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Unaccusativity and the diachrony of null and cognate objects in Greek[*]

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Abstract

In the present paper, we show that in contrast to the diachronic instability that unergatives and transitives present with regard to null and cognate objects, alternating unaccusative verbs constantly appear to meet more restrictions in null and cognate object constructions than the other verbal classes. The restrictions of the null objects with alternating unaccusatives hold irrespective of the structure and the voice morphology of the alternating unaccusatives: alternating unaccusative verbs can be found in causative constructions with null objects only of the most freely used type of null objects (generic null objects); the other verbal classes can appear with deictic null objects in Modern and Ancient Greek or even with referential null objects in Ancient Greek. Cognate objects in Ancient Greek show both argumental and adverbial characteristics: unergatives in Ancient Greek can take cognate objects of argumental or adverbial character, but unaccusatives only take adverbial cognate accusatives. The common complex (causative) template of alternating unaccusatives (in both causative and anticausative uses) can be observed as the cause of the obligatory presence of the patient argument in causative uses of alternating unaccusatives, while the dependence of atelic/telic interpretation in Ancient Greek (especially in Homeric Greek) on an aktionsart/situation type aspect can explain the differences found between the Ancient and the Modern Greek cognate constructions.

1. Introduction[1]

The present paper examines the implications that the changes in null and cognate objects in Greek may have for the Unaccusative Hypothesis. It has been claimed (not without debate) that in contrast to unergatives and transitives, alternating unaccusative verbs[2] cannot take cognate objects and cannot drop their direct objects (i.e., they do not allow a null object) in the case of a causative construction.[3] On the other hand, we

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[1] List of Abbreviations: ACC accusative, ACT active, DAT dative, F feminine, FUT future, GEN genitive, IMP imperative, INF infinitive, INS instrumental, IPFV imperfective, NACT nonactive, NEG negation, NOM nominative, PL plural, PRF perfective, PST past, PTC particle, PTCP participle, SG singular.

[2] Unaccusative verbs consist of two subtypes, alternating and non-alternating unaccusative verbs. Alternating unaccusative (or anticausative) verbs (e.g., *melt*, *break*, *freeze*) have a transitive/causative counterpart, but non-alternating unaccusative verbs (e.g., *happen*, *arrive*, *appear*) do not. We use the term "alternating unaccusatives" and not "anticausatives" when discussing the null and cognate objects for two reasons: we examine the question whether these verbs allow null objects in their transitive use -and the term "anticausative" always refer to the intransitive use-, and we distinguish these verbs from causative verbs (for example, *kill*) that do not have an intransitive use.

[3] The (formal) approach on which we base the study of (alternating) unaccusatives regards the split morpho-syntactic behavior of one-argument verbs as stemming from the different status of the subject, which is an internal argument in the case of unaccusatives. While in other studies (studies of change-of-state verbs, for example), transitive (non-alternating) causative verbs are examined together with alternating unaccusatives, we will try to separate alternating unaccusatives (for example, *break*) from causative transitives (for example, *kill*). The reason for this decision is that we are interested in the issue of null and cognate objects –both of which have been used in the literature (for example, Levin & Rappaport Hovav 1995, 2005) as unaccusativity tests– starting from the intransitive (unaccusative) variant of alternating verbs (this can have a heuristic value because it

have shown elsewhere (Lavidas, to appear) that both diachronic directions (rise and loss) with respect to null and cognate objects of unergative and transitive verbs are possible cross-linguistically. For instance, the English historical data present loss of the referential type of null objects and rise of the activity/event noun (aspectual) cognate objects, while the historical data from Greek demonstrate loss of a type of cognate objects. In Lavidas (to appear), we have attempted to explain the above-mentioned diachronic tendencies by showing that Aspect and Transitivity (as expressed by null and cognate objects) are diachronically correlated: both (non)progressive and (im)perfective viewpoint aspect grammaticalization affects null object constructions, whereas the grammaticalization of (non)progressive aspect allows the presence of activity/event noun cognate objects, and the grammaticalization of the (im)perfective disallows the availability of cognate object constructions (see below).[4] The main question that arises, if we take into consideration alternating unaccusatives as well, concerns the diachronic behavior of the different verbal classes (unaccusatives, unergatives, transitives): the (un)stable relation between the availability of null and cognate objects and alternating unaccusative verbs can provide some evidence on the characteristics of alternating unaccusative verbs and their changes.

2. Typology of verbal classes, null objects, and cognate objects

2.1. Theoretical remarks

2.1.1. Verbal classes

Transitive verbs include one external and one internal argument, whereas according to the Unaccusative Hypothesis (Perlmutter 1978; Burzio 1986), two types of intransitive verbs are distinguished, unaccusatives and unergatives: the subjects of unaccusatives syntactically behave like the objects of transitives, while the subjects of unergatives behave like the subjects of transitives. The tests argued for the distinction have been both syntactic and semantic: *unaccusatives can have a causative counterpart, but unergatives not;* unaccusatives select BE as a perfective auxiliary, unergatives select HAVE; the subject of unaccusatives has the theta role of a patient, the subject of unergatives has the theta role of an agent. There are, however, verbs that do not satisfy the above-mentioned unaccusativity tests in a consistent way, both

refers both to null and cognate objects). We will examine the diachronic behavior of (alternating) unaccusatives with regard to the following two aspects: the availability of omission of their object when they are used in causative constructions, and the availability (again, for the same verbs [i.e., alternating unaccusatives]) of participating in cognate object constructions.

[4] Previous studies on Greek null and cognate objects have put more emphasis on the conditions that constrain the presence of null objects or cognate objects and the changes in their (un)availability, and less emphasis on the relation of their diachrony with the diachrony of unaccusatives. Van der Wurff (1997) examines null objects in Indo-European languages, discussing some Greek data, and argues that early Indo-European languages allowed null objects in sentences referring to actions or states involving a referential object, and that Proto-Indo-European probably also allowed referential null objects. Luraghi (1997, 1998a, b, 2003, 2004) shows that Greek (and Latin) null objects are discourse or syntactically conditioned and that there are communicative differences between null objects and clitics, arguing that the syntax of null objects can be better understood in connection with other types of anaphoric devices (pronouns, clitics). Horrocks & Stavrou (2010) examine the reasons for the presence of activity/event noun ("aspectual") cognate objects in some languages but not all, explore the differences between Ancient and Modern Greek cognate object constructions, and relate their findings to their analysis of the presence/absence of telicity-shifting constructions.

within and across languages (examples 1a, b; Sorace 1995, 2000, 2004, 2006, 2011), verbs that display either unaccusative or unergative syntactic characteristics depending on the predicate (example 2; Sorace 1995, 2006), or intransitive verbs that participate or not in a causative-anticausative alternation depending on the language or the diachronic period (examples 3a-b´). Sorace (1995, 2000, 2004) and Keller & Sorace (2003) show that the distinction between unaccusative and unergative verbs is a gradient based on an Auxiliary Selection Hierarchy.[5] This split intransitivity gradience is determined by the interplay[6] of aspectual and lexico-semantic factors. Cennamo (2002) argues that from the diachronic perspective, the Auxiliary Selection Hierarchy predicts that verbs at the core of the Unaccusativity/Unergativity categories are more impervious to change and that change involves verbs belonging to the periphery of the categories. Accordingly, Cennamo (2008) analyzes the rise of Latin *esse* and *habere* as perfective auxiliaries as one of the outcomes of changes affecting the encoding of the argument structure of the clause in late Latin and the replacement of BE and HAVE in old Neapolitan[7] as sensitive to the gradient model of split intransitivity.

(1) a. *'blush'*: unaccusative in Italian (selects BE); unergative in Dutch (selects HAVE)

b. *'blossom'*: takes either HAVE or BE in Italian

(2) *'swim'*: takes HAVE denoting a process in German and Dutch, but BE with a PP of destination

(3) a. *The rabbit* ***disappeared***. (intransitive construction only, Modern English)

a´. **Mary* ***disappeared*** *the rabbit*. (causative construction, Modern English)

b. *O laghos* ***exafanistike***.
the:NOM rabbit:NOM disappeared:NACT.3SG
'The rabbit disappeared' (anticausative construction, Modern Greek)

b´. *I Maria* ***exafanise*** *to lagho*.
the:NOM Mary:NOM disappeared:ACT.3SG the:ACC rabbit:ACC
'Maria made the rabbit disappear' (causative construction, Modern Greek)

2.1.2. Null objects

Cross-linguistic differences arise with regard to null objects as well. Some languages allow the object position to remain empty (even in the case of referential interpretation), while for other languages, the presence of a DP or a clitic is

[5] The Auxiliary Selection Hierarchy (Sorace 1995; 2000: 863) is illustrated in (i).
(i) change of location: core unaccusatives [select BE]
change of state
continuation of pre-existing state
existence of state
uncontrolled process
controlled process (motional)
controlled process (non-motional): core unergatives [select HAVE]

[6] On the complex interplay of semantic, syntactic and pragmatic factors that determine argument realization within and across languages, cf. Levin & Rappaport Hovav (1995, 2005), Cennamo (2003), Barðdal (2006, 2008), among others.

