When Copula Meets Case

Sebastian Sulger
sebastian.sulger@uni-konstanz.de
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1 Introduction

- Ph.D. research project:
  - tackle several misconceptions about the syntax of the verb ho ‘be’ in Hindi/Urdu
  - develop a new typology of ho; establish sharp distinction between existential verb, copula, and light verb usages of ho
  - reanalyze patterns of alleged “Differential Case Marking” (DCM) as involving structural differences instead
  - implement an LFG analysis of the typology

- Background:
  - project on implementing a broad-coverage LFG grammar for Hindi/Urdu
  - a consistent treatment of ho was necessary, but: more difficult than at first glance

- Starting point: dissertation by Tara Mohanan on Argument Structure in Hindi (Mohanan, 1994); cites well-known cases of DCM in Hindi/Urdu; notes that overtly case-marked nominals are grammatical subjects and display patterns of (semantically motivated) DCM.

- genitive/locative connection:
  (1) a. nina=ka qaləm he
     Nina.Fem.Sg=Gen.Masc.Sg pen.Masc.Sg be.Pres.3.Sg
     ‘Nina has a pen.’
  b. nina=ke pas qaləm he
     Nina.Fem.Sg=Gen.Masc.Sg.Obl near pen.Masc.Sg be.Pres.3.Sg
     ‘Near Nina is a pen.’ = ‘Nina has a pen.’

- dative/locative connection:
  (2) a. nina=ko bəˈay he
     Nina.Fem.Sg=Dat fear.Masc.Sg be.Pres.3.Sg
     ‘Nina is afraid.’ Mohanan (1994, p. 172)
     b. nina=mə bəˈay he
     Nina.Fem.Sg=Loc1n fear.Masc.Sg be.Pres.3.Sg
     ‘Nina is fearful.’ (lit. ‘There is fear in Nina.’) Mohanan (1994, p. 172)

- My main argument: such instances of alleged DCM involve structural differences instead, which give rise to three different readings of the verb ho ‘be’.

- Evidence for structural differences adduced from:
  - topicalization
  - argument selection
  - various tests for subjecthood

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1 I would like to thank my informants Qaiser Abbas, Tafseer Ahmed, Rajesh Bhatt, Miriam Butt, Asad Mustafa and Ghulam Raza for their valuable comments and grammaticality judgments. Their linguistic backgrounds differ; yet each of the data were confirmed by several of them.
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4 Some Data and Observations

• Mohanan (1994): differences in subject case marking in (3) – (4) are instances of DCM:

(3) a. nina=ko bʰa liken hɐ
   Nina.Fem.Sg=Dat fear.Masc.Sg be.Pres.3.Sg
   ‘Nina is afraid.’ Mohanan (1994, p. 172)

   b. nina=mē bʰa liken hɐ
   Nina.Fem.Sg=Loc_in fear.Masc.Sg be.Pres.3.Sg
   ‘Nina is fearful.’ (lit. ‘There is fear in Nina.’) Mohanan (1994, p. 172)

(4) a. nina=ko pyar hɐ
   Nina.Fem.Sg=Dat love.Fem.Sg be.Pres.3.Sg
   ‘Nina is in love.’

   b. nina=mē pyar hɐ
   Nina.Fem.Sg=Loc_in love.Fem.Sg be.Pres.3.Sg
   ‘Nina is full of love.’ (lit. ‘There is love in Nina.’)

(5) a. nina=ko bʰa hot kʰāsi hɐ
   Nina.Fem.Sg=Dat much cough.Fem.Sg be.Pres.3.Sg
   ‘Nina has a severe cough.’ Mohanan (1994, p. 172)

   b. * nina=mē bʰa hot kʰāsi hɐ
   Nina.Fem.Sg=Loc_in much cough.Fem.Sg be.Pres.3.Sg
   Mohanan (1994, p. 172)
• Observations:
  – oblique subjects: either dative or locative case marking;
  – verb ho ‘be’;
  – abstract stative nouns: pyar ‘love’, bhāy ‘fear’, nafrat ‘hate’ etc.;
  – illnesses: kūṃsi ‘cough’, bhūxar ‘fever’ etc.;
  – for abstract stative nouns, case marking alternates between locative and dative;
  – for illnesses, dative case is obligatory, as in (5).

