Some issues related to Complex Predicates in Urdu/Hindi

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Outline

Complex Predicates (CP)

Types of N+V CP w.r.t. Verb Agreement

Types of N+V CP w.r.t Light Verb

Case Study: Light Verb *dE* 'give'

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Complex Predicates

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

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Case Study: Light Verb *dE* 'give'

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.

yAsIn=nE kitAb 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.

yAsIn=nE kitAb paRH-I
Yasin.M.Sg=Erg book.F.Sg 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.

nAdiyA=nE kitAb=kO paRH-A
Nadya.F.Sg=Erg book.F.Sg=Acc read-Perf.M.Sg

'Nadya read the book.'

Urdu Verbs and Agreement

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yAsIn=nE kitAb paRH-I
Yasin.M.Sg=Erg book.F.Sg 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.

nAdiyA=nE kitAb=kO paRH-A
Nadya.F.Sg=Erg book.F.Sg=Acc read-Perf.M.Sg

'Nadya read the book.'

Types of N+V Complex Predicates

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

   Mohanan (1993,1994), Ahmed Butt (2011b)

   2.1 The noun does not have modifiers.
   2.2 The noun may have modifiers.

Types of N+V 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 N+V 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.'

Types of N+V Complex Predicates

- 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 N+V Complex Predicates

- 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.'
- 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.'

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.'

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.

Modeling

nAdiyA=nE sEb kHAyA
Nadya Erg apple eat-Perf.M.Sg
Nadya ate an/the apple.

F (Functional) Structure: A rough sketch

PRED kar <nAdiyA,sEb>
SUBJ nAdiyA
OBJ sEb

Modeling

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]>'>'
 SUBJ    [PRED      'nAdiyah'
          CHECK     [_NMORPH obl]
          NTYPE     [NSEM [PROPER [PROPER-TYPE name]]
                     NSYN proper]
          SEM-PROP  [SPECIFIC +]
        1 CASE erg, GEND fem, NUM sg, PERS 3]
 OBJ     [PRED  'kAm'
          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

nAdiyA=nE kAm SurU kiyA
Nadya Erg work start do-Perf.M.Sg
Nadya started the work.

F (Functional) Structure: A rough sketch

PRED kar <nAdiyA,SurU<kAm>>
SUBJ nAdiyA
OBJ kAm

SurU 'start' is not the object.

Modeling

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.'

```
"biccHU nE meNDak sE bah2as2 kI"

[PRED    'kar<[1:biccHU], 'bah2as2<[35:meNDak]>'>'
 SUBJ    [PRED  'biccHU'
          CHECK [_NMORPH obl]
          NTYPE [NSEM [COMMON count]
                 NSYN common]
        1 CASE erg, GEND masc, NUM sg, PERS 3]
 OBJ     [PRED     '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     [PRED  'meNDak'
          CHECK [_NMORPH obl]
          NTYPE [NSEM [COMMON count]
                 NSYN common]
       35 CASE inst, GEND masc, NUM sg, PERS 3]
 CHECK   [_VMORPH [_MTYPE infl]
          _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]
```

Modeling

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.

Modeling

biccHU=nE meNDak=sE kAI accHI bAtEN k-IN
scorpion=Erg frog=Inst several good discussion do-Perf
The scorpion discussed several good things with the frog.'

bAT 'thing/matter' has modifiers.

