Participles as nonfinite Aspect

Evidence from Vedic

Laura Grestenberger

University of Vienna
Laura.Grestenberger@univie.ac.at

Morphosyntax and Semantics of Indo-European Participles
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Introduction: participles & "identity"

Participles in Indo-European languages occur in a variety of contexts—but not all participles are licensed in all contexts.

(1) Lowe 2017b: Three-way distinction for adjectival/nominal modification:

a. **Attributive**: the *happy/dancing* man.
b. **Predicative**: the man went home, *happy/dancing*.
c. **Predicated**: the man was *happy/dancing*.

- (1a-b): "non-predicated contexts"
- (1c) → "periphrastic constructions"
- Vedic has very few instances of (1c), compared to (1a-b) (Lowe 2015)
- Greek allows (1c), but not all participles occur in periphrastic constructions

Moreover, these contexts are rarely treated together. Are these all (syntactially/semantically) "identical"?

Participles & "identity"

Identity of participles across periphrastic constructions:

(2) Synchronic (non-?)identity: perfect/passive participle "syncretism" in German, English, Italian, ...:

a. Livia has **washed** the turtle. (*perfect*)
b. The turtle is being **washed** (by Livia) (*eventive/verbal passive*)
c. The turtle is **washed** (*adjectival/stative passive*)

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c. The turtle is **washed** (*adjectival/stative passive*)

- ≈ same affix in different contexts
- Synchronically "identical" in terms of their syntax/semantics, function, selectional properties...? (Wegner 2019)
- Category of the participle(s) across contexts? "Ptcp"? "Adj/a"? Something else?

Participles in periphrastic constructions

Accepting that participles in these contexts *are* identical in the relevant sense (here: structure), why do seemingly similar periphrastic constructions vary w.r.t. participial/auxiliary morphology, even in closely related languages?

(3) a. **Greek** periphrastic perfect (passive/nonactive):

le-lu-**mén**-os/ē ei-mi

PF-√release-PTCP.**NONACT**-M/F BE-1SG.PRES.ACT

'I have been released'

b. **Sanskrit** periphrastic perfect (deponent):

īḍ-ā́m ca-kr-**e**

√praise-VN-ACC.SG PF-DO-3SG.PF.**NONACT**

"He/she has praised"

c. **Latin** periphrastic perfect passive:

consump-**t**-um est

consume-PERF.PTCP.**PASS**-NOM.N BE.3SG.PRES

"It has been eaten"

(not today's topic)

Today's goals

- Use DM (Distributed Morphology) to "decompose" Sanskrit (& Greek) participles into their component parts
  - ... but with a focus on the framework-independent questions, such as: what is the category of participles, and do they have a (construction-independent) uniform function?
- Argue that participles are structurally identical across contexts ("predicated" & "non-predicated")
- Participles *are* nonfinite verb forms - they just lack Tense/Agr specifications/"features" → participles realize *Aspect* in (certain) nonfinite contexts
- Discuss implications for the (synchronic) verbal systems of Greek and Sanskrit, especially w.r.t. verbalizing, voice, and aspectual morphology.

Background: Participles & periphrasis in DM

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In DM:

- "verbal" properties of participles result from shared functional structure with finite verbs
- differences in participial syntax result from different attachment sites of the participial suffix.
  - Embick 2000, 2004b, Anagnostopoulou 2003, 2014, Alexiadou et al. 2007, Alexiadou & Anagnostopoulou 2008, Alexiadou et al. 2015, Baker & Vinokurova 2009, Baker 2011, Harley 2009 ...

Background: participles

- "Paradigmaticity" is a non-issue in DM—the "verbal properties" of participles arise because these forms *share structure* with the corresponding finite forms (we'll see exactly how much structure).
  - Cf. Bobaljik 2002, 2008 on "paradigm effects" in DM.

Additional assumptions (to be motivated)

- "PTCP" (participial/nominalizing morphology) spells out Asp when there is no verb movement to T (or Agreement with T is blocked).
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  - Embick 2000, 2003, 2004b, Alexiadou & Anagnostopoulou 2008, Bjorkman 2011, Alexiadou et al. 2015.
- "PTCP" = a contextual allomorph of Asp.
  - Can realize different features of Asp (e.g., perfective vs. imperfective).
  - Can realize Asp in different environments, e.g. adjacent to Voice[±ext.arg.]—difference between AG active and nonactive/middle participles, Grestenberger 2018, 2020.

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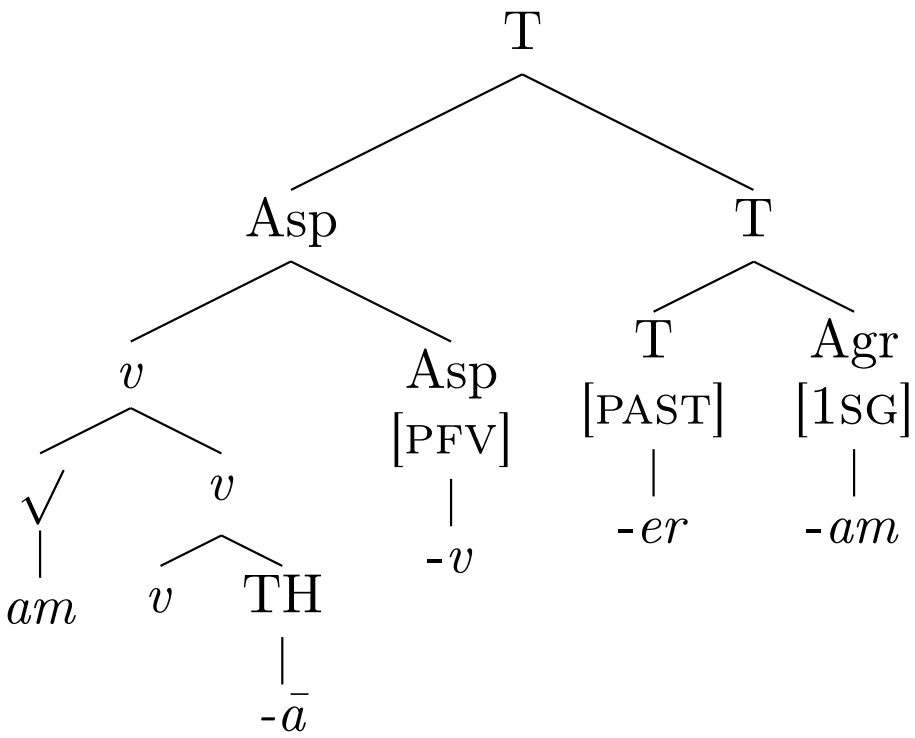
- **Mirror principle**: The sequence of morphemes on a complex form, e.g., a verb *mirrors* the sequence of verbal functional projections.
  - For example, aspectual morphemes are cross-linguistically closer to the root than morphemes relating to tense and mood.

