Aspectual particles in Hindi

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9th meeting of Formal Approaches to South Asian Languages
Reed College, Portland, Oregon
16 March 2019
Overview

- Aspectual particles $ab(hī)\ tak$, $ab(hī)\ bhī$, meaning differences
- Aspectual particles crosslinguistically
- Compositionality of $ab(hī)\ tak$, $ab(hī)\ bhī$
- Semantics of $tak$, $bhī$
- Other environments of $tak$, $bhī$
Hindi aspectual particles

- Hindi *ab(hī) tak*, *ab(hī) bhī* correspond roughly to the English aspectual particle *still*
- Differences in interpretation

(1) 
Rām *ab tak* khānā khā rahā hai
Ram now TAK food eat PROG 3sg
“Ram is still eating food.” (continuously since some earlier time)

(2) 
Rām *ab bhī* khānā khā rahā hai
Ram now BHĪ food eat PROG 3sg
“Ram is still eating food.” (he was eating food at some earlier prominent time; may be gaps in-between)
(hī)

- hī is an “emphatic” particle
- in combinations with ab, difference between ab “now” vs. abhī “right now”

(3) Rām abhī tak khānā khā rahā hai
Ram now TAK food eat PROG 3SG
“Ram is still eating food (up until even right now).”
(continuously since some earlier time)

(4) Rām abhī bhī khānā khā rahā hai
Ram now BHĪ food eat PROG 3SG
“Ram is still eating food (even right now).” (he was eating food at some earlier prominent time; may be gaps in-between)
Paradigms of aspectual particles

Löbner (1989): aspectual particles in many languages are structured forming a system similar to quantifiers, related by internal & external negation, seen in English, German, Hebrew:

<table>
<thead>
<tr>
<th>Outer Negation</th>
<th>Inner Negation</th>
<th>Duals</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>already/schon/kvar</em></td>
<td>←</td>
<td>↑</td>
</tr>
<tr>
<td><em>not anymore/nicht mehr kvar lo</em></td>
<td>←</td>
<td>↓</td>
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<tr>
<td><em>not yet/noch nicht/‘adayin lo</em></td>
<td>←</td>
<td>↑</td>
</tr>
<tr>
<td><em>still/noch/‘adayin</em></td>
<td>←</td>
<td>↓</td>
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Slade & Csirmaz (2018) point out that the larger crosslinguistic picture is rather more complicated, with significant ‘polysemy’ for some items (cp. Beck 2018 on German *noch*), even just for temporal uses.

- **Blue** indicates consistent with Löbner; **red** indicates patterns not predicated by Löbner.

<table>
<thead>
<tr>
<th>Language</th>
<th>‘before that’</th>
<th>‘then’</th>
<th>‘again’</th>
<th>‘still’</th>
<th>‘already’</th>
<th>‘(not) yet’</th>
<th>‘(not) anymore’</th>
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<tbody>
<tr>
<td>Hindi <em>ab tak</em></td>
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<td>Hindi <em>phir</em></td>
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<td>Nepali <em>ahile samma</em></td>
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<td>Nepali <em>pheri</em></td>
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<td>Jamaican patois <em>aredi</em></td>
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<td>Hebrew <em>kvar</em></td>
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<td>Hebrew ‘<em>adayin</em>’</td>
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<td>Hungarian <em>már</em></td>
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<td>Hungarian <em>még</em></td>
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<td>German <em>noch</em></td>
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Realisation of *already* in Hindi

- With future perfect, *ab tak* is roughly equivalent to “already”

\[ (5) \quad \text{Rām-ne } \textbf{ab} \quad \textbf{tak} \quad \text{khānā khā liyā} \quad \text{hoga} \]
\[ \text{Rām-}\text{erg } \textbf{now} \quad \textbf{TAK} \quad \text{food } \text{eat} \quad \text{take.past.masc.sg} \quad \text{be.fut.sg} \]

“Ram would/will/must have already eaten food.”

