

Participles and Voice Revisited: the View from Indo-European Deponents

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1 Introduction: Participles

Participles: deverbal nominalizations that are (perceived to be) integrated in a verbal paradigm; non-finite verbal forms

Recent work on nominalizations (e.g., Alexiadou 2001, Anagnostopoulou 2003,2014, Alexiadou et al. 2007, Alexiadou and Anagnostopoulou 2008, Baker and Vinokurova 2009, Baker 2011, Embick 1997, 2000, Embick (2004b), Harley 2009 ...) suggests that differences in participial syntax result from different attachment sites of the nominalizer.

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

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

(1) *-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>anig-tos</i>	‘opened; open’
<i>klino</i>	<i>klis-menos</i>	<i>klis-tos</i>	‘closed’

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

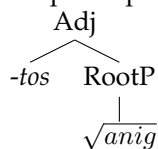
(2) To thisavrofilakio itan prosektika anig-meno/*anig-tos
 the safe was cautiously opened-*meno*/open(ed)-*tos*
 “The safe was cautiously opened”

- *-menos* licenses agent *by*-phrases, *-tos* does not.

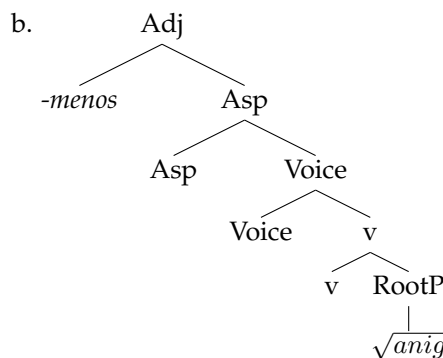
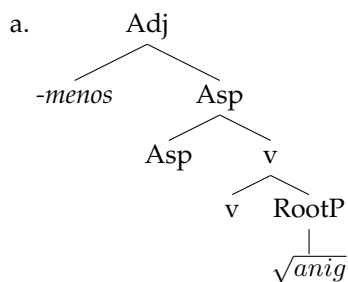
(3) To thisavrofilakio itan anig-meno/*anig-tos apo tin Maria
 the safe was opened-*meno*/open(ed)-*tos* by the Maria
 “The safe was opened by Maria”

Anagnostopoulou argues that these differences reflect different heights of attachment sites for the nominalizing suffixes *-menos* vs. *-tos*. While *-tos* attaches directly to the root, cp. (5), *-menos* either selects v+Asp (“target state participles”, (4-a), NB “v” stands for the verbalizing projection, *not* the one introducing the agent) or v+Voice+Asp (“resultant state participles”, (5-b)).

(4) *tos*-participles:



(5) *menos*-participles:



- This framework can be used to explain the cross-linguistic variation in the syntactic behavior of deponent participles
- Contrary to what has been claimed recently (Papangeli and Lavidas 2009, Pesetsky 2009), deponent behavior does not depend on the availability of finite T.
- Deponent behavior in participles is preserved whenever the projection that determines voice morphology is included in the nominalization

2 Background: Voice and Voice mismatches

Many of the older IE languages (Hittite, Tocharian, Vedic Sanskrit, Avestan, Greek, Latin, Old Irish) and some modern IE languages (Greek, Albanian) have a voice system in which an opposition between active and non-active (“middle”) voice is expressed through verbal inflection together with tense and agreement features → **bivalent voice system, “Greek-type voice system”**.

(6) Vedic: Active—non-active endings (non-past/“present”)

	Active			Middle		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	<i>-mi</i>	<i>-vas</i>	<i>-masi</i>	<i>-e</i>	<i>-vahe</i>	<i>-mahe</i>
2	<i>-si</i>	<i>-thas</i>	<i>-tha</i>	<i>-se</i>	<i>-ethe, -áthe</i>	<i>-dhve</i>
3	<i>-ti</i>	<i>-tas</i>	<i>-nti</i>	<i>-te, -e</i>	<i>-ete, -áte</i>	<i>-nte, -re</i>

- (7) Greek: Active–non-active endings (non-past/“present”)

	Active			Middle		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	-mi, -ō	—	-men, -mes	-mai	—	-metha
2	-s(i), -eis	-ton	-te	-sai, -ēi	-sthon	-sthe
3	-si, -ti, -ei	-ton	-asi, -nti, -ousi	-tai	-sthon	-ntai

- **The puzzle:** In these languages, we find verbs whose voice morphology does not match their syntactic context: they take non-active morphology, but are syntactically active → **feature mismatch verbs, deponents** (Lat. *dē-pōnere* ‘lay aside’, sc. the verb’s passive meaning¹). Examples:

- (8) **Latin:** Deponent *hortor* ‘incite, encourage’: Plautus, *Mercator* 695–697:

sed **coquos**, quasi in mari solet hortator **remiges**
 but cooks.ACC.PL like in sea.ABL be.wont.to.3SG.PRES inciter.NOM rowers.ACC.PL
hortarier, ita **hortabatur**
 incite.INF.PASS so incite.3SG.IPF.PASS

“But just like at sea a rowing-master (lit. ‘inciter’) is wont to urge the rowers, so he urged the cooks”

- (9) **Greek:** Deponent *τίnumai* ‘punish’: Homer, *Iliad*, 3.278-9:

καὶ οἳ ὑπενέρθε καμόντας **ανθρώπους τίνυσθον**
 and who.NOM.PL beneath passed.on.PTCP.ACC.PL men.ACC punish.2DU.PRES.MID.