Background: verbal morphology/inflection in DM

- Synthetic verb forms are complex heads built by cyclic head movement and left adjunction, e.g., (4) (Lat. pluperf. *amāveram* 'I had loved', cf. Embick 2000: 196–7).

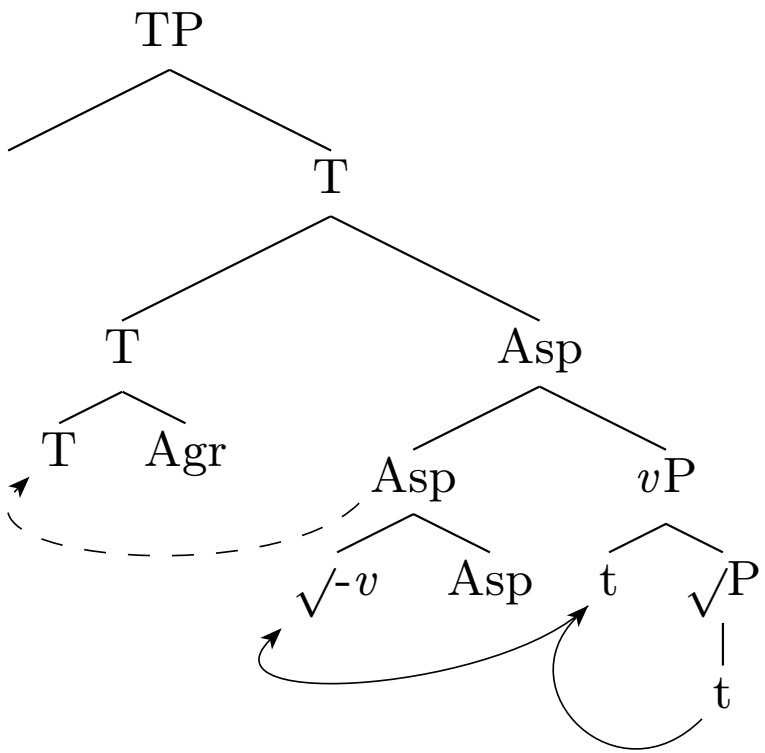
(4)



Background: verbal morphology/inflection in DM

- In analytic forms such as the Latin periphrastic perfect passive, the movement is interrupted: root-to-*v*-to-Asp movement takes place like in synthetic forms (solid arrows in (5)), but the resulting complex head cannot move to T (dotted line; ex. based on Embick 2000: 214).

(5)



DM & periphrasis

→ "Overflow" pattern (Bjorkman 2011): T/AGR features on T are "stranded" and a dummy verb BE is inserted in order to phonologically realize them, while the complex $\sqrt{}$-v-Asp head in (5) is realized by a nonfinite form (= the perfect participle).

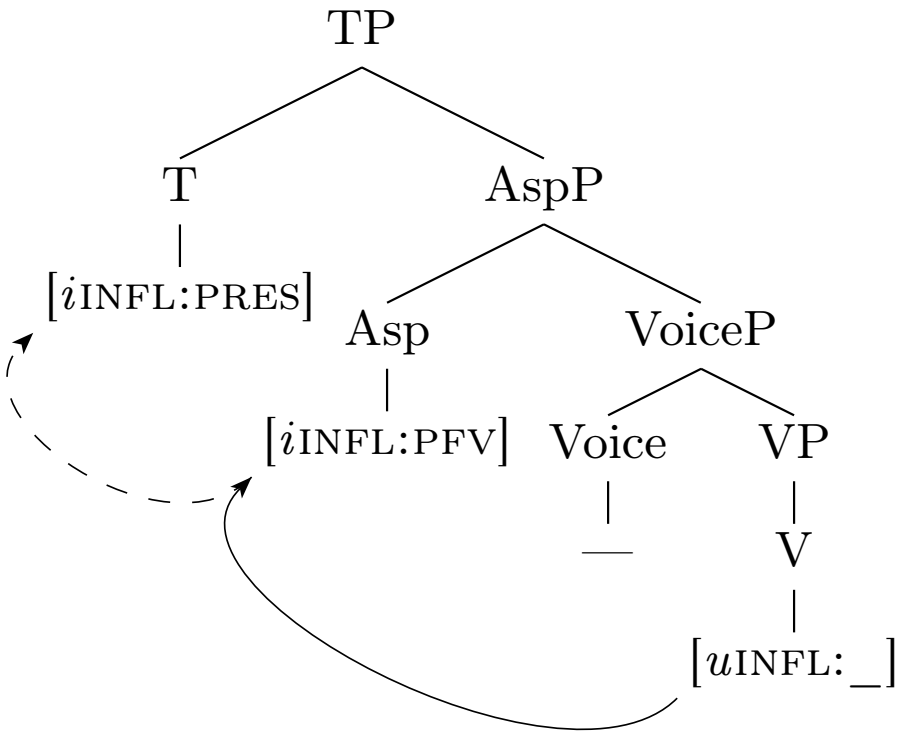
- Embick stipulates that movement to T is blocked in the perfect in the presence of the (interpretable) feature [PASS] on v.

Bjorkman 2011: analytic forms follow from properties of Agree + *markedness* of certain features.

- Auxiliaries are merely "placeholders" that pick up agreement features.

