

6/17/02 Perfective aspect as underspecified past tense

Alice Davison
University of Iowa

1. Introduction. Hindi/Urdu has an extensive and productive set of tense and aspect markers, which are expressed either as affixes on the main verb, or on a tense copula, a form of *hoo-naa* 'to be, become'. It lacks a simple past, however, and instead the perfective aspect suffix on the verbal complex has a simple past or aorist interpretation. (It also lacks a simple present for states or habitual meanings, and instead the imperfective aspect is used with this interpretation. I will focus in this paper only on the use of perfective for simple past). There is a contrast in interpretation between a perfective verb used alone (1a) and a perfective verb combined with a tense copula (1b):

1)a. mujhee pataa hai [ki tum-nee coorii nahiiN **kii**] [Perfect alone]
 I-dat information is that you-erg theft not do-pf-fs

'I know that you didn't steal anything (simple fact, end of discussion).'

b. mujhee pataa hai [ki tum-nee coorii nahiiN kii **hai**] [Present perfect]
 I-dat information is that you-erg theft not do-pf-fs be-pres-3s

'I know that you didn't steal anything, (but there is still a problem).'

The perfect alone is used in reporting a simple fact, which is not related to anything else at the present moment. The present perfect connects the sentence to the matrix sentence speech and reference times.

The issue to be discussed in this paper is how an aspect form which defines an event as bounded rather than in process can have a simple past or 'aorist' interpretation. I will suggest several solutions, including lexical ambiguity and lexical reanalysis, and propose that the use of the perfective alone is a case of lexical underspecification, and so the simple past interpretation is derived by a combination of lexical and contextual information. I will use examples from Montaut 2001 and a narrative in Hindi/Urdu to demonstrate what kind of contextual information can be used.

2. Tense and aspect

The analysis of tense and aspect follows the initial insight of Reichenbach 1947 that tense/aspect combinations involve reference to three times, the time E of the event, the speech time S of the utterance, and a reference time R, often specified by time adverbials. Both aspect and tense have been treated as temporal relations (cf. Kamp and Reyle 1993, Smith 1993/7, Giorgi and Pianesi (1997:26-30, 37-45) and Swart 1998). It is a relation between the event time in the verb's argument structure E and a reference time R. Temporal relations are either precedent (2a) or

overap (2b):

- 2) a. *precedence* (S__R, R__E)
 b. *overlap* (S,R), (R,E).

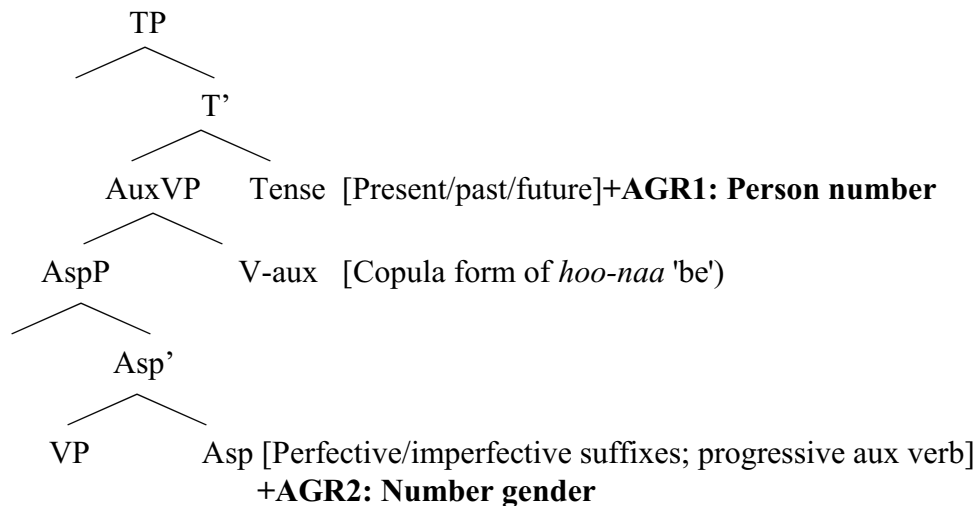
Tense and aspect combinations are composed of two temporal relations among the 3 times. A selection of combinations is shown in (3). The most important combinations for the purposes of this paper are (3a) and (3b):

	ASPECT		TENSE	
3) a. past	(E,R)	combined with	(R__S)	= E,R__S
b. present perfect	(E__R)		(S,R)	= E__S,R
c. future	(R,E)		(S__R)	= S__R,E
d. simple present	(R,E)		(S,R)	= S,R, E
e. past perfect	(E__R)		(R__S)	= E__R__S

(Giorgi and Pianesi 1997:29, 43)

The difference between the past and future lies in the ordering of the speech time S and the reference time R. Perfective aspect shows the event as bounded, in relation to some reference time.

