Presenting the past in Middle Indic

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Abstract

Up to three verbal categories are available for encoding past tense in Middle Indic: inherited finite pasts (lost in younger languages), old past passive participles, and morphological presents. I explore aspectual factors governing the choice of one verb form in preference to another in four texts in Pāli and Jaina-Māhārāṣṭrī, showing that finite pasts (where present) are compatible with multiple aspectual readings, participles almost always have perfective or anterior aspect, and presents have an association with imperfective aspect (exceptionless in Pāli but not in Jaina-Māhārāṣṭrī).

Keywords

Middle Indic – tense – aspect – morphosemantics

1 Introduction

1.1 Preliminaries

‘Middle Indic’ (together with ‘Middle Indo-Aryan’ or ‘Prākrit’) is one of the labels used to refer to a number of languages exhibiting various developmental stages intermediate between those of Old Indo-Aryan (Vedic and Classical Sanskrit) and New Indo-Aryan (e.g. Hindi). Perhaps the development in Middle Indic morphology that has attracted most scholarly attention is the loss of the Old Indo-Aryan preterite forms (aorist, imperfect, and perfect), which are generally replaced by forms of the old past passive participle, ultimately yielding the split ergativity characteristic of many New Indo-Aryan languages. This process (already underway in Classical Sanskrit, which makes less extensive use of finite past forms than Vedic) can be observed taking place over the chronological history of Middle Indic. Forms of Middle Indic that are older...
and developmentally closer to Sanskrit (e.g. Pāli) still have a finite past tense, usually based on the aorist. In younger languages such as Māhārāṣṭrī, the use of past participles is normal. Both in Sanskrit and Middle Indic, past participles used to describe past events may or may not be accompanied by a copula, although the presence of a copula is the exception rather than the rule in the Middle Indic languages under discussion in this article.\(^1\) (1) and (2) illustrate the use of past participles with and without copula in Pāli.

(1) \textit{idāni} `m̥hā naṭ-ṭhā}\newline
\textit{now be.1PL. destroy-PST.PTCP.NOM.PL.}\newline
Now we are destroyed. (Vaṇṇupathajātaka, page 108)

(2) \textit{Akāraṇa-ṁ} te ōvus-o ka-taṁ\newline
\textit{causeless-NOM.SG. 2SG.INS sir-VOC.PL. done-PST.PTCP.NOM.SG.}\newline
Wrong has been done by you, sir. (Vaṇṇupathajātaka, page 106)

A third strategy used to refer to the past in Middle Indic involves the use of present forms with past reference. A Pāli example appears in (3).

(3) \textit{Bodhisatt-o satthavāhakul-e paṭisandhi-ṁ}\newline\textit{Bodhisattva-NOM.SG. caravan-leader's.family-LOC.SG. rebirth-ACC.SG.}\newline\textit{gahe-tvā vayappatt-o pañca-hi}\newline\textit{obtain-GER. having.reached.maturity-ACC.SG. five.hundred-INSTR.PL.}\newline\textit{sakaṭasat-ehi vaṇijja-ṁ karo-nto}\newline\textit{carts-INSTR.PL. trade-ACC.SG. do-PRES.PTCP.NOM.SG.}\newline\textit{vicara-ti.}\newline\textit{travel.around-PRES.3SG.}\newline
The Bodhisattva, having obtained birth into a caravan-leader's family, having reached maturity, \textit{travels around} with five hundred carts, doing trade. (Vaṇṇupathajātaka, page 107)

1.2 \textit{Summary of findings}

In this article, I show that aspectual considerations were often crucial for the morphology of past-referring verb forms in both Pāli and Jaina-Māhārāṣṭrī. Participles are associated with perfective and anterior aspect in all corpora (although there is a single exception in one Māhārāṣṭrī text). The perfective/

\(^1\) Out of the 216 participial forms in the dataset that forms the foundation of this article, only seven are accompanied by a copula.
anterior semantics of the old past passive participle were inherited from Old Indic and proved very robust in Middle Indic. Morphological presents, by contrast, are associated with imperfective aspect, although this correlation is exceptionless only in Pāli. Thus, at the later stage represented by Māhārāṣṭrī both perfective and imperfective readings were (occasionally) available for both participles and presents. It appears that both categories were now undergoing semantic bleaching. Since finite pasts survive into Pāli, it was also necessary to provide an account of their behaviour. Their ability to denote multiple lexical aspects suggests that the category lacked a specific aspect in Pāli.

My discussion is based on a collection of 401 past-referring verb forms extracted from four bodies of text written in two different varieties of Middle Indic, all fictional narratives in poetry or prose. They are the Pāli Apanṭaka-jātaka and Vaṇṇupathajātaka (Fausbøll 1877: 95–110) and the Jaina-Māhārāṣṭrī Agaḍadatta (Jacobi 1886: 68–74) and Naggai (Jacobi 1886: 48–55). The dataset is available on zenodo.org (DOI: 10.5281/zenodo.3544619).

1.3 Predictions of Deo (2012)
This aspect of Middle Indic morphosemantics has not been extensively explored in past scholarship. A notable exception is Deo (2012), who argues that ‘the Middle Indo-Aryan proto-system that gave rise to the New Indo-Aryan languages was an aspect-based system with no present-past distinction’ (3). Past-referring presents are essential to her argument, as she claims that presents realise imperfective aspect and are consequently used when authors wish to present events as ongoing, without regard to the temporal location of those events. Perfective aspect is expressed by the old past participle. Given her interest in establishing a proto-system underlying New Indic, Deo understandably focusses on later Middle Indic languages (Māhārāṣṭrī and Apabhraṃśa), while acknowledging that ‘a much more nuanced examination of the distinct diachronic layers of the Middle Indo-Aryan languages is essential to establishing the loss of the morphological category of tense in Middle Indo-Aryan’ (4–5). Her analysis therefore takes no account of finite past forms, as these did not survive into the period of interest. My research partially confirms her findings and partially suggests a need for further refinement. Given the importance of the theoretical issues she raises, I devote the remainder of this subsection to summarising and discussing her testable predictions, which will be compared to data representing a broader chronological range in sections 3–5 below.

Deo (2012: 12) sets out seven claims that must be correct if ‘the PRES and PERF [=the old past participle, A.H.] paradigms realize the imperfective-perfective aspectual contrast in Middleindo-Aryan, and not the present-past tense contrast.’ The first, that ‘the PRES paradigm is NOT constrained to present time
reference but may also be used to make reference to past and future eventualities,’ is demonstrably correct. She also predicts that ‘[i]n its past uses, the PRES paradigm systematically has imperfective reference.’ Concomitantly, ‘[s]entences containing lexically atelic predicates tend to appear with PRES inflection.’ Meanwhile, ‘telic predicates are interpreted as progressive or habitual/generic with PRES.’ By contrast, ‘the PERF paradigm obligatorily has perfective reference.’ As a result, ‘[s]entences containing lexically telic predicates tend to appear with PERF inflection.’ Finally, ‘[t]he PERF paradigm is not constrained only to past reference but may refer to culminated, completed eventualities (or their result states) obtaining in the past, present, or future.’

Deo (2012: 14–17) considers and rejects the alternative hypothesis that past-referring present forms are ‘historical presents’. She defines historical presents as presents used because ‘the deictic center for temporal location … is shifted to the past in order to achieve a particular narrative effect’ (2012: 14–15). She identifies two ways to assess whether this kind of deictic shift explains the use of presents in a particular text (2012: 15): ‘a. by examining the class of predicates with which PRES typically occurs and its interpretation in context; b. by examining whether the perspectival shift effected by the supposed historical present use of PRES is consistent within a narrative.’ Since present forms realising imperfective aspect are expected to occur typically with atelic predicates, while historical presents need show no such correlation (the shift of deictic centre being unconnected to aspectual considerations), the presence of such a correlation would support the aspectual hypothesis, as, of course, would imperfective interpretations in context.

Deo also predicts that if a shift in deictic centre accounts for the presence of past-referring presents, ‘consecutive sentences, if they contain eventive predicates, advance reference time.’ Advancing reference time is typical of eventive predicates (which, of course, should be altogether absent among morphological presents on Deo’s hypothesis). Consistency of perspectival shift would support the historical present hypothesis, since given that hypothesis ‘we ... expect ... that for a piece of narrative in which the deictic center has been relocated ..., the tense marking should remain consistent, assuming that all eventualities within that narrative are understood to overlap with the shifted perspectival center.’

It is worth noting that Deo’s use of the term ‘historical present’ is by no means universal. She derives it from Cooper (1986: 31). Elsewhere in linguistic

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2 There is a significant difference between Deo’s usage of the term ‘perfective’ and mine in this article, defined in 2.3 below, since she uses the term to embrace both perfective aspect as defined there and what I will be calling resultative aspect.
scholarship the term is frequently used to refer to all past-referring presents, whether they occur in blocks or not. The idea of a distinction between past-referring presents that occur in blocks and those that do not is, however, widespread. The block-like behaviour is familiar from modern English and also from the languages of classical antiquity, as discussed by von Fritz (1949). In the case of such passages, it is clear that (as Cooper and Deo assume) the aspectual properties of individual verbs are irrelevant to the choice of morphology, since the entire passage is in the present. Explanations must therefore be sought on the pragmatic level. Due to the potentially confusing nature of Deo’s use of the term ‘historical present’, I will avoid it in this article, instead using ‘narrative present’ to refer to the same phenomenon. Thus, the term ‘narrative presents’ should be understood to denote morphologically present past-referring forms that cooccur in a block, in cases where the switch into the present is motivated by discourse factors and unconnected to aspect.

Past-referring present forms that do not occur in blocks, but rather occasionally within a narrative otherwise composed using morphologically past forms, are also widely attested. Greek examples are adduced by von Fritz (1949) and Hittite ones by Melchert (1998). In such cases it is much more plausible that properties of individual verbs (aspectual or otherwise) will be relevant to the choice to use present rather than past morphology. The closest parallel I have found to the situation in Middle Indic, where (at least in some languages) morphological presents are associated with imperfective aspect, is the scenario outlined in Melchert (1998), where Melchert argues for a connection between imperfective aspect and some cases where morphologically present forms are used with past reference in Hittite. However, Melchert himself no longer considers this hypothesis precisely correct (p.c.), as he now regards the relevant Old Hittite forms as backgrounding, not imperfective. It appears that the function of such non-block-forming past-referring presents is at least to a large extent specific to particular languages or language groups.

Deo (2012: 20) sets out predictions regarding the distribution of participial forms under three hypotheses: that participles realise an aspectually unspecified past tense, that they realise both past tense and perfective aspect, and that they lack tense specification and merely realise perfective aspect. Under the first hypothesis, past-referring participles should be compatible with both eventive and stative aspect. Under the second, they should be used only to describe past events viewed as complete. Finally, under the third hypothesis, it should be possible to use participial forms to encode present and future events as well as past ones.
2 Methodology

2.1 Summary
I extracted every past-referring verb form from each body of text and recorded for each form its morphology, its lexical aspect, and the aspectual reading that I felt was most appropriate in context. In this section I give examples illustrating each aspectual category.

2.2 Lexical aspects
The lexical aspect categories used were those of State, Activity, Semelfactive, Accomplishment, and Achievement. I use these terms as defined by Smith (1997: 22–35) and the English examples provided here are from that work. In brief, most atelic situation types (situation types that do not involve a change in state) were classified as Activities (if dynamic, i.e. if they occurred in successive stages) or States (if not differentiable into stages). English Activity predicates include run, push a cart, and eat cherries, all of which occur in stages; by contrast, Stative predicates such as own the farm, be tall, and believe in ghosts do not, with the consequence that there is no sub-interval of the period for which a state holds, however brief, within which it is not the case that the subject owns the farm, etc. The difference is illustrated by (3), repeated here as (4), and (5); vicarati ‘travels around’ in (4) is an Activity, because travelling occurs in stages, but ahosin ‘was’ in (5) is a State, because being a caravan-leader does not.

