

A “participle cycle”? The diachronic morphosyntax of Greek participles

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Introduction: change and cycles

van Gelderen (2011): syntactic change is *cyclic*

- systematic
- directional

“Cycles involve the disappearance of a particular word and its renewal by another” (van Gelderen 2016, introduction).

Examples (van Gelderen 2008, van Gelderen 2009a, 2009b, 2016, Jäger 2009, Hegedüs 2014 ...):

- Subject agreement cycle, object agreement cycle: subject pronouns → verbal agreement, object pronouns → verbal agreement
- DP cycle: demonstrative pronoun → definite article → class/case marker
- CP cycle: Topicalized pronouns/prepositions → complementizers
- **Negation cycle** (Jespersen 1917)

Why cyclic change?

- Is “cyclic change” just a descriptive label?
- van Gelderen 2011: No, because it is grounded in general **economy principles** of the Faculty of Language + Language Acquisition

(1) **Head Preference Principle (HPP):**

Be a head, rather than a phrase

(2) **Late Merge Principle (LMP):**

Merge as late as possible

Do these principles apply to participial morphology?

A “participle cycle”?

What this talk is *not* about: The analytic → synthetic → analytic ... “cycle” in the verbal system

- Synthetic tense forms are replaced with periphrastic tense(/aspect) constructions
- Non-finite form (infinitive, *verbum substantivum*, participle) + inflected auxiliary

	(late) Latin		French I		French II
1.sg.	<i>cantāre habeo</i>	>	<i>chanter-ai</i>	→	<i>vais chanter</i>
2.sg.	<i>cantāre habēs</i>	>	<i>chanter-as</i>	→	<i>vas chanter</i>
3.sg.	<i>cantare habet</i>	>	<i>chanter-a</i>	→	<i>va chanter</i>

See Fleischman 1982, Roberts and Roussou 2002, Hopper and Traugott 2002 ...

A “participle cycle”?

What this talk *is* about:

- The diachrony of the non-finite verbal forms themselves, specifically participles
 - morphology, morphosyntax: active vs. passive
 - “voice flipping”: “active” → “passive” participle and vice versa
- Active to passive (Ancient Greek (AG) to Modern Greek (MG)): deletion/loss of verbal functional projection below the nominalizing head
- Passive to active (Proto-Indo-European (PIE) to Hittite vs. AG): addition of a verbal functional projection (VoiceP?)
- In both cases, “ambiguity of analysis” between stative and eventive readings in adjectival passives seems to be relevant

Outline

- 1 Introduction
 - Theoretical background
 - MG participles: two types of passive participles (Anagnostopoulou 2003, Alexiadou and Anagnostopoulou 2008)
- 2 Case study I: Ancient Greek to Modern Greek: *-menos*
- 3 Case study II: PIE *-(o)nt- to Hittite *-anza* and AG *-ont-* (→ MG gerund *-ondas*: Tsimpli 2000, Manolessou 2005)
- 4 Implications: can we speak of a “participle cycle”?
- 5 Conclusion

Background: participles

- Participles: deverbal nominalizations that are integrated in a verbal paradigm; non-finite verbal forms
- Differences in participial syntax result from different attachment sites of the nominalizer (e.g., Anagnostopoulou 2003, 2014, Alexiadou et al. 2007, Alexiadou and Anagnostopoulou 2008, Baker and Vinokurova 2009, Baker 2011, Embick 1997, 2000, Embick 2004b, Harley 2009 ...)

Passives: (at least) two different types (Kratzer 2001, Anagnostopoulou 2003, Embick 2004b):

- Adjectival/stative passives: *The poems are well-written*
- Verbal/eventive passives: *The poems were written by me*

Difference: functional structure

- MG: Verbal/eventive passives are *synthetic*, adjectival passives = analytic

MG Passive participles

MG: Two types of adjectival “passive” participles: *-menos* vs. *-tos* (Holton et al. 1997: 234ff., Embick 1997: 134ff., Anagnostopoulou 2003, Alexiadou and Anagnostopoulou 2008, Papangeli and Lavidas 2009).

- *-menos* has event implications, *-tos* does not
 - e.g., *vrasmenos* implies that there was a boiling event, *vrastos* does not

(3) *-menos* vs. *-tos* participles

Verb	<i>-menos</i>	<i>-tos</i>	
<i>vrazo</i>	<i>vras-menos</i>	<i>vras-tos</i>	‘boiled’
<i>psino</i>	<i>psi-menos</i>	<i>psi-tos</i>	‘grilled’
<i>anigo</i>	<i>anig-menos</i>	<i>anih-tos</i>	‘opened; open’
<i>klino</i>	<i>klis-menos</i>	<i>klis-tos</i>	‘closed’

(... but Beavers and Koontz-Garboden To appear argue that *crack*-verbs *always* have event implications)

Passive participles

- *-menos* licenses manner adverbs, *-tos* does not.