The syntactic instantiation of tense and aspect will be as follows. TENSE head a functional projection and hosts person-number features, while aspect heads another functional projection with number-gender features (Giorgi and Pianesi 1997)



TENSE requires some V projection, with may be a copula auxiliary or an aspectual verb which intervenes between TENSE and ASPECT..

3. Tense and aspect in Hindi/Urdu

Aspect forms express a pragmatic relation, the speaker's decision to view an event as bounded or

in progress, what Smith 1991/97 calls Viewpoint. The morphological expression of aspect in Hindi/Urdu is by suffixes:

- 4) a. -(y)aa 'perfective' or E__R (the final boundary of the event precedes some time R)
- b. -taa 'imperfective'; the event is not bounded.
- c. -kar 'perfective', used on non-finite subordinate clauses, the 'conjunctive participle'

In addition there are aspectual uses of verbs, such as (5)

- 5) V + rahaa 'progressive'

With the exception of the invariant (4c), these forms all have adjectival inflection of number-gender agreement.

Tense forms are distinguished by whether they are finite (with person-number agreement) or not.

6) Finite inflection:

- a. Contingent : -ee (inflected for person and number)
- b. Future: -ee-gaa (the first part is inflected for Person-number the second for number-gender)
- c. Present Forms of *hoo-naa* 'be, become', inflected for Person-number.
- d. Past thaa (past of *hoo-naa* inflected for number and gender); hu-aa is the perfective form of this verb

7) Non-finite tense inflection:

- a. -naa infinitive -optional gender-number inflection.

The overall generalization is that finite tense inflection expresses person-number inflection (with the exception of the simple past, which is adjectival). The agreement features can be taken as an indication of the presence of finite tense, following the insight in Giorgi and Pianesi (1997) that the Person-number set of agreement features indicates Tense, while the Number-Gender set of agreement features indicates aspect. The puzzling feature of the simple past for both main verbs and the copula is that it is *not* associated with the Tense set of agreement features.

4. The contrast of simple past and the perfect tenses

MacGregor (1995) compares the simple with the 3 perfect tenses:

- 8) a. maiN kal aa-yaa (perfect alone) 'Neutral' past
 I yesterday come-pf.ms

'I came yesterday'. (McGregor 1995:27)

- b. maiN kal aa-yaa huuN (Present perfect)
 I yesterday come-pf.ms be-pres.1s

'I came yesterday; I have come yesterday'. (McGregor 1995:27)

- c. maiN kal aa-yaa thaa (Past perfect)
I yesterday come-pf.ms be-pastms

'I came yesterday'; I had come yesterday'. (McGregor 1995:27)

- d. abhii aa-ee hooNgee (future perfect)
now-impf come-pf be-fut.3plmpl

'He will have come just now; he must have just come ' 1995: 29

Perfective aspect indicates completion or termination of an event before a reference time. McGregor observes that wherever there is an expressed tense, the tense established a temporal location for the reference point. The sentence in (34c) indicates completion relative to a time in the past, and the present or future tenses in (34b,d) make a similar contribution of an ordering of the reference time (R) and speech time (S). The perfective alone (34a) is 'neutral with respect to context and time of action'. (McGregor 1995:27). The perfective alone (34a) is 'neutral with respect to context and time of action'. (McGregor 1995:27). The 'neutral perfective' is very close in meaning to the 'neutral' past/aorist tense in that the event is not obligatorily related to the speech time. The time adverbials *kal* 'yesterday', *abhii* 'just now' independently express the reference time.