(4)=(3) Bodhisatt-o satthavāhakul-e
Bodhisattva-NOM.SG. caravan-leader’s.family-LOC.SG.
patisandhi-m gahe-tvā vayappatt-o
rebirth-ACC.SG. obtain-GER. having.reached.maturity-NOM.SG.
paṇca-hi sakaṭasat-ehi vanijja-m
five.hundred-INSTR.PL. carts-INSTR.PL. trade-ACC.SG.
karo-nto vicara-ti.
do-PRES.PTCP.M.NOM.SG. travel.around-PRES.3SG.
The Bodhisattva, having obtained birth into a caravan-leader’s family, having reached maturity, travels around with five hundred carts, doing trade. (Vaṇṇupathajātaka, page 107)

(5) satthavāhajeththak-o pana aham eva a-hos-in
caravan-leader-NOM.SG. but ISG.NOM. EMPH. PTC. AUG-be-PST.3SG.
But I was the caravan-leader. (Vaṇṇupathajātaka, page 110)
Telic situation types (involving a change of state) were classified as Accomplishments if a significant transitional phase intervened between the start and the completion of the change of state and otherwise as Achievements (telic events, including inceptives, where the change of state is instantaneous or almost instantaneous). Kathitā ‘described’ in (6) is a typical Accomplishment (comparable to English examples such as build a bridge, walk to school, or drink a glass of wine), because describing even one kind of person must take an appreciable amount of time.

(6) Satthār-ā cattār-o puggal-ā
Master-INSTR.SG. four-M.NOM.PL. human-NOM.PL.
kath-ītā
describe-PST.PTCP.M.NOM.PL.
Four kinds of person were described by the Master. (Vaṇṇupathajātaka, page 106)

By contrast, the instantaneous ugaṇči ‘arose’ in (7) is an Achievement (comparable to English examples such as find, recognise, break a glass).

(7) Tālakkhandhappamāṇ-ā udakavaṭṭi ugaṇč-i.
palm-trunk.sized-FEM.NOM.SG. water.gush.NOM.SG. arise-PST.3SG.
A gush of water arose, tall as a palm-trunk. (Vaṇṇupathajātaka, page 109)

Two verb forms, including paṭihaññi ‘struck’ in (8), were identified as Semelfactives (like English knock at the door, hiccup, flap a wing), since the events were instantaneous, but involved no change in state.

(8) Ettaka-ṁ ṯhāna-ṁ khaṇ-ītvā pahara-ntānaṁ
so.much-N.ACC.SG. place-ACC.SG. dig-GER. strike-PRES.PTCP.GEN.PL.
kuddāl-o heṭṭhā pāsāṇ-e paṭihaññ-i
spade-NOM.SG. below rock-LOC.SG. strike-PST.3SG.
When they had dug to that depth, the spade of the assailers struck a rock. (Vaṇṇupathajātaka, page 108)

2.3 Aspectual readings
In assigning aspectual readings, I identified predicates referring to ongoing or habitual actions (where the event time included the reference time) as imperfective. These include vicarati in (4)=(3), where the narrator is describing the Blessed One’s customary practice, not narrating a particular episode. Predicates referring to events included within the reference time were recorded as perfec-
tive. These include *pāṭihaṇṇi* ‘struck’ in (8). The remaining cases, where the reference time included the time of utterance, were identified as either experiential or resultative. I use these terms in the senses defined by Dahl (2010:83): a verb referring to ‘a situation which has occurred at one or more times at some indefinite point in the past’ has experiential aspect and one ‘used to express that a state resulting from the completion of a past event holds at evaluation time’ (the time, typically the speech time, relative to which the situation is temporally located) has resultative aspect. *Diṭṭhan* ‘seen’ in (9) is an example of experiential aspect, whereas *pattam* ‘achieved’ in (10) has resultative aspect.

(9) “At-thi pana vo kenaci eka-m be-PRES.3sg. but EMPH.PTC. anyone.M.INSTR.SG. one-NOM.SG. pi meghasīsa-m *diṭ-than* ti. even cloud.top-NOM.SG. see-PST.PTCP.NOM.SG. QUOT.PTC. “Has anyone *seen* the top of even one cloud?” he said. (Apaṇṇakajātaka, page 103)

(10) *kin nu kho te pabbajitakicca-m* Q now EMPH.PTC. 2SG.INSTR. of.monk’s.duty-NOM.SG. *matthaka-m* *pat-taṁ* summit-NOM.SG. achieve-PST.PTCP.NOM.SG. Has the summit of a monk’s life been *achieved* by you? (Vaṇṇupatha-jātaka, page 106)

Both resultative and experiential aspect are subtypes of anterior aspect.

2.4 On identifying copulas

A final methodological issue worth drawing attention to concerns the use of participial forms with copulas. Participial forms cooccur with finite forms belonging to both of the Sanskrit roots √as and √bhū. Of these two, √as is semantically the more neutral in Sanskrit, while √bhū can mean ‘become’ rather than simply ‘be’. This distinction seems to be relevant to the following Jaina-Māhārāṣṭri passage from Agaḍadatta:

(11) *tā oḍhāv-ai dhāv-ai cal-ai khal-ai* thereupon run-PRES.3SG. race-3SG. shake-3SG. stumble-3SG. *parina-o* tahā ho-i bent.down-PST.PTCP.M.NOM.SG. thus be/become-PRES.3SG. Thereupon he [an elephant] runs, races, shakes, stumbles, *is/becomes bent down* [to gore with his tusks]. (Agaḍadatta, verse 61)
It would be possible to analyse \textit{parināao} ‘bent down’ as a participle used as a verbal predicate, \textit{hoi} ‘is/becomes’ (from √\textit{bhū}) being merely the copula. In this case, we would have a predicatival participle with imperfective morphology, since an ongoing situation is described. As seen in 4.3 below, this interpretation is at odds with the usual aspecual behaviour of participles elsewhere in the poem, where participial morphology is consistently correlated with perfective or anterior aspect. Stephanie Jamison (p.c.) suggested that \textit{hoi} is a past-referring present with the meaning ‘becomes’ rather than a copula. This interpretation is strongly supported by the context (a run of presents). Consequently, for the purposes of the discussion in 4 below, the construction is classed as presential rather than participial. This suggests a need to take a cautious attitude towards other constructions containing forms of √\textit{bhū} as apparent copulas. There is only one other such example in any of the corpora:

\begin{verbatim}
(12) So bhikkhu ettak-ena
    upatthamb-ito a-ho-si.

That monk was made firm by just this much. (Vaṇṇupathajātaka, page 107)
\end{verbatim}

In the absence of contextual help comparable to that available in (11), I was unable to identify a truly objective criterion by means of which to determine whether \textit{ahosi} here is a copula or a content word. Due to the resulting impossibility of classifying the verb phrase morphologically, I exclude the passage from the discussion below. Further investigation of the distribution of √\textit{as} and √\textit{bhū} in Middle Indic languages is desirable.

3 The Apaṇṇakajātaka and Vaṇṇupathajātaka

3.1 Preliminaries

These are two of the Pāli Jātakas, tales of the previous births of the Buddha. Like many Indian texts, the Jātakas cannot be precisely dated. Winter- nitz (1968/1920: 96) states that ‘für die große Masse der Verse läßt sich ein höheres Alter als das 3. Jahrhundert v. Chr. nicht mit gutem Gewissen vertreten, gewiß nicht beweisen, und von der Prosa gehört sicherlich vieles erst der nachchristlichen Zeit an’ (‘for the great majority of the verse an earlier date than the third century BCE cannot be posited with a good conscience, and much of the prose certainly dates first from the CE’). The prose narratives under
consideration here are therefore likely to have been composed in the early centuries CE. Since I was interested in the stories’ characteristics as an example of prose narrative, I omitted from consideration certain sections that were irrelevant to this inquiry. These are a quote from the verse Dhammapada, sayings of the Buddha, in the Apanṇakajātaka (Fausbøll 1877: 97), the gāthā (verse that the whole story is supposed to illustrate) of each story (Fausbøll 1877: 104 and 109), and the detailed commentaries or veyyākaraṇas that follow the two gāthās (Fausbøll 1877: 104–05 and 109–10, printed in small type).

Each text consists of a frame narrative set during the life of the Buddha and the actual Jātaka. In the frame narrative of the Apanṇakajātaka, the Buddha converts five hundred adherents of other doctrines, who subsequently backslide. In order to win them back, he tells them the story of how in former days a wise merchant (really his former self) survived the efforts of a yakkha (demon) to trick him into throwing away his water supplies in a desert. The yakkha had previously fooled and eaten a less prudent traveller, whose willingness to place trust in the wrong place is a negative example for the hearers. In the frame narrative of the Vaṇṇupathajātaka, the Buddha encourages a monk who has become disheartened and abandoned a life of religious solitude. This encouragement is rendered efficacious by means of the Jātaka, which describes how previous incarnations of the Buddha and the monk saved a caravan that had got lost in the desert by finding water.

I extracted 152 past-referring forms: 31 participles (20%) belonging to 14 verbs, 104 finite pasts (68%) belonging to 38 verbs, and 17 finite presents (11%) belonging to 13 verbs. The forms here classified as finite pasts include 15 forms of √ah ‘say’, which preserves Sanskrit perfect morphology. The perfect tense was generally lost from Middle Indic, but perfect morphology for this common lexeme was particularly enduring (Jamison 2004: 711). Since the perfect does not survive as a living tense, these forms are not treated as a separate category for the purposes of the following discussion. This ‘perfect’ was probably synchronically analysed as an irregular finite past in Pāli; the third-person plural form is āhaṃsu, where the Old Indic perfect ending -uḥ has been replaced by a sigmatic ending of aorist origin (Geiger 1994/2013: 167).

3 Throughout the article, all forms containing the same Sanskrit root are identified as belonging to the same lexeme, unless they have different preverbs or one is a cvi-formation. (Cvi-formations are made using ‘a particular suffix that converts nouns into items functioning as verbal prefixes before the verbs √bhū and √kṛ in the meanings of ‘becoming that, not having been it before’ … and ‘making something that’’ (Boose & Tubb 2007: 83). A Māhārāṣṭrī example is vasīkao ‘bewitched’, lit. ‘made under [another’s] power’ [Naggai page 52, line 4].)
3.2 **Lexical aspects**

The distribution of situation types across morphological categories is shown in Table 1. The total number of unambiguously telic predicates (Accomplishments and Achievements) is 114 and the total number of atelic predicates (States, Activities, and Semelfactives) is 33. Table 2 shows the numbers and percentages of predicates of telic and atelic predicates represented among forms of each morphological category. (Throughout the article, all percentages are rounded to the nearest integer, which is why those in some columns in some tables add up to slightly more or less than 100.)

It is noticeable that participles seem to be rather limited in the kinds of situation types they are compatible with. Specifically, the vast majority of participial forms are telic predicates as in (13)=(6) and (14).

(13)=(6) **Accomplishment**

\[
\text{Satthār-ā cattār-o puggal-ā} \\
\text{Master-INSTR.SG. four-M.NOM.PL. human-NOM.PL.} \\
\text{kath-itā} \\
\text{describe-PST.PTCP.M.NOM.PL.} \\
\text{Four kinds of person were described by the Master. (Vaṇṇupatha-jātaka, page 106)}
\]

(14) **Achievement**

\[
tvām Satth-u santik-e \\
\text{2SG.NOM. Master-GEN.SG. presence-LOC.SG.} \\
kammatthāna-m gahe-tvā 'samaṇadhama-m \\
\text{subject.of.meditation-ACC.SG. obtain-GER. sage.duty-ACC.SG.} \\
kar-issāmī-ti' ga-to \\
\text{do-FUT.1SG.-QUOT.PTC. go-PST.PTCP.M.NOM.SG.} \\
\text{You left after getting a theme for meditation in the Master’s presence, [saying] “I will live the life of a sage.” (Vaṇṇupathajātaka, page 106)}
\]

The one participle identified as a State is naṭṭhā ‘destroyed’ in (15)=(1). At this point in the Vaṇṇupathajātaka, the merchants in the caravan have realised that they are lost, do not know where to find wood and water, and have exhausted their supplies. This is part of the lamentation they raise; the reference is to their present (atelic) situation, rather than to any process that has caused it to arise.

