Participial syntax and the diachrony of non-finite adjuncts in Ancient Greek

(& Indo-European)

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Introduction: Finite and non-finite subordination

- Recent interest in "parataxis precedes hypotaxis" claim & the diachrony of finite subordination
  - E.g., É. Kiss 2024, 2025; Walkden 2024, 2025
- Less emphasis on the diachrony of *non-finite* subordination, especially adjunction strategies (participles, converbs, absolutives, etc.)
  - tends to be (considered) the "older" strategy
  - lose out to the finite strategy in the languages studied, so not much to say in terms of diachrony during the attested history
- A promising case: The use of **Ancient Greek participles** in non-finite subordination (and in non-finite contexts more generally)
  - inherited strategy, competes with finite subordination from the very beginning of the attestation
  - no evidence for an older "paratactic stage" ("no relics of a stage before relative clauses", Probert 2015: 441)
  - stable coexistence of finite & non-finite strategies for 800+ years (in the attested literary texts)
  - prehistory accessible through comparative reconstruction

Today's goals

- A *synchronic* formal account of the syntax of AG participles across syntactic contexts (focus on 8th–5th c. BCE)
  - AG participles are structurally identical across contexts → **AG participles always spell out Asp**
- Sketch of a *diachronic* account of how participial forms came to gain enough functional structure to compete with finite subordination/adjunction

Not on the menu today:

- An explanation of the *distribution* of the finite vs. the non-finite strategies

Participles: syntactic contexts

Participles in Ancient Greek occur in a variety of different contexts:

1. as **NP adjuncts** ("**adnominal participles**", Lowe 2015)
2. as clausal or VP-adjuncts ("**circumstantial participles**"; "converbal participles", Lowe 2015); modifying the clause or the main predicate
   - 2.1 with case & nominal agreement morphology via agreement with a head noun in the matrix clause (PRO subject)
   - 2.2 with case & nominal agreement independent from the matrix clause (genitive subject); → the **genitive absolute (GA)**
3. as **complements** to verbs of perception and knowledge and "phase verbs" (*begin*, *stop*...)
4. *Perfect* participles are moreover used in a **periphrastic perfect construction (PPC)**
5. (substantivized participles)

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- These contexts are rarely treated together.
  - Are they all (syntactially/semantically) "identical"? (Wegner 2019)
  - Are all of these uses inherited?

Overview: Ancient Greek participles

(1) Ancient Greek participial stems (selection), *lű-ō* 'release'

		Active	Nonactive
a.	Present	lű-o-**nt**-	lū-ó-**men**-
		$\sqrt{}$-v-PTCP.ACT-	$\sqrt{}$-v-PTCP.NACT-
b.	Aorist	lű-sa-**nt**-	lū-sá-**men**-
		$\sqrt{}$-v-PTCP.ACT-	$\sqrt{}$-v-PTCP.NACT-
c.	Perfect	le-lu-k-**ot**-	le-lu-**mén**-
		v_{RED}-$\sqrt{}$-v/Voice$_{\text{ACT}}$-PTCP.ACT-	v_{RED}-$\sqrt{}$-PTCP.NACT-
d.	Future	lű-so-**nt**-	lū-só-**men**-
		$\sqrt{}$-v-PTCP.ACT-	$\sqrt{}$-v-PTCP.NACT-

Overview: AG participles

- present, aorist, perfect, future participles in (1a–d): verbal stem (root plus verbal stem-forming morphology) + *-nt-* ("active participle") or *-men-* "middle participle" + plus gender/case morphology.
- Exception: the perfect *active* participle suffix is *-ot-*/*-os-*.
  - Nom.sg.m. *-ōs* < *-*ŏ̯*(t)s* ← PIE *-*ŭ̯os-*/*-us-*; Nom.sg.n. *-os* < *-*u̯os*; cf. the f. perfect ptcp. Nom.sg. *-uĩa* < *-*usi̯a* < *-*us-ih*$_2$.
- verbal stem-forming morphology = *v*, not Asp
  - Grestenberger 2021, 2022c
- Participles agree for Number, Gender, and Case with their head noun ("concord")

Core claims today

- AG participles are structurally identical across contexts → **AG participles always spell out Asp**
- Their distribution follows from Spell-Out conditions on Asp in different types of contexts & from the feature content of different types of clausal functional heads (T and C)

→ Participles share some verbal functional structure with finite verbs, but occur in environments in which the verb stem cannot combine with T & Agr features.

(2) a. $\sqrt{}$-*v*-Voice-Asp-(Mod)-**T-Agr** (finite verb)
b. $\sqrt{}$-*v*-Voice-Asp(-???) (non-finite verb/participle)

Participial morphology = *non-finite Asp(ect)*

- **Diachrony**: reanalysis of possessive denominal adj. morphology as (eventive root/*v*-selecting) Asp → "participial morphology"

Proposal: Ptcp = Asp

- "PTCP" (participial morphology) spells out Asp when the verbal stem cannot move to T.
  - Embick 2000, 2003, 2004b; Embick & Halle 2005; Bjorkman 2011
  - Participial morphology as realization of Asp also in Alexiadou & Anagnostopoulou 2008; Alexiadou et al. 2015; Grestenberger 2018, 2020; Calabrese 2019, 2020 etc.
- "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.] → active vs. nonactive participles in AG

Ptcp = Asp

- Based on Embick (2000)'s analysis of the Latin periphrastic perfect passive.
- Embick: the *combination* of Voice[PASS] and Asp[PFV] blocks the formation of a synthetic verb form, (3d.)

(3) PPCs in Latin

a. present act.	b. present pass.	c. perfect act.	d. perfect pass.
*am-**ō***	*am-**or***	*amā-**v**-**ī***	*amā-**t**-us/a sum*
'I love'	'I am loved'	'I loved'	'I was loved'

- Synthetic forms, (3a-c), are built through agreement + head movement
- In analytic forms, (3d), the movement is interrupted: $\sqrt{}$-to-v-to-Asp movement takes place like in synthetic forms, but the resulting complex head cannot move to T
  - ... because a "marked feature" blocks movement, Bjorkman 2011

Applying PTCP = Asp to the Ancient Greek PPC

- The Ancient Greek PPC consists of the active/nonactive **perfect participle** + a BE-auxiliary (= *eĩnai*)

(4) Periphrastic perfect of *lū́ō* 'release' ($\sqrt{lŭ}$) in AG; AUX = *eĩnai* (1Sg. *eimí*) 'be'; *lelu(k)-* = perf. stem; *-ōs*/*-menos* = active/nonactive participial suffixes

