More span-conditioned allomorphy: Voice morphology in Classical Greek

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NELS 46, Concordia University, Montreal, Oct. 16–18, 2015

1 Introduction

Classical Greek (CG) Voice morphology (active vs. non-active (NAct; "middle") is usually compatible with all verbal stem-forming morphology (V; portmanteau with Asp & glossed ipfv/pfv in (1–3)), with imperfective and perfective aspect; and with different moods (subjunctive and optative). Voice morphology is expressed as portmanteau together with Tense/Agr morphology.

(1) active vs. middle in CG

	active	middle
pres.	*loú-Ø-ō* wash-IPFV-1SG.NON-PAST.ACT 'I wash (sth.)'	*loú-o-mai* wash-IPFV-1SG.PRES.NACT 'I wash myself'
aor.	*é-lou-s-a* PAST- wash-PFV-1SG.PAST.ACT 'I washed (sth.)'	*e-lou-sá-mēn* PAST-wash-PFV-1SG.PAST.NACT 'I washed myself'
fut.	*loú-s-ō* wash-IPFV/PFV-1SG.NON-PAST.ACT 'I will wash (sth.)'	*loú-so-mai* wash-FUT-1SG.PRES.NACT 'I will wash myself'
pres.subj.	*loú-Ø-Ø-ō* wash-IPFV-SUBJ-1SG.NON-PAST.ACT 'I shall wash (sth.)'	*loú-ō-mai* wash-IPFV.SUBJ-1SG.NON-PAST.NACT 'I shall wash myself'
aor.opt.	*lou-s-ai-mi* wash-PFV-OPT-1SG.NON-PAST.ACT 'if only I had washed (sth.)'	*lou-s-aí-mēn* wash-PFV-OPT-1SG.PAST.NACT 'if only I had washed myself'

Passive is only compatible with perfective aspect. It is only found in the aor. & fut. and surfaces as a stem-forming suffix *-thē-* rather than as part of the verbal endings (cp. (0)-(1)). In the aorist, it is compatible with both subjunctive and optative mood, but in the future it is only compatible with optative, not with subjunctive. It obligatorily co-occurs with active morphology in aor., aor.subj. and aor.opt, (2-a-c), but with middle morphology in the fut. and fut.opt, (2-d-e).

(2) passive

a. *e-loú-thē-n* 'was washed' (aor)
past-wash-pass.pfv-1sg.past.**act**

b. *lou-thô* 'shall be washed' (aor.subj)
wash-pass.pfv.subj.1sg.nonpast.**act**

c. *lou-theíē-n* 'if only I were washed' (aor.opt)
wash-pass.pfv.opt-1sg.past.**act**

d. *lou-thḗ-so-mai* 'will be washed' (fut)
wash-pass.pfv-fut-1sg.nonpast.**NAct**

e. *lou-thē-s-oí-mēn* 'if only I would be washed' (fut.opt)
wash-pass.pfv-fut-opt-1sg.nonpast.**NAct**

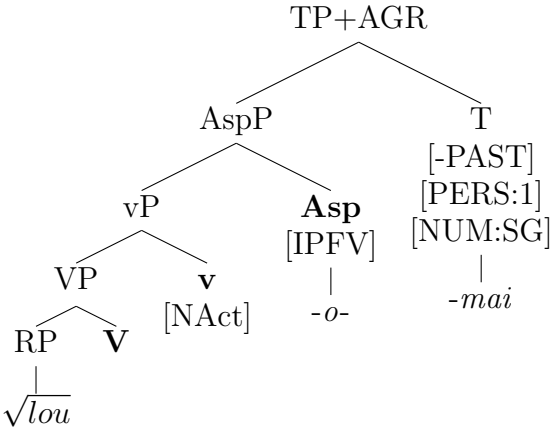
2 Background

Merchant 2015: allomorphy is triggered by adjacent **spans** (= sets of ordered terminal nodes of a given extended projection; each terminal node itself is a span) rather than adjacent nodes.

- **outward sensitivity**: allomorphy is triggered by a structurally higher span (only the *morphosyntactic content* of the higher span is relevant), e.g.: verbal stem allomorphy in Modern Greek, cp. Embick 2010, Merchant 2015)
- **inward sensitivity**: a structurally lower span conditions allomorphy in a higher span (both the phonological and the morphosyntactic content of the lower span is relevant, cp. Embick 2012).