Illustration: the Latin perfect

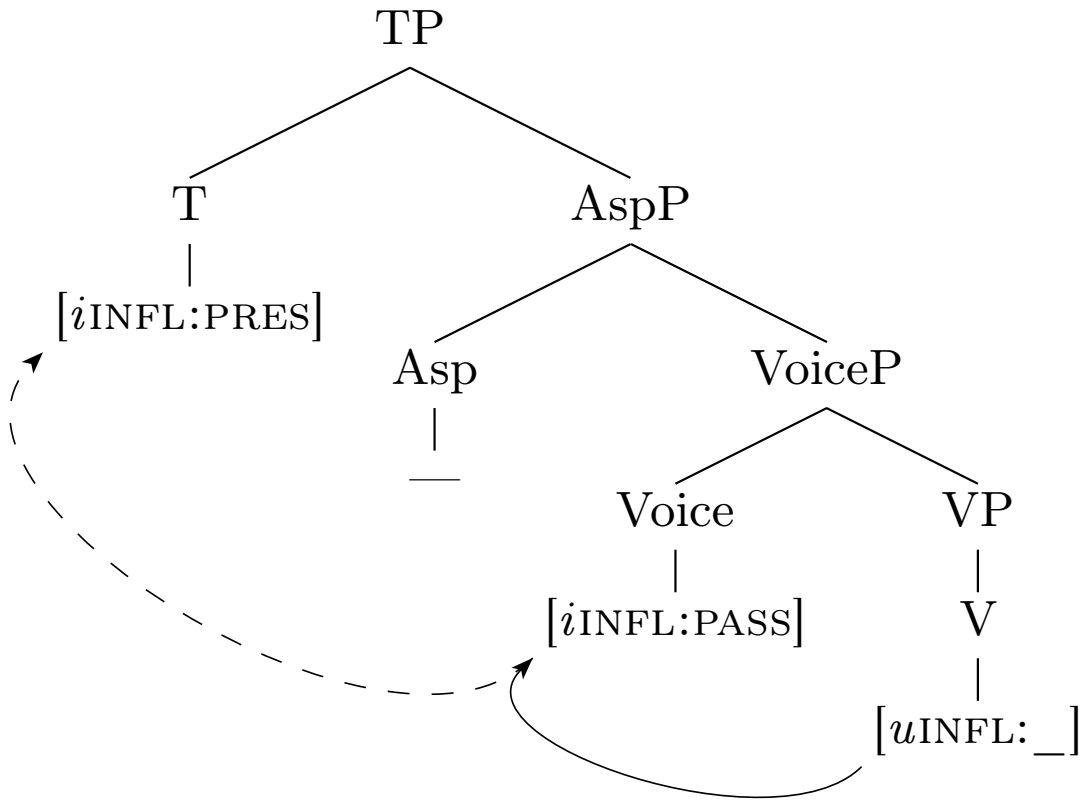
(6) Latin perfect active: *consumpserunt* 'they ate' (Bjorkman 2011: 72)



- The verb agrees directly with the marked inflectional feature on Asp because there is no marked feature on Voice, hence no intervenor.
- the verb moves to Asp (bold arrow); head movement depends on prior Agree.
- The verb is now in a local relationship with T and can agree with its inflectional features (dashed line) → no features are stranded → synthetic verb form.

Illustration: the Latin present passive "overflow pattern"

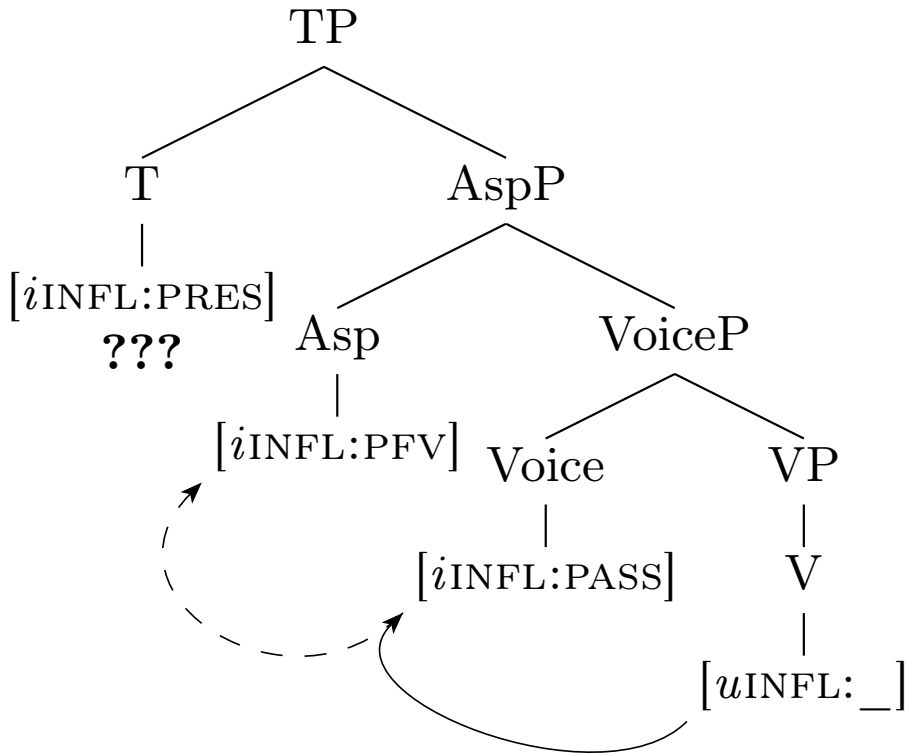
(7) Latin present passive: *consumitur* 'it is eaten' (Bjorkman 2011: 72)



- The verb agrees with the marked feature [PASS] on Voice and moves to Voice (bold arrow).
- No marked feature on Asp: the verb agrees with [*i*INFL] on T → no features are stranded.

Illustration: the Latin perfect passive

(8) Latin perfect passive: *consumptum est* 'was consumed':

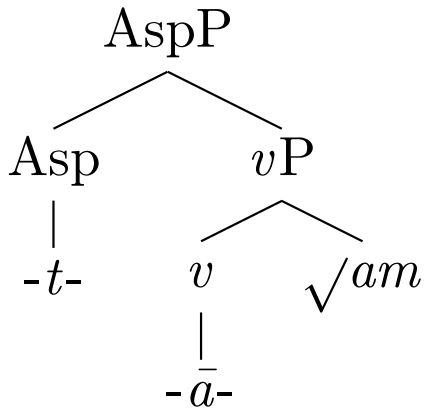


- The verb agrees with and moves to Voice, where it agrees with the marked [PFV] feature on Asp (dotted line).
- The marked [PASS] feature on Voice blocks further movement to Asp; [PFV] on Asp now acts as an intervenor for further agreement
- V cannot agree for Tense and [PRES] on T is stranded. → the default auxiliary BE picks up stranded T/Agr features.

