Complex Predicates in Urdu

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Outline

Complex Predicates

Lights verbs used in Complex Predicates

Complex Predicates and Verb Classes

Conclusion and Future Work
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Lights verbs used in Complex Predicates

Complex Predicates and Verb Classes

Conclusion and Future Work
Complex Predicates

- around 700 simple verbs in Urdu.
- many more complex predicates (Butt 1993)
- possible combinations: Adj + V, N + V, PP + V

nAdiyA=nE yAsin=kO yAd ki-yA
Nadya=Erg Yasin=Acc memory do-Perf.M.Sg
‘Nadya remembered Yasin.’ N+V complex predicate

nAdiyA=nE mEz sAf kI
Nadya=Erg table.F.Sg clean do-Perf.F.Sg
‘Nadya cleans a/the table.’ Adj+V complex predicate
Before the discussion of different types of potential complex predicates, we need to see the agreement patterns of simple verbs and objects in Urdu/Hindi.

- When the subject is not marked by a case marker (ergative etc.), then the verb agrees with the subject.

\[
\begin{align*}
\text{yAsIn} & \quad \text{kitAb} & \quad \text{paRH-tA} & \quad \text{he} \\
\text{Yasin.M.Sg} & \quad \text{book.F.Sg} & \quad \text{read-Impf.M.Sg} & \quad \text{Aux.Pres}
\end{align*}
\]

'Yasin reads the book.'
When the subject is marked by a case marker and the object is unmarked, then the verb agrees with the object.

\[
yAsIn=nE \quad kitAb \quad paRH-I
\]

Yasin.M.Sg=Erg book.F.Sg read-Perf.F.Sg

‘Yasin read the book.’
Urdu Verbs and Agreement

➤ When the subject is marked by a case marker and the object is unmarked, then the verb agrees with the object.

\[
y\text{AsIn}=nE \quad \text{kitAb} \quad \text{paRH-I}
\]
\[
\text{Yasin.M.Sg}=\text{Erg} \quad \text{book.F.Sg} \quad \text{read-Perf.F.Sg}
\]

‘Yasin read the book.’

➤ When both the subject and the object are marked by case markers, then the verb has default (masculine singular) gender.

\[
n\text{AdiyA}=nE \quad \text{kitAb}=kO \quad \text{paRH-A}
\]
\[
\text{Nadya.F.Sg}=\text{Erg} \quad \text{book.F.Sg}=\text{Acc} \quad \text{read-Perf.M.Sg}
\]

‘Nadya read the book.’
Urdu Verbs and Agreement

- When the subject is marked by a case marker and the object is unmarked, then the verb agrees with the object.

\[ y\text{Asin}=nE \quad \text{kitAb} \quad \text{paRH-I} \]
\[ \text{Yasin.M.Sg}=\text{Erg} \quad \text{book.F.Sg} \quad \text{read-Perf.F.Sg} \]

'Yasin read the book.'

- When both the subject and the object are marked by case markers, then the verb has default (masculine singular) gender.

\[ n\text{AdiyA}=nE \quad \text{kitAb}=kO \quad \text{paRH-A} \]
\[ \text{Nadya.F.Sg}=\text{Erg} \quad \text{book.F.Sg}=\text{Acc} \quad \text{read-Perf.M.Sg} \]

'Nadya read the book.'
Types of (potential) Complex Predicates

1. The light verb does not agree with the noun.

2. The light verb may agree with the noun.
   2.1 The noun does not have modifiers.
   2.2 The noun may have modifiers.
Types of (potential) Complex Predicates

- **Class 1**: The light verb does not agree with the noun.
  - `anjum=nE nAdiyA=kO yAd ki-yA`
  - `Anjum=Erg Nadya=Acc memory do-Perf.M.Sg`
  - ’Anjum remembered Nadya.’
  - `yAd ’memory’ is feminine in Urdu. However, it does not take part in agreement scheme in `yAd+kar` complex predicates.`
Types of (potential) Complex Predicates

▶ Class 1: The light verb does not agree with the noun.
  ▶ anjum=nE nAdiyA=kO yAd ki-yA
     Anjum=Erg Nadya=Acc memory do-Perf.M.Sg
     ’Anjum remembered Nadya.’
  ▶ yAd ’memory’ is feminine in Urdu. However, it does not take part in agreement scheme in yAd+kar complex predicates.