	Participle		Auxiliary		
	act.	nonact.	act.	nonact.	
a. Perf.act.	le-lu-k-ṓs		ei-mi		'have released'
b. Perf.pass.		le-lu-mén-os	ei-mi		'have been released'
c. Pluperf.act.	le-lu-k-ṓs		ẽ̃-n		'had released'
d. Pluperf.pass.		le-lu-mén-os	ẽ̃-n		'had been released'
e. Perf.subj.act.	le-lu-k-ὸs		ō̃		'shall release'
f. Perf.subj.pass.		le-lu-mén-os	ō̃		'shall be released'
g. Perf.opt.act.	le-lu-k-ὸs		e-íē̄-n		'might release'
h. Perf.opt.pass.		le-lu-mén-os	e-íē̄-n		'might be released'

- $\sqrt{}$-*v*-Voice/Asp on the participle; (Mod)-T-Agr on the auxiliary

Voice and Asp in AG PPCs

- **Proposal**: In AG [RES] on Asp is a movement-blocking marked feature in the PPC
- The (Homeric/pre-Classical) synthetic perfect, and especially the perfect participle, are usually characterized as *resultative*
  - Schwyzer 1939: 768, Haspelmath 1992, Bentein 2012a, 2012b, 2013, Napoli 2017
- **[RES]** = the feature that distinguishes the pre-Classical synthetic perfect from the aorist
- This feature became grammaticalized in the PPC, while the *synthetic* perfect became perfective and merged with the aorist (= Modern Greek)
- By the end of the pre-Classical period, [RES] on Asp had developed into a marked (movement-blocking) feature → spelled out with non-finite (= participial) morphology because it cannot combine with T
- Like in the periphrastic perfect passive in Latin, BE picks up the stranded T and Agr features on T.

Asp in participles

- AG participial morphology realizes Asp under different conditions (Grestenberger 2018, 2020, 2022b):

(5) Vocabulary Items for AG Asp

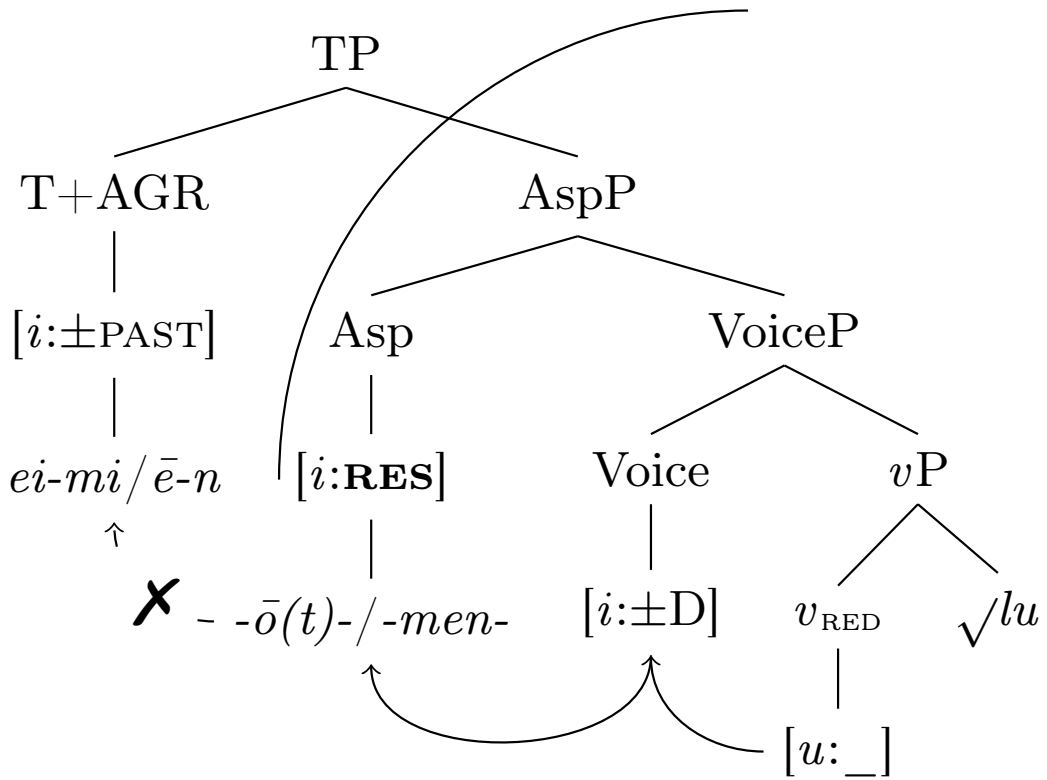
a. Asp[RES]	↔	*-ot-/-os-*	/*v*/Voice[+D]⌢_
b. Asp	↔	Ø	/⌢_⌢T
c. Asp	↔	*-men-*	/Voice[-D]⌢_
d. Asp	↔	*-nt-*	

→ Participial morphology in AG spells out Asp that has not moved to T.

Deriving the periphrastic perfect indicative

(6) AG Perfect/pluperfect active/nonactive indicative:

le-lu-k-ō(t)-/-men-
PF-release-PF-PTCP.ACT/PTCP.NONACT
ei-mi/ē-n
BE-1SG.PRES.ACT/BE-1SG.PAST.ACT



Implications

- **If participial morphology spells out Asp in the PPC, we also expect to see it in other "tenseless" environments (the complement of verbs like *think*, *see*, ..., as NP-adjuncts, etc.)**
- Assuming PTCP = Asp as given, how much additional "functional structure" is there in participles?

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- **If participial morphology spells out Asp in the PPC, we also expect to see it in other "tenseless" environments (the complement of verbs like *think*, *see*, ..., as NP-adjuncts, etc.)**
- Assuming PTCP = Asp as given, how much additional "functional structure" is there in participles? → $\sqrt{}$-v-Voice
  - Participial suffixes attach to verbal *stems*; verbal stem-forming morphology realizes v (Grestenberger 2022c, 2023)
  - Participles (including attributive ones) can be modified by event- and manner-modifying adverbs → diagnostic for v/event structure, e.g., (7).