“and (you) who in the underworld punish the men who have passed on”

- (10) **Vedic:** Deponent *त्रायते* ‘protects’: RV 2.23.4a-b:

त्राया-से जानाम यás तúbhyam dáśāt
 protect-2SG.PRES.MID man.ACC who.NOM you.DAT worship.3SG.SUBJ.ACT

“You protect the man who worships you”

- (11) **Hittite:** Deponent *paḥša(ri)* ‘protects’: KBo 8.35 ii 14-15:

nu mán kūš **lingāuš** **paḥḥašduma** **šumāš=a**
 PART if these.ACC.PL oaths.ACC.PL protect.2PL.PRES.MID you.ACC.PL=PART
 DINGIR.MEŠ-eš **paḥšandaru**
 gods.PL-PL protect.3PL.IPV.MID

‘If you protect these oaths, let the gods likewise protect you!’

- **The broader question: What governs the distribution of active vs. non-active morphology in these languages?**

It has long been noted that it is easy to find (near-)synonyms with differing voice morphology, e.g.:

¹For a detailed discussion of the history of the term see Flobert (1975).

(12) Active/non-active (near-)synonyms

Language	Non-active verb	Active verb	Meaning
Latin	<i>hortor</i>	<i>moneō</i>	'encourage, incite'
	<i>fūror</i>	<i>clepō, rapiō</i>	'steal, rob'
Sanskrit	<i>vārdhate</i>	<i>bhāvati</i>	'grows/becomes'
	<i>grāsate</i>	<i>ātti</i>	'devours/eats'
Hom. Greek	<i>eríomai</i>	<i>phúlassō</i>	'protect, guard'
	<i>érkhomai</i>	<i>eĩmi</i>	'come, go'
Modern Greek	<i>eborevome</i>	<i>adallasso</i>	'trade'
	<i>katarieme</i>	<i>anathematizo</i>	'curse'

- How can we predict where voice morphology occurs, and when does it go wrong?

2.1 Canonical vs. non-canonical uses of non-active morphology

Non-active morphology is found in the same syntactic environments cross-linguistically (Geniušienė 1987, Rivero 1990, Klaiman 1991, Kemmer 1993, 1994, Embick 1998, Kaufmann 2007, Kallulli 2007, 2013, Alexiadou and Doron 2012, Alexiadou 2013 etc.):

(13) Canonical functions of non-active morphology

- Anticausatives
- Reflexives & reciprocals
- Self-benefactives
- Dispositional/generic constructions
- (Medio)passives

= **voice syncretism** (Embick 1998).

NB Non-active verbs in these contexts usually alternate with active-marked verbs → **alternating/oppositional non-active verbs**.

... but non-active morphology is also found in **non-alternating/non-oppositional** contexts (cp. Kemmer 1993, Zombolou and Alexiadou 2014):

- (14)
- Experiencer/psych verbs
 - Statives
 - (some) verbs of motion
 - (some) deadjectival and denominal verbs
 - (some) verbs of speech and communication

Is there a unifying generalization for these contexts? → Their surface subjects ≠ agents.

2.2 A postsyntactic approach to voice morphology

Following Kratzer (1996), the external argument (agent) of transitive verbs is merged in the specifier of a functional projection *v*P.

Spell-Out condition on non-active morphology:

- (15) $v \leftrightarrow v\text{-}X/_$ No external argument (Embick 2004a: 150)
"Non-active voice is assigned when *v* does not introduce an external argument"
("X" = morphological exponence of "non-active" in a given language)

- [ACT] and [NONACT] are not syntactic features, but different ways of spelling out *v*
- [NONACT] = a postsyntactic feature/property of *v*
- active = “elsewhere” morphology

[NB the alternative—defining a condition for active and treating non-active as “elsewhere”—is impossible; no way of unifying formally active transitive/causative verbs with formally active unaccusatives in Greek-type languages]

Further assumption: two types of *v*:

- *v*[AG]: “agentive *v*”
 - can merge an agent as its specifier
 - can value ACC on the object
- *v*:
 - no specifier/external argument
 - no ACC

Cp. Kratzer (1996), Embick (1997), 1998, 2004a, Chomsky (2001) (ϕ -complete *v** vs. “defective *v*”), Kallulli (2007), (2013).

- (16) Definition: canonical uses of non-active morphology: *v*[AG] does not introduce an external argument

This gives us the following basic distribution of voice morphology in a Greek-type voice system (cp. Kallulli 2013: 349):

- (17) Distribution of active vs. non-active morphology:

	+ext.arg.	-ext.arg.
<i>v</i> [AG]	ACT	NONACT
<i>v</i>	n/a	ACT

Spell-Out rules for active vs. non-active:

- (18) a. NONACT \leftrightarrow *v*[AG][–ext.arg]
 b. ACT \leftrightarrow elsewhere

- Deponents are “mismatch verbs” because their surface subject is an agent, but they surface with non-active morphology — not predicted by (17)-(18).

