

# Experiencers vs. Agents in Urdu/Hindi Nominalized Verbs of Perception

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# The Puzzle: Case

- The nominalizations ‘seeing/hearing’ combine with the verb *de* ‘give’.
- **But:** *de* ‘give’ only licenses agentive (ergative or nominative) subjects elsewhere in the language.

## Questions:

- ① Why is there not an ergative/nominative subject in these clauses?
- ② Why does the combination with nominalized verbs of perception seem to constitute an exception in the language?

# The Puzzle: Valency

- 'give' is generally a three-place predicate
- Verbs of perception are generally two-place predicates
- The combined seeing/hearing+give predication has two arguments: an experiencer and a stimulus.

(2) a.    muj<sup>h</sup>-e            is=ka                            koi   lakṣan            nahī  
           Pron.1.Sg-Dat this.Obl=Gen.M.Sg some sign.M.Sg.Nom not  
           dīk<sup>h</sup>ai        de-t-a  
           appearing give-Impf-M.Sg  
           'I do not see any sign of it' (Godan, Premchand)

## Questions:

- ① If the combination of seeing/hearing+give is a complex predicate of the type established for Urdu/Hindi (Butt 1995, Mohanan 1994), then why is (2) not a 4-place predicate?
- ② If the combination of seeing/hearing is not a complex predicate, what is it?

# Structure of the Talk

- ① Data sources
- ② The verb *de* 'give' elsewhere in the language.
- ③ Butt's theory of complex predicates and light verbs.
- ④ Experiencer subjects elsewhere in the language.
- ⑤ More data
- ⑥ Analysis via Linking (Argument Mapping) and Complex Predication

# Our Data

- **Carnesale:** A corpus of Hindi literary texts from the 20th century.
  - The corpus contains 78,054 sentences, for a total of 1,136,573 tokens.
  - The texts are mostly by:
    - Munshi Premchand (primarily)
    - Raghuv eer Sahay
    - Mohan Rakesh
- **hiTenTen21:** The corpus consists of texts collected from the Internet and belongs to the TenTen corpus family.
  - The corpus contains 47,341,925 sentences, for a total of 901,352,786 tokens.
  - The corpus is available on SketchEngine.  
(<https://www.sketchengine.eu/hitenten-hindi-corpus/>)
- **UD Urdu UDTB:** Universal Dependency Treebank based on the Urdu Treebank (Bhat et al. 2015). It consists of 5,130 sentences.
- We also consulted previous literature, Google search and our own native speaker intuition.

# The verb *de* 'give'

- We know of no instance otherwise where *de* 'give' takes a dative subject.
- *de* 'give' is used as
  - a main verb
  - a light verb
- Its main and light verb uses are form- and paradigm-identical.
- Butt and Lahiri (2013) argue that this is due to one underlying lexical entry that gives rise to both main and light verb readings.
- This is a diachronically stable situation.
- There is no auxiliary or modal use of *de* 'give' that we are aware of.

# The main verb *de* 'give'

- As seen in (3a), the main verb *de* 'give'
  - is ditransitive.
  - with an ergative subject, a nominative object and a dative indirect object.
- As expected, idiomatic and metaphorical uses can also be found in the language, (3b)

- (3) a. **nadya=ne** batf<sub>1</sub>tfe=ko kitab d-i  
 Nadya.F=Erg child.M.Sg.Obl=Dat book.F.Sg.Nom give-Perf.F.Sg  
 'Nadya gave the child a/the book.' (main verb)
- b. **protestar=ne** islamabad=mẽ d<sup>h</sup>arna di-ya  
 protestor=Erg Islamabad=in sit-in.M.Sg.Nom give-Perf.M.Sg  
 'Protesters staged a sit-in in Islamabad.' (idiomatic use)



# Case Alternations

- It is well-known that Urdu/Hindi works with case alternations (e.g., Butt and King (2004), Ahmed Khan (2009), Butt and Ahmed (2011), Butt (2022a) and references therein)
- Relevant for us:
  - Ergative/nominative alternation on (di)transitive agentive and unergative verbs.
  - Accusative/nominative alternation on direct objects.