Further assumptions

Embick (2000) analyzes the "participial" suffix -*t*- in perfect passive participles like *consump-**t**-um* (n.) in (8) or *am-ā-**t**-us* (m.) 'loved' as the default realization of the functional head Asp(ect) when Asp has not raised to T:

(9) *am-ā-t-us* (Embick 2000: 219)



(10) Realization of Asp (not raised to T; Embick 2000: 218)

a. -*nt*- ↔ [pres]
b. -*s*- ↔ [ ]/ _ (List)
c. -*t*- ↔ [ ]

Further assumptions

For Vedic (and Greek), this needs to be modified to make the participial suffix context-sensitive to Voice (active/middle or active/nonactive):

(11) Realization of Asp (Vedic):

a. Asp ↔ *-(m)ānа-*/ Voice[NonAct] _

b. Asp ↔ *-nt-*: elsewhere

= Asp is realized as nonactive/active participial suffix if it is in a local structural relationship with a nonactive/active Voice head.

- Further arguments in Grestenberger 2018, 2020, Forthcoming.

Summary

(12) Proposed structure of a synthetic finite verb vs. participle, Vedic

a.

$\sqrt$	-v	-Voice	-Asp	-T
bhár	-*a*	-Ø	-Ø	-*te*

b.

$\sqrt$	-v	-Voice	-Asp	(-T)
bhár	-*a*	-Ø	-*nt*/*mā́na*-	

- Participial morphology is Asp in "nonfinite" environments (no infl. features on T/no T)
- (12b) holds for -*nt*-, -*(m)ā́na*-, -*vaṃs*-, but *not* for -*tá*- (which seems to be a different animal).
- But unlike in Latin (and Greek), (12b) is not found in periphrastic constructions/primary predication contexts.

Summary

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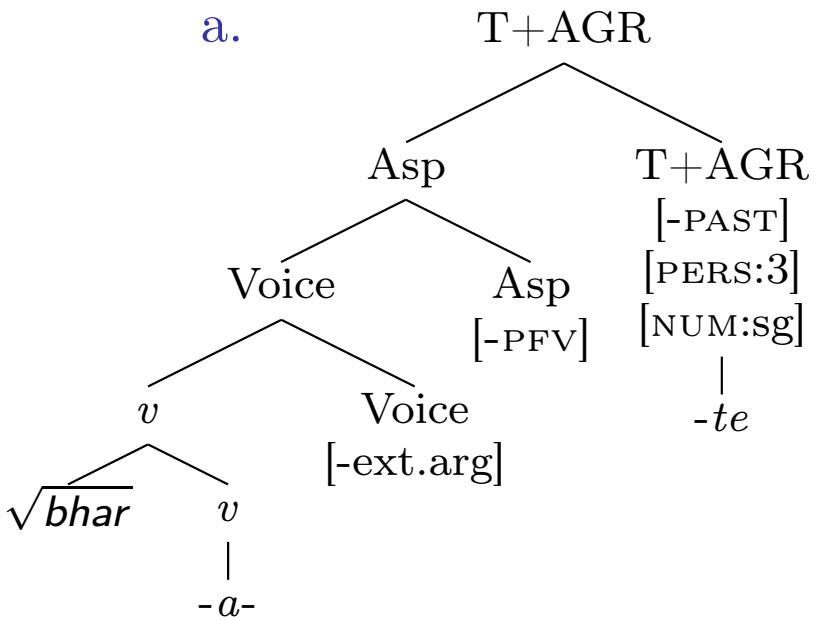
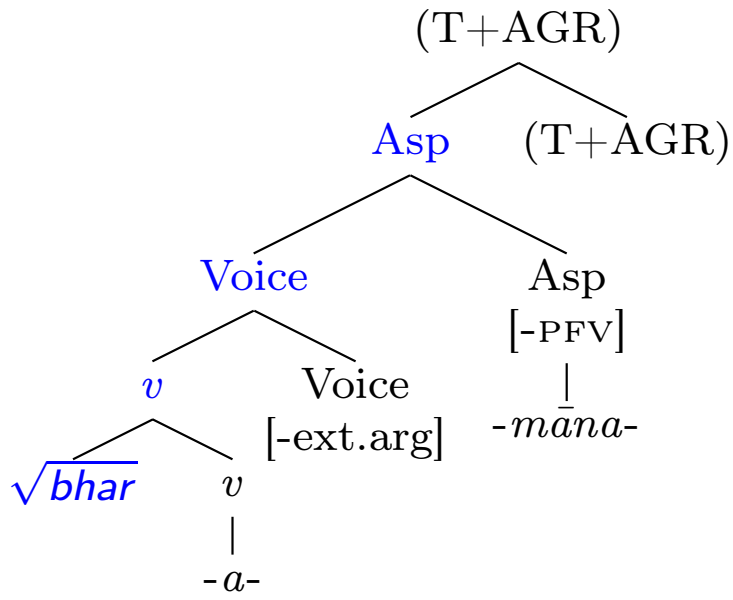


b.



Implications

Several advantages:

- No need to stipulate designated functional categories for auxiliaries ("AuxP") and participles ("PtcpP")—a participle is a verb that has not moved to T (Embick) or agreed with T (Bjorkman).
- Periphrastic constructions appear to "supplete a paradigm" (like in the Latin perfect passive) because they morphologically realize the same syntactic structure as the synthetic forms—the difference lies in interaction of Agree with marked features.
- If participial morphology spells out Asp, we expect to see it in other "tenseless" environments (the complement of verbs like *think, see, ..*, as NP-adjuncts, etc.) → **"non-predicated contexts"** → Vedic.

... Moreover, we now predict participles in these contexts to display very specific syntactic and semantic properties—those associated with the functional projections we have posited for them (verbalizing morphology, voice alternations, aspect ...).