- (19) Definition of deponency (Grestenberger 2014: 65)
 “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.”

3 Properties of Indo-European deponent nominalizations

Observation: some nominalizations of deponent verbs continue the “voice mismatch” while others don’t.

3.1 Mismatch suspended

3.1.1 Agent nouns

- Deponents behave like formally active agentive verbs and form agent nouns, using the same suffix as the regular active verbs.

Vedic: agent noun suffix *-tár-* (Benveniste 1948, AiG II,2: 669ff., Tichy 1995).

(20) Vedic agent nouns

alternating		deponent	
root	agent noun	root	agent noun
<i>dā</i> ‘give’	<i>dā-tár-</i> ‘giver’	<i>trā</i> ‘protect’	<i>trā-tár-</i> ‘protector’
<i>nī</i> ‘lead’	<i>ne-tár-</i> ‘leader’	<i>īd</i> ‘praise’	<i>īdī-tár-</i> ‘praiser, worshipper’
<i>rakṣ</i> ‘protect’	<i>rakṣi-tár-</i> ‘protector’	<i>kṣad</i> ‘serve, prepare’	<i>kṣat-tár-</i> ‘server’

... also holds for the other IE languages:

(21) Greek deponent agent nouns

- rū-tér* ‘protector’ (*érūmai*, *rúomai* ‘protect, guard’)
- lēis-tér* ‘robber’ (*lēizomai* ‘rob, plunder’; *lēis* ‘plunder’)
- lōbē-tér* ‘slanderer’ (*lōbáomai* ‘slander, mistreat’; *lóbē* ‘insult’)

(22) Latin deponent agent nouns

- hortā-tor* ‘inciter’ (*hortor* ‘urge, incite’)
- vēnā-tor* ‘hunter’ (*vēnor* ‘hunt’)
- tū-tor* ‘watcher, protector’ (*tueor* ‘watch, protect, guard’)

(23) Modern Greek deponent agent nouns²:

- hiris-tis* ‘user, manipulator’ (*hirizome* ‘use, manipulate’)
- ekmetalef-tis* ‘exploiter’ (*ekmetalevome* ‘exploit’)
- episkep-tis* ‘visitor’ (*episkeftome* ‘visit’)

3.1.2 Verbal adjectives/“target state participles”

- Vedic, Ancient Greek, Modern Greek, Hittite have nominalizers/stativizers that attach directly to the root. They have a passive reading with transitive verbs, but an intransitive reading with intransitive verbs. The verbal adjectives of deponents pattern with active transitive verbs in having a passive reading.

Vedic: *-tā-* (cp. Jamison 1979, (1990), Whitney (1879: 310ff.), AiG II,2: 551ff.):

²I am grateful to Elena Anagnostopoulou for providing these examples.

(24) Vedic verbal adjectives in *-tá-*

alternating		deponent	
root	verbal adj.	root	verbal adj.
<i>han</i> ‘slay’	<i>ha-tá-</i> ‘slain’	<i>gras</i> ‘devour’	<i>gras-itá-</i> ‘devoured’
<i>vac</i> ‘speak’	<i>uk-tá-</i> ‘spoken’	<i>bādh</i> ‘beset’	<i>bādh-itá-</i> ‘beset, hemmed in’
<i>pā</i> ‘drink’	<i>pī-tá-</i> ‘drunk’	<i>labh</i> ‘take, seize’	<i>-lab-dha-</i> ‘taken’ (< * <i>labh-ta-</i>)

Greek: *-tós* (cp. Risch 1974: 19ff.):

(25) Greek verbal adjectives in *-tós*

alternating		deponent	
verb	verbal adj.	verb	verbal adj.
<i>títhēmi</i> ‘place, set’	<i>the-tós</i> ‘placed, set’	<i>ex-aínumai</i> ‘pick, choose’	<i>éx-ai-tos</i> ‘picked; choice’
<i>poiōō</i> ‘make’	<i>poiē-tós</i> ‘made’	<i>mnáomai</i> ‘woo, court’	<i>mnēs-tē</i> ‘wooed one’ (f.)
<i>tetraínō</i> ‘pierce’	<i>trē-tós</i> ‘pierced’	<i>eúkhomai</i> ‘pray’	<i>euk-tós</i> ‘prayed for, desired’

Hittite: *-ant-* “participle” = syntactically like the verbal adjectives in *-tá-* and *-tós-* in Vedic and Greek (Hoffner and Melchert 2008: 339ff.):

(26) Hittite *-ant-* formations

alternating		deponent	
verb	verbal adj.	verb	verbal adj.
<i>epp-/app-</i> ‘seize’	<i>app-ant-</i> ‘seized, taken’	<i>parš(i)-</i> ‘break’	<i>paršiy-ant-</i> ‘broken’
<i>pai-/pi-</i> ‘give’	<i>piy-ant-</i> ‘given’	<i>huett(i)-</i> ‘pluck, pull’	<i>huetti-ant-</i> ‘pulled’
<i>tarupp-</i> ‘assemble’	<i>tarupp-ant-</i> ‘assembled’	<i>tuḫš-</i> ‘cut off’	<i>tuḫš-ant-</i> ‘cut off’