## Case Alternations: Ergative

The ergative/nominative alternation has:

- a. a semantic condition: it can only appear with agentive arguments
- b. a morphosyntactic condition: the ergative is required if the verb carries perfective inflection

- (4)
- a. **nadya=ne** batftfe=ko kitab **d-i**  
 Nadya.F=Erg child.M.Sg.Obl=Dat book.F.Sg.Nom give-Perf.F.Sg  
 'Nadya gave the child a/the book.'
  - b. **nadya** batftfe=ko kitab **de-gi**  
 Nadya.F.Nom child.M.Sg.Obl=Dat book.F.Sg.Nom give-Fut.F.Sg  
 'Nadya will give the child a/the book.'

A note on **agreement**:

- Verbal agreement can only take place with unmarked (=nominative) arguments in Urdu/Hindi.
- If the subject is nominative, the verb agrees with it.
- Else if the object is nominative, the verb agrees with it.
- Else there is default masculine singular agreement.

# Accusative/Nominative

The accusative/nominative alternation is generally known as an instance of Differential Object Marking (DOM; Bossong (1985, 1991)).

- a. Semantic condition: accusative is used to mark specificity of the object.
- b. Morphosyntactic condition: the specificity DOM is restricted to direct objects.

- (5)
- a.    yasin=ne            kamputar            xarid-a  
       Yassin.M.Sg=Erg computer.M.Sg.Nom buy-Perf.M.Sg  
       'Yassin bought a/some computer.'
  - b.    yasin=ne            kamputar=ko        xarid-a  
       Yassin.M.Sg=Erg computer.M.Sg=ko buy-Perf.M.Sg  
       'Yassin bought a (certain)/the computer.'

# Back to *de* 'give'

*de* 'give' is used as a **light verb** in at least three different complex predicates

- ① aspectual V-V complex predicates
- ② N-V complex predicates
- ③ the permissive

## Light verb use of *de* 'give'

- Aspectual complex predicates consist of:

- ① A main verb in its stem form.
- ② A light verb (also has been called *vector* or *compound* verb, e.g., see Hook (1974, 1991)) carrying the tense/aspect and agreement inflection of the predication.

- (6) a.    nadya=ne      baṭua                      k<sup>h</sup>o di-ya  
           Nadya.F=Erg wallet.M.Sg.Nom lose give-Perf.M.Sg  
           'Someone lost a/the wallet.' (based on Hook 1974, 310)
- b.    nadya=ne      tʃor=ko              dub-a              di-ya  
           Nadya.F=Erg thief.M=Acc sink-Caus give-Perf.M.Sg  
           'Nadya drowned the thief (dunked him completely).'

- The light verb *de* 'give' tends to convey benefaction, but not always.
- Generally it is associated with **responsibility** for an action (Butt and Geuder 2001) and **completion** of an action (Butt 1995).
- The light verb *de* in V-V complex predicates **always** takes an **ergative/nominative** subject.

## Light verb use of *de* 'give'

- N-V complex predicates consist of:
  - an uninflected noun that contributes the larger part of the predication
  - an inflected light verb

- (7) a.    nadya=ne            kahani            yad    k-i  
           Nadya.F.Sg=Erg story.F.Sg.Nom memory do-Perf.F.Sg  
           'Nadya remembered a/the story.'  
           (lit.: 'Nadya did memory of the story.')
- b.    nadya=ko            kahani            yad    a-yi  
           Nadya.F.Sg=Dat story.F.Sg.Nom memory come-Perf.F.Sg  
           'Nadya remembered a/the story.'  
           (lit.: 'Memory of the story came to Nadya.')

- The case on the subject is determined by the choice of the light verb (agentive 'do' vs. non-agentive 'come' in (7)), see also Butt (2022b).

## Light verb use of *de* 'give'

- The light verb *de* 'give' is not used very often as part of N-V complex predicates.
- But examples as in (8) can be found.
- The argument 'diversity' is contributed by the noun 'attention', indicating complex predication.

(8)    b<sup>h</sup>aṣa=ke                      vivid<sup>h</sup>ata=par      ham=ne    aramb<sup>h</sup>=se  
          language.F=Gen.Obl    diversity.M.Sg=on    1.Pl=Erg    beginning=from  
          d<sup>h</sup>yan                      di-ya  
          attention.M.Sg    give-Perf.M.Sg  
          'From the very beginning, we paid attention to the diversity of languages.'  
          (hiTenTen21)

- The case of the subject ('we') is ergative, as is consistent with 'give' as an agentive verb.