(7) heptà dé hoi dṓ-s-ō **eũ**
seven PTCL him.CL give-FUT-1SG.ACT well.ADV
naió-men-a **ptolíethr-a**
inhabit.PRS-PTCP.NACT-ACC.PL.N city-ACC.PL.N
"I will give him seven **well-inhabited cities**" (Hom., *Il.* 9.149)

Event structure in adnominal/attributive participles

Evidence for event modification in adnominal participles is already attested in Mycenaean Greek (14th–12th c. BCE), e.g.:

(8) PY Ta 708.3:

ta-ra-nu	...	*a-ja-me-no*	*e-re-pa-te-jo*	*a-di-ri-ja-pi*
/thrānus		**ajāi(s)-men-os**	elephantej(j)ois	andriam-phi
footstool		inlay-PTCP.NONACT-NOM.SG	of.ivory.INSTR.PL	man-INSTR

re-wo-pi-qe
lewom(p)-phi k^{w}e/
lion-INSTR and

"A footstool ... **inlaid** with ivory figures of men and lions"

(9) MY Oe(-) 127:

pa-we-a$_2$	*e-we-pe-se-so-me-na*
/pharweha	e(h)u **(h)epsē-so-men-a**/
cloth.PL.N	well boil-FUT-PTCP.MID-PL.N

"pieces of cloth **to be boiled** thoroughly"

Evidence for v/Voice

- All participles (including attributive ones) can be used in active–nonactive voice-alternation contexts → diagnostic for VoiceP

(10) Circumstantial/adnominal, Hdt., *Hist.* 1.66.3 (tr., self-benefactive):

hoi Lakedaimónioi, (...) hoì dè [**pédās**
the Lakedaemonian.NOM.PL they PART chains.ACC.PL
pheró-menoi] epì Tegeḗtās estrateúonto ...
carry-PTCP.NOM.PL on Tegeans.ACC.PL advance.3PL.IPF

"The Lakedaemonians, (...) they advanced on the Tegeans (with their army), **carrying chains** ..."

(11) Circumstantial/adnominal, Hdt., *Hist.* 2.29.2 (passive + *by*-phrase):

tò ploĩon oíkhetai [**pheró-men-on** **hupò**
the boat.NOM goes.off carry.PRES-PTCP.NACT-NOM.SG.N by
iskhúos toũ rhóou]
strength.GEN the.GEN current.GEN

"... the boat gets lost, **carried off by the strength of the current**."

Attributive/adnominal participles

- How much structure do Greek (adnominal/circumstantial) participial adjuncts actually contain? TP? CP?

Attributive/adnominal participles

- How much structure do Greek (adnominal/circumstantial) participial adjuncts actually contain? TP? CP?
- Appositive/adnominal participles functionally compete with finite relative clauses (restrictive/non-restrictive):

(12) toutéōn dè tèn neōtérēn
these.GEN.PL.F PTCL the.ACC.SG.F younger.ACC.SG.F
[**epispoménēn hoi ep' Aígupton**] kteínei
follow.AOR.PTCP.ACC.SG.F him.DAT to Egypt.ACC kill.PRS.3SG
"The younger of these, **who had followed him to Egypt**, he killed."
(participial, non-restrictive; Hdt. 3.31.6, cit. after Goldstein 2015: 234)

(13) amphì dé min krateraì stíkhes aspistáōn
around PTCL him stout.NOM.PL rank.NOM.PL shieldbearing.GEN.PL
laōn, [**hoí** hoi **héponto** Tríkēs eks
men.GEN.PL who.NOM.PL him.DAT follow.IPF.3PL Trica.GEN from
hippobótoio]
horse.sustaining.GEN
"Around him [were] the stout ranks of the shieldbearing men **who followed** him from the pasturelands of Trica." (finite, restrictive/non-restrictive; *Il.* 4.201–2)

Evidence for TP

- AG Participles are in general underspecified for *tense* & receive temporal interpretation only relative to the matrix clause
  - van Emde Boas et al. 2019: 607, Jaszczyński 2021
- ... so if there is a TP it must be *defective* at least w.r.t. agreement
- Evidence that TP is present, but defective in these types of reduced clauses (cf. Pires 2006) comes from attributive participles that can be modified by temporal adverbs, as in (14).

(14) Hdt., *Hist.* 1.1.2:

en tẽi **nũn** **Helládi** **kaleo-mén-ēi**
in the.DAT now Greece.DAT call.PRES-PTCP.NONACT-DAT.SG.F
khōrẽ̄i
land.DAT.F

"in the **land** (that is) **now** **called** **Greece**."

Evidence for TP

Further evidence: Sentential negation.

- Brodahl (2022: 306): Sentential negation in participial adjuncts is indirect evidence for TP, assuming that Neg is dependent on T (e.g., Zanuttini 1997), (15).

(15) tō̃n dè barbárōn hoi polloì en
the.GEN.PL PTCL barbarian.GEN.PL DEF.NOM.PL.M many.NOM.PL.M in
tē̃i thalássēi diephthárēsan [**néein** **ouk**
the.DAT.F sea.DAT.F die.AOR.PASS.3PL swim.PRS.INF NEG
epistá-men-oi]
know.PRS-PTCP.NONACT-NOM.PL
"But many of the barbarians drowned in the sea **not** **knowing how to swim**"/"**because they didn't know how to swim**." (Hdt. 8.89.2)

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→ Adnominal participial clauses can contain (at least) defective T.

Evidence for CP

- ✔ Evidence for Voice, Asp, and T in adnominal & circumstantial participial clauses.
- ▶ In circumstantial participial clauses (= non-finite adverbial adjunct clauses), there is even evidence for CP, e.g., ex. like (16) with overt complementizers.

(16) ek Lésbou dè limainoúsēs hoi
from L.GEN PTCL starve.PRS.PCTP.ACT.GEN.SG.F him.DAT.CL
tẽs stratiẽs pérēn diabaínei, **ek**
the.GEN.SG.F army.GEN.SG.F across pass.over.PRS.3SG.ACT from
toũ Atarnéos hōs amḗsōn tòn sĩton
the.GEN A.GEN that reap.FUT.PTCP.ACT.NOM.SG the.ACC corn.ACC
(...)

"Because his army was starving, he crossed over from Lesbos **to reap corn from Atarneus** (...)" (Hdt. 6.28.2)

Note availability of topic/focus position to the left of complementizer.

(17) [$_{\text{Foc}}$ *ek toũ Atarnéos* [$_{\text{CP}}$ *hòs* [... *amḗsōn tòn sĩton*]]]
from the Atarneus **that** reaping the corn

CP in circumstantial participles/GAs

- Further evidence for CP in circumstantial participles/GAs: left periphery/operator movement (topicalization, wh-movement), e.g., (18)–(19).