3.1.3 Latin

Latin deponents use the same morphology as non-deponents in non-finite contexts. The mismatch appears to be suspended. Example: Lat. **present** participles in *-ns* found both with deponent and with formally active verbs:

(27) Latin non-finite forms

	Present			Perfect	
	Pres.act.	Pres.pass.	Pres.ptcp.	Perf.act.	Perf.pass.
Altern.	<i>am-ō</i> ‘I love’	<i>am-or</i> ‘I am loved’	<i>amā-ns</i> ‘loving’	<i>am-āv-ī</i> ‘I have loved’	<i>amātus sum</i> ‘I was loved’
Dep.		<i>sequ-or</i> ‘I follow’	<i>sequē-ns</i> ‘following’		<i>secūtus sum</i> ‘I have followed’

On the other hand, **perfect** participles of deponents continue the mismatch behavior:

(28) *sequor* ‘follow’, perf.ptcp. *secūtus* ‘(have) followed’, Livy, *Ab urbe condita* 4.20.5:

omnes ante me **auctores** **secutus**, ... **exposui**
all.ACC before me authors.ACC followed.PTCP.NOM.SG.M expound.1SG.PERF

“Having followed all authors before me, I have stated (that) ...”

(not: “having been followed”)

- (29) *com-minīscor* ‘invent, devise’, perf.ptcp. *commentus* ‘(have) devised’: Plautus, *Truculentus* 85:

eo nunc **commenta** **est dolum**
 this.ABL now devised.PTCP.NOM.SG.F is deceit.ACC

“For this reason she has now devised this deceit”

(not: “has been devised”)

- (30) *loquor* ‘speak, say’, perf. *locūtus sum* ‘(have) said’: Plautus, *Trinummus* 563:

quid hic est locutus **tecum?**
 what he is spoken.PTCP.NOM.SG.M with.you

“What did he discuss with you?”

(not: “what has been discussed”)

- The Latin present “active” participle cannot be used as evidence that voice mismatches are suspended in non-finite contexts

3.2 Mismatch continued

3.2.1 Vedic and Greek

- Vedic & Greek: active vs. middle (non-active) participial forms in the present, aorist, and perfect paradigm.
 - Vedic: active *-ant-/-at-*, middle *-āna-/-māna-*
 - Greek: active *-(o/e/a)-nt-*, middle *-(o/a)-menos*.

Deponent participles always select the **middle** suffix and continue the mismatch (direct objects, agent-oriented adverbs, manner adverbs ...)

Vedic:

- (31) Deponent *day* ‘distribute’, RV 1.130.7d-g:

atithigvāya śambaram girér ugró ávābharat mahó
 Atithigva.DAT Śambara.ACC mountain.ABL mighty.NOM push.down.3SG.IPF great.ACC
dhánāni dāyamāna **ójasā** víśvā dhánāny
 prizes.ACC distributing.PART.PRES.MID.NOM.SG might.INSTR all.ACC prizes.ACC
 ójasā
 might.INSTR

“The mighty one pushed Śambara off the mountain for Atithigva, distributing the great prizes with might, (distributing) all the prizes with might.”

- (32) Deponent *īd* ‘praise, invoke’, RV 7.8.1c:

náro havýebhir **ídate** **sabádhaḥ**
 men.NOM sacrifices.INSTR invoke.3PL.PRES.MID eager.ACC.ADV

“The men are eagerly invoking (him) with sacrifices.”

(33) *bādh* ‘oppress, attack, fend off’, RV 1.35.3cd:

á devó yāti savitá ... víśvā duritá
 PRVB god.NOM.SG go.3SG.PRES Savitar.NOM.SG all.ACC.PL danger.ACC.SG
bādhamānah
 fend.off.MID.PTCP.NOM.SG

“The god Savitar is approaching, ... fending off all dangers.”

Greek:

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

óikheto gār kai keīse thoēs epì vèòs Odusseùs **phármakon**
 go.3SG.IPF PART and there swift.GEN on ship.GEN Ulysses.NOM poison.ACC
androphónon dizēmenos
 men.slaying.ACC seeking.NOM

‘And then Ulysses went into his swift ship, seeking (some) men-slaying poison.’

(35) *tīnumai* ‘avenge, punish, chastize’ : ptcp. *tīnúmenos*, Od.24.326:

lóbēn tīnúmenos thumalgéa kai kakà érga
 insult.ACC avenging.PRES.PTCP.MID.NOM.SG grievous.ACC and bad.ACC deeds.ACC

“ ... avenging (their) grievous insults and bad deeds.”