▶ Class 2: The light verb may agree with the noun.
  ▶ anjum=nE nAdiyA=sE behes k-I
     Anjum=Erg Nadya=Inst debate.F.Sg do-Perf.F.Sg
     ’Anjum argued with Nadya.’
Class 2.2: The noun of N+V complex predicates may have modifiers.

Anjum=nE nAdiyA=sE savAl ki-yA
Anjum=Erg Nadya=Inst question.M.Sg do-Perf.M.Sg
'Anjum asked Nadya.'
Types of (potential) Complex Predicates

- Class 2.2: The noun of N+V complex predicates may have modifiers.

- \( \text{anjum}=nE \quad \text{nAdiyA}=sE \quad \text{savAl} \quad \text{ki-yA} \)
  
  Anjum=Erg Nadya=Inst question.\text{M.Sg} \ do-\text{Perf.M.Sg}

  ’Anjum asked Nadya.’

- \( \text{anjum}=nE \quad \text{nAdiyA}=sE \quad \text{kAI} \quad \text{accHE} \quad \text{savAl} \)
  
  Anjum=Erg Nadya=Inst several good.\text{M.Pl} \ \text{question.M.Pl}
  
  ki-\text{E}
  
  do-\text{Perf.M.Pl}

  ’Anjum asked Nadya several good questions.’
Does class 2 contain real complex predicate?

Yes. Because the noun in these N+V sequences introduces an argument. (The verb *kar* 'do' has two arguments.)

- **N+kar** 'do' with dative *kO* marked argument: *hidAyat* 'instruction/advice', *pESkaS* 'offer', *ImEl* 'email'
- **N+kar** 'do' with *sE* (instrument) marked argument: *SAdI* 'marriage', *laRAI* 'fight'
- **N+kar** 'do' with *par* (locative) marked argument: *hamlA* 'attack', *EtrAz* 'objection'
- **N+kar** 'do' with *k-* (genitive) marking the noun: *intizAr* 'wait', *a*
Does class 2 contain real complex predicate?

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  - N+kar ’do’ with sE (instrument) marked argument: *SAdl* ’marriage’, *laRAI* ’fight’
  - N+kar ’do’ with par (locative) marked argument: *hamlA* ’attack’, *EtrAz* ’objection’
Does class 2 contain real complex predicate?

- Yes. Because the noun in these N+V sequences introduces an argument. (The verb kar 'do' has two arguments.)
  - N+kar 'do' with dative kO marked argument: hidAyat 'instruction/advice', pESkaS 'offer', lmEl 'email'
  - N+kar 'do' with sE (instrument) marked argument: SAdl 'marriage', laRAI 'fight'
  - N+kar 'do' with par (locative) marked argument: hamlA 'attack', EtrAz 'objection'
  - N+kar 'do' with k- (genitive) marking the noun: intizAr 'wait', a
More examples of class 2 complex predicates

just for revision. The sentences have an extra (third) argument.

► anjum=nE nAdiyA=par EtrAz ki-yA
   Anjum=Erg Nadya=Inst several objection.M.Sg
do-Perf.M.Sg
'Anjum objected to Nadya.'

► anjum=nE nAdiyA=sE kAI accHE savAl
   Anjum=Erg Nadya=Inst several good.M.Pl question.M.Pl
   ki-E
do-Perf.M.Pl
'Anjum asked Nadya several good questions.'
Mohanan (1993, 1994) says that N+V sequences in which the verb agrees with the noun have a light verb.

