

Verbs in Hindi: A Semantico-Syntactic Classification

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Abstract

Hindi, an Indo-Aryan language has the vocabulary of mostly tatsam (borrowed from Sanskrit and kept intact) and tadbhav (derived from Sanskrit and modified) words. The examination of the root forms shows that most of the verbs are intransitive at base but the present paper argues that morphology cannot be the reliable basis to decide this. Hence, the need of the hour is to probe into their semantico-syntactic behaviour and classify them according to that criterion. The paper provides a detailed semantic-syntactic classification of Hindi verbs. This classification will also provide a range of information regarding the linguistic properties of the verbs. It will be a powerful resource for various NLP applications as well as research in the area of cognitive linguistics.

Keywords: NLP, intransitive, transitive, verb class, internally caused, externally caused

1. Introduction

A semantico-syntactic classification aims to capture the relationship between the syntax and semantics of verbs. It gives an insight about a range of (cross) linguistic properties. Though, it is not a means for full semantic inferencing, its usefulness is nevertheless extensive. It has proved useful in supporting various linguistic and natural language processing (NLP) tasks. It is a useful resource for semantic analysis and cognitive linguistics research. It is also an effective means for handling various NLP tasks and applications like computational lexicography, machine translation, WSD, language generation, semantic role labelling (SRL), event recognition, etc. This classification is an important component in systems which need predicate-argument structure.

The vocabulary of Hindi, a modern Indo-Aryan language, contains mostly *tatsam* (borrowed from Sanskrit and preserved intact) and *tadbhav* (derived from Sanskrit and modified) words. Irrespective of etymology, however, most of the verb roots would end up being listed as intransitives if one were to make reference to morphology alone in decisions about what constitutes the base form of a Hindi verb. The present paper explores Hindi verbs in this light and provides an encyclopedic semantic classification of Hindi verb classes based on Levin and Rappaport Hovav (1995). The paper is organized as follows: section two discusses the issue of transitive/intransitive base in Hindi, section three gives a brief explanation of Levin's classification, section four is devoted to the classification of Hindi verbs and section five presents some concluding remarks.

2. Intransitive or Transitive at Base?

As discussed above, Hindi verbs seem to have an intransitive base. Let us look at some examples with their roots as given in the dictionary¹:

Table 1. Intransitive-transitive-root table

Intransitive	Transitive	Gloss	Root
pisnA	pi:snA	Grind	√pis (Sans.)
khudnA	khodnA	Dig	√kshud (Sans.)
luTnA	lu:TnA	Rob	√lunTh (Sans.)
marnA	mArnA	Die	√mri (Sans.)
jagnA	jagAnA	wake up	√jAgr (Sans.)

Bhatt and Embick (2004) argue that Hindi has two sets of verbs- the AA-class, where the transitive forms have an overt suffix –A, and the NULL-class that is without any overt suffix. In the AA-class, the intransitive form appears to be basic and in the NULL-class, it is the transitive form which is the basic. Let us look at their examples:

Table 2. AA-class

Intransitive	Transitive	Gloss	Root
jAgnA	jagAnA	wake up	A/a
bi:tanA	bitAnA	elapse/cause to elapse	i:/i
su:khnA	sukhAnA	dry/cause to dry	u:/u
ronA	rulAnA	cry/cause to cry	o/u
leTnA	liTAnA	lie/lay	e/i

Table 3. NULL-class

Intransitive	Transitive	Gloss	Root
mArnA	marnA	die/kill	A/a
kholanA	khulnA	open	o/u
lu:TnA	luTnA	be robbed	u:/u
pi:TnA	piTnA	hit	i:/i

(Bhatt & Embick, 2004, p. 23)

Bhatt and Embick come to the conclusion that one single rule of Vowel Simplification (i.e. it is basically shortening the vowel) operates to derive transitives from intransitives in the AA class and intransitives from transitives in the NULL class. Moreover, there are no diagnostics to show “that the two classes are distinct in any syntactico-semantic way.” Without going into the details of their analysis at this point, this suggests that whatever differences there may be in terms of the syntax and semantics of transitivity and intransitivity, Hindi morphology is not a reliable cue when one seeks to determine whether roots are at base transitive or intransitive.

