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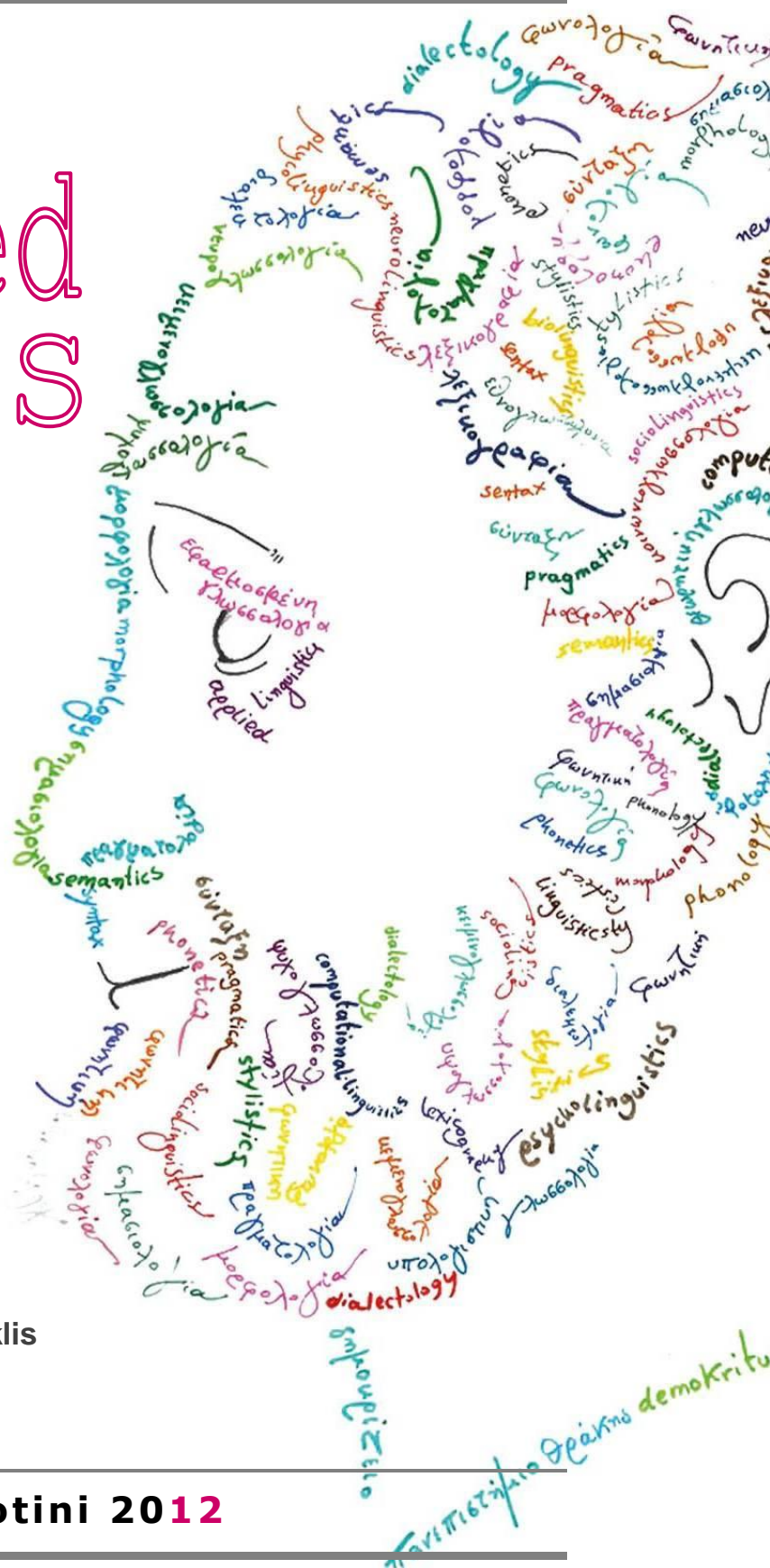
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ACTIVE vs. NONACTIVE VOICE IN THE GREEK DIACHRONY: REAL OR APPARENT OPTIONALITY IN THE USE OF VOICE MORPHOLOGY?

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ABSTRACT

The aim of our study is to examine the diachronic development of a set of anticausative verbs with respect to the frequency of ACT/NACT (active/nonactive) Voice morphology as well as their participation in causative (transitive) and anticausative structures. We investigate diachronic differences between verbs that synchronically mark anticausative with ACT and other verbs which express anticausative either with ACT or NACT. Significant differences between the verbs are shown in the previous periods with respect to ACT/NACT distribution, while anticausative readings show a similar diachronic development of Voice marking regardless of the Lexical Conceptual Structure (LCS) of the verb class. We propose that this is caused by a change in the features of NACT morphology from a period when syntactic movement (internal Merge) of an internal argument to the subject position needs to be morphologically marked with (NACT) Voice morphology to the stage attested today where syntactic movement does not need to be marked with Voice morphology.

Keywords: Voice morphology, anticausatives, verbs of two forms (“δίτυπιάς”), diachrony

1. Introduction

The aims of our study are to investigate (a) why anticausative readings are primarily expressed with active (ACT) morphology in Modern Greek (MG) verbs, and (b) why, in earlier periods, the active/nonactive (ACT/NACT) alternation was consistent while in MG the relevant alternation appears to be relatively inconsistent. To approach these aims, we will examine the diachronic development of a set of anticausative verbs with respect to the frequency of (a) ACT/NACT Voice morphology and (b) their participation in causative (transitive) and anticausative structures. In this respect, we will search for diachronic differences between verbs that synchronically mark anticausative with ACT exclusively and verbs that express anticausative readings either with ACT or NACT morphology (verbs of two forms, “δίτυπιάς”, according to Theophanopoulou-Kontou 2004).