## Light verb use of *de* 'give'

- A further use of *de* 'give' is as a light verb in a permissive.
- This consists of:
  - A verbal noun with invariant oblique infinitive inflection.
  - The inflected light verb 'give'.

(9)    nadya=ne      batftfe=ko                      kitab                      **par<sup>h</sup>-ne**  
          Nadya.F=Erg child.M.Sg.Obl=Dat book.F.Sg.Nom read-Inf.Obl  
**d-i**  
          give-Perf.F.Sg  
          'Nadya let the child read a/the book.'

- Butt (1995) shows that these V-V combinations function as monoclausal predications
  - They are predicationally equivalent to simplex verbs.
  - There is no embedding (of verbs or arguments).
- Again, the subject of the complex predication with *de* 'give' is ergative, not dative.



# Complex Predicates

## Definition of a Complex Predicate (based on Butt 1995)

Complex predicates are formed when two or more predicational elements enter into a relationship of co-predication. Each predicational element adds arguments to a monoclausal predication. Unlike what happens with control/raising, there is no syntactic embedding into a complement clause.

Several pieces of machinery are needed to make this work:

- Light verbs are taken to be an instance of **incomplete predication**: they need to combine with another predicate (cf. Alsina (1996)).
- This is indicated by a variable (marked with a % as per XLE notation) in their a(rgument)-structure, see (10) for permissive 'give'.

(10) give < agent goal %Pred >

# Complex Predicates: A Proposal

- When two argument structures are combined, individual arguments can be identified with one another.
- This is not the result of random combinations, but the lowest matrix argument combines with the highest embedded one at a-structure.
- Butt (2014): This is parallel to what has been established for syntactic control and raising.

	<b>Control</b>	<b>Raising</b>	<b>Complex Predicate</b>
<b>syntax</b> (f-structure)	PRO controlled	Exceptional Case Marking (ECM)	No
<b>a-structure</b>	argument controlled (fusion)	arguments unified (raising)	Yes

- **That is:** Argument Identification at the level of syntax has been called control/raising.
- Similarly, Argument Identification exists at the level of a-structure.
- This leads to complex predication (or clause union or argument merger or restructuring, as it has variously been called).

# Permissive: A Monoclausal Complex Predicate

*Nadya let Yassin [read the book].*

- composed a-structure:  
give/let < agent goal; read < agent; patient >>
- monoclausal f-structure

$$\left[ \begin{array}{l} \text{pred} \\ \text{subj} \\ \text{obj}_{go} \\ \text{obj} \\ \text{tns-asp} \end{array} \begin{array}{l} \text{'let-read < subj, obj}_{go}, \text{obj >'} \\ \left[ \begin{array}{l} \text{pred 'Nadya'} \\ \text{case erg} \end{array} \right] \\ \left[ \begin{array}{l} \text{pred 'Yassin'} \\ \text{case dat} \end{array} \right] \\ \left[ \begin{array}{l} \text{pred 'book'} \\ \text{case nom} \end{array} \right] \\ \left[ \begin{array}{l} \text{tense past} \\ \text{aspect perf} \end{array} \right] \end{array} \right]$$

# Mapping/Linking

- Below is a mapping between a-structure and f-structure that uses standard assumptions and the  $[\pm o(\text{bjective})]$  and  $[\pm r(\text{estricted})]$  features.
- As can be seen, an application of standard Mapping Theory in combination with argument fusion yields exactly the right results.

