Contrastive Studies in Verbal Valency

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Between Passive and Middle

Evidence from Greek and beyond

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This paper focuses on verbs that can appear with two non-active voice morphologies in Greek. The starting point of the study is a comparison to the Vedic verbs that can also have two different, though formally related, non-active morphologies. In Vedic, these belong to the semantic class of verbs denoting decay and destruction as well as some other spontaneous processes. On the contrary, in Greek, there is a tendency for verbs that participate in causative-anticausative alternations to appear with both middle and passive voice morphology (for instance: 'unbind sth. – be unbound'; 'cause to lean – lean'). It will be argued that these verbal classes demonstrate a diachronic tendency for change in their voice marking, which often results in the emergence of lability (that is, the same morphological marking for both transitive and intransitive uses). We will also show that the diachrony of Greek displays a clear decrease in the percentage of such verbs. This decrease is related to the ongoing decline of the middle voice. However, it can also be due to the expansion of the labile type in Greek at the expense of verbs of change-of-state that could appear with middle and passive voice morphologies.

1. Introduction

The study of the relationship between morphological encoding of the mapping of semantic roles onto the level of syntactic relations (verbal voice), semantic features and verbal alternations in Greek and Vedic can serve as an instructive illustration of how the active-passive contrast emerges as a local innovation with a limited scope (that is, covering only a part of the verbal Lexicon). This study can also demonstrate that the passive is in constant competition with its eternal rival, the anticausative, but gradually absorbs several areas of the valency alternations

(see Kulikov & Lavidas 2013). In Ancient Greek, the mediopassive[1] morphology marks a variety of valency alternations, such as passive, anticausative, reflexive, auto-benefactive transitive and reciprocal. The development of Greek displays two opposite tendencies: the productivity of the morphological marking in transitive-passive alternations and the emergence of lability in the domain of the causative-anticausative alternations. On the one hand, the number of verbs that can participate in a transitive-passive alternation with a mediopassive ending in the passive construction increases (from Homeric to Classical, and from Classical to Koine Greek; see, for instance, Luraghi 2010). On the other hand, new causative-anticausative alternations are marked with active morphology in both constructions, while the mediopassive cannot mark auto-benefactive transitives (see, for instance, Lavidas 2009). By contrast, Vedic exhibits an opposite type of evolution. On the one hand, labile verbs or verbal forms, not infrequent in early Vedic (cf. *sváda-te* 'makes sweet (for oneself) / is sweet'; *vāvr̥dh-úḥ* '(they) have grown [intr.] / have increased (smb./sth.)' [tr.]), become rare or exceptional by the end of the early Vedic period. On the other hand, the present formations with the suffix *-yá-* (i.e. morphological passives in the present system) become more productive, ousting non-characterized middle forms that, presumably, were more intimately associated with the passive function in the Proto-Indo-European language. This, eventually, contributes to the degrammaticalization of the middle diathesis (see Kulikov 2012b). Both languages furnish valuable evidence for a diachronic typological analysis of voice systems – in particular, for a study of possible scenarios of the rise and disappearance of voice oppositions such as active/passive (see, among others, Kulikov & Lavidas 2013) – and verbal alternations. The aim of the present contrastive study is the examination of the area of verbs that can appear with two non-active voice morphologies. These verbal classes are of particular significance because cross-linguistically they demonstrate a tendency for change in their voice morphology, which may result in lability (same morphology for the transitive and intransitive use).[2]

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1. Middle/passive for the Future and Aorist, middle for all other tenses; see below for details and an analysis.

2. Our study differs from Kemmer's (1993) typological study, which has different aims and does not examine verbs that can appear with both middle and passive morphologies. Kemmer analyzes the situation types that can be associated with the middle: for instance, verbs of grooming, motion, change in body posture, emotion or spontaneous events can be encoded by the middle in various languages. Kemmer does not examine the passive markers (for instance, in the Classical Greek Future and Aorist tenses). Kemmer, however, discusses the question of existence of both middle and reflexive markers: accordingly, some languages (e.g., Modern French) have middle markers that are identical to the reflexive markers; in other languages (e.g., Modern Russian), the middle markers are partly identical to the reflexive markers; some languages (e.g.,

In Vedic, there is a class of present formations with the suffix *-ya-* that can have the accent on the root or on the suffix (henceforth labelled ´-*yá*-presents). It consists of two major semantic subclasses (see Kulikov 1998a for details). One of these two subclasses can be described as consisting of verbs of destruction (splitting, breaking, etc.). Verbs of another subclass ('become free', 'fall') denote "a process when an element ceases to be included in any system or structure" (Kulikov 1998a: 147) and, accordingly, can be qualified as verbs describing destruction of a system (verbs of destructuring). Verbs of both subclasses denote spontaneous processes that share an important feature: in physical terms, they can be qualified as verbs denoting processes that result in the increase of entropy.[3] Kulikov has shown that, originally, ´-*yá*-presents were non-passives (anticausatives) with root accentuation. Altogether, the Vedic ´-*yá*-presents of "entropy increase" form the semantic core of the class of spontaneous predicates and can also be considered as canonical anticausatives.[4] Alongside the class of spontaneous predicates, there are other semantic groups that form the core of the verbal class of anticausatives: here belong, for example, verbs of change-of-state and verbs of motion.[5] The class of verbs denoting spontaneous processes that result in entropy increase turns out to be relevant within

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Classical Greek) have middle markers that are historically unrelated to the reflexive markers. As noted, our aim is the analysis of verbs that can appear with both middle and passive morphologies in the Aorist/ Future. The reflexive markers in Greek have the form of pronouns, not of verbal suffixes, and, for this reason, we do not examine them in the present study. The reflexive marking on verbs that can bear middle and passive morphologies remains a task for future research.

3. The increase of entropy characterizes many spontaneous and irreversible processes such as destruction or simplification of a system, natural decay or death, decrease of energy, burning of fuel. This semantic feature, introduced in Kulikov (1998a), is not widely used in the literature on the semantics of verbal classes – though see, for instance, Howard 2001; Padučeva 2001; Lazzeroni 2004, where the feature of 'entropy increase' is discussed and further elaborated. Nevertheless, it appears to be relevant for the semantic classification of verbs and, especially, for a scrutiny of the passive/anticausative distinction. In particular, it captures several crucial aspects of certain spontaneous processes that seem to be associated with some peculiar morphological features of the corresponding verbs (such as accent fluctuation in non-passive middle *-ya*-presents in Vedic) distinguishing them from other verbs denoting spontaneous processes not implying the increase of entropy. Cf. Vedic middle *-ya*-presents *pádyate* 'falls' or *líyate* 'sticks', which show no accent fluctuation. For its relevance for other (non-Indo-European) languages, see, for instance, Dom (2014), where this feature is applied to the material of Bantu languages and appears to be indispensable for the analysis of the middle morphology.

4. For a similar, but not identical, approach to the definition of anticausatives, see Haspelmath (1987: 16–17) with evidence from Gothic.

5. Cf. "Move and Change class" in Jespersen (1927/1954: 332–337); see also Smith (1970).

the classification of verbal classes in some languages. In Vedic, this feature becomes "morphologically influential" (Kulikov 1998a, 2011), being constitutive for a class of verbs with similar phonological, morphological and paradigmatic properties.

