Using instruments to diagnose argument structure

Sakshi Bhatia

University of Massachusetts, Amherst

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The Question

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▶ What can instrument phrases tell us about the argument structure of verbs in Hindi-Urdu?

(1) [swadeshi karyakartaoM-ne] [saare videshi yantr]
     Swadeshi workers-ERG   all   foreign devices
     [**mashaal**-se] jal-aa   diye
     torch-INST   burn-DC give.PERF
     'The Swadeshi workers burned all foreign-made devices with a torch.'

▶ Goal: To demonstrate that these adjuncts serve as an important tool for diagnosing the precise syntactic and semantic properties of argument structure alternations in the language.

Outline

Part 1: The basic data pattern

► Instruments in Unaccusatives, Direct causatives and Indirect causatives

► Novel data showing that in addition to the typical instrument phrase licensed by unaccusatives and direct causatives, there is another type of instrument -se phrase that can occur only in indirect causative structures

Outline

Part 2: The analysis

- The Role Exhaustion principle (Williams 2015)
- The licensing of multiple instruments provides support for the (minimally) bi-eventive analysis of indirect causation in line with Bhatt & Embick (2003)
- (Not included in today's talk: Ramchand's (2010) mono-eventive analysis of all causatives is called into question by the availability of multiple instruments.)

Outline

Part 3: Implications and future directions

▶ Implications of the current analysis for the status of intermediate agent -se phrases - these phrases are not instruments (contra Ramchand 2010)

▶ Other argument structure alternations between nominative subjects and a broader set of -se marked nominals (instruments and causers) - this alternation is closely tied to the analysis of indirect causatives argued for in this talk.

Basics of Hindi-Urdu Argument Structure

- ▶ Hindi-Urdu has a productive morphological causativization system.
- ▶ Involves suffixation of causativizing morphemes to verbal roots or Stem alternation (Kellogg 1876, Kachru 2006, inter alia)

Unaccusative	Direct causative	Indirect causative
jal	jal-aa	jal-vaa
burn	burn	cause to burn

- ▶ Terminology:
  Direct causative = causative 1 = inner, lexical causative
  Indirect causative = causative 2 = outer, syntactic causative
  (cf. Saksena 1982, Kachru 1980, Shibatani 1976)

Examples

(2) makaan **jal**-aa   Unaccusative
     House   burn-PERF
     'The house burned.'

(3) zamindaar-ne makaan **jal-aa**-yaa   DC
     Landlord-ERG house   burn-DC-PERF
     'The landlord burned the house.'

(4) zamindaar-ne (Dakait-se) makaan **jal-vaa**-yaa   IC
     Landlord-ERG bandit-INST house   burn-IC-PERF
     'The landlord had the house burned.'

   ▶ What is the difference between the DC and the IC?

   ▶ DC = personally involved agent

   ▶ IC = non involved causer

One Instrument of an Unaccusative

(5) a. ye makaan *mashaal*-se jal-aa thaa
   this house torch-INST burn-PERF be.PAST
   'This house was burned with a torch.'
   (i.e. the burning happened with a torch)

   b. *ye makaan *mashaal*-se maachis-se
   this house torch-INST matchstick-INST
   jal-aa thaa
   burn-PERF be.PAST
   '*This house was burned with a torch with a
   matchstick.'

One instrument of a Direct causative

(6) a. zamindaar-ne *mashaal*-se makaan jal-aa-yaa
Bandits-ERG torch-INST house burn-DC-PERF
'The landlord burned the house with the torch.'

b. *zamindaar-ne *mashaal*-se maachis-se
Bandits-ERG torch-INST matchstick-INST
makaan jal-aa-yaa
house burn-DC-PERF
'*The landlord burned the house with the torch with the matchstick.'

- ▶ The DC alternant has higher valency - an additional obligatory argument relative to the Unaccusative
- ▶ But the valency change does not lead to an increase in the number of licensed instruments

Two instruments of an Indirect Causative

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(7) zamindaar-ne (apni **dhamkiyon$_2$**-se) (Dakait-se)
     Landlord-ERG ANA.GEN threats-INST   bandit-INST
     (*mashaal$_1$*-se) makaan jal-vaa-yaa
     torch-INST   house burn-IC-PERF
     'Using his threats, the landlord had the bandits
     burn the house with a torch.'