(15)=(1) **State**

\[
idāni 'mhā naṭ-ṭhā \\
\text{now be.1PL. destroy-PST.PTCP.M.NOM.PL.} \\
\text{Now we are destroyed. (Vaṇṇupathajātaka, page 108)}
\]
The participle identified as a semelfactive is *samuṭṭhitā* ‘originated’ in (16).

(16) Semelfactive

\[
\text{Ka-ṁ} \quad \text{pana ārabbha} \quad \text{ayāṁ} \quad \text{kath-ā} \\
\text{who-M.ACC.SG. but} \quad \text{with.reference.to this.NOM.SG. story-NOM.SG.} \\
\text{samuṭṭh-itā} \quad \text{ti.} \\
\text{originate-PST.PTCP.F.NOM.SG. QUOT.PTC.} \\
\text{“But with reference to whom did this story originate?” (Apaṇṇakajātaka, page 95) }
\]

Finite pasts show no such limitations. Although the largest group is the Accomplishments like *kathesi* ‘told’ in (17), we also find Achievements, e.g. in (18), States, e.g. in (19), Activities, e.g. in (20), and a Semelfactive in (21)=(8).

(17) Accomplishment

\[
\text{Ima-ṁ} \quad \text{dhammadesana-ṁ} \quad \text{Bhagavā} \\
\text{this-F.ACC.SG. justice.discourse-ACC.SG. Blessed.One.NOM.SG.} 
\]
Sāvatthi-yaṁ vihara-nto kathe-si.
Sāvatthi-LOC.SG. live-PRES.PTCP.M.NOM.SG. deliver-PST.3SG.
The Blessed One delivered this discourse concerning justice while living at Sāvatthi. (Vaṇṇupathajātaka, page 106)

(18) Achievement
So ekadā satṭhiyojanika-m
that.M.NOM.SG. at.one.time sixty.yojana-N.ACC.SG.
marukantāra-m patipajj-i.
sandy.wilderness-ACC.SG. enter-PST.3SG.
On one occasion he entered a sandy wilderness sixty yojanas across. (Vaṇṇupathajātaka, page 107)

(19) State
tvam pubbe viriyavā a-ho-si
2SG.NOM. formerly energetic.M.NOM.SG. AUG-be-PST.2SG.
You were formerly energetic. (Vaṇṇupathajātaka, page 107)

(20) Activity
tadā pana dhuravāt-o a-ho-si, ta-smā
at.that.time but yoke.wind-NOM.SG. AUG-be-PST.3SG. that-N.ABL.SG.
so satthavāhaputt-o purato
that.M.NOM.SG. caravan-leader’s.son-NOM.SG. in.front
AUG-go-PST.3SG.
At that time the wind was against them [i.e. blowing from the front/yoke-end], so the caravan-leader’s son was going in front. (Vaṇṇupathajātaka, page 109)

(21)=(8) Semelfactive
Ettaka-m thāna-m khan-ītvā
so.much-N.ACC.SG. place-ACC.SG. dig-GER.
pahara-ntānaṁ kuddāl-o heṭṭhā pāsān-e
strike-PRES.PTCP.GEN.PL. spade-NOM.SG. below rock-LOC.SG.
patihaṅṅi
strike-PST.3SG.
When they had dug to that depth, the spade of the assailers struck a rock. (Vaṇṇupathajātaka, page 108)

The past forms whose lexical aspects were recorded as uncertain are cintesi ‘thought’ in (22) and (23) and ahosi ‘occurred [lit. was]’ in (24) and (25).
The Bodhisattva thought: “If this foolish caravan-leader's son goes with me ... the road will not be sufficient ...” (Apanṇakajātaka, page 98)

He thought: “There will be many advantages for me going first ...” (Apanṇakajātaka, page 98)

Then this occurred [lit. was] to him: “Four kinds of people were described by the Master ...” (Vaṇṇupathajātaka, page 106)

The Bodhisattva saw many advantages in going second, for the following occurred [lit. was] to him: “Going in front, they will make smooth the rough surface of the road ...” (Apanṇakajātaka, page 99)

The occurrence of a thought is an instantaneous event, but it is unclear to me whether it should be classified as an Achievement or a Semelfactive (since it is hard to tell whether it involves a change of state or not).

Presents are also compatible with a range of situation types: atelic States, e.g. in (26), and Activities, e.g. in (27)=(4)=(3), telic Accomplishments, e.g. in (28), and an Achievement in (29).
(26) State

\[
\text{Ts-fm} \quad \text{kt-r-e} \quad \text{shvtm-vlik-a} \quad \text{mt-thin-a}
\]

that-N.LOC.SG. wilderness-LOC.SG. fine.sand-NOM.SG. fist-INSTR.SG.

g-s-th-a \quad \text{hth-e} \quad \text{a ti-tha-ti}

grasp-PST.PTCP.F.NOM.SG. hand-LOC.SG. NEG stay-PRES.3SG.

In that wilderness fine sand, grasped by the fist, does not stay in the hand.
(Vaṇṇupathajātaka, page 107)

(27)=(4)=(3) Activity

\[
\text{Bdh-i-t-o} \quad \text{satthv-hwakul-e}
\]

Bodhisattva-NOM.SG. caravan-leader's.family-LOC.SG.

\[
\text{p-ti-sandhi-m} \quad \text{ghe-tv-o} \quad \text{va-yapp-t-o}
\]

rebirth-ACC.SG. obtain-GER. having.reached.maturity-NOM.SG.

\[
\text{pa-nca-hi} \quad \text{ska-tasat-ehi} \quad \text{vni-jia-m}
\]

five.hundred-INSTR.PL. carts-INSTR.PL. trade-ACC.SG.

\[
\text{kro-nto} \quad \text{vicra-ti}
\]

do-PRES.PTCP.M.NOM.SG. travel.around-PRES.3SG.

The Bodhisattva, having obtained birth into a caravan-leader's family, having reached maturity, travels around with five hundred carts, doing trade. (Vaṇṇupathajātaka, page 107)

(28) Accomplishment

\[
\text{suri-yugmanama-to} \quad \text{pa-thh-a} \quad \text{a-ngh-arasi}
\]

sun.rise-ABL.SG. from.the.time.of heap.of.burning.coal.NOM.SG. like

\[
\text{u-nh-a} \quad \text{ho-ti}
\]

hot-F.NOM.SG. become-PRES.3SG.

From the rising of the sun [the sand] becomes hot as a bed of charcoal embers. (Vaṇṇupathajātaka, page 107)

(29) Achievement

\[
\text{Te} \quad \text{ta-to} \quad \text{pa-thh-a} \quad \text{ncck-l-m}
\]

that.M.NOM.PL. that-N.ABL.SG. from.then.on all.the.time-ACC.SG.

\[
\text{Anhpi-dik-en} \quad \text{saddhim}
\]

Anāthapiṇḍika-INSTR.SG. with

\[
\text{gan-hatth-a} \quad \text{vih-r-m} \quad \text{gan-tv-a}
\]

perfumes.garlands.etc.in.hand-M.NOM.PL. monastery-ACC.SG. go-GER.

\[
\text{dhmma-m} \quad \text{sna-nti} \quad \text{dn-m} \quad \text{de-nti}
\]

Dharma-ACC.SG. hear-PRES.3PL. donation-ACC.SG. give-PRES.3PL.

\[
\text{sila-m} \quad \text{rak-ha-nti} \quad \text{uposathkamma-m}
\]

ethical.behaviour-ACC.SG. keep-PRES.3PL. weekly.fast-ACC.SG.

indicating that the past in middle indic
From then on, constantly, together with Anāthapiṇḍika, having perfumes, garlands, and so on in their hands, having gone to the monastery, they hear the Dharma, they give charitable gifts, they keep the items of good character, they perform the weekly fast. (Apaṇṇakajātaka, page 96)

The present listed as having uncertain lexical aspect is vadanti ‘say’ in (30), which occurs during the wise merchant’s dispute with his less wise followers in the Apanṇakajātaka. They cite the demon’s followers’ claims about water as a reason to throw away their supplies. In his response, the merchant summarises these claims. (I preserve Fausbøll’s punctuation.) The example is discussed under 3.3.

(30) Idañi ekacce manuss-ā ‘etāya
now some.M.NOM.PL. man-NOM.PL. this.F.LOC.SG.
ilavananrājīy-ā parato dev-o
green.forest.belt-LOC.SG. further rainy.sky-NOM.SG.
vassa-tī-ti’ vada-nti
rain-PRES.3SG.-QUOT.PTC. say-PRES.3PL.

Now some men say “It’s raining further on, in this green forest-belt.” (Apanṇakajātaka, p. 102)

Of the stories’ 31 durative atelic predicates (States and Activities) only 11 (35%) are presents. This text therefore does not bear out Deo’s prediction (2012: 12) that ‘[s]entences containing lexically atelic predicates tend to appear with PRES inflection.’ (The Semelfactives were excluded when calculating this percentage, since the relevance of atelic situation types lies in the fact that they are generally highly compatible with imperfective aspect. This is true only of States and Activities.) Of the 120 telic and/or instantaneous predicates (Accomplishments, Achievements, Semelfactives, and (22)–(25)), only 29 (24%) are participles, meaning that the text also does not bear out Deo’s prediction that ‘[s]entences containing lexically telic predicates tend to appear with PERF inflection.’ It is notable, however, that only three atelic predicates (one of which is a Semelfactive) have participial morphology and only one instantaneous predicate has present morphology. The complicating factor here is the presence of finite past forms, which Deo omits from consideration, due to her focus on a late stage of Middle Indic when they were no longer present as a category. It is apparent that participles and past-referring presents in Pāli both already show the asperciptual tendencies she observes in later languages, but here they
are accompanied by pasts, which show considerable aspectual flexibility. This becomes clear when Deo’s advice to test for the presence of narrative presents by looking into the class of predicates with which presents typically occur (Deo 2012: 15) is followed; the 11 unambiguously atelic presents (65%) outnumber the five telic ones (29%). If only the presents and participles are taken into consideration, Fisher’s exact test confirms that the difference between the proportions of telic and atelic predicates represented within each category is significant at $p < .05$ ($p = 0.0001$). (The figures used are those given in Table 2 for the actual numbers of telic and atelic predicates among both participles and presents.)

### 3.3 Aspectual readings

The distribution of aspectual readings is shown in Table 3.

| Participle | Finite pasts | Finite presents |
|------------|--------------|----------------|
| Imperfective | 0 (0%) | 16 (15%) | 16 (94%) |
| Perfective | 13 (42%) | 87 (84%) | 0 (0%) |
| Experiential | 3 (10%) | 0 (0%) | 0 (0%) |
| Resultative | 15 (48%) | 1 (1%) | 0 (0%) |
| Uncertain | 0 (0%) | 0 (0%) | 1 (6%) |

Participles appear to be incompatible with imperfective aspect, but are compatible with perfective, resultative, and experiential aspect. Neither perfective nor anterior aspect seems to be lexically restricted, eight lexemes being represented among the 13 perfective tokens and 11 (including several of the same ones) among the 18 anterior tokens, and the distribution of lexical aspects within the two is similar. (The 13 perfective participles include six Achievements, five Accomplishments, a Semelfactive, and an Activity. The 18 anterior participles include seven Achievements, 10 Accomplishments, and a State.)