Vajpayee (1987) also argues that the intransitive *silnA* is not the root form of the transitive verb *silAnA* ‘to sew.’ Consider the following sentence:

¹ Verma, R. (ed.). (1990). *Maanak Hindi Kosh*, Vol. I-IV. HindiSaahitya Sammelan, Prayaag.

- i. kapRe silte hain
clothes stitch-HAB be-PRS.PL
'The clothes get stitched.'

In the above sentence 'clothes' cannot get stitched on their own, they need an agent. So, the root form would be the transitive variant *silAnA* 'to sew.' But it is not so easy to point out the basic variants in all the verbs. Vajpayee (1987) remarks that the transitive verb *mArnA* is not derived from the intransitive *marnA* 'to die' because in the present tense, *mArnA* means 'to hit' and not 'to kill.' But in the past tense, *μαρνα* can mean both 'to kill' and 'to hit.' So, he argues that *marnA* and *mArnA* are separate verbs. Similarly, there are verbs that have both transitive and intransitive uses. For example:

- ii. dabnA 'to get pressed' dAbnA 'to press'

Here also, according to Vajpayee, both can be separate verbs instead of one being the derived form of another.

Therefore, it is clear that arguments from morphology cannot be the basis to decide which form is the derived one and which is the basic. If there is a need to maintain a distinction between these forms, they must be distinguished on a syntactic or a semantic basis.

3. Verb Classes: Levin's Classification

Levin (1993) and Levin and Rappaport Hovav (1995), henceforth LRH, identify three broad classes of verbs, defined in terms of their lexical semantic representation and associated argument structure. The first class of verbs is the class of verbs that are externally caused, which include many verbs of change of state, and are basically dyadic causative verbs. The second class of verbs is the class of verbs that are internally caused verbs, and these are monadic in terms of their lexical semantic representation, and unergative in nature. The third class of verbs is the verbs of existence and appearance, which are dyadic unaccusative verbs with two internal arguments. Let us consider the three broad classes in detail.

- a. The externally caused class of verbs regularly participates in causative alternation. For example:

- iii. a) Vasily broke the window. (English)
b) The window broke.

Here, the subject of the intransitive variant and the object of the transitive variant bear the same semantic role. However, prototypical unergatives such as 'laugh', 'play', 'speak' do not participate regularly in this alternation in languages like English, French, Italian and Russian. For example:

- iv. a) The children laughed. (English)
b) *The joker laughed the children.

LRH suggest that such alternating unaccusative verbs are basically causative. The alternating unaccusative verbs have a unique lexical semantic representation associated with both their unaccusative and transitive variants, and this is a causative one. They propose the following representation for the two types of verbs:

- v. a) *break* : [[x DO – SOMETHING] CAUSE [y BECOME BROKEN]]
 b) *laugh* : [x LAUGH]

A verb like ‘break’, on both its transitive and intransitive uses, has a complex Lexical Semantic Representation (LSR) involving the predicate CAUSE. There are two sub-events involved: the causing sub-event and the central sub-event, the latter specifying the change associated with the verb. The causer argument is associated with the causing sub-event and the passive participant (patient / theme) with the central sub-event. The LSR associated with a non-alternating intransitive verb such as ‘laugh’ does not involve the predicate CAUSE; it has only one sub-event and is taken to be basically monadic.

The above representation of alternating (‘break’) verbs reflects that such verbs are externally caused, as these verbs involve two sub-events. Therefore, externally caused verbs are inherently dyadic predicates, which take both the external cause and passive participant in the eventuality as arguments. The core class of causative alternation verbs are verbs of change of state (describe changes in physical shape or appearance).²

It is, however, important to note that only externally caused verbs of motion and verbs of change of state participate in causative alternation. Levin (1993) suggests that there should be no externally caused verbs without a transitive variant. All externally caused verbs have a transitive and causative use, but not all of them have an intransitive use in which the external cause is unspecified. For example:

- vi. a) Shekharan wrote a new poem. (English)
 b) *A new poem wrote.
- vii. a) The girl cut the cake. (English)
 b) *The cake cut.

