SE367A Project

# Complex Predicates in Hindi

## Gaze Tracking and Survey based study

**Sachet Chavan**

(Dept. of HSS economics)

**Pranav Kumar**

(Dept. of Electrical engineering)

**Under the guidance of Prof. Mukherjee**

# Abstract:

Complex predicates also known as complex verbs abound in South Asian languages.

They occur in the form of noun + verb combinations and verb + verb combinations. In our project we dealt with the verb + verb combinations also known as lexical compound verbs.

These complex predicates are formed by the combination of a verb that denotes a situation-type (hereafter, the main/heavy verb) and a finite light verb, an aspectual functor which semantically modifies the main verb's meaning.

# Motive

Complex predicates are lexical compound verbs. Now as they are a part of our day-to-day language we are very much accustomed to them.

But if a person has no knowledge of Hindi, he won't be able to decipher the meaning of these compound verbs. And that's because individually these heavy verbs and light verbs mean different but when put together as a complex predicate, the meaning they try to convey changes.

Also not each and every heavy verb and light verb combination can be said to be a complex predicate. There are very limited number of combinations which are prevalent enough to be accepted as a part of general vocabulary.

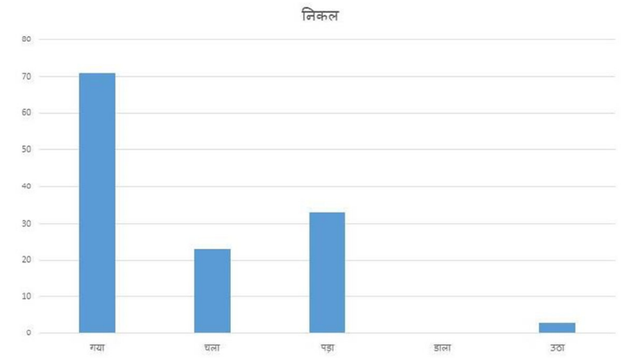
## Part 1: Gaze Tracking

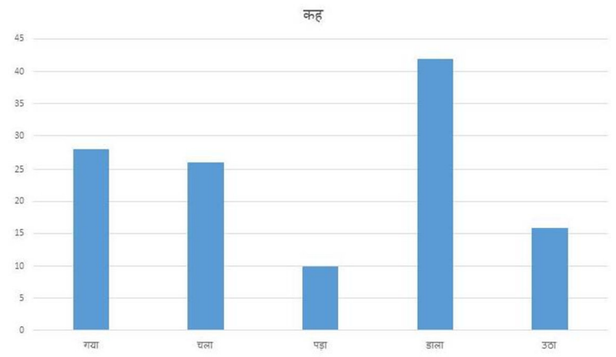
The first part of our experiment was that of gaze tracking in which we made our subjects read a text comprising of sentences which contained standard aspectual complex predicates, reverse aspectual complex predicates and plain verbs.

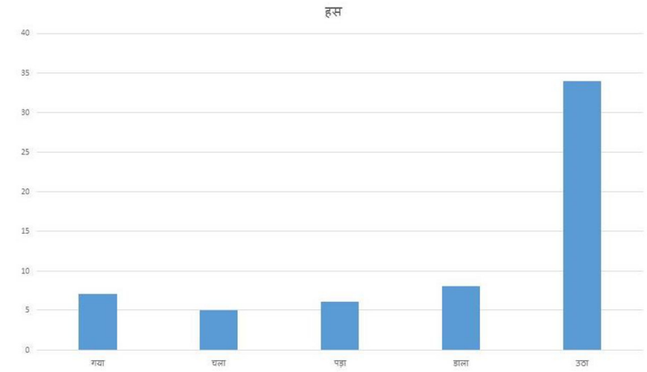
## Part 2: Survey

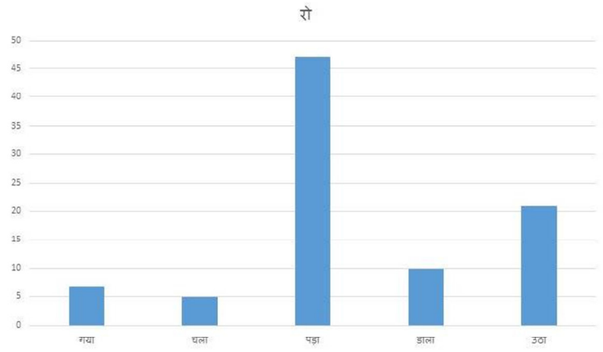
We circulated a survey containing a grid like structure comprising 5 heavy verbs and 5 light verbs which made 25 different combinations and asked the participants to vote the ones they find appropriate.

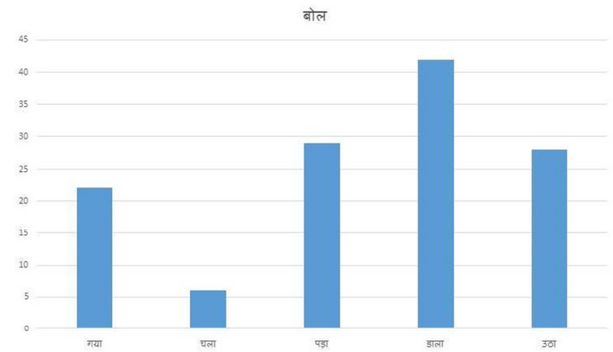
# Result of Survey




These graphs show the number of votes each light verb got for respective heavy verbs.

