

Complex -éō verbs in Ancient Greek. A case study at the interface between derivation and compounding

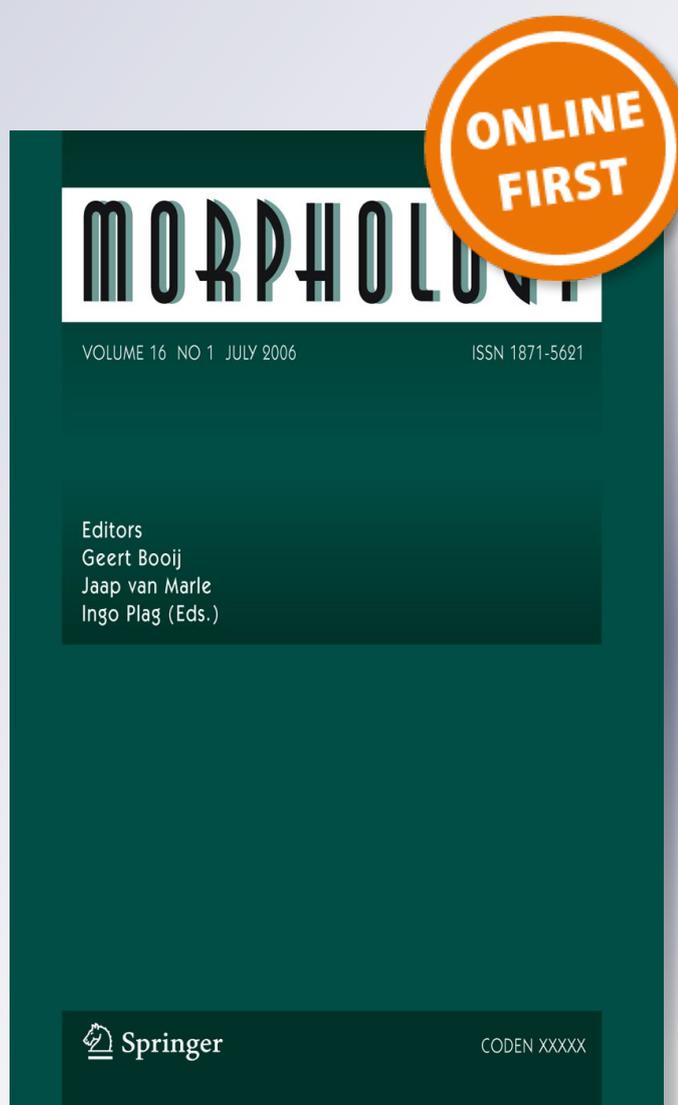
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Complex *-éō* verbs in Ancient Greek. A case study at the interface between derivation and compounding

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Abstract The article aims to analyze Ancient Greek complex verbs in *-éō* from a constructionist perspective. These verbs are usually accounted for as the effect of a conversion from adjectival and/or nominal compounds in *-os* (and, eventually, *-on*). However, this account does not explain why in complex *-éō* verb formations there seem to be two parallel morphological processes which ‘feed into’ each other: nominal/adjectival compounds in *-os* can generate complex *-éō* verbs, but also complex *-éō* verbs can generate compound nouns or adjectives ending in *-os*. Moreover, both of these complex formations can give rise to new free simple words (both nouns and verbs) by means of a process of reanalysis. Construction morphology allows us to provide a single picture describing these processes, exploring and explaining all possible interrelations.

Keywords Compounding · Conversion · Reanalysis · Conflation · Ancient Greek

This article is the result of the close collaboration between both authors; however, for academic purposes, Anna Pompei is responsible for Sects. 1, 1.1, 2, 3, 4 and Nicola Grandi for Sects. 5, 5.1, 5.2, 5.3, 6.