[7] Cennamo (1999, 2001) has shown that in the selection of an auxiliary in old Neapolitan and in some contemporary Campanian varieties (as well as in other manifestations of split intransitivity [pleonastic reflexives *se/sibi*]), verbs denoting telic change of state (Neap. *muri* 'die', *nascere* 'be born') seem to realize the core of the category, whereas verbs denoting telic change of location (Neap. *parti* 'leave') are coded as more peripheral and display alternation in the auxiliary selection.

obligatory.[8] Following Tsimpli & Papadopoulou (2006), Hale & Keyser (2002), Cummins & Roberge (2004), Borer (2004), and Pirvulescu & Roberge (2005), we assume that the object position is merged independently of the verbal lexical characteristics; this assumption also has consequences for verbal classes (transitive, unergative, unaccusative).[9] This perspective is based on the fact that in some languages, such as Modern French, transitive verbs can be used intransitively, while unergative intransitive verbs can often be used transitively (Larjavaara 2000; Cummins & Roberge 2004; Pirvulescu & Roberge 2005). Cummins & Roberge (2004)[10] assume the existence of four different types of null objects in French (Table 1):

Reference	referential			non-referential	
Antecedent	reference to antecedent		no reference to antecedent		
Contextual recovery	recovered by clitic *(A: Tu veux ce livre?* *B: Oh! Mais je l'ai déjà* ***lu*** *Ø.* *'A: Do you want this book?* *B: Oh! But I have already* ***read it')***	clitic-drop *(A: Tu veux ce livre?* *B: Oh ! Mais j'ai déjà* ***lu*** *Ø.* *'A: Do you want this book?* *B: *Oh! But I have already* ***read')***	deictic *([A hands a paper to B and says]: Tiens,* ***lis Ø****.* *'Here,* ***read Ø****'.)*	contextual clues present *(Je vais acheter un magazine au kiosque, et je* ***lirai Ø*** *en t'attendant.* *'I'll buy a magazine at the stand, and I'll* ***read Ø*** *while I'm waiting for you.')*	contextual clues absent *(Pendant mon congé sabbatique j'ai surtout l'intention de* ***lire Ø****.* *'During my sabbatical I mainly intend to* ***read Ø****.')*
Syntax	pro		N		
Semantics	φ features of clitic	via antecedent	via deixis	lexical semantics of V	
Pragmatics		I-principle[11] on linguistic context	I-principle on extralinguistic context	I-principle (less stereotype, more context)	I-principle (more stereotype, less context)
TYPES of null objects	*since a clitic is present, we do not name this construction as a null object construction*	*type 1 (referential null object)*	*type 2 (referential but deictic)*	*type 3a (non-referential, less stereotype)*	*type 3b (non-referential, more stereotype)*

Table 1: Null objects typology (based on Cummins & Roberge 2004).

[8] The terms *object drop* and *zero anaphora* have also been used. The term *object drop* implies that an empty category can be found in an argument position, while the term *zero anaphora* refers to a discourse option (cf. Zyzik 2008).

[9] Cf. Borer (2004), who claims that the projection of arguments is independent of the properties of substantive vocabulary items, and Hale & Keyser (2002), who treat denominal unergative verbs as belonging to a transitive VP.

[10] According to Cummins & Roberge, direct object positions are licensed by syntax and receive an interpretation based on verbal semantics.

[11] Cummins & Roberge 2004 propose that the I-principle of Levinson (2000) forces the recipient to amplify the informational content of the utterance s/he hears and to assume the most specific interpretation.

The starting-point of this paper was the claim that alternating unaccusative verbs (i.e., verbs which participate in causative-anticausative alternations) obligatorily express the patient argument (the argument that undergoes the change of state) in all contexts (van Hout 2000; Ritter & Rosen 1998; Rappaport Hovav & Levin 1998). Not all agree with that opinion: counterexamples may show that causative constructions may allow patient arguments to be null (examples 4a-b –but notice that the specific examples (from Goldberg) contain causative constructions but with transitive verbs of change-of-state and not with alternating unaccusative verbs). For this reason, Goldberg (2001, 2005) proposed the "principle of omission under low discourse prominence": omission is available when the patient argument is de-emphasized in the discourse with regard to the action (the action is particularly emphasized).

(4) a. *Tigers only **kill** at night.*
b. *An old broom can **sweep** cleaner*. (Goldberg 2005)

As we observe, however, the alternating unaccusative examples are all used with null objects in generic or habitual contexts, that is, with the third type of the null objects illustrated in table 1, and not with the first or the second type. Hence, although other verbal classes are found with any of the null object types, alternating unaccusatives are never found in a non-generic/habitual context without their patient argument. Specifically, as Rappaport Hovav & Levin (2002) have shown,[12] alternating unaccusatives cannot be used with unspecified objects (example 5a), nor are they found in non-subcategorized DP resultatives (example 5b), nor do they allow *out*-prefixation (example 5c), while the patient argument must be the direct object and not an oblique (example 5d), and alternating unaccusatives cannot be used in alternations in which the direct object is replaced by a DP expressed as an oblique (examples 5e, e′).

(5) a. **Pat **broke/dimmed***.[13]
b. **My kids **broke** me into the poorhouse.*
c. **The two-year old **outbroke** the three-year old.*
d. *Alex **broke** the vase* / **Alex **broke** at the vase.*
e. *Kelly **broke** my arm.*
e′. **Kelly **broke** me on the arm*. (Rappaport Hovav & Levin 2002)

Rappaport Hovav & Levin (2002) argue that this restriction of the use of null objects with alternating unaccusatives is determined by a non-aspectual, lexicalized property, the "change of state" property. The data in (5) pose problems for analyses that assume

[12] This holds for all change-of-state verbs, i.e., not only for alternating unaccusatives (*break*), but also for non-alternating transitives/causatives (*kill*).

[13] A reviewer has mentioned the behavior of verbs such as *break* vs. *continue* (**John broke, John continued*). We think that the difference between them has to do with Goldberg's "principle of omission under low discourse prominence" (omission is available when the patient argument is de-emphasized in the discourse with regard to the action), or, according to our perspective, with our claim that alternating unaccusative examples with null objects can all be used only with deictic (second type of) null objects (*John continued whatever he was doing*) or generic or habitual contexts of null objects, and not with the first type of null objects (i.e., referential null objects). Therefore, although other verbal classes (unergatives) are found with any type of null objects, alternating unaccusatives cannot be found in a non-deictic or non-generic/habitual context without their patient argument (and the lexical semantics of *continue* plays an important role in the availability of the null object construction because this verb can easily appear in deictic or generic/habitual contexts).

aspectual parameters as the only determinants of argument realization, and they support Rappaport Hovav & Levin's (1998) and Hale & Keyser's (1998) approach, according to which "constants[14] typed by ontological category are lexically associated with nonaspectually defined event structures, and these, in turn, constrain argument projection" (Rappaport Hovav & Levin 2002: 279).

2.1.3. Cognate objects

Cognate objects "repeat" the meaning of the verb and have the same stem as the verb (*"They fight a good fight"*). As null objects can turn transitive verbs into intransitive verbs, cognate objects can turn intransitive verbs into transitive verbs (examples 6a, b). Cognate objects have also been at the center of debate because they have been analyzed either (a) as internal arguments governed by a verb (on the basis of a number of syntactic tests: passivization, VP-preposing, ellipsis – Massam 1990; Macfarland 1994, 1995; Hale & Keyser 1997, among others), or (b) as adjuncts, modifying verbal action and not governed (Jones 1988; Zubizarreta 1987; Mittwoch 1998; Bary & de Swart 2005), or (c) as distinguished by two types, adjunct and argument cognate objects[15] (Pereltsvaig 1999a, 1999b, 2001; Nakajima 2006).

(6) a. *John **died** a gruesome **death**.*
b. *Harry **lived** an uneventful **life**.* (Jones 1988: 89)

Analyses of cognate objects as adjuncts take into consideration examples with clear adjuncts of verbs (examples 7a, b; Real-Puigdollers 2008); these cognate objects can appear with all classes of verbs -unergatives, unaccusatives- and even with adjectives.

(7) a. *Ivan **ulybnulsja** ščastlivoj **ulybkoj**.*
Ivan:NOM smiled happy smile:F.INS
'Ivan smiled a happy smile.' (Modern Russian; from Pereltsvaig 1999b: 273)
b. *John **lived** a happy **life**.*

Following Horrocks & Stavrou's (2010) typology of cognate objects (Table 2), we distinguish three types of cognate objects: (a) cognate objects with transitives (transitives can take cognate objects among the direct objects they may be accompanied by); (b) cognate objects in transitivizing cognate object constructions;[16] (c) cognate objects in activity/event-noun (or aspectual) cognate object constructions.[17]

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[14] or *roots* (according to Levin & Rappaport Hovav 2005).