Perfective and resultative aspect are exemplified in (13)=(6) and (31)=(10) respectively.

$$(31)=(10) \quad \text{kin nu kho te pabbajitakicca-m}$$

Q \ now EMPH. PTC. 2SG. INSTR. of. monk’s duty. NOM. SG.
Has the summit of a monk's life been achieved by you? (Vaṇṇupathajātaka, page 106)

The three participles with unambiguous experiential aspect all occur during a conversation in the Apanṇṇakajātaka between the wise merchant, who has resisted the blandishments of the yakka, and his subordinates, who believed the yakka and his followers when they claimed there was a water-filled oasis ahead:

(32)=(9) “At-thī be pana vo kenaci but EMPH.PTC. anyone.M.STR.G.
eka-m pi meghasisa-m ḍīṭ-tha-n”
one-N.STR.G. even cloud.top-N.STR.G. see-PST.PTCP.N.STR.G.
ti.
QUOT.PTCP.
“Has anyone seen the top of even one cloud?” he said. (Apaṇṇakajātaka, page 103)

(33) “At-thī be pana vo kenaci but EMPH.PTC. anyone.M.STR.G.
vijjullatobhās-o ḍīṭ-tho”
lightning-flash-N.STR.G. see-PST.PTCP.M.STR.G. QUOT.PTCP.
“Has anyone seen a lightning-flash?” he said. (Apaṇṇakajātaka, page 103)

(34) “At-thī be pana vo kenaci but EMPH.PTC. anyone.M.STR.G.
meghasadd-o su-to”
thunder.peal-N.STR.G. hear-PST.PTCP.M.STR.G. QUOT.PTCP.
“Has anyone heard a peal of thunder?” he said. (Apaṇṇakajātaka, page 103)

It is noteworthy that all the participles with resultative or experiential aspect appear in direct speech. These aspects would be out of place in the voice of the omniscient narrator, since the reference time includes the time of utterance. Furthermore, all participles accompanied by a copula have anterior aspect (resultative, as in (15)=(1), or experiential as in (32)=(9)–(34)). Although resultative aspect is clearly possible without a copula, as in (31)=(10), the presence of a copula seems to be incompatible with perfective aspect. I suggest that the
inclusion of the time of utterance within the reference time in cases of anterior aspect may optionally be reflected by the presence of an auxiliary with present morphology, which would not be appropriate in cases of perfective aspect, where the reference time is located before the time of utterance.

The data are consistent with Deo’s prediction (2012: 12) that ‘the PERF paradigm obligatorily has perfective reference,’ since her definition of ‘perfective reference’ includes ‘culminated, completed eventualities (or their result states);’ thus, she counts resultative forms as perfective. She does not explicitly mention experiential aspect, but since this is a subtype of anterior aspect along with resultative aspect, these two would be expected to pattern together.

The association of participial morphology with perfective/anterior aspect occurs in Sanskrit as well as in Middle Indic. The aspectual semantics of the predicated past passive participle in early Vedic are discussed by Jamison (1990) and by Condoravdi and Deo (2015). These authors agree that the formation had typically stative readings at this stage (Jamison 1990: 1; Condoravdi & Deo 2015: 267). This situation changed in later varieties of Sanskrit; Jamison (1990: 18) suggests that the state of affairs in Epic and Classical Sanskrit derives from ‘a state of language somewhat like the RV,’ since in those speech varieties ‘the past participle … can express either proximate or simple past value in context.’ Such a secondary development of perfective readings by an originally anterior category is typologically well-attested. Forms that have undergone it are labelled ‘old anteriors’ by Bybee et al. (1994: 78–81). These ‘have anterior as a use but also have other uses suggestive of more grammaticised meanings … The majority … have a use as a non-anterior past or perfective.’ It appears that the development of the predicated past passive participle into an old anterior in post-Vedic Sanskrit is paralleled in Pāli, unsurprisingly, since this too must descend from an earlier stage close to the language of the Rig Veda.

The only aspectual reading unambiguously attested among the presents in the two Jātakas read is the imperfective one, exemplified in (26). This fits nicely with Deo’s prediction (2012: 12) that ‘[i]n its past uses, the PRES paradigm systematically has imperfective reference,’ whatever the lexical aspect of the individual predicates, and indicates that we are not dealing with narrative presents due to shift of the deictic centre. Deo 2012: 15 prompts me to consider whether ‘the perspectival shift effected by the supposed [narrative] present use of PRES is consistent within a narrative,’ which might be evidence for the narrative present hypothesis. A superficial look at some aspects of the data might indicate that the shift is in fact consistent. In the Apanṭakajātaka, all but one of the present forms fall into one of three distinct clusters of past-referring presents. One cluster appears in (29), the other two in (35) and (36).
At that time the Bodhisattva, having been born into a caravan-leader’s family, having reached adulthood in the course of time, travels around with five hundred carts, doing trade. At one time he goes from east to west, at one time from west to east. At Varanasi there is another caravan-leader’s son, stupid, foolish, not clever in resources. (Apaṇṇakajātaka, page 98)

Is it raining on the road you came on? Are there lakes covered with lotuses and so forth? (Apaṇṇakajātaka, page 100)

However, there is an obvious aspectual explanation for the strong concentration of presents at each point in the text. (29), from the frame story, describes the new converts’ fervour immediately after their conversion; each verb is clearly habitual, and they are grouped together because at this point in the story the author wants to describe various aspects of the characters’ lives during a certain period of some duration. (35) is from near the beginning of the Jātaka proper, before the events of the story have begun to unfold. The author’s con-
cern here is to provide background information necessary for readers’ understanding of the story that will follow. It is therefore unsurprising that we find several imperfective (present) verbs. In (36), the wise merchant questions the yakṣa and his followers, who are disguised as another caravan, and are pretending that there is water nearby: they hold bunches of lotuses and are dripping with water. It seems plausible to me that the wise merchant is asking about events that were (potentially) ongoing at the time when the ersatz caravan passed along the road.

Similarly, with the exception of vicarati ‘travels around’ in (27)=(4)=(3) above, all the past-referring presents in the Vaṃśupathajātaka occur in a single passage. However, an aspectual explanation for this situation is not hard to find either. The passage in question describes features of the wilderness that the Buddha’s previous incarnation enters in (18) above. At this point the progress of the narrative is suspended while the author fills in background information about the locale. Imperfective aspect, which is appropriate in such a context, continues until enough background information has been supplied and the author is ready to describe the caravan’s experiences on the particular occasion the story is about. Thus, although the past-referring presents in these stories often occur together in blocks, they are consistently imperfective, indicating that they are not narrative presents in the sense defined in 1.3 (past-referring presents that cooccur in blocks due to discourse factors). On the narrative present hypothesis, we would indeed expect blocks of presents, but we would also expect diverse aspectual readings within those blocks, since the switch into the narrative present is supposed to be based on discourse factors and not connected to aspect.

The one present for which an imperfective interpretation seems less than completely compelling is vadanti ‘say’ in (39). While imperfective aspect might not have been expected in this context, I suggest, given the very strong association between historic presents and imperfectivity elsewhere in the text, that the author may have used the present form vadanti ‘say’ here because he wanted to suggest that the demons went on making their claim for an extended period. In this case, the passage could be paraphrased as ‘Some men were saying “It’s raining further on, in this green forest-belt” ...’ An additional reason for imperfective aspect could be the plurality of the speakers, who presumably did not all speak in unison. The ambiguity of the passage extends to the lexical aspect. If the form is imperfective, it denotes an Activity, but if it is perfective, it denotes an Accomplishment.

Like the perfective/anterior semantics of the predicated past passive participle, the use of past-referring presents to encode imperfective aspect is also paralleled in Sanskrit: in the classical language, ‘the most common employment of the [past-referring] present is that of expressing facts when “going on”’.
(Speijer 1886/1998: 244). Such forms may be accompanied by the particle *sma*, but this ‘is not necessary and is generally wanting in the body of a narrative’ (Speijer 1886/1998: 245). The history of the semantics of this category in the various Indo-Aryan languages falls outside the scope of this article, but the wide spread of the phenomenon is noteworthy, whatever the reason for it (influence between languages, common inheritance from an earlier stage, or a mixture of the two).

In contrast to participles and presents, finite pasts are compatible with all three of imperfective, perfective, and anterior aspect. Although perfectives like *paṭipajji* ‘entered’ in (18) are most common, there are also a number of imperfectives like *ahosi* ‘were’ and *agamāsi* ‘was going’ in (20) and a resultative in (37).

(37) *Kim pana tvāṁ ...* oṣṣaṭṭhaviriy-o
Q * but 2SG.NOM.SG. of.abandoned.resolution-M.NOM.SG.
*bhikkhū* *ti* *jānāpe-si*
monk. NOM.SG. QUOT.PTC. reveal-PST.2SG.

But have you ... revealed yourself as a monk who has abandoned resolution? (Vaṭṭapathajātaka, page 107)

The high number of perfectives is probably due to the text type rather than to any innate aspectual features of the morphological category, since the rather simple and fast-paced narrative requires few imperfective verbs. Half of those that do appear are finite pasts.

Whether an imperfective reading is possible for a finite past seems to depend largely on lexical aspect. Out of the 16 imperfective pasts, 15 are States (10 being forms of √bhū ‘be’, like *ahosi* ‘were’/‘was’ in (19) and (20)) and the sixteenth, *agamāsi* ‘was going’ in (20), is an Activity. However, the small size of the corpus makes it impossible to determine whether a telic or instantaneous predicate really cannot have past morphology and imperfective aspect. (By contrast, only 11 of the 16 imperfective presents [69%] are States or Activities.) Out of the 87 perfective pasts, only three are unambiguously atelic, one of which is a semelfactive, *paṭṭhaṇñi* ‘struck’ in (21)=(8); the other two are Activities, one of which, *desesi* ‘preached’, is given in (38):

(38) *Na kevala-ṅ ca nesam Satth-ā
everta-ṁ yeva dhamma-ṁ dese-si*
NEG alone-N.ACC.SG. and this.M.GEN.PL. Master-NOM.SG.
this.much-N.ACC.SG. EMPH.PTC. Dharma-ACC.SG. preach-PST.3SG.

And the Master did not preach Dharma to them only this much. (Apanṭaṇakajātaka, page 97)
The other perfective pasts include 55 Accomplishments, e.g. kathesi ‘delivered’ in (17), and 25 Achievements, e.g. paṭipajji ‘entered’ in (18), as well as four pasts with uncertain lexical aspect. Thus, 93% of perfective pasts have either telic or instantaneous lexical aspect.

The aspectual characteristics of the various morphological categories emerge clearly from consideration of lexemes with forms attested belonging to more than one category. The two stories contain five lexemes attested with both past and participial morphology, three with both past and present morphology, one with both participial and present morphology, and two with all three of past, present, and participial morphology. The aspectual reading for each token of each of these lexemes is the one normally associated with the relevant morphological category (or one of the readings normally associated with the relevant morphological category in the case of the categories that are associated with multiple readings). For example, one of the lexemes attested in all three morphological forms is vīgam ‘go’. Participial examples include gato ‘left’ in (14), with perfective aspect, while finite pasts include agamāsi ‘was going’ in (20), with imperfective aspect, and presents include gacchati ‘goes’ in (35), with imperfective aspect. Perfective pasts and a resultative participle are also attested.

3.4 Summary
It appears that participles in the Apanṇakajātaka and Vaṇṇupathajātaka can only have perfective or anterior aspect (with no sign of lexical restrictions on what readings are available) and presents can be only imperfective. The data are thus neatly consistent with the aspectual hypothesis set out in Deo (2012), since this pattern is what one would expect if, as she argues, the two categories express perfective (including anterior) and imperfective aspect respectively. Fisher’s exact test shows that the difference between the proportions of imperfective and perfective/anterior predicates represented among the presents and participles is significant at $p < .05$ ($p = < 0.0001$). The figures used are given in Table 4.

|          | Participles | Finite presents |
|----------|-------------|-----------------|
| Imperfective | 0           | 16              |
| Perfective/Anterior | 31         | 0               |

TABLE 4
The finite past category (probably including surviving old perfects) is compatible with multiple aspectual readings, the reading in a given case apparently being largely determined by lexical aspect.