The outline of the study is as follows: (i) we present the MG classes of anticausatives based on Voice marking and our selection of verbs that either retain the ACT form in both the causative and anticausative version of the alternation or express anticausative either with ACT or NACT. (ii) We examine the frequency of ACT and NACT with these verbs diachronically, the frequency of anticausative interpretations, the transitive uses and the role of the animacy feature on the syntactic subject. (iii) We compare the development of the verbs that are only ACT in MG with the development of the verbs that can have ACT or NACT Voice morphology (*katharise/katharistike* ‘cleaned’). Our proposal will be that ACT spread (from the prototypical use of ACT in unergatives) to all verbs with single-argument representation in the syntactic structure due to or in parallel with a change in the properties of NACT.

1.1 Modern vs. Ancient Greek ACT and NACT uses

With regard to Voice marking, there are three classes of verbs with anticausative readings in MG: (i) verbs that are marked with ACT (*eklise* 'closed-ACT'); (ii) verbs that are marked either with ACT or with NACT (*lerose/lerothike* 'got-dirtied-ACT/NACT'); (iii) verbs that are marked with NACT (*skistike* 'got-torn-NACT').

- (1) *I porta eklise (apo ton aera).*
ART.NOM.SG door:NOM.SG close:ACT.PST.PFV.3SG (by ART.ACC.SG wind:ACC.SG)
'The door was closed (by the wind).'
- (2) *Ta ruha lerosan/lerothikan apo ti boja.*
ART.NOM.PL cloth:NOM.PL get-dirty:ACT/NACT.PST.PFV.3PL by ART.ACC.SG paint:ACC.SG
'The clothes got dirty from the paint.'
- (3) *I simea skistike apo ton aera.*
ART.NOM.SG flag:NOM.SG get-torn:NACT.PST.PFV.3SG by ART.ACC.SG wind:ACC.SG
'The flag got torn by the wind.'

Verbs that denote both internally (*sapise* 'rotted') and externally-caused (*eklise* 'closed', *espase* 'broke') change of state are included in the first class, while externally-caused change of state verbs are included in the second (verbs of two forms/"ditipia" verbs; *katharise* 'cleaned', *tsalakose* 'crumpled', *tripise* 'pierced') and the third class (only NACT; *afksithike* 'increased', *miothike* 'diminished', *skistike* 'got-torn') (Theophanopoulou-Kontou 1983-4, 2004, Tsimpli 1989, 2006, Alexiadou & Anagnostopoulou 2004, Roussou 2009, Alexiadou 2010, Manzini, Roussou & Savoia [to appear]). The third class is consistent and diachronically stable in the use of NACT as a transitivity change marker (Lavidas 2009), and will not be examined further in the present study.

The general picture shows that anticausative verbs differ with respect to (i) Voice (only ACT in causative and anticausative vs. optionality in the use of ACT/NACT in the anticausative form¹) and (ii) Lexical Conceptual Structure (LCS) (internally and externally caused change of state verbs in the first class vs. only externally caused change of state verbs in the other classes). On the other hand, the diachronic pattern of both classes is similar, since both started with only NACT for anticausative readings and ACT strengthened later in their development (Lavidas 2009). In this article, we will examine the role of the animacy feature and the presence or absence of a correlation between the spread of ACT in anticausatives and the changes in the distribution of ACT/NACT regardless of readings, the LCS differences, and the frequencies of causative vs. anticausative uses. Diachronic differences which do not necessarily pertain to Voice marking can be observed within verb classes as well: minimal changes in the stem (*vrasso/vratto* – *vrazo* 'boil') are attested, different stems are used in parallel for some period of time with only one surviving eventually (*tēkō* / *tēkomai* – *liono* 'melt'), and, finally and most frequently, prefixed forms of these verbs are attested in earlier periods but are lost now. We exclude prefixed verb forms from our present study and examine different stems separately.

We initially considered the change in the use of NACT morphology as a potential effect of the differences in the LCS of these verbs (one-place predicates vs. two-place predicates; Levin 1993, Levin and Rappaport Hovav 1995, 2005); however, *klino* and *sapizo* both belong to the first class in terms of disallowing NACT morphology although *klino* is an externally-caused change of state verb while *sapizo* an internally-caused one. Evidence for the differences in the LCS can be provided (1) by considering subject animacy: one-place predicates (internally-caused verbs) prefer inanimate subjects regardless of Voice marking while two-place predicates (externally-caused verbs) should show an interaction between Voice morphology and animacy (they should prefer animate subjects when marked ACT) – and (2) by considering the frequency of transitive uses: two-place predicates should be more frequent in transitive uses than one-place predicates.

In AG Voice morphology changes were consistent in that all anticausative classes of MG were marked with NACT² when the structure was anticausative while all causative uses of the same verbs were marked as ACT (even though NACT was allowed in other cases of transitive uses; Table 1)

¹ but only with inanimate subjects ("ditipias" verbs).

² Ancient Greek has a complex nonactive voice system: "middle" (or "mediopassive") endings in all tenses, and additional "passive" suffixes only in the Aorist and Future tense. "Middle"/"mediopassive" endings are not excluded from a passive reading, and "passive" endings can be used with a non-passive reading, i.e. with an anticausative interpretation or even in a transitive construction. Mainly for this reason (cf. also Lavidas 2009: 79), we call "nonactive" all endings that are different from the active endings and are traditionally called "middle" (or "mediopassive") or "passive".

(Lavidas 2009). NACT in AG can be seen as a marker of the internal argument displacement (or derived subject) with no reference to the presence or absence of an external argument.