[15] For example, Pereltsvaig (1999a, 1999b) has argued that some languages (such as Russian) may have both argument and adjunct cognate objects.

[16] The criteria proposed by Horrocks & Stavrou (2010: 294) for transitivizing cognate object constructions are the following:
a. passivization: *A song was sung by the revellers*.
b. topicalization: *A lovely song, everyone wanted to sing*.
c. questioning: *What did everyone sing?*
d. plural (quantification): *They sang (all the, some, many...) songs*.
e. optional qualification (indefinite): *They sang a (lovely) song*.
f. optional qualification (definite): *They sang the/this/that (famous) song*.
g. Not necessary strict cognates: *They sang a song, an anthem, an aria, ...*

[17] The criteria proposed by Horrocks & Stavrou (2010: 294) for the activity/event-noun cognate object constructions/aspectual cognate object constructions are the following:
a. passivization: ??*A (winning) smile was smiled by the winner*.

cognate object constructions	with transitive verbs	with intransitive verbs	both with transitives and unergatives
	cognate objects are normal objects: as one of the many possible direct objects	transitivizing cognate object constructions	activity/event-noun cognate object constructions (or aspectual cognate objects)[18]
	*(8) He **drank** his **drinks**.*	*(9) She **sang** her favorite **song**.*	*(10) He **coughed** a sinister **cough**.*

Table 2: Cognate object typology (Horrocks & Stavrou 2010).

It should be noted that both scholars who argue in favor of the analysis of cognate objects as arguments and scholars who argue in favor of an adverbial analysis of cognate objects have used cognate object constructions as a means of testing for split intransitivity (cf. Clary 2007). Keyser & Roeper (1984: 404) and Levin & Rappaport Hovav (1995: 40) have claimed that while unergatives participate in cognate object constructions (example 11), unaccusatives never do (example 12).

(11) *She **laughed** a sad **laugh**.*
(12) **The glass **broke** a crooked **break**.* (Levin & Rappaport Hovav 1995: 40)

Hence, Keyser & Roeper (1984), Larson (1988), Massam (1990), Levin & Rappaport Hovav (1995), Macfarland (1995), and Miyamoto (1999) have supported a restriction on the cognate object construction, according to which only unergatives can take cognate objects. This idea follows Burzio's generalization (Burzio 1986) assuming that unergative verbs can assign the accusative case to an object, while unaccusative verbs cannot assign the accusative case to complements.

On the other hand, Kuno & Takami (2004: 116), on the basis of examples of cognate object constructions with unaccusatives (*fall*, *drop*, *die*, etc.; examples 13a-d), questioned the validity of "unergativity restriction" (only unergative intransitives can take a cognate object).

(13) a. *The tree **grew** a century's **growth** within only ten years*.
b. *The apples **fell** just a short **fall** to the lower deck, and so were not too badly bruised.*
c. *The stock market **slid** a surprising 2% **slide** today*.
d. *The general **died** the **death** of a hero*. (Kuno & Takami 2004)

b. topicalization: **A (winning) smile, no one smiled*.
c. questioning: **What did she smile?*
d. plural (quantification): ?*She smiled (all the, some, many...) smiles*.
e. quantification preferred: ?*She smiled a smile* (cf. *a winning smile*).

[18] Following Horrocks & Stavrou (2010), we call Mittwoch's (1998) 'proper' cognate object constructions and Kearns's (1988/2002) 'true light verbs' as 'activity/event-noun cognate object constructions'. The complement of an 'activity/event-noun cognate' is an event nominal (*give a groan*), and the verb and its object share the same agent.

According to Kuno and Takami (2004), it is not unaccusative verbs but telic verbs[19] that do not participate in cognate object constructions.[20] However, even if we accept their claim, some counterexamples still exist. First, the telic verb *die* frequently takes a cognate object. Kuno & Takami (2004: 123-126) try to give a historical solution to their problem with the verb *die*: they observe that in Middle English, the noun *death* was used with prepositions (describing only the manner in which one died); in Modern English, we observe the loss of the preposition with the result that the verb *die* occurs with cognate objects similarly to other verbs that participate in cognate object constructions. With regard to the fact that not all atelic unaccusatives[21] participate in cognate object constructions, Kuno & Takami add more factors that may influence the availability of a cognate object construction: for example, the existence of a rival transitive use (**He descended a fast descent - He descended the hill*).

Larson (1988: 386-387) and Macfarland (1995), however, argue that the verb *die* is not an unaccusative but an unergative verb; Larson simply claims that *die* is an unergative verb (because it appears with cognate objects), but Macfarland uses syntactic tests to prove this conclusion. The first test is that unergative verbs do not form adjectival passives (*a *run* man), while unaccusative verbs do (*wilted* lettuce; Levin & Rappaport Hovav 1988). Since *die* does not form an adjectival passive (*a *died* knight), it must be an unergative verb. The second syntactic test is that unergative verbs are compatible with the *way*-construction (e.g., John *yelled* his way down the street; Marantz [1992]), while this is not the case with unaccusative verbs (e.g., *The window *opened* its way into the room). Since *die* appears in the *way* construction (e.g., You could *die* your *way* out of it), Macfarland (1995: 197) concludes that it is an unergative verb.[22]

Furthermore, even if cognate objects appear with (atelic) unaccusative verbs, they seem to be always in an adverbial position and do not behave as internal arguments. Nakajima (2006) has shown that the cognate objects -as well as the extent DPs- with unaccusatives cannot be passivized (examples 14a-c) and contrast with argument-like objects that can be passivized (examples 15a-c).[23]

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[19] Levin & Rappaport Hovav (1995: 172) first argued that there are two classes of unaccusatives that are not telic but atelic: degree achievement verbs (*cool, widen)*, and atelic inherently directed motion verbs (*rise, fall*). Kuno & Takami claim that cognate objects are found exactly with atelic unaccusatives.

[20] Kuno & Takami (2004: 121) propose the Functional Constraint on the Cognate Object Construction: "In the cognate object construction, the cognate object (the whole NP) must represent a specific state or event that is a subset of the possible states/events resulting of the action represented by the verb". Finally, Kuno & Takami add one more restriction to that constraint (2004: 125): "the speaker's specific reference to the state or event represented by the cognate object must be either conventionally or contextually justifiable".

[21] Cf. fn. 19. According to Levin & Rappaport Hovav (1995), there are two classes of unaccusatives that are atelic (degree achievement verbs [e.g., *cool*] and atelic inherently directed motion verbs [e.g., *rise*]).

[22] For Kuno & Takami (2004: 113), these syntactic tests do not work: "there are unaccusative verbs that are not compatible with the formation of adjectival passives [...] (e.g., **never-existed dragons*, **a suddenly come guest*) and conversely, there are unaccusative verbs that are compatible with the *way*-construction [...] (*The avalanche rolled its way into the valley / Rainwater trickles its way to the underground pool*)".

[23] Iwasaki (2007: 12) has also argued in favor of the distinction that unergatives participate in cognate object constructions with internal arguments, while unaccusatives participate in adjunctive cognate object constructions.

(14) a. **A century's **growth** was **grown** within only ten years by the tree trunk.*
b. **The largest **drop** in three years was **dropped** by the stock market today.*
c. **A funny little **bounce** was **bounced** right into the shortstop's glove by the ball.* (Nakajima 2006)

(15) a. *A sound **sleep** was **slept** by the baby.*
b. *A good **life** was **lived** by Susan.*
c. *The same **dream** was repeatedly **dreamed** by Mary.* (Nakajima 2006)

Another obvious difference mentioned by Nakajima (2006) between the cognate objects with unaccusatives and the argumental cognate objects is the formation of *wh*-questions; according to Nakajima (2006), while the argumental cognate objects can be questioned by the nominal *what kind of* (example 16a), cognate objects with unaccusatives can only take the adverbial *how much* or *how far*; example 16b).

(16) a. ***What kind of sleep** did the baby **sleep**?*
b. ***{How much/How far/*What kind of growth}** did the tree **grow** in ten years?* (Nakajima 2006)

The presence of an adverbial class of cognate objects is consistent with Pereltsvaig's (1999b, 2001) claim (for Russian, Hebrew, and Vietnamese) and Horrocks & Stavrou's (2010) analysis (of Greek, English, and Hebrew).[24] Hence, following Nakajima (2006), Pereltsvaig (1999b, 2001), and Horrocks & Stavrou (2010), we assume that only unergatives select cognate objects with a resultative interpretation; unaccusatives select cognate objects only with adverbial meanings.