3.3 Summary

(36) Morphosyntax of IE participles to verbs with active syntax:

	formally active verb	deponent verb
Vedic	<i>-nt-</i> ; <i>-tá-</i>	<i>-(m)āna-</i> ; <i>tá-</i>
Greek	<i>-(ole/a)-nt-</i> ; <i>-tós</i>	<i>-menos</i> ; <i>-tós</i>
Latin	<i>-ns</i>	<i>-ns</i> ; <i>-tus</i>
Hittite	<i>-ant-</i>	<i>-ant-</i>

4 Deriving deponent participles

The puzzle: At what point in the derivation do we know that, e.g., Vedic \sqrt{ni} ‘lead’ is alternating, but $\sqrt{trā}$ ‘protect’ is deponent? They are identical w.r.t. agent noun formation & verbal adjective formation, but have different voice morphology in their finite paradigm and their participles:

(37) Vedic

	3sg.pres.	pres.ptcp.	verbal adj.	agent noun
alternating: \sqrt{ni} ‘slay’	náy-a-ti	náy-a-nt-	nī-tá-	ne-tár-
deponent: $\sqrt{trā}$ ‘protect’	trā-ya-te	trā-ya-māna-	trā-tá-	trā-tár-

Observation: Voice mismatch in deponents = linked to their *verbalizing* morphology.

(38) Vedic alternating and deponent verb stems

Alternating		Deponent	
Stem	Meaning	Stem	Meaning
<i>vārdh-a</i> -act./mid.	'grow'	<i>rābh-a</i> -mid.	'seize'
<i>bhār-a</i> -act./mid.	'carry'	<i>grās-a</i> -mid.	'devour'
<i>yāj-a</i> -act./mid.	'sacrifice'	<i>trā́-ya</i> -mid.	'protect'

This suggests that the “trigger” of deponent behavior is located between the verbalizer *V* and *v*.

4.1 Proposal

- In deponents, the agent argument is introduced *non-canonically* by a projection *X* below *v*[AG]
- This means that *v*[AG] will be spelled out as non-active by rule (18), even though there is an agent argument (it’s just not in the right place)
- If a nominalizer in a given language regularly attaches above *v*P([AG]), deponent behavior is preserved in the nominalization. If a nominalizer attaches below *v*P([AG]), deponent behavior is suspended in the nominalization.

= Deponent participles generalization

4.2 Nominalizer above *v*P([AG])

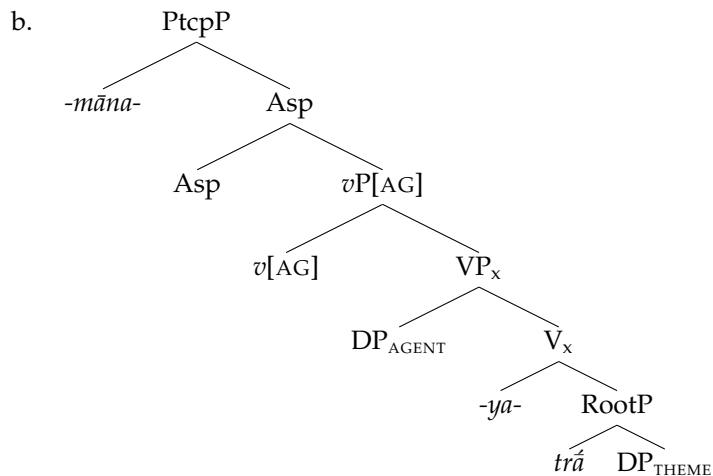
- Vedic: active participle *-ant-* vs. middle participle in *-(m)āna-*: Participles of deponents always take the middle suffix and display the same mismatch as the corresponding finite forms.
- Greek: active participle suffix *-(o/e/a)-nt-*, middle participle suffix *-menos*. Deponents always take the middle participial suffix and continue the mismatch behavior:

Structure for Vedic/Greek deponent participles³:

- (39) a. Vedic
trā́-ya-māṇa-
 protect-VB-MID.PTCP-
 ‘protecting’

³I use PtcpP for the nominalizing head; other notations used include nP, NP, DP, and AdjP, but nothing hinges on the choice of notation. The only interesting alternative is that of Embick (2000), who proposes that the Latin participial suffixes spell out the head Asp when the verb cannot move to T (instead of operating with a designated nominalizing projection).

Don’t ask me about labeling.



Spell-Out rules for Vedic participles:

- (40) a. Ptcp \leftrightarrow $-(m)\bar{a}na-/_v[AG][\text{-ext.arg}]$
 b. Ptcp \leftrightarrow $-ant-$: elsewhere

Spell-Out rules for Greek participles:

- (41) a. Ptcp \leftrightarrow $-menos/_v[AG][\text{-ext.arg}]$
 b. Ptcp \leftrightarrow $-(e/o/a)-nt-$: elsewhere

4.2.1 Latin

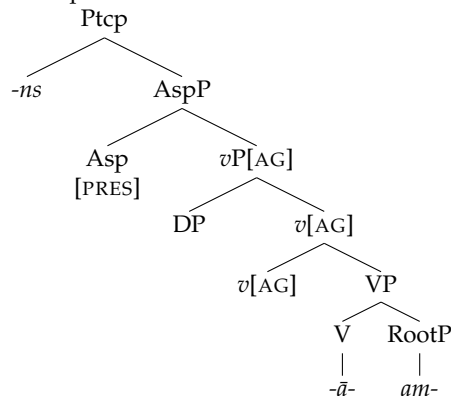
Additional assumption for Latin *-ns*: not sensitive to whether or not $v[AG]$ has a specifier:

- (42) Ptcp \leftrightarrow $-ns$

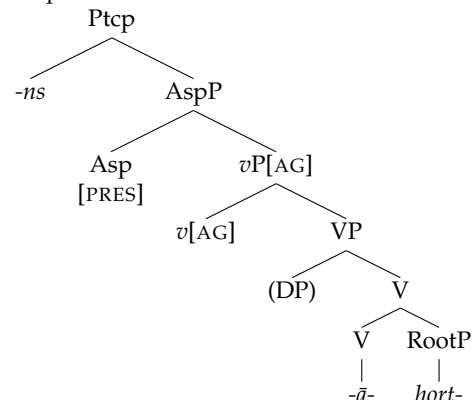
Syncretism: in the context of Asp[PRES], the nominalizer is always spelled out as *-ns* (cp. Embick 2000: 218)

- (43) Latin *ns*-participles:

a. Non-deponent: *amāns*



b. Deponent: *hortāns*



Additional evidence that Latin “active” participle is underspecified for Voice (cp. Leumann 1977: 583): the present participle of alternating verbs occasionally has the syntactic behavior of the formally

passive (rather than active) finite forms.

- (44) a. *vertēns* ‘turning’ (tr./itr.): *vert-ō* ‘turn’ (tr.): *vert-or* ‘turn’ (itr.)
 b. *volvēns* ‘rolling’ (tr./itr.): *volv-ō* ‘roll’ (tr.): *volv-or* ‘roll’ (itr.)
 c. *liquēns* ‘fluid’: *liqu-or* ‘become fluid, melt’ (vs. *liqueo* ‘be clear’ and (later) *liqu-ō* ‘make fluid, melt’ (tr.))

Embick (2000): *-ns* and *-tus* are allomorphs of Asp:

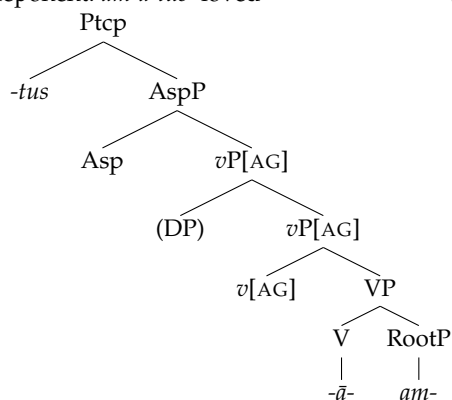
- (45) a. *-ns* ↔ Asp[PRES]
 b. *-t[us]-* (/ *-s-*) ↔ elsewhere

-tus = underspecified for Voice and Aspect (cp. also Weiss 2009: 437)

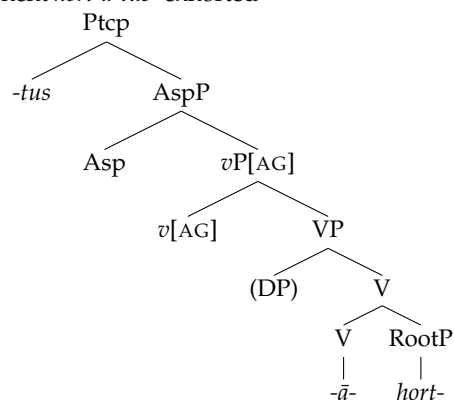
- Non-deponent vs. deponent *tus*-participles (based on Embick 2000):

- (46) *tus*-participles

a. non-deponent: *am-ā-tus* ‘loved’



b. deponent *hort-ā-tus* ‘exhorted’



- *tus*-participles can value accusative case on their objects because they contain *v*[AG]
- they can be modified by manner adverbs (cp. Anagnostopoulou’s diagnostics)

- (47) *filius ūnicē amā-tus*
 son uniquely love-PERF.PTCTP.NOM.SG
 “especially loved son”

4.3 Nominalizer below *vP*([AG])

Anagnostopoulou (2003), Alexiadou and Anagnostopoulou (2008), Anagnostopoulou (2014): nominalizer in MG *tos*-participles (“stative participles”) takes a RootP (RP) complement.

- Only the internal argument is included → derives the “theme-orientedness” of these formations (intransitive subject/transitive object)
- No verbalizing morphology, no *vP* → deponents are predicted to pattern with regular transitive verbs

This means that if a nominalization of a deponent does not include the verbalizer and *vP*, the mismatch is suspended.

- (48) a. Vedic non-deponent *tá*-participle: b. Vedic deponent *tá*-participle:
- kr-tá* 'made'

Adj

-*tá*- RootP

/ \

kr DP

trā-tá 'protected'

Adj

-*tá*- RootP

/ \

trā DP

Besides MG *-tos* and Vedic *-tá*-, this is also the structure of the Ancient Greek *to*-participle and the Hittite *ant*-participle.