In Section 2, we will discuss the class of verbs that can appear with two non-active voice morphologies in Vedic, and we will formulate a hypothesis on their contrastive analysis. In Section 3, we will examine the status of middle and passive voice in Greek, and we will focus on verbs with two non-active voice morphologies in Homer and Classical Greek (3.1). Section 3.2 will present the results of a corpus study of the presence of verbs that can appear with two non-active voice morphologies in Homeric and Classical Greek, and Section 3.3 discusses our diachronic corpus study of verbs that can appear with two non-active voice morphologies in Koine Greek. Section 4 presents the main conclusion of the paper. We will show that a clear decrease of the percentage of verbs that can appear with two non-active voice morphologies occurs in the diachrony of Greek and Vedic. This decrease is related to the ongoing loss of the middle voice, but also demonstrates the replacement in Greek of the class of verbs of change-of-state that can appear with two non-active voice morphologies with a new verbal class (labile verbs in Greek).

2.   Verbs with two non-active voice morphologies: Evidence from Vedic in a typological perspective

In Vedic, there are two types of verbs with the suffix *-ya-* and non-active (middle) inflection (hereafter 'middle *-ya-*presents'). The verbs with the stress on the suffix (*-yá-*presents) are employed in passive usages (cf. *kṛ* 'make' – *kriyáte* 'is [being] made', *pū* 'purify' – *pūyáte* 'is [being] purified, *han* 'kill' – *hanyáte* 'is [being] killed') and function as the regular productive passive formation in the present system. By contrast, verbs that have the accent on the root (middle *´-ya-*presents, or class IV presents, in Indian tradition) are not used in passive constructions. The latter class consists of three major semantic subclasses: (i) verbs of change-of-state, (ii) verbs of motion and body posture, and (iii) verbs of mental activities (typically construed with accusatives); cf. *jani* 'be born' – *jā́yate* 'is born, emerges', *pad* 'fall' – *pádyate* 'falls', *man* 'think, respect' – *mányate* 'thinks, respects'.

There is also a class of some 20 middle *-ya-*presents that may have the accent either on the root or on the suffix (labelled *-ya-*presents with fluctuating accentuation, or *´-yá-*presents, in Kulikov 1998a, 1998b, 2011, 2012a). This group furnishes valuable evidence for a study of the distinction between passive and anticausative constructions, instantiating, in a sense, a border-line case between these two categories. The larger semantic subclass of the Vedic *´-yá-*presents includes two groups, (i) verbs of (spontaneous) destruction, such as *kṣi* 'perish, disappear'

– *kṣíyate/kṣīyáte* 'perishes, disappears', *chid* 'break, cut off' – *chídyate/chidyáte* 'breaks' (intr.), and (ii) verbs denoting some processes. Both groups are referred to with the cover term 'verbs of entropy increase' in Kulikov (1998a, 2012a). Group (ii) includes, in particular, verbs denoting processes implying some sort of destructurization, when an element is removed from a system (cf. *vy-ṛdhyate/-ṛdhyáte* 'is bereft, is deprived of something') or spontaneous "fatal" processes that result in destroying some natural/artificial system, such as, for instance, the present *śíyate/śīyáte* 'falls', which refers to a particular kind of falling implying natural decay, growing old: falling out of hair or teeth, as in (1–2):

(1) (Maitrāyaṇī Saṃhitā 3.10.5:137.1–2)
  yán ná prāśnīyā́t,   *soma-pīthéna*
  if not eat:PRS:3SG.OPT.ACT soma-drinking:INS.SG
  vyṛdh-yéta
  be.deprived-PRS:3SG.OPT.MID
  'If (he) would not eat, (he) would be deprived of the soma-drink(ing).'

(2) (Taittirīya-Brāhmaṇa 3.9.4.4)
  *yád asya-   upā́kṛtasya   lómāni **śī́-ya-nte**
  when this:GEN.SG.M prepared:GEN.SG.M hair:NOM.PL fall-PRS-3PL.MID
  '… when the hair of this [horse] prepared [for the sacrifice] falls out.'

The smaller semantic class of the middle ´-*yá*-presents includes verbs of heating, such as *tápyate/tapyáte* 'heats, suffers'. Kulikov's (1998a, 2011, 2012a: 710ff.) conclusion for the Vedic -*ya*-presents with fluctuating accentuation is that, for these verbs, the difference in accentuation does not correlate with any semantic difference (in particular, with the passive/anticausative distinction), as the following examples (3 and 4) clearly show.

(3) (Taittirīya-Saṃhitā 3.5.1.3–4)
  *amúm **apakṣī́-ya-māṇam**   *ánv ápa kṣī-ye-ta*
  this:ACC.SG.M wane-PRES-PART.MID.ACC.SG.M after wane-PRS-3SG.OPT.MID
  'He would waste after this **waning** (moon).'

(4) (Śatapatha-Brāhmaṇa 2.1.3.1)
  yá   eva-àpūr-yá-te   'rdha-māsáḥ
  which:NOM.SG.M PTC-increase-PRS-3SG.MID half-moon:NOM.SG
  sá   devā́; yò   'pakṣī-yá-te
  that:NOM.SG.M god:NOM.PL which:NOM.SG.M wane-PRS-3SG.MID
  sá   pitaráḥ
  that:NOM.SG.M father:NOM.PL
  'The half-moon which increases (represents) the gods; that which **wanes** (decreases) [represents] the fathers.'

Kulikov (1998b, 2012a) further argues that this fluctuation is not at random. The accentuation of the ´-*yá*-presents is determined by the following rule: in the Ṛg-Veda (together with the RV-Khilāni) and in the texts of the Taittirīya school (Taittirīya-Saṃhitā, Taittirīya-Brāhmaṇa and, probably, Taittirīya-Āraṇyaka), ´-*yá*-presents show root accentuation; in the Atharva-Veda, Maitrāyaṇī Saṃhitā, Śatapatha-Brāhmaṇa as well as, most probably, in the texts of the Kāṭhaka school, ´-*yá*-presents show suffix accentuation. The accent fluctuation does not thus depend on the function or syntactic features of the corresponding -*ya*-presents (passive/non-passive) in question, but represents a difference between Vedic schools/dialects.

Nonetheless, the Vedic ´-*yá*-presents are of particular value for a study of the passive/anticausative opposition, serving as a missing link that "bridges" these two closely related categories. The "intermediate" position of ´-*yá*-presents between -*yá*-passives and non-passive middle ´-*ya*-presents may be due to their peculiar semantics. Most likely, their non-passive (anticausative) meanings and syntax as well as their root accentuation in the Ṛgveda, the most ancient Vedic text, point to the original root accentuation; that is, these formations should belong with the (middle) class IV presents such as *jā́yate* 'is born', *pádyate* 'falls' etc. At a later stage, they could be re-interpreted as passives in some contexts[6] and, subsequently, due to the increasing productivity of the -*yá*-passives, undergo accent shift in several Vedic dialects (in particular, in the dialects of the Atharva-Veda, Maitrāyaṇī-Kāṭhaka and Śatapatha-Brāhmaṇa).

Furthermore, the opposition of the ´-*yá*-presents referring to processes that result in entropy increase to the corresponding transitive-causative presents with nasal affixes is their most remarkable paradigmatic feature (cf. *kṣī́yáte* 'perishes, disappears' – *kṣiṇā́ti, kṣiṇóti* 'destroys'; Kulikov 2011). The ´-*yá*-presents of entropy increase show similar morpho-phonological patterns as well: they mostly have stems of the types *Cīya-, CiCya-*, and *Cī/ūrya-* (as opposed to verbs of heating with *CaCya-* stems derived from *CaC* roots). Hence, as shown in Kulikov (2011), the similarities between ´-*yá*-presents in Vedic cannot be a coincidence; they form a (morphologically relevant) verbal class, not a random group of verbs.

In what follows, we will test the hypothesis that the Greek middle/passive (in the Aorist and Future) fluctuation is not a random, or only a morphophonological, fluctuation, either. We will also show that the Greek middle/passive fluctuation reflects the affinity of the two closely related categories, passive and anticausative, differently from the Vedic middle -*ya*-presents.