Inward sensitivity to spans captures (1–2): Spell-Out of the final node T/Agr must have access to the [NAct] feature on v across the intervening head Asp, independent of the value of Asp (since both the present (imperfective) and the aorist (perfective) stem can occur with active and non-active morphology, (1a-b) and (2a-b)) → predicted if V+v+Asp form a *span*, as in (3) (heads in **bold** form a span; the theme vowel *-o-* spells out the entire span):

(3) Derivation of the 1sg.pres.mid.:



- More evidence: **deponent verbs** = formally non-active verbs that syntactically behave like agentive transitive verbs. The [NAct] feature is a property of particular *verbal stems* that are lexically marked for having non-canonical agents (cp. Grestenberger 2014; with

a lexical feature on the root: Embick 1998, 2000). The T-Agr complex is again sensitive to the span V+v+Asp rather than just Asp:

(4) CG Deponent verbs:
   a. *[dízē]$_V$-mai*
      seek.IPFV-1SG.PRES.NACT
      'I seek (sth.)'
   b. *[tínu]$_V$-mai*
      punish.IPFV-1SG.PRES.NACT
      'I punish'

BUT the "passive" suffix -*thē*- triggers obligatory insertion of default T/Agr morphology ("active") in the aorist (3-a), but non-active T/Agr morphology in the future (3-b). This is not predicted by either node adjacency nor (inward-looking) span adjacency.

2.1 Voice in CG

Embick (1998), (2004), Kallulli (2007), (2013): Non-active is assigned *postyntactically* to particular syntactic environments.

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

- "active" = elsewhere morphology
- Since non-active morphology in T/Agr is sensitive to a property of v, active morphology also emerges as a default whenever v is missing, as in unaccusative and stative predicates (Kallulli 2013).
- CG v can be [+/-NAct]; CG does not have a passive Voice head (cp. Alexiadou and Doron 2012 for Modern Greek).

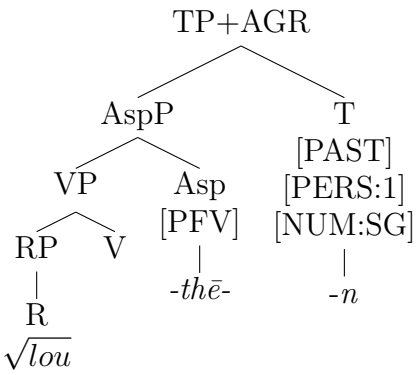
3 Analysis

Proposal: CG -*thē*- realizes Asp[pfv] in the absence of the agentivity/event-introducing head v

- -*thē*- is predicted to occur only in contexts where v is missing and hence surface with default T/Agr morphology $\rightarrow$ aorist passive.
- -*thē*- $\neq$ a (passive) Voice head
- In the future passive, the span **v+Asp+Mod** triggers non-active rather than the expected default morphology

3.1 The CG Aorist passive

(6) Aorist passive



Evidence:

- *-thē-* developed diachronically from a verbal stem forming suffix that made itr./unacc. verbal stems without specifically passive meaning (thus still in Homer), e.g.:

(7) Intransitive non-passive Homeric *thē*-aorists

a. *e-krúph-thē-n*
PAST-hide-PFV-1SG.PAST.ACT
'I hid (myself)'

b. *e-phobḗ-thē-n*
PAST-flee-PFV-1SG.PAST.ACT
'I fled'

- *-thē-* is in complementary distribution with other aorist stem-forming morphology rather than with voice morphology:

(8) Alternation with stem-forming morphology

a. *é-du-s-a*
PAST-sink-PFV-1SG.PAST.ACT
'I sank sth.'

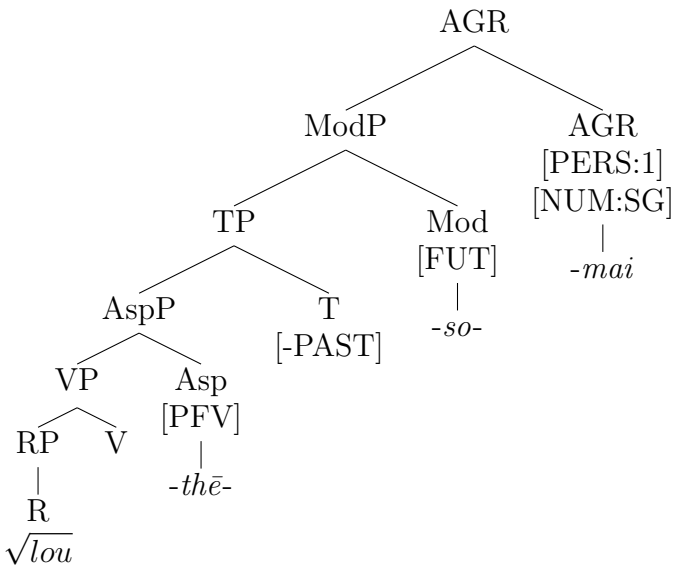
b. *é-traph-o-n*
PAST-be.nourished-PFV-1SG.PAST.ACT
'I was nourished'

c. *e-dú-thē-n*
PAST-sink-PFV.PASS-1SG.PAST.ACT
'I was sunk'

- *-thē-* does not license agent *by*-phrases (Kulikov and Lavidas 2013).