AG verbs	Voice morphology
a. all three classes of anticausatives	NACT <i>etákēn, etēkhthēn</i> ‘melted’ <i>ekathērámēn, ekathárthēn</i> ‘cleaned’ <i>ēuksēhēn</i> ‘increased’
b. transitives	both ACT and NACT (self-beneficent interpretation) <i>paraskeuázō</i> <i>naûn</i> <i>prepare:ACT.PRS.1SG</i> <i>ship:ACC.SG</i> <i>‘I prepare a ship.’</i> <i>paraskeuázomai</i> <i>naûn</i> <i>prepare:NACT.PRS.1SG</i> <i>ship:ACC.SG</i> <i>‘I prepare a ship for myself.’</i>
c. causatives	only ACT
d. passives	NACT (few instances of ACT)
e. reflexives	NACT

Table 1 Voice morphology in AG³

2. The Data

The verbs examined are: *klino* ‘close’, *stegnono* ‘dry’, *liono* ‘melt’, *sapizo* ‘rot’, *vrazo* ‘boil’ (Voice non-alternating anticausatives/first class). Our aim was to look for similarities and differences between them. We compared these Voice non-alternating verbs with a Voice alternating verb (*katharizo* ‘clean’; second class; it exhibits “ditipia” i.e. both ACT and NACT in MG) to establish differences diachronically. The periods examined are AG, Hellenistic-Roman Greek (HRG), Medieval Greek (MedG) and MG. *Klino* ‘close’ is considered a Voice non-alternating anticausative in MG although we will show that it is different from the other verbs of the first class and more similar to *katharizo* ‘clean’ (which is a “ditipias” verb) in LCS (both synchronically and diachronically) and the related variables (animacy and transitive uses). Hence, the four parameters of our study are: frequency of ACT vs. NACT Voice morphology, Voice marking with anticausative reading, subject animacy, and frequency of transitive uses.

Since our aim is to compare results from different corpora, we decided to base our study on the whole Institute for Language and Speech Processing (hence ILSP) corpus, available on <http://hnc.ilsp.gr>⁴ and the whole Thesaurus Linguae Graecae (TLG) corpus, available on <http://www.tlg.uci.edu/> (written register, mainly formal):

- (i) MG: ILSP corpus;
- (ii) AG (8BC – 3BC), HRG (3BC – AD4), MedG (mainly AD12 – AD15): TLG online corpus; AD5 – AD11: early medieval texts were also included but only in an attempt to find the earliest appearance of ACT marking in anticausatives (and are not further discussed in the present paper).

Of course, a lot of limitations and methodological difficulties can be met in such studies: for example, the constant updating of both corpora makes searches not completely repeatable; the small number of examples of the targeted interpretations forces us to collect raw data from the TLG and ILSP as a whole, i.e. not to be sensitive to register, geographical location etc, and not to be fully representative of vernacular Greek. Nevertheless, some relevant trends can be observed. Furthermore, we examined sentences with only 3rd person (singular or plural) forms of these verbs (to avoid any possible person effect) and we had to ignore data from the AG period since most of our verbs (with the specific meanings) first appeared in HRG.

³ Cf., among many others, Goodwin 1978 [1894], Kühner & Gerth 1963 [1898-1904], Gildersleeve 1900, Stahl 1907, Smyth 1984 [1920], Meillet & Vendryes 1924, Humbert 1945, Schwyzler 1943 [1942], Schwyzler & Debrunner 1950, Jankuhn 1969, Duhoux 2000², Allan 2003, Luraghi 2010.

⁴ The ILSP corpus seems to be closer to the TLG corpus that contains a variety of registers, most of them (written and) formal.

Verbs	First Attestation
<i>stegnóō/stegnóno</i>	HRG
<i>tēkō</i>	Homeric Greek; ‘melt’, often prefixed <i>eks-</i> , <i>en-</i> , <i>sun-</i>
<i>leiōō/óno</i>	HRG; mainly with the meaning ‘make smooth, be polished, smoothed, pound fine, emulsify’ / Medieval Greek: ‘melt’
<i>sēpō</i>	Homeric; ‘make rotten’
<i>sapízo</i>	MedG; formed on the basis of the AG 3pl Aorist <i>esápēsan</i>
<i>vráso/tto/zo</i>	HRG; meaning ‘shake violently, throw up’ (cf. MG: <i>ksevrázi/ete</i>), and ‘boil’
<i>klíno</i>	AG (<i>kleiō</i>); but most of the examples with a prefix <i>kata-</i> , <i>ek-</i> , <i>apo-</i> , <i>peri-</i> , <i>sun-</i> [we do not include prefixed classes of <i>kleiō</i> in the present data]
<i>katharízo</i>	HRG (we leave the data of <i>kathairō</i> open for future research)

Table 2 Our corpora: dates and limitations

The criteria we used to identify anticausative readings included the presence of PPs or DPs in the dative/genitive (or subordinate clauses) denoting a Cause argument and not an Agent, and the absence of explicit or implicit agentivity on the basis of the context (examples of sentences with anticausative or passive reading are given in 4a and b). Hence, we coded for explicit (PPs, DPs-dative, etc) and implicit (derived from context) cause, Voice morphology, and subject animacy.

(4) a. anticausative reading

katháper kai hai tōn balaneiōn thúrai automátōs
just-as and ART.NOM.PL ART.GEN.PL bath:GEN.PL door:NOM.PL by-themselves
kleíontai
close:NACT.PRS.3PL

‘Just as the doors of the baths close by themselves.’
(Heron Mech., Pneumatica, 1, 39, 16; AD 1)

b. passive reading

kleísthētai tò stómion hōs hupò daktúlōn
close:NACT(PASS).FUT.3SG ART.NOM.SG mouth:NOM.SG as by finger:GEN.PL
tinōn
some:GEN.PL

‘The mouth will be closed as if by some fingers.’
(Galenus Med., De simpl. med. temp. ac fac. xi., 11, 752, 18; AD 2)

Finally, in order to address the question of LCS differences between the two verb classes, we coded for transitive uses of the verbs under discussion (two-place predicates should prefer transitive uses) and subject animacy (animate/inanimate) in the transitive and anticausative uses (two-place predicate should prefer animate subjects with ACT Voice).