(18) [[**patròs dè kaì mētròs**]$_{CT}$ oukéti moi
father.GEN PTCL and mother.GEN no.more me.DAT
zōóntōn] adelpheòs àn állos oudenì trópōi
live.PRS.PTCP.GEN.PL brother.NOM MOD other.NOM none.DAT way.DAT
génoito
become.AOR.OPT.MID.3SG
"[**My mother and father**]$_{CT}$ being no longer alive], there's no way I could get another brother." (Hdt. 3.119.6, after Goldstein 2015: 229)

(19) [**tí** d' àn **epidizémenos**] poioĩmi
what.ACC PTCL MOD seek.PRS.PTCP.NOM.SG do.PRS.OPT.1SG
taũta
this.ACC.PL
"[**In search of what**] would I do these things"? (Hdt. 5.106.3; Goldstein 2015: 235)

CP in circumstantial participles

- The circumstantial/absolute use of the AG active participle gave rise to the Modern Greek (MG) gerund in -*ondas*
- But the MG gerund in -*ondas* is usually argued *not* to contain CP based on the diagnostics in (20) (Tsimpli 2000; Manolessou 2005)
- By the same diagnostics, AG participial clauses/circumstantial participles *do* contain CP

(20) AG participial clauses vs. MG gerunds

	AG participial clauses	MG gerunds
1) can be introduced by conjunctions	✔	✗
2) allow operator/wh-movement	✔	✗
3) allow nominalization	✔	✗
4) provide a landing position for topics and dislocated elements	✔	✗

Participial adjuncts: analysis

- Clausal participial adjuncts (participial clauses) contain a **defective CP** which cannot license ϕ-features on T (cf. Ershova 2023)

Assuming a selectional relationship between C and T (Chomsky 2001):

- **ϕ-complete C** can only select ϕ-complete T $\rightarrow$ T then becomes the goal for agreement with the [uϕ] feature on the verbal complex which is then spelled out as a synthetic finite verb.
- **ϕ-defective C** ("C[#]" following Ershova) can select either ϕ-complete T or ϕ-defective T[#], but neither is able to act as a goal for agreement with the [uϕ] feature on the verbal complex:
  - the former because it is not licensed by C
  - the latter because it does not contain the relevant features
- ... so the verb is spelled out with infinitival morphology in the former and with participial morphology in the latter context, (21).
  - see Sevdali 2013 on the "weak" phase head C in AG infinitives

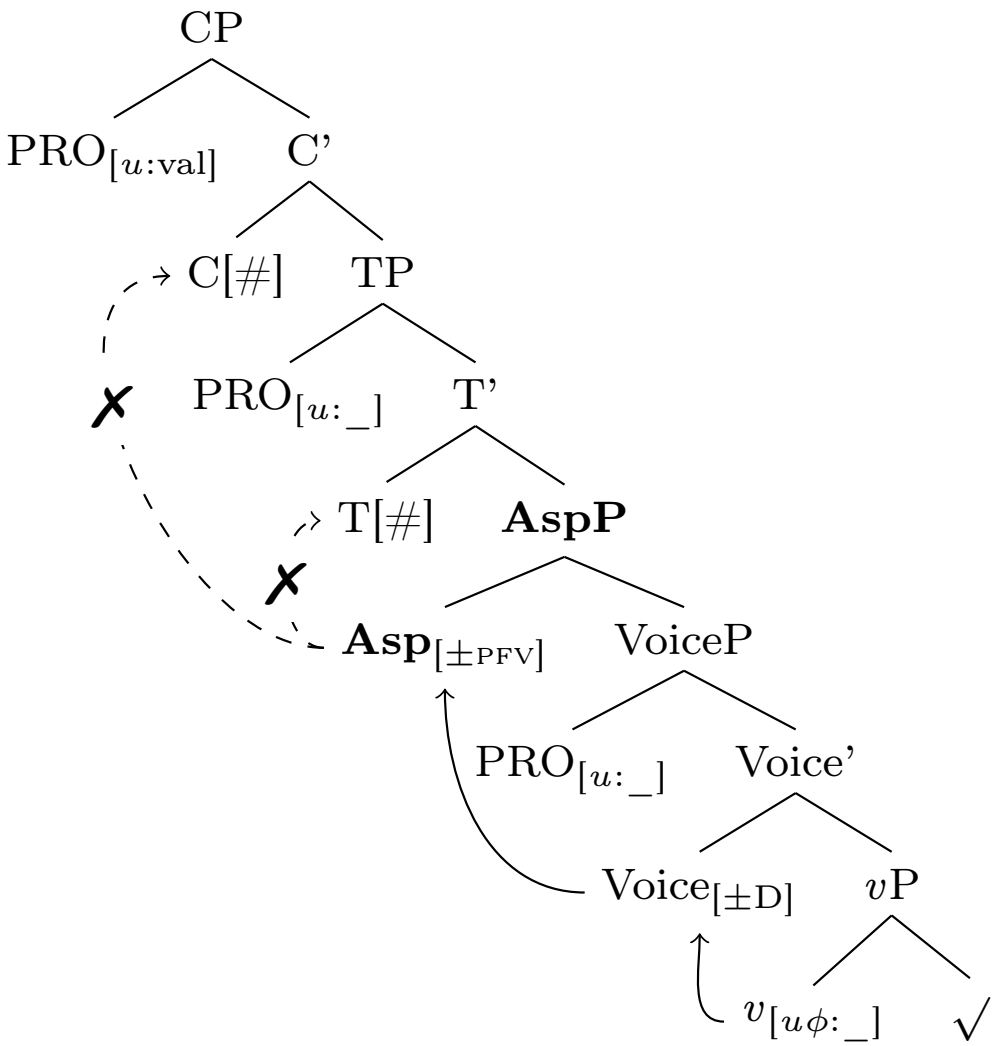
Participial adjuncts: analysis

(21) AG clause types

	CP[ϕ]	CP[#]
TP[ϕ]	finite verb	inf
TP[#]	n/a	**ptcp**

Clausal participles

(22) AG participial adjunct clause (circumstantial participles)