• Mohanan (1994), citing Kachru (1970) and Pandharipande (1981), was the first to acknowledge these patterns of case marking and gave the following explanation:

  While -ko encodes the abstract location of a temporary state, such as happiness or worry, or a temporary fear [...], -mē expresses the location of a characteristic attribute that is relatively permanent, such as a fearful disposition, [...]. When the state is inherently temporary, as in the event of a cough or a fever, the use of -mē is disallowed, perhaps because abstract containment cannot be extended to temporary states [...].

  Mohanan (1994, p. 172)

→ the semantics of the case markers involved account for the different readings
→ dative =ko encodes temporary properties, locative =mē encodes permanent properties

5 Problems with Mohanan’s (1994) Explanation

• Various problems with Mohanan’s (1994) explanation involving a pattern of (semantically motivated) DCM:

  – the explanation does not predict the ungrammaticality of (6b) over (6a)
  – if the only difference were in the choice of the case marker, we would simply predict a different interpretation (something along the lines of (6b) expressing a more permanent state of “being in search” than (6a)), but not ungrammaticality of (6b)

  (6) a. nina=ko tōlaš  he:
    Nina.Fem.Sg=Dat search.Fem.Sg be.Pres.3.Sg
    ‘Nina is searching.’
  b. * nina=mē tōlaš  he:
    Nina.Fem.Sg=Loc1n search.Fem.Sg be.Pres.3.Sg

  – the explanation does not predict the ungrammaticality of (7b) over (7a)
  – if the only difference were in the choice of the case marker, we would simply predict a different interpretation (something along the lines of (7b) expressing a more permanent love relation towards yasin than (7a)), but not ungrammaticality of (7b)

  (7) a. nina=ko yasin=se  bohut pyar  he:
    Nina.Fem.Sg=Dat Yassin.Masc.Sg=Inst much love.Fem.Sg be.Pres.3.Sg
    ‘Nina carries much love (in her) for Yassin.’ ~ ‘Nina is in love with Yassin.’
  b. * nina=mēn yasin=se  bohut pyar  he:
    Nina.Fem.Sg=Loc1n Yassin.Masc.Sg=Inst much love.Fem.Sg be.Pres.3.Sg
6 A Proposal

- Novel explanation of the data based on a difference in the argument structure of the nominals involved
  - main argument: constructions in (3a) vs. (3b) and (4a) vs. (4b) not the same syntactically — differ in their argument structure
  - more specifically: they differ in their status as complex predicates (CPs); will argue that while (3a) and (4a) constitute CPs, (3b) and (4b) do not form CPs, but are copula constructions
  - (3a) and (4a): abstract stative nouns (bhay ‘fear’ and pyar ‘love’), taking two semantic arguments — an experiencer (dative-marked) and a source (instrumental-marked)
  - source does not surface in (3a) and (4a), but does surface in e.g. (7a)

→ will refer to these as dative experiencer constructions in this talk

- (3b) and (4b): not complex predicates; stative nouns such as bhay ‘fear’ and pyar ‘love’ seem to be ambiguous in Hindi/Urdu between a version where they realize their arguments and a version where they do not
- (3b) and (4b): essentially existential locative constructions in the sense of Freeze (1992); can be derived from predicate locatives via locative inversion (Freeze, 1992, Bresnan and Kanerva, 1989, Landau, 2010)

→ will refer to these as locative experiencer constructions in this talk

- Consider (8a) vs. (8b); I argue that syntactically, they are identical. The case marking and argument structure evidence supports this assumption. The only difference is that in (8a), the location is an abstract one in a sense, thus requiring a sentient subject.

(8) a. nina=mē bhay hr;
Nina.Fem.Sg=Locin fear.Masc.Sg be.Pres.3.Sg
‘Nina is fearful.’ (lit.: ‘There is fear in Nina.’) Mohanan (1994, p. 172)

b. kōmre=mē admi hr;
room.Masc.Sg.Obl=Locin man.Masc.Sg be.Pres.3.Sg
‘There is a man in the room.’ Freeze (1992, p. 555)

→ (3b), (4b), (8a) not analyzed as CPs in the sense of Butt (1995): their argument structure is not complex — the noun does not realize its arguments

- Consider (9a) vs. (9b). (9a) is a dative experiencer construction, (9b) a locative experiencer construction.