Implications

Open issues:

1. Distribution of different auxiliaries (BE, HAVE), light verbs in periphrastic constructions? (Not today's topic)
2. Cross-linguistic variation: which features trigger periphrasis where, and why? (Not today's topic)
3. **Can this analysis be extended to participles/nonfinite verb forms outside of periphrastic constructions?**

Attributive, predicative and complement participles in Vedic

Background

Vedic participles are almost never used as primary predicates (Lowe 2015: ch. 4, Kümmel 2017), ex. such as (14) are rare in the RV (Kümmel 2017 lists 12, 2 of which with an overt copula).

- Follows from the assumption that participles are "blocked" in these contexts by finite synthetic forms as outlined above—though periphrasis eventually develops in, e.g., the perfect (Grestenberger Forthcoming) and the future (Lowe 2017a, 2017b).

(14) **ghn-ánt-o** vṛtrā́ṇi sūríbhiḥ
smash.PRES-PTCP.ACT-NOM.PL obstacles.ACC patrons.INSTR
ṣ-<i>yā-ma **sāsah-vā́ṃs-o** yudhā́
be-OPT-1PL.ACT vanquish.PF-PTCP.ACT-NOM.PL battle.LOC
nṛ́bhir amítrān
men.INSTR opponents.ACC
"... **may we**, with our patrons, **be (always) smashing obstacles**; **may we**, with our superior men, **be (always) victorious** in battle over those without alliance (to us)." (RV 7.92.4c–d, Jamison & Brereton 2014)

Background

... so participles are mainly found in "non-predicated" contexts , especially in adnominal (including "attributive") modification, (15), and sentential/converbal modification, (16).

- Terminology following Lowe 2015, 2017b; cf. (participant-/event-oriented) "secondary prediction" in Casaretto 2020.

(15) Adnominal (≈ NP adjuncts):

yásminn índraḥ ... óko dadhé
which.LOC Indra home.ACC established
brahmaṇyantaś=ca náraḥ
speak.formulae.PTCP.ACT.NOM.PL=and men

"In which (place) Indra .../ established his home, and (likewise did) men **who speak sacred forumulae**." (Lowe 2015: 87, RV 2.19.1cd, restrictive)

Background

(16) Predicative/converbal: (≈ TP adjuncts):

víṣūco **áśvān** **yuyujāná** īyata
separated.ACC.PL horses.ACC yoke.PF.PTCP.MID.NOM.SG speeds
ékaḥ
alone.NOM

"**Having yoked the separated horses**, he speeds (off) / alone."
(Lowe 2015: 94, RV 6.59.5cd)

Background

- ... of course, that doesn't mean that these are the only nonfinite verbal forms found in these contexts (cf. *-tá-*, especially in secondary predication → Casaretto 2020).
- But we're focusing here on the syntax & semantics of *participles* in these contexts. Specifically, we predict the following properties bases on the analysis outlined above:
  - *v*P/lexical aspect/event layer: verbal stem-forming morphology (✓), manner- and event-oriented adverbial modification.
  - VoiceP/voice alternations layer: direct object (acc. case) in active transitive participles, eventive passive reading (with optional demoted agent *by*-phrase) for passively used nonactive participles.
  - Asp/viewpoint aspect layer: ipfv/pfv (pf?) distinction like in the finite forms
  - lack of Tense/temporal distinctions
  - lack of sentential negation (?)
  - lack of clitic & preverb movement out of the participical adjuncts
    - ... adjuncts are "islands" for movement (ever since Ross 1967); we furthermore expect adjunct-argument asymmetries.

In the following, we'll take a closer look at each of these diagnostics.

Adverbial modification

- Modification by manner- and event-oriented adverbs such as *evám* 'thus', *sadyáḥ* 'instantly', (17), or manner/cause instrumentals, (18) (cf. Casaretto 2020: 38)

(17) aryó gíraḥ **sadyá á jagm-úṣ-īr**
stranger.GEN songs.ACC instantly PRVB come.PF-PTCP.ACT-NOM.PL.F
<á> <u>srā́ś cākant<u> <u>bháyeṣ<u> asmé
PRVB ruddy.NOM.PL enjoy.PF.IPV.3PL both.LOC us.LOC
"Let the ruddy ones [=Dawns?], **coming here in an instant** to the songs of the stranger, find pleasure in both of us [=singers and patrons]." (RV 1.122.14c–d, adnominal (?))

(18) **agním índh-ān-o** **mánasā** dhíyaṃ
Agni.ACC kindle.PRES-PTCP.NONACT-NOM mind.INSTR thought.ACC
saceta márt<i>yaḥ
follow.3SG.OPT.NONACT mortal.NOM
"**Kindling Agni with his mind**, the mortal should follow his visionary thought." (RV 8.102.22a-b, converbal)

Adverbial modification

(19) ví dyā́m eṣi rájas pṛth<ú> **áhā**
across heaven.ACC go.PRES.2SG realm.ACC broad.ACC days.ACC
mím-ān-o **aktúbhiḥ**
measure.PRES-PTCP.NONACT-NOM nights.INSTR
páśyañ jánmāni sūr<i>ya
looking.PRES.PTCP.ACT.NOM races.ACC sun.VOC
"Across heaven you go, the broad realm, **measuring the days with the nights**, looking upon the races, o Sun." (RV 1.50.7, Jamison & Brereton 2014, converbal)

(20) índro yád vajrí́ **dhṛṣá-māṇ-o**
Indra.NOM when mace.holding.NOM dare.PRES-PTCP.NONACT-NOM.PL
ándhasā bhinád valásya paridhī́mr iva tritáḥ
stalk.INSTR split.3SG.IPFV Vala.GEN barricades.ACC as Trita.NOM
"when the mace-wielding Indra, **emboldened by the soma stalk**, split the barricades of the Vala-cave, as Trita had." (RV 1.52.5c-d, Jamison & Brereton 2014; cf. Casaretto 2020: 20, 45, adnominal?)

Passivization

Several strategies:

- "derivational passive": -*yá*-passive (incl. ptcp.)
- "inflectional passive": passive function of nonactive ("middle") morphology
- Passive aorist
- "statives" (= "dentalless middles", not all are functionally passive)
- (-*tá*-"passives" ?)

The first four behave as passives given the usual diagnostics (ACC obj. → NOM subj., demoted agent, eventive reading... cf. Grestenberger 2021) and form participles, so these will be considered here.