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6. In accordance with the scenario: 'breaks' → 'is broken (by accident)' → 'is broken (by smb.)'; 'becomes free' → 'is released', or the like.

3. Middle and Passive Voice in Greek

3.1 Voice morphology in Ancient Greek: With special focus on the verbs that can appear with two non-active voice morphologies

Ancient Greek has a system of *three voices* (voice morphological paradigms): active, middle and passive, but the middle and the passive morphology are distinguished only in the Future and Aorist.[7] The single non-active/middle form in all other tenses – except for the Future and Aorist – is formed based on the morphological alternation of the verbal ending (denoting also person and number): *-ō:* vs. *-omai*. Humbert (1986) has argued that the formation of passive Aorist with *-thēn* has been completed in Homer, whereas the passive Future with *-thēsomai* is not in evidence before Aeschylus (Table 1). With regard to the morphology, the Future and Aorist passive forms have an additional non-active morpheme, the morpheme *-thē-*. Cf. *lu-thḗ-somai* (unbind/release-PASS-FUT.PASS.1SG), *e-lú-thē-n* (AOR-unbind/release-PASS-AOR.1SG).[8] Thus, in the Future, both the morphemes *-thē- (passive)* and *-omai (middle)* express the non-active, whereas in the Aorist, it is only the morpheme *-thē-* that expresses the non-active.

The middle form in Classical Greek is not identified with specific constructions or interpretations (for instance, reflexive or anticausative), nor is the passive form identified with the passive construction and interpretation. Hence, we claim that there are two different morphological types of the same non-active category, which are used alternately. Chatzidakis (1934: 23ff.) states: "νωρίς σημειώθηκαν χρήσεις που παραβίαζαν τη δομική διαφοροποίηση μέσης και παθητικής φωνής στον Αόριστο και τον Μέλλοντα" ["from early on, uses are noticed that violate the structural differentiation between middle and passive voice in the Aorist and Future"]. In Classical Greek, the middle form is used in passive constructions with or without an overtly expressed passive agent (Ex. 5; see Lavidas 2009, 2013).

Table 1. Middle and passive voice in the Future and Aorist.

	Future	Aorist
Middle	*-somai*	*-samēn*
Passive	*-thē-somai*	*-(th)ē-n*
		-thē-samēn

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7. Classical Greek voice morphologies and tense/aspect:

Tense and Aspect	Aorist – Future	Present	Perfect
Voice	Active / Middle / Passive	Active / Mediopassive	Active / Mediopassive

8. On the Aorists in *-thē-*, see also Magni (2004, 2008, 2010).

(5) (X. HG 7.5.18; 5–4 BC)[9]
 ekeínoi   **poliorkḗsointo**   *hupò tôn*   *antipálōn*
 these:NOM besiege:FUT.3PL.OPT.MID by   ART.GEN.PL adversary:GEN.PL
 'They <u>would be besieged</u> by their adversaries.'

Similarly, from Classical Greek, the passive form is used productively in intransitive non-passive constructions, with psych-verbs or with clear anticausative interpretation. See Ex. (6).

(6) (Pl. Grg. 506c,1; 5–4 BC)
 kaí me   *eàn ekselégkhēis,*   *ouk* **akhthesthḗsomai**
 and 1SG.ACC if   refute:PRS.2SG NEG grieve:FUT.1SG.PASS
 'And if you refute me, I <u>shall not be grieved</u>.'

Furthermore, the middle voice morphology appears in *transitive constructions* where it adds the meaning that the result of the verbal action concerns the subject. Cf. *títhēmi nómon* (place:PRS.1SG.ACT law:ACC.SG) 'I establish a law.' vs. *títhemai nómon* (place:PRS.1SG.MID law:ACC.SG) 'I pass a law in my own interests.' The middle/passive verbs with reflexive interpretation can also take a direct object in the accusative case in Classical Greek (*loúomai tò sôma* / wash:PRES.1SG.MID ART.ACC. SG body:ACC.SG / 'I wash my body'). The middle/passive voice morphology also appears in transitive constructions with deponent verbs (see Ex. (7); cf. Lavidas & Papangeli 2007).

(7) (X. Smp. 4.12; 5–4 BC)
 egṑ   *Kleinían*   *hḗdion*   *mèn* **theômai**   *ḗ*
 1SG.NOM Cleinias:ACC more-pleasantly PTC gaze:PRS.1SG.MID than
 tâlla   *pánta*
 ART.other:ACC all:ACC
 'I <u>would</u> rather <u>gaze</u> at Cleinias than at all the rest.'

It should be noticed that, in Homeric Greek, there are few cases of verbs with active morphology that may have passive meaning (lexical passives; for instance, *thnḗskein* 'die-be killed', *píptein* 'fall-be thrown'): the passive meaning in these cases is triggered by the occurrence of an agent phrase (Jankuhn 1969). The same phenomenon is attested in Classical Greek too, where there is evidence of intransitive constructions with active verbs with a PP denoting the agent (→ passive interpretation) or the cause (→ passive or anticausative interpretation; George 2005). On the other hand, in the case of middle and passive forms, the agent is not obligatory (Ernout 1908–9: 329ff.; Schwyzer 1943; Lavidas 2009). In examples where a

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9. For abbreviations of authors and works, see LSJ (Liddell-Scott-Jones Greek-English Lexicon). <http://stephanus.tlg.uci.edu/lsj/01-authors_and_works.html>

by-Phrase is present, the choice of the preposition depends on the semantic class to which the verb belongs (even though *hupó* can occur with any verb), as well as on the finiteness of the verb (George 2005; Lavidas 2009).[10]

Causative verbs in Classical Greek bear active morphology,[11] whereas anticausatives are marked with the middle/passive morphology (Ex. 8a and b). However, there are instances of anticausatives that can bear both middle/passive and active voice morphology, without a difference in meaning (see Ex. 9a-c). This alternation of active and middle/passive forms may reflect a morphological alternation of the intransitive type before it was causativized (before it was used in a causative construction for the first time). It is also possible that the active form arose as a result of an ongoing morphological change: the active form appears in those verbs in free distribution with the middle/passive form, to prevail in the next period (Koine Greek). We will return to this observation when examining data from Koine Greek. The presence of the middle/passive form is consistent in the case of anticausative constructions in Classical Greek, either as the only morphology in the majority of instances, or in free distribution with the active in very few instances (Lavidas 2009, 2013).

(8) a. Anticausative
        (Pl. Ti. 79e.3; 5–4 BC)
        tò   dè periōsthèn   eis tò   pûr   empîpton
        ART.NOM PTC propel.round:NOM into ART.ACC fire:ACC stream:PART.NOM
        thermaínetai
        warm:PRS.3SG.MID
        '…which (the air) is thus propelled round <u>becomes warmed</u> by streaming into the fire.'
    b. Causative
        (Ar. Ach. 1175; 5–4 BC)
        húdōr   en khutridíōi   thermaínete
        water:ACC in little.pot:DAT warm:IMP.2PL.ACT
        '<u>Make warm</u> water in a little pot.'

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10. Participles take different PPs than finite verbs.

11. In the majority of the cases; see Lavidas (2009). Our corpus study reveals instances of middle morphology with causative verbs (see below).