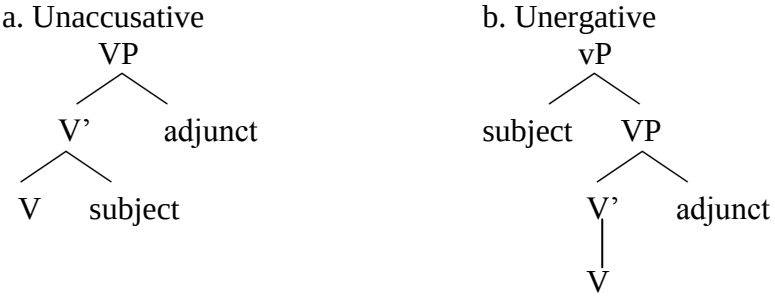


Figure 1. Positions of cognate adjuncts with unaccusatives and unergatives; Nakajima (2006: 678).

The question that arises now is why some unaccusatives can take adverbial cognate objects, while others cannot. We shall see (in section 2.2.2) that cognate nouns appear not only with verbs but also with some adjectives in Ancient Greek; the morphological case of these cognate nouns is accusative in both instances.[25] Similarly, the adverbial cognate objects with unaccusatives in English (as well as the object-like extent DPs) have been supposed to bear the accusative Case on the basis of

[24] The evidence of the existence of adverbial cognate objects in English (given by Nakajima 2006) modifies Pereltsvaig's (1999b, 2001) analysis that although Russian, Vietnamese, and Hebrew have argumental and adverbial cognate objects, English has only argumental cognate objects, and supports the perspective of the possibility of existence of that distinction between argument and adverbial cognate objects *in any language*.

[25] Cognate objects in the dative case and adverbial datives with adjectives replace accusative cognate objects in this (adverbial) role in Hellenistic (Koine) Greek.

the fact that the cognate objects are accompanied by the preposition *of*[26] in the nominalization of the verbs (Nakajima 2006; examples 17a, b). It seems, then, that some (not all) unaccusatives, similarly to some adjectives in the period of Ancient Greek, can take an adverbial in the accusative case.

(17) a. *The tree's growth of a century's growth in only ten years (surprised me*).
b. *The stock market's drop of its largest drop in three years (was a shock to me*) (Nakajima 2006)

2.2. The Greek data

2.2.1. Null objects and alternating unaccusatives in Greek

Direct objects with specific interpretation (referential objects, type 1 in Table 1) are overt and realized either as an object clitic or as a full DP in Modern Greek (Tsimpli 1999; Tsimpli & Papadopoulou 2006). Roussou & Tsimpli (2006) associate the extensive use of object clitics in Modern Greek with Transitivity (grammaticalized as a case on a Clitic Position). On the other hand, the omission of direct objects with a non-specific reference and an indefinite antecedent or no antecedent (type 2 and 3a, b in Table 1) is grammatical in Modern Greek (Giannakidou & Merchant 1997; Panagiotidis 2003; Tsimpli & Papadopoulou 2006).

Ancient Greek data[27] support a discontinuity analysis for the development of null objects.[28] In Ancient Greek,[29] examples with the omission of referential direct objects (type 1 in Table 1) are attested (Smyth 1956: 303; van der Wurff 1997; Luraghi 1997, 1998a, b, 2003, 2004). Luraghi has shown that in Ancient Greek, there are syntactic environments that trigger object omission, and has argued in favor of a communicative difference between null objects and clitics. Hence, as shown in example (18) (from Luraghi 2003), Classical Greek appears to have fewer restrictions in allowing null objects than Modern Greek.

(18) *empimplàs* *hapántōn* *tèn* *gnṓmēn* ***apépempe***
satisfy:PTCP.NOM all:GEN the:ACC expectation:ACC dismissed:3SG
'Having satisfied the expectations of all, he dismissed them.' (Xenophon, Anabasis 1.7.8; 5-4 BC) (Luraghi 2003)

[26] The preposition *of* is analyzed as the realization of the accusative Case in nominalizations.

[27] The data set (for both null and cognate object constructions) is mainly based on published discussions by the author (Lavidas 2009, to appear) of other relevant phenomena in the area of transitivity, and it is supplemented by examples quoted from other scholars (among others, Smyth 1956, van der Wurff 1997, Luraghi 1997, 1998a, b, 2003, 2004) and by data collected from the online version of the Thesaurus Linguae Graecae (TLG): *http://www.tlg.uci.edu/*. The generalizations (wherever stated) are based on the following grammars of Greek: Goodwin (1894 [1978]), Jannaris (1897/1968), Kühner & Gerth ([1898-1904]/1963), Gildersleeve (1900), Stahl (1907), Smyth (1956), Meillet & Vendryes (1924), Humbert (1945), Schwyzer & Debrunner (1950).

[28] On null arguments in Latin and changes that took place in the licensing of null and overt arguments as Latin developed into the Romance languages, cf. also Vincent (2000).

[29] Data and generalizations from the following periods are discussed: Ancient Greek (8BC – 4BC; Homeric Greek: 8BC, Classical Greek: 5BC – 4BC), Hellenistic-Roman Greek (3BC – AD4), Medieval Greek (AD5 – AD15).

Homeric Greek appears[30] to allow null objects in more cases (examples 19a-b) than Classical Greek and (especially) than the subsequent periods (Hellenistic, Medieval Greek or Modern Greek; example 19c, where omission of the direct object is not possible anymore). This means that Classical Greek seems to be an intermediate stage (between Homeric and Hellenistic) with regard to null objects.

(19) Homeric Greek (Luraghi 2003)

a. *autàr égōge speúsomai eis Akhilêa, hín' otrúnō* ***polemízein***
but I:NOM hasten:FUT.1SG to Achilles that urge:1SG war:INF
'But I will hasten to Achilles, that I may urge him on to do battle.' (Homer, Iliad, 15, 401-402; 8 BC)

b. *histía mèn steílanto,* ***thésan*** *d' en nēì melaínēi*
sail:ACC PTC furled:3PL stowed:3PL PTC in ship:DAT black:DAT
'They furled the sail, and stowed it in the black ship.' (Homer, Iliad, 1, 433; 8 BC)

Hellenistic Greek

c. *kaì prosḗnegka autòn toîs mathētaîs sou, kaì ouk ēdunḗthēsan* ***autòn therapeûsai.***
and took:1SG him the:DAT pupils:DAT your and not could:3PL him heal:INF
'I took him to your pupils, and they could not heal him.' (New Testament, Matthew, 17, 16; AD 1)

Not all verbal classes can drop their object in a similar way, and alternating unaccusative[31] verbs meet more restrictions in omitting their object even in Homeric or Classical Greek (cf. Kiparsky 1997; Rappaport Hovav & Levin 1998; Lemmens 2006 – contra Goldberg 2001). As we have observed (section 2.1.2), Goldberg (2001) has argued that alternating unaccusative verbs are sometimes found in causative constructions with unspecified objects or in resultatives with non-subcategorized DPs. However, this happens with alternating unaccusative verbs only in generic causative contexts (Rappaport Hovav & Levin 2002), i.e., only in one of the three types of null objects (type 3a, Table 1), and actually in the most freely used type of null objects because these null objects are constantly found in all periods of the Greek

[30] The generalization is based on the following grammars of Greek: Goodwin (1894 [1978]), Jannaris (1897/1968), Kühner & Gerth ([1898-1904]/1963), Stahl (1907), Smyth (1956), Humbert (1945), Schwyzer & Debrunner (1950). A statistical comparison and analysis of the relevant periods is open to future research.

[31] On the characteristics of unaccusatives and unergatives in Greek, see Markantonatou (1992), Sioupi (1997), Alexiadou & Anagnostopoulou (1999a, b), Theophanopoulou-Kontou (1999, 2003), Lavidas (2009). Markantonatou (1992) and Alexiadou & Anagnostopoulou (1999a) have attempted to define the criteria that distinguish Modern Greek intransitives into unergatives and unaccusatives because the majority of the criteria used cross-linguistically cannot be applied to Modern Greek (all intransitives in Modern Greek take the verb 'have' as auxiliary; Modern Greek does not have resultative and impersonal passive structures). According to Markantonatou and Alexiadou & Anagnostopoulou, unaccusatives but not unergatives in Modern Greek form adjectival participles: *pezmeno filo / fall:NACT.PTCP leaf / 'fallen leaf' vs *treghmenos anthropos / run:NACT.PTCP human / 'a person who has run a lot'*. Furthermore, unaccusatives in the past tenses –when the subject exhibits something countable– do not allow the presence of a progressive adverbial (and atelic interpretation): **o Thiseas eftane epi meres stin Athina / the:NOM Theseus:NOM arrive:ACT.PST.IPFV.3SG for days in Athens / '*Theseus was arriving for days in Athens'*.

diachrony;[32] the other verbal classes can appear with null objects of type 2 in Modern and Ancient Greek or with null objects of type 1 (referential null objects) in Ancient Greek (where this type of null object is available). Hence alternating unaccusative verbs appear to be a special case with regard to the null object distribution. It is important to note that the unavailability of null objects with alternating unaccusatives also holds for periods of Greek when alternating unaccusatives had a different structure (Lavidas 2009). Null objects cannot be found in causative constructions of alternating unaccusatives either in Classical Greek, when alternating unaccusatives (in the anticausative construction) productively bore nonactive voice morphology, or from the Hellenistic period onwards, when alternating unaccusatives bore active voice morphology both in causative and anticausative constructions. This means that null objects are not possible with alternating unaccusatives in the diachrony of Greek irrespective of the structure and voice morphology of the alternating unaccusatives. Alternating unaccusatives in Ancient Greek constantly bear nonactive voice morphology in anticausative constructions due to the presence higher than *v* of *Voice[-agent]* (example 20); Voice has the feature [-agent] because only the presence of a *'by'*-Phrase denoting a cause or instrument, but not an agent, is possible.