5. The *perfective-for-past* problem

Using perfective aspect for past tense is far from uncommon in languages of the world. Hindi/Urdu has present and future tense, so the problem of the *perfective-for-past* is somewhat different from languages like Chinese which have only aspect markers (Smith 1997:Chapter 11). It is somewhat more like Yoruba, which has future tense and progressive and perfective aspect for past; present tense/imperfective aspect is unmarked. (Bode 2000). But these 3 tense meanings are derived by a pattern of opposition between two morphological forms.

Hindi/Urdu on the other hand has a rich system of tense and aspect, allowing many combinations of the verbal affixes in (4)-(7). It also has combinations of aspectual verbs and affixes, some examples of which will figure in discussion below. It appears that the system is only partially 'defective', lacking only an explicit past tense.

Before exploring some explanations, I will compare the representations for the past tense, perfective alone, and the present perfect:

- 8) a. Past tense E, **R** _____ R
b. Perfective aspect E _____ **R**
c. Present perfect E _____ **R,S**

The problem is how to explain the interpretation of (8b), perfective aspect, as past tense (8a), and distinct from the present perfect (8c). The perfective aspect alone resembles the present perfect

more closely than it resembles the past, specifically in the location of the reference time R. Yet this relationship goes counter to a natural account of the shift from perfective aspect alone to past.

Before going to this discussion, I want to underline the terminology to be used in this paper. I will use the term **perfective** for a viewpoint aspect which, as in Smith 1993, includes both the initial and final boundaries of an event, characterizing the event as a whole, though the final boundary is not necessarily the inherent end point of a telic event. Other grammatical means exist to convey the completion of a telic event, such as the combination of a main verb with a co-verb (Hook 1974, Singh 1998, Butt and Ramchand 2001).

The term **perfect** will be used to refer to a combination of perfective aspect and a finite tense, for example as in (7). In many languages, the perfect and imperfect are expressed as single inflected forms, combining both past tense and aspectual meaning (Comrie 1976, Giorgi and Pianesi 1997), but in Hindi/Urdu, these forms consist very clearly of a non-finite aspect form and a finite tensed verb.

6. Reanalysis or lexical ambiguity

In this section, I consider two possible solutions which I will argue are not satisfactory accounts of the use of perfective aspect for past tense. In the first solution, the perfective aspect is reanalyzed as a finite tense form. This could be done in two ways. The first, espoused by me in earlier papers, is simply to add a null tense in TENSE to a sentence in which ASPECT is filled with Perfective aspect. This reanalysis changes (9a) to (9c) by way of the change in (9b):

- 9) a. Perfective E ___ R
b. Reanalysis E ___ R plus R,S =
c. Result E ___ R,S

The result is incorrect, in that it is identical to the present perfect, which we have seen in (1) and (7) is distinct in meaning from the simple past.

The second reanalysis simply reorganizes the position of the R reference time, while adding S:

- 10) a. Perfective E ___ R
b. Reanalysis E, **R** ___ S =past

This method requires adding a S speech time, and also shifting the R reference time to overlap with the E event time. It is an arbitrary change, not motivated by any independent principle. This solution would work as a stipulated solution.

Possibly such a change actually occurs in Indic languages in the languages like Marathi, Bangla and Kurmali which have created past tense forms by addition Person-Number Agr features to old perfective participles. For example:

11) [Kurmali]-Finite clauses

- . tor^j betaa-taa-yⁱ sinemaa-0 dekh -l -oⁱ --u^j [Past, E,R __S]
your son-def-erg film-acc see-past-3s-2s
2s 3s
'Your son saw the film'. (Mahto 1989:49)

12) [Kurmali] Non-finite participles combined with tense auxiliary.

- a. perfect: V- le (transitive) V-(a)l (intransitive) (Mahto 1989:50/59)
- b. paDh-le ra-h-lii 'had read' [Past perfect E__R__S]
read-pf past-be-3sf

The -l form is perfective aspect marker (Masica 1991), to which person-number agreement forms have been added (11). This form has become distinct from the past marker. The perfective verb participle which combines with the 'be' auxiliary to form the perfect has the forms in (12a,b) Note that both the past in (11) and the tense copula in (12b) have person-number agreement. The participle form has no agreement marker, indicating that this form is not a finite tense form.