(9) a. nina=ko yasin=se buhut pyar hr;
Nina.Fem.Sg=Dat Yassin.Masc.Sg=Inst much love.Fem.Sg be.Pres.3.Sg
‘Nina is in love with Yassin.’

b. nina=mē yasin=ke liye buhut pyar hr;
‘Nina carries much love (in her) for Yassin.’ ~ ‘Nina is in love with Yassin.’

→ (9a) is considered a N-V CP since the noun pyar licenses a se-marked argument. (9b) is not considered a CP since pyar does not contribute any arguments; the phrase marked by the complex postposition ke liye ‘for’ is a sentence-level adjunct — ke liye generally marks adjuncts in Urdu/Hindi.

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2There are other nouns which are not ambiguous: some nouns never take arguments, other nouns obligatorily take arguments; more in Section 9.
7 Complex Predicates in Hindi/Urdu

- Complex predicates (CPs) are pervasive in Urdu/Hindi — the language has about 700 simple verbs, almost all other verbal predication is achieved via complex predication. CPs in Urdu/Hindi have been thoroughly analyzed in e.g. Butt (1995, 2003, 2010), Ahmed and Butt (2011), Mohanan (1994) and references in all of these.

→ major step in analyzing the data in (1)–(7): determine their status (i.e. whether they are CPs or not)
→ the definition of a complex predicate, given in Butt (1995, p. 2), is repeated below; based on this definition, we will examine the present data

7.1 Definition of a Complex Predicate

- The characteristics below are due to Butt (1995, p. 2).
  - The argument structure is complex (two or more semantic heads contribute arguments).
  - The grammatical functional structure is that of a simple predicate. It is flat: there is only a single predicate (a nuclear pred) and a single subject.
  - The phrase structure may be either simple or complex. It does not necessarily determine the status of the complex predicate.

- An example for a noun-verb complex predicate is given in (10).

(10) nadya=ko hatʰi=se ḏar log-a
Nadya.Fem.Sg=Dat elephant.Masc.Sg=Instr fear.Masc.Sg attach-Perf.Masc.Sg 'Nadya was frightened by the elephant.'

  - complex argument structure: light verb log ‘attach’ selects two arguments (“attachee” and “thing attached”), ḏar ‘fear’ one argument (“thing being feared”);
  - simple grammatical functional structure: no embeddings;
  - light verb log ‘attach’ assigns case to the subject, carries aspectual features, agrees.

![Figure 1: F-Structure for (10)](image)

7.2 Polyclausal vs. Monoclusal Structures

- Butt (1995): provides CP tests based on agreement, control, anaphora; problem: the tests are designed so as to distinguish monoclausal, non-embedding, CP structures from polyclausal, embedding, non-CP structures

→ the constructions in (1)–(7) are unmistakably monoclausal in nature (only a single verbal element)
→ the open question is whether they constitute copula constructions (XCOMP/PREDLINK; a single predicate) or CPs (multiple predicates combining into a complex one)
7.3 Copula vs. CP Analysis — Coordination

- Raza (2011): lists several uses of the verb *ho* 'be'; mentions that *ho* may also be used as a light verb in noun-verb CPs; in these cases, the noun is itself a predicate that introduces an argument.

- According to Raza (2011), the nominal predicates may **not** be coordinated, see (11); crucially, coordination is also not allowed in (11c), which is a dative experiencer construction.