Participial adjuncts vs. complements

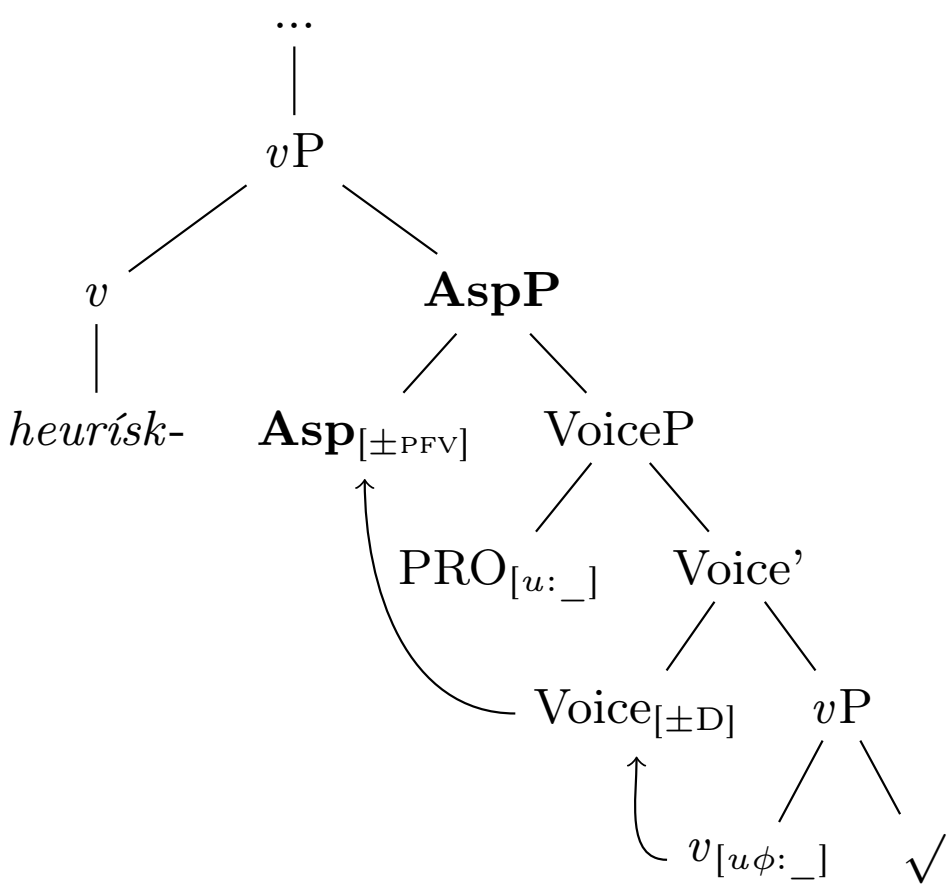
- (22) is the largest possible structure for AG participial clauses: up to C[#]
  - Same structure for GAs, but with overt genitive-marked subj.; only up to T[#] for adnominal participles.
- Smaller structure (only Asp) in "supplementary"/"complementary" participles
- i.e., complements of verbs of perception, knowledge; *begin*, *stop*, etc., (23).
  - Rijksbaron 2002; Faure 2017; van Emde Boas et al. 2019; Jaszczyński 2021

(23) soì melétō tò entheũten hókōs mè **se** ópsetai [
you.DAT take.care.IPV thereupon such.that NEG you.ACC will.see
i-ónt-a **dià** **thuréōn**]
go.PRES-PTCP.ACT-ACC through doors.GEN
"Take care thereupon so that she does not see **you going through the door**." (Hdt. 1.9.3)

- No (finite) T in ECM complements; clitic climbing into matrix clause possible, (23).
- complementary participles are semantically events (Voice/Asp; Faure 2017, Wurmbrand & Lohninger 2020)
  - infinitives = TP (situations); finite clauses = CP (propositions)

Participial complements

(24) AG participial complement (*heurískō* ‘find (out); know’)



Summary

(25) Structure of participial constructions in AG

	Asp	T	C
Complementary ptcp	✔		
PPC participle	Asp[RES]	T[ϕ]	C[ϕ]
Adnominal ptcp	✔	T[#]	?
Circumstantial ptcp	✔	T[#]	C[#]
GA	✔	T[#]	C[#]

Summary

- AG Participles occur in a variety of syntactic contexts, both finite and non-finite ones — but they always realize the same syntactic head, **Asp**
- Assuming participial morphology is used when the verb cannot move to T or when there is no (ϕ-complete) T, we derive the distribution of various types of participial adjuncts and participial complements.
  - Note that these are environments which are independently analyzed as "tenseless"
- When there *is* a finite T, Agreement/movement can fail when a marked feature intervenes/blocks movement
  - Asp[**RES**] in the PPC

→ "Clause size" in AG varies, but participial size crucially does *not*.

Diachrony: background

- Goal: explain how participles-as-Asp-heads came to be
  - Goal for the future: explain how participles-as-Asp-heads come to be embedded in defective clauses → competition with finite hypotaxis
- Active (-*nt*-; -*ot*/*s*-) and middle (-*men*-) participles as Asp heads with event structure/Voice already in Mycenaean (adnominal ex. in (8)–(9))
  - lack of attestation of circumstantial participles probably due to fragmentary nature of attestation
- And inherited (at least in this function) from Post-Anatolian Indo-European.

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(Problem: etymology of middle participial suffix is contested, so will be left aside. Focus on "active" *-*nt*-.)

Participial morphemes in IE

(26) Continuation of participial morphemes in Indo-European (Grestenberger & Fellner Forthcoming)

	"active" *-(o)nt-	"nonact./middle" *-mh_1no-	"perf.act." *-$\underset{\sim}{u}$os-/-us-	verbal adj." *-tó-
Hittite	✔	✗	✗	✗
Vedic	✔	✔	✔	✔
Avestan	✔	✔	✔	✔
Greek	✔	✔	✔	✔
Baltic	✔	✔	✔	✔
Slavic	✔	✔	✔	✔
Tocharian	✔	✔	✔	✗
Italic	✔	remnants	✗	✔
Celtic	remnants	remnants	✗	✔
Germanic	✔	✗	remnants	✔
Armenian	remnants	remnants	✗	remnants
Albanian	✗	?	✗	✔

Anatolian participles

- Anatolian = generally considered "first to branch off"
- has reflexes of *-*nt*-participle (= "active" participle in Greek) exclusively in attributive/adnominal use (no circumstantial participles; Jaszczyński 2021; Hoffner & Melchert 2024: 444ff.)
- but the Hittite/Anatolian *ant*-participle is *passive* to transitive accomplishment & CoS verbs, unlike its Greek (etc.) cognates.
- Evidence for (at least) *v*/event structure (Voice?): adverbial modification, instrument and agent phrases

Hittite -*ant*-

(27) Hittite -*ant*- with adverbial modification (KUB 30.15 Vs. 13):

paḫḫur=ma=kan ***IŠTU*** **KAŠ GEŠTIN karū**
fire=PTCL=PTCL ABL.INSTR beer wine already
kištanuw-an
extinguish-PTCP.NOM.N

"The fire (was) **already extinguished with beer and wine**."

