The Development of Perfective Auxiliaries in Indo-Aryan

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1 Outline

- Sanskrit had a primarily inflectional tense/aspect system.
- One well-known exception is the perfective auxiliary construction, formed with *kṛ* 'do', *bhū* 'be' and *as* 'be'.
- Modern Indo-Aryan languages generally exhibit mixed tense/aspect systems.
- **Likely Hypothesis:** the Sanskrit perfective auxiliary construction paved the way for the development of a mixed inflectional tense/aspect system.
- **Problem:** The modern periphrastic constructions appear to be descended from several different participials, not the perfective auxiliary constructions.
- **Alternative Proposal:**
  - The Sanskrit "perfective auxiliary" construction was actually subdivided into two different types of syntactic creatures: a control, and a N-V complex predicate.
  - The ancestors of the modern periphrastic tense/aspects were participles with either *bhū* 'be', *as* 'be' or *sthā* 'stand'.

2 Sanskrit

2.1 Inflected Tenses

- The past tenses of Sanskrit are the imperfect, perfect and aorist.
- All of these tenses are inflectional.
- The following examples and descriptions are taken from Kiparsky (1998); the examples are from the Rigveda.

  - The aorist serves as a general past tense.

(1) prá maṇḍū́kā avādiṣuḥ
Pref frog-Pl.Nom Aug-speak-Aor-3Pl
'The frogs have spoken.' [in chorus] (7.103.1)

  - The imperfect and the perfect are used for a remote or historical past.
  - The perfect is furthermore restricted to events not witnessed by the speaker.
  - It is generally formed via reduplication of the stem.

(2) tuvám̐ jigetha ná dhánā ruroditha
you.Nom win-Perf-2Sg not prize-Pl.Acc retain-Perf-2Sg
'You have [always] won and not kept the booty.' (1.102.10)

2.2 Perfective Auxiliaries

- In addition to the inflectional past tenses, Sanskrit made use of a periphrastic construction.
- The oldest (Vedic) construction involved *kṛ* 'do'.
- Classical Sanskrit used *as* 'be' (and very rarely *bhū* 'be').
- The traditional grammars propose that this construction was formed with those roots which could not form a perfect via reduplication.
- This included
  - Primary roots with long vowels

(3) ās-ām cakre
sit.Pres.Stem.Acc do.Perf.Mid.1/3.Sg
'I sat' ($\sqrt{\textit{ās}}$ 'sit')

  - Derivatives: causatives, denominatives

(4) toṣ-ay-ām āsa
be satisfied.Pres.Stem-Caus-Acc be.Perf.Act.1/3.Sg
'I satisfied (somebody)' ($\sqrt{\textit{tuṣ}}$ 'be satisfied')

(5) sa saṃ-ni-mantr-ay-ām-āsa
Dem.Nom.3.Sg.M with-down-speech-Denom.Pres.Stem-Acc-be.Perf.Act.1/3.Sg
mahīpālān-viśāṃ
prince.Acc.Pl-nation.Gen.Pl
'He invited the princes of the nations.' ($\sqrt{\textit{mantr}}$-ay(Denom.) 'think')
(Nalopākhyāna II,8)

— Verbs of the 10th class
(a verb class whose present stem is derived with *i*, Dhātu-Pāṭha (Pāṇini))

(6) nṛpatir-bhīmo ... cintay-ām-āsa
king.Nom.Sg.M-Bhima think.Pres.Stem-Acc-be.Perf.Act.1/3.Sg
tat-kāryaṃ
Dem.Acc.Sg-do.Part.Nec.Acc.Sg

'The king Bhima thought about what to do.'
$\sqrt{cint}$ 'think' (10th Class) $\longrightarrow$ cintay- (Pres.Stem)
(Nalopākhyāna II,6)

- Note that the syntax is unusual.
- The old grammarians were not quite sure what to do with these constructions and were therefore uncharacteristically reticent.

3 Modern Perfective Auxiliaries

3.1 Possible Path of Grammaticalization

- A reasonable hypothesis would be that Sanskrit perfective auxiliaries paved the way for the modern Indo-Aryan periphrastic tense/aspect constructions.
- Indeed, the older grammars (Speijer 1886, Whitney 1879) propose that the constructions with 'be' are modeled on the earlier *kṛ* 'do' construction.
- The next logical step would be further grammaticalization that leads to the modern system of periphrastic auxiliaries not only in the perfective, but also in other tenses/aspects.

3.2 Examples from Modern Indo-Aryan Languages

The modern Indo-Aryan languages indeed use descendents of both *as* 'be' and *bhū* 'be'.

Bengali and Urdu/Hindi provide good examples because they can be taken to represent the Western and Eastern branches of Indo-Aryan.

3.2.1 Auxiliaries in Urdu/Hindi

- Urdu/Hindi uses *rah* 'remain' and descendents of Sanskrit *sthā* 'stand' and *bhū* 'be'.

- These auxiliaries interact with the tense/aspect system as shown in (7).

(7)

Pres	Past	Fut	Impf	Perf	Prog
			Pres/Past	Pres/Past	Pres/Past
	mara	marega	marta(+be)	mara (+be)	mar **raha** (+be)

mar- 'hit' -3.Sg.