(20) Alternating unaccusatives in Ancient Greek: nonactive voice morphology in anticausative constructions

eksēránthē *pedíon*
dried:NACT.3SG field:NOM
'The field dried.' (Homer, Iliad, 21, 345; 8 BC)

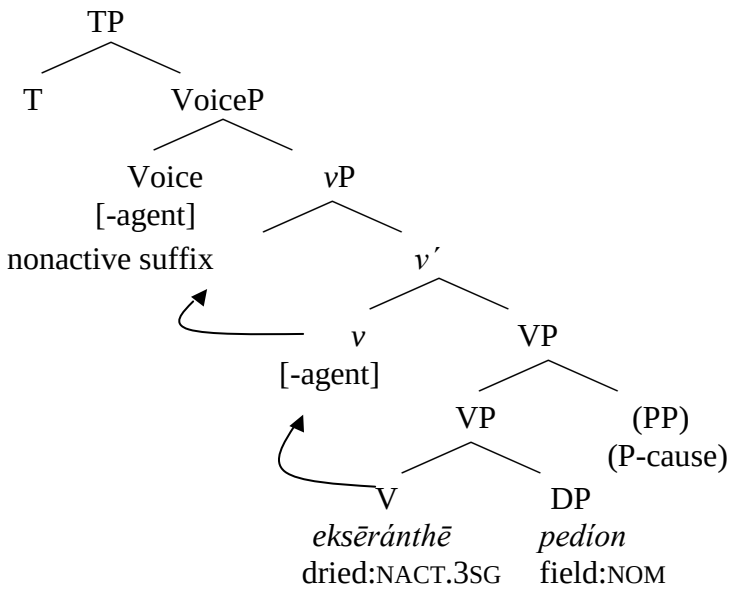


Figure 2. The structure of Ancient Greek nonactive anticausative constructions

[32] Cf. Jannaris (1897/1968), Kühner & Gerth ([1898-1904]/1963), Smyth (1956), Schwyzer & Debrunner (1950), Luraghi (1997, 1998a, b, 2003, 2004), van der Wurff (1997), Lavidas (2009).

(21) Alternating unaccusatives in Ancient Greek: active voice morphology in causative constructions

mékhri *hoû* ***ksēránas*** *tḕn* *diṓrukha*
until when drained:ACT.PTCP.NOM the:ACC canal:ACC
'At length he drained the canal (and diverted the water).' (Thucydides, 1, 109; 5 BC)

Despite a whole range of changes affecting alternating unaccusatives starting in Hellenistic-Roman Greek and ending in Medieval Greek (absorption of the accusative by the nonactive voice morphology, predominance of nonactive passives and active anticausatives), null objects are not possible with alternating unaccusatives in Modern Greek. The structure (Figure 3) of anticausatives in Medieval and Modern Greek does not include Voice; the absence of Voice causes the anticausatives to systematically bear active voice morphology in Modern Greek.

(22) Alternating unaccusatives in Medieval and Modern Greek: active voice morphology in anticausative constructions

etromaksen *o* *kozmos* *dhia* *tuto*
scared:ACT.3SG the:NOM people:NOM from that
'People were scared because of that.'

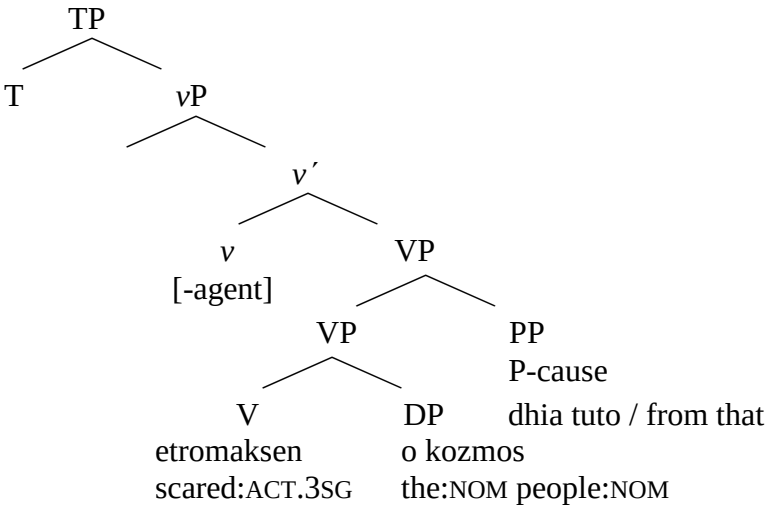


Figure 3. The structure of Medieval and Modern Greek active anticausative constructions

(23) Alternating unaccusatives in Medieval and Modern Greek: active in causative constructions

o *Janis* ***tromakse*** *to* *filo* *tu*
the:NOM Janis:NOM scared:ACT.3SG the:ACC friend:ACC his
'Janis scared his friend.'

The stable unavailability of null objects in causative constructions of alternating unaccusative verbs goes hand in hand with the other stable characteristics of alternating unaccusative verbs, distinguishing them again from the transitive (non-causative) and the unergative verbs. Alternating unaccusatives in causative constructions have a stable syntactic behavior, they consistently require direct objects only in the accusative, and case alternation is not possible with them, while

transitive[33] and unergative verbs exhibit instability in their argument structure (changes from transitive to intransitive verbs and vice versa are attested, see Lavidas 2009 for more details) and their case requirements (object/case alternation between the accusative and other cases [and/or PPs] are very productive, especially in Ancient Greek). With transitives, from the Ptolemaic era onwards, the use of the accusative case increases, and there are many examples of case alternation between the 'new' accusative and the dative or the 'new' accusative and the genitive. Hence, this case alternation in Hellenistic-Roman Koine also constitutes a significant difference between the transitives (examples 24a, b) and the alternating unaccusatives that only take a DP in the accusative as their complement.

(24) a. *akoúō* *phōnḗn* / *phōnês*
hear:ACT.1SG voice:ACC / voice:GEN
b. *geúomai* *sumpósion* / *sumposíou*
enjoy:NACT.1SG symposium:ACC / symposium:GEN

This alternation in the case requirements of transitive (non-causative) verbs (genitive/dative/PP) strengthened the process of replacement of the dative and the genitive case by the accusative case. Spread of the accusative instead of the dative and the genitive can also be observed in the texts of Polybius (Krebs 1882; de Foucault 1972: 103-105), while the replacement of the dative by the accusative is frequent in the New Testament for the objects of verbs meaning 'disapproval, hate, promise' (Humbert 1930; Mihevc-Gabrovec 1960: 20-24; Jannaris 1897/1968: 341-347). In Koine of the Roman period, the accusative is used as (a) the default case with transitive verbs not only for direct objects but also instead of oblique cases, and (b) the default case assigned by prepositions. Moreover, the adverbial use of the accusative case is extended, and the distinction between the location meaning of the dative and the directional meaning of the accusative gradually leads to its abandonment in favor of the accusative.

With regard to voice morphology, alternating unaccusatives bear active morphology in their causative use in all periods of Greek, in contrast to transitives and unergatives, which show instability[34] in this respect. Even in Ancient Greek, when the use of nonactive (mediopassive) endings with transitives for the expression of personal interest of the subject for the verbal action (auto-benefactive meaning) was productive (and when alternating unaccusative verbs obligatorily bore nonactive morphology in anticausative constructions; examples 25a-e), nonactive alternating unaccusatives in causative constructions were not attested.

[33] All transitives except for causative transitives (transitives which denote change-of-state, e.g., *kill*) are included in this description; for more details, see Lavidas (2009). Causative transitives share the same characteristics as alternating unaccusatives with regard to synchronic and diachronic stability in the obligatory accusative case of their direct objects and the unavailability of case alternations.

[34] Labile verbs are a later development in Greek in contrast to English, for example. Van Gelderen (2010) argues that Old English already had quite a number of labile verbs, and, using an expanded VP shell, she shows how the loss of the morphological marking of causatives and transitives affected the argument structure of verbs.

(25) Ancient Greek alternating unaccusatives:

in anticausative constructions	in causative constructions	
a. *phúomai*	*phúō*	'to grow/produce'
b. *tréphomai*	*tréphō*	'to grow/increase'
c. *sḗpomai*	*sḗpō*	'to rot/moulder'
d. *tḗkomai*	*tḗkō*	'to melt/be dissolved/melt away'
e. *rhḗgnumai*	*rhḗgnumi*	'to break/burst'

We assume that causative and anticausative uses of alternating unaccusatives are connected to each other through a common complex (causative) template (and syntactically with the presence of *v* in both causative and anticausative constructions; Lavidas 2009),[35] and that this common (causative) template can be the basis of the obligatory presence of the patient in causative uses of alternating unaccusatives.

