

## The pieces of Indo-Aryan aspectual adverbs

**Introduction:** We examine a subset of aspectual adverbials in Hindi & Nepali. We provide an account of their meaning which captures the inter-relations signalled by their compositional morphology. Specifically we examine Hindi *phir* (ambiguously “then, after that” or “again”) and *phir bhī* (“still”, both temporal and concessive), as well as their Nepali counterparts *pheri* and *pheri pani*. Though in languages like English *still*, *then*, *again* have no obvious connections, in Hindi & Nepali they do, and thus ideally the morphological compositionality of these items can be related to a (at least partially) compositional semantics. Likewise, items like English *then* have a variety of interpretations which are not always available to their crosslinguistic counterparts. Such considerations drive this investigation of possible decompositions of aspectual adverbs into more basic pieces, taking a cue from earlier investigations such as those of Ippolito (2004, 2007).

- |     |  |                            |
|-----|--|----------------------------|
| (1) | John took a shower. Then he went to bed.                     | [ordering <i>then</i> ]    |
| (2) | John was sleeping at 10. He was still sleeping at midnight.  | [temporal <i>still</i> ]   |
| (3) | John was sleeping all day. He was still sleepy the next day. | [concessive <i>still</i> ] |

Hindi *bhī* and Nepali *pani* are additive/scalar particles often meaning something like “also, even”, e.g. Hindi *Rām bhī so gayā* “Ram slept too” or “Even Ram slept.” These particles are also used with indefinites to form NPIs, e.g. Hindi *koī bhī*, Nepali *kohi pani* “anyone” and free choice items in combination with relative pronouns, e.g. Hindi *jab bhī* “whenever”, Nepali *je bhae pani* “whatever happens”.

The basic idea is to provide an explanation of the relationships between these aspectual elements via an compositional account of their semantics. The account should capture the morphological relationship between *phir/pheri* “then, after that; again” and *phir bhī/pheri pani* “still”. The relation, which is not indicated in languages like English or German, seems surprising at first blush.

**Basic data:** Hindi *Rām phir yahā āyā* can mean either “Ram came here again” OR “Then Ram came here”; *Rām phir bhī yahā nahī āyā* is “Ram still isn’t here” (in the temporal sense of *still*); *Rām guṇḍā hai, phir bhī mera dost hai* is “Ram is a villain, (but) still he’s my friend” (with the concessive sense of *still*).

Unlike English *then*, Hindi *phir*/Nepali *pheri* can only denote “temporal ordering” *then*, i.e. “after that”, not the “anaphoric” *then*, i.e. “at that time” (as in *I dream of the age of kings; people were nobler then*). This sense of *then* would be expressed with the separate lexical items *tab* (Hindi); *uhile, tahile, taba* (Nepali).

**Defining *then*, *again*, *still*:** We begin with definitions for *then*, *again*, and *still* for English (adapting Ippolito 2007 on *again* and *still*; note that  $t$  is part of the runtime of the event):

- |     |   |  |
|-----|---|--|
| (4) | $\llbracket then_{\text{ordering}} \rrbracket^{c,g,w} = \lambda t_i . \lambda e_t . \lambda P_{\langle l, \langle i, t \rangle \rangle} : \exists t' < t [\exists e' [\exists R_{\langle l, \langle i, t \rangle \rangle} R(e', t')]] . P(e)(t) = 1$  |  |
| (5) | $\llbracket again \rrbracket^{c,g,w} = \lambda t_i . \lambda e_t . \lambda P_{\langle l, \langle i, t \rangle \rangle} : \exists t' < t [\exists e' [P(e', t')]] . P(e)(t) = 1$   |  |
| (6) | $\llbracket still_{\text{temporal}} \rrbracket^{c,g,w} = \lambda t_i . \lambda e_t . \lambda P_{\langle l, \langle i, t \rangle \rangle} : \exists e'' \exists \tau [P(e'')(\tau) \& \exists t' < t [P(e', t')]] \& e \subseteq e'' \& e' \subseteq e'' \& t \subseteq \tau \& t' \subseteq \tau . P(e)(t) = 1$ |  |

All three items take as arguments a time  $t$ , an eventuality  $e$ , and a predicate  $P$ , and assert that it is true that at time  $t$   $e$  is an eventuality of type  $P$ . *Then John snored*, *Again John snored*, *Still John snored* all assert that there is an event of John snoring which is true at time  $t$ . They differ in what they presuppose. All presuppose the existence of a temporally prior time  $t'$ . *Then* additionally presupposes the existence of an eventuality  $e'$  s.t. there is some predicate  $R$  s.t. it is true that there is an eventuality  $e'$  of type  $R$  at time  $t'$ . *Again* additionally presupposes the existence of an event  $e'$  s.t. it is true that there is an eventuality  $e'$  which occurs at time  $t'$  which is of type  $P$  (i.e. the same type of eventuality as the asserted eventuality). *Still* like *again* posits a separate prior eventuality of type  $P$  and additionally posits a “supereventuality”  $e''$  with a run-time of  $\tau$  s.t.  $e$  and  $e'$  are subevents of  $e''$ .