(28) Hittite attributive -*ant*- with negation & instrument phrase (KBo 15.10 ii 8-10, OH/MS):

... $^{\text{GIŠ}}$**GIDRU** ***ŪL*** **walḫ-ant-an** UDU-un šipantaḫḫun
stick.INSTR NEG beat-PTCP-ACC sheep-ACC sacrificed.1SG

"I sacrificed the sheep **not beaten with a stick**"

Hittite *-ant-*

(29) Hittite *ant*-participles according to semantic class (cf. Frotscher 2013; Fellner & Grestenberger 2018; Grestenberger 2020)

a. transitive, accomplishment (235 vbs)
   (i) *appă̆nt-* 'seized, taken' (*epp-*^{zi}/*app-* 'seize, take')
   (ii) *(i)yant-* 'made' (*iye/a-*^{zi} 'make, do')
   (iii) *kunant-* 'killed, slain' (*kuen-*^{zi}/*kun-* 'kill, slay')

b. change-of-state, achievement (45 vbs)
   (i) *akkant-* 'dead, deceased' (*āk-*^{i}/*akk-* 'die')
   (ii) *ară̆nt-* 'arrived' (*ār-*^{i}/*ar-* 'arrive')
   (iii) *kištant-* 'extinguished' (*kišt-*$^{\bar{a}ri}$ 'extinguish')

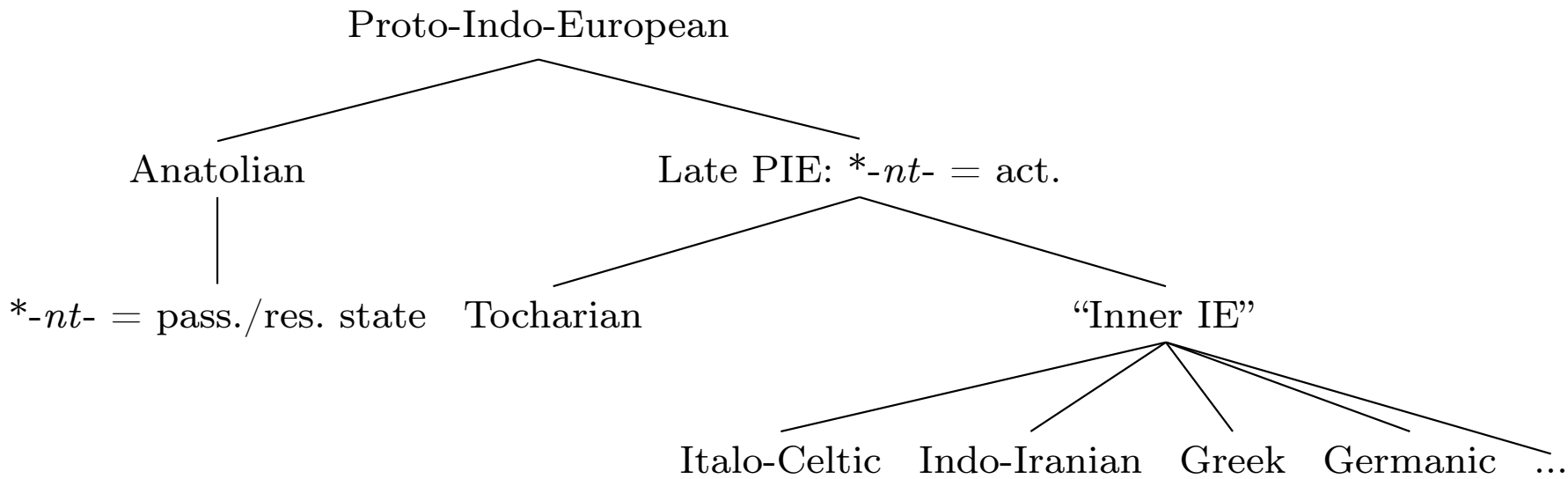
c. stative (26 vbs)
   (i) *ānt-* 'hot' (*ai-*^{ari} 'be hot')
   (ii) *tarrant-* 'able, capable' (*tarra-*$^{tta(ri)}$ 'be able, capable')
   (iii) *kardimiant-* 'angry' (*kartimmiye/a-*^{zi} 'be angry')

d. continuative/activity (13 vbs)
   (i) *aršant-* 'flowing' (*ă̆rš-*^{zi} 'flow')
   (ii) *iyanniyant-* 'striding' (*iyanna, -i-*^{i} 'march, stride')
   (iii) *palwant-* 'cheering' (*palwae-*^{zi} 'cheer, yell')

Hittite -*ant*-

- This suggests that the reanalysis of *-*nt*- as specifically *active* participial suffix took happened after Anatolian left the family (probably starting from participles to verbs expressing a simple state, as in (29c))
  - Fellner & Grestenberger 2018, Grestenberger 2020, Grestenberger & Fellner Forthcoming

(30) Simplified relative chronology of PIE *-*nt*-



Going back even further

- Anatolian also preserves the best evidence that *-*nt*- originally formed *denominal* qualifying/"possessive" adjectives
- In Greek and the other "inner IE" languages, best correlates are *nt*-participles derived from abstract root nouns/stative roots

(31) Denominal -*nt*- in IE

a. Hittite
   (i) *nāta/i*- 'straw, reed' → *natānt*- 'with/having a straw'
   (ii) *lalaḫḫima*- 'excitement' → *lalaḫḫimant*- 'excited'

b. Avestan
   (i) *xrū*- 'blood, gore' → *xruu-aṇt(a)*- 'bloody'
   (ii) *bərəz*- 'height, high' → *bərəz-aṇt*- 'high'

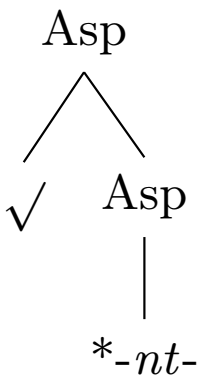
c. Sanskrit
   (i) *sáh*- 'victory' → *sáh-ant*- 'victorious'
   (ii) *śúc*- 'shine, glow' → *śuc-ánt*- 'shining, glowing'

d. **Ancient Greek**: "stative" -*(o)nt*-
   (i) *kré-ont*- 'having power, powerful; ruler'
   (ii) *gér-ont*- 'old; old man'
   (iii) *méd-ont*- 'ruler'

*-*nt*-: Gain of Function

- Direction (DE)NOMINAL → (DE)VERBAL general trend in older IE languages & cross-linguistically (Grestenberger 2022a, Grestenberger 2023)
- We need to explain how denominal suffixes such as *-*nt*- *gained event structure* to become participles
- We don't actually need to go very far up the syntactic tree to get to Greek: only up to Asp
- Proposal: -*nt*- = a root-attaching stativizer ("stative Asp") in (31b–d) & (32).
  - Anagnostopoulou 2003, Alexiadou & Anagnostopoulou 2008, Anagnostopoulou & Samioti 2014 ...