4 Agaḍadatta

4.1 Preliminaries
Later Middle Indic is represented by forms from the Jaina-Māhārāṣṭrī stories of Agaḍadatta and Naggai. I read the first hundred verses of the story of Agaḍadatta (in the edition of Jacobi 1886: 68–74). This tale of the exploits of a prince who, after abandoning the profligate ways of youth and living a life of dashing adventure, ultimately undergoes a religious conversion and becomes a Jain ascetic, is written in āryā verse. It is impossible to identify either the original author of the text or the date of composition. It is preserved in the Uttarādhyayana-ṭīkā of Devendra, a compilation dated, at least by Charpentier (1911: 202), to 1073 CE, so that date is a plausible terminus ante quem. Alsdorf (1938) argues that Devendra’s version is more recent than the variant of the same story contained in the Vasudevahinḍi. Since the latter is likely to have been composed no later than the sixth century (Alsdorf 1938: 281), the version discussed here may tentatively be located somewhere in the second half of the first millennium.

As a poetic text, Agaḍadatta may be deemed less appropriate for a study of this nature than the other texts examined here, on the ground that poetic language, constrained by metre, is typically further from everyday speech than prose. However, while it is true that some ancient poems are highly elaborate, even the most outlandish poetic flights must be capable of being generated by a native speaker’s grammar. In the case of Agaḍadatta, the language is plain and unadorned, with few poetic flourishes, suggesting that the constructions used do not diverge too far from the language of everyday, and there is little sign of either archaisms or eccentric word order. Furthermore (as will be seen below in sections 4 and 5), the results of my study indicate that the morphological expression of past events in Agaḍadatta is very similar to that of Naggai, a prose text also written in Jaina-Māhārāṣṭrī, confirming that this aspect of the language was not overly contorted by poetic necessity.

I extracted 98 relevant forms, including 68 participles (69%) belonging to 39 verbs and 30 presents (31%) belonging to 26 verbs. It will be apparent that Māhārāṣṭrī represents a stage of linguistic development much further removed from Sanskrit than Pāli does. Finite past forms have been virtually
abandoned and past participles and morphological presents have stepped into their place.

4.2  **Lexical aspects**

The distribution of situation types across morphological categories is shown in Table 5. The total number of unambiguously telic predicates (Accomplishments and Achievements) is 74 and the total number of atelic predicates (States and Activities) is 20. Table 6 shows the numbers and percentages of telic and atelic predicates represented among forms of each morphological category.

**Table 5**

| morphological category  | Participles | Finite presents |
|-------------------------|------------|----------------|
| States                  | 0 (0%)     | 4 (13%)        |
| Activities              | 2 (3%)     | 14 (47%)       |
| Accomplishments         | 28 (41%)   | 6 (20%)        |
| Achievements            | 35 (51%)   | 5 (17%)        |
| Uncertain Lexical Aspects| 3 (4%)     | 1 (3%)         |

**Table 6**

| morphological category | Telic predicates | Atelic predicates | Uncertain lexical aspects |
|------------------------|------------------|-------------------|--------------------------|
| Participles            | 63 (85%)         | 2 (10%)           | 3 (75%)                  |
| Finite Presents        | 11 (15%)         | 18 (90%)          | 1 (25%)                  |

The largest group of participles are Achievements as in (39).

(39) Achievement

\[ \text{kumar-o } cai-ūna \text{ niya’pura-}m \text{ ramma-}m \]

\[ \text{youth-NOM.SG. leave-GER. own.city-ACC.SG. delightful-N.ACC.SG.} \]

\[ \text{khagga’}sahā-o \text{ cal-}io \]

\[ \text{with.sword.as.companion-M.NOM.SG. depart-PST.PTCP.M.NOM.SG.} \]

The youth, having left his own delightful city, **departed**, his sword his companion. (verse 9)
There are many Accomplishments, exemplified by (40), from an episode that takes place after Agaḍadatta meets a teacher of the arts, Pavaṇacaṇḍa, who will become his mentor.

(40) Accomplishment

Sankhaurā-o jahā viṅkhan-to
Sankhaura-ABL.SG. how leave-PST.PTCP.M.NOM.SG.

kah-ιο taha vuttant-o kumar-enaṃ
tell-PST.PSS.PTCP.M.NOM.SG. thus story-NOM.SG. youth-INSTR.SG.

Pavaṇacaṇḍa-ssa
Pavaṇacaṇḍa-GEN.SG.

The story of how he left Sankhaura was told by the youth to Pavaṇacaṇḍa.

(verse 16)

There are also a couple of Activities, e.g. vihiyam ‘perpetrated’ in (41). This example is from a speech delivered by the people of Agaḍadatta's home-city to his father, the king; the context shows ((45) below) that Agaḍadatta's misbehaviour consisted in a long record of bad habits.

(41) Activity

kumar-ena narā’hiv-a nayar-e asamanjasa-ṃ
youth-INSTR.SG. lord-VOC.SG. city-LOC.SG. unseemly-N.NOM.SG.

vihiya-ṃ
do-PST.PASS.PTCP-N.NOM.SG.

Lord, unseemly [behaviour] has been perpetrated in the city by the youth. (verse 6)

The participles with uncertain lexical aspect are pulaiyā ‘seen/looked at’ in (42) and cintiyam ‘thought’ in (43) and (44).

(42) kumar-ena ta-mmi diyab-e sā
youth-INSTR.SG. that-M./N.LOC.SG. day-LOC.SG. that.F.NOM.SG.

bāl-ā pula-iyā ya sa visesam
girl-NOM.SG. see/look at-PST.PTCP.F.NOM.SG. and comprehensively

On that day that girl was comprehensively seen/looked at by the youth.

(verse 29)

4 The gender of diyaba- ‘day’ fluctuates in this text.
(43) *cint-yaṁ ca: kim esā*
think-PST.PTCP.NOM.SG. and Q this.F.NOM.SG.
*amaraνilāsini uaha hojja nāgākann-a-vva*
divine.plaything.NOM.SG. ??? be.OPT.3SG. Nāga.girl-NOM.SG.-or
And he thought: “Is this woman a plaything of the gods, or might she be a Nāga girl?” (verse 30)

(44) *tao cint-yaṁ rāin-ā:*
thereupon think-PST.PTCP.NOM.SG. king-INSTR.SG.
*uttamaνpuris-o eso.*
excellent.man-NOM.SG. this.M.NOM.SG.
Thereupon the king thought: “This is an excellent man ...” (verse 74)

In (42), I find it hard to tell whether the verb should be translated as ‘see’ (in the sense of ‘catch sight of, notice’), in which case it would be an Achievement, or ‘look at’, in which case it would be an Activity. As with (22)–(25) above, I am unsure whether to class the occurrence of a thought in (43) and (44) as an Achievement or a Semelfactive.

The largest group of finite presents are Activities as in (45); recounting the young prince’s wild oats, the author uses presents to describe his general regrettable habits:

(45) Activity
*majja-ṃ pi-ei jūya-ṃ ram-ei*
liquor-ACC.SG. drink-PRES.3SG. gambling-ACC.SG. enjoy-PRES.3SG.
*pisiya-ṃ mahu-ṃ ca bhakkh-ei*
meat-ACC.SG. honey-ACC.SG. and eat-PRES.3SG.
*nāḍaνpeḍaνyavesaνindaνpariga-o*
attended.by.groups.of.actors.and.crowds.of.prostitutes-M.NOM.SG.
*bham-ai puraνmajjha-e*
roam-PRES.3SG. city.middle-LOC.SG.
He drinks liquor, he enjoys gambling, he eats meat and honey, he roams in the middle of the city, attended by groups of actors and crowds of prostitutes. (verse 5)

5 The etymology and translation of *uaha* here are disputed. Jacobi (1886: 97) understands it to be the equivalent of Sanskrit *utāho* (a combination of two interrogative particles) and translates it as ‘oder’ (‘or’), while Meyer (1909: 241) identifies it with the second-person plural imperative *uaha* ‘look!’, which is related to the Vedic *uvē* ‘I see’ (Mayrhofer 1986: 233).
There are also a few States, Accomplishments, and Achievements, exemplified by (46)–(48).

(46) State
\[ \text{tatth'} \quad \text{at-thi} \quad \text{setṭhi'} \text{dhāy-ā} \]
there be-PRES.3SG. merchant's.daughter-NOM.SG.
\[ \text{manoḥar-ā} \quad \text{Mayaṇamanjari} \quad \text{nāma} \]
heart-stealing-F.NOM.SG. Mayaṇamanjari.NOM.SG. by.name
A merchant's daughter, heart-stealing, Mayaṇamanjari by name, is there.
(verse 25)

(47) Accomplishment
\[ \text{bāvattari-ṃ} \quad \text{kal-ō} \quad \text{gēṅh-ai} \quad \text{thev-ena} \]
seventy-two-ACC.SG. art-ACC.PL. acquire-PRES.3SG. short-M.INSTR.SG.
kāl-enam

time-INSTR.SG.
He acquires the seventy-two arts in a short time. (verse 22)

(48) Achievements
\[ \text{kov-ēṇa} \quad \text{dhamadham-ento} \quad \text{danta'cchobh-ē} \quad \text{ya} \]
anger-INSTR.SG. pant-PRES.PTCP.M.NOM.SG. tusk.thrust-ACC.PL. and
d-ei
so
ta-mmi
kumaro

give-PRES.3SG. that.M.NOM.SG. that-N.LOC.SG. youth-NOM.SG.
vi
\[ \text{pīṭṭha'bhā-e} \quad \text{pahaṃ-ai} \]
EMPH.PTC. back.region-LOC.SG. strike-PRES.3SG.
dadha'muṭṭhi pahar-enāṃ tā \quad \text{odhāv-ai} \quad \text{dhāv-ai} \]
firm.fist.blow-INSTR.SG. thereupon run-PRES.3SG. race-3SG.
cal-ai
khal-ai
parina-o
tahā
shake-3SG. stumble-3SG. bent.down-PST.PTCP.M.NOM.SG. thus
ho-i
\[ \text{paribham-ai} \]
be/become-PRES.3SG. move.around-PRES.3SG.
cakka'bhamaṇa-ṃ \quad \text{ros-enāṃ} \]
circular.movement-INSTR.SG. anger-INSTR.SG.
dhamadham-ento
so
pant-PRES.PTCP.M.NOM.SG. that.M.NOM.SG.

Panting with rage, he [an elephant] inflicts thrusts of his tusks on it [Agaḍadatta's cloak]. The youth strikes him in the region of his back with a firm blow of his fist. Thereupon he [the elephant] runs, races, shakes, stumbles, becomes bent down [to gore with his tusks], moves around with a circular movement, panting with anger. (verses 60–61)
The present whose lexical aspect was identified as uncertain is *cintae* ‘thinks’ in (49), which describes Agaḍadatta’s reaction to an admirer’s avowal of love. As with (22)–(25) and (43)–(44), I am unsure whether this is an Achievement or a Semelfactive.

(49) *so* nisun-iūna vayaṇa-ṃ tie bālā-ē
that.M.NOM.SG. hear-GER. speech-ACC.SG. that.F.GEN.SG. girl-GEN.SG.
cint-ae hiya-ē6 mar-ai phuḍaṃ
think-PRES.3SG. heart-LOC.SG. die-PRES.3SG. clear-N.ACC.SG.
ciya esā EMPH.PTC. this.F.NOM.SG.
Having heard that girl’s speech, he *thinks* in his heart: “Clearly this woman is dying.” (verse 40)

Out of 20 atelic States and Activities, 18 (90 %) are presents, consistently with Deo’s prediction (2012: 12) that ‘[s]entences containing lexically atelic predicates tend to appear with PRES inflection.’ Out of 77 telic/instantaneous predicates (74 Accomplishments and Achievements, (43)–(44), and (49)), 65 (84 %) are participles, consistently with Deo’s prediction that ‘[s]entences containing lexically telic predicates tend to appear with PERF inflection.’ Fisher’s exact test shows that the difference between the proportions of telic and atelic predicates represented within each category is significant at $p < .05$ ($p = < 0.0001$). (The figures used are those given in Table 6 for the actual numbers of telic and atelic predicates among both participles and presents.)

### 4.3 Aspectual readings

The distribution of aspectual readings is shown in Table 7.