(9) a. Anticausative non-active
(Pl. Plt. 270e.7; 5–4 BC)
kaì tôn   mèn presbutérōn hai   leukaì   tríkhes
and ART.GEN PTC old.men:GEN ART.NOM white:NOM hair:NOM
emelaínonto
blacken:IMPRF.3PL.MID
'The white hair of the old men <u>grew dark</u>.'

b. Anticausative active
(Pl. Ti. 83a.7; 5–4 BC)
*palaiótaton òn   tês   sarkòs… **melaínei**   mèn*
oldest:NOM be:PART.NOM ART.GEN flesh:GEN blacken:PRS.3SG.ACT PTC
hupò palaiâs sungaúseōs
by   old:GEN combustion:GEN
'All the oldest part of the flesh… <u>blackens</u> by the continued combustion.'

c. Causative active
(Arist. Pr. 966b.2; 4 BC)
*tền   dè sárka   **melaínei**?*
ART.ACC PTC flesh:ACC blacken:PRS.3SG.ACT
'It <u>blackens</u> the flesh.'

As already mentioned, the aim of this present article is to test if the Greek verbs that appear with both middle and passive morphology (and thus represent a difficult case for a theory of voice and verbal classes) belong to semantic classes similar to the semantic classes of the Vedic ´-*yá*-presents with accent fluctuation. The answer to this question would have important consequences for the description of the voice and transitivity system of Indo-European as well as for the status of this intermediary class in Proto-Indo-European and for the analysis of the development of this class in different Indo-European languages.

Allan (2002, 2003) analyzes voice in Ancient Greek and refers to verbs that can appear both with the middle and passive morphology. We will summarize here only his basic conclusions on the contrast between middle and passive in the Aorist and Future. Allan examines the different possible interpretations of middle and passive voice in Ancient Greek. He therefore does not focus on the verbal classes that can appear with *both* middle and passive morphology in the Future and Aorist. First, he shows that passive Aorists in -*thē*- and -*ē*- can both express the following meanings (besides other meanings that can be only expressed by either -*thē*- or -*ē*- and can be also expressed by the middle voice):[12] passive, spontaneous

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12. With regard to the Aorist, it should be noted that Ancient Greek has three different morphological types of middle Aorist (root, thematic, sigmatic) and two morphological types of passive Aorist (in -*ē*- and -*thē*-).

process, mental process, (collective and body) motion; see also Prévot (1935) and van de Laar (2000: 413–415). On the other hand, according to Allan's results, the sigmatic middle Aorist is not attested with a spontaneous (anticausative) or a passive interpretation; but see below that the other forms of the middle Aorist have a different behavior. The reflexive construction, however, is expressed with the sigmatic middle Aorist; all relevant examples have an animate subject, and most of them are volitional (cf. *eterpsámēn* 'I amused myself' vs. *etárphthēn* 'I was amused *or* I became amused'). Hence, in Homeric and Classical Greek, in cases of possible alternation between the passive forms and the sigmatic middle, the passive forms are restricted to a passive and spontaneous (anticausative) interpretation, and the sigmatic middle has a volitional, reflexive interpretation. For our study, the instances of alternation between the passive Aorist and the middle sigmatic Aorist in Homer are significant. These cases are mainly with psych-verbs (mental process verbs for Allan) or verbs of motion.[13] For instance, psych-verbs, such as *ekoréssato – korésthēn* 'was satisfied', *nemesḗsetai – nemessḗthē* 'became angry', and motion verbs, such as *ōrmḗsato – ōrmḗthē* 'set off', *nosphisámēn – nosphistheís* 'retired, left'. See Allan (2003), for details.

Allan locates several verbs of Classical Greek that can appear with both sigmatic middle and passive (*-thē-/-ē-*) morphemes. For instance, see Ex. (10a, b).

(10)   a.   (Hdt. 9.15.1; 5 BC)
    en Tanágrēi dè   núkta   enaulisámenos
    in Tanagra PTC night:ACC camp:AOR.PART.MID.NOM
    'Having camped in Tanagra for the night.'
   b.   (Hdt. 8.9; 5 BC)
    … autoû meínantas   te   kaì aulisthéntas
      there abide:AOR.PART.ACC PTC and camp:AOR.PART.PASS.ACC
    '…(the opinion prevailed that) they should abide and encamp there.'

Allan's explanation is that these verbs possess semantic features of two different classes: for example, motion (that needs passive morphology) and reflexive features (that need middle morphology); see also our detailed corpus study below. If we include root and thematic Aorists in our discussion, the picture changes since the root (after Homer, many root Aorists disappear) and thematic Aorists are attested with passive, anticausative and reflexive interpretation (see Table 2, from Allan 2002; cf. also Schwyzer 1943: I: 97).

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13. For alternating Aorist forms (i.e. Aorists that can appear with two non-active voice morphologies), see also Kühner & Gerth [1898–1904]/1963: I, 118, Schwyzer 1943: I, 760–761, Chantraine 1958: 405–407.

Table 2. Meanings of root and thematic Aorists in Homer (Allan 2002).

a. Root Aorists	
Passive	*éktato* 'was killed'
Spontaneous process	*phthímēn* 'perished'
Mental process	*étlēn* 'endured, dared'
Body motion	*âlto* 'jumped'
Collective motion	*ksúmblēto* 'met with'
Speech act	*eûkto* 'boasted, prayed'
Indirect reflexive	*étheto* 'put sth for oneself'
b. Thematic Aorists	
Passive	*eskhómēn* 'was held'
Spontaneous process	*ōlómēn* 'perished'
Mental process	*elathómēn* 'forgot'
Body motion	*etrapómēn* 'turned'
Collective motion	*ēgrómetha* 'gathered'
Perception	*ēisthómēn* 'perceived'
Speech act	*ērómēn* 'asked'
Indirect reflexive	*ēgagómēn* 'led away for myself'

Allan only partly discusses some cases of verbs that appear *both* with passive form (-*thē-*/-*ē-*) and middle root or thematic form. Cf. *ēgrómēn* vs. *ēgérthēn* (*egeíromai* 'wake, rouse'); *elipómēn* vs. *eleíphthēn* (*leípomai* 'left behind, remain').

The situation is very different in the case of Future middles and passives. Even though the aspectual analyses for the contrast between middle and passive forms are not missing for the Aorist, the description of the contrast between middle and passive in the Future is mainly aspectual. See, among others, Blass, Debrunner & Rehkopf (1979/1984) or Wackernagel (1920–24). According to these analyses, the middle marks the progressive (/imperfective) and the passive the perfective (a completed event). Stahl (1907: 83), on the other hand, prefers a diathetical semantic explanation for the difference between passive and middle Future: middle Futures are volitional in contrast to passive Futures. Stahl mentions *apalláksomai* (PRS: *apallássō* 'set free') with a volitional (middle) meaning and *apallagḗsomai* with a nonvolitional (passive) meaning. For Allan, the passive Future has a specific domain of use: it has a non-iterative/generic interpretation and is accompanied with a participle or it is absolute. Hence, Allan argues that, in Sophocles, Euripides and Plato, *phanoûmai* (PRS: *phaínō* 'bring to light, cause to appear') has an imperfective value, whereas *phanḗsomai* had a perfective value (see also our corpus study below). Allan states that many verbs show a morphological contrast in the

Future stem that is similar to the contrast between *phanoûmai* and *phanḗsomai*, but only adds *kinḗsomai / kinēthḗsomai* (PRS: *kinéō* 'set in motion').

3.2 A corpus study: Homeric and Classical Greek

To exclude any other parameters (which may relate to person, number or mood), we have collected all instances of the 3rd person singular indicative in the middle and passive Aorist and in the middle and passive Future. We believe that our corpus study should be diachronic to test the relevant hypothesis formulated on the basis of evidence from Vedic and to check the development of these phenomena in Greek.[14] For this purpose, we have collected all third-person singular indicative verbs in Homer, Plato, and the New Testament based on the corpora in PROIEL and Perseus under Philologic. We have compared these lists of verbs to analyze the verbs that can appear in both middle and passive voice in the relevant tenses.

