

Making Verb Frames for Bangla Vector Verbs

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Abstract

This paper is an initial attempt to make verb frames for some Bangla verbs. For this purpose, I have selected 15 verbs which are used as vectors in the compound verb constructions of Bangla. The frames are made to show their number of arguments as well as case markings on those arguments when these verbs are used alone and when they form part of compound verb constructions. This work can be extended further to make similar verb frames for all other verbs and can be used as a rich lexical resource.

Keywords: verb frames, compound verbs, Bangla, arguments and case markings, lexical resource.

1 Introduction

Compound verbs had always taken a pivotal role in the linguistic research of Indian languages. They are composed of two verbs and together make a complex predicate. The typical property of the compound verbs in Indian languages is that the second verb or V2 does play a very important role in the meaning composition of the complex predicate and occasionally also retains its own argument while forming a compound verb. For these interesting properties of the compound verbs, they have been studied extensively in almost all major Indian

languages (Hook (1974), Kachru and Pandharipande (1980), Butt (1993, 1995), Kachru (1993) on Hindi, Bashir (1993) on Kalasa, Pandharipande (1993) on Marathi, Fedson (1993) on Tamil, Hook (1996) on Gujrarti, Kaul Vijay on Kashmiri (1985), Rajesh Kumar and Nilu (2012) on Magahi, Mohanty (1992) on Oriya and Paul (2004, 2005) on Bangla). The first verb appears in its perfective form in Bangla compound verbs and the second takes the inflection as in other languages.

The vectors of the compound verbs are responsible for providing certain kinds of senses cross-linguistically as shown by Abbi and Gopalkrishnan (1992) with data taking from all four major language families of India. They have categorized these senses into three types: Aspectual, Adverbial and Attitudinal with some sub-types under these. Under aspectual cross-linguistically a sense of perfectivity or completeness of event (telicity) is found. Adverbial is further divided by them into three types: manner, benefactive and others all showing some way the action of the V1 performed. Under attitudinal type, comes the attitude of the speaker or the narrator towards the action mentioned by the V1 such as anger, surprise, contempt, disgust etc. These three senses are observed in Bangla compound verbs also. While aspectual and adverbial are most common senses, some cases are found (vectors *bOS* and *rakh*) with attitudinal sense of undesirability and intention to make the hearer attentive towards the speaker.

The present paper takes total 15 major vector verbs of Bangla listed in the work of Paul and provides syntactic frames for them when used alone as well as when used as a V2 in a compound verb construction. The goal of the paper is to see whether in a compound verb construction the V2 retains its argument structure and case marking properties or not. The paper as far as my knowledge goes, makes the first attempt to build verb frames for Bangla. The syntactic and semantic information associated with the verb frames can be very useful for classifying and analyzing the verbs as well as for many NLP applications such as information retrieval, text processing, building parser, Machine Translation etc.

2 Syntactic Frames of Bangla Vector Verbs

Attempt for classification of verbs is not a new phenomenon for a resource-rich language like English. Levin's verb classification (Levin 1993), based on syntactic and semantic properties is a gigantic classic work. VerbNet is a broad-coverage freely available online verb lexicon of English based on Levin's classification and provides information about thematic roles and syntactic and semantic representations. It is linked to other lexical resources like FrameNet, PropBank and WordNet. However, Indian languages still lack such kind of broad coverage verb resource. Apart from some initial attempt for making verb frames for Hindi (Rafiya et al, undated online version), we don't find any other work in this direction.¹

For the present work, to build a frame for a verb, I take the syntactic categories in a sentence where the verb appears. Then the NPs of the sentence are marked with the thematic roles they bear and the case marker or postposition they take. Apart from the traditional thematic roles found in standard GB theory like agent, experience, patient, instrument, benefactive, source, location and goal, I have used some other roles like associative for the accompanying NP with an agent, distinguished between causer, cause and an intermediate agent in case of a verb which provides the semantics of causation. The noun phrases are classified into location, time and matter and they bear locative case markers. Therefore, in the frames these different types of NPs are mentioned. Case markers are very important for Indian languages. For one particular

theta role, there may be more than one case marker. After providing the frame schema, an example sentence of Bangla is given for that particular frame with a gloss and translation in English.

In the following subsections the verb frames are developed and described for each of the vectors found in a compound verb construction.