- In general the vector/light verb *cuk-* indicates completedness, and functions as a reasonable counterpart of *already* in translations:

\[ (6) \quad \text{Rām so } \quad \text{cukā} \quad \quad \text{hai} \]
\[ \text{Ram sleep} \quad \text{finish.past.masc.sg} \quad \text{be.3sg.pres} \]

“Ram is already asleep.”
Semantically-complex aspectual particles

- Further, certain aspectual particles are morphologically-complex, including Hindi *phir bhī*, Nepali *pheri pani*, Hungarian *mégis* (all with the function of English concessive *still*)
- And all involving an element used elsewhere as an aspectual (*phir, pheri, még*) combined with an additive particle (*bhī, pani, is*)

(7) Shyām guṇḍā hai, (magar) *phir bhī* merā dost hai. Shyam villain is, (but) *then/again too* my friend is “Shyam’s a villain, (but) *still* he’s my friend.” [Hindi]

(8) Mai.le timī.lāī Sītā ko ghar na.jāū bhaneko I.ERG you.DAT Sita poss house not.go.IMPV.2MGH say.PAST.PTCP thie, (tara) timī *pheri pani* gayau. be.PAST.1SG, (but) you *then/again too* go.PAST.2MGH “I told you not to go to Sita’s house, (but) you *still* went.” [Nepali]
Compositionality of Hindi *ab(hī) tak*, *ab(hī) bhī*

- Hindi *ab(hī) tak*, *ab(hī) bhī* also are morphologically-complex, suggesting an internal semantic derivation.
- Further, the scalar elements *tak*, *bhī* themselves display differences in distribution which can be connected to differences between *ab(hī) tak* vs. *ab(hī) bhī*.
**tak vs. bhī**

- The additive scalar particles *tak* and *bhī* (both roughly “even”) differ from one another in two ways (Schwenter & Vasishth 2000):
  1. *bhī* (but not *tak*) requires that another proposition be already salient and accessible in the context;
  2. *bhī* marks a point higher on the relevant scale, it does not mark an end-point, while *tak* does

(9) Buddhū Rām-*tak*-ne/#-ne-*bhī* exam pass kiyā
Fool Ram-*TAK*-ERG-ERG-*BHĪ* exam pass do.pst.msc.sg
“Even stupid Ram passed the exam.”

(10) Śyām-ne exam pass kiyā aur buddhū
Shyam-ERG exam passed do.pst.msc.sg and fool
Rām-ne-*bhī*/#-*tak*-ne exam pass kiyā lekin Sītā-ne
Ram-ERG-*BHĪ*/#/-*TAK*-ERG exam passed do.pst.msc.sg but Sita-ERG
(yadyāpi vah bahut buddhimān hai) exam pass nahī kiyā
(even though s/he very intelligent is) exam pass not do.pst.msc.sg
“Shyam passed the exam, and even stupid Ram passed the exam, but Sita (even though she’s very intelligent) did not pass the exam.”
Additional properties of *bhī* & *tak*

- Another difference between *bhī* and *tak* is that *bhī* but not *tak* can occur in concessive conditionals

(11) Agar bāriś-*bhī/#-tak* ho ham jāēge
    If rain-*BHĪ/#-TAK* become we go.fut.1pl
    “Even if it rains, we’ll go.” [Schwenter&Vasishth(2000)]

- Likewise *ab(hī) bhī* but not *ab(hī) tak* can function as a concessive aspectual (in the manner of concessive *still* in English)

(12) Rām ka pet bharā huā hai, lekin vah *ab bhī/#tak*
    Ram gen stomach full become is but he/she now *BHĪ/#TAK*
    khānā khā rahā hai
    food eat prog is
    “Ram is full but he is still eating food.”
We relate the availability of concessive interpretation to existential quantification (similarly to concessive elements in other languages, both Indo-Aryan and unrelated):

(13) pheri \textit{pani}
then/again too
concessive “still” [Nepali]

(14) még-\textit{is}
still-\textit{too}
concessive “still” [Hungarian]

it is predicted then that only \textit{bhī} will be felicitous in such instances.
Non-scalar instances of *bhī*

*Bhī* can also function as a plain additive (15) and as a sort of conjunctive coordinator (16)

(15) Rām aur Sītā ghar āye. Šyām bhī  
Ram and Sita home come.past.masc.pl. Shyam too  
āyā.  
come.past.3.masc.sg  
“Ram and Sita came home. Shyam also came (home).”