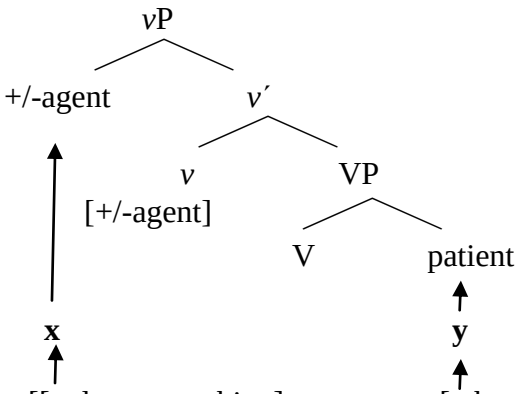


Figure 4. Causative template for both causative and anticausative uses of alternating unaccusatives; Lavidas 2009).

Lexical semantic representation	[[x does something] causes [y becomes *CLOSED*]]	
Mapping rules	↓	↓
Argument structure	Ø	<y>

Figure 5. Lexical semantic representation of anticausative constructions (based on Levin & Rappaport Hovav 1995).

In causative constructions, both arguments appear: the agent (or cause or instrument) in the [Spec, *v*P] position and the patient in [Compl, VP]. In anticausative constructions, the agent is lexically bound (according to the analysis of Levin & Rappaport Hovav 1995). The result of the lexical binding of the agent is that the patient argument is the subject of the intransitive structure (after movement [internal merge] to the subject position, [Spec, *v*P]). Hence it is reasonable to assume that if the

[35] In Lavidas (2009), we have shown that causativizations and instability in the voice morphology of anticausatives can strengthen the idea of a basic causative schema both for causative and anticausative constructions. That both constructions (causative and anticausative) are lexically derived from a common causative template is apparent from the strong tendency of intransitives (of change-of-state) to causativize (i.e., the corresponding causative construction appears in a later period) in the history of many languages and from the absence of sub-groups (based on voice morphology) of verbs that participate in anticausative constructions in the different periods of the history of Greek.

patient remains null with alternating unaccusatives, the result will be an unresolved ambiguity between causative and anticausative interpretation.[36]

2.2.2. Cognate objects and unaccusatives in Greek

Similarly to null objects, cognate objects show no continuity in the history of Greek. If we compare the diachrony of cognate objects with the diachrony of null objects in Greek, the direction of the changes seems to be the same: in Modern Greek, the verbs that participate in transitivizing cognate object constructions have been reduced compared with Ancient Greek (see Horrocks & Stavrou 2010 for a detailed analysis of cognate objects in Greek; in this paper, we will concentrate only on the (un)availability of the combination of cognate objects and unaccusatives). It should be noted, however, that even in early Ancient Greek, aspectual restrictions on the use of cognate objects can be found. Clary (2007) has shown that perfect verbal forms never take cognate objects in Homeric Greek and that the loss of this restriction happens after 460 BC. In Table 3, provided by Clary (2007), we can observe that it is the cognate objects in the accusative (and not the cognate objects in the dative that have a clear adverbial use) that are unavailable with perfect verbal forms in Homeric Greek.

	Future	Present	Imperfect	Aorist	Perfect	Pluperfect	Total
nominative cognate object	1	28	18	21	3	1	75
accusative cognate object	*18*	*70*	*26*	*124*	*0*	*0*	*238*
dative cognate object	2	8	6	31	5	1	53
genitive cognate objects	0	1	0	0	1	0	2

Table 3: Tenses and cognate object constructions in Homeric Greek; Clary (2007), based on Fehling (1969).

The restriction of the combination of perfect verbal forms with cognate objects in the accusative is lost after Aeschylus.[37] As a result, in Classical Greek, unrestricted use of cognate objects in the accusative is available. Bary & de Swart (2005) compare Latin and Ancient Greek and argue that cognate accusatives that can accompany not only verbs but also adjectives should not be analyzed as direct objects but as predicate modifiers. Their analysis is close to Nakajima's approach – with a difference being that Bary & de Swart place emphasis only on the adverbial use of cognate objects and

[36] Cf. Fotiadou & Tsimpli (2010), who experimentally show that in Modern Greek, the transitive option is dispreferred for alternating anticausatives with one argument and that null objects are not easily accessible with anticausatives.

[37] Aeschylus uses perfect tenses with cognate objects in the accusative. In the following example, it is worth noting that the verb bears nonactive (mediopassive) morphology (see below in the same section for more on that characteristic of Ancient Greek verbs).

(1) *ṓmoi péplēgmai kairían plēgèn ésō*
alas strike:NACT.PRF.1SG mortal:ACC strike:ACC deep
'Alas! I am struck deep with a mortal blow.' (Aeschylus, Agamemnon, 1343; 6-5 BC)

not on both the argumental and the adverbial characteristics of cognate objects in Ancient Greek. The possibility of passivization of the cognate objects in Ancient Greek constitutes an argument against the assumption that cognate accusatives in Ancient Greek are only adverbials (examples 26a, b, from Horrocks & Stavrou 2010).

(26) a. *kaì nunì meízona* ***kíndunon*** *hē ...* *boulè* ***kinduneúei***
and now greater:ACC risk:ACC the:NOM Council:NOM risk:ACT.3SG
'And now the Council is taking a greater risk.' (Dinarchus, In Aristogitonem, 1, 7; 4-3 BC)

b. *skopeîn ...* *mè ouk en tôi Karì ho* ***kíndunos kinduneúētai***
look-out:INF ... that NEG in the Carian the:NOM risk:NOM risk:NACT.3SG
'To take care that the risk is not taken in the person of the Carian slave.' (Plato, Laches, 187b1; 5-4 BC) (Horrocks & Stavrou 2010)

As we can see in (27) (examples 27a-c: from Smyth 1956: 355-357; examples 27d-e: from Goodwin 1894 [1978]: 223-225; examples 27f-g: from Andriotis 1937) examples of cognate objects with unergatives and transitives are attested in Ancient Greek. Unergatives and transitives (with an auto-benefactive interpretation) of Ancient Greek can be found in nonactive (mediopassive) voice morphology, but that does not prevent these verbs (nonactive unergatives and transitives) from appearing with a cognate object (examples 28a-d: from Smyth 1956 and examples 28e-g: from Andriotis 1937).

(27) a. *pollèn* ***phluarían*** ***phluaroûnta***
much:ACC nonsense-talk:ACC talk-nonsense:ACT.PTCP.ACC
'talking much nonsense' (Plato, Apologia, 19c;5-4BC)

b. *tèn en Salamîni* ***naumakhían naumakhḗsantes***
the:ACC in Salamis:DAT sea-fight:ACC fight:ACT.PTCP.NOM
'fighting in the sea-fight at Salamis' (Demosthenes, Against Neaera, 59, 97; 4BC)

c. ***paideían*** *autoùs* ***epaídeuse***
lesson:ACC they:ACC taught:ACT.3SG
'(The war) taught them a lesson.' (Aeschines, Against Ctesiphon, 3, 148; 4BC)

d. ***peseîn***... ***ptṓmata***
fell:ACT.INF falls:ACC
'to have suffered (to fall) misfortune (falls)' (Aeschylus, Prometheus Bound, 919; 6-5 BC)

e. ***douleían***... ***douleûsai***
slavery:ACC be-slave:ACT.INF
'to be subject to slavery' (Plato, Laws, 3, 698c; 5-4BC)

f. ***noseî*** *mèn* ***nóson*** *agrían*
be-ill:ACT.3SG PTC wound:ACC savage:ACC
'He is afflicted with a savage wound.' (Sophocles, Philoctetes, 173; 5 BC)

g. ***ēutúkhēsan*** *toûto tò* ***eutúkhēma***
succeeded:ACT.3PL this:ACC the:ACC happiness:ACC
'They have gained this success.' (Xenophon, Anabasis, 6, 3, 6; 5-4 BC)

(28) a. *pásas* ***hēdonàs*** ***hḗdesthai***
all:ACC enjoyments:ACC enjoy:NACT.INF
'to enjoy all pleasures' (Plato, Philebus, 63a; 5-4 BC)
b. *Mélētós* *me* ***egrápsato*** *tèn* ***graphèn*** *taútēn*
Meletus:NOM I:ACC wrote:NACT.3SG the:ACC writing:ACC that:ACC
'Meletus brought this accusation against me.' (Plato, Apology, 19b; 5-4 BC)
c. *pâsan* ***therapeían...*** ***therapeuómenos***
all:ACC service:ACC pay-service:NACT.PTCP.NOM
'receiving every manner of service' (Plato, Phaedrus, 255a; 5-4BC)
d. ***agôna*** ***agōnízesthai***
contest:ACC contend:NACT.INF
'to undergo a contest' (Plato, Alcibiades, 1, 120b; 5-4BC)
e. ***strophàs*** ***stréphesthai***
turnings:ACC twist:NACT.INF
'to try every dodge' (Plato, Republic, 405c; 5-4 BC)
f. *állēn* ***lúpēn*** ***lupêtai***
other:ACC sadness:ACC become-sad:NACT.3SG
'He becomes sad again.' (Plato, Phaedo, 85a; 5-4 BC)
g. ***epimeloûntai*** *pâsan* ***epiméleian***
care:NACT.3PL all:ACC care:ACC
'They take the utmost care.' (Plato, Protagoras, 325c; 5-4 BC)

The fact that the relevant examples include unergatives (and transitives) and not unaccusatives is evident from (a) the passivization examples from the same period (examples 29a-c; Smyth 1956: 363); (b) examples with "accusatives of result" from the same period (examples 30a-e; Smyth 1956: 357), that is, examples that show the use of unergative verbs that are accompanied with DPs in the accusative to express an "unaccusative" (i.e., resultative) interpretation (cf. Levin & Rappaport Hovav 1995, 2005); this use (unergative + accusative of result) is ungrammatical in Modern Greek, something that causes the more restrictive appearance of cognate objects in Modern Greek.

