Complex Predicate Puzzles

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This talk

Outline

Staking out an Empirical Domain

- Two (or more) items are not complex predications, compounds or collocations just because
    - they occur together fairly frequently
    - and mean something in that combination
- Example:
  A banker at UBS **is being** fired.

- Neither *a banker* nor *is being* (or *being fired*) should be considered a complex predicate, compound or collocation under anybody's theory or description.

Staking out an Empirical Domain

- Complex predicates raise thorny problems about the nature of predication which can only be understood if the empirical domain is well demarcated.

- Goal:
  - ▶ establish formal properties of complex predicates
  - ▶ use that to focus on a coherent empirical domain
  - ▶ which poses challenges for our current understanding of predication
  - ▶ (and then move towards resolving those challenges)

Outline

Background

- Background Assumptions:
  - Groundwork as in Butt (1995)
  - Further developments as in Butt (1998), Butt&Geuder (2001), Butt&Tantos (2004), Butt (2010), Butt&Lahiri (2013), Butt (2013)

- Main Domain of Inquiry
  - Hindi/Urdu permissives, V-V "aspectual" complex predicates and causatives
  - Recent extension to N-V complex predicates (Ahmed&Butt 2011, Butt et al. 2012)

What's a Complex Predicate?

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 are no embedded arguments and no embedded predicates at the level of syntax.

Tests for complex predicates are language specific

Examples (for more see Butt 2010):

- Romance: include clitic climbing and long passives,
- Choi (2005) developed NPIs (negative polarity items) as a test for Korean
- Hindi/Urdu: agreement, control, anaphora, (NPI)

Establishing Complex Predication

It is very important to:

- pay attention to surface morphosyntactic clues on the one hand
- test for the actual underlying structure on the other hand.

Establishing Complex Predication

- Examples: Permissive (Complex Predicate) vs. Instructive (Control)

  (1) nadya=ne   yassin=ko   paoda   kaṭ-ne
      Nadya.F.Sg=Erg Yassin.M.Sg=Dat plant.M.Sg.Nom cut-Inf.Obl
      di-ya   t^h-a
      give-Perf.M.Sg be.Past-M.Sg
      'Nadya had let Yassin cut the plant.'

  (2) nadya=ne   yassin=ko   [paoda   kaṭ-ne]=ko
      Nadya.F.Sg=Erg Yassin.M.Sg=Dat plant.M.Sg.Nom cut-Inf.Obl=Acc
      kah-a   t^h-a
      say-Perf.M.Sg be.Past-M.Sg
      'Nadya had told Yassin to cut the plant.'

- Permissive has (slightly) different morphosyntax and behaves syntactically quite differently from the instructive (agreement, control, anaphora, NPI).
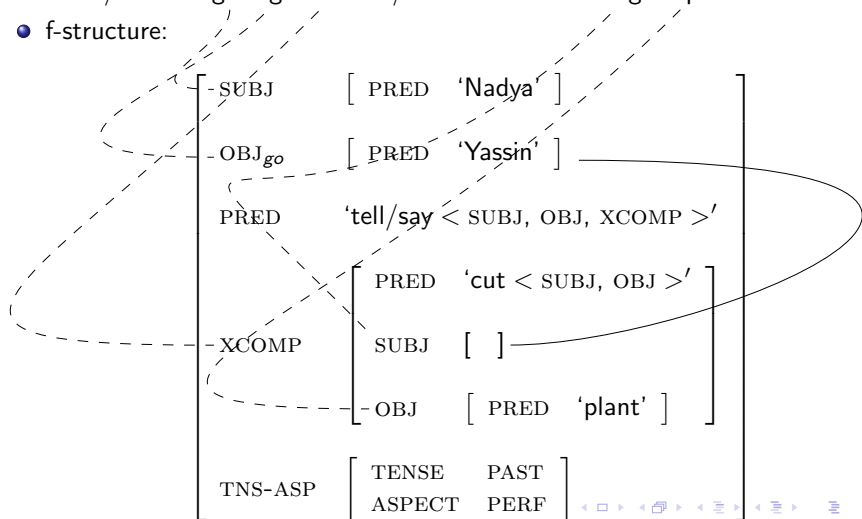
Example: A Biclausal Control Structure

Nadya told Yassin [to cut the plant].

