

Aspectual particles in Hindi

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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*

Aspectual Particles

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

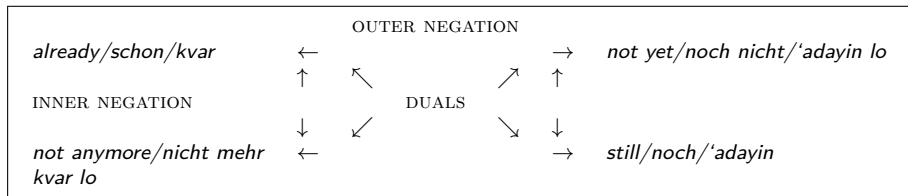
- *hī* is an “emphatic” particle
- in combinations with *ab*, difference between *ab* “now” vs. *abhī* “right now”

(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:



Aspectual Particles crosslinguistically

- 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

	'before that'	'then'	'again'	'still'	'already'	'(not) yet'	'(not) anymore'
Hindi <i>ab tak</i>				X	(X)	X	
Hindi <i>phir</i>		X	X				
Nepali <i>ahile samma</i>				X	(X)	X	
Nepali <i>pheri</i>		X	X				
Romanian <i>mai</i>			X	X	X		X
Italian <i>ancora</i>			X	X	X	X	
Jamaican patois <i>aredi</i>					X	X	
Spanish <i>ya</i>					X		X
Spanish <i>todavía</i>				X		X	
Hebrew <i>kvar</i>					X		X
Hebrew <i>'adayin</i>				X		X	
Hungarian <i>már</i>					X		X
Hungarian <i>még</i>	X			X		X	
German <i>noch</i>	X			X		X	

Realisation of *already* in Hindi

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

(5) Rām-ne **ab tak** khānā khā liyā hogā
Ram-ERG **now TAK** food eat take.PAST.MASC.SG 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) Rām so cukā hai
Ram sleep finish.PAST.MASC.SG 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.”

Bhī and concessive interpretations

- We relate the availability of concessive interpretation to existential quantification (similarly to concessive elements in other languages, both Indo-Aryan and unrelated):

(13) pheri **pani**
then/again too
concessive “still” [Nepali]

(14) még-**is**
still-**too**
concessive “still” [Hungarian]

- it is predicted then that only *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. Śyām **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** Śyām **bhī** donō mar gaye.
Ram **too** Shyam **too** both die go.PAST.MASC.PL
b. Rām **bhī** mar gayā. Śyām **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.

$$(18) \quad \lambda S \lambda x_S \lambda \mathcal{P} : \\ \begin{array}{l} \exists x_S^* \\ \exists Q \end{array} \left[\begin{array}{l} Q(x^*, \dots) \in FA(\mathcal{P}(x, \dots)) \ \& \\ x^* \prec x \ \& \end{array} \right] . \mathcal{P}(x, \dots)$$

Formalisation of *bhī* and *tak*

$$(19) \quad \llbracket bhī \rrbracket = \\ \lambda S \lambda x_S \lambda P : \begin{array}{l} \exists x_S^* \\ \exists Q \end{array} \left[\begin{array}{l} x^* \prec x \ \& \\ Q(x^*) \in FA(P(x)) \end{array} \right] .P(x, \dots)$$

$$(20) \quad \llbracket tak \rrbracket = \\ \lambda S \lambda x_S \lambda P : \begin{array}{l} \forall x_S^* \\ \exists Q \end{array} \left[\begin{array}{l} x^* \prec x \ \& \\ Q(x^*) \in FA(P(x)) \end{array} \right] .P(x, \dots)$$

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.

$$(21) \quad \llbracket ab \ bh\bar{i} \rrbracket = \lambda T \lambda t_T \lambda \mathcal{P} : \exists t_T^* \left[\begin{array}{l} t^* \prec t \ \& \\ Q(x^*) \in FA(\mathcal{P}(x)) \end{array} \right] . \mathcal{P}(t, \dots)$$

$$(22) \quad \llbracket ab \ tak \rrbracket = \lambda T \lambda t_T \lambda \mathcal{P} : \forall t_T^* \left[\begin{array}{l} t^* \prec t \ \& \\ Q(t^*) \in FA(\mathcal{P}(t)) \end{array} \right] . \mathcal{P}(t, \dots)$$

Paradigms for aspectual adverbs

- Löbner-type paradigm:

$STILL(t, \Phi)$ assert: $\Phi(t)$ presup: $\exists t' \prec t[\Phi(t')]$	$NOTYET(t, \Phi)$ assert: $\neg\Phi(t)$ presup: $\exists t' \prec t[\neg\Phi(t')]$	$ALREADY(t, \Phi)$: assert: $\Phi(t)$ presup: $\exists t' \prec t[\neg\Phi(t')]$	$NOTANYMORE(t, \Phi)$ assert: $\neg\Phi(t)$ presup: $\exists t' \prec t[\Phi(t')]$
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- problematic definition for *already* (presupposes earlier time at which Φ 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:

	α	$\neg > \alpha$	$\alpha > \neg$
$t' \prec t$	still assert: P is true at t presup: P is true at t'	not anymore (=not still) assert: P is not true at t presup: P is true at t'	not yet (=still not) assert: P is not true at t presup: P is not true at t'
$t \prec t'$	already assert: P is true at t presup: P is true at t'	not already assert: P is not true at t presup: P is true at t'	already not assert: P is not true at t presup: P is not true at t'

- 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

$$(23) \quad \llbracket bhī \rrbracket = \\ \lambda S \lambda x_S \lambda \mathcal{P} : \begin{array}{l} \exists x_S^* \\ \exists Q \end{array} \left[\begin{array}{l} x^* \prec x \ \& \\ Q(x^*) \in FA(\mathcal{P}(x)) \end{array} \right] . \mathcal{P}(x, \dots)$$

$$(24) \quad \llbracket tak \rrbracket = \\ \lambda S \lambda x_S \lambda \mathcal{P} : \begin{array}{l} \forall x_S^* \\ \exists Q \end{array} \left[\begin{array}{l} x^* \prec x \ \& \\ Q(x^*) \in FA(\mathcal{P}(x)) \end{array} \right] . \mathcal{P}(x, \dots)$$

Other versions of *tak*, *bhī*

- non-scalar *bhī*

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

(26) $\llbracket bhī \rrbracket =$
 $\lambda x \lambda \mathcal{P} : \exists x^* \left[\exists Q \left[Q(x^*) \in FA(\mathcal{P}(x)) \right] \right] . \mathcal{P}(x, \dots)$

- non-focus-sensitive

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

(28) $\llbracket tak \rrbracket =$
 $\lambda S \lambda x_S \lambda \mathcal{P} : \forall x_S^* \left[x_S^* \prec x \right] . \mathcal{P}(x, \dots)$

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”)

Conclusions

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- *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*]

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