In Homer, as we expected, we found no instance of the passive Future (in the 3rd singular indicative); see Table 3a. Instead, 85 verbs (and 278 occurrences of these verbs) appear in the middle Future. Passive forms appear in the Aorist, but they again constitute a very small group, indicating that the middle voice morphology should be archaic and the passive voice morphology has to be analyzed as a later innovation; see Table 3b. It is of significance that the opposite tendency of increase of presence of passive forms will appear (see below) in the development of voice in Greek, resulting in the prevalence of the passive forms. With regard to the Aorist, the middle voice morphology is used in the majority of instances (1181 occurrences of verbs bearing middle voice morphology [80.56% of the non-active forms] vs. 285 verbs with the passive morphology [19.44%]). 286 verbs (72.22% of the non-active verbs) appear at least once with the middle morphology in the Aorist, while 110 verbs (27.78% of the non-active verbs) occur with the passive morphology.[15]

The purpose of our study is to examine the verbs attested with both middle and passive voice morphology (to compare with the relevant verbal class of Vedic). The results show that 13 verbs (4.55% of the verbs that appear with middle morphology) can occur with both middle and passive morphology (in the 3rd singular indicative). See Table 3c and Ex. (11). The distribution of the verbal meanings in

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14. Allan only offers a short footnote to the development of passive – middle morphology: "Note that in the Koine […] the use of the middle forms almost completely disappeared. Thus, in Polybius and the papyri, there are no more verbs that have both the middle form and the passive form with passive meaning (see Mayser 1926–34, II: 212, Blass & Debrunner 1979: 62)."

15. Our quantitative comparison concerns only the Aorist and the Future, and no other tenses (the reason is that the middle appears in all tenses whereas the passive only in these two tenses).

the Greek examples shows a clear difference between these Greek verbs and the Vedic -*ya*-presents with fluctuating accentuation, which in some Vedic dialects may have a passive, rather than an anticausative/ (non-passive), middle morphology. There is a tendency in Greek for verbs that participate in causative-anticausative alternations such as 'hurt – be hurt', 'pour – be poured', 'unbind sth. – sth. is unbound', 'cause to lean – lean', 'terrify – struck with terror' to appear with both middle and passive morphology. The middle voice appears to mark the auto-benefactive meaning in the case of a causative use, whereas the passive voice marks the anticausative interpretation. On the other hand, there is clear evidence for the presence of psych-verbs in the list of Greek verbs that can appear with two non-active voice morphologies, a fact that can extend the analysis of the Vedic -*ya*-presents with fluctuating accentuation in this case, to also cover the Greek data ('gladden', 'struck with terror', 'anger').

Table 3a. 3rd singular indicative middle and passive Futures in Homer.

Homer	Middle Future	Passive Future
Verbal lexemes	85 verbs	0 verbs
Occurrences	278	0

Table 3b. 3rd singular indicative middle and passive Aorists in Homer.

Homer	Middle Aorist	Passive Aorist
Verbal lexemes	72.22% of the non-active verbs in the Aorist [286]	27.78% of non-active verbs in the Aorist [110][16]
Occurrences	80.56% of the non-active forms in the Aorist [1181]	19.44% of the non-active forms in the Aorist [285]
Verbs that can appear with two non-active voice morphologies	4.55% of the middle Aorists are also attested in the passive Aorist (13/286)	11.82% of the passive Aorists are also attested in the middle Aorist (13/110)

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16. With regard to all of our quantitative data, relative frequencies (and, of course, not the absolute numbers) are of significance: that is, we compare, for instance, the percentage of verbs that appear with middle morphology in the Aorist to all other verbs that appear with any non-active morphology (middle and passive) in the Aorist.

Table 3c. Verbs that can appear with two non-active voice morphologies: 3rd singular indicative middle and passive Aorists in Homer.

Homer	Middle Aorist	Passive Aorist
be hurt/damaged	*aásato*	*aásthē*
take breath	*ámpnuto*	*ampnúnthē*
be poured	*amphékhuto*	*amphekhúthē*
overpower	*(e)damássato*	*damásthē*
be able/ strong enough	*(e)dunḗsato*	*dunásthē*
be unbound, unfastened	*elúsato*	*lúthē*
blow	*émpnuto*	*empnúnthē*
be caused to lean, prop	*ereísato*	*ereísthē*
anger, provoke	*(e)kholṓsato*	*ekholṓthē*
be moored, lie at anchor	*hormḗsato*	*hormḗthē*
attempt, endeavour, try	*peirḗsato*	*peirḗthē*
struck with terror	*peplḗgeto*	*plḗgē*
delight, gladden, cheer	*tetárpeto*	*tárphthē*

(11) *An example of a verb that can appear with two non-active voice morphologies:*
  a. Middle morphology[17]
      (Hom. Il. 11.355; 8 BC)
      kaì **ereísato**   *kheirì*   *pakheíēi   gaíēs*
      and prop:AOR.3SG.MID hand:DAT strong:DAT ground:GEN
      'and <u>propped himself</u> with his brawny hand leaning on the ground.'[18]
  b. Passive morphology
      (Hom. Il. 7.145; 8 BC)
      hò   *d'*   *húptios*   *oúdei*   **ereísthē**
      ART.NOM PTC backward:NOM ground:DAT prop:AOR.3SG.PASS
      'And backward <u>was he propped</u> upon the ground.'[19]

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17. Notice that we use the terms "middle" and "passive" in these cases as terms that describe voice morphology (and not the interpretations or the constructions).

18. The translations of the examples from Homer are based on: *Homer. The Iliad. Translated by A. T. Murray. Cambridge, MA., Harvard University Press; London, William Heinemann, Ltd. 1924.*

19. We agree with the reviewer that the interpretation (and translation) in such cases can be either passive (if the omitted PP/ dative denotes an agent) or anticausative (if the omitted PP/ dative denotes a cause). Cf. Tsimpli (2006) who considers passives and anticausatives as having the same structure (in contrast to reflexives).

In contrast to Homeric Greek, in Classical Greek (Plato), passive forms are available in the Future.[20] Our results have shown the presence of 71 occurrences of passive forms (3rd singular indicative) in the Future (8.81% of the non-active forms). The middle forms are again the majority (834 occurrences for the Future; 92.15%). We found 159 verbs bearing middle endings one or more times (79.90% of the non-active verbs) and 40 verbs bearing passive Future endings (20.10% of the non-active verbs). See Tables 4a and b, and Ex. (12). The class of verbs that can alternate between middle and passive morphology is small (and smaller than the class of verbs in the Aorist): only 8 verbs (5.03% of the verbs that occur with middle morphology) appear both with the middle and passive voice morphology in the Future in different examples. Again, many of these verbs participate in the causative-anticausative alternation that forms a different morphological class for Classical Greek; in post-Classical Greek, the tendency will be for these verbs to bear active voice morphology in contrast to the other intransitive verbs of Greek. The class includes the following: 'cause to give light/make to blaze up – give light/ blaze up', 'bring into a new state of being – come into a new state of being', 'approve – be approved', 'set in motion – be set in motion', 'bring to light/cause to appear – come to light/appear'. On the other hand, a comparison of the verbs in the Aorist in Homer and Plato reveals a different picture with regard to the total number of verbs in the middle or passive voice. See Tables 4c and d, and Ex. (13). However, in terms of number of verbal lexemes, the numbers are not different if compared to the number of verbs that appear in the passive Aorist or the number of verbs that appear with both middle and passive Aorist. 138 verbs are found in the middle Aorist (55.20% of the non-active verbs) and 112 verbs in the passive Aorist in Plato (44.80%). Of these, 14 (10.14% of the verbs that occur with middle morphology) are attested in both voices (middle and passive). Again, the (anti)causative interpretation is obviously present in many of the verbs that are available with both passive and middle endings in Plato. These include the following: 'beget/ cause to exist – exist', 'bring up – be brought up', 'equip/furnish fully with – be equipped/furnished fully with', 'mix/blend with – be mixed/blended with', 'place under – be placed under', 'divide – be divided'. The middle suffix expresses the personal interest in the case of a causative use, whereas the passive suffix marks the anticausative use.