(4) To thisavrofilakio itan prosektika anig-meno/*anig-to
the safe was cautiously opened-*menos*/open(ed)-*tos*
“The safe was cautiously opened”

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- *-menos* can license agent *by*-phrases, *-tos* does not.
- (5) To thisavrofilakio itan anig-meno/*anih-to apo tin Maria
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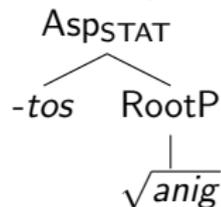
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- MG *-menos* is used in periphrastic verbal constructions, *-tos* is not.

Passive participles

Alexiadou & Anagnostopoulou: different attachment sites for the nominalizing suffixes: *-tos* attaches directly to the root; *-menos* either selects *v* (“target state participles”) or *v+Voice* (“resultant state participles”)

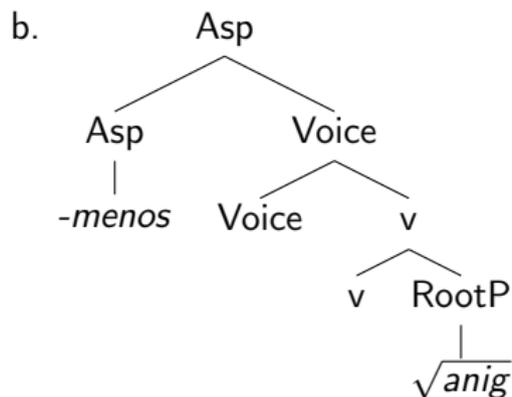
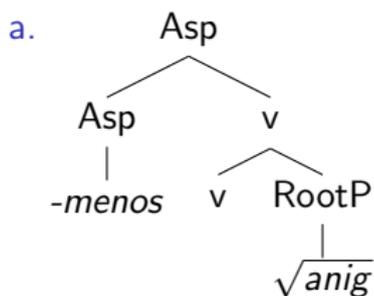
(6) MG *tos*-participles:



(participial/nominalizing suffix spells out *Asp* if there is no verb movement to *T*, cf. Embick 2000, Alexiadou and Anagnostopoulou 2008, Bjorkman 2011)

Passive participles: MG *-menos*

(7) MG *menos*-participles:



Background: voice morphology in AG & MG

(8) Voice alternations in Modern Greek

Function	Non-active	Active
Anti-causative	<i>sikon-ome</i> 'rise'	<i>sikon-o</i> 'raise'
Reflexive	<i>plen-ome</i> 'wash myself'	<i>plen-o</i> 'wash'
Self-benefactive	<i>promithev-ome</i> 'supply myself'	<i>promithev-o</i> 'supply'
(Medio)passive	<i>skoton-ome</i> 'am killed'	<i>skoton-o</i> 'kill'

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Anti-causative	<i>daío-mai</i> 'burn, blaze' (itr.)	<i>daí-ō</i> 'burn sth.'
Reflexive	<i>louó-mai</i> 'wash myself'	<i>lou-ō</i> 'wash sth.'
Self-benefactive	<i>phéro-mai</i> 'carry (away) for myself'	<i>phér-ō</i> 'carry, bear'
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- **Voice syncretism** (Embick 1998, 2004a): the same morphological exponent (here: non-active/NAct) surfaces in different syntactic environments.

Background: voice morphology in AG & MG

- NAct: Voice = [-ext.arg.]
- Act: “elsewhere” (Voice = [+ext.arg.] or missing)

(10) Distribution of active vs. non-active morphology (Kallulli 2013):

	+ext.arg.	-ext.arg.
Voice	Act	NonAct
—	n/a	Act

- AG *-menos* = **middle** participle → only formed to finite non-active verbs
- Like finite NAct forms, *-menos* occurs in a variety of contexts
- ... including transitive constructions with direct objects (e.g., self-benefactives), which is impossible for MG *-menos*

AG -menos

- (11) Self-benefactive/reflexive, Hom. Il. 10.34:

tòn d' heūr' amph' ómoisi **tithé-men-on**
 him.ACC PART found around shoulders putting-PTCP-ACC.M
éntea kalà
 armour.ACC beautiful.ACC

“He found him **putting his beautiful** armour around his shoulders”

- (12) Intransitive, motion verbs: Il. 4.514–16:

autàr Akhaioùs ôrse (...) kudíst-ē Tritogéneia
 but Achaeans.ACC urged most.glorious-NOM.F Tritogeneia.NOM
erkho-mén-ē kath' hómilon (...)
 walking-PTCP-NOM.F among crowd

“But (as for) the Achaeans; ... the most glorious Tritogeneia urged (them) on, **walking among the crowd** ...”