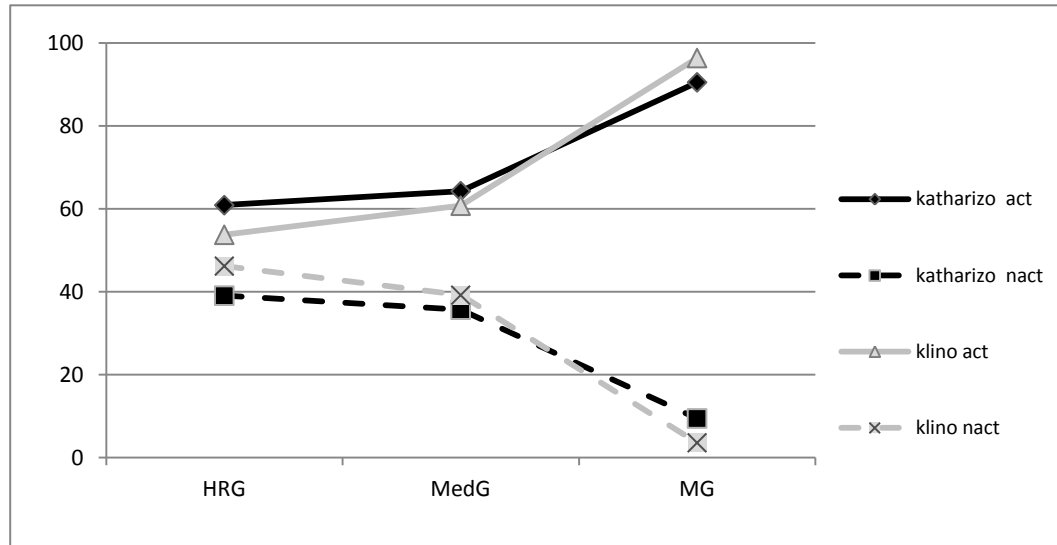
3. Results and Discussion

For ease of exposure, we first analyse data with regard to frequency of ACT and NACT Voice marking and then proceed to the analyses of the other variables tested, i.e. anticausative reading with ACT and NACT verb morphology, animacy of the syntactic subject (both with ACT and NACT verb forms) and, finally, frequency of transitive vs. anticausative readings (with ACT verb forms)⁵.

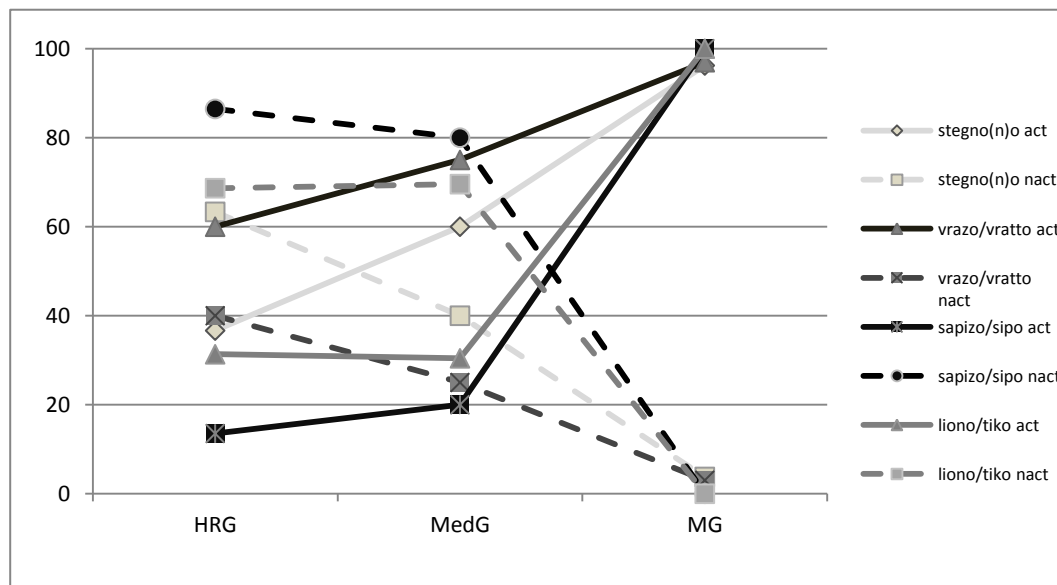
Starting with the distribution of the morphological marking of Voice, the results show that the frequency of ACT Voice morphology increased and NACT decreased throughout the different periods

⁵ When statistical data are provided, MedG corresponds to the period AD12 – AD15 (and not to the Early Medieval subperiod (AD5 – AD11) as well).

examined, as shown in Graphs 1 and 2, although not all of the verbs have the same equal distribution of ACT/NACT⁶:



Graph 1 Diachronic change in the distribution of the ACT vs. NACT Voice morphology (%): the verbs *katharizo* ‘clean’ and *klino* ‘close’

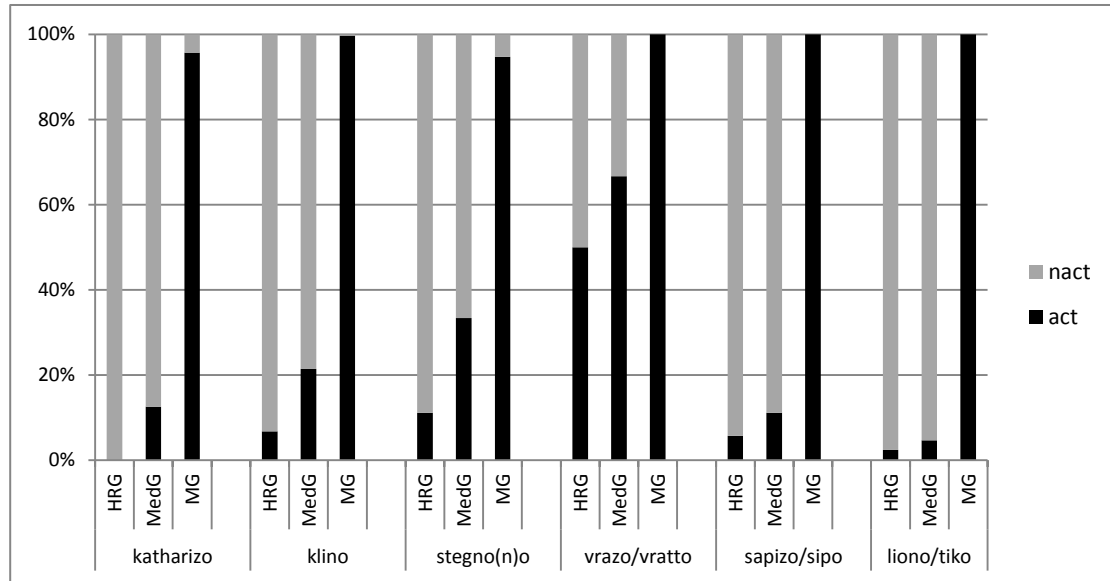


Graph 2 Diachronic change of the distribution of the ACT vs. NACT Voice morphology (%): the verbs *stegno* ‘dry’, *vrazo* ‘boil’ and *sapizo* ‘rot’