In English, many alternating verbs of change of state are deadjectival as those adjectives are used to describe states. For example:

- viii. a) *open, loose, slim, shut, dry, empty, cool, clear, quiet, dirty, ...*
 b) *lighten, redden, ripen, toughen, tighten, loosen, lengthen, ...*
 (Levin, 1993)

² Jespersen (1927) characterised the class of alternating verbs as the ‘move and change’ class as it also includes verbs of change of state as well as verbs of motion.

b. Internally caused verbs are monadic in terms of their lexical semantic representation. These verbs do not participate in the causative alternation and need not be agentive as they are internally caused. This class of verbs is referred to as ‘verbs of emission’.³ This class is divided into four subclasses:

- ix. a) Sound: *jingle, whistle, roar, ring, buzz, clank, hum, crackle,...*
- b) Light: *glow, glitter, sparkle, flash, flicker, gleam, shine,...*
- c) Smell: *stink, reek, smell, ...*
- d) Substance: *ooze, gush, spout, squirt, puff, bubble, ...*

These verbs describe eventualities that are result of internal physical characteristics of their argument. Therefore, the kinds of entities that qualify as arguments of such emission verbs are limited. For example, consider the verb ‘glitter’: because only certain substances have the inherent property to glitter, the choice of argument for such a verb is restricted to those substances. These verbs generally have no causative use. For example:

- x. a) The diamond sparkled. (English)
- b) *Mitako sparkled the diamond.

However, some emission verbs are compatible with a dual classification as either internally or externally caused. LRH argue that the transitive and causative uses of emission verbs represent the externally caused option and their intransitive uses represent internally caused option. The externally caused use arises only by direct manipulation of the emitter. For example:

- xi. a) The doorbell rang. (English)
- b) The postman rang the doorbell.

- xii. a) The light flashed. (English)
- b) The kid flashed the light.

In addition, there are some verbs of change of state which are internally caused. The changes of state they describe are inherent to the natural course of development of the entities and do not need to be brought about by any kind of external cause. This class includes verbs such as ‘flower’, ‘bloom’, ‘blossom’, ‘decay’, ‘rust’, ‘sprout’, ‘swell’, etc. These verbs, too, do not participate in the causative alternation. For example:

- xiii. a) The rose bloomed/blossomed early. (English)
- b) *The gardener bloomed / blossomed the rose early.

Verbs of bodily process are also internally caused and do not participate in the causative alternation. For example:

³ Perlmutter (1978) describes these verbs as verbs of “[n]on-voluntary emission of stimuli that impinge on the senses”.

- xiv. a) Anna coughed. (English)
 b) *Katharine coughed Anna.

Agentive verbs like ‘laugh’, ‘play’, ‘speak’ also do not participate in causative alternation as the property inherent to the argument of the verb which is responsible for bringing the eventuality is the will or volition of the performing the activity.

- c. The third class of verbs includes verbs of existence, appearance and disappearance⁴. LRH though agree that these verbs are associated with a theme and a location, they propose that these verbs are dyadic and take two internal arguments. This class of verbs requires a location argument (even an understood argument). These verbs do not participate in causative alternation.

- xv. a) A solution exists. (English)
 b) *The mathematician existed a solution.

- xvi. a) A picture appeared (on the screen). (English)
 b) *The lady appeared a picture (on the screen).

These verbs are among the prototypical unaccusative verbs of many languages. They are particularly stable in their unaccusativity. For example, in English, these verbs cannot assign accusative case; in Italian, they select the auxiliary *essere* ‘be’, the auxiliary found with unaccusatives. They are not internally caused. LRH propose that these verbs belong to a class of verbs for which the notion of external and internal causation is irrelevant. In the following section we identify the verb classes (based on Levin, 1993) in Hindi.

4. Verb Classes in Hindi

Based on LRH (1995)’s classification, Hindi verb classes can be broadly divided into the following ten classes: 1. Emission Verbs, 2. Verbs of Change of State (includes Verbs of Non-volitional Change of State and Verbs of Change of State), 3. Verbs of Motion (includes Agentive Verbs of Manner of Motion, Verbs of Manner of Motion and Verbs of Inherently Directed Motion), 4. Verbs of Spatial Configuration, 5. Verbs of Existence, Appearance & Disappearance, 6. Verbs of Bodily Process, 7. Verbs of Contact / Attachment, 8. Verbs of Consumption, 9. Verbs of Perception, and 10. Verbs of Image Impression.