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

[PRED    'kar<[1:biccHU], 'bAt<[35:meNDak]>'>'
 SUBJ  1 [PRED  'biccHU'
          CHECK [_NMORPH obl]
          NTYPE [NSEM [COMMON count]
                 NSYN common]
          CASE erg, GEND masc, NUM sg, PERS 3]
 OBJ     [PRED    'bAt'
          ADJUNCT {[PRED 'accH'
                 72 ATYPE attributive, DEGREE positive, GEND fem, NUM pl]}
          CHECK   [_RESTRICTED +]
          LEX-SEM [AGENTIVE +]
          NTYPE   [NSEM [COMMON count]
                   NSYN common]
          SPEC    [QUANT [PRED 'kAI'
                      70 NUM  pl]]
          TNS-ASP [ASPECT perf, MOOD indicative]
          CASE nom, CLAUSE-TYPE decl, GEND fem, NUM pl, PASSIVE -, VTYPE complex-pred]
 OBL    35 [PRED  'meNDak'
            CHECK [_NMORPH obl]
            NTYPE [NSEM [COMMON count]
                   NSYN common]
            CASE inst, GEND masc, NUM sg, PERS 3]]
```

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Case Study: Light Verb *dE* 'give'

Light Verbs used in Complex Predicates

There are two types of light verbs that occur in N+V complex predicates.

- "Aspectual" light verbs
  - *kar* 'do', *he* 'be', *hO* 'become', *rakH* 'put', *rah* 'stay'
  - e.g. *yAd* 'memory' *kar* 'do' remember/memorize
- "Semantic" light verbs
  - *dE* 'give', *A* 'come', ...
  - e.g. *zOr* 'pressure' *dE* 'give' 'pressurize'/'insist'

"Aspectual" Light Verbs

- *kar* 'do', *he* 'be', *hO* 'become', *rakH* 'put', *rah* 'stay'
- e.g. *yAd* 'memory' *kar* 'do' remember/memorize
- These light verbs are related with aspect.
- This set of light verbs is frequently used in N+V complex predicates.
- The noun e.g. *yAd* 'memory' can appear with any of these light verbs, if its semantics does not conflict with the light verb.

"Aspectual" Light Verbs

- *us=kO sabaq yAd he*
  3SG=Dat lesson memory be.Pres
  'He remembers the lesson.'
  `Something/Somebody has the state.`
- *us=kO sabaq yAd hU-A*
  3SG=Dat lesson memory become-Perf.M.Sg
  'He remembers the lesson.'
  `Something/Somebody gets the state.`
- *us=nE sabaq yAd kiyA*
  3SG=Erg lesson memory do.Perf.M.Sg
  'He remembered/learnt the lesson.'
  `Something/Somebody causes something/somebody to get the state.`

"Aspectual" Light Verbs

- *us=kO* *sabaq* *yAd* *rah-A*
  3SG=Dat lesson memory stay-Perf
  'He remembered the lesson.'
  `Something/Somebody stays in the state.`
- *us=nE* *sabaq* *yAd* *rakH-A*
  3SG=Erg lesson memory keep-Perf.M.Sg
  'He kept the lesson remembered.'
  `Something/Somebody causes something/somebody to stay in the state.`

"Aspectual" Light Verbs

- *us=kO sabaq yAd rah-A*
  3SG=Dat lesson memory stay-Perf
  'He remembered the lesson.'
  `Something/Somebody stays in the state.`
- *us=nE sabaq yAd rakH-A*
  3SG=Erg lesson memory keep-Perf.M.Sg
  'He kept the lesson remembered.'
  `Something/Somebody causes something/somebody to stay in the state.`

`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 part of the complex predicate and find which light verbs comes with this noun.`

Verb Classes and Syntax

- Ahmed and Butt (2011)
- 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 occuring 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 occuring 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: *yaqIn* '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

  nAdiyA=kO kahani 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

  *(nAdiyah=kO) makAn taa2mIr
  Nadya.F.Sg=Dat house.M.Sg.Nom construction
  hu-A/?he
  be.Perf-3.M.Sg/be.Pres-3.M.Sg
  '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
  be.Pres-3.M.Sg/be.Perf-3.M.Sg
  '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.

Light Verbs used in Complex Predicates

- "Aspectual" light verbs
- "Semantic" light verbs
  - *dE* 'give', *A* 'come', ...
  - e.g. *zOr* 'pressure' *dE* 'give' 'pressurize'/'insist'
  - The choice of the light verb depends on other semantic properties of the noun.

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Case Study: Light Verb *dE* 'give'

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In this section, we present the case study of one "semantic" light verb *dE* 'give'.
We claim that the change in argument structure in a N+V sequence shows that noun and verb forms a complex predicate that has a modified argument structure .

Main verb *dE* 'give'

The Subcategorization frame of *dE* 'give' is `SUBJ,OBJ,OBJgoal`.

nAdiyah=nE(`SUBJ`)	yAsIn=kO(`OBJgoal`)	kitAb(`OBJ`)	dI
Nadya=Erg	Yasin=Dat	book	do.Perf

'Nadya gave a book to Yasin.

The dative *kO* marked recipient receives a theme that is given by the subject.

N+*dE* bigrams

- We searched bigrams of N+*dE* 'give' in a Urdu corpus.
- We analyzed most frequently occurring 55 N+*dE* sequences that are potential candidate for complex predicates.
  - We noted the subcategorization frames (the other arguments) for each N+*dE* sequence.

Subcat frames of N+*dE* sequences

- The following table shows the arguments (other than SUBJ) for N+*dE* 'give' sequences.

Frequency	Arguments	Examples
1	OBJ PREDLINK	*qarAr*
1	OBJ OBJ-goal	*sONp* 'hand over'
3	OBJ OBL-on	*zOr* 'pressure, *tavajja* 'attention'
3	OBJ	*taSkll* 'constitute', *janam* 'birth'
5	OBJ-goal OBL-gen	*darja* 'rank', *dars* 'lesson'

- The remaining N+*dE* sequences have canonical arguments i.e. SUBJ,OBJgoal.

sONp dE - an extra argument

- *sONp dE* is a complex predicate.

  us=nE(SUBJ) bETE=kO(OBJgoal) hukUmat(OBJ)
  3Sg=Erg son=Dat government
  sONp dI
  hand-over give.Perf
  'He handed over the government to the son.'

- compare it with the canonical *dE*

  us=nE(SUBJ) bETE=kO(OBJgoal) hukUmat(OBJ) dI
  3Sg=Erg son=Dat government give.Perf
  'He gave the government to the son.'

jHARU dE - a minimum pair

- *jHARU dE* is a complex predicate in the following example as the argument structure is changed (dative marked recipient is not allowed).

  meN=nE(SUBJ) kamrE=mEN(OBL-loc) jHARU dI
  1Sg=Erg room=in broom give.Perf

  'I swept in the room.'

- The following is the canonical usage of *dE* in which *jHARU* is the object. There is no complex predicate in this example because there is no change of argument structure.

  meN=nE(SUBJ) us=kO(OBLgoal) jHARU(OBJ) dI
  1Sg=Erg 3Sg=Dat broom give.Perf

  'I gave him the broom.'

Complex Predicate Identification

- We concluded that if there is a change in argument structure, the N+V sequence is considered as a complex predicate.
- However, we cannot comment on whether the other N+V (N+*dE* in this case study) sequences have metaphorical usage of *dE* or they constitute a complex predicate.
- It is an open question whether *inTarviyU* 'interview' + *dE* 'give' 'get interviewed' and *SHikast* 'defeat' + *dE* 'give' 'defeat' etc. have metaphorical objects or they constitute a complex predicates.

Thanks and Questions