**Table 7**

| Participle | Imperfective | Perfective | Experiential | Resultative | Uncertain |
|------------|--------------|------------|--------------|-------------|-----------|
|             | 0 (0 %)      | 24 (80 %)  |              |              | 2 (7 %)   |
|             | 50 (74 %)    | 4 (13 %)   |              |              |           |
|             | 2 (3 %)      | 0 (0 %)    |              |              |           |
|             | 15 (22 %)    | 0 (0 %)    |              |              |           |

6 I assume that Jacobi’s *biyae* is an error. *Hiya*-, the Jaina-Māhārāṣṭrī equivalent of Sanskrit *hrdaya*-, is also seen in (50), (54) and (55), although Jacobi also prints *biyae* in (50) and (54).
The majority of the participles have unambiguously perfective readings, as in (39).

A good number are clearly resultative, e.g. those that appear in Mayanamanjari’s speech describing her love for Agadadatta:

(50) jad’divasā-o diṭ-tho sundar-a
which.day-ABL.SG. see-PST.PTCP.M.NOM.SG. handsome-M.VOC.SG.
tam Kusumacāva’aricch-o tad’diyahā-o majhām
2SG.NOM. flower.bowed.like-M.NOM.SG. that.day-ABL.SG. ISG.GEN.
asuha’tarū vaddh-io hiya-e jena:
sorrow.tree.NOM.SG. grow-PST.PTCP.M.NOM.SG. heart-LOC.SG. for
nidd-ā vi hu nat-thā
sleep-NOM.SG. EMPH.PTC. EMPH.PTC. destroy-PST.PTCP.F.NOM.SG.
loyaṇ-āna deha-ṃmi vaddh-io dāh-o
eye-GEN.PL. body-LOC.SG. grow-PST.PTCP.M.NOM.SG. fever-NOM.SG.

From the day I saw you, gorgeous, like the flower-bowed [god of love], from that day the tree of sorrow has grown in my heart, for sleep has vanished from my eyes, in my body has grown fever. (verses 35–36)

I take diṭtho ‘seen’ in 35 to have perfective aspect, referring to Mayanamanjari’s first sight of her heart-throb in the past. The other three participles (vaddhio ‘grown’ × 2 and natthā ‘vanished’), however, clearly denote continuing states: both the tree of sorrow and the fever have grown and are still there, while the vanished sleep is still absent. Anterior aspect for participles shows no sign of lexical restriction, as 14 lexemes are represented among the 17 tokens. They are mostly telic (nine Achievements, four Accomplishments, and an Activity), but the 50 perfective participles include 23 Achievements and 23 Accomplishments (as well as an Activity and three forms with uncertain lexical aspect), so this correlation is specific to neither of the perfective and anterior readings.

Two participles, vihiyam ‘perpetrated’ in (41) and diṭtho ‘seen’ in (51), have experiential readings. (51) comes soon after (48); Agadadatta’s heroism has impressed the local monarch (not identical with his father), who asks who he is. An answer is supplied by a servant who has seen him one or more times in Pavanacanda’s house. There are no particularly striking commonalities between the two verbs, so there is no apparent reason to doubt that experiential readings are available for all lexemes. As in the Jātakas, all the participles with certain or possible resultative or experiential aspect appear in character speech (direct or indirect).
The participle with a doubtful reading, \textit{viṇikkhanto} ‘left’ in (40), is a case where I am torn between perfective and resultative readings. The translation given above suggests a perfective one, but given the context (indirect statement), I consider it possible to view \textit{viṇikkhanto} as an unergative resultative referring to Agaḍadatta’s state at the time of his telling the story. If this is correct, ‘had left’ would be a better gloss than ‘left’.

The majority of the presents have clearly imperfective readings, e.g. in (45). There are, however, two ambiguous cases, which I will now discuss. The first is supplied by (48). The verbs referring to the elephant’s actions (\textit{dei} ‘inflicts’ [lit. ‘gives’], \textit{odhāvai} ‘runs’, \textit{dhāvai} ‘races’, \textit{calai} ‘shakes’, \textit{khalai} ‘stumbles’, \textit{pariṇao} … \textit{hoi} ‘becomes bent down’, and \textit{paribhamai} ‘moves around’) are beautifully clear examples of presents with imperfective aspect. The passage does not describe a sequence of events, one following another as it is completed, but rather a scenario in which the elephant was repeatedly doing all of these things for an extended period of time. The verb denoting Agaḍadatta’s action, \textit{pahaṇai} ‘strikes’, complicates the situation because it is accompanied by a singular instrumental adjunct, \textit{daḍhamuṭṭhipahareṇam} ‘with a firm blow of his fist’. It is hard to understand the striking as a repeated action when we are told that it is accomplished with a single blow.

I can see two possible analyses of the passage. One is that the singular \textit{daḍhamuṭṭhipahareṇam} actually stands in for many blows, making it possible to understand \textit{pahaṇai} as denoting a habitual action, like the other presents in this passage. This seems to be the idea of Meyer (1909: 245), who translates ‘the prince hit the animal on the region of the back with hard blows of the fist’ (my italics). The other is that Agaḍadatta only strikes the elephant once, in which case the verb has perfective aspect. The reason for choosing a present may have something to do with the large number of nearby presents, which create a present context.

The second aspectually ambiguous form occurs in (52), which contains the question answered in (51):

\begin{center}
\begin{tabular}{llll}
(51) & \textit{kala˙yāyariya-ssa} & \textit{mandir-e} & \textit{es-o} \\
 & teacher.of.art-GEN.SG. & house-LOC.SG. & this-M.NOM.SG. \\
& \textit{kala˙parisama-ṃ} & \textit{kun-anto} & \\
& art.exertion-ACC.SG. & do-PRES.PTCP.M.NOM.SG. & \\
& \textit{diṭ-ṭho} & \textit{me} & \textit{tattha nara˙nāh-a} \\
& see-PST.PTCP.M.NOM.SG. & ISG.INSTR. & there & king-VOC.SG. \\
\end{tabular}
\end{center}

In the house of the teacher of the arts, king, this man has been seen by me there, devoting effort to the arts. (verse 66)
Having seen the youth positioned on the elephant's back like Suravai, the king asks his servants: “Who is this boy, a treasury of good qualities?” (verse 64)

Given the collective object, niyabhiccayanam ‘own servants’, it is conceivable that the king could have asked a series of servants rather than making a single utterance (making imperfective aspect appropriate), but the text is equally compatible with the assumption that the king spoke only once and the body of servants were all present at the time. That neither analysis can be ruled out is indicated by the fact that the text contains several past-referring presents with incontestably perfective readings. One is cintae ‘thinks’ in (49), where the present seems to recount a one-off instance of thought on Agaḍadatta’s part, exactly parallel to the use of participial forms of the same verb elsewhere, e.g. in (43). The other three are presented in (53), (54), and (55). It is unclear whether it is significant that all four introduce either utterances or thoughts (as does pucchai ‘asks’ in (52)).

(53) belongs to Agaḍadatta’s introduction to Pavaṇacanda’s house:

(53) sāh-ei mahiliyā-e eso maha
say-PRES.3SG. wife-GEN.SG. this.M.NOM.SG. 1SG.GEN.
bhāuyā su-o-tti
brother’s.SON-NOM.SG.-QUOT.PTC.

[The teacher] says to his wife: “This is my brother’s son.” (verse 18)

(54) is from Agaḍadatta’s first conversation with Mayaṇamanjarī and shortly follows (43).

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7 The same is true of vadanti ‘say’ in (30), the sole aspectually ambiguous past-referring present in the two Jātakas read, but this is likely to be a coincidence.
So having thought in his heart, the youth speaks the following aloud: “Who are you, excellent girl?” (verses 31–32)

Theoretically, the explanation for the presence of both perfective and imperfective past-referring presents might be that they are narrative presents and therefore their morphology has nothing to do with aspect. The fact that present morphology is associated with both atelic lexical aspect and imperfective aspect is evidence against this. The other way to identify narrative presents suggested by Deo (2012: 15) involves ‘examining whether the perspectival shift effected by the supposed [narrative] present use of PRES is consistent within a narrative.’ There are, in fact, multiple passages in Agaḍadatta that feature blocks of present forms, including (45) and (48). The others appear at verses 21–27 and 90–92. The former passage, which describes the situation after Agaḍadatta moves in to Pavaṇacaṇḍa’s house, contains seven presents, including atthi ‘is’ in (46) and geṇhai ‘acquires’ in (47). Verses 90–92 contain two presents, paribhamai ‘roams around’ and hiṇḍai ‘wanders’. The subject of both is Agaḍadatta, who has volunteered to catch a thief for the king and is looking for him in various shady locations around the city. The nine present forms outside these passages occur in complete isolation.

It is conceivable that the text might feature more than one kind of past-referring present. The present forms that occur in blocks would be narrative presents and, as such, to be differentiated from the other presents that encode imperfective aspect and occur singly. I do not endorse this analy-
sis because attention to the context in each passage suggests that the block-forming presents also encode imperfective aspect. For (45), it is easy to explain the block-like behaviour in aspectual terms, as the passage is devoted to describing an ongoing state of affairs, so it is natural that all the verb forms are imperfective. The same is true of most of the presents in (48), although, as noted above, pahanai ‘strikes’ is problematic. A similar situation obtains in verses 21–27. This passage describes the mode of life of the two young people, Agañadatta and his lovestruck new neighbour Mayanamanjarī, over an extended period of time, not a series of one-off events. It is an extended set-up for the scene from which (42), (43), (49), (50), and (54) are taken. Likewise, the passage at verses 90–92 describes an ongoing state of affairs, Agañadatta’s detective activities. The occasional block-like behaviour of present forms in this text therefore gives no reason to suppose that they are narrative presents.

The selection read from the story contains seven lexemes attested with both participial and present morphology. In two cases, those of √cal ‘move’ and √grah ‘seize’, the aspectual reading of each token is one of the readings typically correlated with the relevant morphological category. For example, calio ‘departed’ in (39) is a perfective participle, while calai ‘shakes’ in (48) is the corresponding imperfective present. The other five cases, those of √bhan ‘say’, √cint ‘think’, √prach ‘ask’, pra√han ‘strike’, and √šās ‘say’, are less straightforward. The forms of √bhan are ten perfective participles and one equally perfective present in (54). The three tokens of √cint include two perfective participles, in (43)–(44), and one perfective present in (49). The forms of √prach are three perfective participles and one aspectually ambiguous present in (52). There are two tokens of pra√han, one perfective participle and one present, in (48), classified as having an uncertain aspectual reading. There are also two tokens of √šās, one participle and one present; the participle is again perfective, as is the present (in (53)). Thus, consideration of lexemes with both participial and present forms attested confirms both that these categories have broadly similar aspectual behaviour to their Pāli equivalents and that, in contrast to Pāli, the Māhāraṣṭrī situation is complicated by the presence of perfective presents.

4.4 Summary
Participles in Agañadatta always have perfective or anterior readings (with no apparent lexical restrictions on the availability of either), while presents usually have imperfective aspect. Although the presence of several perfective presents makes this system less neat than that observed in the Pāli Jātakas, Fisher’s exact test shows that the difference between the proportions of perfective/anterior and imperfective readings represented within each category is significant at $p < .05$ ($p = < 0.00001$). The figures used are given in Table 8.
5 Naggai

5.1 Preliminaries
Naggai is a romantic fairy tale incorporating nested narratives. It begins with a king whose horse runs away with him into a forest, where he finds and marries a beautiful maiden, who tells him the story of the marriage of their previous incarnations. At that time he was also a king, while she was the daughter of a painter, who entranced him with her intelligence and virtue.

Data were culled from pages 48–53 of Jacobi 1886. This yielded 151 forms: 117 participles (77%) belonging to 57 verbs and 34 presents (23%) belonging to 25 verbs. Although I did not carry on to the end of the story, the number of forms from Naggai thus exceeds that gathered from any other single text, making this an adequate corpus for comparison with the 152 forms from the two Pāli stories and the 98 from Agaḍadatta.