- Coordination is possible in copula constructions, see (12); crucially, coordination is also possible in (12d), which is a locative experiencer construction.

\[(11)\]
\[a. \quad \text{Ali}=\text{ko} \quad \text{xabar} \quad \text{he} \quad \text{[khi ...} \quad \text{Comp ...} \quad \text{Ali knows that ...}']
\[b. \quad * \quad \text{Ali}=\text{ko} \quad \text{xabar} \quad \text{or} \quad \text{vosa} \quad \text{he} \quad \text{[khi ...} \quad \text{Comp ...}
\[c. \quad * \quad \text{Nina}=\text{ko} \quad \text{yasin}=\text{se} \quad \text{pyar} \quad \text{or} \quad \text{izzat} \quad \text{he} \quad \text{Nina=Fem.Sg=Dat Yassin.Masc.Sg=Instr love.Fem.Sg and veneration.Fem.Sg be.Pres.3.Sg}

\[(12)\]
\[a. \quad \text{Nina}=\text{g^h_Ar=mê} \quad \text{he} \quad \text{Nina.Fem.Sg=House.Masc.Sg=Loc in be.Pres.3.Sg}
\['Nina is in the house.]
\[b. \quad * \quad \text{Nina}=\text{g^h_Ar=mê} \quad \text{or} \quad \text{yab=mê} \quad \text{he} \quad \text{Nina.Fem.Sg=House.Masc.Sg=Loc in or garden.Masc.Sg=Loc in be.Pres.3.Sg}
\['Nina is in the house or in the garden.]
\[c. \quad \text{g^h_Ar=mê} \quad \text{cuha} \quad \text{ya kurtâ} \quad \text{he} \quad \text{House.Masc.Sg=Loc in rat.Masc.Sg or dog.Masc.Sg be.Pres.3.Sg}
\['A rat or a dog is in the house.' (lit: 'There is a rat or a dog in the house. ')
\[d. \quad \text{Nina=mê} \quad \text{pyar} \quad \text{or} \quad \text{b^h_Ay} \quad \text{he} \quad \text{Nina.Fem.Sg=Loc in love.Fem.Sg and fear.Masc.Sg be.Pres.3.Sg}
\['Nina is full of love and fear.' (lit: 'There is love and fear in Nina. ')

7.4 Copula vs. CP Analysis — Topicalization

- The nominal predicate in a N-V CP may not be topicalized (Mohanan, 1994, p. 206). See (13).

\[(13)\]
\[a. \quad \text{Nadya}=\text{ko} \quad \text{hat^h_i=se} \quad \text{dro} \quad \text{log-a} \quad \text{Nadya.Fem.Sg=Dat elephant.Masc.Sg=Instr fear.Masc.Sg attach-Perf.Masc.Sg}
\['Nadya was frightened by the elephant. ']
\[b. \quad * \quad \text{dro} \quad \text{Nadya}=\text{ko} \quad \text{hat^h_i=se} \quad \text{log-a} \quad \text{fear.Masc.Sg Nadya.Fem.Sg=Dat elephant.Masc.Sg=Instr attach-Perf.Masc.Sg}

- generally awkward to topicalize an experience in a locative experiencer construction; see (14).

- due to the fact that abstract concepts do not make for good topics: not easily quantifiable, most naturally occur as indefinites (Nicolas, 2010, Lasersohn, 2011)

\[(14)\]
\[a. \quad \text{Ram=mê} \quad \text{mamta} \quad \text{he} \quad \text{Ram.Masc.Sg=Loc in affection.Fem.Sg be.Pres.3.Sg}
\['In Ram is affection.' = 'There is affection in Ram.' = 'Ram has affection.'
\[b. \quad ?? \quad \text{mamta} \quad \text{Ram=mê} \quad \text{he} \quad \text{affection.Fem.Sg Ram.Masc.Sg=Loc in be.Pres.3.Sg}

- however: far from being ungrammatical
• dialogue in (15):

(15) a. A: nina=mē janwarō=ke liye pyar he
‘Nina has love for/of animals (in her).’ = ‘Nina loves animals.’

b. B: pyar janwarō=ke liye ram=mē he,
māgar Nina=mē admiyō=ke liye
pyar he
love.Fem.Sg be.Pres.3.Sg
‘The love for animals is within Ram, but in Nina there is love for people.’

→ these facts from coordination & topicalization already point to a structural difference between the constructions examined

→ a CP analysis seems right for the part of the data that exhibits complex argument structures

8 Locatives and Locative Inversion in Hindi/Urdu

• locative predication in Hindi/Urdu: achieved via the frame in (16) (includes a theme argument and a locative argument)

(16) ho < theme, locative >

(17) kuṭṭa gʰar=mē he
dog.Masc.Sg house.Masc.Sg=Loc_in be.Pres.3.Sg
‘The dog is in the house.’