AG -menos

- (13) Hdt., *Histories*, 1.66.3: Transitive, self-benefactive:

hoi Lakedaimónioi, (...) hoì de **pédās**
 the Lakedaemonian.NOM.PL they PART chains.acc.pl
pheró-menoi epì Tegeétās estateúonto ...
 carry-PTCP.NOM.PL on Tegeans.acc.pl advance.3PL.IPF

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

- (14) Hdt., *Histories*, 2.29.2: (Medio)passive:

tò ploion oíkhetai **pheró-menon** hupò
 the.NOM.N boat.NOM.N goes.off carry-PTCP.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.**”

AG -menos

- AG -menos can combine with all tense/aspect stems: present, aorist, perfect, future ...
- AG **Deponent verbs** also have transitive *menos*-participles
 - Deponents have an agent subject and appear in syntactically active contexts, but take non-active morphology = **morphology/syntax mismatch**
 - Definition of deponency (Grestenberger 2014): “In an active—non-active voice system, a deponent is a syntactically active verb whose surface subject is an agent and whose finite forms are morphologically non-active.”

(15) AG deponent: *dízēmai* ‘seek sth.’: ptcp. *dizēmenos* ‘seeking’, Od.1.261-2:

óikheto gàr kai keíse thoês epì nēòs Odusseùs
 went PART and there swift.GEN on ship.GEN Ulysses.NOM

phármakon androphónon dizé-men-os
 poison.ACC man.slaying.ACC seeking-PTCP-NOM.M

“And then Ulysses went into his swift ship, **seeking (some) man-slaying poison.**”

Modern Greek *-menos*

- MG *-menos* forms exclusively passive participles
- Combines with morphologically active or non-active verbs (valency relevant, not voice morphology)
- It never takes direct objects
- It does not combine with intransitive verbs (exceptions? Holton et al. 1997: 237: *(ine) perpatimenos* ‘has walked’)
- It only combines with the passive perfective stem \approx “perfect passive participle”
- It is used in periphrastic (perfect) passive constructions

(16) To vivlio ine **gram-meno** apo tin Maria
 the book is written by the Maria
 “The book is written by Maria”

- formally continues (more or less) AG perfect/aorist participles after the collapse of the distinction by Early Modern Greek (cp. Holton and Manolesou 2010)

MG -menos

- *menos*-participles of MG **deponents** are always *passive*

(17) Non-deponent *grafo* 'write':

a. To gramma ine grammeno
The letter.NOM is written
"The letter is written"

b. To grammeno gramma
The written letter

(18) Deponent *metahirizome* 'use':

a. To lexiko ine metahirismeno
The dictionary.NOM is used
"The dictionary is used"

b. To metahirismeno lexiko
The used dictionary

Summary

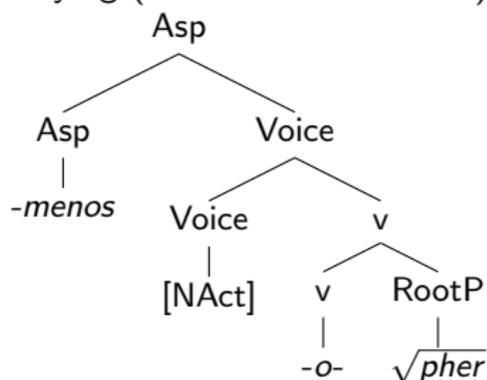
(19) Properties of *-menos* in AG vs. MG

	AG	MG
transitive, acc	✓	✗
periphrastic passives	(✓)	✓
deponents	active	passive
sensitive to finite verb voice morphology	✓	✗
sensitive to valency	✗	✓
passive	✓	✓
<i>by</i> -agent	✓	✓

Analysis: AG

AG *-menos*: can be transitive, has the same range of functions as finite middle forms (“voice syncretism”), compatible with manner-, event- and agent-oriented adverbs → must have contained VoiceP + vP

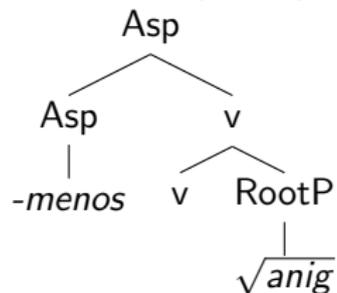
(20) *pherómenos* ‘carrying (for one’s own benefit)’/‘being carried’:



- VoiceP = the projection that determines Act/NAct morphology in AG & MG (Embick 1998, 2004a, Kallulli 2007, Kallulli 2013, Alexiadou et al. 2015)
- Voice syncretism = a property of VoiceP
- Deponency: also a property of VoiceP (Grestenberger 2014)

Analysis: MG

(21) MG *menos*-participles: *anig-menos* ‘opened’ :