- a-structure:
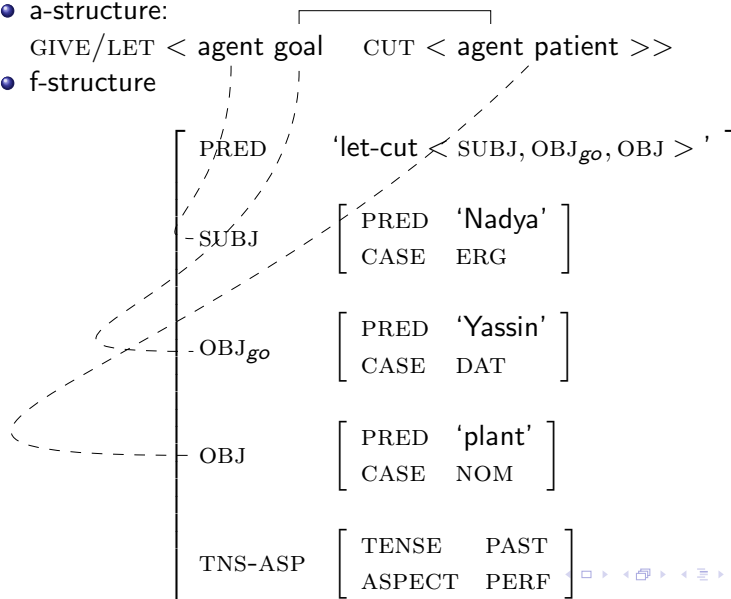 TELL/SAY $<$ agent goal theme/event $>$ CUT $<$ agent patient $>$
- f-structure:

Example: A Monoclausal Complex Predicate

Nadya let Yassin [cut the plant].

- a-structure:

$$\text{GIVE/LET} < \text{agent goal} \quad \text{CUT} < \text{agent patient} >>$$

- f-structure

$$
\begin{bmatrix}
\text{PRED} & \text{'let-cut} < \text{SUBJ}, \text{OBJ}_{go}, \text{OBJ} > \text{'} \\[2ex]
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{'Nadya'} \\ \text{CASE} & \text{ERG} \end{bmatrix} \\[3ex]
\text{OBJ}_{go} & \begin{bmatrix} \text{PRED} & \text{'Yassin'} \\ \text{CASE} & \text{DAT} \end{bmatrix} \\[3ex]
\text{OBJ} & \begin{bmatrix} \text{PRED} & \text{'plant'} \\ \text{CASE} & \text{NOM} \end{bmatrix} \\[3ex]
\text{TNS-ASP} & \begin{bmatrix} \text{TENSE} & \text{PAST} \\ \text{ASPECT} & \text{PERF} \end{bmatrix}
\end{bmatrix}
$$

Establishing Complex Predication

- Sulger (2013): the examples in (3) look very similar.
- But: Copula (Locational) vs. N-V Complex Predicate (Dative Experiencer Construction)

   (3) a.

        nina=ko   b^{h}ay   hɛ
        Nina.Fem.Sg=Dat fear.Masc.Sg be.Pres.3.Sg
        'Nina is afraid.'

      b.

        nina=mẽ   b^{h}ay   hɛ
        Nina.Fem.Sg=Loc$_{in}$ fear.Masc.Sg be.Pres.3.Sg
        'Nina is fearful.' (lit. 'There is fear in Nina.')