**Hindi & Nepali “then”, “again”, “still”:** We assume that the meanings of Hindi *phir*, Nepali *pheri* (“then”, “again”) match the English translations given in (4), (5). Either of these entries could be the starting point for *phir bhī/pheri pani*. For the scalar meaning of *bhī/pani* we assume the basic definition in (7).

$$(7) \quad [\text{ADD}_1 [\dots F_1 \dots]]: [\dots F \dots] (\exists F' \neq F[\dots F' \dots]) \text{ (Ippolito 2007, adapted from Krifka 1998)}$$

For sake of ease, only considering the temporal “still” for the moment, and thus taking *bhī, pani* to be functioning as additive particles [APs], the addition of an AP to “again” as per (4) adds a presupposition that there is an additional eventuality  $e''$  which is of also of type  $P$ . This fails to be fully compositional, since it still lacks the requirement that eventualities  $e, e'$  be sub-events of  $e''$ , and there is likely a role for language change here: roughly, the AP adds a presupposition of the additional type  $P$  eventuality  $e''$ , and in context  $e''$  should somehow relate to  $e, e'$ . That  $e''$  contains both  $e$  and  $e'$  is one such possible relation, and apparently the one which became conventionalised over time.

In fact, the same explanation can apply if we take (ordering) “then” as the base for *phir bhī/pheri pani*; the diachronic fixing of the relation of the additional presupposed event to that of containment will end up subsuming  $R$  as also being of type  $P$  (nothing in (4) precludes  $R$  from being identical to  $P$ ). Further, given the ambiguity in both Hindi & Nepali, we might even take (4) to be the underlying meaning of *phir/pheri*, with certain contexts imposing a felicity condition that  $R=P$  resulting in contextual “disambiguation” of “again” from “then”. This in fact is an ideal outcome, showing a relation between the two items that does not appear from English, German, &c.

For the concessive sense of “still”, we assume that the APs *bhī, pani* contribute their scalar reading:

$$(8) \quad [\text{SCAL}_1 [\dots F_1 \dots]]: [\dots F \dots] (\neg \exists F' \neq F[\dots F' \dots] <_{\text{likely}} [\dots F' \dots]) \text{ (Ibid.)}$$

Here assuming that the AP combines with an item with essentially the meaning of (4), this adds a presupposition that there exists not only an eventuality  $e''$  which (through diachronic change) has the containment relation to  $e$  and  $e'$ , but also triggers the generation of a set of alternatives, each of which an alternative to eventuality  $e''$ . Each of these alternative “supereventualities” contain both the asserted eventuality  $e$  and an alternative to the presupposed eventuality  $e'$ . And, these alternative eventualities are ranked on a scale of likelihood s.t.  $e''$  is less likely than any of the alternatives to  $e''$ .

$$(9) \quad \llbracket \text{still}_{\text{concessive}} \rrbracket^{c,g,w} = \\ \lambda t_i . \lambda e_1 . \lambda P_{\langle i, t \rangle} : \exists e'' \exists \tau [P(e'')(\tau) \& \exists t' \prec t [P(e', t') \& e \subseteq e'' \& e' \subseteq e'' \& t \subseteq \tau \& t' \subseteq \tau \& \max_{\leq, w_c} \{w : w \in p \& w \in q\} <_{\text{likely}} \max_{\leq, w_c} \{w' : w' \in \neg p \& w' \in q\}]. P(e)(t) = 1^1$$

**Remaining issues:** In addition to ambiguous *phir*, Hindi also has the bimorphemic form *phir se* which is unambiguously “again”. There is no immediately obvious explanation for why adding the instrumental/ablative postposition *se* to *phir* should pick out the “again” sense. We can only gesture generally towards a potential answer. Though present-day Hindi *se* lacks a comitative function, but this appears represents a later development, as *se* derives from Skt. *sahita* “accompanying”/*sahitam* “together with” (Turner #13310), and so the ablative and instrumental senses both seem to be later developments, with a loss, at some point, of the comitative sense. In that comitatives would seem to have some sort of additive function, it is possible that this is what resulted in the disambiguation in some fashion or other.

Also of interest is Sanskrit *punar*<sup>2</sup> for similar reasons as Hindi *phir* and Nepali *pheri*:— its inherent ambiguity. *Punar* can mean “back”, “again”, “still” and so might well be analysed as even more underspecified than Hindi *phir*/Nepali *pheri*, with contextual constraints aiding in precise interpretation.

**References:** BECK, S. (2005) There and back again: a semantic analysis, *JoS* 22:3–51; KRIFKA, M. (1998) Additive particles under stress, *SALT VIII*, 92–110; IPPOLITO, M. (2004) An analysis of “still”, *SALT XIV*; IPPOLITO, M. (2007) On the meaning of some focus-sensitive particles, *NLS* 15.1:1–34; MCGREGOR, R.S. (1995) *Outline of Hindi Grammar*, OUP; VON STECHOW, A. The different readings of *wieder* “again”...*JoS* 13:87–138; TURNER, R.L. (1931) *Comparative & etymological dictionary of Nepali...*, London: Paul, Trench, Trubner; TURNER, R.L. (1962–1985) *Comparative dictionary of Indo-Aryan...* OUP;

<sup>1</sup>Adapted in part from Ippolito 2007:26, def. of *max* ultimately based on von Fintel 2001.

<sup>2</sup>From which, incidentally, Nepali *pani* derives. Hindi *bhī*, on the other hand, represents earlier Sanskrit *api* “also”.