1. /aSa/ 'come'

Sense 1: Deixis

The deictic verb *aSa* may focus on the source of the movement, the path or the goal. If the source is in focus, the frame has a *theke* marked source location NP, if the goal is in focus the argument is locative *-e* marked and when the path is in focus it is *-die* or *-hoe* marked path NP.

NP1(Agent) NP2-theke (source) V

1. ami baRi theke aSchi.

I house-from come-pr-prog-1p
'I am coming from the house.'

NP1-Agent NP2-e(goal) V

2. pOrpOr kotogulo durbOl Sorkar khOmotay aSe.

Consecutively some weak government power-loc come-pr-3p
'Some weak governments came to power consecutively.'

NP1(Agent) NP2-hoe/die (Path) VI

3. amra kalna hoe elam.

We Kalna via come-pt-1p
'We came via Kalna.'

4. amra men lain die elam.

We main line by com-pt-1p
'We came by main line.'

The verb may also take an associative argument marked with *-r SoMge/Sathe* as in (5).

NP1(agent) NP2-r SOMge (associative) V

5. bacchaTa kar SoMge eSeche?

Child-cl who-gen with come-pr-pft-3p
'With whom has the child come?'

The V1 which are compatible with deictic senses are *ghora* 'to roam', *phera* 'to return', *bERano* 'to travel, to stroll'. The frames of the verbs *ghora* and *bERano* require a locative argument. This argument, when combined with *aSa* in a

compound verb is merged with the source argument of *aSa*. As a result, there is only one source marked argument in the compound verb frames of *ghure aSa* and *beRie aSa*, which may be dropped occasionally. E.g.

NP1(agent) NP2 –theke(source) V1 V2.

6. amra ladakh theke beRie elam.

We Ladakh from o travel come-pt-1p

‘We came back travelling from Ladakh.’

When the path is focused in the deictic sense the argument is case marked with postposition *die* as in the next sentence.

NP1(agent) NP2-die(path) V1 V2

7. je pOth die cole eli, Se pOth Ekhon bhule geli.
(Tagore song)

which way by walk come-pt-2p-NH, that way now forget go-pt-2p-NH

‘Now you forgot the way by which you came past.’

When the goal is in focus, however, the argument of the same compound verb becomes a locative – *e/te* marked place noun.

NP1(agent) NP-e(goal) V1 V2

8. hElheD istinDia kompanir cakri nie bharote cole aSen.

Halhed East India Company-gen job with India-loc come-pr-3p-hon back

‘Halhed came back to India with a job in East India Company.’

When the source is in focus, the argument will be *theke* marked source.

NP1(agent) NP2(temporal) V1 V2

9. kintu uni jodi ajkaler moddhei phire aSen..

but he-hon if by today or tomorrow return come ‘What if he comes back by today or tomorrow.’

aSa may also be combined with some verb with one object argument (e.g. *phEla* ‘to drop’) and in that case that object argument is realized in the frame of the compound verb as the following. However, there is still the deictic sense of the vector retained in such construction. The place of speaking and the place of the first verb cannot be same.

NP1(agent) NP20/ke/re (theme) V1 V2

10. tui phele eSechiS kare?

You-NH drop come-pr-pft-2p-NH whom (poetic)

‘Whom have you left behind?’

NP1(agent) NP2-ke(patient) V1 V2

11. make bole eSechiS? (alternatively *bOla* may also take locative argument like *baRite*)

Mother-obj. tell come-pr-pft-2p-NH

‘Have you informed mother?’

Sense 2: Duration

When *aSa* as a V2 is used in the sense of duration of the event of V1, it may have a temporal NP with postpositions like *theke*, *dhore* (*kOtodin dhore*).

NP1(agent) NP2 (temporal) V1 V2

12. ami kObe theke bole aSchi.

I when from say come-pr-prog-3p

‘I have been saying it for a long time.’

NP1(agent) NP2(matter/viśay) V1 V2

13. Se tar pitar onukOroNe o nirdeSe ei karjo kore aSche.

(s)he his/her father-gen following-loc and instruction-e this work do come-pr-prog-3p-NH

‘She has been doing this work following her father’s instruction.’

Sense 3: gradualness of the event

When *aSa* is used in the sense of gradualness of the event of V1 it may optionally take a manner adverb phrase like *dhire dhire*, *aste aste* ‘slowly’.