Tests for Complex Predication

- Some Tests for N-V complex predicates:
  - Contribution of extra argument(s) by noun
  - Determination of case on argument(s) by noun
  - Impossibility of substitution via a pronoun or wh-phrase.
  - (see Kearns 2002 for more for English)

- Tests that are generally **not** reliable for any kind of complex predicate:
  - linear adjacency, scrambling
  - negation or other adverbial modification

The latter appear to test phrase structure constituency and scope, i.e., are more surface oriented (for example, they do not work very well with morphological causatives, which are also complex predicates underlyingly).

Outline

Arguments vs. Grammatical Relations

- Approaches to Complex Predicates
  - take very different shapes
  - are informed by different theoretical assumptions
  - are based on different empirical grounding.
- Irrespective of Theory, the following should be recognized:
  - Complex Predicates are an instance of a **mismatch** across modules of grammar (this is part of what makes them so interesting)
  - They involve predicate composition in terms of lexical-semantic **arguments** but not syntactic grammatical relations.

Predicate Composition

- Predicate composition is a difficult notion for theories that were brought up with the concept of *lexical projection* and the importance of a (single) *head* that determines the structure of a clause.

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- I focus on Predicate Composition
  - ▸ What kinds of predicate composition denoting a single event exist?
  - ▸ How can they can be accounted for formally?
  - ▸ What kind of predictions can be made in terms of diachronic change? (cf. Caudal et al.)

Predicate Composition and LFG

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- It seems to me that LFG is uniquely poised to tackle predicate composition and mismatch across grammar modules (and was so even 20 years ago).
- Advantage: separate but mutually constraining representations for a(rgument)-structure, f(unctional)-structure and c(onstituent)-structure
- However, even in LFG both the theory and the formalism had to be extended in order to allow for predicate composition ($\longrightarrow$ dynamic predicate composition via the Restriction Operator (Kaplan and Wedekind 1993, Butt, King and Maxwell III 2003))

Predicate Composition and LFG

Current State in LFG

- Complex predicate formation involves a complex a-structure with embedding(s) which corresponds to a monoclausal simplex f-structure.

- Complex predicate formation can be triggered via periphrastic (as in the Urdu permissive example above) means or via morphological means (i.e., morphological causatives) — the underlying mechanism is the same (cf. Alsina 1993).

- But different types of argument merger appear to exist (cf. also Rosen 1989).

- Butt (1998, 2013)
  - proposes there are basically only two types
  - these mirror syntactic control/raising

Argument Identification at Different Modules of Grammar

Butt (1998, 2013):

- Argument Identification at the level of syntax (f-structure) has been called control/raising

- Similarly, Argument Idenfication exists at the level of a-structure. This leads to complex predication (or clause union or argument merger, as it has variously been called).

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

- Stated with other theoretical assumptions: Complex Predication happens within the *v*P, control/raising happens above that (VP?).

Examples of Different Argument Mergers

- Argument Fusion (analogous to syntactic control)

  (4) mã=ne   **bɑccõ=ko**   kɪtab-ẽ   pɑrʰ-ne
      mother.F.Sg=Erg child.M.Pl.Obl=Dat book.F-Pl.Nom read-Inf.Obl
      dĩ
      give.Perf.F.Pl
      'Mother let (the) children read (the) books.'

- Argument Raising (analagous to syntactic raising)

  (5)
      pɪta=ne   peɽ   kaʈ-ne   di-e
      father.M.Sg=Erg tree.M.Nom be.cut-Inf.Obl give-Perf.M.Pl
      'Father allowed the trees to be cut.'

Example: Argument Raising (Complex Predicate)

- The permissive in (6) was analyzed as syntactic raising by Davison (2013) and as raising cum restructuring in the sense of Wurmbrand (2001) by Bhatt (2005).

  (6)

pɪta=ne	peṛ	**kɑṭ-ne**	**di-e**
father.M.Sg=Erg	tree.M.Nom	be.cut-Inf.Obl	give-Perf.M.Pl

  'Father allowed the trees to be cut.'

- Butt (2013) shows that syntactically **both** types of permissives must be analyzed as complex predicates (tests from agreement, anaphora, control, etc.)