▶ The IC alternation has higher valency than the
  Unaccusative, but not the DC

▶ No additional obligatory arguments

▶ But additional instrument is licensed, unlike with
  Unaccusatives/DC.

Role Exhaustion

- Informally: a semantic relation associated with one dependent cannot be repeated by another, irrespective of whether it is an argument or adjunct (see, Carlson, 1984 inter alia)
- Formally, Role exhaustion:
  - When a dependent is assigned a relation to some *(group of) event(s)*, it identifies *all and only* the individuals in that relation to *that (those) event(s)*. (Williams, 2015)

Role Exhaustion

- ▶ A single dependent bears a relation to an event for the entirety of the event
- ▶ Several imaginable sub-events does not imply each sub-event has its own relation assignment
- ▶ e.g. the house (got) burnt with a torch:
  - ▶ take the torch close to the house
  - ▶ set the flame close enough to make contact with the house
  - ▶ hold it there till it catches fire
- ▶ **Only one instrument per event**
- ▶ Two instruments → two events
- ▶ **IC have a bi-eventive semantics**

Predictions from Bieventiveness

- ▶ Multiple exponents of other roles should be available for IC verbs
- ▶ e.g. Multiple (source) locations

(8) john-ne **london-se** miiraa-se **dilli-se**
     John-ERG London-INST Mira-INST delhi-INST
     dehraduun-meM kaagaz ban-vaa-ye
     Dehradoon-LOC papers make-IC-PERF
     'From London, John caused Mira (who was in Delhi) to get the papers drawn up in Dehradun.'

Predictions ctd.

▶ e.g. Multiple interpretations of the same adverbial

(9) a. makaan **acche-se** ban rahaa hai
         house nice-INST make prog be.PRES
         'The house is being built nicely.'

     b. mazduuroM-ne **acche-se** makaan ban-aa-yaa
         Workers-ERG nice-INST house make-DC-PERF
         'The workers are building the house nicely.'

     c. miiraa-ne mazduuroM-se **acche-se** makaan
         Mira-ERG workers-INST nice-INST house
         ban-vaa-yaa
         make-IC-PERF
         'Mira got the workers to build the house nicely.'
         (a) Mira's behaviour = nice
         (b) The workers' performance = nice.

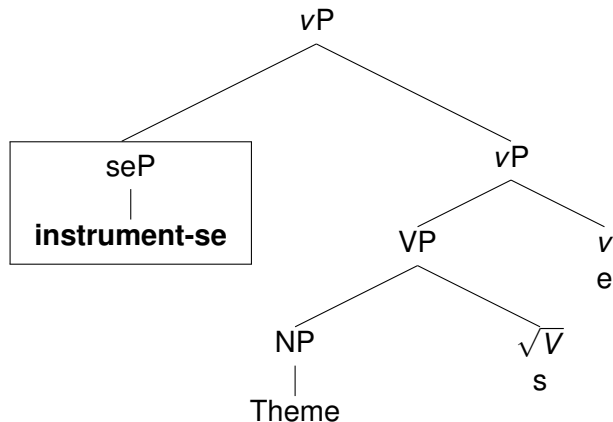# Unaccusatives

- ► All unaccusative verbs in Hindi-Urdu include a causative component

- ► The single instrument is a modifier of this *causative* verb phrase, vP. (cf. Schafer, 2008; Alexiadou et al., 2006; Kratzer, 2005; Pylkkanen, 2008; and Levin & Rappaport-Hovav, 1995 among others for similar proposals for other languages.)
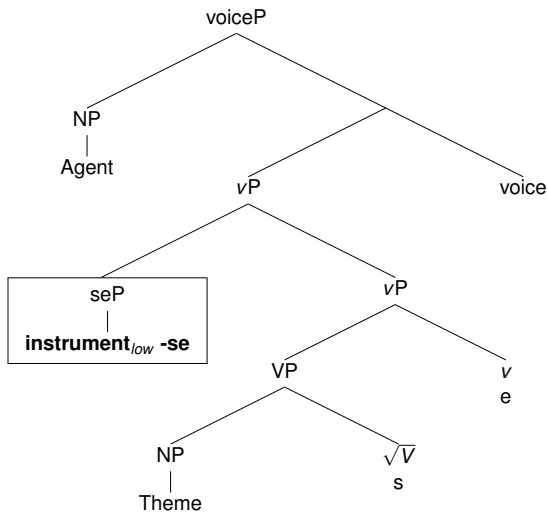
Unaccusatives