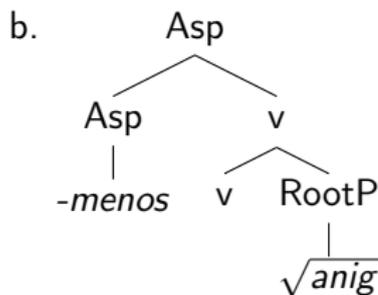
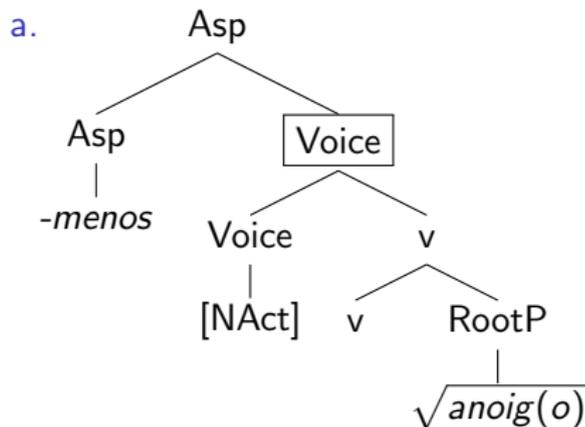
- Loss of VoiceP = loss of “middle” properties
 - ability to occur in transitive (self-benefactive, etc.) contexts with an acc object
 - ability to be formed to deponent verbs
- ... but target state passive interpretation still available!
 - does not license agent arguments in MG (Anagnostopoulou 2003: only target state participles are compatible with *parameno* ‘remain’):

(22) I varka paremine fuskomeni (*apo tin Maria)
 the boat remained pumped.up (by the Maria)
 “The boat remained inflated (*by Maria)”

Analysis

- This suggests that the starting point of the loss of “active” uses of *-menos* were (medio)passive contexts in which it could be interpreted as (target state) passive participle
- → VoiceP failed to be acquired during L1 acquisition in these contexts

(23) AG to MG: *-menos*



Analysis

- Starting point presumably *-menos*-participles from AG *perfect stems* of transitive verbs → very often passive already in Homeric Greek
- perfect participles in *-menos* are the only *menos*-participles used in periphrastic constructions in AG:

(24) Hdt., *Histories*, 6.98.3:

kaì en khrēsmōi **ên gegram-mén-on** perì autēs hōde: ...
 and in oracle was written-PTCP-NOM.N about self.GEN thus

“And in the oracle thus **(it) was written about it(self)** (the island Delos): ...”

But Herodotus uses the present ptcp. *graphó-menos* and the aorist ptcp. *grapsá-menos* in transitive contexts:

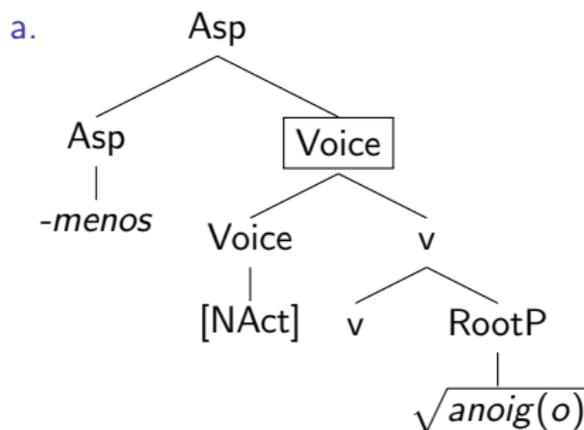
- *Hist.* 2.82.2.: *graphómenoi* “(those who) write (it) down; writing ones”
- *Hist.* 3.128.2: *bublía grapsámenos pollà* ‘having written many letters’

Loss of functional structure

MG passive *-menos* vs. MG passive *-tos*:

- *-tos* never has event implications and is incompatible with oblique agents and adverbial modification → *-tos* selects roots
- A possible conjecture: a diachronic trajectory for participles by which functional categories of the “verbal spine” are successively lost below the nominalizing suffix
- (25-a): AG *-menos*, (25-b): MG *-menos*, (25-c): MG *-tos*

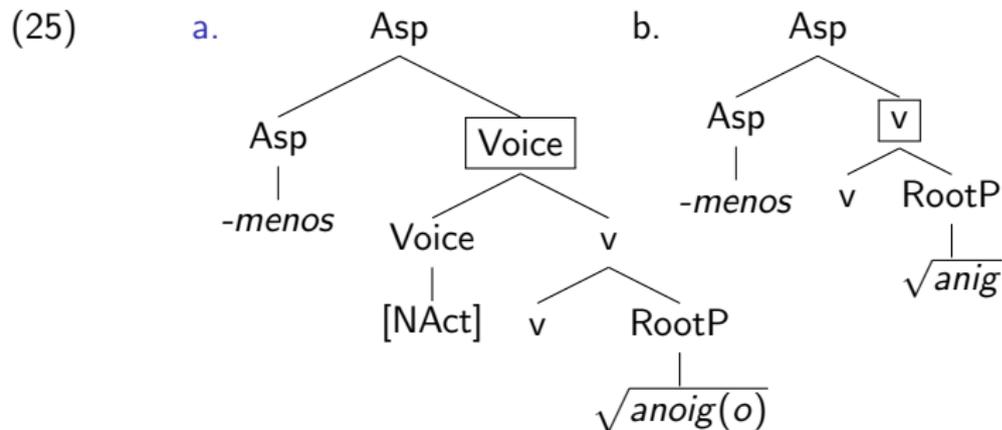
(25)