4.1. *Emission Verbs*

Some of these verbs in Hindi are compatible with a dual classification as either internally or externally caused whereas some are only internally caused. The verbs, which are exclusively internally caused, do not have a transitive,

⁴ Mulder and Wehrmann (1989) recognise that verbs of existence describe eventualities that involve two participants: a theme (i.e. an entity whose existence is asserted) and a location. They treat these verbs as monadic verbs taking a small clause internal argument containing a theme and a location.

causative use. These verbs are *expressives*⁵ in Hindi, e.g. kaRaknA ‘thunder,’ garajnA ‘roar,’ TarrAnA ‘croak,’ gungunAnA ‘hum,’ phusphusAnA ‘murmur,’ camcamAnA ‘glitter.’

The verbs with the externally caused option have transitive and causative use and involve direct manipulation of the (animate) emitters. Therefore, just as LRH have noted for English, Hindi verbs too have transitive and causative uses of emission verbs that correspond to the externally caused option, with intransitive uses of such verbs corresponding to the internally caused option. For example:

- xvii. a) ghanTi: bajI
bell ring-PST.F
‘The bell rang.’
- b) ru:nA-ne ghanTi: baj-A-i:
Runa-ERG bell ring-TR-PST.F
‘Runa rang the bell.’
- c) ru:nA-ne mili-se ghanTi: baj-wA-i:
Runa-ERG Mili-INS bell ring-CAUS-PST.F
‘Runa rang the bell.’

Moreover, transitive and causative uses of these verbs do not permit instruments/natural forces. For example:

- xviii. a) *hawA-ne chaims baj-A-yA
wind-ERG chimes ring-TR-PST
*‘Wind rang the chimes.’
- b) *ag-ne tel kaRk-A-yA
fire-ERG oil boil-TR-PST
*‘Fire boiled the oil.’

4.2. *Verbs of Change of State*⁶

This class of verb can be subdivided into two classes- Verbs of Non-volitional Change of State and Verbs of Change of State.

⁵ This can be further divided into onomatopoeic expressions and expressives as done in literature since expressives are not sound symbolic in the strict sense whereas onomatopoeic expressions are. However, onomatopoeic expressions and expressives share the general property that neither of the two halves of the expression is independently meaningful, whereas the base of an echo expression forms a lexical item in its own right, and this is true of both elements of paired words. Therefore, in order to avoid any confusion, I have used the term *expressives* to include both onomatopoeic expressions and expressives, based on Abbi (1992). Asher (1985) refers to both onomatopoeic expressions and expressives as *ideophones*, whilst Gnanasundaram (1972) groups onomatopoeic expressions and expressives as *ideophones*, whilst Gnanasundaram (1972) groups onomatopoeic expressions and expressives together under the general heading of ‘*echo words*.’

⁶ Levin (1993) has further divided this class into subclasses like *break* verbs, *bend* verbs, *cooking* verbs, *-en* verbs, *-ify* verbs, *-ize* verbs, *-ate* verbs etc. which is only useful for English verbs.

a. *Verbs of Non-volitional Change of State (henceforth verbs of NVCS)*

“The change of state described by these verbs are inherent to the natural course of development of the entities that they are predicated of and do not need to be brought about by an external cause (although occasionally they can be, and in such instances, causative uses of these verbs are found” (LRH 1995, p. 97).

Some of the verbs in this class describe a state as well as a change-of-state, e.g. क्खिलना ‘bloom.’ Let us consider the following sentences:

xix. a) ye phu:l ek din tak khil-A (in a state interpretation)
 this flower one day till bloom-PST
 ‘This flower bloomed for a day.’

b) ye phu:l ek din mein khil-A (change-of-state interpretation)
 this flower one day in bloom-PST.
 ‘This flower bloomed in a day.’

In (xix,a) the verb describes being in a state and in (xix,b) it has an interpretation of ‘come to bloom’ (i.e. a change-of-state interpretation). These verbs have transitive and causative uses, though the semantics of these uses are slightly different than verbs of other classes. For example, (compare with example (xvii,b)):

xx. mani-ne phu:l khil-A-yA
 Mani-ERG flower bloom-TR-PST
 ‘Mani made the flower bloom’.