The noun is the syntactic object as well as part of the complex predicate.

It is possible because these are related to different levels of representation (ARG STR and GF STR).
Modeling

- Urdu ParGram (PARallel GRAMmer), Universitaet Konstanz, Germany
- Grammar rules written using Lexical Functional Grammar (LFG) framework
- The N+V complex predicates of class 1 were already implemented in Urdu ParGram.
nAdiyA=nE kAm SurU kiyA
Nadya   Erg   work start do-Perf.M.Sg
Nadya started the work.
F (Functional) Structure of the above sentence is:
"nAdiyah nE kAm SurUe2 kiyA"

PRED 'kar<[1:nAdiyah], 'SurUe2<[21:kAm]>'
  [PRED 'nAdiyah']
  [CHECK [NMORPH obl]]
SUBJ NTYPE [NSEM [PROPER [PROPER-TYPE name]]] 
      [NSYN proper]
      [SEM-PROP [SPECIFIC +]]
      1 [CASE erg, GEND fem, NUM sg, PERS 3 ]
  [PRED 'kAm']
OBJ NTYPE [NSEM [COMMON count]]
      [NSYN common]
      21 [CASE nom, GEND masc, NUM sg, PERS 3 ]
CHECK [VMORPH [MTYPE infl]] 
      [RESTRICTED -, _VFORM perf]
LEX-SEM [AGENTIVE +]
TNS-ASP [ASPECT perf, MOOD indicative]
77 [CLAUSE-TYPE decl, PASSIVE -, VTYPE complex-pred]
Modeling

\[ \text{nAdiyA= } nE \text{ kAm SurU kiyA} \]

Nadya \qquad \text{Erg \ work \ start \ do-Perf. M. Sg} 

Nadya started the work.

F (Functional) Structure: A rough sketch

**PRED** kar \(<\text{nAdiyA, SurU}<\text{kAm}>>

**SUBJ** nAdiyA

**OBJ** kAm

*SurU* 'start' is not the object.
We decided that class 2 have complex predicates.

Thanks to Tracy King in the implementation of the grammar rule.
The scorpion argued with the frog.

"bicchU nE meNDak sE bah2as2 kI"

```
[PRED 'kar<1:bicchU], 'bah2as2<35:meNDak>'
  [PRED 'bicchU'
    CHECK [NMORPH obl]
    NTYPE [NSEM [COMMON count]]
    NSYN common
    1[CASE erg, GEND masc, NUM sg, PERS 3]
  ]
  [SUBJ]
  [OBJ 'bah2as2'
    CHECK [RESTRICTED +]
    LEX-SEM [AGENTIVE +]
    NTYPE [NSEM [COMMON count]]
    NSYN common
    TNS-ASP [ASPECT perf, MOOD indicative]
    CASE nom, CLAUSE-TYPE decl, GEND fem, NUM sg, PASSIVE -, VTYPE complex-pred
  ]
  [OBL]
  [CHECK [VMORPH [MORPH inf1]]
    RESTRICTED - , _VFORM perf]
  [LEX-SEM [85-OBJ-LEX-SEM]
    TNS-ASP [85-OBJ-TNS-ASP]
    85[CASE nom, CLAUSE-TYPE decl, PASSIVE -, VTYPE complex-pred
```
F-structure of

biccHU=nE  meNDak=sE  behes  k-I
scorpion=Erg  frog=Inst  debate.F.Sg  do-Perf.F.Sg

The scorpion argued with the frog.'

F (Functional) Structure: A rough sketch

PRED  kar<biccHU, behes<mENDak>>
SUBJ  biccHU
OBJ  behes
OBL  mENDak

behes 'debate' is the object as well as part of the complex predicate.
The scorpion discussed several good things with the frog.