3.2 The CG future passive

(9) Future passive



Evidence:

- The **future passive** is perfective, the future middle is imperfective (Smyth and Messing 1956, Allan 2003), so *-thē-* also realizes Asp[pfv] in the absence of *v* in the fut.pass.:

(10) CG future passive

a. *tīmḗ-so-mai* (fut.mid.)
honour$_{V}$-FUT-1SG.NONPAST.NACT
'I shall enjoy honour' (ipfv)

b. *tīmē-thḗ-so-mai* (fut.pass.)
honour$_{V}$-PFV.PASS-FUT-1SG.NONPAST.NACT
'I shall be honored' (on a particular occasion; pfv)

- The future marker *-se/o-* realizes Mod (future = modality: cp. Giannakidou 2014)
  - as the result of a diachronic reanalysis: *-se/o-* still behaves like a desiderative/ipfv. stem-forming suffix in closely related languages

3.3 Span-conditioned allomorphy?

Problem: in the future passive, the span **v+Asp+Mod** appears to trigger non-active rather than the expected default morphology

- Mod alone is compatible with active and non-active morphology, so it can't be the trigger for obligatory non-active in the fut. passive
- The trigger must be the *span* Asp[pfv]+Mod, spelled out as *-thē-so/e-*
- The span that triggers allomorphy does not need to be spelled out as portmanteau (Merchant 2015): Asp[pfv] and Mod are realized separately
- **Inward sensitivity**: Higher spans are sensitive to **morphosyntactic** and **phonological** features of a lower span

– if the lower span has been spelled out and has phonological content

= Mod acts as an intervener between T/Agr and Asp[pfv]

– T/Agr cannot directly access the features of v+Asp because another node *with phonological content* intervenes (unlike in the present, aorist and future active and middle and the aorist passive)

– expected default morphology does not surface

3.3.1 Evidence for phonological intervention

Mod (*-se/o-* also triggers non-active in many verbs that are otherwise active in the present → **semi-deponents**: active in the present/aor., but non-active in the future.

(11) CG semi-deponents

Pres.: act.	Fut.: NAct	Meaning
aeíd-ō	*aeí-so-mai*	'(will) sing'
akoú-ō	*akoú-so-mai*	'(will) hear'
hamartán-ō	*hamartḗ-so-mai*	'(will) miss, fail'
baín-ō	*bḗ-so-mai*	'(will) walk, go'
plé-ō	*pleú-so-mai*	'(will) sail'

- Kemmer 1993: 79ff.: inherently desiderative/volitional verbs ('want', 'will') tend to take non-active morphology ("subject affectedness")

4 Analysis II

- Fut. & subj. are different values of epistemic Mod ("high Mod" Cinque 1999), which selects TP (fig. 3) → fut. & subj. cannot co-occur
- Opt. = deontic mod., can co-occur with future
- Mod_{FUT} selects v without an external argument and introduces a volitional/affected argument → condition on non-active voice applies (ex. 5), obligatory non-active in the future

Observation: default (active) morphology surfaces in the passive whenever Asp+Mod form a portmanteau (or Mod is missing → aor.pass.), (12-a–c). Non-active surfaces when Asp & Mod are spelled out separately, (12-d–e) (illustrated with 1pl.):

(12) Spell-Out of Mod:

a.	1pl.aor. pass.	*-thē-men* -pfv.pass-1pl.past.act
b.	1pl.aor. subj.pass.	*-thô-men* -pfv.pass.subj-1pl.nonpast.act
c.	1pl.aor. opt.pass.	*-theĩ-men* -pfv.pass.opt-1pl.past.act
d.	1pl.fut. pass.	*-thē-só-metha* -pfv.pass-fut-1pl.nonpast.**NAct**
e.	1pl.fut. opt.pass.	*-thē-soí-metha* -pfv.pass-fut.opt-1pl.past.**NAct**

Cp. linearization for (12-b) vs. (12-e):

(13) a. $\sqrt{lou}$⌢Asp.Mod[thô]⌢Agr[-men]
b. $\sqrt{lou}$⌢Asp[thē]⌢Mod[so]⌢Agr[-metha]

- Asp.Mod[thô]⌢Agr[1pl] are spelled out as [*-thô-men*] (Asp+Mod: portmanteau), but Asp⌢Mod⌢Agr[1pl] surface as [*-thē-so-metha*] (no portmanteau)
- parallel to Mod[so]⌢Agr[1pl] → *-so-metha* (1sg. *-so-mai*) in the fut.mid. ((10) & (12-d))
  - cp. English past tense allomorphy: T must be concatenated with the *root* to be spelled out as (irregular) past tense allomorph → possible because V/v = Ø and has been **pruned**, no intervention (Embick 2012)
  - (10), (12-d–e): No pruning possible in the fut.pass.; Mod has phonological content and intervenes between Asp[*thē*] and Agr

5 Implications

- Strict node adjacency may still be necessary for inward-looking allomorphy → Voice morphology in CG appears to be sensitive to local heads with phonological content
- **Problem**: AGR can "see" the Voice feature on v in the future act./mid. but not the lack of v in the future passive
- Parallels for purely phonological intervention effects during vocabulary insertion?

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