$[[$*instrument* $-$ *se theme* $\sqrt{V}$ *v*$]] =$
$\lambda e_s \exists s$ CAUSE(e)(s) & V(theme)(s) & WITH(instrument)(e)

Direct Causative

- ▶ A voice head introduces the external argument (Kratzer, 1996)
- ▶ voice and v are separate heads, contra Bhatt & Embick (2003) (cf. voice-bundling in Pylkkänen, 2008)
- ▶ Uniform syntax for the single instrument for unaccusative and DC verb forms: the single instrument is a modifier of vP.

Direct Causative

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$[[NP_{agent}\ instrument_{low} - se\ obj\ \sqrt{V}\ v\ voice]] = \lambda e_s$
Agent(NP_{agent})(e) & $\exists$s CAUSE(e)(s) & V(theme)(s) &
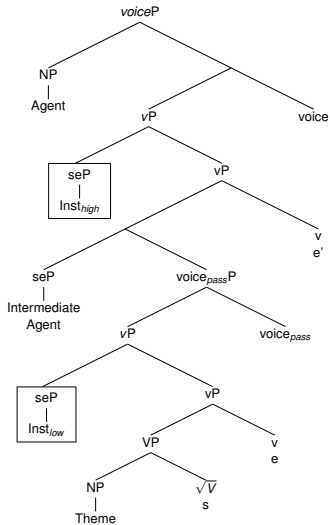WITH(instrument)(e)

Indirect Causative

- ▶ Bottom of the structure building: unaccusative structure which has a causative vP
- ▶ One instrument modifies this vP
- ▶ A passive voice head selects this unaccusative structure and introduces the intermediate agent in its specifier (cf. Bhatt & Embick, 2003)
- ▶ This structure is further embedded by a causative verb phrase vP
- ▶ The second instrument modifies the higher vP
- ▶ This higher vP is selected by a voiceP

Aside: Why passive substructure?

▶ Successful prediction of Bhatt & Embick (2003)- indirect causativization is unavailable for verbs that do not allow for passivization.

(10)   a. rohit-ne [ghar jaa-naa] caahaa
        Rohit-ERG home go-GER want-PERF
        .'Rohit wanted to go home.'

      b. *ghar jaa-naa caah-aa   gayaa
        home go-GER want-PERF PASS-PERF
        Intended: 'Going home was desired.'

      c. *rohit-ne   (nupur-se) [ghar jaa-naa]
        Rohit-ERG Nupur-INST home go-GER
        cah-vaa-yaa
        want-IC-PERF
        Intended: 'Rohit made Nupur want to go home.'

*voice*P

NP
|
Agent

*v*P

voice

seP
|
Inst*high*

vP

vP

v
e'

seP
|
Intermediate
Agent

voice*pass*P

*v*P

voice*pass*

seP
|
Inst*low*

vP

VP

v
e

NP
|
Theme

$\sqrt{V}$
s

[[*subj instrument$_{high}$ − se intermediate − agent − se instrument$_{low}$ − se obj $\sqrt{V}$ v v$_{pass}$ v voice*]] =
λe_s Agent(subj)(e') & with(instrument$_{high}$)(e') & $\exists$e'$_s$
CAUSE(e',e) & Agent (intermediate agent)(e) &
with(instrument$_{low}$)(e) & $\exists$s CAUSE(e,s) & V(theme)(s)

Structural Ambiguity

(11)   rajaa-ne   shahii **farmaan**-se mantrii-se   iilaa-ko
       king-ERG royal edict-INST   minister-INST Ila-DOM
       bul-vaa-yaa
       call-IC-PERF

       a. 'The king used a royal edict to make the
       minister to send for Ila.'   (=instrument$_{high}$)
       b. 'The king made the minister use a royal edict to
       send for Ila.'   (=instrument$_{low}$)

Implications: Status of Intermediate agents

- Claim in Ramchand (2010):
    - Intermediate agents are a type of instrument
    - Modify the same kind of element in the structure: *proc*
- Claim here:
    - Intermediate agents and instruments modify different parts of the structure
    - Intermediate agents are not a type of instrument, but rather a type of agent
    - Prediction of my account: Intermediate agents should not pattern with instruments with respect to syntactic diagnostics

Intermediate agents control into -kar Clauses

► also known as the *conjunctive participle*

► Described as being subject-oriented (Kachru 1981 among others).