(29) a. ***pólemos...*** ***epolemeîto***
fight:NOM fought:NACT.3SG
'War was waged.' (Xenophon, Hellenica, 4, 8, 1; 5-4BC)
b. *hē* ***krísis*** *hèn* ***ekríthē***
the:NOM judgment:NOM which:ACC judged:NACT.3SG
'The sentence that was pronounced upon him.' (Lysias, Against Agoratus, 13, 50; 5-4BC)
c. *ho* ***kíndunos*** ***kinduneúētai***
the:NOM risk:NOM risk:NACT.3SG
'The risk is run.' (Plato, Laches, 187b; 5-4BC)

(30) a. ***hélkos ...*** ***oútasen***
wound:ACC smote:ACT.3SG
'(He) smote (and thus made) a wound.' (Homer, Iliad, 5, 361; 8 BC)
b. ***oulḗn ...*** ***élase***
scar:ACC inflicted:ACT.3SG
'A scar, (that a pig) inflicted (on him).' (Homer, Odyssey, 23, 74; 8 BC)

c. ***presbeusántōn*** *tèn* ***eirḗnēn***
negotiate:ACT.PTCP.GEN the:ACC peace:ACC
'(The diplomatists who) negotiated the peace.' (Demosthenes, On the False Embassy, 19, 134; 4 BC)

d. *se* *Thêbaí* *g'* *ouk* ***epaídeusan*** ***kakón***...
you:ACC Thebes:NOM PTC NEG trained:ACT.3PL evil:ACC
'Yet it was not Thebes that trained you to be evil.' (Sophocles, Oedipus at Colonus 919; 5 BC)

e. ***epoikodomḗsantes*** *dè* *autò* *hoi* *Athēnaîoi* ***hupsēlóteron***
raise:ACT.PTCP.NOM PTC it:ACC the:NOM Athenians:NOM higher:ACC
'The Athenians now built their wall higher.' (Thucydides, 7, 4; 5 BC)

Ancient Greek unergatives and transitives can take objects that are cognate objects in a wider sense, i.e., they are not morphologically, but semantically cognate objects (examples 31a-c). This is again a characteristic that is relevant to the behavior of unergatives (and transitives) and not to unaccusatives. Finally, an attributive word is usually necessary, but not always, and especially not in Homeric Greek. According to Smyth (1956), the attribute is omitted in Homeric Greek (and even in Classical Greek) when the meaning of the DP is specialized (example 32a), when the noun is restricted by an article (example 32b), when a plural DP denotes repeated occurrences (example 32c), or when the DP without an attribute provides a more emphatic form of statement (example 32d). The DP may also be omitted, leaving only the adjective (example 32e).

(31) a. *tòn* *hieròn* *kaloúmenon* ***pólemon*** ***estráteusan***
the:ACC sacred:ACC called:ACC war:ACC waged:ACT.3PL
'They waged what is called the Sacred War.'

b. ***ēsthénēsen*** *taútēn* *tèn* ***nóson***
fell-ill:ACT.3SG hat:ACC the:ACC disease:ACC
'He fell ill of this disease.'

c. *anthrṓpou* ***phúsin*** ***blastὸn***
man:GEN nature:ACC born:ACT.PTCP.NOM
'born to man's estate' (Smyth 1956)

(32) a. ***phóron*** ***phérein***
payment:ACC pay:ACT.INF
'to pay tribute'

b. *tèn* ***pompὲn*** ***pémpein***
the:ACC procession:ACC proceed:ACT.INF
'to conduct the procession'

c. ***etriērárkhēse*** ***triērarkhías***
was-trierarch:ACT.3SG triremes:ACC
'He performed the duty of trierarch.'

d. ***húbrin*** ***hubrízein***
insult:ACC insult:ACT.INF
'to insult grievously'

e. ***paîson*** ***diplên*** *(plēgḗn)*
strike:ACT.IMP.2SG double:ACC (strike:ACC)
'strike twice (a double blow)' (Smyth 1956)

The class of verbs that participate in transitivizing object constructions is large in Ancient Greek, but there is an important reduction of them in Modern Greek. Horrocks & Stavrou (2010) consider this change to be a result of an assimilation of verbs such as 'sing' and 'dance' to normal transitivity because in Modern Greek, they allow a wider range of different objects. With regard to intransitivity split, Horrocks & Stavrou assume that any subclass of verb (unergatives, transitives, and even unaccusatives) may take a transitivizing cognate object. The unaccusative example they mention includes the verb *píptō 'fall'* (example 33).

(33) *hōs ei palaistheìs* ***ptôma*** *thanásimon* ***pesêi***
as if wrestle:NACT.PTCP.NOM fall:ACC deadly:ACC fall:NACT.FUT.2SG
'If you fall dead in the struggle.' (Euripides, Electra, 686; 5 BC)

We believe that the above example shares similarities with the unergative examples of Modern English, i.e., it presents a shift of aspectual character with regard to the corresponding unergative (*?She smiled a smile - She smiled a (winning) smile*). According to Horrocks & Stavrou, this aspectual function is only relevant to unergatives in Modern English (hence cognate objects do not occur with other verbal classes). We assume that the Ancient Greek examples are also examples of unergative and not unaccusative constructions because their combination with a cognate object has, as a result, a resultative meaning. This means that we have a case of (syntactic) "unergativization"[38] of an unaccusative verb. According to Mendikoetxea (2006), there are two alternative ways of accounting for unaccusativization (and, according to us, "unergativization" as well): (a) a syntactic (constructionist) approach, and (b) a lexical-semantic (projectionist) approach. The syntactic approach (Hoekstra & Mulder 1990, Mateu 2002, Borer 1994, 2005) argues that certain verbs listed as unaccusative/unergative in the lexicon appear in constructions associated with unergative/unaccusative verbs in the syntax.[39] In the case of a (syntactic) "unergativization", the activity component is emphasized and the change component is secondary. This is the reason why the LSJ Dictionary, for example, includes so many different meanings for *píptō*, one of them being '*(when intentional) cast oneself down*':

Interpretations of ***píptō*** in LSJ
A. Radical sense, *fall down*, and (when intentional) *cast oneself down*
[...][40]
B. Special usages:
I. [...] *fall violently upon, attack,* [...]
2. *throw oneself down, fall down,* [...]
II. *fall* in battle, [...]

[38] By "syntactic unergativization", we mean the use of an unaccusative verb in an unergative syntactic structure.

[39] The lexical-semantic approach (Levin & Rappaport Hovav 1995), on the other hand, claims that the different interpretations have different lexical-semantic representations in the lexicon and that the syntactic (unaccusative or unergative) structure is projected from the lexical representation. According to Levin & Rappaport Hovav (lexical rule of *Template Augmentation*), a component of meaning may be added to an existing template, so that, for example, an activity may become an accomplishment. Cf. also Mendikoetxea (2006): "R[appaport] H[ovav] & L[evin]'s approach is designed to account for a phenomenon known as the 'elasticity of verb meaning' (or verbal polysemy), which allows atelic manner activity verbs like *wipe* [...] to express telic meanings [...]."

[40] We omit most of the examples cited in LSJ for reasons of space.

2. *fall, be ruined,* [...]
3. *fall, sink,* [...] the wind *fell,* [...]
4. *fall short, fail,* [...]
III. [...] *fall out of, lose* a thing, unintentionally, [...]
2. reversely, [...] ouk ékhō poî gnṓmēs pésō I know not which way *to turn*, [Sophocles, Trachiniae 705].
3. [...] *fall* asleep, [...]
4. [...] *to be applied* to (medicinal) use, [...]
5. [...] *to be accessible* to perception, [...]
IV. [...] *to fall* between her feet, i.e. to be born, [...]
V. of the dice, [...]
2. generally, *fall, turn out,* [...]
3. *fall to* one, i.e. to his lot, esp. of revenues, *accrue,* [...]
VI. *fall,* of a date or period of Time, [...]
VII. *fall under, belong to* a class, [...]