Different Argument Mergers

- "Allow-to-do" reading — Permittee fused with highest argument of embedded a-structure (argument fusion)

$$\text{GIVE/LET} < \text{agent goal} \quad \overline{\text{CUT} < \text{agent patient} >>}$$

- "Allow-to-happen" reading — Arguments from both predicates are taken together, but no argument fusion happens $\longrightarrow$ argument "raising"

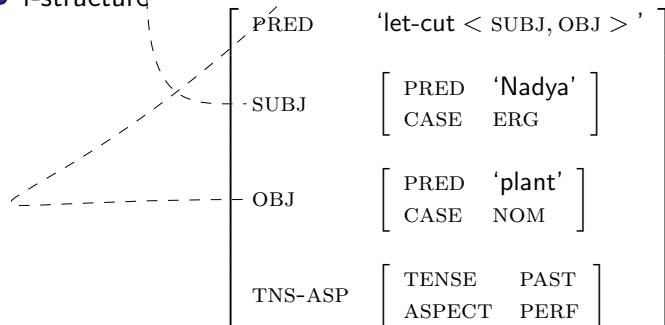$$\text{LET} < \text{agent} \quad \text{CUT} < \text{patient} >>$$

Example: Argument Raising (Complex Predicate)

Nadya allowed the plant to be cut.

- a-structure:

  LET $<$ agent   CUT $<$ patient $>>$

- f-structure

$$
\begin{bmatrix}
\text{PRED} & \text{`let-cut} < \text{SUBJ, OBJ} > \text{'} \\[2ex]
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`Nadya'} \\ \text{CASE} & \text{ERG} \end{bmatrix} \\[3ex]
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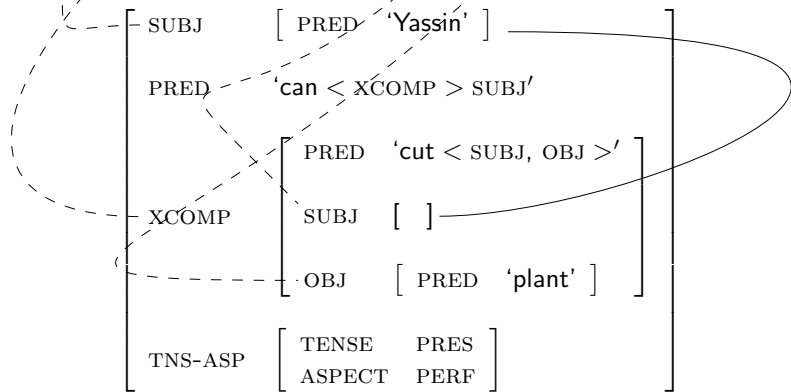$$

Example: A Biclausal Raising Construction

Yassin can [cut the plant]. (in Urdu, of course, Bhatt et al. 2011)

- a-structure:

  CAN ___ < theme/event >   CUT < agent patient >

- f-structure:

$$
\begin{bmatrix}
\text{SUBJ} & \begin{bmatrix} \text{PRED} & \text{`Yassin'} \end{bmatrix} \\
\text{PRED} & \text{`can} < \text{XCOMP} > \text{SUBJ'} \\
\text{XCOMP} & \begin{bmatrix} \text{PRED} & \text{`cut} < \text{SUBJ, OBJ} >\text{'} \\ \text{SUBJ} & [\ ] \\ \text{OBJ} & \begin{bmatrix} \text{PRED} & \text{`plant'} \end{bmatrix} \end{bmatrix} \\
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XLE Demo

Concrete Computational Demo — Morphological Causatives if there is
time

Outline

Aspectual V-V Complex Predicates

- Another type of V-V conplex predicate
  (cf. Zeisler)

  (7) a.

  nadya=ne   xɑt   **lık**$^{\text{h}}$ **li-ya**
  Nadya.F=Erg letter.M.Nom write take-Perf.M.Sg
  'Nadya wrote a letter (completely).'