(AdvP) NP1(undergoer) V1 V2

14. (dhire dhire) cokh (ghume) juRe aSche.

Slowly eyes in sleep close come-3p-pr-prog ‘The eyes have been closing slowly.’

2. *rakha* ‘to keep’: This verb when used alone takes a locative place argument.

NP1(agent) NP2 (theme) NP3-e/-er +a locative postposition V (locative)

15. boiTa kothay rekhechiS?

book-cl where keep-pr-pft-2p-NH

‘Where have you kept the book?’

Sense 1: Aspectual

When used in the aspectual sense as a vector, it combines with verbs which take one object argument and that is realized in the frame of the compound verb, aspectual difference of the two senses of *rakha* as a vector is not reflected in the verb frame. In both cases the V1 is verb with one object argument but the difference is in the type of the verb, with the first sense a process verb and with the second sense a perceptual verb resulting some cognitive effect is found as a V1. E.g.

NP1(agent) NP2-0/ke (patient) V1 V2

16. phulTa tule rakhiS.

flowers pick keep-2p-fut-imp-NH

‘Pick up the flowers (with a telic reading).’

17. benarOs tar oitijjho dhore rekheche.

Benaras its tradition hold keep-pr-pft-3p ‘Varanasi has kept up its tradition.’

Sense 2: to make the hearer attentive/attitudinal sense of the speaker

It is often used in imperative mood and generally comes with the adverbial phrase *bhalo kore* or *mon die* which in this context mean carefully/with attention. E.g.

NP1(agent)NP2-0/ke (patient) AdvP V1(perception verb) V2

18. kOthaTa bhalo kore Sune rakho.

Word-cl well hear keep-pr-imp-2p-NH

‘Listen to the words carefully.’

3. ana ‘to bring’: The basic frame has a subject and an object argument and a source from where the object is brought. The verb *ana* semantically involves a movement of things from one place to another.

NP1(agent) NP2-theke(source) NP2-0/ke (theme) V

19. tumi dilli theke ki enecho?

you what bring-pr-pft-2p-MH

‘What have you brought?’

When it is combined with another verb with an object argument there is sharing of argument and only one object is realized in the frame of the compound verb.

NP1(agent) NP2-0/ke (theme) V1 V2

20. kake dhore enechi, dEkho.

whom catch bring-pr-pft-1p see-imp-2p

‘See, whom have I brought?’

4. dea ‘to give’: It loses its core sense when used as a vector. The frame of *dea* alone is the following.

NP1 (agent) NP2-ke (recipient) NP3 (theme) V

21. ke kake ki dilo?

Who whom what give-pt-3p-NH

‘Who gave what to whom?’

When used as a vector with any other process verb in complete aspectual sense, it does not retain any of its arguments. The resulting sentence structure has the arguments of V1. The semantics of this vector is the action of V1 will be beneficial for somebody other than the actor.

NP1(agent) NP2-0/ke (patient) V1 V2

22. tumi ki kajTa kore debe?

you QP work-cl do-give-fut-2p-MH

‘Will you do the work?’

5. nea ‘to take’

The basic frame of the verb is the following with a *theke* marked source argument.

NP1(agent) NP-2-theke (source) V

23. eTa kotha theke nile?

This-cl where from take-pt-3p

‘Where did you take it from?’

However, the source argument is lost when it is used in a compound verb frame as a V2 and the frame follows the first verb completely. The semantics is the action of V1 is done for the benefit of the actor. E.g.

24. taRataRi khee ne, iskuler deri hoe jacche.

quickly eat take-pr-imp-2p-NH, school-gen.

late become go-pr-prog

‘Take the food quickly, (you) are getting late for the school.’

6. tola ‘to pick up’

The basic frame of the verb consists of an agent of picking up, a source of pick up and the theme/ patient to be picked up.

NP1(agent) NP2- 0/ke (theme) NP3-theke (source)

V

25. ami bacchader skul theke tulbo
 I children school from pick up-fut-1p
 ‘I will pick up the children from the school.’

The source argument is not found in the frame of the compound verb with an accomplishment V1.

- NP1(agent) NP2-0/ke (patient) (AdvP) V1 V2*
 26. Condrobabu naiDuke notun rajdhani SohorTa
 dhire dhire goRe tulte hObe.