But in Hindi, the verbal form which has a simple past reading has only number gender agreement, which if we take Giorgi and Pianesi 1997 seriously, is an overt signal that it is still an aspect form.

13) [Hindi/Urdu]

vee samay-par aa-ee [Neutral past; no reference time]
3pl time-on come-pf-impl

'They came on time'.

If the reanalysis solutions for Hindi/Urdu have to be rejected, then we might try lexical ambiguity. On this view, the morphological marker *-yaa* is ambiguous between being a non-finite aspect form and a finite tense form:

14) Lexical ambiguity solution

- a. E__R (Non-finite aspect)
b. E,R __S (Past tense)

This solution does capture a fact about Hindi/Urdu, which that the perfective alone as an aspect form is non-finite, while the perfective with past interpretation patterns with other finite forms, *except* in the appearance of finite agreement.

In Hindi/Urdu, there are major differences between finite and non-finite clauses. Finite clauses are

islands for long-distance reflexive binding, wide scope wh interpretation and long-distance agreement. The subordination prefix *ki* occurs only with finite clauses (15) Only finite clauses can have ergative subjects, and only finite clauses allow preposing or postposing of arguments (16):

15) Narrow scope wh- interpretation, ki clause introducer :

bhagwaan jaan-ee [ki saggaR gaaRii -kaa kyaa hu-aa]
 lord know-contingent that transport cart-gen what be-pf

'The lord (only) would know [*what* happened to his transport cart (T.Q 2.24)

16) Subject postposing, ergative subject

[PRO haNs-kar] baat uRaa dii **sabhii-nee**
 laugh-prt matter(f) fly-cause give-pf-fs all-emph-erg

'Everybody laughed off this event (T.Q. 9.23)

The finiteness condition is met by both the perfect tenses and the perfective-as-past, but not by the perfective used as a non-finite aspectual participle (17-18).

17) Non-finite perfective participle:

a. aap-nee kabhii [**kisii-koo/*-nee khub pi-yee**] deekh-aa hai?
 you-erg sometime some-dat *erg well drink-pf see -pf is

'Have you ever seen [someone having drunk too much]? (Porizka 1963: 389)

b. aap-nee kabhii deekh-aa hai [**ki kisii-nee/*-koo khub pi-yaa (hai)**]?
 you-erg sometime see-pf is that some-erg/*dat well drink-pf is

Have you ever seen [that someone had drunk too much]?

18) a. [e(i)/***us-nee kisii-see kuch kah-ee**] binaa woo(i) cal-aa ga-yaa
 3s-erg some-with something say-pf without 3s go-pf go-pf

'Without PRO saying anything to anyone, he went off (Porizka 1963:362)

b. binaa is-kee [**ki (us-nee) kisii-koo kuch kah-aa**] woo cal-aa ga-yaa
 without this-gen that 3s-erg some-dat something say-pf 3s go-pf go-pf

He said nothing to anyone, but went off

There are very clear syntactic conditions which are met by both the perfective alone and tensed

forms with person-number agreement in finite clauses, but not by the perfective in constructions selecting non-finite complements. The ambiguity solution describes the two uses of the perfective, but shows no relation between the perfective and past. So how does a speaker of Hindi/Urdu know which interpretation is the right one? In English, the perfect can be interpreted as past time : in non-finite contexts and in doubly tensed sentences, where the finite past tense morpheme is prohibited.(Comrie 1976:55) The properties of the surrounding syntactic or pragmatic context should be important in separating the two uses. Furthermore, how does a speaker know when it is possible to use the perfective as past? What properties of the context license the past-tense interpretation? How is the aspectual content of the perfective composed with other information to derive either the past tense interpretation or something close to it? When is the perfective alone required, and the present perfective disallowed?