4.4 Summary

- (49) Morphosyntax of deponent participles “Greek-type voice systems”:

	includes <i>vP</i>	no <i>vP</i>
act.	Gk. <i>-menos</i> , Ved. <i>-(m)āna-</i> , Lat. <i>-ns/-tus</i>	
pass.		Gk. <i>-tos</i> , Ved. <i>-tá</i> -, MG <i>-tos</i> , Hitt. <i>-ant-</i>

4.5 Modern Greek

Deponent participles, both in *-tos* and in *-menos*, behave like the participles of non-deponent transitive verbs. *-tos* occurs in negated participles of deponent and non-deponent verbs (ex. from Papangeli and Lavidas 2009: 201):

- (50) a. Non-deponent *pleno* ‘wash’:
 pli-menos — a-*pli*-tos
 washed unwashed
- b. Deponent *metahirizome* ‘use’:
 metahiris-menos — a-*metahirist*-tos
 used unused

behavior of *-tos* = expected given Anagnostopoulou’s analysis (cp. (4) above).

Problem: *menos*-participles of deponents are passive.

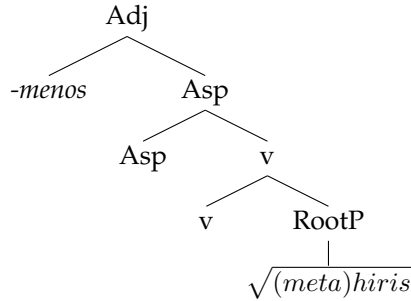
- (51) Non-deponent *grafo* ‘write’:
 a. To *gramma* *ine* *grammeno*
 The letter.NOM is written
 “The letter is written”
 b. To *grammeno* *gramma*
 The written letter
- (52) Deponent *metahirizome* ‘use’:
 a. To *lexiko* *ine* *metahirismeno*
 The dictionary.NOM is used
 “The dictionary is used”
 b. To *metahirismeno* *lexiko*
 The used dictionary

(not: ‘using’)

.... unexpected given Anagnostopoulou’s analysis (cp. 5b)): VoiceP/*v*P is included, so the mismatch should be preserved.

Possible solution: Papangeli and Lavidas (2009: 201): VoiceP is absent in deponent adjectival participles

(53) (= Anagnostopoulou’s (5a) above)



- More evidence needed to show that Voice/*v* is absent in deponent participles in MG

... a possible argument: MG participles in *-ómenos*⁴ preserve the mismatch when formed to deponent verbs:⁵

- (54) a. *metahiris-ménos* ‘used’
 b. *metahiriz-ómenos* ‘using’

Cp. *epitithémenos* ‘attacking; attacker’ (*epititheme*), *ekmetalevómenos* ‘taking advantage of, using’ (*ekmetalevome*), *dehómenos* ‘accepting’ (*dehome*), *arnúmenos* ‘refusing’ (*arnume*), etc.

These have the same active, transitive syntax as the finite forms:

- (55) *Kerdise lefta ekmetalevómenos tus ergates*
 won.3SG.PAST.ACT money.ACC exploiting the.ACC workers.ACC
 “He won money (by) exploiting the workers”

- Maybe *-menos* does not include Voice for deponent participles, but *-omenos* does (or did)?

4.6 Conclusion

- Voice mismatches are lexically conditioned, but only surface in “verbal” environments (VP-*v*P must be present)
- Voice mismatches do not depend on finite T
- Anagnostopoulou’s analysis of Modern Greek participles predicts the behavior of deponent participles in Vedic and Ancient Greek and the behavior of verbal adjectives in Vedic, Greek, and Hittite
- Additional assumption for Latin: syncretism in participial morphology
- Open issue: the exact structure of Modern Greek *menos*-participles

⁴This is usually said to belong to *Katharevousa* Greek (Holton et al. 1997: 235ff.) and appears to be unproductive.

⁵Thanks to Elena Anagnostopoulou, Sabine Iatridou, and Despina Oikonomou for these examples.