(8)

Urdu 'be' Auxiliaries			
Form	**Meaning**	**Inflection**	**Defective Cells**
ho-na:	to be	Pres/Fut/Impf/Perf	Past
t^h-a/i/e/ĩ	be (Orig. stand)	Past	All Others

- The *be* auxiliaries are commonly thought of as belonging to the same paradigm.
- In this paradigm, t^h- functions as the past form.
- However, this is really a case of two paradigms in complementary distribution. The auxiliaries derive from two different verbs and as a consequence inflect differently:

1. *ho* inflects according to person and number because it comes from the verb *bhū* 'be'.
2. t^h inflects according to gender and number because it comes from an adjectival past participle of the Sanskrit verb *sthā* 'stand'.

3.2.2 Bengali Auxiliaries

In Bengali, a descendent of the Sanskrit verb *as* 'be' (Bengali ɑ$tʃ^h$) was pressed into service for the perfect and the progressive.

(9)

	Pres	Past	Fut	Impf	Perf	Prog
				Pres/Past	Pres/Past	Pres/Past
Bengali	mɑre	mɑrlo	mɑrbe	mɑrto	meret$ʃ^h$e/	mɑrt$ʃ^h$e/
				(Past only)	meret$ʃ^h$ilo	mɑrt$ʃ^h$ilo

mɑr (Bengali) 'hit' – 3.Sg.

- The perfect and the progressive differ in that an emphatic clitic (*o*) can be introduced between the stem and the -$tʃ^h$ in the perfect, but not in the progressive.

(10) a. mere-o-t$ʃ^h$e
b. *mɑr-o-t$ʃ^h$e

- This and other differences make sense under an analysis (Lahiri to appear, Butt and Lahiri 1998) in which
  - the progressive -(ɑ)tʃʰ has been reanalyzed as a piece of derivational morphology
  - the auxiliary -(ɑ)tʃʰ has retained its status as an independent prosodic word in the perfect

3.3 Historical Origin of the Periphrastic Constructions

3.3.1 Urdu/Hindi

Origin and Usage

- The perfect verbal forms in Urdu/Hindi (e.g., *mara* 'hit') are derived from the Sanskrit deverbal adjectival past participle in *-ta* (Chatterji 1926, Kellog 1893, Beames 1872).
- An example of typical Sanskrit usage of participle as past tense form is given in (11).

(11)

evam-uk-tā	tu	haṃsena	damayantī
so-say-Pass.Past.Part	then	goose.Inst.Sg	Damayanti.Nom.Sg.F

'Then Damayanti was spoken to like that by the goose.' (Nalopākhyāna I,30)

- This participle could already be used as a past tense form in Sanskrit (Speijer 1886:255,294).
- The agreement between the past participle and the patient is still reflected in Urdu/Hindi today in terms of object agreement.

Historical Development

- The *-ta* affix had the morphophonological forms *-ta, -ita*.
- The *i* was used more frequently in the Prakrit dialects and eventually took on the quality of a semi-vowel: *y*.
- The *-t*, on the other hand, was either voiced (*d*), or lost altogether.

(12) **From Participle to Perfect**

Sanskrit	*ta* and *ita* >
Middle Indo-Aryan	*a* and *ia* >
Urdu/Hindi	*-y-* in verbs ending with a vowel

(Chatterji 1926, Beames 1872:132–133, Kellogg 1893:339)

- The modern perfect form inflects for gender and number. This is due to a (nominalizing) affix *ā* that inflected for number and gender.

3.3.2 Bengali

- The Bengali perfect form (e.g., *mere* 'hit') comes from the Sanskrit absolutive *tvā*.
- An example of typical Sanskrit usage is given in (13).

(13)

taṃ	dṛṣ-tvā	...
Pron.3.Sg.Acc	see-having	

'Having seen him, ...' (Nalopākhyāna II,27)

(14) **From Participle to Perfect**

Sanskrit/Pali	*tvā* and *yā* >
Prakrit	*ia* >
	i and *a* >
Bengali	*e*

(Chatterji 1926, Kellogg 1893:341)

3.4 Summary

- The Sanskrit perfective auxiliary construction thus is not the ancestor of the modern periphrastic tense/aspect constructions.
  - The original periphrastic perfective auxiliary construction was formed with deverbal accusative nominals.
  - The modern constructions are formed with descendents of various Sanskrit participials, which already had past tense use in Sanskrit.
  - Thus, there is a clear continuity between the use of the Sanskrit participles and the modern periphrastic constructions.
- With respect to the perfective auxiliaries, on the other hand, the only property in common is that the verbs *as* 'be' and *bhū* 'be' are involved.
  - Note that the *kṛ* 'do' forms no part of the modern tense/aspect systems.