7. Underspecification

Suppose that the perfective verb form used in finite sentences has the interpretation (19), so that it has only the temporal content that the final boundary of the event precedes some reference time:

19) E__R

Let us suppose that the context supplies some temporal anchoring which adds to (19) and yields an interpretation which is close to a tense interpretation, and may be the same as a tense interpretation in a connected narrative, in which all S speech times except the first in the sequence are coindexed and not deictic (Smith to appear)

There is another fact which bears on the interpretation of (19) in Hindi/Urdu, and in some sense supports the interpretation of the perfective aspect as past tense, that is bounded and not necessarily completed (De Praetere xxx). A completed or telic interpretation is required only if the main verb is combined with a co-verb (Hook 1974, Nespital 1997, Singh 1999, Butt and Geuder 2000. Verbs like *khooj-naa* 'search, search for, search out, find, discover' are not specified for telicity, which is added by a co-verb. (It can also be assumed as the default interpretation if not ruled out by some other factor). In (20) the use of the (telic) co-verb *lee-naa* 'take' rules out a non-telic meaning:

20) a. us-nee [khoo-ee hu-ee baccee-koo] doo ghaNtee-meeN/*tak **khooj li-yaa**
 3s-erg lose-pf be-pf child-dat two hours-in up to search take-pf

'He/she found the lost child in two hours/*for two hours.'

b. us-nee [khoo-ee hu-ee baccee-koo] doo ghaNtee-tak **khooj-aa /*khooj li-yaa**
 3s-erg lose-pf be-pf child-dat two hours-uo to search-pf search take-pf

'He/she searched for the lost child for two hours (but then gave up).'

In effect the use of co-verbs in Hindi specifies that the natural end-point is reached for a main

verb which is not fully specified for telicity. In the absence of the specification of a natural end point, the perfective viewpoint specifies some arbitrary final boundary (though there is a default interpretation that the final bound is the natural endpoint unless otherwise specified!).

These facts support a the underspecification analysis of the perfective morphology. If its interpretation were fixed, it would have an aspectual interpretation necessarily including a final boundary preceding some time, and it would occur only in non-finite contexts. But it does occur as the only verbal suffix in finite contexts such as *ki* clauses. Further, telic interpretation is obligatorily added by a co-verb, specifying a natural endpoint by its presence. If the final point is specified by the V-V combination independently of the perfective suffix, then the perfective suffix in some sense is less specified inherently and is open to the addition of contextual information. This is what I argue is the case in Hindi/Urdu, in contrast with Kurmali and other languages, in which the perfective is reanalyzed and specified as a past tense when finite person-number agreement is added. The non-finite perfective participle takes on a different form.

If this is the right solution, we need to specify exactly what information gets added to (19)

19) E__R

The event time variable E contributed by VP is specified as preceding another time variable R, which itself is unanchored. In a fully specified tense -aspect combination, the reference time R would precede, follow or overlap with speech time S. But we don't simply want to add S, because we would get the present or other perfect meaning:

21) E__R,S

The R time variable is open to unselective binding by some superordinate time which is anchored in discourse. Existential individual variables are unselectively bound by contextually available existential quantifier (Diesing 1990), not necessarily in the same position, and without scope ambiguities. Here I want to propose that R is coindexed with some anchored time in the context, and in different cases, the anchoring time is different.

Let us survey the contexts where the tense copula is not unnecessary for a time interpretation or even perhaps rather odd in the intended interpretation. The first case involves an exclamatory speech act, as opposed to a statement. The anchoring time is the S speech time of a performative act, the 'mirative' exclamation discussed by Montaut 2001. The speech time is identical to the reference time (22a).

22) a. aree! kitnaa baRaa hoo ga-yaa!
Oh! how-much big be go-pf

'How tall is he is/ How much he has grown!'² (Montaut 2001)

b. woo kaafii baRaa hoo ga-yaa **hai**.
3s rather big be go-pf is

'He has grown rather tall (Ibid)

- c. **un das saalooN -kee dauran** woo kaafii baRaa hoo ga-yaa
those ten years-gen during 3s rather big be go-pf

In those ten years he grew rather tall. (Ibid)

- 23) a. aree! tumhaaree baal pak ga-ee/ ***ga-yee haiN!** (Exclamation, mirative)
Oh! your hair be-cooked go-pf go-pf are

'Oh, your hair has become all white! (Montaut 2001)

- b. haaN, meeree baal pak **ga-yee haiN**, par fizuul nahiiN (Statement, assertion)
yes my hair be-cooked go-pf are but useless not

Yes my hair has become white, but not in vain.

In an ordinary statement (22b) the overt present tense is possible, though not required. The tense copula adds reference to present time, giving the 'completed event with present relevance' meaning of the present perfect (23b)..