References

- AiG II,2 = Debrunner, Albert. 1954. *Altindische Grammatik*, volume II,2: *Die Nominalsuffixe*. Göttingen: Vandenhoeck & Ruprecht.
- Alexiadou, Artemis. 2001. *Functional Structure in Nominals: Nominalization and Ergativity*. Amsterdam/ Philadelphia: John Benjamins.
- Alexiadou, Artemis. 2013. Where is non-active morphology? In *Proceedings of the 20th International Conference on Head-Driven Phrase Structure Grammar*, ed. S. Müller, 244–62. CSLI publications.
- Alexiadou, Artemis, and Elena Anagnostopoulou. 2008. Structuring participles. In *Proceedings of the 26th West Coast Conference on Formal Linguistics*, ed. Ch. B. Chang and H. J. Haynie, 33–41. Somerville, MA: Cascadia.
- Alexiadou, Artemis, and Edit Doron. 2012. The syntactic construction of two non-active voices: passive and middle. *Journal of Linguistics* 48:1–34.
- Alexiadou, Artemis, Liliane Haegeman, and Melita Stavrou. 2007. *Noun Phrase in the Generative Perspective*. Berlin/New York: Mouton de Gruyter.
- Anagnostopoulou, Elena. 2003. Participles and voice. In *Perfect Explorations*, ed. A. Alexiadou, M. Rathert, and A. von Stechow, 1–36. Berlin/New York: 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, and Nadya Vinokurova. 2009. On agent nominalizations and why they are not like event nominalizations. *Language* 85/3:517–556.
- Benveniste, Émile. 1948. *Noms d'agent et noms d'action en indo-européen*. Paris: Adren Maisonneuve.
- Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: a Life in Language*, ed. M. Kenstowicz, 1–52. Cambridge, MA: MIT Press.
- Embick, David. 1997. Voice and the Interfaces of Syntax. Doctoral Dissertation, University of Pennsylvania.
- Embick, David. 1998. Voice systems and the syntax/morphology interface. In *Papers from the UPenn/MIT Roundtable on Argument Structure and Aspect*, ed. H. Harley, 41–72. MIT Working Papers in Linguistics 32.
- Embick, David. 2000. Features, syntax, and categories in the Latin perfect. *Linguistic Inquiry* 31/2:185–230.
- Embick, David. 2004a. Unaccusative syntax and verbal alternations. In *The Unaccusativity Puzzle*, ed. A. Alexiadou, E. Anagnostopoulou, and M. Everaert, 137–58. Oxford University Press.
- Embick, David. 2004b. On the structure of resultative participles in English. *Linguistic Inquiry* 35/3:355–92.
- Flobert, Pierre. 1975. *Les verbes déponents latins des origines à Charlemagne*. Paris: Belles Lettres.
- Geniušienė, Emma. 1987. *The typology of reflexives*. Berlin/New York/Amsterdam: De Gruyter.
- Grestenberger, Laura. 2014. Feature Mismatch: Deponency in Indo-European. Doctoral Dissertation, Harvard University.
- Harley, Heidi. 2009. The morphology of nominalizations and the syntax of *v*P. In *Quantification, Definiteness and Nominalization*, ed. M. Rathert and A. Giannadikou, 320–42. Oxford University Press.
- Hoffner, Harry A. Jr., and H. Craig Melchert. 2008. *A Grammar of the Hittite Language. Part I: Reference Grammar*. Winona Lake, Ind.: Eisenbrauns.
- Holton, David, Peter Mackridge, and Irene Philippaki-Warbuton. 1997. *Greek: a Comprehensive Grammar of the Modern Language*. London/New York: Routledge.
- Jamison, Stephanie. 1979. Remarks on the expression of agency with the passive in Vedic. *KZ (= Zeitschrift für Vergleichende Sprachforschung)* 93:196–219.
- Jamison, Stephanie. 1990. The tense of the predicated past participle in Vedic and beyond. *Indo-Iranian Journal* 33:1–19.
- Kallulli, Dalina. 2007. Rethinking the passive/anticausative distinction. *Linguistic Inquiry* 38/4:770–80.
- Kallulli, Dalina. 2013. (Non-)canonical passives and reflexives: deponents and their like. In *Non-Canonical Passives*, ed. A. Alexiadou and F. Schäfer, 337–58. Amsterdam/Philadelphia: John Benjamins.
- Kaufmann, Ingrid. 2007. Middle voice. *Lingua* 117:1677–714.
- Kemmer, Suzanne. 1993. *The Middle Voice*. Amsterdam: John Benjamins.
- Kemmer, Suzanne. 1994. Middle voice, transitivity, and the elaboration of events. In *Voice: Form and Function*, ed. B. Fox and P. Hopper, 179–230. Amsterdam: John Benjamins.
- Klaiman, Miriam H. 1991. *Grammatical Voice*. Cambridge University Press.
- Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase Structure and the Lexicon*, ed. J. Rooryck and L. Zaring, 109–37. Dordrecht: Kluwer.
- Leumann, Manu. 1977. *Lateinische Laut- und Formenlehre*. Lateinische Grammatik, vol. I. München: Beck.

- Papangeli, Dimitra, and Nikolaos Lavidas. 2009. Deponents and non-finite constructions in Greek. In *Proceedings of the 2007 Workshop in Greek Syntax and Semantics at MIT*, ed. C. Halpert, J. Hartman, and D. Hill, MIT Working Papers in Linguistics 57, 197–211.
- Pesetsky, David. 2009. Passive, deponency, and tense: comments on the paper by Papangeli and Lavidas. In *Proceedings of the 2007 Workshop in Greek Syntax and Semantics at MIT*, ed. C. Halpert, J. Hartman, and D. Hill, 213–19. MIT Working Papers in Linguistics 57.
- Risch, Ernst. 1974. *Wortbildung der homerischen Sprache*. Berlin: De Gruyter, 2nd edition.
- Rivero, María-Luisa. 1990. The location of nonactive voice in Albanian and Modern Greek. *Linguistic Inquiry* 21/1:135–46.
- Tichy, Eva. 1995. *Die Nomina Agentis auf -tar- im Vedischen*. Heidelberg: Winter.
- Weiss, Michael. 2009. *Outline of the Historical and Comparative Grammar of Latin*. Beech Stave Press.
- Whitney, William Dwight. 1879. *A Sanskrit Grammar*. Leipzig: Breitkopf & Härtel.
- Zombolou, Katerina, and Artemis Alexiadou. 2014. The canonical function of the deponent verbs in Modern Greek. In *Morphology and Meaning. Selected Papers from the 15th International Morphology Meeting, Vienna, February 2012*, ed. F. Rainer, F. Gardani, H. C. Luschützky, and W. U. Dressler, 331–44.