(32)

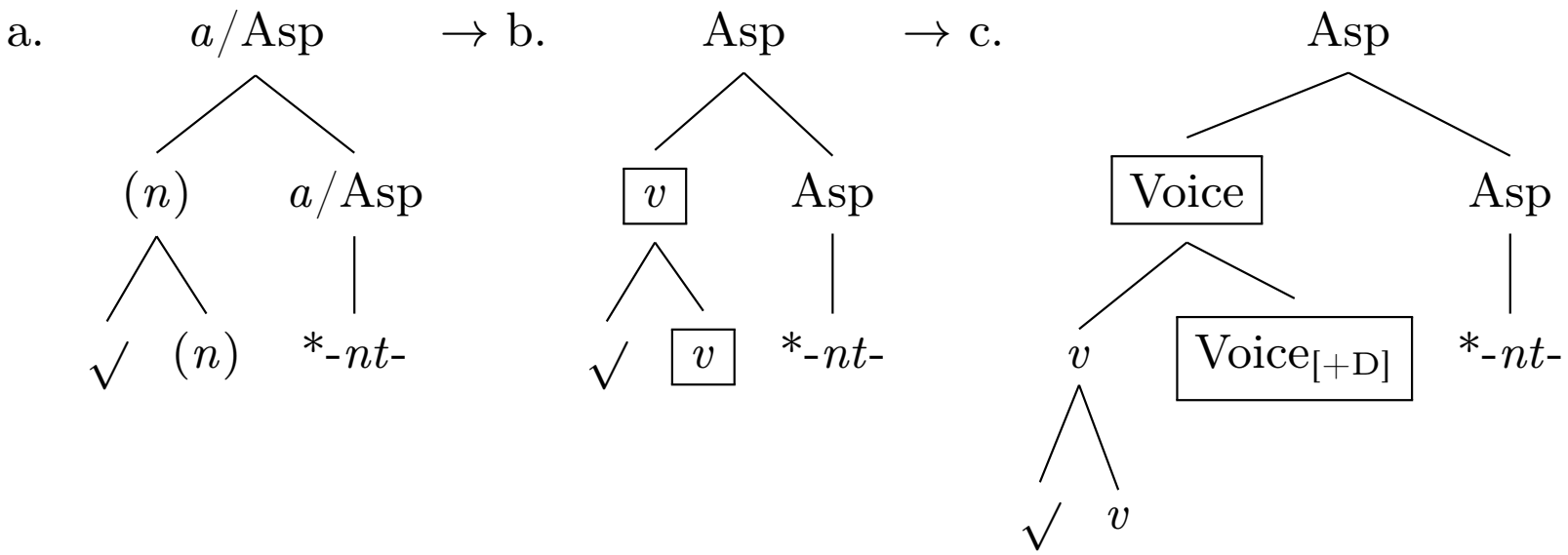


Gain of Function

- Originally only with roots expressing a Property Concept (PC) due to the origin in qualifying/possessive adjectives
  - Cf. Beavers et al. 2021; also Hanink & Koontz-Garboden 2025 on possession $\Leftrightarrow$ categorization
- Remnant in older IE: "stative -*nt*-"
- From (32), we only need to gain event structure/v (probably via eventive *roots*) and Voice to arrive at the Greek situation.

Gain of Function

(33) *-*nt*-: PIE/Proto-Anatolian (a.) → Proto-Anatolian/late PIE (b.) → Inner IE (AG, Indo-Iranian, Latin, etc.) (c.); Grestenberger (2020).

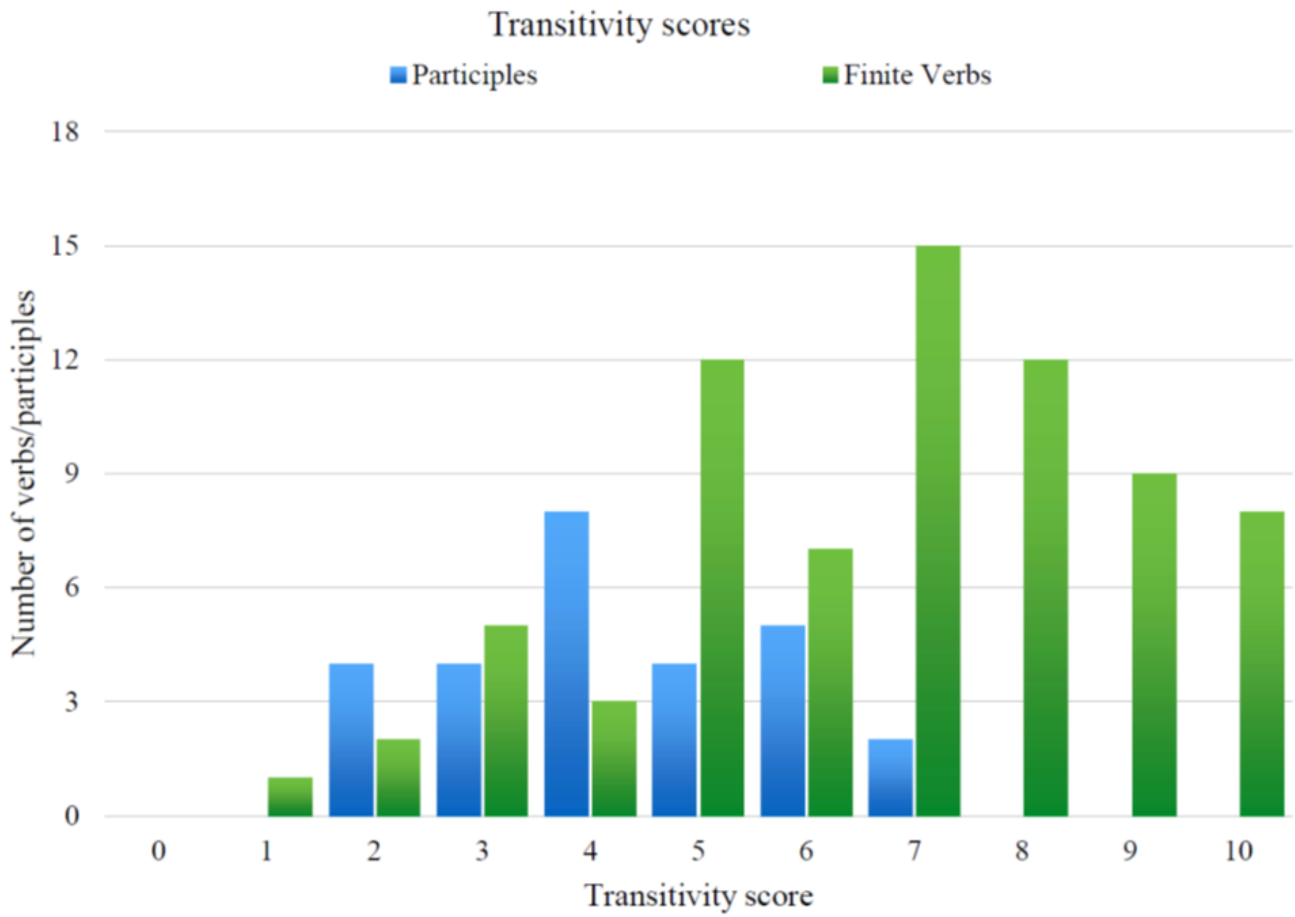


- Some evidence for a similar path (with subsequent specialization to perfect stem) for "perfect active" participle suffix *-*u̯os*- (Gk. -*(w)os/(w)ot/us*-), Rau 1998, 2017.