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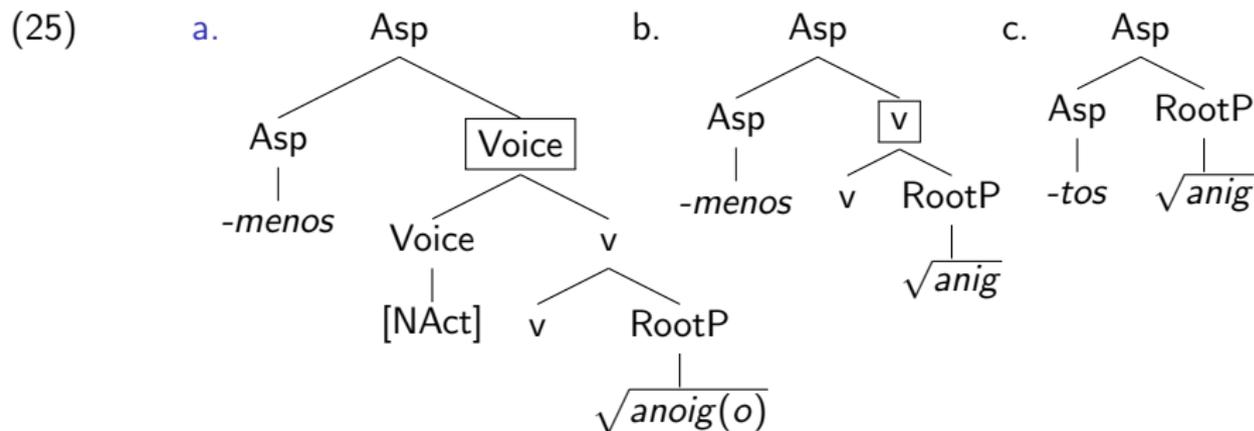
- tos* never has event implications and is incompatible with oblique agents and adverbial modification → *-tos* selects roots
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Losing and gaining functional categories

- Case study I = a classic case of “structural reanalysis” (or “structural simplification”), cp. Roberts and Roussou 2003, Roberts 2007
- How do new participles arise? Can we also “gain” functional structure somehow? If structural reanalysis is key, this should in principle be possible
- A possible example: The development of PIE **-(o)nt-*

PIE *-(o)nt-

- forms active participles in most older Indo-European languages:
- Valency of the verb not important - what matters is that there is a morphologically *active* finite paradigm

(26) -nt- in Indo-European

	Act.	NAct.	Ptcp.
Skt.	<i>bhāra-ti</i> 'carries' <i>é-ti</i> 'goes', 3pl. <i>yá-nti</i>	<i>bhāra-te</i> 'carries for oneself' —	<i>bhāra-nt-</i> 'carrying' <i>yá-nt-</i> 'going'
AG	<i>phér-ō</i> 'carry' <i>eĩ-mi</i> 'go'	<i>phéro-mai</i> 'carry for myself' —	<i>phéro-nt-</i> 'carrying' <i>ió-nt-</i> 'going'
Lat.	<i>fer-ō</i> 'carry' <i>e-ō</i> 'go'	<i>fer-or</i> 'am carried' —	<i>fere-nt-</i> 'carrying' <i>eu-nt-</i> 'going'

- Anatolian: archaic branch of IE, discovered late (identified as IE in 1916), generally considered first to “split off”
- No trace of *-menos* (< *-mh₁no-), but *-(o)nt- > is *passive*: Hitt. *-anza*

Hittite *-anza*

- Functionally an adjectival passive participle like MG *-menos*
- Formed from the present stem (Hitt. has present vs. preterit)
- Used in periphrastic passive and perfect/pluperfect constructions
- Can be formed to morphologically active or NAct verbs (valency important, not voice morphology)

(Frotscher 2013, Melchert To appear, Grestenberger To appear, Fellner and Grestenberger To appear)

(27) Passive: KUB 26.84 ii 7:

k]uit **IŠTU** ^{LÚ}**KÚR** arḫa **warnuwa-nza**
 because by enemy up burned-PTCP.NOM.C

“because he was **burned up by the enemy**”

Hittite *-anza*

- (28) Pluperfect: KBo 5.8 i 23–25:

nu=mu **īstamašš-an** kuit **ḫark-er** ...
 PART=me.DAT-ACC hear-PTCP.NOM.N because hold-3PL.PRET ...

“Because **they had heard** about me ...”