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20. We absolutely agree with the reviewer that the quantitative data of the voice morphology in the Future do not have as the same significance as the data of the Aorist. For this reason, most of our conclusions are based on the Aorist (which is connected with both non-active morphologies in all stages that we compare). We use the data from the Future only in order to have a complete picture of the two tenses that allow for the two non-active morphologies, even though they may allow for these morphologies for different reasons.

Table 4a. 3rd singular indicative middle and passive Futures in Plato.

Plato	Middle Future	Passive Future
Verbal lexemes	79.90% of the non-active verbs in the Future [159]	20.10% of the non-active verbs in the Future [40]
Occurrences	92.15% of the non-active forms in the Future [834]	8.85% of the non-active forms in the Future [71]
Verbs that can appear with two non-active voice morphologies	5.03% of the middle Futures are also attested in the passive Future (8/159)	20% of the passive Futures are also attested in the middle Future (8/40)

Table 4b. Verbs that can appear with two non-active voice morphologies: 3rd singular indicative middle and passive Futures in Plato.

Plato	Middle Future	Passive Future
give light, blaze up	*anaphaneîtai*	*anaphanḗsetai*
become free, be delivered from	*apalláksetai*	*apallagḗsetai*
come into a new state of being	*(en)genḗsetai*	*genēthḗsetai*
be approved	*epainḗsetai*	*epainethḗsetai*
be set in motion	*kinḗsetai*	*kinēthḗsetai*
pick up / say, speak	*léksetai*	*lekhthḗsetai*
see, look	*ópsetai*	*ophthḗsetai*
come to light, appear	*phaneîtai*	*phanḗsetai*

(12)   *An example of a verb that can appear with two non-active voice morphologies:*
    a.   Middle morphology
        (Pl. Tht. 182c; 5–4 BC)
        *eíper ge dè teléōs   **kinḗsetai***
        if   PTC PTC absolutely be-in-motion:FUT.3SG.MID
        'That is, if they are to <u>be in</u> perfect <u>motion</u>.'[21]

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21. The translations of the examples from Plato are based on: *Plato in Twelve Volumes,* Vols. 5 & 6 translated by Paul Shorey. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1969; Vol. 9. Translated by Harold N. Fowler. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1925; Vols. 10 & 11 translated by R.G. Bury. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1967 & 1968; Vol. 12 translated by Harold N. Fowler. Cambridge, MA, Harvard University Press; London, William Heinemann Ltd. 1921.

b. Passive morphology
   (Pl. R. 545d; 5–4 BC)

   hē   pólis   hēmîn   **kinēthḗsetai**
   ART.NOM city:NOM 1PL.DAT be-in-motion:FUT.3SG.PASS
   '(How, then) will <u>disturbance arise</u> in our city.'

Table 4c. 3rd singular indicative middle and passive Aorists in Plato.

Plato	Middle Aorist	Passive Aorist
Verbal lexemes	55.20% of the non-active verbs in the Aorist [138]	44.80% of the non-active verbs in the Aorist [112]
Occurrences	50.47% of the non-active forms in the Aorist [376]	49.53% of the non-active forms in the Aorist [369]
Verbs that can appear with two non-active voice morphologies	10.14% of the middle Aorists are also attested in the passive Aorist (14/138)	12.50% of the passive Aorists are also attested in the middle Aorist (14/112)

Table 4d. Verbs that can appear with two non-active voice morphologies: 3rd singular indicative middle and passive Aorists in Plato.

Plato	Middle Aorist	Passive Aorist
point away from	apedeíksato	apedeíkhthē
come to a conclusion	dieperánato	dieperánthē
beget / exist	egennḗsato	egennḗthē
scratch, graze	egrápsato	egráphē
be brought up	epaideúsato	epaideúthē
pass through, pass over	epráksato	eprákhthē
draw up in order of battle, form, array, marshal	etáksato	etákhthē
cheat by lies, beguile	epseúsato	epseústhē
bear or carry a load	ēnéngato	ēnékhthē
be found	hēúreto	hēuréthē
be equipped, furnished fully with	kateskeuásato	kateskeuásthē
be mixed, blended with	sunekerásato	sunekerásthē
be placed under	hupétheto	hupetéthē
be divided	hōrísato	hōrísthē

(13) *An example of a verb that can appear with two non-active voice morphologies:*
    a.   Middle morphology
        (Pl. Lg. 730c; 5–4 BC)
        hautôi   *pâsan* **kateskeuásato**
        himself:DAT all:ACC furnish:AOR.3SG.MID
        'He <u>is making</u> everything for himself.'
    b.   Passive morphology
        (Pl. Smp. 201a; 5–4 BC)
        hóti toîs   *theoîs*   **kateskeuásthē**   *tà*   *prágmata*
        that ART.DAT gods:DAT furnish:3SG.AOR.PASS ART.NOM world:NOM
        'That the world <u>was contrived</u> by the gods.'

3.3 Koine Greek: Changes in voice and a corpus study

In contrast to Homeric and Classical Greek, where passive constructions with active forms are still possible (see above), in Koine Greek, passive usages are incompatible with the active inflection (Lavidas 2009). Accordingly, verbs that can be construed with agentive phrases (passive agents) encoded with PPs (with *pará* or *hupó*) do not occur with active inflection. Furthermore, from the Koine Greek period onward, the marking of the auto-benefactive meaning ('do sth. for one-self') with the middle/passive morphology in transitive constructions begins to be abandoned. The active and middle/passive transitive type can be found without a difference in meaning, even in the same sentence. The auto-benefactive feature attributed by the middle/passive voice morphology in cases of transitive constructions in Classical Greek is lost in Koine Greek. See Ex. (14).

(14) **timômen**   *tòm*   *múrion*   / **timómetha**
     estimate:PRS.1PL.ACT ART.ACC numberless:ACC / estimate:PRS.1PL.MID
     tòn   *múrion*
     ART.ACC numberless:ACC
     In both cases: 'we <u>calculate/estimate</u> the numberless.'
                                         (Mayser 1929/1970: 112)

It should also be noticed that middle/passive Futures that use active endings to form the Present tense are replaced by active Futures. According to Mayser, the replacement of middle/passive Future forms with active Future forms in the Roman papyri is not as productive as it is in the New Testament and in Hellenistic Koine Greek. However, it is more frequent than in the Ptolemaic papyri (there is only one instance there: *ekpheúksein 'flee out or away/escape'*; Mayser 1929/1970: i[2], 2, 130).

    With regard to the main hypothesis of the present study, the middle and passive endings, which are only distinguished in the Aorist and Future, freely alternate

in Koine Greek, demonstrating a tendency which had already begun during the Classical Greek period. The new element for this period is the extension of the passive endings (see our corpus study below). For instance, the deponent and the intransitive verb in Ex. (15a) and (15b), respectively, begin to use passive Futures and Aorists instead of the middle endings in the Roman papyri (Chatzidakis 1892/1975: 193–200).

(15)   a.   *ēisthánthēn* feel:AOR.1SG.PASS   (PMich. 486.7; AD 2)
       b.   *elupḗthē* be.grieved:AOR.3SG.PASS   (PMich. 497.15; AD 2)

The middle Aorist also appears with other verbs in Koine Greek (for example, with *arnéomai* 'deny'); this again indicates that there is no clear distinction in the use of middle and passive endings. See Ex. (16).