However:

xxi. *mani-ne is poudhe mein phu:l khil-A-yA
 Mani-ERG thi splant in flower bloom-TR-PST
 *‘Mani made the flower bloom in this plant.’

In (xx), the initiator of the causing sub-event, Mani, does not directly affect the central event of the flower blooming; rather, he creates conditions favourable for the internally caused event to come about (by planting / watering the shrub etc.). Therefore, (xxi), which requires him to externally cause the natural course of development of the flower, is unacceptable. Though these verbs do have transitive and causative uses, there are also restrictions, with the transitive and causative use denoting a semantically distinct eventuality.

Other verbs like *murjAnA* ‘wither’, *sikuRnA* ‘shrink’, *ankurnA* ‘sprout’, *muskurAnA* ‘smile’, *sharmAnA* ‘blush’ *su:jnA* ‘swell’, etc. have only the change-of-state interpretation. For example:

xxii. a) *ye phu:lek din tak murjh-AyA (in-a-state interpretation)
 this flower one day till wither-PST
 *‘This flower withered for a day.’

- b) yephu:lek din mein murjh-AyA (change-of-state interpretation)
 this flower one day in wither-PST
 ‘This flower withered in a day.’

Moreover, these verbs do not have transitive and causative uses⁷ unlike verbs like ‘bloom.’ For example:

- xxiii. *mani-ne phu:l murjh-A-yA
 Mani-ERG flower wither-TR-PST
 *‘Mani withered the flower’.

b. *Verbs of Change of State*

These verbs are externally caused⁸ change of state verbs unlike NVCS verbs which are internally caused. Some verbs of change of state in Hindi are *girna* ‘fall’, *su:khnA* ‘dry’, *Du:bnA* ‘sink’, *galna* ‘melt’, *jamna* ‘freeze’, *Tu:Tna* ‘break’ *khulna* ‘open’, etc. These have transitive and causative uses that differ from the transitive and causative uses of verbs of NVCS verbs in that the eventuality brought out here is direct not indirect. For example:

- xxiv. JoshuA-ne jahAj Dub-A-yA
 Joshua-ERG ship sink-TR-PST
 ‘Joshua sank the ship’.

Compare the above example (xxiv) with (xix). Moreover, note that while in (xxii), the eventuality of blooming is not directly brought about by *Mani*, in (xxiv) the eventuality of sinking is directly brought about by *Joshua*.

4.3. *Verbs of Motion*

a. *Agentive Verbs of Manner of Motion*

LRH cites Reinhart (1991) and Cruse (1972) to point out that the “cause” argument in transitive and causative uses of these verbs can only be an agent in true sense, never an instrument or a natural force. This is true in Hindi, too. For example:

- xxv. a) *hawA-ne patang uR-A-yA
 wind-ERG kite-ACC fly-TR-PST
 *‘The wind flew the kite.’
- b) *somi:-ne hawA-se patang uR-A-yA
 Somi-ERG wind-INS kite-ACC fly-TR-PST
 *‘Somi made the wind flew the kite.’

⁷ Smith (1970) explains the lack of transitive and causative uses for these verbs in terms of the presence of *internal control*.

⁸ Smith (1970) makes a slightly different proposal. He suggests that these verbs describe eventualities that are under control of some external cause and these have transitive uses where the external cause is expressed as a subject.

In Hindi, directional phrases are not obligatory in the transitive and causative uses of these verbs as they are in languages like English. For example:

- xxvi. a) *We ran the mouse
 b) We ran the mouse through the maze
- xxvii. a) Ru:nA-ne chu:he-ko dauR-A-yA
 Runa-ERG mouse-ACC run-TR-PST
 ‘Runa ran the mouse.’

b. Verbs of Manner of Motion

These verbs specify a manner of motion but not direction, inherently involving a kind of change which is not directed. In Hindi, most of these verbs have transitive and causative uses. For example:

- xxviii. a) chakkA ghu:m rahA hai
 wheel rotate PROG be-PRS
 ‘The wheel is rotating.’
- b) Somi: chakkA ghu:m-A rahA hai
 Somi wheel rotate-TR PROG be-PRS
 ‘Somi is rotating the wheel.’
- c) Somi: ru:nA-se chakkA ghum-wA rahA hai
 Somi Runa-INS wheel rotate-CAUS PROG be-PRS
 ‘Somi is making Runa rotate the wheel.’