(12) a. **kaiMchi**$_i$ [**PRO**$_i$ gir-kar] TuuT gayii
scissors   fall-do   break go-PERF
'The scissors fell and (then) broke.'
'The scissors broke after falling.'

    b. **kabir**$_i$ [**PRO**$_i$ chillaa-kar] duusre bacce-par
Kabir   shout-do   other child-LOC
kuud-aa
jump-PERF
'Kabir shouted and (then) jumped on the other child.'
'Kabir jumped on the other child while/after shouting.'

- ▶ Intermediate agents can control into -kar clauses
- ▶ When overt (Clauss 2014):

(13) kabir$_i$-ne **mira**$_j$-se john$_k$-ko [**PRO**$_{i/j/*k}$
      Kabir-ERG Mira-INST John-DAT
      cilla-kar] jag-vaa-yaa
      scream-do wake-IC-PERF
      'Kabir$_i$ got John$_k$ woken up (by Mira$_j$) through
      his/her$_{i/j/*k}$ shouting.'
      (Based on Clauss 2014)

- ▶ When covert:

(14) kabir$_i$-ne john$_k$-ko [**PRO**$_{i/j/*k}$ cillaa-kar]
      Kabir-ERG Mira-INST John-DAT
      jag-vaa-yaa
      scream-do wake-IC-PERF
      'Kabir$_i$ got John$_k$ woken up (by someone$_j$)
      through his/her$_{i/j/*k}$ shouting.'

▶ Agents of passives behave similarly

(15)   **salmaa**$_i$-dwaaraa [**PRO**$_i$ ghar   jaa-kar] mohan-ko
        Salma-BY   home go-do   mohan-DOM
        DaaMtaa   gayaa
        scold-IMPF go-PERF
        'Mohan was scolded by Salma after she went
        home.'
        (Mahajan 1995 via Srishti 2011)

▶ Instruments cannot control into kar clauses

(16) a. **kaiMchi**$_i$-se kapRaa$_j$ [**PRO**$_*i/j$ gir-kar]
          scissors-INST   fall-do   tear
          faT   gayaa
          go-PERF
          'The cloth fell and tore because of/on the
          scissors.'
          Unavailable: 'The scissors fell and tore the
          cloth.'

▶ Another instance of subject orientation which can
   pick out agents and intermediate agents and exclude
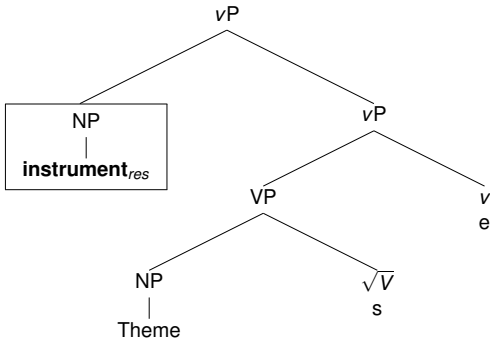   instruments - the anaphoric possessive *apnaa*

Argument structure alternations: focus on the causers

(17) a. **john**-ne   taalaa khol-aa
         John-ERG lock   open.DC-PERF
         'John unlocked the lock.'   (=Agent)

      b. **vispot**-ne   naav-ko dub-aa   diyaa
         explosion-ERG boat-dat sink.DC-PERF give.PERF
         'The explosion sank the boat.'   (=Event)

      c. **baaRh**-ne sab kuch bahaa   diyaa
         flood-ERG all   some flow.DC-PERF give.PERF
         'The flood swept everything away.' (=Nature)

      d. **caabi**-ne taalaa khol-aa
         key-ERG lock   open.DC-PERF
         'The key unlocked the lock.'   (=Instrument)

► Instruments may be subjects, but they use up the
instrument role

(18)   a.   john-ne *cabi*-se taalaa khol-aa
            John-ERG key-INST lock open.DC-PERF
            'John unlocked the door with a key.'

        b.   **cabi**-ne taalaa khol-aa
            key-ERG lock open.DC-PERF
            'The key unlocked the lock'.

        c.   *__cabi__-ne *sui*-se   taalaa khol-aa
            key-ERG hairpin-INST lock   open.DC-PERF
            'The key unlocked the door with a hairpin.'