Candrababu Naidu-Dat new capital city-cl
 slowly build pick be-fut-modal
 ‘Candrababu Naidu has to build up the new capital city slowly.’

7. *loTha/ ‘to rise’*

Primary frame of the verb has an agent argument with a locative/temporal argument if it is used in the sense of physical rising or ascending or getting up or some change in the position.

NP1(agent) NP2-0/e (location/temporal) V

27. bacchara chade uTheche.
 kids roof-loc ascend-pr-pft-3p
 ‘The kids have ascended on the terrace.’
 28. amra bhorbEla uThechi.
 We dawn get up-pr-pft-1p
 ‘We have got up early in the morning.’
 29. Surjo purbodike oThe.
 The sun east-loc rise-generic-pr-3p
 ‘The sun rises in the east.’

This verb when used as a vector with *gORa* ‘to build’ makes an unaccusative complex predicate where the subject of the construction is actually the complement of the verb.

- NP1(patient) NP2 (location/temporal) V1 V2*
 30. Sob purono Sobbhotai nodir dhare goRe
 uThechilo.

All old civilizations river-gen side-loc build
 rise-pt-3p
 ‘All the old civilizations were built in the river banks.’

In the second sense of the vector, it contributes to the modality of the first verb and mostly used with interrogation or negation. The V2 *oTha* in this sense is always with the suffix *-te* with the auxiliary *para* denoting ability.

- NP1(agent) NP2(patient) V1 V2-te para*
 31. ami Ekhono lekhaTa likhe uThte pari ni.

I so far article-cl write rise can not
 ‘So far I have not been able to manage to write the article.’

NP1(agent) ki NP2-0(patient) V1 V2 para?

32. tumi ki kajTa kore uThte perecho?
 you QP work-cl do rise can-pr-pft
 ‘Have you been able to manage to do the work?’

In the third use of the vector *oTha* it is used very commonly with the manner adverb *hOthat* ‘suddenly’ and denotes the suddenness or unexpectedness of the first event.

NP1(agent) AdvP V1 V2

33. baccaTa hOthat keMde uThlo
 child-cl suddenly cry rise-pt-3p
 ‘Suddenly the child cried.’

8. *pORa ‘to fall’*

The verb *pORa* as mentioned before denotes a change of place of its subject. The subject undergoes an action of falling from a certain source often marked with *theke*. The location of falling may also be marked in the sentence occasionally with locative *-e*. However, none of these may be present in a sentence. The subject gets the theme theta role and it is actually raised to the position of the subject from the complement position of the verb. Therefore, *pORa* is an unaccusative predicate.

NP1-theke(source) NP2-e(location) NP3 (theme) V

34. kal rate gach theke bagane Onek am poReche.
 last night tree from garden-loc many mangoes
 fall-pr-pft-3p
 ‘Many mangoes have fallen in the garden last night.’

When it is used with a stative V1 in a compound verb frame it emphasizes the resulting state of the V1 after certain motion. The frame needs only one compulsory theme argument which is realized as subject NP. The argument is actually a theme can be checked from the fact that in this construction another object is not allowed. For instance, **bacchaTa lOmba ghum ghumie poReche* is ungrammatical where *lOmba ghum* ‘long sleep’ is

inserted as an object. However, with the single verb *ghumono* ‘sleep’ the object argument is perfectly acceptable.

NP1(theme) VI V2

35. bacchaTa ghumie poReche.
Child-cl sleep fall-pr-pft-3p
‘The child has fallen asleep.’

9. *boSa* ‘to sit’

The verb frame of the single intransitive verb *boSa* has one compulsory agent argument with one optional (often unrealized in a sentence) location of seating.

NP1(agent) NP2-e/te (location) V

36. tumi maTite boSle kEno?
You floor-loc sit-pt-2p-NH why
‘Why did you sit on the floor?’

However, when used in a compound verb frame it refers to only aspectual function of the V1, suddenness or unexpected nature of the event. The verbs with which it goes are transitive like *boLa* ‘to say’, *koRa* ‘to do’.

NP1(agent) NP2(time or location) VI V2 (ke jane)

37. meeTa kOkhon ki bole boSbe ke jane
girl-cl when what say sit-fut-3p who knows
‘Who knows, when the girl will say what (unexpected)!’