A possible trace of "stative -*nt*-" in Greek?

Jaszczyński (2021: 60-63): skew towards intransitivity among adnominal participles in Homeric Greek, compared to finite relative clauses, which are more often transitive.

(34) attributive (= adnominal) participles vs. relative clauses in books 1, 3 & 9 of the *Iliad* (Jaszczyński 2021: 62)



Summary

- The origin of *-*nt*- as qualifying/possessive adjectivizer → stativizer explains the famous 'mixed" behavior of (AG/IE) participles as formally adjectival, but structurally verbal (or even clausal)
- possible diachronic path (preliminary):

(35) POSSESSIVE/QUALIFYING ADJECTIVE >
ADNOMINAL STATIVE ADJECTIVE >
ADNOMINAL EVENTIVE ADJECTIVE/PARTICIPLE >
ADNOMINAL PARTICIPIAL ADJUNCT (CLAUSE) >
CLAUSAL PARTICIPIAL ADJUNCT CLAUSE

(where "clause" can stand for Asp, T or C depending on the language/stage of development)

Conclusion

- Participial morphology in AG = (flavors of) non-finite Asp, "stativizer"
- inherited strategy of forming non-finite eventive adjuncts – stable coexistence with finite hypotaxis with (presumably) slightly different distribution/meaning
  - Transitivity/states (adnominal participles vs. relative clauses)
  - temporal anchoring/finiteness (adnominal & circumstantial participles vs. finite adjunct clauses)
- Participles-as-non-finite-Asp $<$ denominal (possessive) adjectives
  - Some cross-linguistic evidence for this path (Haspelmath 1994), but more work needed.

Thank you!

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Appendix: Voice in participles & finite verb forms

AG nonactive ("middle") morphology is found in different syntactic environments (anticausative, reflexive, self-benefactive, passive...) → **Voice syncretism** (Embick 1998, 2004a; Oikonomou & Alexiadou 2022): the same morphological exponent surfaces in different syntactic environments.

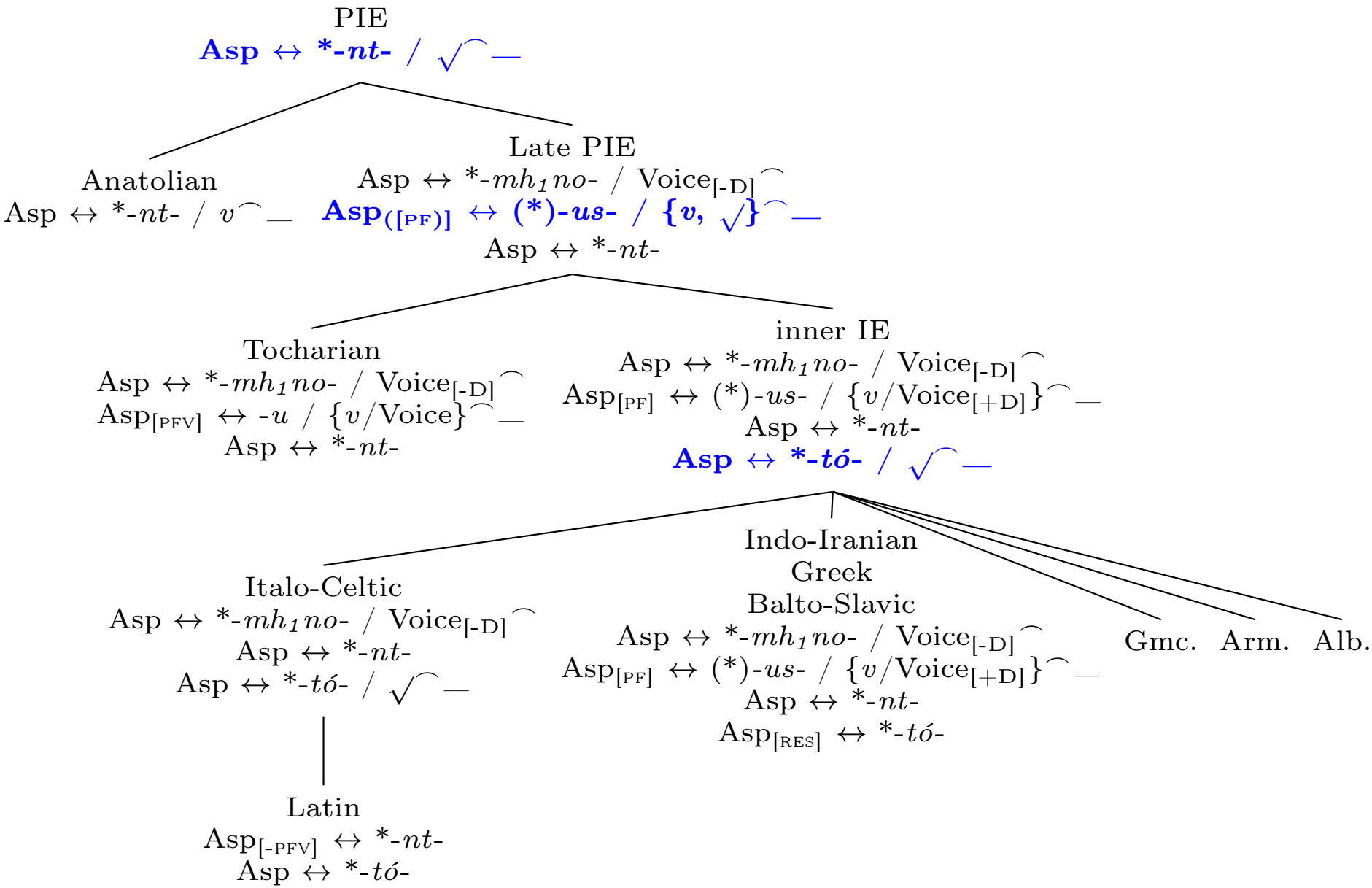
- Voice syncretism follows from a particular condition on the realization of Voice in a specific syntactic context, (36).
  - Cf. Kratzer 1996; Alexiadou 2013, Alexiadou & Doron 2012; Alexiadou et al. 2015, Schäfer 2017; Grestenberger 2018, 2020; Kastner 2020, etc.

(36) Voice → Voice[NonAct]/_ No DP specifier
(Alexiadou et al. 2015: 102, after Embick 2004a: 150)

[NONACT] = VoiceP without an external argument.

- i.e., Voice[-D] (Kastner 2020; privative: Alexiadou et al. 2015; Schäfer 2017)
- ACT = elsewhere.

Appendix: Relative chronology of participial morphemes in IE



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