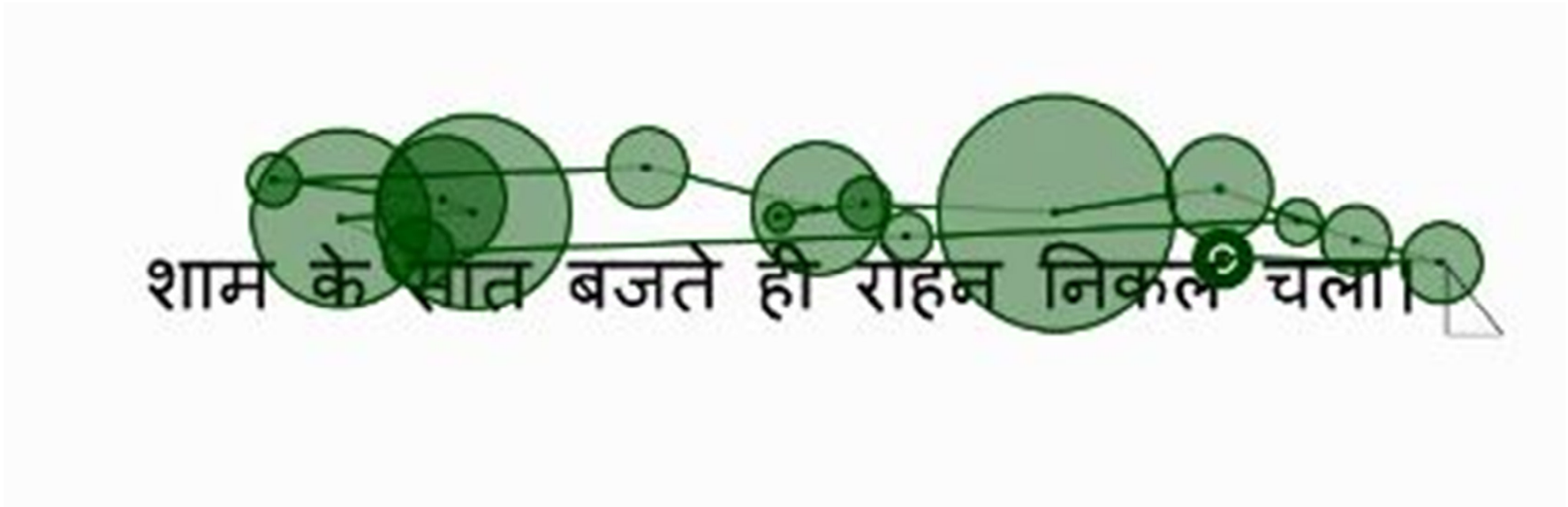
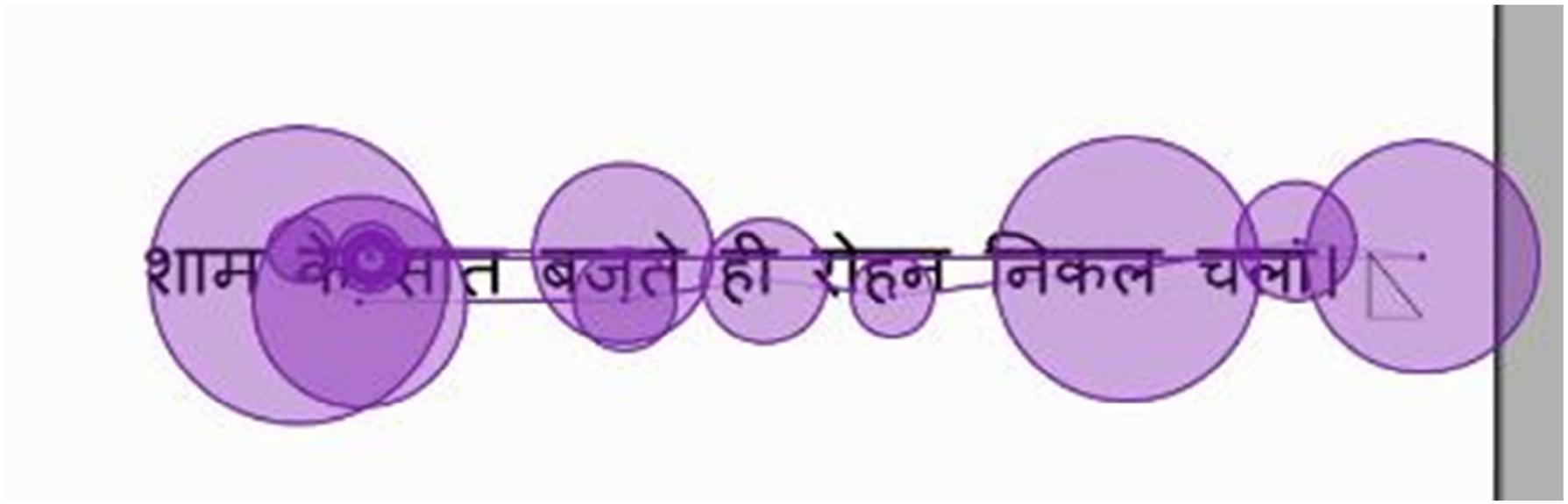
# Inference

From the votes we got for the light verbs for their respective heavy verbs, we can safely conclude that the ones with lower votes(less than 20) are not that prevalent in general Hindi vocabulary and thus can’t be a part of the Hindi wordnet.

In the gaze tracking study we can say that the complex predicates taking more time to read than their normal verb counterpart.

As radius of circle is measure of saccade time it demonstrates Heavy Verb takes relatively more time than Light Verb

# References:


- D.Chakravarti H.Mandalia R.Priya V.Sharma P.Bhattacharya; 2008: Hindi Compound Verbs and their Automatic Extraction(IITB)
- Shakthi Poornima, Jean-Pierre Koenig; 2009: Hindi Aspectual Complex Predicates (State University of New York at Buffalo)

# Sample Results of Gaze Tracking