(11)    nadya=ne      batftfe=ko                      kitab                      paṛ<sup>h</sup>-ne  
           Nadya.F=Erg    child.M.Sg.Obl=Dat    book.F.Sg.Nom    read-Inf.Obl  
           d-i  
           give-Perf.F.Sg  
           ‘Nadya let the child read a/the book.’

give/let <	agent	goal; <sub>i</sub>	read <	agent;	theme	>>
	[-o]	[+o]		[-o]	[-r]	
	subj	obj <sub>go</sub>		obj	obj	
	Erg/Nom	Dat		Nom	Nom	



# Adding More Data/Information

- No trace of an agentive/ergative argument was found in any of the examples with *dik<sup>h</sup>ai/sunai+de* in our corpora.
- The addition of an agentive argument to *dik<sup>h</sup>ai/sunai+de* constructions is judged as severely ungrammatical by native speakers.
- The verb 'give' does not combine with any other such nouns in the language: *dik<sup>h</sup>ai* and *sunai* are the only ones.
- **Conclusions:**
  - the verb *de* 'give' exceptionally does not license an agentive argument in this construction
  - the construction is very limited and not productive

## Adding More Data/Information

We looked into the morphological make-up of *dik<sup>h</sup>ai* and *sunai*.

- The nouns *dik<sup>h</sup>ai* and *sunai* each consist of (Chatterji 1926, §402):
  - a verb stem (*dik<sup>h</sup>* ‘appear to’ and *sun* ‘hear’)
  - the verb stem is causativized via the addition of the causative morpheme *-a*
  - and is further nominalized via the feminine nominalization affix *-i*
  - Both the causative and the nominalization morphemes are productive.
- Given that the nominalizations contain a causative, one would expect an agent argument somewhere in the predication, either from ‘give’ or from the causativization.
- Following the established analyses for complex predication, one should get something as in (13), with three arguments.
- But we only end up with two.

(13) GIVE < agent goal; CAUSE < agent; HEAR < experiencer; stimulus >>>

## Dative Argument as Subject

- One could try to build an analysis in which the agent argument is somehow unexpressed but still there.
- However, there is no evidence for this.
- In particular, subject tests show that the dative experiencer is functioning as a subject.

- (14) a.       $\text{muj}^{\text{h}}\text{-e}$                        $\text{apn-e}$      $\text{g}^{\text{h}}\text{ar}=\text{m}\bar{\text{e}}=\text{se}$      $\text{ek}$      $\text{bur}^{\text{h}}\text{-i}$      $\text{aurat}$   
 Pron.Sg.1.Obl-Dat self-Obl house=in=Abl one old-F.Sg woman.F.Sg.Nom  
 $\text{nikal-t-i}$                        $\text{hu-i}$                        $\text{dik}^{\text{h}}\text{-a-i}$                        $\text{d-i}$   
 emerge-Impf-F.Sg become-Perf.F.Sg appear-Caus-F.Sg give-Perf.F.Sg  
 'I saw an old woman coming out of my house.'                      (*Apni karni*, Premchand)
- b.      [ $\text{age}$   $\text{ja}=\text{kar}$ ]  $\text{un-h}\bar{\text{e}}$                        $\text{ran}=\text{ke}$                        $\text{pas}$      $\text{ek}$      $\text{k}^{\text{h}}\text{ubsurat}$   
 ahead go=CP 3.Pl.Obl-Dat Ran=Gen.Obl near one beautiful  
 $\text{bag}$                        $\text{dik}^{\text{h}}\text{-a-i}$                        $\text{de-t-a}$                        $\text{he}$   
 garden.M.Nom appear-Caus-F.Sg give-Impf-M.Sg be.Prs.3.Sg  
 'They continue forward and they see a beautiful garden next to Ran.' (hiTenTen21)

- The reflexive in Urdu/Hindi is subject-oriented (Gurtu 1985, Mohanan 1994) and is oriented towards the dative in (14a).
- The unexpressed (PRO) subject is generally controlled by a subject, this is the dative in (14b).



## Dative Argument as Subject

- If one wants to express an agentive sense, needs to be done via the addition of another verb: 'go'.
- This has can be used to express a passive, but also an **ability** reading with an instrumental (Butt 1997).

(15)    pʊlis=se    tʃor                      pɑkr̩-a                      ja-ta                      hɛ  
           police=Inst thief.M.Sg.Nom catch-Perf.M.Sg go-Impf.M.Sg be.Prs.3.Pl  
           'The police are able to catch a/the thief.'