• I assume the copula ho may select a theme and a location; this is a cross-linguistically valid assumption (Bresnan and Kanerva, 1989, Curnow, 1999, Pustet, 2003)

• Proposal: Urdu/Hindi has locative inversion, cf. Bresnan and Kanerva (1989), Kibort (2007): in cases of locative inversion, the theme role is optionally classified as objective, thus rendering the locative as a subject and the theme as an object

• Bresnan and Kanerva (1989) motivate this optional assignment in terms of discourse functions: inverted locatives have a presentational function whereby the theme is focussed (What is in the house? – There is a rat in the house.), thus theme must be realized as object (cf. Kibort, 2007) in this context

(18) gʰar=mē kuṭṭa he
house.Masc.Sg=Loc_in dog.Masc.Sg be.Pres.3.Sg
‘A dog is in the house.’ (lit. ‘There is a dog in the house.’)

• predictions by Bresnan and Kanerva (1989) w.r.t. discourse borne out by Urdu/Hindi data: focus position generally immediately preverbal (Butt and King, 1997)

• dialog tests provide further evidence:

(19) a. ram=ka kuṭṭa he
Ram.Masc.Sg=Gen.Masc.Sg dog.Masc.Sg be.Pres.3.Sg
‘Of Ram is a dog.’ = ‘Ram has a dog.’

b. kuṭṭa kāmre=mē he
dog.Masc.Sg room.Masc.Sg.Obl=Loc_in be.Pres.3.Sg
‘The dog is in the room.’

c. ?? kāmre=mē kuṭṭa he
room.Masc.Sg.Obl=Loc_in dog.Masc.Sg be.Pres.3.Sg
9 Nominal Argument Structure

• it has long been known that nouns across languages may take arguments (Chomsky, 1970, Higginbotham, 1983, Grimshaw, 1990, among others)

• partition by Grimshaw (1990): nouns may be ambiguous between complex event nominals and result nominals

(22) a. the (constant) examination of the patients took a long time. complex event nominal

b. the (*constant) examination was on the table. result nominal

• complex event reading has argument structure, result reading does not; evidence from modifiers, argument control, by phrases, ...

• for Grimshaw, argument structure is associated with the presence of event structure: if a predicate lacks an event structure, it will also lack argument structure and will never take any grammatical arguments at all

• but: the nominals surveyed here are stative (and lack event structure), and still clearly have argument structure

→ new division of nominals into: argument structure nouns (event nouns vs. stative nouns) and referential nouns
9.1 Argument Structure Nouns

9.1.1 Argument Realization

- In certain contexts, abstract stative nouns such as *nafrot* ‘hate’ and *pyar* ‘love’ realize source arguments marked by the instrumental case marker *=se*.

(23) mujhe (roma logô=*se*) nafrot he:
  ‘I hate (the Roma people).’

(24) nina=ko (yasin=*se*) pyar he:
  Nina.Fem.Sg=Dat Yassin.Masc.Sg=*Inst love.Fem.Sg be PRES.3.Sg
  ‘Nina is in love (with Yassin).’

- Also interesting: if experiencer is realized as the dative subject, source must be realized as a source argument, not as an adjunct using *ke liye*

(25) * nina=ko yasin=ke liye pyar he:
  Nina.Fem.Sg=Dat Yassin.Masc.Sg=Gen.Masc.Sg.Obl for love.Fem.Sg be PRES.3.Sg

→ Native speakers inform me that in (24a)/(25a), it is always understood that Nina’s love/hate is directed at someone/something specific.

→ Hindi/Urdu makes use of pro-drop (all arguments may in principle be dropped), which explains why the *=se*-marked nominal may be absent.

→ Notice that we have dative case marking on the subject in all these cases; since the copula usually does not license dative case, we can assume the dative (experiencer) case is licensed by the noun.

9.1.2 Argument Suppression

- In other contexts, the same abstract stative nouns never realize any oblique arguments.