- (29) Attributive: KUB 20.11 ii 22 (Hoffner and Melchert 2008: 339):

[g]aggapan zanua-nd-an tianzi
 G.ACC cook-PTCP-ACC.SG place.3PL.PRES.ACT

“They place/set down **a cooked Gaggapa-animal.**”

- (30) Deponent: KUB 10.52 vi 8–9 (Hoffner and Melchert 2008: 339):

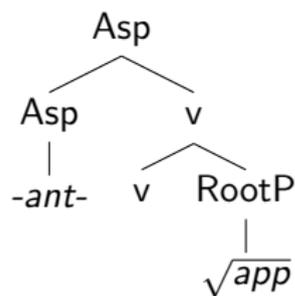
ḫarkišš=a ^{NINDA} **ḫaršiš** karū **paršiya-nza**
 white=and Ḫarši-bread already broken-PTCP.NOM.C

“And the white *Ḫarši*-bread **was already broken** (into pieces).”

Analysis

- Given its properties, the Hitt. *-anza* ≈ MG passive *-menos*:

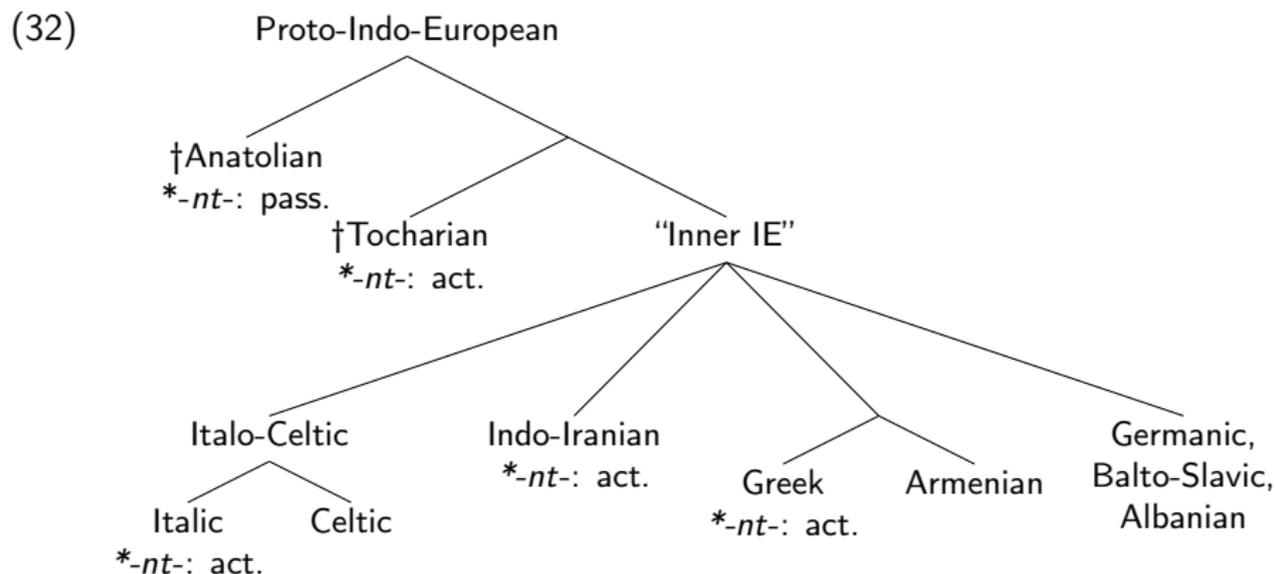
(31) Hitt. *app-ant-* ‘seized’



- ... but the *active* participle in AG, etc., must contain VoiceP
 - agent arguments
 - transitive
 - Morphological Act/Nact distinction

*-(o)nt- in IE languages

- Anatolian (Hittite): *-(o)nt- = passive participle
- All other: *-(o)nt- = active (cp. Fellner and Grestenberger To appear)



- *-(o)nt- changed from selecting vP to selecting VoiceP — how?

Analysis: more structural ambiguity

- Hitt. *-ant-* is ambiguous between a stative and an eventive/“processual” interpretation for certain verb classes (Frotscher 2013), crucially stative-intransitive verbs:

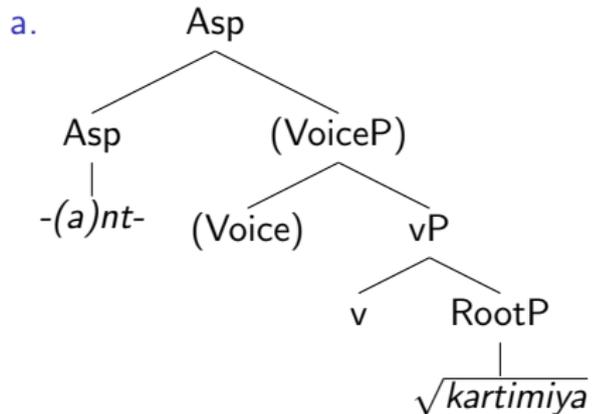
- (33)
- ā-nt-* 1. ‘hot’ (state), 2. ‘being hot’ (event/process) ↔ *āri* ‘is hot’
 - šaš-ant-* 1. ‘asleep’ (state), 2. ‘sleeping’ (event/process) ↔ *šaši* ‘sleeps’
 - kardimiy(aw)-ant-* 1. ‘angry’ (state), 2. ‘being angry’ (event/process) ↔ *kartimiyattari* ‘is angry’