  b.

  nadya=ne   mɑkan   **bɑna di-ya**
  Nadya.F=Erg house.M.Nom make give-Perf.M.Sg
  'Nadya built a house (completely, for somebody else).'

  c.

  ram   **ga** **ʊʈ**$^{\text{h}}$**-a**
  Ram.M.Sg.Nom sing rise-Perf.M.Sg
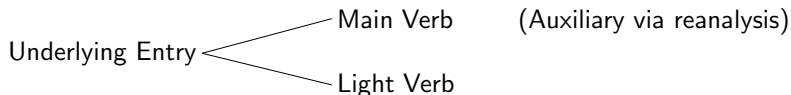 'Ram sang out spontaneously (burst into song).'

Event Modification

- As with the permissive, a *light verb* is involved.
- But this light verb seems "lighter" than the permissive....
    - ▸ The light verb does not independently contribute an argument to the overall predication.
    - ▸ The complex predicates are all "completive".
    - ▸ Different light verbs contribute different defeasible information (suddenness, responsibility, benefaction, surprise, etc.)
- Butt& Geuder (2001) and Butt&Ramchand (2005) analyze these as instances of *Event Modification* (event fusion).

Characteristics of Light Verbs

- Light verbs are always form-identical with a main verb
- Butt&Lahiri (2013) show that light verbs as in the Aspectual V-V complex predicates are historically stable in Indo-Aryan (as a syntactic configuration).
- They propose that light verb and main verb versions be derived from the same underlying entry.
- Grammaticalization that may occur is always based on the main verb version.

(8)

```
                                 Main Verb     (Auxiliary via reanalysis)
        Underlying Entry
                                 Light Verb
```

Open Questions

- How are light verb versions related to the underlying lexical-semantic representation?
- For that matter, what should the underlying representation be?
- From my perspective:
  - Information about valency (how many argument slots)
  - Lexical semantic information pertaining to case marking (e.g., experiencer vs. agent).
  - Aktionsart type information (e.g., $\pm$ telic).
- **Most importantly:**
  - information about event semantics
  - systematic way of relating light to full verb entries

Light Verbs and "Transparent Events"

- Alsina (1993): light verbs are "incomplete Predicates"
- Butt (1995): light verbs involve a "transparent Event"

A transparent Event in contrast to a simple Event has something of a deficient nature, it cannot stand on its own and must either unify with another event structure, or lean on it in some way . . .

But what does this mean?

Events and Subevents

General solution so far: Assume some sort of lexical event decomposition and think of light verbs as contributing information at the level of subevents.

- Butt (1995):
  - used Lexical-Conceptual Structures (LCS) based on Jackendoff (1990)
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- Ramchand (2008a,b): First Phase Syntax
  - Assume a *v*P decomposed into init(iator), proc(ess) and res(ult) projections and place bits of the complex predication into the heads of this tree.
  - The init, proc and res heads represent subevents that can be interpreted in the formal semantic Neo-Davidsonian event semantics.
  - **but:** formally a subevent is of the same type as a "full" event — no way to distinguish between them semantically in Neo-Davidsonian event semantics

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- Auxiliaries and modals do not modify the primary event predication
  $\longrightarrow$ they do **not** form complex predicates
  $\longrightarrow$ and are subject to diachronic reanalysis

Problematic: "Super" Events

- Serial verbs consist of several "full" events that are bundled together in some way into a construable coherent "super" event (Durie 1997).

  (9) a.
      mɨyt ritm   muh-hambray-an-m
      tree insects climb-search.for-1S-3Pl
      'I climbed the tree looking for insects.'   (Alamblak, Bruce 1988:29)
      b.
      *mɨyt guñm muh-hëti-an-m
       tree stars climb-see-1S-3Pl
       'I climbed the tree and saw the stars.' (Alamblak, Bruce 1988:29)

- But how can differences between simple verbs, complex predicates and serial verbs be represented if event, super event and subevents are all formally the same?