*bAT 'thing/matter' has modifiers.*

```
"biccHU nE meNDak sE kAI accHI bAtEN kIN"
```

<table>
<thead>
<tr>
<th>PRED</th>
<th>'kar&lt;[1:biccHU], 'bAt&lt;[35:meNDak]&gt;'</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBJ</td>
<td></td>
</tr>
<tr>
<td>CHECK</td>
<td>[NMORPH obl]</td>
</tr>
<tr>
<td>NTYPE</td>
<td>[NSEM [COMMON count], NSYN common]</td>
</tr>
<tr>
<td>CASE</td>
<td>erg, GEND masc, NUM sg, PERS 3</td>
</tr>
<tr>
<td>OBJ</td>
<td></td>
</tr>
</tbody>
</table>
| ADJUNCT| [PRED 'accH',
|        | 72ATYPE attributive, DEGREE positive, GEND fem, NUM pl] |
| CHECK  | [RESTRICTED +]                     |
| LEX-SEM| [AGENTIVE +]                       |
| NTYPE  | [NSEM [COMMON count], NSYN common] |
| SPEC   | [QUANT 70 NUM pl]                  |
| TNS-ASP| [ASPECT perf, MOOD indicative]     |
| CASE   | nom, CLAUSE-TYPE decl, GEND fem, NUM pl, PASSIVE -, VTYPE complex-pred |
| OBL    |                                    |
| CHECK  | [NMORPH obl]                       |
| NTYPE  | [NSEM [COMMON count], NSYN common] |
| CASE   | inst, GEND masc, NUM sg, PERS 3    |
Outline

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Lights verbs used in Complex Predicates

Complex Predicates and Verb Classes

Conclusion and Future Work
Light Verbs used in Complex Predicates

- Commonly used light verbs in N+V complex predicates:
  - kar 'do'
  - he 'be'
  - hO 'become'
  - rakH 'put'
  - rah 'stay'.

- These light verbs are related with aspect.
Light Verbs used in Complex Predicates

- us=nE sabaq yAd kiyA
  3SG=Erg lesson memory do.Perf.M.Sg
  He remembered/learnt the lesson.’

- us=kO sabaq yAd hU-A
  3SG=Dat lesson memory become-Perf.M.Sg
  He remembers the lesson.’

- us=nE sabaq yAd rakH-A
  3SG=Erg lesson memory keep-Perf.M.Sg
  He kept the lesson remebered.’
Light Verbs used in Complex Predicates

- us=kO  sabaq yAd  he  
  3SG=Dat lesson memory be.Pres  
  He remembers the lesson.’

- us=kO  sabaq yAd  rah-A  
  3SG=Dat lesson memory stay-Perf  
  He remembered the lesson.’
Light Verbs used in Complex Predicates

- us=kO  sabaq  yAd  he
  3SG=Dat  lesson  memory  be.Pres
  He remembers the lesson.’

- us=kO  sabaq  yAd  rah-A
  3SG=Dat  lesson  memory  stay-Perf
  He remembered the lesson.’

Hence, we should not list the N+V complex predicates as unrelated combinations like N1+V1, N1+V2, N2+V1, ...

We should focus on the noun (or adjective) part of the complex predicate and find which light verbs comes with this noun (or adjective).
There are other light verbs e.g. A 'come' and \textit{dE} 'give' that forms N+V complex predicates. However, these are not productive as the set of kar 'do'/ hO 'become' verbs. These are discussed briefly at the end of the presentation.
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Ahmed and Butt (2011) This work is done before I realized that there are two more "aspectual" light verbs rakH and rah beside the light verbs presented in the following.
Ahmed and Butt (2011) This work is done before I realized that there are two more "aspectual" light verbs rakH and rah beside the light verbs presented in the following.

Commonly used light verbs in N+V complex predicates: kar 'do', he 'be' and hO 'become'.

Every noun does not occur with each of these light verbs.