5.2 Lexical aspects

| Participle Type     | Participles | Finite presents |
|---------------------|-------------|-----------------|
| States              | 1 (1%)      | 3 (9%)          |
| Activities          | 2 (2%)      | 20 (59%)        |
| Accomplishments     | 57 (49%)    | 6 (18%)         |
| Achievements        | 56 (48%)    | 5 (15%)         |
| Uncertain Lexical Aspects | 1 (1%) | 0 (0%) |

The distribution of situation types across morphological categories is shown in Table 9. The total number of unambiguously telic predicates (Accomplishments and Achievements) is 124 and the total number of atelic predicates...
(States and Activities) is 26. Table 10 shows the numbers and percentages of telic and atelic predicates represented among forms of each morphological category.

| Table 10 |
|---------------------------------|
| **Telic predicates** | **Atelic predicates** | **Uncertain** |
| lexical aspects       |                      |       |
| Participles            | 113 (91%)            | 3 (12%) |
| Finite Presents        | 11 (9%)              | 23 (88%) |

Participles are most often telic, as in (56)–(57), but may also be atelic Activities, as in (58). māo ‘fit’ in (59) is the only State.

(56) Accomplishment

\[
\text{kaḍḍ-amāṇassa} \quad \text{ya jav-ena}
\]

pull-PRES.MID.PTCP.M.GEN.SG. and speed-INSTR.SG.

\[
dhāv-amāṇo \quad \text{ga-o} \quad \text{bārasa}
\]

run-PRES.MID.PTCP.M.NOM.SG. go-PST.PTCP.M.NOM.SG. twelve

\[
\text{joyaṇ-āiṃ}
\]

yojana-ACC.PL.

While he was pulling on the reins, [the horse] went speedily at a run for twelve yojanas. (page 48, lines 28–29)

(57) Achievement

\[
tass' \quad \text{annayā} \quad \text{Uttarāvahā-o do}
\]

that.M.GEN.SG. at.one.time Northland-ABL.SG. two.M.NOM.PL.

\[
turangam-ā \quad \text{uvāyaṇ-ena} \quad \text{samāga-yā}
\]

horse-NOM.PL. present-INSTR.SG. arrive-PST.PTCP.M.NOM.PL.

On one occasion two horses arrived as a present for him from the Northland. (page 48, lines 24–25)

(58) Activity

\[
gega-ṃmi \quad \text{pāyav-e} \quad \text{ta-ṃ} \quad \text{bandh-iūṇa}
\]

one-M.LOC.SG. tree-LOC.SG. that-M.ACC.SG. tie-GER.

\[
\text{lag-go} \quad \text{paribham-iuṃ} \quad \text{ka-yā}
\]

begin-PST.PTCP.M.NOM.SG. roam.around-INF. do-PST.PTCP.F.NOM.SG.
Having tied him [his horse] to a tree, he began to roam around. Sustenance was **effected** by means of fruit. (page 48, lines 31–32)

The one form whose lexical aspect was identified as uncertain is *cintiyam* ‘thought’ in (60). As with (22)–(25), (43)–(44), and (49), this is clearly an instantaneous event, but I was uncertain whether to classify it as an Achievement or a Semelfactive.

Among presents, Activities like *kaḍḍhai* ‘pulls’ and *vaccai* ‘goes’ in (61) are by far the most common situation type. As well as a few States like *atthi* ‘is’ in (62), telic situation types are also represented, as in (63)–(64).
at-thi
be-PRES.3SG.
There is in him not even a little pity. (page 49, line 26)

(63) Accomplishment
rāyā bhaṇ-ai: kaham aham cauthth-o
king.NOM.SG. say-PRES.3SG. how 1SG.NOM. fourth-M.NOM.SG.
pā-o?
leg-NOM.SG.
The king says: “How am I the fourth leg?” (page 49, lines 33–34)

(64) Achievement
ārūḍh-o rayani‘vāsa’nimitta-m
climb-PST.PTCP.M.NOM.SG. purpose.of.staying.the.night-ACC.SG.
egammi girisihar-e 8 jāva, pecch-ai tattha
one-N.LOC.SG. mountain.peak-LOC.SG. when see-PRES.3SG. there
satta’bhūmiya-m pāsāya-m.
seven.storied-M.ACC.SG. palace-ACC.SG.
After he climbed a mountain-peak in order to stay the night there, he sees there a palace with seven stories. (page 48, lines 32–33)

The data in Table 10 are consistent with Deo’s predictions (2012: 12) that ‘[s]entences containing lexically atelic predicates tend to appear with PREs inflection’ and ‘[s]entences containing lexically telic predicates tend to appear with PERF inflection.’ Fisher’s exact test shows that the difference between the proportions of telic and atelic predicates represented within each category is significant at $p < .05$ ($p= < 0.00001$). (The figures used are those given in Table 10 for the actual numbers of telic and atelic predicates among both participles and presents.) The tendency for atelic predicates to have present morphology suggests that the presence of presents is aspectually conditioned rather than being due to a shift in deictic centre. Furthermore, past-referring presents do not occur only in discrete blocks with shifted deictic centres, but are intermingled with participial forms, as in (65).

8 Jacobi prints girisibare, but I assume this is an error, as the word is from Sanskrit śikhara- ‘pointed’. The Prākrit form is listed as sihara- in Turner’s comparative dictionary (Turner 2008/1966: 720).
(65) tassa ya jovana’th-ā that.M.GEN.SG. and arrived.at.puberty-F.NOM.SG.
Kaṇayamanjari nāma dhūyā Kaṇayamanjari.NOM.SG. by.name daughter.NOM.SG.
bhattam’ān-ei annaya patth-īyā bring.food-PRES.3SG. at.one.time set.out-PST.PTCP.F.NOM.SG.
gahiya’bhoyan-ā piū’samīva-m; jāv’ āgacch-ai having.got.food-F.NOM.SG. father’s.vicinity-ACC.SG. while go-PRES.3SG.
jaṇa’samkul-e rāya pah-e people.crowded-M.LOC.SG. king’s.road-LOC.SG.
java’nimukk-en’ ās-eṇa eg-o set.on.with.speed-M.INSTR.SG. horse-INSTR.SG. one-M.NOM.SG.
āsavār-o sā ya bhī-yā rider-NOM.SG. that.F.NOM.SG. and frighten-PST.PTCP.F.NOM.SG.
palā-nā.
flee-PST.PTCP.F.NOM.SG.
And his young daughter, Kaṇayamanjari by name, brings his meals. On one occasion she set out for where her father was, having got the food; while she is going, there was a rider on the king’s road, [which was] crowded with people, setting his horse to run fast. And she fled, frightened. (page 49, lines 14–16)

5.3 Aspectual readings
The distribution of aspectual readings is shown in Table 11.

| Participles | Finite presents |
|-------------|----------------|
| Imperfective | 1 (1%) | 28 (82%) |
| Perfective  | 107 (91%) | 5 (15%) |
| Resultative | 8 (7%) | 0 (0%) |
| Uncertain   | 1 (1%) | 1 (3%) |

Among participles, perfective aspect, exemplified by (56), is clearly the norm, but there are also resultative forms, e.g. in (66). As with the Jātakas and Agaḍadatta, all resultative forms appear in character speech. They show no sign of lexical restriction, since the eight tokens belong to as many lexemes. They are mostly telic (including four Achievements, three Accomplishments, and an
Activity), but so are the perfective participles (including 52 Achievements, 54 Accomplishments, and one form with uncertain lexical aspect [in (60)]).

(66) cittayār-āṇam sabh-ā samabhāg-eṁ
    painter-GEN.PL. hall-NOM.SG. equal.shares-INSTR.PL.
virik-kā.
entrust-PST.PTCP.F.NOM.SG.
The hall has been entrusted to the painters in equal shares. (page 49, lines 28–29)

The participle with imperfective aspect is māo ‘fit’ in (59).
The participle with an uncertain aspectual reading is kayā ‘effected’ in (58).
I find it impossible to identify the reference time, which would reveal whether the verb is perfective or imperfective, from the context.
The majority of present forms have imperfective aspect, as in (61), but there are also a few with perfective aspect. Two are bhaṇai ‘says’ in (63) and pecchāi ‘sees’ in (64). The others appear in (67)–(69). The five forms belong to four different lexemes and only two, in (63) and (68), introduce speeches, indicating that the apparent restriction of perfective aspect among present forms to such contexts observed in Agadaḍatā may be accidental.

(67) pahaṭṭha˙maṇ-o ya pavīṭ-tho
    with.delighted.mind-M.NOM.SG. and enter-PST.PTCP.M.NOM.SG.
    ta-ṃmi bhavan-e rāyā. pecch-ai tattha
    that-N.LOC.SG. house-LOC.SG. king.NOM.SG. see-PRES.3SG. there
    jīna˙bhavaṇa-ṃ; tass’ aggao
    Jina.sanctuary-ACC.SG. that.N.GEN.SG. before
    vei.
    wedding.balcony.NOM.SG.
And, with delighted mind, the king entered that house. He sees there a sanctuary of the Jina; in front of it [was] a wedding-balcony. (page 49, lines 4–5)

(68) anna-ṁ puṭ-thā kah-eī:
other-N.ACC.SG. ask-PST.PTCP.F.NOM.SG. relate-PRES.3SG.
egā-ṃmi sannives-e eg-o
one-M.LOC.SG. place-LOC.SG. one-M.NOM.SG.
mayahar-o.
Village.magistrate-NOM.SG.
Asked for another [story], she relates: “In a place [there was] a village magistrate.” (page 50, line 31)
(69) jāhe kahavi na pāv-ei, tāhe tassa
when somehow NEG reach-PRES.3SG. then that.M.GEN.SG.
ros-o āga-o. tena
anger-NOM.SG. arrive-PST.PTCP.M.NOM.SG. that.M.INSTR.SG.
tasso ˈvarīṃ mutta-m purisa-m ca
that.M.GEN.SG. on urine-ACC.SG. dung-ACC.SG. and
vosir-īyaṃ. Mayaṇiyā-e discharge-PST.PTCP.N.ACC.SG. Mayaṇiyā-INSTR.SG.
bhaṇiyaṃ: kahaṃ so
say-PST.PTCP.N.NOM.SG. how that.M.NOM.SG.
mutta˙purīsa-ṃ vosir-ai tasso ˈvarīṃ,
urine.and.dung-ACC.SG. discharge-PRES.3SG. that.M.GEN.SG. on
ja-m vayān-em pi pāve-uṃ na
which-M.ACC.SG. mouth-INSTR.SG. EMPH.PTC. reach-INF. NEG
be.able-PRES.3SG
“When he [a camel] can’t reach [a tree] in any way, he became angry [lit. anger of him arrived]. He discharged urine and dung on it.” Mayaṇiyā said:
“How does he discharge urine and dung on the tree that he can’t even reach with his mouth?” (page 50, line 37-page 51, line 1)

The present form whose aspectual reading was identified as uncertain is vaccai ‘passes’ in (70).

(70) tut-thena ya rann-ā
delight-PST.PTCP.INSTR.SG. and king-INSTR.SG.
savva′rajja′sāmiṇī ka-yā;
mistress.of.entire.kingdom.NOM.SG. make-PST.PTCP.F.NOM.SG.
paṭṭ-o ya bad-dho. evaṃ vacc-ai
turban-NOM.SG. and bind-PST.PTCP.M.NOM.SG. thus pass-PRES.3SG.
kāl-o. annayā
time-NOM.SG. at.one.time
Vimalacand’āyariya′samīv-e rāin-ā
proximity.of.the.teacher.Vimalacanda-LOC.SG. king-INSTR.SG.
Kanayamanjarī-e ya paḍivan-no
Kaṇayamanjari-INSTR.SG. and undertake-PST.PTCP.M.NOM.SG.
sāvaya dhamm-o.
lay.devotee.law-NOM.SG.
And she was made mistress of the entire kingdom by the delighted king; and the turban [of office] was bound [on her]. So time passes. On one
occasion the law of lay devotees was undertaken by the king and Kaṇayamanjarī in the presence of the teacher Vimalacanda. (page 53, lines 2–4)

The sentences on either side of the relevant sentence feature participles with obviously perfective aspect (kañā ‘made’, baddho ‘bound’, padivanno ‘undertaken’). evam vaccai kālo ‘so time passes’ bridges the gap between the two periods at which these events occurred. If it is perfective, the meaning is that a period of time elapsed after Kaṇayamanjarī was invested with the turban. If it is imperfective, the beginning of the period of time that elapsed before the hero and heroine became lay devotees is seen as overlapping with the investment with the turban, and the passage can be paraphrased thus: ‘She was made mistress of the kingdom and the turban of office was bound on her. Time was passing in such a way when the law of lay devotees was undertaken by the king and Kaṇayamanjari in the presence of the teacher Vimalacanda.’ The fact that the author has chosen to insert a present in the string of participles seems to support the imperfective reading, since one might expect him to use another participle if he had no aspectual contrast in mind. However, the presence of clearly perfective presents elsewhere in the text weakens this argument. For example, pecchāi ‘sees’ in (64) is also framed by participles, but can hardly be read as imperfective.