If a time adverbial is available to anchor time variables, then the perfective as past interpretation is possible (22c). The end of the ten years corresponds to the endpoint of the change.

Other temporal anchoring is provided within the sentence in the form of subordinate clauses, especially the relative clauses with the mean of 'as soon as' or 'until' .

- 24) *jyooN hii* us-nee ghar-see paaNw **nikaal-aa**, phisal-kar gir **paR-ii**
so only 3s-erg house-from foot bring-out-pf slip-prt fall fall-pf

'As soon as she set foot outside the house, she slipped and fell.' (Barz and Yadav 1993:219)

- 25) *jab-tak* ravi na **aa-ee**, *tab-tak* maiN wahaaN **rah-aa**
when-to Ravi not come-pf then-to I there stay-pf

I stayed there until Ravi came (McGregor 1995: 93)

Another kind of unselective binding is common in narrative contexts. Often a sentence with overt tense (20a) is followed by a sequence of events expressed with the perfective alone (20b,c,d):

- 26) a. bahut kar li-yaa **hai**; gaaNw-meeN kuch kaam ki-yaa **hai?** (Present perfect)
much do take-pf is village-in some work do-pf is

'You have done a lot; is there anything you have neglected in the village?(Montaut 2001)

- b. bhaN**DaariyooN-koo** raavatoon-see bhiiRvaa **di-yaa** (perfective/aorist)
bhandars -dat Ravats-with clash-case give-pf

You caused the Bhandars to clash with the Ravats.(Ibid)

c. khandhuriyooN aur jyooshiyooN-meeN pushtainii-dushmanii karvaa **dii**
Khandhurs and Joshis-in hereditary-enmity do-case give-pf

You started off quarrels between the Khandus and the Joshis (Ibid)

d. aur kuch na **ban-aa**, too "kha-ba" -kaa cakkar calaa **di-yaa**
and some not be-made then -gen round go-cause give-pf

And when that didn't work, you set off a round of inner rivalries (Ibid)

The present tense of the first sentence (20a) defines overlapping R and S times. The bare perfectives in the following sentences introduce a time (R) which is bound by the R,S of the preceding tensed sentence. This coindexing is typical for narratives, in which even tensed sentences in a connected narrative do not have a separate and independent S time (Smith to appear)

To sum up, the bare perfective gets an aorist past tense interpretation by binding/coindexing. This binding is unselective in that the antecedent can be a speech act, a time adverbial or a tense in the preceding context.

27)a. Mirative speech act (in which the S, R and E are identical) = R
(Normal statements have a S time which overlaps with or is contained in R)
E__R=Speech act

b. An adverbial introduces a R overlapping with E, leaving the perfective R to be bound by S
[Adv]R, E__R=S

c. In narratives a single tense anchors the sequence and binds R
[R1 __S] E__R2 >R1 E__R3 >R2 etc (Cf Smith to appear)

Conclusion

I have argued that the Hindi/Urdu perfective has two uses--it expresses perfective aspect in non-finite contexts, but it also has an 'aorist' interpretation comparable to a past tense. The affix licenses different syntax and morphology depending on which interpretation it has, so either the form is completely reanalyzed or it remains a perfective aspect which combines with contextual information to yield an interpretation similar to the past. The reanalysis explanation either gives the wrong interpretation by just adding S, or it fails to explain why there is not a divergence of surface form, as in Indic languages in which perfective aspect has become a tense with the additional of number-gender features, distinct from the non-finite participle. The perfective combines unselectively with various anchoring times, such as the R reference time added by adverbials or the mirative speech act, or the time which defines a sequence of events in narratives

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1. The default interpretation is defeasible for the main verb+perf alone. But the V-V co-verb combination is necessarily telic. Singh 1999 shows that telic interpretation of the V -perf combination is defeasible. But the V+perf is not necessarily a-telic.

Singh 1999 shows that the co-verb requires a telic interpretation

2. Note that the English translation is very odd without the present perfect. The telic interpretation conveyed in Hindi by the combination *hoo gay-aa* 'be+go-perf' has to be translated by the English perfect. I take this to be evidence that the finite tenses in English are fully specified and not open to contextual specification.

i) # How tall he grew!