c. Verbs of Inherently Directed Motion

These verbs are achievement verbs; they specify an achieved end point. These specify direction not manner. Dowty (1991) argues that in the verbs, it is the path argument, not the theme, which is the incremental theme⁹. Like other verbs of motion, these also have transitive and causative uses in Hindi. For example:

- xxix. a) mili: pahAR par chaRh-i:
 Mili mountain up climb-PST.F
 ‘Mili climbed up the mountain.’
- b) SherpA-ne mili:-ko pahAR par chaRh-A-yA
 Sherpa-ERG Mili-ACC mountain up climb-TR-PST
 ‘Sherpa made Mili climb up the mountain.’
- c) JoshuA-ne sherpA-se mili:-kopahAR par chaRh-wA-yA
 Joshua-ERG Sherpa-INS Mili-ACC mountain up climb-TR-PST
 ‘Joshua made Sherpa make Mili climb up the mountain.’

⁹ The argument of certain predicates involved in defining homomorphism from its own physical extent to the temporal progress of the event it participates in (LRH, 2002).

4.4. *Verbs of Spatial Configuration*

These verbs specify the position of an entity that bears a particular spatial configuration with respect to that position. LRH suggest that languages associate up to three types of noncausative meanings and one type of causative meaning with a particular spatial configuration of these verbs. The first is “maintained position”, the second is “assumed position” and the third is “simple position.” For example:

- xxx. a) Yvonne stood alone (in the hallway) for six hours.
 b) Yvonne stood up.
 c) The picture is hanging on the wall.

(LRH, 1995, p. 127)

In Hindi, unlike in English, the locative phrase is not obligatory in the “simple position” sense (though the location of the entity is implicit). For example:

- xxxi. a) taswi:r (di:wAr par) la Takrahi: hai
 picturewall on hang PROGbe-PRS
 ‘The picture is hanging (on the wall).’

In Hindi, These verbs also have transitive and causative uses. For example:

- xxxii. a) bandar-ne Dali: jhuk-A-i:
 monkey-ERG twig bend-TR-PST.F
 ‘The monkey bent the branch.’
 b) mili:-ne ru:nA-se Dali: jhuk-wA-i:
 Mili-ERG Runa-INS twig bend-CAUS-PST.F
 ‘Mili made Runa bent the branch.’

4.5. *Verbs of Existence, Appearance & Disappearance*

Mulder and Wehrmann (1989) define verbs of existence as verbs describing eventualities that involve two participants: a theme (i.e. an entity whose existence is asserted) and a location. Verbs of existence and verbs of appearance are semantically related. Kimball (1973, p. 267) states, “The concept of existence is... formed semantically (grammaticality) as perfective of coming into being.” Verbs of disappearance are the verbs of coming not to exist. LRH propose that for this class of verbs external and internal causation are apparently not relevant. In Hindi, too, these verbs lack transitive and causative variants. For example:

- xxxiii. a) wo is gharmein rahtAthA
 he this house in live-HAB be-PST
 ‘He lived in this house.’
 b) *ru:nA-ne mili:-koi gharmein rah-A-yA
 Runa-ERG Mili-ACC this house in live-TR-PST
 *‘Runa made Mili live in this house.’

4.6. *Verbs of Bodily Process*

LRH suggest that these verbs are internally caused; hence they do not have transitive and causative uses. There are few instances of transitive and causative uses of these verbs which they term as “spurious”, i.e. the causative variant is not derivationally related. Smith (1970) points out that the choices of objects for transitive use of these verbs are very limited. For example:

- xxxiv. a) The baby burped.
 b) The nurse burped the baby.
 c) The doctor burped.
 d)*The nurse burped the doctor.

(Smith, 1970, p. 107)

In Hindi, these verbs do not have a transitive use, but quite frequently they do have a causative use. For example:

- xxxv. a) RromAnov thu:k-tA hai
 Romanov spit-HAB be-PRS
 ‘Romanov spits.’
- b) *IlyA RomAnov-ko thuk-A-tA hai
 Ilya Romanov-ACC spit-TR-HAB be-PRS
 ‘Ilya causes Romanov to spit.’
- c) IlyA RomAnov-ko thuk-wA-tA hai
 Ilya RomanovACC spit-CAUS -HAB be-PRS
 ‘Ilya causes Romanov to spit.’