All the verbs presented are shown to favour ACT verb marking in MG, though significant differences between the verbs are shown in the previous periods with respect to their distribution. More specifically, *sapizo* and *liono* show a high preference for the NACT over the ACT marking (HRG: $\chi^2=121.786$, $p<.001$ and MedG: $\chi^2=7.200$, $p=.007$; HRG: $\chi^2=72.377$, $p<.01$ and MedG: $\chi^2=14.087$, $p<.001$ respectively). *Stegno* is more like *klino* and *katharizo*: their distribution of (N)ACT uses does not show extreme tendencies in HRG (though *klino* is more used in ACT ($\chi^2=13.535$, $p<.001$), the other two are equally used); all of them present an increase in the use of ACT in MedG ($\chi^2=5.714$, $p=.017$; $\chi^2=4.745$, $p=.029$; $\chi^2=.333$, $p=.564$ respectively), and they are almost exclusively used in ACT in MG ($\chi^2=395.588$, $p<.001$; $\chi^2=3067.404$, $p<.001$; $\chi^2=45.302$, $p<.001$ respectively). *Sapizo* and *liono* are more used in NACT until MedG ($\chi^2=7.200$, $p=.007$; $\chi^2=14.087$, $p<.001$ respectively), but they undergo an

⁶ Due to the differences in the size of the corpora, only relative frequencies are used (i.e., for example, percentage of ACT vs. NACT endings of a verb in a specific period), and not absolute frequencies.

abrupt change in MG and are exclusively used in ACT. *Vrazo* looks like *katharizo* and *klino*, though no significant differences are revealed when non-parametric chi-square tests are conducted, except for MG, where ACT morphology is significantly preferred over the NACT one ($\chi^2=203.848$, $p<.001$).



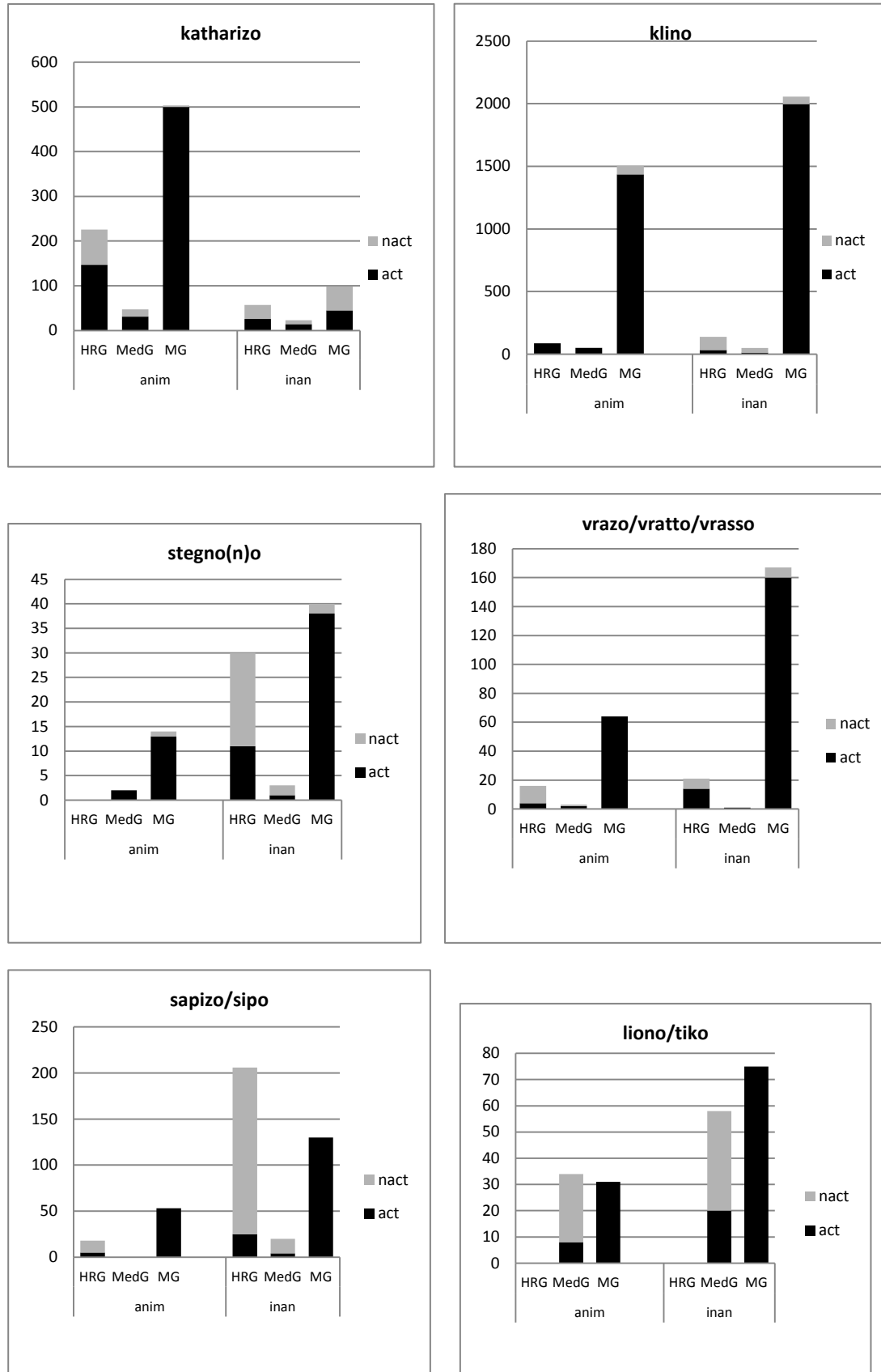
Graph 3 Distribution of the anticausative readings in ACT/NACT Voice morphology diachronically: analyses per verb