- An unspecified instrumental agent can be added to the following example (shown in brackets)

(16)    ham            jo            dek<sup>h</sup>-na            cah-t-e                      hɛ                      ham-ẽ  
           1.Pl.Nom which see-Inf.M.Sg want-Impf-M.Pl be.Prs.3.Pl 1.Pl-Obl  
           vah-i            (kisi=se)                      dik<sup>h</sup>ai di-ya                      ja-ta  
           that-Emph (somebody=Inst) seeing give-Perf.M.Sg go-Impf-M.Sg  
           hɛ  
           be.Prs.3.Pl  
           'We are shown what we want to see.'

# The Nominalized Causatives

- The nominalized causative is not productive in the language anymore.
- Some fixed examples are *car<sup>h</sup>-ai* 'climb, ascent', *lip-ai* 'painting', *lar-ai* 'fight', *luṭ-ai* 'plundering', *par<sup>h</sup>-ai* (e.g., see Kachru (1980), Saksena (1982)),
- We could thus hypothesize that *dik<sup>h</sup>ai* and *sunai* have been lexicalized to be nouns of perception with an attendant experiencer/theme argument structure.
- So rather than (17) we have (18).

(17) **Originally:**

*cause* < causer/agent *appear/listen* < experiencer theme > >

(18) **After Lexicalization:**

*seeing/hearing* < experiencer theme/stimulus >

# The status of 'give'

- We have been assuming that *de* 'give' is a light verb.
- This also means that we predict an agentive argument — but one that we do not find in the nominalized perception N-V combinations.
- We could instead assume that *de* 'give' is syntactically and semantically quite empty and plays no role.
- However:
  - then we have no explanation for the syntactic status of the *dik<sup>h</sup> ai/sunai*
  - it is not clear why *de* 'give' should be involved rather than some other semantically light verb like 'go' or 'come'.
  - In the seeing/hearing construction the *de* 'give' cannot be analyzed as an auxiliary (situates an event in time) or a modal (situates an event in terms of possible worlds) either semantically or syntactically.
  - In the seeing/hearing construction the *de* 'give' is clearly also not functioning as main verb.

## Putting together the pieces

- Given the syntactic (and semantic) parallels with other N-V experiencer complex predicates, it is likely that ‘give’ is a light verb when combining with ‘seeing/hearing’.
- In our analysis, we assume Butt’s theory of complex predication.
- But also: the event-based linking proposed by Schätzle (2018) and Beck and Butt (2023).
- And we propose to take the causative and nominalizing morphology on *dik<sup>h</sup>ai/sunai* seriously, rather than assuming a lexicalized version.

# Event-based linking

- Unlike many other proposals for relating argument structure to syntactic roles, standard LFG does not assume an event-based representation.
- An exception is Butt's (1995) proposals for linking based on Jackendoff's ideas (e.g., Jackendoff (1990)).
- A more recent proposal:
  - integrates Ramchand's (2008) tripartite organization of subevental structure
  - combines this with the use of Proto-Role information (Dowty 1991) as proposed by Zaenen (1993)
  - and works with the ideas in Kibort's (2014) version of LFG's Mapping Theory.
- Kibort posits four abstract argument positions as an independent tier of representation ('argument slots') at a-structure, eschewing thematic role labels.

# Event Based Linking

- Ramchand (2008) decomposes an event into three major subevents, each of which causes/initiates the other
  - (i) a causing or initiating subevent (*init*); results in a
  - (ii) a process subevent (*proc*); results in a
  - (iii) a result state (*res*).
- In addition, *rhemes* (*rh*) are taken to be in a static relationship with one of the three subevents of a predicate, like a static spatial Figure/Ground relationship.
- Each of these four event slots licenses an argument participant (corresponding to Kibort's four).

# Template

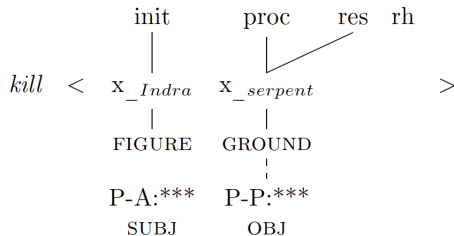
## (19) General Linking Schema

		init	proc	res	rh	
<i>predicate</i>	<	x	x	x	x	>
		figure	ground			
<i>grammatical relations</i>		subj	obj	obj <sub>theta</sub>	obl	

- Abstract argument slots are licensed by the subevents init, proc, res and rh.
- These are further associated with figure/ground relations (Talmy 1975).
- The entailments generated by figure/ground and, for example, being an initiator vs. an undergoer of a process are factored into the linking to grammatical relations, as per Zaenen's (1993) ideas.
- The argument with the most Proto-Agent properties is linked to the SUBJ.
- The argument with the most Proto-Patient properties is linked to the OBJ.