(16)   (N.T. 2 Ep.Ti. 2.12; AD 1)
       *ei **arnēsómetha**,   kakeînos   arnḗsetai   hēmâs*
       if deny:FUT.1PL.MID and.3SG.NOM.M deny:FUT.3SG.MID 3PL.ACC
       'If we <u>deny</u> him, he also will deny us.'

The other significant new element of this period is the extension of the active voice to anticausatives that participate in causative-anticausative alternations; as an indication of an ongoing change, anticausative forms with the active (corresponding to the new type) and middle/passive voice morphology (corresponding to the type of the previous period) are attested without difference in meaning. This is a clear change in voice morphology, i.e. in the marking of the anticausative interpretation. However, some grammarians (e.g., Kühner & Gerth [1898–1904]/1963; Brugmann & Thumb 1913) do not take into consideration the earlier availability of corresponding anticausative verbs with the middle/passive morphology and, therefore, describe this change as a new intransitive/anticausative use. Similarly, Mayser (1929/1970) refers to the verbs in (17) from the Ptolemaic period as cases of intransitives that can be used in intransitive constructions for the first time. He discusses, however, examples of verbs that in Classical Greek already could be used in intransitive constructions but with non-active voice morphology.

(17)   *allássō* 'change'
       epibállō 'go straight towards/lie upon'
       ektopízō 'take oneself from a place/go abroad'
       kinô 'move forward'

The causative and anticausative use for most of these verbs was already available in Classical Greek, with the difference that the anticausative use was marked with a middle/passive verb (agent/cause + *anoígō* open:PRES.1SG.ACT+ patient, patient + *anoígetai* open:PRS.3SG.MID). This change concerns only the voice morphology of

the verb in the anticausative use (patient + *anoígei* open:PRS.3SG.ACT) without any other syntactic change in the existing causative-anticausative alternation (Lavidas 2009). The result is that the same voice morphology appears for both the transitive and the intransitive construction (labile transitivity alternation). Despite the extension of active anticausatives, some verbs continue to mark the anticausative use with the middle/passive voice (similar to the tendency in Classical Greek); see Ex. (18).

> (18)   (Ph. On Dreams 1.11.2; 1 BC-AD 1)
> *antheî*   *gàr hē*   *psukhḕ*   *pròs*
> blossom:PRS.3SG.ACT PTC ART.NOM.SG soul:NOM.SG towards
> *epistḗmēn,*   *hopóte hai*   *toû*   *sṓmatos*
> knowledge:ACC.SG when   ART.NOM.PL ART.GEN.SG body:GEN.SG
> *akmaì*   *khrónou*   *mḗkei*   **maraínontai.**
> vigour:NOM.PL time:GEN.SG lenght:DAT.SG wither:PRS.3PL.MID
> 'As the soul blossoms to knowledge whenever the body's vigor <u>withers</u> at length.'

Example (18) is indicative of a preference in Koine Greek for marking the verb *anthô* 'blossom' with the active voice, whereas in the same sentence, *maraínomai* 'wither' is marked with the middle voice. An important difference between the two verbs is the absence of the transitive *anthô* 'blossom' in contrast to the presence of the transitive *maraínō* 'wither'. On the other hand, both verbs denote a biological process. Hence, for Levin and Rappaport Hovav (1995), 'blossom' could not be anticausative as long as the criterion for (anti)causativity is the presence of a transitive and intransitive use. For Theophanopoulou-Kontou (1999, 2004) as well, the meaning of 'blossom' is at the end of the continuum, with the possibility of only a metaphorical cause. See Modern Greek: *ʔo erotas tin anthise* / ART.NOM love.NOM 3SG.ACC.F blossom:PAST.PRFVE.3SG.ACT / 'Love made her blossom'. The middle/passive morphology of verbs such as *maraínomai* 'wither' has to be relevant to the generalization of middle/passive morphology for pseudo-reflexives that show a high level of affectedness of the subject-patient (that is a property of the reflexives).[22]

Our corpus study with regard to the (3rd singular indicative) verbs that can appear with two non-active voice morphologies shows that the situation differs in New Testament Greek if compared to Ancient Greek and, particularly, Homeric Greek. There is only one verb (*gignṓskō*) that appears with both middle and passive morphology in the Future. In Table 7b, we have also included two other

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22. Cf. also Modern Greek *skorpizome* 'scatter', *singendronome* 'collect', *eksafanizome* 'disappear' (Theophanopoulou-Kontou 2004; for a diachronic analysis, Lavidas 2009).

verbs that appear unprefixed in the passive voice and prefixed in the middle voice (*(ap)arnoûmai, (para)lambánō*). However, even if we include prefixed verbs in the discussion,[23] the large group of verbs that can bear both middle and passive voice morphology in the period of Koine Greek is absent, in contrast to Ancient Greek. In total, 198 occurrences of verbs (54.25% of the non-active forms) in the middle Future and 167 occurrences of verbs (45.75% of the non-active forms) in the passive Future are found in the Greek New Testament. However, 48 verbs (40.34% of the non-active verbs) appear in the middle Future one or more times and 71 verbs (59.66% of the non-active verbs) in the passive Future. Hence, with regard to the total appearances of the one or the other voice morphology, the middle voice is still very frequent; but if we limit our study to the verbal lexemes attested, the tendency for a higher frequency of passive endings (than middle endings) is revealed. See Tables 5a and b, and Ex. (20). The Aorist in the New Testament has more verbs with the middle voice morphology, than the Future, and more verbs that can appear in both middle and passive voice. Five verbs appear in both voices (5/168 of passive Aorists [2.98%] or 5/86 of the small class of verbs that still appear with middle endings [5.81%]), a fact that demonstrates a tendency for a decrease of the class of verbs that can appear in both voices (as opposed to the 14/112 [12.50%] passive Aorists that are attested with both non-active voice morphologies in Plato and the 13/110 [11.82%] passive Aorists that can bear both non-active voice morphologies in Homer). All verbs that are available with both non-active voice endings are polysyllabic, mainly indicating a morpho-phonological group of verbs and less a semantic class. See Tables 5c and d, and Ex. (21).

On the other hand, following a Classical Greek rule, the middle marks the personal interest of the subject for the verbal action in the causative use; the passive marks the anticausative interpretation. In Koine Greek, the use of active endings to mark verbs that participate in causative-anticausative alternations becomes a productive tendency. By contrast, Ancient Greek marked the causative alternant with the active and the anticausative with the middle or passive. See (19).[24]

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23. See Drachman et al. 2013, for a discussion of prefixation in the diachrony of Greek.

24. It should be noted that, contrary to the above remarks, Alexiadou and Doron (2012) have argued in favor of a syntactic analysis of the middle voice – which should appear with anticausative, reflexive (and reciprocal), dispositional middle [for instance: The bread cuts easily] and medio-passive constructions [the external argument is not necessarily an agent; it could be an experiencer or a causer] – as distinct from the passive voice, which should appear with passive constructions. Alexiadou and Doron (2012: 1) claim that: "One factor complicating the issue is that in some languages, all non-active verbs share the same morphology, such as in (Modern) Greek, Latin, Akkadian, Syriac, Amharic, whereas in other languages, such as Classical Greek, Hebrew (both Modern and Classical), Standard Arabic, Fulani, Icelandic, there are two separate non-active forms of the verb. Whereas in the latter type of languages we can derive

(19)   Ancient Greek

    a.   *anoígō   tền   thúran*
        open:PRS.1SG.ACT ART.ACC door:ACC
        Verb-active + Patient-accusative (causative interpretation: 'I open the
        door')

    b.   *hề   thúra   anoígetai*
        ART.NOM door:NOM open:PRS.3SG.MID
        Patient-nominative + Verb-**middle** (anticausative interpretation: 'The
        door opens')

→ Koine Greek

    c.   *anoígō   tền   thúran*
        open:PRS.1SG.ACT ART.ACC door:ACC
        Verb-active + Patient-accusative (causative interpretation: 'I open the
        door')

    d.   *hề   thúra   anoígei*
        ART.NOM door:NOM open:PRS.3SG.ACT
        Patient-nominative + Verb-**active** (anticausative interpretation: 'The
        door opens')

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morphological evidence for the passive vs. middle distinction, it is much less clear what can be concluded from the former type of languages. We might either conclude, as many scholars do, that the passive in these languages subsumes middle-like meanings, or that two separate voices, the middle and the passive, are marked in these languages by the same non-active morphology."