The anticausative readings reveal a similar pattern for all verbs examined except for *vrazo*, which is used both in ACT and NACT from the Hellenistic period (ACT:9 vs. NACT:9).⁷ The pattern outlined in the data is that there appears an overwhelming preference for NACT Voice marking in the pre-MG period, totally reversed in MG. More specifically, Pearson chi-square analyses show that from HRG to MedG there is a change (*katharizo*: $\chi^2=5.471$, $p=.019$, $\eta=.240$, Cramer's $V=.019$; *klino*: $\chi^2=4.005$, $p=.045$, $\eta=.215$, Cramer's $V=.045$; *stegno(n)o*: $\chi^2=1.037$, $p=.309$, $\eta=.222$, Cramer's $V=.309$; *vrazo*: $\chi^2=.286$, $p=.593$, $\eta=.117$, Cramer's $V=.593$; *sapizo*: $\chi^2=.838$, $p=.360$, $\eta=.061$, Cramer's $V=.360$; *liono*: $\chi^2=.972$, $p=.324$, $\eta=.050$, Cramer's $V=.324$) which becomes significant only from MedG to MG (*katharizo*: $\chi^2=32.615$, $p<.001$, $\eta=.833$, Cramer's $V<.001$; *klino*: $\chi^2=1.047E3$, $p<.001$, $\eta=.782$, Cramer's $V<.001$; *stegno(n)o*: $\chi^2=11.907$, $p=.001$, $\eta=.539$, Cramer's $V=.001$; *vrazo*: $\chi^2=64.330$, $p<.001$, $\eta=.574$, Cramer's $V<.001$; *sapizo*: $\chi^2=1.678E2$, $p<.001$, $\eta=.937$, Cramer's $V<.001$; *liono*: $\chi^2=1.313E2$, $p<.001$, $\eta=.958$, Cramer's $V<.001$).

One can reasonably wonder whether the change in Voice marking with anticausative structures is a side-effect of another change taking place at the same time. It is also worth looking at the above observation with respect to the distribution of Voice morphology overall per Verb (regardless of readings). In contrast to what we have seen (Graph 2) in relation to the variable frequency of ACT or NACT Voice morphology per verb, all verbs moved from NACT to ACT when used with an anticausative reading, and ACT is almost exclusively preferred with anticausative interpretation in MG.

We now turn to the examination of the distribution of subject animacy with ACT/NACT verb forms: a high frequency of animate subjects, regardless of Voice morphology, is considered evidence for a two-place predicate in terms of LCS (Levin 1993, Levin and Rappaport Hovav 1995, 2005). Even if causativization of a one-place predicate is involved, it is predicted to be less frequent than the basic LCS (intransitive structure).

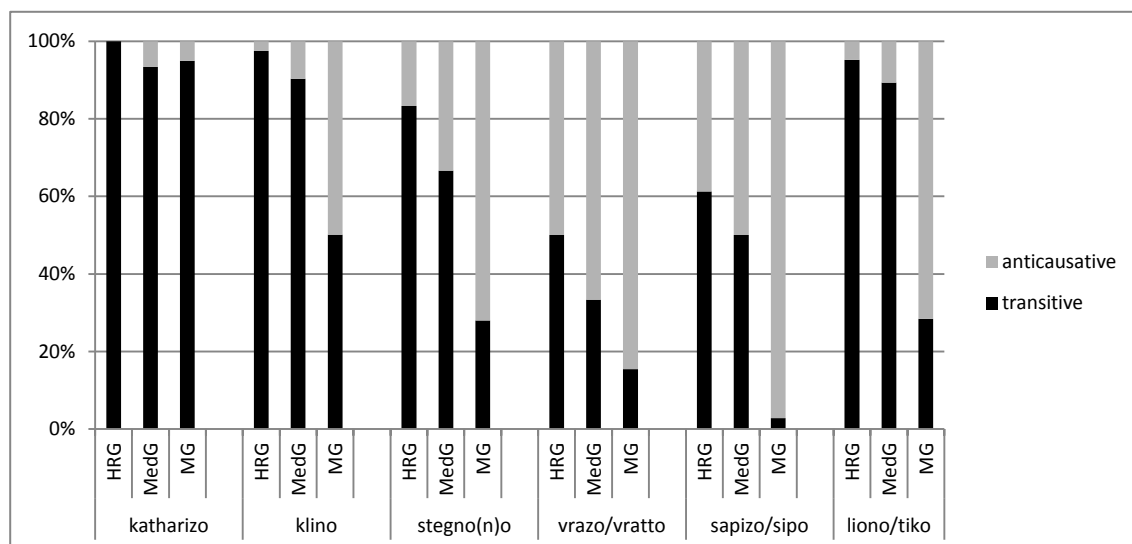
⁷ Cf. (1) a. anticausative reading – active voice morphology
oû hē agápē en emoi brássei
REL.GEN.SG ART.NOM.SG love:NOM.SG in me:DAT.SG boil:ACT.PRS.3SG
lit. '...for whom love boils in me.'
(Acta Thomae 15, 18; AD 3)
b. anticausative reading – nonactive voice morphology
brasthēi mèn tà éndon tou thōrēkos
boil:NACT(PASS).AOR.SUBJ.3SG PRT ART.NOM.PL within ART.GEN.SG chest:GEN.SG
'(If with length of time and much pain) the matters within the chest ferment.'
(Aretaeus Med., De causis et signis acutorum morborum libri duo, 1, 5, 7; AD 2)



Graph 4 Distribution of [+/- animacy] of syntactic subjects with (N)ACT verbs (all readings)

Graph 4 shows that the verb *katharizo* is used more frequently with an animate subject (+anim: 776 vs. -anim: 179), *klino* is frequent with an animate subject but preferred with an inanimate subject (+anim: 1644 vs. -anim: 2244) whereas this is not the case for the remaining verbs examined (*stegnono*, *vrazo*, *sapizo* and *liono*), which are more frequently used with an inanimate subject. We should further notice that *katharizo* with an inanimate subject is the only verb that appears as *ditipias*, i.e. the ACT and NACT forms are equally distributed in all three periods examined (ACT: HRG:26; MedG:14; MG:45 – NACT: HRG: 31; MedG:9; MG:54).