Reanalysis: L1 learners acquired these “adjectives” as including vP and VoiceP, which was also compatible with transitive, eventive verbs (Fellner and Grestenberger To appear) → occasionally also in Hittite (proportional analogy):

- (34)
- kartimiyattari* ‘is angry’ : *kartimiy-ant-* ‘(being) angry’
 - šākk-i* ‘knows’ : x, x = *šakk-ant-* ‘knowing’ (besides expected ‘known’)
 - ēd-zi* ‘eats’ (*ad-anzi* ‘they eat’) : x, x = *ad-ant-* ‘eating’ (besides expected ‘eaten’)

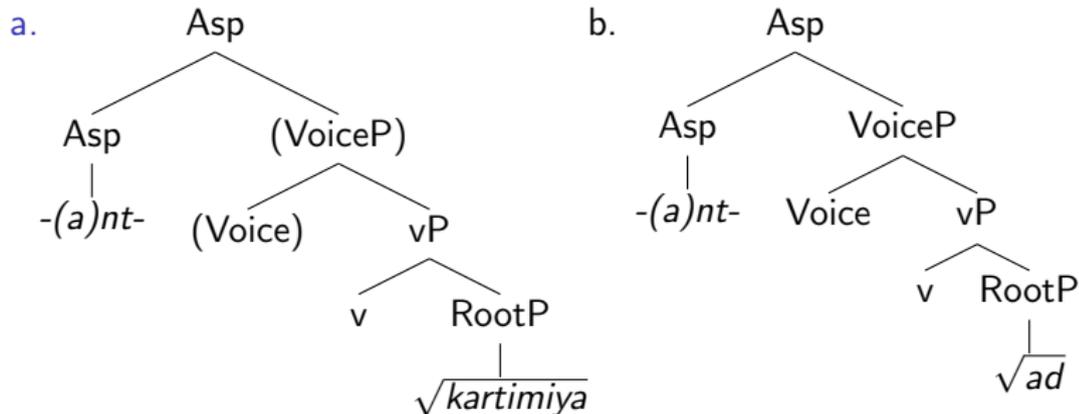
Analysis

(35) Reanalysis



Analysis

(35) Reanalysis



Anecdotal, but relevant: Language acquirer B (2 1/2 years old, ex. provided by Lauren Clemens), spontaneous production while trying to go up a hill after fresh snowfall:

"I can't do it! My body is too *slipable*!"

- Change in selectional criteria w.r.t. argument structure: transitive object vs. intransitive (unergative) subject

Analysis

The same development happened on the way to AG (and Latin, Sanskrit ...), where *-(o)nt- became consistently associated with *active* finite paradigms (not so in Hittite, cp. (34))

- Some remnants of the older stative-intransitive, non-VoiceP use in AG (and other IE languages, Rau 2009, Lowe 2012):

- (36)
- kré-ont-* ‘having power, powerful; ruler’
 - gér-ont-* ‘old; old man’
 - méd-ont-* ‘ruler’ (AG *médo-mai* ‘take care of’ = always non-active)

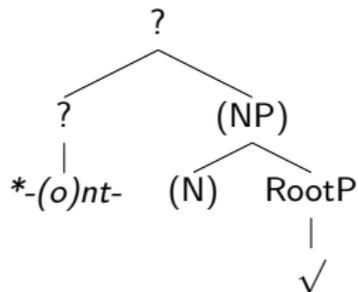
... and there’s evidence for an even earlier stage in which *-(o)nt- was denominal (Frotscher 2013):

- (37) Hittite
- nāta/i-* ‘straw, reed’ → *nata-nt-* ‘with/having a straw’
 - lalaḥḥima-* ‘exitement’ → *lalaḥḥima-nt-* ‘excited’

Analysis

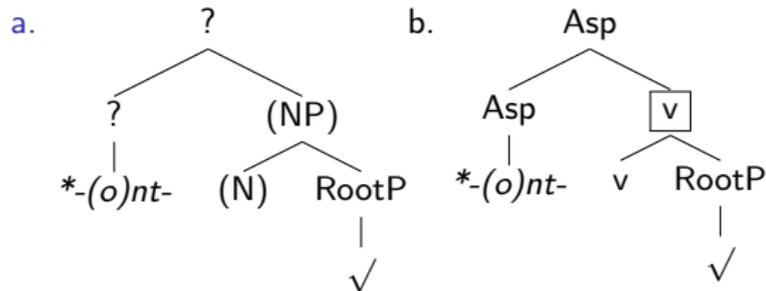
- (38) **(o)nt-*: PIE/Proto-Anatolian (a.) → Anatolian (b.) → AG, Indo-Iranian, Latin, etc. (c.)

a.