10. *phEla* ‘to drop’

The verb *phEla* when used alone takes an agent argument, a theme and optionally a location of dropping.

NP1(agent) NP2(theme) NP3-e/te (location) V

38. baccaTa cabiTa nice phelechilo
child-cl key-cl downstairs-loc drop-pt-pft-3p
‘The child had dropped the key downstairs.’

As a vector it is used in the sense of ‘to do the event of V1 without hesitation or further consideration’ as in *bole phEla* ‘speak out’, *kore phEla* ‘do without hesitation’. The frame has one agent and patient with some manner adverbial.

NP1(agent) NP2(patient) AdvP VI V2

39. Oto bhabchiS ki, kajTa cOTpOT kore phEl.

Much think-pr-prog-2p-NH what, work-cl fast do drop-imp-2p-NH

‘What are you thinking so much? Do the job quickly.’

The second use in the sense of an unwanted event of V1 can be found with the same set of verbs. The frame typically generally has question words *kOkhon/kothay* and *ki* as time location and patient argument.

NP1(agent) NP2(time or location) NP3(patient) VI V2

40. o je kOkhon ki kore phelbe tar Thik nei.
(s)he comp when what do drop-fut-3p its clear not
‘It is not clear, when he will do what (unexpectedly).’

Notice that same verb may be used with both the senses.

The third use is completely aspectual and it indicates the telicity of the event of V1. The transitive verbs with an overt argument go with this reading of *phEla*. E.g. *chuMRe phEla* ‘to throw out’, *bheMe PhEla* ‘to break’, *gile phEla* ‘to swallow’.

NP1(agent) NP2(theme) NP3-e/te(location) VI V2

41. tini phuler toRaTa baje kagojer jhuRite chuMRe phellen.
(s)he flower-gen bouquet-cl waste paper basket-loc throw drop-pt-3p
‘She threw the bouquet of flowers in the waste paper basket.’

11. *jaoa* ‘to go’

As a single verb *jaoa* has an agent of the motion and a goal or destination where the agent goes. It may also alternatively refer to the path of the motion marked by the postposition *-die/hoe*.

NP1(agent) NP2(goal) V

43. ami dilli jacchi.
I delhi go-pr-prog-1p
‘I am going to Delhi.’

When it is used as a vector, it loses the goal argument and it is used with some time adverbial denoting duration of the event. The TAM expressed is either present perfect continuous or habitual pre-

sent and it is realized by either simple present continuous or simple present in the language.

NP1(agent) NP2(temporal) VI V2

44. meeTa Sokal theke khele jacche.
girl-cl since morning play go-pr-prog-3p
'The girl has been playing (continuously) since morning.'

NP1(agent) NP2(temporal) AdvP VI V2

45. lokTa Saradin cupcap kaj kore jay.
man-cl whole day silently work do go-pr-3p
'The man keeps on working silently for the whole day.' (habitually)

12. *cOla* 'to go on/to work (for a thing)'

cOla as a main verb may mean 'to walk or move' or 'to go on or to work (for a thing)'. In the first sense, it takes an agent and a path or a goal argument as in (44).

NP1(agent) NP2 (path) V

46. amra Onek rasta collam.
We long way walk-pt-1p
'We walked a long way.'
47. tumi kothay colle?
You where go-pt-2p
'Where are you going?' (past form used in present sense)

When used in the sense of 'to go on', *cOla* takes one theme argument which is realized as the subject. The verb frame may occasionally have a manner adverbial.

NP1(theme) AdvP V

48. purodOme kaj colche.
in full swing work go on pr-prog-3p
'The work is going on in full swing'.
49. ghoRiTā ThikThak cloche.
Clock-cl alright work-pr-prog-3p
'The clock is working alright.'

The verb when used as a vector provides aspectual information of the main verb. It is used with present perfect continuous TAM realized as present perfect and often has a time adverbial denoting duration of the V1.

NP1(agent) NP2 (temporal) VI V2

50. cheleTa Sokal theke kaj kore coleche.

boy-cl morning since work do move-pr-pft-3p
'The boy has been working continuously since morning.'

13. *paThano* 'to send'

As a main verb *paThano* takes two object arguments one theme and one recipient along with an agent.

NP1(agent) NP2(recipient) NP3(theme) V

51. ami tomake boiTā paThacchi.
I you-obj book-cl send-pr-prog-1p
'I am sending you the book.'

