambda e \exists e_1, e_2 \exists e_4, e_5 [Q(e_5) \& \text{State}(e_5) \& \text{Object}(\llbracket \text{NP}_1 \rrbracket, e_5) \& V'(e_4) \& \text{Process}(e_4) \& e_2 = \langle e_4, e_5 \rangle \& \text{Object}(\llbracket \text{NP}_2 \rrbracket, e_4) \& v'(e_1) \& \text{Causing}(e_1) \& e = e_1 \rightarrow e_2 \& \text{Object}(\llbracket \text{NP}_3 \rrbracket, e_1)]$

6 Conclusion

- Three functional projections (causing, process and result) provide exactly the right spectrum for dealing with the predication differences in Urdu/Hindi complex constructions.
- Differences between auxiliaries and light verbs find a natural explanation:
 - We see light verbs (including morphological causatives) as being situated in v, or, if the relationship to the main verb is even tighter, as being a co-head (V).
 - Auxiliaries reside in the functional projections above vP.
- Light verbs are unlike auxiliaries in that they are part of the ‘lexical syntax’: they spell out the individual heads (v, or V) which represent the decomposition of morphologically simplex lexical items in languages like English (thus, the greater syntactic integrity and influence on case marking etc.).
- The interaction assumed here between event semantics and morphosyntactic structure results in a satisfactory analysis for the predication differences:
 - The Type 3 control construction vs. the Type 1 and 2 complex predicates.
 - The difference in predication “tightness” between Type 1 and 2.

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