- We'll leave -*tá*- aside for a number of reasons—ask Antje or Saverio about -*tá*-!

Passivization

- Adnominal passive participle with demoted agent (*yá*-passive):

(21) RV 5.3.8c-d:

saṃsthé yád agna íyase
gathering.LOC when Agni.VOC speed.2SG.PRES.NONACT
rayīṇā́ṃ devó **mártair** **vásubhir**
riches.GEN.PL god.NOM mortals.INSTR good.INSTR.PL
idh-yá-mān-aḥ
kindle-PASS-PTCP.NONACT-NOM

"... when, o Agni, you speed amid the gathering of riches as the god **being kindled by mortals and by the good (gods)**."
(Jamison & Brereton 2014)

Passivization

(22) ví pṛkṣo bābadhe **nṛ́bhi**
PRVB nourishment.ACC.PL push.INT.3SG.NONACT men.INSTR
stáv-ānaḥ
praise.PRES-PTCP.NONACT.NOM.SG
"He has thrust outward the fortifying nourishments **when being praised by men**." (RV 7.36.5c, Jamison & Brereton 2014, converbal)

(23) **gā́ ná vr-āṇā́** avánīr
cows.ACC like lock.in.AOR-PTCP.NONACT-ACC.PL.F streams.ACC.PL.F
amuñcad
released
"The streams, **pent up like cows**, he released (...)" (RV 1.61.10c, Jamison & Brereton 2014, adnominal)

Tense/Aspect

Probably the most difficult diagnostic—we predict participles to have the same aspectual properties as the corresponding finite forms, *but no independent tense specification.*

- It is usually claimed in the literature that this is the case—participles have no independent reference time: "a particple's reference time is identified with the event time of its matrix verb" (Lowe 2015: 197)
- Present participles invariably express imperfective aspect (≈ ongoing event), pf. participles (with the exception of stative perfects) express anteriority (event completed before event time of main predicate), cf. Lowe 2015: ch. 5 & (24).

(24) [vaiśvānaró **dásyum** agnír **jaghan-vā́ṁ**]
Vaiśvānara.NOM demon.ACC Agni.NOM kill.PF-PTCP.ACT.NOM.SG
ádhūnot kā́ṣṭhā áva śámbaram bhet
shake.3SG.IPF barriers.ACC down Śambara.ACC cut.3SG.AOR.INJ
"Vaiśvānara, Agni, **having smashed the Dasyu**, shook the wooden barriers, cut down Śambara." (RV 1.59.6c-d,
Jamison & Brereton 2014; cf. Casaretto 2020: 37)

Tense/Aspect

- However, aorist participles don't behave so neatly—they sometimes show the expected perfective reading, sometimes anteriority, but are sometimes indistinguishable from present participles, e.g., (25) (cf. Lowe 2015: 204ff.)

(25) áhiṃ yád vṛtrám apó vavri-vā́ṃs-aṃ
snake.ACC when Vṛtra.ACC waters.ACC obstruct.PF-PTCP.ACT-ACC
hánn ṛjīṣin **víṣṇunā**
slay.3SG.IPFV.ACT ṛjīṣin.VOC Viṣṇ.INSTR
sac-āná-ḥ
accompany.AOR-PTCP.NONACT-NOM.SG
"when you, **accompanied by Viṣṇu**, smashed the serpent Vṛtra, who had obstructed the waters, you possessor of the silvery drink." (Jamison & Brereton 2014)

≈ *sácamāna-*

Tense/Aspect

- Lowe (2015) argues that the behavior of the aorist participle is an indicator of ongoing changes in the Vedic tense-aspect system, namely 1) the decline of the finite aorist as a category and 2) the ongoing dissociation of the participial system from the finite verb (in terms of tense-aspect specification).
- But setting aside the aorist participle, the prediction holds up pretty well, since the vast majority of instances are present or perfect active participles:
- "Most examples in our corpus [*of secondary predicates*, LG] belong to present active participles (92 examples), followed by *ta*-forms (41 examples), present middle participles (27 examples) and perfect active participles (24 examples)." (Casaretto 2020: 35)

Negation

Depends on your view of negation — but if (finite) clausal negation is a feature [NEG] on (finite) T (or a CP-Adverb, cf., e.g., Breitbarth 2017), then we don't expect clausal negation (*ná*/*mā́*) in nonfinite contexts, including participles in "non-predicated" contexts.

- This is correct: Vedic participles are negated with the "adjectival" negative prefix *á(n)-* (Delbrück 1888, Lowe 2011, Lowe 2015: ch. 6).
- *á-ghnant-* 'not slaying', *á-jaghanvaṃs-* 'not having slain', *á-carant-* 'unmoving'; nonact. *á-kṣīyamāna-* 'not perishing, invincible', *á-cetāna-* 'not perceptive, inconsiderate', etc.
- Problem (?): "negated participles are almost always intransitive, even when the corresponding positive participle and the finite verbal stem is transitive." (Lowe 2015: 277)

Lack of movement out of participial adjuncts

Despite frequent claims of "free" or "flexible" word order in Vedic, complex participial phrases show fairly rigid word order.

- Secondary predicates/depictives tend to follow their controller and are usually adjacent to it (Casaretto 2020: 23ff.)
- ≈ Converbal participles tend to follow the noun with wich they agree (Lowe 2015: 194ff.)
- Moreover, "If the secondary predicate has its own dependent constituent — mostly an argument or adjunct —, this element normally immediately precedes the secondary predicate, ..." (Casaretto 2020: 34)

(26)

úpa	tvāgne	(...) **námo**
PRVB	you.ACC+Agni.VOC	homage.ACC
bhára-nt-a		émasi
bring.PRES-PTCP.ACT-NOM.PL		approach.1PL.ACT

"We approach you, o Agni, (..) **bringing homage**–" (RV 1.1.7, Jamison & Brereton 2014)

Lack of movement out of participial adjuncts

(27) atithigvā́ya śámbaraṃ girér ugró
Atithigva.DAT Śambara.ACC mountain.ABL mighty.NOM
ávābharat [mahó **dhánāni**
push.down.3SG.IPF great.NOM prizes.ACC
dáyamāna **ójasā**] víśvā
distributing.PTCP.PRES.NONACT.NOM.SG strength.INSTR all.ACC
dhánāny ójasā
prizes.ACC strength.INSTR