(16) a. Rām bhī Šyām bhī donō mar gaye.  
Ram too Shyam too both die go.past.masc.pl  
b. Rām bhī mar gayā. Šyām bhī mar  
Ram too die go.past.masc.sg. Shyam too die  
gayā.  
go.past.masc.sg.  
“Both Ram and Shyam died.”
Non-focus sensitive instances of *tak*

- *Tak* can also function as a plain endpoint marker:

(17) a. Rām Mumbaī se Pune paidal calkar
    Ram Bombay from Pune by-foot move.conv
    gayā
    go.PAST.MASC.SG
    “Ram walked from Bombay to Pune.”

  b. Rām Mumbaī se Pune *tak* paidal calkar
    Ram Bombay from Pune **until** by-foot move.conv
    gayā
    go.PAST.MASC.SG
    “Ram walked from Bombay **until/as far as** Pune.”
Connections between *tak*, *bhī* and *ab tak*, *ab bhī*

- Just as *tak* in (9) requires all salient individuals who are more likely than Ram to pass the exam to indeed pass (while *bhī* doesn’t require this), so *ab tak* requires the predicate to be true at all time intervals between the endpoint picked out by *tak* and the time indicated by *ab* ‘now’.

- *Bhī* requires the predicate to be true for at least one other salient entity on the scale, whether this is individuals ranked by intelligence or moments in time (for *ab bhī*)
Towards a formulation of *tak* and *bhī*

- Schwenter & Vasishth (2000) do not provide an explicit formalisation of *tak* or *bhī*
- Csirmaz & Slade (2018)’s analysis of Hungarian *még* ‘still’, Hindi *phir*, ‘then; again’ and other particles, assumes a base templatic meaning for aspectual particles, which can be adapted here.

\[
\lambda S \lambda x_S \lambda \mathcal{P} : \\
\exists x^*_S \left[ Q(x^*, \ldots) \in FA(\mathcal{P}(x, \ldots)) \land \\
\exists Q \left[ x^* \prec x \land \mathcal{P}(x, \ldots) \right]
\]
Formalisation of *bhī* and *tak*

(19) \[[bhī]\] =
\[\lambda S \lambda x S \lambda P : \exists x^* \exists Q \left[ x^* \prec x \land Q(x^*) \in FA(P(x)) \right] . P(x, \ldots)\]

(20) \[[tak]\] =
\[\lambda S \lambda x S \lambda P : \forall x^* \exists Q \left[ x^* \prec x \land Q(x^*) \in FA(P(x)) \right] . P(x, \ldots)\]

**Difference between *bhī* and *tak***

Both presuppose asserted event involves a high-ranked entity, but *bhī* presupposes the existence of a salient lower-ranked entity (while *tak* does not require a salient lower-ranked entity) while *tak* presupposes ALL other scalar entities are lower-ranked than the asserted entity and that the proposition is also true for all such entities on the relevant scale.
Formalising *ab(hī) tak* & *ab(hī) bhī*

- The meanings of *ab(hī) tak* & *ab(hī) bhī* thus predicted to follow the above formulation where the scale is fixed to time, and the asserted point of time is the present.