As a vector it is used in the sense of causativization. There are causer, causee and an intermediates agent with postposition *die*.

NP1(causer agent) NP2-die (instrument) NP3-ke (causee) VI V2

52. SahoS dEkho, jhike die amake Deke paThieche.
audacity look, maid-obj by summon send-pr-pft-3p
'Look at the audacity, (she) has summoned me through a maid-servant.'

14. *bERano* 'to roam'

When used alone *bERano* takes an agent and a location argument.

NP1(agent) NP2-te(location) VI

53. tOkhon amra bagane beRacchilam.
Then we garden-loc roam-pt-prog-3p
'Then we were roaming in the garden.'

When used as a vector it is used in the sense of 'non-directional movement' (Paul (2010) says this as random action of V1 without discretion) and instead of a location may take a temporal or manner adverbial.

NP1(agent) NP2 (temporal) VI V2

54. ma-mOra meeTa Saradin keMde bERacche.
mother-died girl-cl whole day cry roam-pr-prog-3p
'The girl whose mother has died has been crying here and there for the whole day.'

AdvP NP1(agent) VI V2

55. Sudhu Sudhu ghure bERaccho kEno?

worthlessly wander roam-pr-prog-2p why
‘Why are you wandering here and there worth-
lessly?’

15. *mOra* ‘to die’

mOra is used as an intransitive verb with one
undergoer of the event.

NP1(undergoer) V

56. lokTa moreche

man-cl die-pr-pft-3p ‘The man has died.’

When used in a compound verb construction, it
denotes futility of the event of V1.

NP1(agent) (AdvP) V1 V2

57. orOkom keMde morchiS kEno?

Such cry die-pr-prog-3p why

‘Why are you crying such futile?’

When it is combined with a transitive verb like
bhaba ‘to think’, it retains the object argument of
that verb in the resulting compound verb frame.

NP1(agent) NP2 (patient) V1 V2

58. ami Saradin tomar kOtha bhebe morchi ar
tomar kono kheali nei?

I whole day your word think die-pr-prog-3p
and you-gen any concern-emph neg

‘I have been thinking of you only for the whole
day and you don’t have any concern at all?’ and
tables below the body, using 10 point text.

3. Findings and Results

From the above data total 45 tokens of verb frames
are found and they are listed below together with
their respective verbs.

- i. NP1(Agent) NP2-theke (source) V
- ii. NP1(Agent) NP2-e(goal)V
- iii. NP1(Agent) NP2-hoe/die (Path) V
- iv. NP1(agent) NP2-r SOMge (associative) V
- v. NP1(agent) NP2-0/ke/re (patient) V1 V2
aSa
- vi. NP1(agent) NP20/ke/re (theme) V1 V2
- vii. NP1(agent) NP2(temporal) V1 V2
- viii. NP1(agent) NP2((matter/viṣay) V1 V2
- ix. (AdvP) NP1(undergoer) V1 V2
- x. NP1(agent) NP2-e/-er +a locative postposition
(location) V

xi. NP1(agent) NP2 0/ke/re (patient) V1 V2
rakha

xii. NP1(agent) NP20/ke (patient) AdvP V1 V2

xiii. NP1(agent) NP-theke (source) NP20/-ke/re
(theme) V

xiv. NP1(agent) NP2-0/ke/re (theme) V1 V2
ana

xv. NP1(agent) NP2-ke (recipient) NP3 (theme)
V

xvi. NP1(agent) NP2-0/ke (patient) V1 V2
dea

xvii. NP1(agent) NP-2-theke (source) NP3
(theme) V

As a vector it follows frame of V1.
Nea

xviii. NP1(agent) NP2- 0/ke (theme) NP3-theke
(source) V

xix. NP1(agent) NP2 (patient) (AdvP)
V1(accomplishment) V2 *tola*

xx. NP1(agent) NP2 (location/temporal) V

xxi. NP1(theme) NP2 (location/temporal) V1
V2

xxii. NP1(agent) NP2(patient) V1 V2-te para neg
oTha

xxiii. NP1(agent) ki (QP) NP2(patient) V1 V2
para?