It cannot be said that present forms in Naggai ‘systematically have imperfective reference’ and ‘the PERF paradigm obligatorily has perfective reference’ (Deo 2012:12). On the other hand, there are clearly strong correlations between presents and imperfectivity on the one hand and participles and perfectivity on the other. Fisher’s exact test shows that the difference between the proportions of perfective/anterior and imperfective readings represented within each category is significant at \( p < .05 \) (\( p = < 0.00001 \)). The figures used are given in Table 12.

### Table 12

| Participles | Finite presents |
|-------------|-----------------|
| Imperfective| 1 28            |
| Perfective/Anterior | 115 5         |

Seven lexemes are attested in the text sample with both participial and present morphology. In five cases, the aspectual reading for each token falls within the range of readings generally correlated with the relevant morphological category. For example, āgacchā ‘goes’ in (65) and āgao ‘arrived’ in (69), respectively
an imperfective present and a perfective participle, are both forms of ā√gam. The other two cases, those of √bhan ‘say’ and √kath ‘relate’, are less straightforward. Out of the 27 forms of √bhan, 26 are perfective participles (as in (69)) and the twenty-seventh is the perfective present in (63). Similarly, the four tokens of √kath include three perfective participles and the equally perfective present in (68). Consideration of such lexemes thus confirms the near-identity of the grammars that generated the two Jaina-Māhārāṣṭrī texts (incidentally indicating that the poetic nature of Agaḍadatta does not remove it from normal speech too far for it to be of use for a study of this nature).

5.4 Summary

Participles in Naggai usually have perfective or anterior aspect, while presents are usually imperfective. This pattern is similar to that observed in Agaḍadatta, confirming that aspectual factors are important in determining morphology in Jaina-Māhārāṣṭrī, as in the Pāli of the Jātakas. However, there are exceptions in both directions, making the pattern less neat than the one observed in the data from the Apanṇakajātaka and Vaṇṇupathajātaka in Table 3. There are no signs of lexical restrictions on what readings are available for either participles or presents.

6 Conclusions

While the evidence of the corpora examined confirms that aspectual considerations often decided the morphology used to refer to past events, the details vary depending on the text, as summarised in Table 13.

|                | Jātakas          | Agaḍadatta       | Naggai         |
|----------------|------------------|------------------|----------------|
| Participles    | perfective/anterior | perfective/anterior | 98% perfective/anterior |
| Finite Presents | imperfective     | 80% imperfective | 82% imperfective |
| Finite Pasts   | aspectually unspecified | N/A              | N/A            |

The most obvious difference is the disappearance of the finite past in Māhārāṣṭrī. In Pāli, where it does appear, this category is not correlated with any particular aspectual reading(s). The factors that may have led writers to employ finite past forms rather than other, more aspectually specific, forms stand in need of further investigation.
Finite presents are associated with imperfective aspect, exceptionlessly in the Jātakas, but not in Agaḍadatta or Naggai. Particiles encode perfective and anterior aspect. The correlation is exceptionless in the two Jātakas and Agaḍadatta, but not in Naggai. As noted under 3.3, the correlation of participles with both perfective and anterior aspect is explicable on the assumption that the predicated past passive participle is an ‘old anterior’ in the sense of Bybee et al. (1994), i.e. an originally anterior category that has secondarily developed perfective readings. The situation in Naggai is unique in that the same category is now capable of expressing imperfective aspect as well as the familiar perfectivity and anteriority. The absence of imperfective participles in Agaḍadatta is striking, but, since I do not know of any other reason to suppose that the Jaina-Māhārāṣṭṛi of this text is more archaic than that of Naggai, may be accidental. The presence of perfective presents and an imperfective participle in Māhārāṣṭṛi suggests diachronic change away from the situation represented by the Jātakas, although it should be remembered that Māhārāṣṭṛi is not directly descended from Pāli, and so need never have passed through a precisely parallel stage.

Deo (2012) argues on the basis of Māhārāṣṭṛ and Apabhraṃśa that at least late Middle Indic, if not Middle Indic in general, had an aspect-based system rather than a tense-based one. Surprisingly, the texts discussed in this article indicate that if the data were ever fully consistent with such a system, it was actually at an earlier stage, that of Pāli. It is only in Pāli that the data contradict none of the testable predictions for an aspect-based system made in Deo (2012: 12) and summarised in 1.3. Her crucial prediction that ‘[i]n its past uses, the pres paradigm systematically has imperfective reference’ (Deo 2012: 12) is false for Māhārāṣṭṛ: finite past-referring presents are usually imperfective in Agaḍadatta and Naggai, but not always (80 % and 82 % respectively). The other crucial prediction that ‘the perf paradigm obligatorily has perfective reference’ (Deo 2012: 12) is true of the Jātakas and Agaḍadatta, but false of Naggai. The subsidiary predictions that, due to the aspectual features of the two morphological categories, atelic predicates will tend to have present morphology, and telic predicates will tend to have participial morphology do hold true in all the texts read, but this is not a sufficient criterion for qualifying as an aspect-based system.9

In Māhārāṣṭṛ, both participles and presents could (occasionally) have both perfective and imperfective readings. There are multiple conceivable interpretations of this synchronic state of affairs and explanations of its diachronic development. One crucial question is whether at some earlier stage (Proto-)

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9 The additional subsidiary prediction that those telic predicates that have present morphol-
Māhārāṣṭrī had had a system identical to that of Pāli or not. If it had not, it is possible that Jaina-Māhārāṣṭrī preserves a stage, presumably paralleled in the prehistory of Pāli, at which past-referring presents were not completely restricted to imperfective reference. If it had, by the time of Naggai’s composition the rigid semantic distinction between the old anterior and the imperfective past-referring present was breaking down. I am not currently able to explain this change, but suggest that it may be relevant that the present stem has a broader range of tense expression than the past participle, meaning that it can be used in contexts where the participle cannot. The present can refer to future time as well as past and present, as in (71), where kahei ‘she tells’ and suṇemi ‘I hear’ have future reference (cf. the morphological future kahissam ‘I will tell’, with the same reference time).

(71) iyari-e bhan-iyam: Mayaṇi-e, tāva
other-F.INSTR.SG. say-PST.PTCP.N.NOM.SG. Mayaṇiyā-VOC.SG. now
rāyā niddā-e suy-au, tao kah-issam.
king.NOM.SG. slumber-LOC.SG. sleep-IMP.3SG. then tell-FUT.1SG.
rāiṇ-ā cint-iyam: kerisa-ṃ
king-INSTN.SG. think-PST.PTCP.N.NOM.SG. what.sort.N.ACC.SG.
puṇa im-ā akkhāyaṇa-ṃ kah-ei? aham
EMPH.PTCL. this-F.NOM.SG. story-ACC.SG. tell-PRES.3SG. 1SG.NOM.
pi suṇemi-tti
EMPH.PTCL. hear-PRES.1SG.
The other woman said: “Mayaṇiyā, let the king sleep in slumber now, then I’ll tell [a story].” The king thought: “What kind of story will she tell? I will hear.” (Naggai, page 50, lines 12–14)

Participles are comparatively limited in their range of possible temporal reference. (When they have anterior aspect, the reference time does include the time of utterance, but there must still be a past event that has already occurred at least once.) In Middle Indic generally, Jamison notes that ‘often the present stem has become the basis for all other categories’ (Jamison 2004: 709). Due to this broad sphere of usage, the present may have come to be used as a default form even where a perfective reading was intended during the history of (Proto-)Māhārāṣṭrī.
As pointed out by Eystein Dahl (p.c., 19 March 2019), a possible parallel for such a loss of aspectual specificity by a formerly imperfective category exists in Italian, where the *imperfetto*, the descendant of the aspectually imperfective Latin imperfect, can be used in narrative discourse, as noted by Bertinetto (1986: 381–403). Scholars such as Blücher therefore view the *imperfetto* as aspectually neutral (Blücher 1974: 101). This development is also broadly in keeping with the generalisation that shifts in semantics of tense-aspect gram types are ‘uniformly generalizing’ (Condoravdi & Deo 2015: 261).

The formation may synchronically be basically imperfective in Māhārāṣṭrī as in Pāli, but have pragmatically licensed perfective uses. As noted by Ducrot (1979: 8–9), a typological parallel for such a system is found in French. The French *imparfait*, ordinarily an imperfective tense, is sometimes used where the reference time is not included within the event time, with the effect of emphasising that the event referred to was continuous throughout the period of time referred to and characterised that period. (72) is one of Ducrot’s examples.

(72) *L’année dernière je déménageais*. [ipf.]

Last year I moved house.

The meaning here is not that the move was ongoing before and after the beginning and end of the year, but rather that, although contained within the limits of the year, this was a major event that shaped the speaker’s experience of the period. Ducrot explains this by appealing to his thesis that ‘[l]orsqu’un énoncé est à l’imparfait, l’état ou l’événement constituant son propos sont présentés comme des propriétés, comme des caractéristiques du thème, et qualifient celui-ci dans sa totalité’ (‘when an utterance is in the *imparfait*, the state or event constituting its proposition are presented as properties, as characteristics, of the topic, and qualify it in its totality’; 1979: 6). Caudal et al. (2003) also lay out an analysis of the *imparfait* according to which perfective readings may occur due to pragmatic factors. A similar situation may obtain in Māhārāṣṭrī. This hypothesis may be supported by the fact that the perfective presents are a small minority of the total number of past-referring presents in both Agaḍa-datta and Naggai. On the other hand, I am unable to see any special pragmatic factors that distinguish the relevant examples ((49), (53)–(55), (63)–(64), and (67)–(69)).

None of the above reasoning can account for the imperfective use of the participle in Naggai. This phenomenon is extremely marginal (restricted to a single form, *māo* ‘fit’ in (59)) and may have a lexical explanation, but again more research is needed.
The development of Indo-Aryan tense systems in Middle Indic languages later than Māhārāṣṭrī, and in New Indo-Aryan, falls outside the scope of this article. However, it is noteworthy that descendants of the Sanskrit and Middle Indic past passive participle in New Indo-Aryan languages such as Hindi are still associated with perfective aspect. In Hindi, the relevant form, the perfective participle, is used when an ‘action is perfective (completed) and not habitual’ (Sandahl 2000: 80). Without an auxiliary, it is used as a perfective past; in combination with present-tense forms of honā ‘be’, it forms a perfect (Sandahl 2000: 89). (The fact that the auxiliary is required in the latter case suggests that the participle itself no longer encodes anterior aspect.) The association of the original morphological present with imperfective aspect does not survive in Hindi, where the form is an aspectless potential used when talking about events that may or may not happen (Sandahl 2000: 93). (The Hindi present is a periphrastic formation consisting of the present participle and a form of honā ‘be’.) However, Deo (2012: 26–30) notes that the use of forms descended from the Old and Middle Indic present to encode imperfective aspect does survive in other New Indo-Aryan languages such as Gujarati.

While these conclusions can only be provisional given the wealth of data still waiting to be analysed, my research takes a first step towards tracing the diachronic development of the morphosemantics of past-referring verbal forms in Middle Indic.

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