    We cannot, however, follow this perspective for the diachrony of Greek, because even in Classical Greek – where middle and passive voice endings are available and productive for the Aorist and Future – the passive voice morphology can mark the anticausative or the reflexive interpretation, and middle endings can mark the passive interpretation. Hence, Classical Greek does not provide morphological evidence for a passive vs. middle distinction and cannot be included in the list of languages that possess two separate non-active forms of the verb. See also Abraham (1995): "To the extent that other old Indo-European languages distinguished morphologically between the medial diathesis and the passive, the meanings were often indistinguishable. Cases in point are again Sanskrit and Old Greek."

Table 5a. 3rd singular indicative middle and passive Futures in the Greek New Testament.

New Testament	Middle Future	Passive Future
Verbal lexemes	40.34% of the non-active verbs in the Future [48]	59.66% of the non-active verbs in the Future [71]
Occurrences	54.25% of the non-active forms in the Future [198]	45.75% of the non-active forms in the Future [167]
Verbs that can appear with two non-active voice morphologies	2.08% of the middle Futures are also attested in the passive Future (1/48)	1.41% of the passive Futures are also attested in the middle Future (1/71)

Table 5b. Verbs that can appear with two non-active voice morphologies: 3rd singular indicative middle and passive Futures in the Greek New Testament.

New Testament	Middle Future	Passive Future
come to know, learn, perceive	*gnṓsetai*	*gnōsthḗsetai*
deny utterly / deny, disown	*arnḗsetai*	*aparnēthḗsetai*
take	*lḗmpsetai*	*paralēmphthḗsetai*

(20) *An example of a verb that can appear with two non-active voice morphologies:*
    a. Middle morphology
        (N.T. Ev.Jo. 7.17)
        gnṓsetai   perì   tês   didakhês.
        know:FUT.3SG.MID about ART.GEN teaching:GEN
        'He <u>will know</u> about the teaching.'[25]
    b. Passive morphology
        (N.T. Ev.Jo. 10.26)
        kaì kruptòn   *hò*   *ou* **gnōsthḗsetai**
        and hidden:NOM REL.NOM NEG know:FUT.3SG.PASS
        '(There is nothing covered that will not be revealed) and hidden that <u>will not be known</u>.'

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25. The translations of the examples from the Greek New Testament are based on: *World English Bible. Rainbow Missions, Inc.; revision of the American Standard Version of 1901.*

Table 5c. 3rd singular indicative middle and passive Aorists in the Greek New Testament.

New Testament	Middle Aorist	Passive Aorist
Verbal lexemes	33.86% of the non-active verbs in the Aorist [86]	66.14% of the non-active verbs in the Aorist [168]
Occurrences	46.62% of the non-active forms in the Aorist [435]	53.38% of the non-active forms in the Aorist [498]
Verbs that can appear with two non-active voice morphologies	5.81% of the middle Aorists are also attested in the passive Aorist (5/86)	2.98% of the passive Aorists are also attested in the middle Aorist (5/168)

Table 5d. Verbs that can appear with two non-active voice morphologies: 3rd singular indicative middle and passive Aorists in the Greek New Testament.

New Testament	Middle Aorist	Passive Aorist
look	*etheásato*	*etheáthē*
warn	*enebrimḗsato*	*enebrimḗthē*
be given graciously	*ekharísato*	*ekharísthē*
be cured, be treated	*iásato*	*iáthē*
be put to	*prosétheto*	*prosetéthē*

(21) *An example of a verb that can appear with two non-active voice morphologies (middle and passive Aorist) in Koine Greek:*

a. Middle morphology
(N.T. Act.Ap. 28.8)
*epitheìs   tàs   kheîras   autôi   **iásato**   autón*
lay:PART.NOM ART.ACC hands:ACC 3SG.DAT heal:AOR.3SG.MID 3SG.ACC
'And laying his hands on him, <u>healed</u> him.'

b. Passive morphology
(N.T. Ev.Luc. 8.47)
*kaì hōs **iáthē**   parakhrêma.*
and how heal:AOR.3SG.PASS immediately
'and how she <u>was healed</u> immediately.'

Based on a hypothesis derived from data on verbs that can appear with two non-active voice morphologies in Vedic, we have examined the diachronic development of verbs that can take both middle and passive morphology in Greek. In both languages, the development of these verbs is directly related to the degrammaticalization of middle voice and the development of labile verbs (rise in Greek vs. loss of labile verbs in Vedic). It is not the case that a similar semantic class appears with two non-active morphologies in both Greek and Vedic; there is only a partial

convergence (see, for instance, psych-verbs). On the other hand, the verbs that can appear with two non-active morphologies belong to the class of spontaneous processes in Vedic and to the class of verbs that can be used in causative/anticausative constructions in Greek.

4.   Conclusion

The aim of this study was to test the hypothesis that verbs that appear with both middle and passive morphology in the Future and Aorist in Greek do not represent a random fluctuation of voice morphology. On the contrary, according to our hypothesis, they may show a similar syntactic behavior or belong to the same semantic class as the Vedic ´-yá-presents with accent fluctuation. Furthermore, following the remark that the accent fluctuation in Vedic middle -ya-presents reflects the affinity of the passive and anticausative, the present study has also tested the relation of the passive vs. anticausative distinction to the development of middle and passive voice morphologies in Greek.

Table 6. Verbal lexemes that can appear with two non-active morphologies in the Aorist in Greek (3rd singular indicative): Homer, Plato and the Greek New Testament.

	Verbs that can appear with two non-active voice morphologies (in the Aorist)
Homeric Greek	4.55% of the verbs that appear with middle morphology[26]
	11.82% of the verbs that appear with passive morphology
Classical Greek (Plato)	10.14% of the verbs that appear with middle morphology
	12.50% of the verbs that appear with passive morphology
Koine Greek (New Testament)	5.81% of the verbs that appear with middle morphology
	2.98% of the verbs that appear with passive morphology

The diachronic corpus study shows a decrease of the presence of the verbal class that can appear with two non-active voice morphologies in Greek (see Table 6). This decrease is related to the ongoing loss of the middle voice morphology. However, it can also reflect a change in the particular verbal class in Greek: verbs of change-of-state that show voice morphology alternation are replaced by a new verbal class, labile verbs that have active voice morphology for both causative and

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26. The percentage of middle Aorists that are also attested in the passive Aorist in Homer contrasts with the corresponding percentage of passive Aorists in Homer as well as with the corresponding percentages of middle and passive Aorists in Plato. The issue remains open for future research.

anticausative uses. Note that the labile type falls into decay in Vedic, in contrast to Greek (Kulikov 2014).

It appears that verbal classes that can have two non-active voice morphologies demonstrate a diachronic tendency for change in their voice marking, which results in labile syntax in Greek. This tendency is related to the development of the middle voice, but can also be due to the expansion of the labile type in Greek (at the expense of verbs of change-of-state that could appear with both possible non-active voice morphologies).

Acknowledgements

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