- This alternation involving instrument as the 'subject' corresponds to a structure which lacks an agent introducing voiceP

Causers with IC: an empirical extension

- ▶ Ramchand (2010): IC verbs only have animate causers (because these causers are initiator-undergoers)
- ▶ Indirect causatives can have inanimate causers

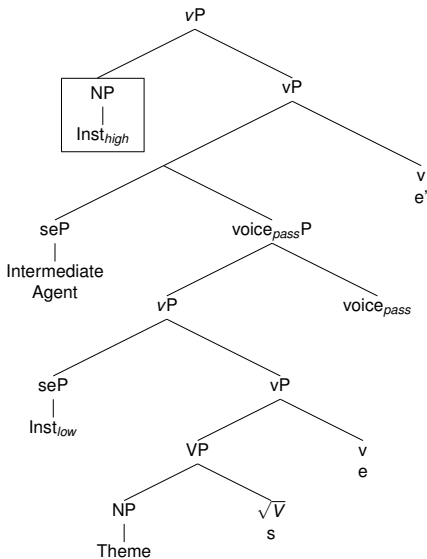(19)   paagalpan ke **daure**-ne ravi-se   na   jaane
        madness   GEN bout-ERG ravi-INST not know
        kya-kya   kar-vaa-yaa
        what-what do-IC-PERF
        'The bout of madness caused Ravi to do all sorts
        of things.'   (=Event)

(20)   sardaar ke **laalach**-ne DakaiToM-se kaii   Daake
        Leader   GEN greed-ERG dacoits-INST   many heists
        Dal-vaa-ye
        put-IC-PERF
        'The leader's greed made the dacoits perform
        several heists.'   (=State)

Prediction of no voiceP account for instruments

- Removing the voiceP layer leaves the instrument modifying the higher causative as the only candidate available to participate in the subject-instrument alternation

- the instrument modifying the lower vP is structurally inaccessible for this alternation

(21) (khoyi hui) **caabii**-ne karan-se   taalaa
       lost   be.PERF key-ERG Karan-INST lock
       khul-vaa-yaa
       open-IC-PERF
       'The (lost) key caused Karan to unlock the lock.'
       (=Reason)
       Unavailable: 'The (lost) key was the means of the unlocking.'

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Non-instrument causers

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- ▶ Where are other causers, i.e. non instruments, located in the structure - Spec, voiceP OR Spec vP or elsewhere?
- ▶ Causers can't be in the by-phrase of passives → not spec, voiceP (Schäfer, 2012)

(22) john-dwaaraa darvaazaa kholaa   gayaa thaa
      wind-by   door   open.DC-perf go-perf
      'The door was opened by John.'

(23) *hawaa-dwaaraa darvaazaa kholaa   gayaa
       wind-by   door   open.DC-perf go-perf
       thaa
       be.past
       *'The door was opened by the wind.'

An open issue

- ▶ What is the status of a *-se* phrase like the one below?
- ▶ What is the role assigned to this phrase if not instrument?

(24) nadii-ne **apne tez bahaav-se** sab kuchh
      river-ERG self's   fast flow-INST
      tahas-nahas kar diyaa
      every   thing destroy do give-PFV
      'The river destroyed everything with it's swift flow.'

Instruments of Causatives

-se phrase	Unaccusative	DC	IC
Instrument$_{low}$	✓	✓	✓
Instrument$_{high}$	✕	✕	✓

- ▶ Instrument -se phrases are modifiers of vPs across argument structure variants
- ▶ Unaccusatives, Direct causatives are mono-eventive $\rightarrow$ single instrument -se phrase
- ▶ Indirect causatives are bi-eventive $\rightarrow$ two instrument -se phrases

(Intermediate) agents and Subjects

- Intermediate agents are not instruments, they modify passive voiceP, not causative vP
- Subjects of Causatives

	Direct causative	Indirect causative
Animate agent	✓	✓
Eventive causer	✓	✓
Instrument$_{low}$	✓	×
Instrument$_{high}$	-	✓

- An instrument role bearing entity can be a nominative/ergative subject, as long as no agent is present in the structure and that instrument is the highest accessible instrument in the structure
- Causer subjects may also be introduced in Spec vP

Takeaway:

- ▶ **Care for your instruments as adjuncts, and your instruments as subjects**

Acknowledgements

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Thank you!