(26) a. mujh=mê nafrot he:
  I.Obl=Loc hate.Fem.Sg be PRES.3.Sg
  ‘I hate.’

b. * mujh=mê roma logô=*se nafrot he:

(27) a. nina=mê pyar he:
  Nina.Fem.Sg=Loc love.Fem.Sg be PRES.3.Sg
  ‘Nina is full of love.’

b. * nina=mên yasin=*se pyar he:
  Nina.Fem.Sg=Loc Yassin.Masc.Sg=*Inst love.Fem.Sg be PRES.3.Sg

→ Native speakers inform me that in (26a)/(27a), the focus is not on the object of Nina’s love/hate, but rather on the feeling by itself.

  - Rajesh Bhatt (p.c.): these are utterances which you expect from e.g. a psychotherapist or a medical doctor monitoring an MRI scan
  - detached, externalised, and somewhat more concrete reading of *pyar* ‘love’

- Nevertheless, semantically inherently relational (e.g., *love* always semantically selects an experiencer and a source)

→ I conclude that these nouns have a reading where they do not realize syntactic arguments (argument suppression).

→ These are exactly the cases where we have locative case marking on the subject.
9.2 Referential Nouns

- other nouns are referential in nature: do not have argument structure
- may be abstract (e.g., acc\textsuperscript{h}ai ‘goodness’) or concrete (e.g., kitab ‘book’)
- e.g., acc\textsuperscript{h}ai ‘goodness’ never appears with dative subjects as in (28b); subjects are only allowed to bear locative case as in (28a)

\[(28)\]
\[\text{a. } nina = \text{m} \\text{e} \quad \text{acc\textsuperscript{h}ai} \quad \text{hr} \quad \text{Nina.Fem.Sg} = \text{Loc}_\text{int} \quad \text{goodness.Fem.Sg be.Pres.3.Sg} \quad \text{‘Nina is good/a good person.’ (lit. ‘There is goodness in Nina.’)}\]
\[\text{b. } * \text{nina} = \text{k} \quad \text{acc\textsuperscript{h}ai} \quad \text{hr} \quad \text{Nina.Fem.Sg} = \text{Dat} \quad \text{goodness.Fem.Sg be.Pres.3.Sg}\]

\[
\rightarrow \text{ referential nouns may carry an abstract or concrete meaning but do not have argument structure}
\]

10 A Classification of Nouns — Towards an Analysis

We have identified three different classes of Hindi/Urdu nouns wrt. argument selection:

\[
\text{nouns}
\]
\[
\begin{array}{c}
\text{AS nouns} \\
\text{event nouns} \quad \text{stative nouns} \\
\text{tabahi ‘destruction’} \quad \text{pyar ‘love’, b\textsuperscript{h}ay ‘fear’} \\
\text{referential (non-AS) nouns} \quad \text{acc\textsuperscript{h}ai ‘goodness’, kitab ‘book’} \\
\end{array}
\]

\[\text{Figure 2: Noun classes wrt. argument selection}\]

We also have identified two different patterns of experiencer constructions:

- dative experiencer constructions:
  - the subject is dative marked;
  - the noun is predicative, licensing an experiencer and a source;
  - complex argument structure: ho ‘be’ is a light verb, forming a CP with the noun — noun must realize all its arguments in the clause (source may be pro-dropped)

\[\text{(29) } \text{ho < %PRED, locative >}\]

\[\text{(30) } \text{pyar < experiencer, source >}\]

\[\text{(31) } \text{ho < pyar < experiencer, source > locative >}\]
locative experiencer constructions:
- the subject is locative marked;
- the theme is nominative;
- the construction is essentially an inverted locative;
- simple argument structure: ho ‘be’ is a copula, selecting for a theme and a locative — if the noun licenses arguments, it may not realize them in the clause

(32) $ho < \text{theme, locative} >$

(33) $pyar < \text{experiencer, source} >$

(34) $ho < pyar < \text{experiencer, source}> \text{locative} >$

11 Summary

- data discovered and examined by Mohanan (1994) on first sight seem to be instances of DCM
- in fact, there is a structural difference in the argument structure of the nominals involved in the construction — and thus in their status as CPs vs. straightforward copula constructions
- this difference is also mirrored by facts from coordination & topicalization
- LFG’s Mapping Theory can account for all the data in a straightforward fashion (detailed analysis in the appendix)
- the varying argument structure of locative copula constructions vs. experiencer CPs thus gives rise to the differences in the semantics
  → The data suggest a clear-cut separation between copula and light verb usages of ho.
  → This difference in the constructions gives rise to patterns of DCM.
  → The data further give rise to a new division of nouns wrt. argument structure, deviating from the one suggested by Grimshaw (1990) and others
  → The genitive? Different story, for which you have to refer to my thesis...
References