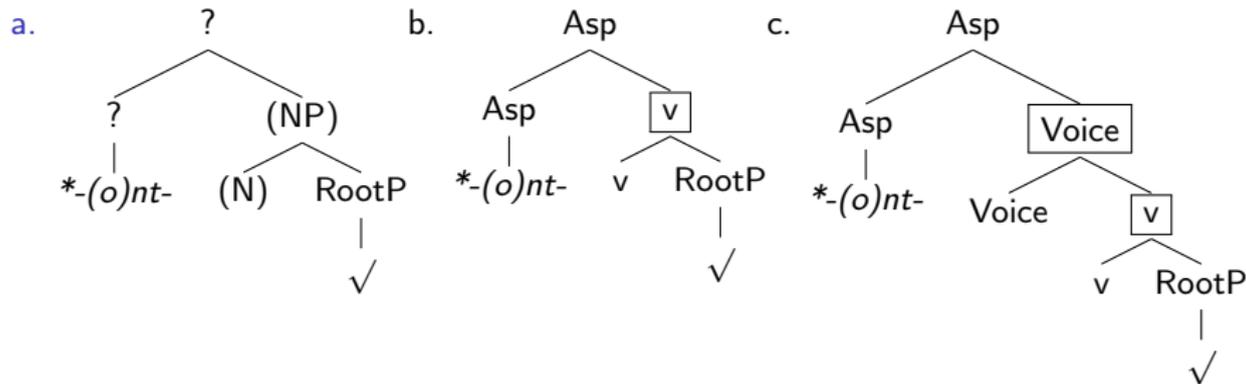
Analysis

(38) **-(o)nt-*: PIE/Proto-Anatolian (a.) → Anatolian (b.) → AG, Indo-Iranian, Latin, etc. (c.)



Analysis

(38) **(o)nt-*: PIE/Proto-Anatolian (a.) → Anatolian (b.) → AG, Indo-Iranian, Latin, etc. (c.)



Summary

Two case studies:

- ① Loss of functional categories below the nominalizer → “passive” participles
 - Distinction between (different types of) adjectival & eventive passive participles
- ② Addition of functional categories below the nominalizer → (syntactically) “active” participles
 - VoiceP itself can have different values: Act, NAct/“middle”, passive ...

A “participle cycle”?

... but is it a cycle?

- no “renewal” of functional/lexical material

(39) **Head Preference Principle (HPP):**
Be a head, rather than a phrase

→ Does not apply

(40) **Late Merge Principle (LMP):**
Merge as late as possible

→ Does not apply

- “Structural reanalysis”, “structural simplification”: loss of (functional) structure during language acquisition if input is structurally ambiguous (Lightfoot 1995, 2003, 2006, Roberts 2007, Roberts and Roussou 2003, etc.)
- adding functional structure = more controversial, but seems warranted given case study II

More examples: passive/adjectival → active

- development of PIE **-to-* (AG *-tós*, etc.) in **Latin**:
 - Derived from the verbal *stem* rather than the bare root: *am*_√*-ā_v-tus*_{ptcp} ‘loved’
 - Found in transitive constructions with acc objects (not possible in AG, Sanskrit, etc.):

(41) Deponent *sequor* ‘follow’: Livy, *Ab urbe condita* 4.20.5:

omnes ante mē **auctōres** **secū-tus** ...
 all.ACC before me authors.ACC followed-PERF.PTCP.NOM

“Having followed all authors before me ...” (not: “having been followed”)

- Sanskrit: *-ín*: denominal → deverbal

(42) denominal: *aśvā-* ‘horse’ → *aśvín-* ‘with horses, having horses’; *vájra-* ‘mace’ → *vajrín-* ‘mace-holder; one who has a mace’

(43) deverbal: *kram* ‘go’ → *krāmín-* ‘going’; *yaj* ‘sacrifice’ → *yājín-* ‘sacrificing’

Conclusion

- Syntax of participles changes within the parameters of synchronic variation (e.g., adjectival vs. eventive passive participles)
- Structural reanalysis + language acquisition
- These changes cannot be characterized as cycle, but they are systematic

Moreover, when a particular suffix changes, a new one tends to fill its slot

- When **(o)nt-* went from adjectival/stative to active, new adjectival passives developed:
 - **-to-*: Sanskrit *-tā-* (*kr̥-tā-* 'made'), AG *-tó-* (*the-toś* 'placed'), Latin *-tus* (*fac-tus* 'made'), etc.
 - **-no-*: Sanskrit *-na-* (*pūr-ṇā-* 'filled; full'), Old Church Slavonic (OCS) *-nъ* (*o-dě-nъ* 'done'), Old High German (*gi)tā-n* 'done', Engl. *done*, etc.
 - **-lo-*: Arm. *gerc-al* 'caught', OCS *-lъ* (*nes-lъ* 'carried'; Modern Slavic past tense suffix *-l-*, e.g., Russian *čita-l* 'he read', etc.)

→ “Cycles involve the disappearance of a particular word and its renewal by another” (van Gelderen 2016)

... or a particular suffix?

Thank you!

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