xxiv. NP1-theke(source) NP2-e(location)
NP3(theme) V

xxv. NP1(patient) V1 V2 *pORa*

xxvi. P1(agent) NP2(theme) NP3-e/te(location) V

xxvii. NP1(agent) NP2(patient) AdvP V1 V2

xxviii. NP1(agent) NP2 (temporal/location)
NP3(patient) V1 V2

xxxix. NP1(agent) NP2(theme) V1 V2
phEla

xxx. NP1(agent) NP2 (goal) V

xxx. NP1(agent) NP2 (temporal) V1 V2

jaoa

xxxii. NP1(agent) NP2 (temporal) AdvP V1 V2

xxxiii. NP1(agent) NP2-0(theme) NP3-
ke(recipient) V

xxxiv. NP1(causer) NP2-die (instrument) NP3-
ke(causee) V1 V2 *paThano*

xxxv. NP1(agent) NP2-te(location) V1

xxxvi. NP1(agent) NP2(temporal) V1 V2

xxxvii. AdvP NP1(agent) V1 V2
bERano

xxxviii. NP1(undergoer) (AdvP/AdvCl) V

xxxix. (AdvP) NP1(agent) NP2 (patient)V1 V2
mOra

- xl. NP1(agent) NP2-0/te or -r locative postposition (location)V
- xli. NP1(agent) NP2(temporal/location) NP3 (patient) V1 V2 (ke jane) *bOSa*
- xlii. AdvP NP1(theme) V
- xliii. NP1(agent) NP2 (temporal) V1 V2 *cOla* in the sense of ‘go on/work’
- xliv. NP1(agent) NP2(path) V
- xlv. NP1 (agent) NP2(goal) V *cOla* in the sense of ‘move’

We can classify these 45 tokens of verb frames into 17 types.

- i. NP1(Agent) NP2-theke (source) V
- ii. NP1(Agent) NP2-e(goal)V
- iii. NP1(Agent) NP2-hoe/die (Path) V1
- iv. NP1(agent) NP2-r SOMge (associative) V
- v. NP1(agent) NP2-0/ke/re (patient) V1 V2
- vi. NP1(agent) NP20/ke/re (theme) V1 V2
- vii. NP1(agent) NP2(temporal) V1 V2
- viii. NP1(agent) NP2((matter/višay)) V1 V2
- ix. (AdvP) NP1(undergoer) V1 V2
- x. NP1(agent) NP2-e/-er +a locative postposition (location) V
- xi. NP1(agent) NP20/ke (patient) AdvP V1 V2
- xii. NP1(agent) NP-theke (source) NP20/-ke/re (theme) V
- xiii. NP1-theke(source) NP2-e(location) NP3(theme) V
- xiv. NP1(agent) NP2-ke (recipient) NP3 (theme) V
- xv. NP1(undergoer) (AdvP/AdvCl) V
- xvi. AdvP NP1(theme) V
- xvii. NP1(causer) NP2-die (instrument) NP3-ke(causee) V1 V2

The general observation which comes out from these frames are intransitive verbs are generally used with an adverbial phrase or clause which depicts the manner of the event. They may also have a temporal or spatial NP in their frames which denote the time or the location of the event. However, they no longer need their compulsory locative NP argument or manner adverbial phrase or clause in the compound verb structure. The V2s when used in pure aspectual sense as in *jaoa*, *aSa* (one sense is aspectual), *rakha* (one sense only) and *cOla* or aspectual and some benefactive adverbial sense as in *deoa* and *nea* do not retain their original syntactic arguments in the compound verb structure. With the other adverbial senses like sudden-

ness or unexpectedness of the event with the V2s *phEla* and *bOSa*, the argument and case marking of the vector verb are not retained in the new compound verb structure. The deictic motion verb *aSa* may retain its goal, source or path arguments in a compound verb structure when it is combined with a non-directional motion verb which talks about manner of the motion. The other verb *ana* which has a source deictic motion sense retains it in the compound verb structure also.

3 Conclusion

This work is only a first attempt to build a knowledge-base lexical resource for Bangla verbs and has a very wide scope to extend it to fully develop frames for all the verbs of Bangla and classify them on the basis of syntactic and semantic information. At present, the work does not incorporate any semantic feature in the argument structure of the verbs but a future work can incorporate that to classify the nature of the arguments with same semantic or theta role. Once such a resource is fully developed it can be linked to the Indo Wordnet also.

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