"The strong one brought down Śambara from the mountain for Atithigva, the great one **distributing riches with his strength** – all riches with his strength." (RV 1.130.7d-g, Jamison & Brereton 2014)

Lack of movement out of participial adjuncts

- "In the majority of instances, preverbs that modify participles are 'prefixed' to the participical stem (...) Non-compounded preverbs most commonly appear at the start of the participical phrase ..." (Lowe 2015: 130–131)

(28) á devó yāti savitā́ parāváto [<**á**>**pa**
PRVB god.NOM go.3SG.PRES Savitar.NOM distance.ABL away
víśvā duritā́ bā́dhamānaḥ]
all.ACC.PL danger.ACC fend.off.PTCP.NONACT.NOM.SG
"God Savitar drives hither from afar, **thrusting away all obstacles**."(RV 1.35.3c–d, Jamison & Brereton 2014)

→ So argument and adjunct position inside the "PtcpP" is fairly rigid, tmesis is restricted compared to the finite verb and crucially the preverb does not move outside of the participial phrase.

Addendum: participles in complements

"Completive participles": participles can form the complement of verbs of perception (Delbrück 1888: 395f., Lowe 2015: 109ff.), especially *man* 'think', less often *paś*/*dṛś* 'see', *cakṣ* 'look at'.

(29) sómam manyate papi-ván
Soma.ACC thinks drink.PF-PTCP.ACT.NOM.SG
"He thinks (that) he has drunk Soma." (RV 10.85.3a, Lowe 2015: 109)

Addendum: participles in complements

(30) aruṇó **mā** sakṕd vṕkaḥ **pathā́**
reddish.NOM me.ACC suddenly wolf.NOM path.INSTR
y-ánt-aṃ dadárśa hí
go.PRES-PTCP.ACT-ACC.SG see.PF.3SG.ACT because
"Because the reddish wolf **has suddenly seen me going along the path**, ..." (RV 1.105.18a-b, Jamison & Brereton 2014)

- "complementation hierarchy" (cf. recently Wurmbrand & Lohninger 2020) — no finite T in ECM complements?
- Why participles rather than infinitives/nominalizations? → Jaszczyński (forthcoming)

Addendum: substantivized participles

= attributive/adnominal participles modifying a null N?

(31) ... yé ta iṣṭáv **énaḥ** **kṛṇv-ánt-am** asura
which your will.LOC sin.ACC do.PRES-PTCP.ACT-ACC.SG asura.VOC
bhrīṇánti
punish.PRES.3PL
"... (with the weapons) which at your will punish him who commits sin, O asura." (RV 2.28.7ab, cit. after Lowe 2015: 93)

→ ≈ reduced relative clause (RC) structure with null head noun? (cf. Lowe 2015: 87ff., Sleeman 2011 ...)

- NB these differ from "lexicalized" participles (e.g., *pácant-*) or derivationally nominalized participles which take *genitive* rather than accusative objects (though not exclusively...).

Summary & Conclusion

Summary

(32) Summary: properties of Vedic participles in non-predicated contexts

verbal stem-forming morphology	✓
adverbial modification (manner/event)	✓
direct (and other) objects	✓
passive w/demoted agent	✓
lack of sentential negation	✓
pfv/ipv/pf distinction on participles	(✓/?)
lack of independent tense	✓
lack of preverb movement out of participial adjuncts	✓
lack of clitic movement out of participial adjuncts	?

Summary & conclusion

- Synthetic verb forms in Vedic are built via head movement → movement can fail/be blocked by a **marked feature**, leading to periphrastic constructions
  - In Greek: Asp[RES] → periphrastic perfect
  - In Sanskrit: "marked" v + Asp[PERF]
- Markedness of features should follow from independently observed properties of the Greek & Sanskrit verbal system
- In Vedic: no marked features → synthetic finite verbs.
- BUT: no movement to T in "non-predicated contexts" (tenseless adnominal/converbal adjuncts, complements of certain verbs...) → **participles**

Summary & conclusion

- Participles in Vedic (and Greek...) do not head a designated category ("Ptcp")—they are contextual allomorphs of verbal functional structure, specifically: **Asp**.
- Assuming participial morphology is inserted when there is no finite T, we derive the distribution of attributive participles, various types of participial adjuncts (absolute constructions?) and participial complements.

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Summary & conclusion

- Participles in Vedic (and Greek...) do not head a designated category ("Ptcp")—they are contextual allomorphs of verbal functional structure, specifically: **Asp**.
- Assuming participial morphology is inserted when there is no finite T, we derive the distribution of attributive participles, various types of participial adjuncts (absolute constructions?) and participial complements.
  - Note that these are environments which are usually independently analyzed as "tenseless"!
- When there *is* a finite T, Agreement/movement can fail if a marked feature intervenes/blocks movement (**PFV**/**PASS** in Latin, **RES** in CG, marked features on v in CS)
  - Again, failure to Agree, upwards Agree, etc. ... have been independently motivated (Bjorkman 2011 etc.)

Open issues/future work

- RC structure of (pre-nominal/post-nominal) attributive & predicative participles, and of participles as complements of verbs of perception & cognition?
- Distribution of other nonfinite forms? Infinitives, "verbal adjectives", etc.
- Why adjectival agreement?
- Other periphrastic constructions in Greek, Sanskrit?
- Diachrony: how/why does feature markedness, movement, etc., change?
- Exact mechanism of movement vs. agreement in Greek, Sanskrit, etc.?

Thank you!

Structure of participial adjuncts

= reduced relative clauses (Kayne 1994, Cinque 1999), but with differing internal structure (Sleeman 2011):

(33) prenominal vs. postnominal eventive passive participles (Sleeman 2011: 1574)

a. a book [recently published]
b. a book [that has recently been published]
c. a [recently published] book
d. *a [that has recently been published] book

Sleeman argues that postnominal participles project to CP, whereas prenominal ones don't:

(34) a. postnominal:
[$_{DP}$ the [$_{CP}$ [book]$_i$ [AspP [*vP* [sent [t$_i$ to John by Mary]]]]]]
b. prenominal:
[$_{DP}$ the [$_{FP}$ [$_{AspP}$ recently [$_{vP}$ [sent]]] [$_{F'}$ [book]]]]

... but she also argues that post- and prenominal (eventive & resultative) participles contain *v* & Asp, but not T.