Appendix: An Analysis in LFG

An Outline of LFG’s Lexical Mapping Theory

- Lexical Mapping Theory as described in e.g. Bresnan and Kanerva (1989), Bresnan and Zaenen (1990), Butt et al. (1997), Butt (1998)

- main features:
  - maps from predicate-argument structure (lexical semantics) to GF structure (syntax)
  - defines predicate-argument structure of a predicator as a list of thematic roles (a-structure)

\[
\text{lexical semantics} \quad \downarrow
\quad \text{a-structure} \quad \downarrow \quad (\text{LMT})
\quad \downarrow \quad \text{syntactic structure}
\]

Figure 3: Semantics-syntax mapping via LMT

- a-structures are ordered lists; ordering reflects prominence in a (language-universal) hierarchy of thematic roles

(35) Hierarchy of thematic roles:
  agent > beneficiary > experiencer/goal > instrument > patient/theme > locative

- roles are assigned two binary-valued syntactic features: \([\pm r]\) (for restricted, separates thematically restricted from unrestricted functions) and \([\pm o]\) (for objective, separates object functions from non-object functions)

<table>
<thead>
<tr>
<th>-r</th>
<th>+r</th>
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<tbody>
<tr>
<td>-o</td>
<td>SUBJ OBL</td>
</tr>
<tr>
<td>+o</td>
<td>OBJ OBJ</td>
</tr>
</tbody>
</table>

Table 1: Assignment of syntactic features in LMT

- markedness hierarchy: subject least marked (two minus features, in (almost) all sentences in all languages), \(\text{OBJ}_0\) most marked (two plus features; not present in all languages)

(36) \(\text{SUBJ} > \text{OBJ}, \text{OBL}_0 > \text{OBJ}_0\)

- mapping of thematic roles onto grammatical functions:
  1. intrinsic role classifications
  2. morpholexical operations (optional; applicativization, argument suppression, passive, ...)
  3. default mapping principles

- amendments to original Lexical Mapping Theory:
  - reformulated as Mapping Theory by e.g. Butt (1995), Alsina (1996) to account for CPs
  - argument fusion
  - pertinent characteristic of light verbs: contain predicate variable argument \(\%\text{PRED}\) (Butt (1995): transparent event \(\text{ev}_T\)) which triggers argument fusion; CP formation must take place if \(\%\text{PRED}\) present
  - case: a separate system interacting with linking principles & clausal semantics, but not wholly determining them (Butt, 1998)

- analysis makes use of two different frames for the copula \(\text{ho} \ ‘\text{be}’\): a locative frame and a frame used for CP formation
assumptions about case:
- $ev_T/%PRED$ never receive case marking, behave like theme arguments, are always nominative (Butt, 1995)
- predicational nouns licensing arguments may license case depending on their argument structure
- experiencers receive dative case (Butt et al., 2006)
- sources take instrumental case
- locations receive locative case; choice of the particular locative case marker depends on aspect/lexical semantics of the noun

Predicative Locatives

<table>
<thead>
<tr>
<th>ho</th>
<th>th</th>
<th>loc</th>
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<tbody>
<tr>
<td>intrinsic</td>
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<td>[−o]</td>
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<tr>
<td>defaults</td>
<td>[+r]</td>
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<table>
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<tr>
<th>OBJ/SUBJ</th>
<th>OBL\text{_{loc}}</th>
</tr>
</thead>
<tbody>
<tr>
<td>well-formedness</td>
<td></td>
</tr>
<tr>
<td>SUBJ</td>
<td>OBL\text{_{loc}}</td>
</tr>
<tr>
<td>case</td>
<td>nom</td>
</tr>
</tbody>
</table>

Table 2: Linking analysis for predicative locatives

- This frame is used for predicate locatives such as (37).