(21) \[ [ab bhī] = \lambda T\lambda t_T\lambda \mathcal{P} : \exists t^*_T \left[ t^*_T \prec t \land Q(x^*) \in FA(\mathcal{P}(x)) \right].\mathcal{P}(t, \ldots) \]

(22) \[ [ab tak] = \lambda T\lambda t_T\lambda \mathcal{P} : \forall t^*_T \exists Q \left[ t^*_T \prec t \land Q(t^*) \in FA(\mathcal{P}(t)) \right].\mathcal{P}(t, \ldots) \]
Paradigms for aspectual adverbs

- Löbner-type paradigm:

<table>
<thead>
<tr>
<th>Paradigm</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>STILL($t, \Phi$)</td>
<td>assert: $\Phi(t)$</td>
</tr>
<tr>
<td>NOTYET($t, \Phi$)</td>
<td>assert: $\neg \Phi(t)$</td>
</tr>
<tr>
<td>ALREADY($t, \Phi$):</td>
<td>assert: $\Phi(t)$</td>
</tr>
<tr>
<td>NOTANYMORE($t, \Phi$)</td>
<td>assert: $\neg \Phi(t)$</td>
</tr>
</tbody>
</table>

- problematic definition for *already* (presupposes earlier time at which $\Phi$ is not true; but “Kim doesn’t need to apply for citizenship; she already is a citizen because she was born here.”)

- New suggested paradigm:

<table>
<thead>
<tr>
<th>Paradigm</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t' &lt; t$</td>
<td>$\alpha$</td>
</tr>
<tr>
<td>$\alpha$</td>
<td>$\neg &gt; \alpha$</td>
</tr>
<tr>
<td>$\neg &gt; \alpha$</td>
<td>$\alpha &gt; \neg$</td>
</tr>
</tbody>
</table>

- different sort of symmetry where *already* is the inverse-ordering of *still*
- *not still* and *still not* often receive special forms (*anymore, yet*)
Paradigms for aspectual verbs

- Quantification in aspectual adverbs

(23) \([\text{bhī}] = \lambda S\lambda x_S\lambda \mathcal{P} : \exists x^*_S \exists Q \left[ x^* \prec x \& Q(x^*) \in \text{FA}(\mathcal{P}(x)) \right] \mathcal{P}(x, \ldots)\)

(24) \([\text{tak}] = \lambda S\lambda x_S\lambda \mathcal{P} : \forall x^*_S \exists Q \left[ x^* \prec x \& Q(x^*) \in \text{FA}(\mathcal{P}(x)) \right] \mathcal{P}(x, \ldots)\)
Other versions of *tak, bhī*

- **non-scalar *bhī***

  
  (25) ... Śyām bhī āyā.
  
  “... Shyam also came.”

  
  \[
  \begin{array}{c}
  [bhī] = \\
  \lambda x \lambda P : \exists x^* \exists Q \ [ Q(x^*) \in FA(P(x)) ] \cdot P(x, \ldots)
  \end{array}
  \]

- **non-focus-sensitive**

  
  (27) ... Mumbaiā se Dillī *tak* ...
  
  “... from Bombay until/as far as Delhi...”

  
  \[
  \begin{array}{c}
  [tak] = \\
  \lambda S \lambda x_S \lambda P : \forall x^* \ [ \ x^* \prec x \ ] \cdot P(x, \ldots)
  \end{array}
  \]
Decomposing paradigms

- But the pattern found for Hindi aspectual adverbs (and beyond) suggests universal (crosslinguistic) access to basic semantic components, which may combine in different fashion in different languages.

- **basic components**
  - *tak* (endpoint post-position)
  - *bhī* (plain additive/scalar additive particle)
  - *phir* (“then, after that; again”)

- **complex aspectual adverbs**
  - *ab(hī) tak* (“still” [“until (right) now”])
  - *ab(hī) bhī* (“still” [“even (right) now”])
  - *phir bhī* (concessive “still”)

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Conclusions

- *tak, bhī* as aspectual particles
- Part of an aspectual system (revision of Löbner’s paradigm)
- Differences between *tak* and *bhī*, distinct uses of adverbs
- Compositionality of *ab(hī) tak, ab(hī) bhī*, [cp. also *phir bhī*]
References