References I

Alexiadou, Artemis & Elena Anagnostopoulou. 2008. Structuring participles. In Ch. B. Chang & H. J. Haynie (eds.), *Proceedings of the 26th West Coast Conference on Formal Linguistics*, 33–41. Somerville, MA: Cascadilla.

Alexiadou, Artemis, Elena Anagnostopoulou & Florian Schäfer. 2015. *External arguments in transitivity alternations: a layering approach*. Oxford University Press.

Alexiadou, Artemis, Liliane Haegeman & Melita Stavrou. 2007. *Noun phrase in the generative perspective*. Berlin: Mouton de Gruyter.

Anagnostopoulou, Elena. 2003. Participles and voice. In A. Alexiadou, M. Rathert & A. von Stechow (eds.), *Perfect explorations*, 1–36. Berlin: Mouton de Gruyter.

Anagnostopoulou, Elena. 2014. Decomposing adjectival/stative passives. Paper given at the MIT Linguistics Colloquium, Feb. 14 2014.

Baker, Mark. 2011. Degrees of nominalization: Clause-like constituents in Sakha. *Lingua* 121. 1164–93.

Baker, Mark & Nadya Vinokurova. 2009. On agent nominalizations and why they are not like event nominalizations. *Language* 85(3). 517–556.

Bjorkman, Bronwyn. 2011. *BE-ing default: The morphosyntax of auxiliaries*: MIT dissertation.

Bjorkman, Bronwyn. To appear. Verbal inflection in Distributed Morphology. In A. Alexiadou, H. Harley & R. Kramer (eds.), *Oxford handbook of Distributed Morphology*, Oxford: Oxford University Press.

References II

Bobaljik, Jonathan David. 2002. Syncretism without paradigms: Remarks on Williams 1981, 1994. In G. Booij & J. van Marle (eds.), *Yearbook of Morphology 2001*, 53–85. Dordrecht: Kluwer.

Bobaljik, Jonathan David. 2008. Paradigms, optimal and otherwise: a case for skepticism. In A. Bachrach & A. I. Nevins (eds.), *Inflectional identity*, 29–54. Oxford University Press.

Breitbarth, Anne. 2017. Jespersen's Cycle = Minimize Structure + Feature Economy. In *Studies on negation: Syntax, semantics, and variation*, 21–47. Göttingen: Vandenhoeck & Ruprecht / University of Vienna Press.

Casaretto, Antje. 2020. On secondary predicates in Vedic Sanskrit: syntax and semantics. *International Journal of Diachronic Linguistics and Linguistic Reconstruction* 17. 1–63.

Cinque, Guglielmo. 1999. *Adverbs and functional heads: a cross-linguistic perspective.* Oxford University Press.

Delbrück, Berthold. 1888. *Altindische Syntax* Syntaktische Forschungen 5. Halle a.S.: Verlag der Buchhandlung des Waisenhauses.

Embick, David. 2000. Features, syntax, and categories in the Latin perfect. *Linguistic Inquiry* 31(2). 185–230.

Embick, David. 2003. Locality, listedness, and morphological identity. *Studia Linguistica* 57(3). 143–169.

Embick, David. 2004b. On the structure of resultative participles in English. *Linguistic Inquiry* 35(3). 355–392.

Grestenberger, Laura. 2018. Deponency in finite and nonfinite contexts. *Language* 94(3). 487–526.

References III

Grestenberger, Laura. 2020. The diachrony of participles in the (pre)history of Greek and Hittite: losing and gaining functional structure. *Diachronica* 2(37). 215–263.

Grestenberger, Laura. 2021. Two types of passive? Voice morphology and "low passives" in Vedic Sanskrit and Ancient Greek. In Kleanthes K. Grohmann, Akemi Matsuya & Eva-Maria Remberger (eds.), *Passives cross-linguistically: theoretical and experimental approaches*, Leiden: Brill.

Grestenberger, Laura. Forthcoming. Περὶ περιφράσεως. In a forthcoming Festschrift.

Harley, Heidi. 2009. The morphology of nominalizations and the syntax of *v*P. In M. Rathert & A. Giannadikou (eds.), *Quantification, definiteness and nominalization*, 320–42. Oxford University Press.

Harley, Heidi. 2013. External arguments and the Mirror Principle: on the distinctness of Voice and v. *Lingua* 125(1). 34–57.

Jamison, Stephanie W. & Joel P. Brereton. 2014. *The Rigveda: The Earliest Religious Poetry of India, vol. I-III*. Oxford University Press.

Kayne, Richard. 1994. *The antisymmetry of syntax*. Cambridge, MA: MIT Press.

Kümmel, Martin J. 2017. Partizipien und Verbaladjektive als Prädikate im Indoiranischen. In C. Le Feuvre, D. Petit & G.-J. Pinault (eds.), *Verbal adjectives and participles in Indo-European languages*, 141–158. Bremen: Hempen.

Lowe, John J. 2011. Negated participles in Ṛigvedic Sanskrit and Proto-Indo-European. *Indo-Iranian Journal* 54. 19–38.

Lowe, John J. 2015. *Participles in Rigvedic Sanskrit: the syntax and semantics of adjectival verb forms*. Oxford University Press.

References IV

Lowe, John J. 2017a. The Sanskrit (pseudo-)periphrastic future. *Transactions of the Philological Society* 2(115). 263–294.

Lowe, John J. 2017b. *Transitive nouns and adjectives: Evidence from early Indo-Aryan.* Oxford: Oxford University Press.

Ross, John R. 1967. Constraints on variables in syntax. Ph.D. thesis, MIT.

Sleeman, Petra. 2011. Verbal and adjectival participles: position and internal structure. *Lingua* 121. 1569–1587.

Wegner, Dennis. 2019. The properties of perfect(ive) and (eventive) passive participles: An identity approach. *Glossa* 4(1). 1–33.

Wurmbrand, Susi & Magdalena Lohninger. 2020. An implicational universal in complementation: Theoretical insights and empirical progress. In J. M. Hartmann & A. Wöllstein (eds.), *Propositionale Argumente im Sprachvergleich: Theorie und Empirie*, Tübingen: Narr.