We follow Levin (1993)’s classic assumption that semantic predicational classes can be identified on the basis of a study of the syntactic contexts the predicates occur in.
Methodology

- List of first 45 nouns occurring in N-V combination with either of the light verbs *kar* 'do', *he* 'be' and *hO* 'become' in a POS tagged corpus compiled by CRULP.
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- A full set of combinatorial (im)possibilities of these nouns compiled by using native speaker judgment.
Methodology

- List of first 45 nouns occurring in N-V combination with either of the light verbs *kar* 'do', *he* 'be' and *hO* 'become' in a POS tagged corpus compiled by CRULP.
- A full set of combinatorial (im)possibilities of these nouns compiled by using native speaker judgment.
- An analysis of the resulting patterns identified distinct semantically coherent classes/classification patterns.
- Pertinent semantic factors appear to be stative vs. eventive nouns, agentivity vs. experiencer verbs (psych predications) and the licensing of a dative recipient.
Verb Classes

▶ Class A
Pysch verbs: *yaqln* 'belief', *piyAr* 'love'

- Subj (Experiencer) Obj (Theme) N+ *kar* 'do'
- Subj (Experiencer)=Dat Obj (Theme) N+ *hO* 'become'
- Subj (Experiencer)=Dat Obj (Theme) N+ *he* 'be'

▶ Class B
Main pattern (38/45): *ijAd* 'invention', *tAmir* 'construction'

- Subj (Agent) Obj (Theme) N+ *kar* 'do'
- Subj (Theme) N+ *hO* 'become'/?*he* 'be'
- *Subj=Dat* Obj N+ *hO* 'become'/he 'be'
Verb Classes

- Class A
  
  \[ \text{nAdiyA=kO nAd yAd} \]
  
  Nadya.F.Sg=Dat story.F.Sg.Nom memory
  
  hu-I/he be.Perf-3.F.Sg/be.Pres-3.F.Sg
  
  ‘Nadya remembers/knows a/the story.’

- Class B
  
  \[ *(\text{nAdiyah=kO makAn taa2mIr}) \]
  
  Nadya.F.Sg=Dat house.M.Sg.Nom construction
  
  
  ‘A/the house got constructed./ A/the house is constructed.’
Other Verb Classes

Class C

- This class allows dative subject like class A. However, it does not allow N+ho 'become’ construction.

- nAdiyA=kO yAsIn=kA intizAr
  Nadya.F.Sg=Dat Yasin.M.Sg=Gen waiting
  he/*hu-A
  ‘Nadya waited for Yasin.’

- ho ‘become’ does not work with these nouns because the subject is too agentive to be felicitous as the undergoer of a become predication.
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Conclusions

- We find Urdu N+V complex predicates in which the noun part of the complex predicate also acts as the syntactic object and the verb might agree with it.
- The noun of such complex predicates also allows modifiers.
- We find five light verbs *kar* and *hO* etc. that frequently follow nouns in N+V complex predicate for ”aspectual” reasons.
- We find semantic classes of the nouns formed by (im)permissibility of the above mentioned light verbs.
Future Work

- There are other light verbs e.g. A 'come' and dE 'give' that forms N+V complex predicates. However, these are not productive as the set of kar 'do'/ hO 'become' verbs. We guess that these are also related to semantic classes of noun, but it needs further investigation.

- We need to define rules to distinguish the borderline between:
  (i) main verb and canonical object
  (ii) main verb and object with idiomatic meaning
  (iii) N+V complex predicate.
Future Work

- Currently, we use argument structure clues for this distinction. Using this method [Arg \textit{par} 'on'] \textit{zOr} 'pressure' \textit{dE} 'give' might be a complex predicate because it has a \textit{par} marked argument in place of canonical dative \textit{kO} marked argument.

- However, the classification of [Arg \textit{kO} 'on'] \textit{dhakka} 'push' \textit{dE} 'give' is more difficult as it has \textit{kO} marked argument similar to the canonical usage of \textit{dE} 'give'.