(37) \textit{adm} \textit{kamre} = \textit{mē} \textit{he} \textit{man.Masc.Sg} \textit{room.Masc.Sg.Obl} = \textit{Loc_{1n}} \textit{be.Pres.3.Sg} \textit{‘The man is in the room.’}

Inverted Locatives, Locative Experiencer Constructions

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<tr>
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<th>loc</th>
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</thead>
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<td>[−o]</td>
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<tr>
<td>defaults (Loc. Inv.)</td>
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<table>
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<td>OBJ</td>
<td>SUBJ</td>
</tr>
<tr>
<td>case</td>
<td>nom</td>
</tr>
</tbody>
</table>

Table 3: Linking analysis for inverted locatives

- This frame is used for the inverted version of (37) (\textit{kamre} = \textit{mē admī he} ‘There is a man in the room.’). It is also the frame used for the locative experiencer constructions as in (39). The linking is given in Table 3.

(38) \textit{nina} = \textit{mē} \textit{bāy} \textit{he} \textit{Nina.Fem.Sg} = \textit{Loc_{1n}} \textit{fear.Masc.Sg be.Pres.3.Sg} \textit{‘Nina is fearful.’} (lit.: ‘There is fear in Nina.’)\textit{ Mohanan (1994:172)
Dative Experiencer Constructions

- abstract stative nouns (e.g. *pyar* `love`) when plugged in supply two arguments: experiencer, source
- This frame is used for a CP such as the one in (39), where the noun supplies two arguments

(39) \( nina=ko \quad yasin=se \quad bhohut \ pyar \quad he \)

\[ \text{Nina.Fem.Sg=Dat much love.Fem.Sg be.Pres.3.Sg} \]

‘Nina carries much love (in her) for Yassin.’ ~ ‘Nina is in love with Yassin.’

- The highest argument of the embedded predicate is fused with the lowest argument of the matrix predicate (Butt, 1995, 1998); linked arguments are fused in complex predicate formation as in Table 4.

\[ \text{ho} \quad < \quad \%PRED \quad \text{loc} \quad > \]
\[ \text{pyar} \quad < \quad \exp \quad \text{src} \quad > \]
\[ \text{ho} \quad < \quad \text{pyar} \quad < \quad \exp \quad \text{src} \quad > \quad \text{loc} \quad > \]

\[ \text{intrinsic} \quad \text{[-r]} \quad \text{[-o]} \]
\[ \text{defaults} \quad \text{[+r]} \quad \text{[-r]} \]

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<th>OBL</th>
<th>OBL</th>
<th>SUBJ</th>
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<tbody>
<tr>
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<td>nom</td>
<td>inst</td>
<td>dat</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Linking analysis for experiencer complex predicate (I)

- matrix frame \( \text{ho} < \%PRED \text{loc} > \) is also selected for the “illness” examples such as (40); see Table 5.

(40) a. \( nina=ko \quad bhahut \ kha\text{si} \quad he \)

\[ \text{Nina.Fem.Sg=Dat much cough.Fem.Sg be.Pres.3.Sg} \]

‘Nina has a severe cough.’

b. \( nina=ko \quad buxar \quad he \)

\[ \text{Nina.Fem.Sg=Dat fever.Masc.Sg be.Pres.3.Sg} \]

‘Nina has fever.’

\[ \text{ho} \quad < \quad \%PRED \quad \text{loc} \quad > \]
\[ \text{kha\text{si}} \quad < \quad \exp \quad > \]
\[ \text{ho} \quad < \quad \text{kha\text{si}} \quad < \quad \exp \quad > \quad \text{loc} \quad > \]

\[ \text{intrinsic} \quad \text{[-r]} \quad \text{[-o]} \]
\[ \text{defaults} \quad \text{[-r]} \]

<table>
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<tr>
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<th>OBJ</th>
<th>SUBJ</th>
</tr>
</thead>
<tbody>
<tr>
<td>case</td>
<td>nom</td>
<td>dat</td>
<td></td>
</tr>
</tbody>
</table>

Table 5: Linking analysis for experiencer complex predicates (II)