Furthermore, the data reveal that in MG, although equally frequently used with ACT and NACT morphology, *katharizo* with an animate subject is more frequent in ACT than NACT ($\chi^2=491.072$, $p<.001$). This preference for ACT vs. NACT, as already suggested, is not supported when an inanimate subject is present ($\chi^2=.818$, $p=.366$). *Klino* is used in ACT with animate subjects (HRG: 86 vs. 0; MedG: $\chi^2=35.852$, $p<.001$; MG: $\chi^2=1274.057$, $p<.001$) (favouring transitive readings –see below, Graph 5), a tendency that remained throughout the periods examined, while, in the presence of inanimate subjects, we observe a significant change: although in HRG and MedG, NACT morphology was preferred (HRG: $\chi^2=35.507$, $p<.001$; MedG: $\chi^2=10.796$, $p<.001$), in MG the verb is more frequently used in ACT ($\chi^2=1824.000$, $p<.001$). According to our data, *stegnono* was more frequently used in NACT with inanimate subjects, though not significantly so (HRG: $\chi^2=2.133$, $p=.144$; MedG: $\chi^2=.333$, $p=.564$), while it is preferred in ACT in MG ($\chi^2=32.400$, $p<.001$). However, the occurrences are very few throughout the periods examined. In the presence of an animate subject, the verb was (and is) very rarely used, almost exclusively with ACT (HRG: 0 (act) vs. 0 (nact); MedG: 2 (act) vs. 0 (nact); MG: 13 (act) vs. 1 (nact)). *Vrazo*, *sapizo* and *liono* present a similar pattern: in HRG and MedG the verbs were used both in ACT/NACT with animate subjects (although their diachronic frequencies differ) but are used only with ACT in MG (*vrazo*: 64; *sapizo*: 130; *liono*: 31). More specifically, *vrazo* was more frequent with NACT in HRG ($\chi^2=4.000$, $p=.046$) but very rare in MedG (2 (act) vs. 1(nact)), *sapizo* was more frequent with NACT in HRG ($\chi^2=118.136$, $p<.001$) but totally absent in MedG and *liono* was more frequent with NACT in MedG ($\chi^2=9.529$, $p=.002$). In the presence of inanimate subjects, the verbs present a different pattern: in HRG and MedG, *vrazo* was more frequent in ACT, but not significantly so ($\chi^2=2.333$, $p=.127$; only one occurrence in ACT found in MedG), while *sapizo* and *liono* in NACT ($\chi^2=118.136$, $p<.001$ and $\chi^2=7.200$, $p=.007$; found only in MedG: $\chi^2=5.586$, $p=.018$, respectively); in MG all of them are more frequently used in ACT (*vrazo*: $\chi^2=140.174$, *sapizo* (n=130) and *liono* (n=75) found only in ACT).

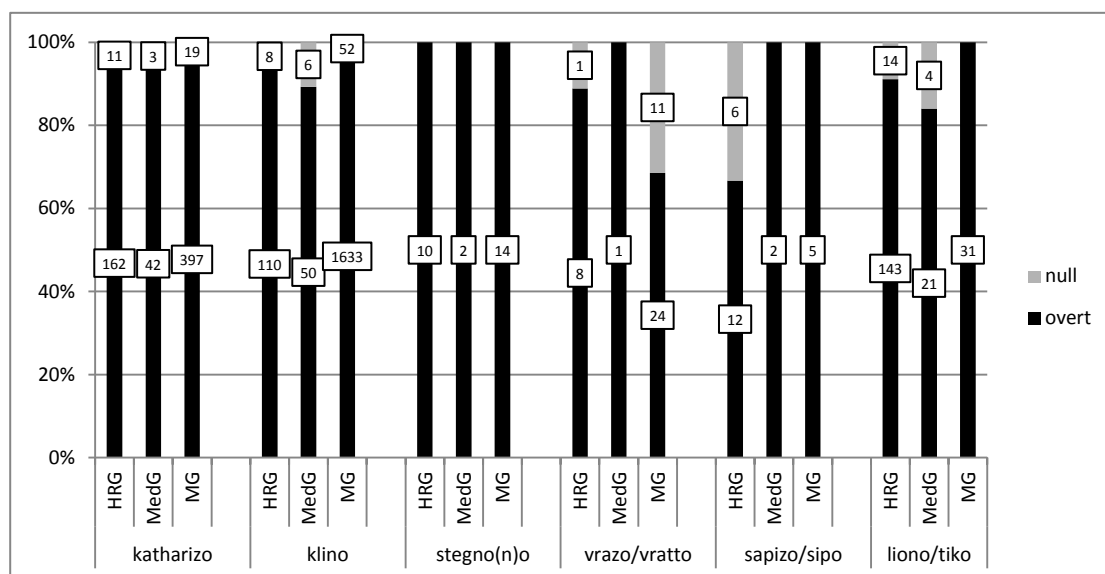


Graph 5 Distribution of anticausative vs. transitive uses with ACT verbs

Diachronically, if we compare (MedG vs. MG) the change of preference in anticausative vs. transitive use with ACT (Graph 5), we observe that this change has occurred from MedG to MG, since statistically significant differences are observed for (almost) all the verbs between these periods (*klino*: $\chi^2=39.399$, $p<.001$, $\eta=.107$, Cramer's $V<.001$; *stegnono*: $\chi^2=2.008$, $p=.156$, $\eta=.195$, Cramer's $V=.156$; *sapizo*: $\chi^2=23.558$, $p<.001$, $\eta=.360$, Cramer's $V<.001$; *liono*: $\chi^2=34.126$, $p<.001$, $\eta=.499$, Cramer's