# Example: Active Agentive Clause

Indra killed the serpent.

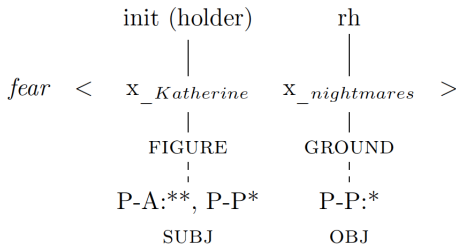


- 'Indra' has three Proto-Agent (P-A) properties:
  - ① initiator of an event
  - ② the figure
  - ③ is sentient
- 'serpent' has three Proto-Patient (P-P) properties:
  - ① casually affected (proc)
  - ② undergoes a change of state (res)
  - ③ the ground



# Example: An Experiencer Predicate

Katherine fears nightmares.



- 'Katherine' has two Proto-Agent properties and one Proto-Patient property.
  - ① holder of a state (P-P) – analysis based on Ramchand
  - ② the figure (P-A)
  - ③ is sentient (P-A)
- 'nightmares' has one Proto-Patient property:
  - ① the ground

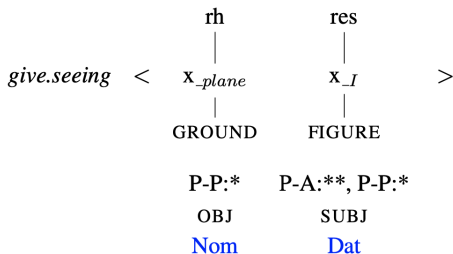






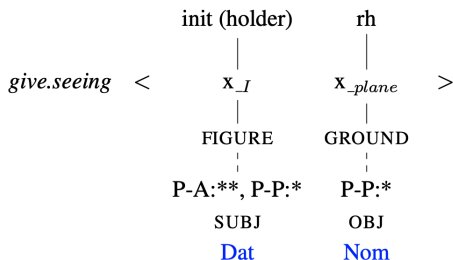
# Linking the Combined Argument Structures

- Focusing in on just the two arguments available for linking, we see that we get just the right results under the event-based linking.



- There is a fuller story to this, which involves the rise of dative subjects diachronically (Beck and Butt 2023).
- There we find exactly the same configuration in which a former goal is reinterpreted as an experiencer, leading ultimately to the experiencer configuration we already saw with *Katherine fears nightmares*.

# Experiencer Subjects



- We suggest that similarly a reanalysis of an originally complex predication has taken place.
- Which accounts for the fact that this construction is not productive today (can only find this with *dik<sup>h</sup>ai* and *sunai*).

## Further Data

- We can explain examples where *dik<sup>h</sup>ai* and *sunai* combine with *paṛ* ‘fall’ as in (23) along similar lines.
- The dative experiencer argument would here originally be derived from the locative argument contributed by the verb ‘fall’.

- (23) a.      $\alpha$ canak (muj<sup>h</sup>e)           ek hiran                   dik<sup>h</sup>ai paṛ-a  
           suddenly Pron.1.Sg.Dat one deer.M.Sg.Nom seeing fall-Perf.M.Sg  
           ‘Suddenly a deer appeared (to me).’
- b.     unhē           kuc for                           sunai paṛ-a  
           Pron.Pl.Dat some loud.noise.M.Sg.Nom hearing fall-Perf.M.Sg  
           ‘He heard some loud noise.’





# Conclusion

- We investigated a puzzle in terms of an unexpected argument frame found in a complex predication.
- We pursued an explanation from the perspective of an event-based linking as articulated in Schätzle (2018) and Beck and Butt (2023) and show how this can account for the argument mapping found with seeing/hearing+give.
- In sum, we hope to have shown that the reconceptualization of LFG's Mapping Theory in terms of an event-based approach to the licensing of event participants at argument structure allows for an insightful way of accounting for our puzzle.

# Acknowledgements



## Thank You!

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