4 Perfective Auxiliaries Revisited

- If the perfective auxiliaries did not give rise to the modern periphrastic tense/aspect constructions, a logical conclusion would seem to be that they were developmental dead-ends.
- Note that the syntax of the "perfective auxiliaries" is complex and unusual for an auxiliary construction.
- A close look at the modern languages reveals some similarities across the ages.
  - The *kṛ* 'do' construction shows similarities to the N-V complex predicates found in Urdu/Hindi today (T. Mohanan 1994).
  - 'be' auxiliaries, on the other hand, find striking parallels in an infinitive control construction in Urdu.
- If these proposed parallels hold up to further research, the "perfective auxiliaries" would appear to have provided the model for constructions still alive and well in the modern languages.

4.1 Differences between the 'do' and the 'be' Forms

- The *kṛ* 'do' construction was in use in Vedic, the oldest attested stage of Sanskrit (Pāṇini knows only of *kṛ* 'do' not of the 'be' perfective auxiliaries).
- The *kṛ* 'do' construction was not limited to the perfect tense, but could appear in all tenses.
- This is in contrast to the 'be' forms, which are only attested in classical Sanskrit and were limited to the perfect.

4.2 The *kṛ*-construction — A N-V Complex Predicate?

4.2.1 Sanskrit

- Consider again an example of perfective auxiliary constructions with *kṛ* 'do'.

(15) gam-ay-ām cakāra
go.Pres.Stem-Caus-ACC do.Perf.Act.1/3.Sg
'I sent.' ($\sqrt{gam}$ 'go')

- The verb 'do' takes an accusative argument.
- It is not clear what the other arguments of the clause were — more research is needed into the contextual occurence of these constructions.

4.2.2 Hindi/Urdu

- N-V complex predicates are extremely common in modern Indo-Aryan languages.
- T. Mohanan (1994) proposes an analysis in terms of argument structure merger, by which the argument domains of the noun and the verb combine.
- However, the noun still also functions as an argument of the verb.

(16) us=ne mohɑn=ko yad ki-ya
Pron.3.Sg=Erg Mohan.M=Acc memory.F.Sg.Nom do-Perf.3.Sg.M
'He remembered Mohan.' (Hindi)

(17) 'do' < agent$_i$ Event >
'memory' < agent$_i$ theme >
Erg Nom Acc

- This analysis could be extended to the Sanskrit *kṛ*-construction.

(18) a. vid-ām cakāra
find out.Pres.Stem.Acc do.Perf.Act.1/3.Sg
'I found out.' (Sanskrit, $\sqrt{vid}$ 'find out')

b. ram=ne kuc [pɑta ki-ya]$_{\overline{V}}$
Ram.M=Erg something.Nom knowledge.M=Nom do-Perf.3.Sg.M
'Ram found out something.' (Urdu/Hindi)

4.3 The 'be' Auxiliaries

- Now consider an example with the *as* auxiliary.

(19) sa saṃ-ni-mantr-ay-ām-āsa
Dem.Nom.3.Sg.M with-down-speech-Denom.Pres.Stem-Acc-be.Perf.Act.1/3.Sg
mahīpālān-viśāṃ
prince.Acc.Pl-nation.Gen.Pl
'He invited the princes of the nations.' ($\sqrt{mantr}$-ay(Denom.) 'think')
(Nalopākhyāna II,8)

- It features the finite form of the verb 'be', an accusative deverbal noun, an accusative object and a nominative subject.
- Now consider the Urdu constructions in (20), which contain a finite form of the verb 'be', an accusative infinitive, an object and a nominative subject.

- Glassman (1986) cites these constructions as denoting "imminent action".

(20) a. ḍakṭar sahıb bol-ne=ko tʰe
   Pron.3.Sg doctor sahib.M.Nom speak-Inf.Obl=Acc be.Past.M.Subj
   'The doctor was about to speak.'

  b. mem-sahibɑ cae bɑna-ne=ko tʰĩ
   Madam.F.Nom tea.F.Nom make-Inf.Obl=Acc be.Past.F.Subj
   'Madam was just about to make tea.'

- We propose to analyze both of these constructions as instances of control in which the finite 'be' verb takes two arguments: a subject and an (verbal noun) complement.

(21) a. **Urdu:** [Madam$_i$ [PRO$_i$ tea V]-ACC be.Past]

  b. **Sanskrit:** [He$_i$ [PRO$_i$ princes V]-ACC be.Perf]

- Note that while the Sanskrit construction denoted perfectivity, the Urdu construction appears to be ingressive.
- The semantic component here has changed, however, what the constructions have in common is that they are both used to denote a temporal/aspectual distinction.

5 Conclusion

Facts

- The perfective auxiliaries in Sanskrit did not give rise to modern Indo-Aryan periphrastic tense/aspect systems.
- The development of modern periphrastic constructions involves a straight-forward grammaticalization scenario which identifies Sanskrit participles as the ancestral construction.

Speculations

- However, the "perfective auxiliaries" were possibly not dead-ends: parallel constructions can be identified in modern Urdu/Hindi.
- We propose that the *kṛ*-construction might be a type of N-V complex predicate and that the 'be' perfective auxiliaries might be a control construction.
- Butt and Lahiri (1998) argue that complex predicates constructions are relatively stable in terms of historical change — our findings would appear to support this.
- Under our proposal, the differences in usage between the *kṛ* 'do' and the 'be' perfective auxiliaries could be taken to follow from differing underlying syntactic structures.

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