$V < .001$); *vrazo* underwent this change earlier, from HRG to MedG, though statistically no significant differences are found, due to the small size of the data ($\chi^2 = .286$, $p = .593$, $\eta = .117$, Cramer's $V = .593$); *katharizo*, on the other hand, presents a similar pattern throughout the periods examined. Moreover, the differences between anticausative vs. transitive uses are statistically significant in most of the verbs: in HRG the transitive uses are more frequent with *klino* ($\chi^2 = 109.298$, $p < .001$), *stegnono* ($\chi^2 = 5.333$, $p = .02$) and *liono* ($\chi^2 = 134.552$, $p < .001$) while *katharizo* is exclusively transitive ($n = 173$); *vrazo* and *sapizo* show no statistical differences; in MedG transitive uses remain more frequent in *katharizo* ($\chi^2 = 33.800$, $p < .001$) *klino* ($\chi^2 = 40.323$, $p < .001$) and *liono* ($\chi^2 = 17.286$, $p < .001$), while no significant differences are found in *stegnono*, *vrazo* and *sapizo*. Finally, in MG the reverse pattern is attested: anticausative readings are significantly more frequent in *klino* ($\chi^2 = 40.323$, $p < .001$), *stegnono* ($\chi^2 = 9.680$, $p = .002$), *vrazo* ($\chi^2 = 108.586$, $p < .001$), *sapizo* ($\chi^2 = 158.562$, $p < .001$) and *liono* ($\chi^2 = 20.266$, $p < .001$), while transitive uses remain more frequent only with *katharizo* ($\chi^2 = 354.420$, $p < .001$).

In all, a between-verb analysis yields a significantly different pattern in the verbs *katharizo* and *klino* vs. all the others; *vrazo*, *sapizo* and *liono* show similar tendencies, while *stegnono* differs from *katharizo*, *klino* and *sapizo* but not from MG *liono*. In other words, *klino* and *katharizo* show stability with respect to the readings of ACT verb forms: they are dominantly used as transitives throughout the three periods examined. However, given that *klino* is a very frequent verb in MG, with many metaphorical uses, anticausative readings are also very frequent (antic vs. trans: $\chi^2 = .015$, $p = .904$). *Sapizo*, *liono* and *stegnono* were used transitively in HRG and MedG, while they receive more frequently an anticausative reading in MG. Finally, *vrazo* was equally used with transitive and anticausative readings in HRG, but it favours the anticausative reading since MedG.



Graph 6 Distribution of overt vs. null non-referential objects in transitive structures

With respect to the presence of an overt vs. a null (always, non-referential) object in the transitive uses we should notice that null non-referential objects are very rare in all the periods examined: they appear more frequently only with *sapizo* in HRG (overt: 12 vs. null: 6; $\chi^2 = 2.000$, $p = .157$) and they tend not to exist at all with all verbs but *vrazo* in MG (overt: 24 vs. null: 11; $\chi^2 = 4.829$, $p = .028$). Further statistical analyses are not, however, conducted due to the existence of very limited results in the majority of the verbs.

Overall, diachronically, the verbs examined show variation regardless of class in the distribution of Voice with all interpretations. Moreover, anticausative readings show a similar development of Voice marking (a shift from NACT to ACT) regardless of class. A relationship is also confirmed between subject animacy and transitive uses and LCS and between ACT with transitive or anticausative use and class LCS.

4. Conclusions

The question that arises is how to account for the instability and inconsistency in MG with regard to the first and the second class of anticausative verbs. The first proposal would be that the use of ACT only affected the anticausative reading of one-place predicates *at the LCS* initially (i.e. not *katharizo* ‘clean’ and *klino* ‘close’) and then spread to the other verbs. However, no LCS effect is found when looking at the anticausative reading diachronically. ACT appears to have spread to all verbs with a single argument at the syntactic level and probably on the basis of the (prototypical) use of ACT in unergatives (single argument verbs without argument movement). This implies a change in the properties of NACT morphology as such: NACT has changed from a marker with a double role, that is marking syntactic movement (internal Merge) of an internal argument to the subject position or of marking argument absorption (or blocking or suppression – according to the preferred analysis of detransitivisation) into a marker with a single role, that of argument absorption (subject is interpreted as object and another syntactic argument is absorbed/suppressed/blocked by the NACT morpheme). In MG, movement (internal Merge) is not marked through Voice morphology, while absorption is of a theta-role/argument in AG and of Case (structural) in MG. Accordingly, we would expect verbs of the second class (“ditipias” verbs), that are two-place predicates, to show NACT consistently (and not an ACT/NACT alternation). Most verbs of the second class have been introduced to the language much later (after HGR; *lerono* ‘get dirty’, *tsalakono* ‘crumble’: AD 12). It appears that two-place predicates could follow the ‘rule’ of one-place predicate when the syntactic derivation includes the internal argument only (Borer 2005). That means that ACT/NACT variation is not random: when the implicit argument is to be activated in the parse, then NACT is used, and NACT passives and NACT “anticausatives” share the same derivation. On the other hand, when the implicit argument needs not be activated, then ACT is used. On-going changes in the language show a convergence with verbs of the second class (class of verbs of two forms/“ditipias”) from the other two classes: verbs of the first class begin to be used with NACT Voice as well (*liono*), verbs of the third class begin to be used with ACT Voice as well (*eskise* besides *skistike* and *marane* besides *marathike*; examples 5a, 5b) (Fotiadou 2010, Roussou & Tsimpli 2007):

- (5) a. *I* *zaxari* *lionete* *ja* *na* *jini* *siropi*
 ART.NOM.SG sugar:NOM.SG melt:NACT.PRS.3SG for to become:3SG syrup:NOM
 ‘The sugar is melted to syrup.’
 b. *Ta* *maranes* *ta* *luludia*
 them:ACC.PL wilt:ACT.PST.PFV.2SG ART.ACC.PL flower:ACC.PL
 ‘You made the flowers wilt.’

Needless to say, we have to leave many questions open: for example, what caused the change in the properties of NACT. Possible directions to look for answers for this change are the replacement of structural and lexical case in earlier periods of Greek by structural case alone, or changes in the interaction between lexical and morphological aspect which might have affected the use and function of NACT Voice morphology.

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