4.7. *Verbs of Contact/Attachment*

These are accomplishment verbs (consisting of a process and a result state). With these verbs, the result state describes the attained location of some physical object. In Hindi, these verbs do have transitive and causative variants. For example:

- xxxvi. a) Wahid-ne posTar chipak-A-yA
 Wahid-ERG poster paste-TR-PST
 ‘Wahid pasted the poster.’
- b) Wahid-ne Runa-se posTar chipak-wA-yA
 Wahid-ERG Runa-INS poster paste-CAUS-PST
 ‘Wahid made Runa paste the poster.’

4.8. *Verbs of Consumption*

These verbs describe atelic (nondelimited) activities, i.e. which does not include a goal, aim or conclusion. These are also incremental theme verbs. In Hindi, these verbs have transitive and causative variants. For example:

xxxvii. a) mA-ne bachche-ko phal khil-A-yA
 mother-ERG child-ACC fruit eat-TR-PST
 ‘Mother fed fruit to the child.’

b) mA-ne naukar-se bachche-ko phal khil-wA-yA
 mother-ERG servant-INS child-ACC fruit eat-CAUS-PST
 ‘Mother made the servant feed food to the child.’

4.9. *Verbs of Perception*

According to LRH (1995), these verbs, in their active use, describe the act of perceiving a state or an event. Frequently, the state asserts the existence of a physical object at some location. In Hindi, these verbs have transitive and causative variants. For example:

xxxviii. a) di:di: Somi:-kog anA sun-A-ti: hai
 sister Somi-ACC song listen-TR-HAB.F be-PRS
 ‘Sister makes Somi listen to the song.’

b) di:di: Mili-se Somi:-kogAnA sun-wA-ti: hai
 sister Mili-INS SOMI-ACCSONG LISTEN-CAUS-HAB.F BE-PRS
 ‘Sister makes Mili make Somi listen to the song’.

4.10. *Verbs of Image Impression*

These verbs have transitive and causative variants in Hindi. For example:

xxxix. a) JoshuA-ne Somi:-ko hisAb paRh-A-yA
 Joshua-ERG Somi-ACC maths read-TR-PST
 ‘Joshua taught Somi maths.’

b) JoshuA-ne mAsTar-se Somi:-ko hisAb paRh-wA-yA
 Joshua-ERG teacher-INS Somi-ACC maths read-CAUS-PST
 ‘Joshua made the teacher teach Somi maths.’

5. Conclusion

This paper provides the base for semantico-syntactic investigation of Hindi verbs and their argument structure. Further analysis¹⁰ into this is needed for its proper utilization. Although Hindi exhibits the same classes as those detailed for English by LRH, there are also significant differences between the two languages in how the verbs in each class behave. While in English, only externally caused verbs participate in the transitive/causative alternation, in Hindi, all externally caused verbs, and many internally caused verbs have both transitive, ditransitive and morphological causatives. This can be seen by a comparison of the verb classes we have isolated for both Hindi and English.

¹⁰ For reference, see Richa (2011).

Table 4. English vs Hindi verb classes: A comparison

VERB CLASS	ENGLISH	HINDI
Emission verbs	Only externally caused verbs participate in causative alternation	Externally caused verbs have transitive and causative uses
Verbs of change of state	Core class of causative alternation but internally caused verbs do not	Have transitive as well as causative uses
Agentive verbs of manner of motion	Directional phrases are obligatory in the transitive use of these verbs	Directional phrases are not obligatory in the transitive and causative uses of these verbs
Verbs of manner of motion	Participate in causative alternation	Have transitive as well as causative uses
Verbs of inherently directed motion	Do not participate in causative alternation	Have transitive and causative uses
Verbs of spatial configuration	Participates in causative alternation	Have both transitive and causative uses
Verbs of existence, appearance & disappearance bodily process	Do not participate in causative alternation Never participate in causative alternation	Do not have transitive and causative uses No transitives, only causatives
Verbs of contact/ attachment	Do not participate in causative alternation	Have transitive and causative uses
Verbs of consumption	Can have transitive use too	Have transitive as well as causative uses
Verbs of perception	Can have transitive use too	Have transitive as well as causative uses

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