Furthermore, the causative equivalent of clauses such as (33) (and 34a and b below) is unattested, as observed by the absence of such interpretations in LSJ: *píptei tiná 'make sb. fall' / 'make sb fall in ruin'* (cf. data in Lavidas 2009 as well). The causatives are telic change-of-state verbs, and Whelpton (2007) has used this test (availability of causative equivalents) to show that unaccusatives cannot appear in adjectival resultative constructions in Icelandic; according to Whelpton, it may be the case that causative change-of-state verbs are strictly transitive in a way that force-contact verbs, for example, are not, and it is this strict transitivity that is incompatible with adjectival resultative predication (in Icelandic and cross-linguistically).

Examples in (34a-b) represent similar instances of the shift of an unergative into a type that has unaccusative behavior. In Lavidas (2009), we have shown how cognate constructions have contributed to the rise of innovative alternating unaccusatives (on the basis of verbs that were initially used only as intransitives), this being an intermediate stage for the transitive use of intransitive verbs in all periods of Greek.

(34) a. ***peseîn*** *atímōs* ***ptṓmat'*** *ouk anaskhetá...*
fell:ACT.INF dishonourably falls:ACC NEG endurable:ACC
'From having fallen in ignominious and unendurable ruin.' (Aeschylus, Prometheus Bound, 919; 6-5 BC)

b. *orthḕ àn hēmôn hē pólis ên kaì ouk*
upright:NOM PTC our:GEN the:NOM city:NOM was:3SG and NEG
àn ***épese*** *tóte toioûton* ***ptôma***
PTC fell:ACT.3SG then such:ACC fall:ACC
'Our city would be holding up her head and would not then have had such a terrible fall.' (Plato, Laches, 181b; 5-4 BC)

As we can observe in (35), examples such as (34a-b) are totally ungrammatical in Modern Greek. We agree with Horrocks & Stavrou's analysis according to which in Modern Greek, the viewpoint aspect is encoded in distinct verb stems and the aspectual character is lexically fixed so that an "aspectual" cognate object cannot change this pre-assigned property. On the other hand, the examples with the resultative interpretation (cognate objects that are non-referring and denote only terminative events) show that the situation was not similar in Ancient Greek (especially in Homeric Greek): the atelic/telic interpretation depended on the

aktionsart/situation type aspect (Moser 2005, 2008) (Figure 6). Hence the differences between the Ancient and the Modern Greek examples can be explained on the basis of the development of aspect[41] in Greek that, according to Moser (2008), has moved from the expression of oppositions of aktionsart/situation type aspect (states, telic activities, atelic activities) to the expression of oppositions of grammatical aspect/viewpoint aspect (perfective, imperfective) and tense (past, non-past and later past, present, future).

(35) ***epese*** *thanatiforo/thanasimo* ***pesimo***
fell:ACT.3SG deadly:ACC fall:ACC
'He fell and died (fell a deadly fall).' (Modern Greek)

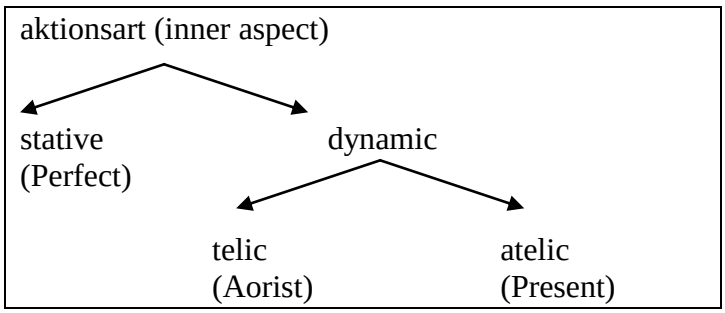


Figure 6. Homeric Greek verb tenses (strictly bound with aktionsart/situation type aspect); Moser (2005).

Again, as in Modern English, non-terminative activity readings are possible in Ancient Greek to facilitate adjectival modification in a language that uses the accusative case to express adverbial meanings (Bary & de Swart 2005, also for Latin). Accordingly, de Swart (2007) observes that the examples with the neuter pronouns and the substantivized adjectives have developed from examples with cognate objects; after the loss of the cognate noun, which was combined with an adjective, the adjective was changed into a neuter accusative form (*hēdú gelân* / sweet.ntr.acc smile.inf; cf. also Bornemann & Risch 1978; Kühner & Gerth [1898-1904]/1963).

3. Conclusions

In this paper, we have explored the diachronic relation of (alternating) unaccusatives to null and cognate objects in Greek. We have shown that, in contrast to the diachronic instability that unergatives and transitives present with regard to (referential) null and (argumental and adverbial) cognate objects, (alternating) unaccusative verbs constantly cannot take referential null objects and cognate objects in the case of a causative construction. The stable relation between null and cognate objects and (alternating) unaccusatives presents evidence on the characteristics of unaccusatives and the nature of null and cognate objects in Greek. Furthermore, we have argued that verbs do not satisfy unaccusativity tests in the same way across all periods of the Greek language (i.e., in a diachronic perspective): verbs can display either unaccusative or unergative syntactic characteristics depending on the historical period, and intransitive verbs can change with respect to the possibility of

[41] Cf. van Gelderen (2004: 203ff), who argues for a similar change in the history of English where the setting of a parameter is switched from having (inner) aspect as unmarked to tense as unmarked.

participation or not in the causative-anticausative alternation in different diachronic periods (cf. Sorace's (2006)[42] cross-linguistic conclusions on unaccusatives and unaccusativity tests).

Alternating unaccusative verbs in Greek meet more restrictions than the other verbal classes in omitting their object in all periods, even in Homeric or Classical Greek (when fewer restrictions are attested in general with regard to null objects). In Ancient Greek, alternating unaccusative verbs can be found in causative constructions only with one type of null objects (type 3a, Table 1), i.e., only with the most freely used type of null objects (null objects of this type are found in all periods of the Greek diachrony). The other verbal classes can appear with null objects of type 2 in Modern and Ancient Greek or even with null objects of type 1 (referential null objects) in Ancient Greek. Therefore, the unavailability of referential null objects with alternating unaccusatives holds irrespective of the structure and voice morphology of the alternating unaccusatives. Referential null objects cannot be found either in causative constructions of alternating unaccusatives in Classical Greek, when alternating unaccusatives bear nonactive voice morphology in anticausative constructions, or from the Hellenistic period onwards, when alternating unaccusatives bear active voice morphology. The stable unavailability of referential null objects in causative constructions of alternating unaccusative verbs pairs the other stable characteristics of alternating unaccusative verbs that distinguish them from transitive (non-causative) and unergative verbs: alternating unaccusative verbs can take direct objects only in the accusative case, show no case alternations, and bear active morphology in their causative use in all periods of Greek. The common complex (causative) template of alternating unaccusatives (in both causative and anticausative uses) seems to be the basis of the obligatory presence of the patient argument in causative constructions of alternating unaccusatives; if the patient argument does not appear in a causative construction, the result will be an unresolved ambiguity between causative and anticausative interpretation.

Cognate objects in Ancient Greek show both argumental and adverbial characteristics. Unergatives in Ancient Greek can take cognate objects of an argumental or adverbial character, but unaccusatives only take adverbial cognate accusatives because: (a) "Accusatives of result", i.e., examples that show the use of unergative verbs accompanied by DPs in the accusative to express an "unaccusative"/resultative interpretation are attested in Ancient Greek (this use is ungrammatical in Modern Greek). (b) The accusative case can have an adverbial use in Ancient Greek –as an option with unergatives and always with unaccusatives– as shown not only by the adjectives that are accompanied by "adverbial" DPs in the accusative but also by the non-terminative activity readings of verbs with accusative DPs and the neuter pronoun forms and substantivized adjectives that accompany verbs having an adverbial meaning in Ancient Greek. (c) The possibility of passivization of cognate objects –with transitives and unergatives– in Ancient Greek, however, excludes the hypothesis that all cognate objects may be adverbial in Ancient Greek. Hence, Ancient Greek is not like Modern Greek either with regard to cognate objects; the changes in aspect can explain the differences found between the Ancient and the Modern Greek cognate constructions. The aspectual restrictions on cognate

[42] We agree with the reviewer who notes that there seems to be a lexical-semantic gradient in Ancient Greek as well, but we think that further data and, perhaps, a quantitative analysis of the historical data are needed so that a description of this gradient is possible. This description is beyond the focus of this paper (which takes as its basis a distinction between unergatives and (alternating) unaccusatives), and we leave it open for further research.

object constructions (with cognate objects in the accusative case) observed in Homeric Greek (and until Aeschylus) seem to show exactly the same phenomenon: changes in aspect affected the availability of cognate objects.

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