Event Semantics of Complex Predicate Formation

Conclusion

- Current formal understanding of event semantics falls short with respect to dealing with complex predication.
- Lexical Decomposition Approaches do not offer a better insight into the problem of (different types of) complex predication vs. serial verbs.
- (Alternatives I may have missed?)
- **Hunch:** understanding the interaction between event semantics and lexical-semantic decomposition better will be crucial to understanding the diachrony of complex constructions.

Outline

Historical Stability

- Butt& Lahiri (2013) show that V-V aspectual complex predicates are historically stable as a syntactic configuration in Indo-Aryan.
- The modern Indo-Aryan morphological causative is also not much different from how it was over 2000 years ago (Butt 2003).
- Davison (2013) notes that the permissive with 'give' also already appears to have existed in Old Indo-Aryan.

Diachrony of Indo-Aryan

(10)   A. Old Indo-Aryan
       1200 BCE — 600 BCE (Vedic)
       600 BCE — 200 BCE (Epic and Classical Sanskrit)
     B. Middle Indo-Aryan (Aśokan inscriptions, Pāli, Prākrits,
        Apabhraṃśa—Avahaṭṭha)
        200 BCE — 1100 CE
     C. New Indo-Aryan (Bengali, Hindi/Urdu, Marathi and other
        modern North Indian languages)
        1100 CE — Present

Diachrony of Indo-Aryan

Note: Indo-Aryan is not historically conservative in other areas

- Case system crashed and was reinvented.
- Tense/Aspect system crashed and was reinvented
- Verb Particles were gotten rid of.
- . . .

Light Verbs and Historical Stability

- Further crosslinguistic evidence confirms that light verbs are historically stable (cf. Bowern 2008, Brinton&Akimoto 1999):
  - They do not grammaticalize further into auxiliaries or inflections.
  - A light verb use is not independent of the main verb use — when the main verb is lost, so are all light verb uses.
  - Example: English *take* replacing *nimen* (Iglesias-Rábade's 2001).
  - (cf. Klumpp on Kamas)

Historical Change

But:

- Aspectual V-V complex predicates have become more frequent over time in Indo-Aryan (Hook 1993, 2001).
- This appears to be connected to the demise of verb particles (Deo)
- Particle-Verb combinations do lexicalize.
- Adj/N-V complex predicates lexicalize (cf. Caudel et al.)
- Serial verbs change over time $\longrightarrow$ Prepositions, Complementizers (e.g., Lord 1993).

Historical Change and Complex Predication

What explains these differences?

- Ramchand (2008) offers a promising explanation for the connection/trade-off between verb particles and aspectual V-V complex predicates
    - both instantiate res
    - both modify a given event predication in a similar manner
    - But:
        - ⋆ But how could both exist in one system side by side?
        - ⋆ And why don't they in German or English?

- I know of no good explanation for the other patterns so far (taken in the larger context of complex predication).

Outline

In Conclusion

- There is much yet still to be explained.
- The crosslinguistic evidence is still coming in.
  - often hampered by careless use of terminology
  - this hinders a clear demarcation of the empirical domain
  - the demarcation of the empirical domain is already difficult enough
    - ★ tests for complex predication tend to be language specific
    - ★ only at the beginning of having understood the space of crosslinguistic variation
- Further Problems:
  - inability of frameworks to deal cleanly with mismatches across a-structure and f-structure (leading to confusion with control/raising)
  - inability of frameworks to deal cleanly with event semantics of complex predications (leading to confusion with auxiliaries, modals and serial verbs)

In Conclusion

On the Positive Side:

- More and more interesting phenomena are being documented carefully across languages.
- New theoretical possibilites opening up (e.g., First Phase Syntax, TCL)

On my agenda:

- Get formal event semanticists interested in complex predication
- Get lexical semanticists interested in the relationship between light verbs and their full verb counterparts (how to really represent the underlying representation?)
- Understand the patterns of diachronic change with respect to complex predications.

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