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1 Introduction

This paper aims to analyze a sub-class of Ancient Greek verbs from a construction-ist perspective. These verbs end in *-éō* in the quotation form¹ and have a complex structure, being formed by a nominal plus a verbal element ($[N+V]_V$)²:

- | | | |
|-----|------------------------------------|-------------------------|
| (1) | <i>karpo-logéō</i>
fruit-gather | ‘to gather fruit’ |
| (2) | <i>hulo-makhéō</i>
wood-fight | ‘to fight in the woods’ |
| (3) | <i>paido-poiéō</i>
child-make | ‘to beget children’ |
| (4) | <i>oiko-doméō</i>
house-build | ‘to build (a house)’ |

1.1 Structure of complex *-éō* verbs

The first element of complex *-éō* verbs is usually a noun root, with a referential value. Like all ancient Indo-European languages, Ancient Greek displays a rich inflectional system with a high degree of internal complexity. The variable parts of speech—such as nouns and verbs—are constituted by a root and an inflectional ending that can be separated by a thematic vowel (TV). The root and the possible TV form the stem. This is the internal structure of the nominal (referential) elements which feature in the initial position of the complex verbs listed in (1)–(4)³:

- | | | |
|-----|--|---------|
| (5) | <i>karp-ó-s</i>
<u>root-TV-ending</u> (N.SG.M)
stem | ‘fruit’ |
| (6) | <i>húl-ā(-ē)-Ø</i>
<u>root-TV-ending</u> (N.SG.F)
stem | ‘wood’ |

¹This is usually the first person singular of the indicative active present. The *-éō* ending occurs in radical presents (e.g. *hairéō* ‘to take’), as well as in secondary formations such as denominal (e.g. *metréō* ‘to measure’ from *métron* ‘measure’) and deverbal verbs, expressing habit/iteration or causativity (e.g. *potéomai* ‘to flit’ from *pétomai* ‘to fly’); see Schwyzer (1939: 717–718, 726). Indeed, in all these formations, the *-é-* is never an inflectional ending, unlike *-ō-*, as well as in the complex verbs we examine here. However, the choice to speak of *complex -éō verbs* is due to the fact that, in almost all the complex verbs formed by a nominal plus a verbal element ($[N+V]_V$), the *-ō* ending is preceded by *-é-*. The reason is very likely the initial denominal nature of these formations (Sect. 2). The exceptions (e.g. *hudrophobiáō* ‘suffer from hydrophobia’) are extremely rare and absolutely marginal.

²Data presented in this article have been mainly extracted from the electronic query of the *T(hesaurus)L(inguae)G(raecae)*. Abbreviations: A: adjective; Adv: adverb; F: feminine; M: masculine; N: noun; Pref: prefix; RAD: root/radical element; SG: singular; TV: thematic vowel; V: verb.

³Nouns might belong to two different thematic declensions, either the *-o-* declension, as in the case of *karpós* and *oikos*, or the *-aā-* (or *-ē-*, according to different dialects) one, as in the case of *húl-ā(-ē-)*. Nouns that join the ending directly to the root, without the insertion of a TV—such as *país*—are members of the so-called ‘athematic declension’. In the case of *país*, in particular, the joining of the nominative ending *-s* causes the fall of the dental stop at the end of the root.

- (7) **paid-s* > **paid-s* > *paîs* 'child'
stem-ending (N.SG.M/F)
- (8) *oîk-o-s* 'house'
root-TV-ending (N.SG.M)
stem

If we compare the structure of these nouns and the form they take within complex *-éō* verbs, we can observe that in the latter case they surface as roots, usually followed by a morpho-phonological readjustment vowel, generally an *-o-*, independent of the presence of a TV, and of its nature.⁴

The analysis of the second constituents of complex *-éō* verbs listed in (1)–(4) is more problematic, and a unitary explanation is not easily provided. Since they predicate an action, they are usually labeled as 'predicative forms'. According to the typological definition of word classes (see Croft 1991: 67), they can be numbered among verbs. However, these predicative (or, verbal) forms often do not occur as autonomous words; that is to say, they can be classified as bound morphemes. For instance, in the case of *karpologéō* (1) the second constituent, *-logéō*, never occurs as an actual word in isolation within a sentence; the corresponding free form is *légō*:

- (9) *karmo-logéō* (**logéō* vs *légō* 'to gather')
fruit-gather
'to gather fruit'

Both forms, *-logéō* and *légō*, share the same predicative root expressing the process of 'gathering'. It is an apophonic root, which presents the typical *-e-/o-* vowel alternation. In such cases, verbs have an *-e-* vowel,⁵ whereas deverbal nouns

⁴The phenomenology of possible phonological processes at work between the first and the second element of *-éō* complex verbs is wider. For instance, in cases of vowel clash either segment deletion (see e.g. *phōnaskéō* 'to train one's voice', from *phōnē* 'voice' and *askéō* 'to train') or contraction (see e.g. *phutourgéō* 'to do gardener's work', from *phuto-* 'plant' and *erg-* 'to work') might take place. On the other hand, in cases of consonant clash, epenthetic vowel insertion applies, usually of an *-o-* (see e.g. *paidopoiéō* 'to beget children'), which also extends to *-a/ā-* declension stems (see e.g. *poiologéō* 'to put up corn in sheaves'—which also occurs as *poēlogéō* from *poiē/poiā/pōā* 'grass, herb, plant' and *log-* 'to gather'). A consequence of this hyperextension of *-o-* is also the concurrence of allomorphs due to a sort of hypercorrection (see e.g. *phutēkoméō* 'to take care of plants' from *phuto-* 'plant' and *koméō* 'take care of' vs e.g. the middle-passive verb *phutotrophéomai* 'to be trained', used for vines, from the same nominal and *troph-* 'to rear'). In other cases the selection of different allomorphs is due to the existence of different stems of the same noun (see e.g. the case of *sōma* 'body', which occurs both in this form, for instance in *sōmaskéō* 'to exercise the body', and in the allomorph *sōmat-*, for instance in *sōmatopoiéō* 'to give bodily existence to'). The reduplication of the initial verb consonant may also occur (see e.g. *psukhorrophéō*, from *rhophéō* 'to gulp down, to drain dry', either compounded with *psūkhos* 'cold', with the meaning 'to drink cold water', or with *psukhē* 'soul, life', in the meaning 'to suck out the life'). On the phonological processes at work in Ancient Greek compounding see Schwyzler (1939: 437–441); *-o-* is the final vowel that we still find today occurring in neoclassical compounding, in prefixoids. For other considerations on the linking element *-o-*, both in a synchronic and historical perspective cf. Anastasiadi-Symeonidi (1983), Ralli and Raftopoulou (1999), Ralli (2008b).

⁵Indeed, the *-o-* apophonic grade also occurs in verbal forms, usually in the perfect, i.e. the aspectual stem that codifies a state of affairs implying two phases, the attainment of a *telos* and the subsequent state. Verbs codifying states are the nearest to nouns (Givón 1979).

and adjectives—i.e. *logeía* ‘gathering’, and *logaiōs* ‘chosen, picked’—have an *-o-* vowel.

The case of *oikodoméō* (4) ‘to build (a house)’ is slightly different, since the verb *doméō* actually occurs, but this is a late development and it is usually accounted for as a backformation from complex verbs having *-doméō* as a second element. Moreover, the late verb *doméō* is found alongside the earlier form with the expected *-e-* grade apophony, i.e. *démō*, which has the same meaning and displays a higher degree of frequency than *doméō*:

- (10) *oiko-doméō* (doméō vs démō ‘to build’)
house-build
‘to build (a house)’

In the case of *hulomakhéō* (2) the matter is again different, because the unbound verb expressing the notion of ‘fighting’ is usually the middle-passive *mákhomai*; indeed another early middle-passive unbound form *makhéomai* is also attested, but not the active counterpart **makhéō*:

- (11) *hulo-makhéō* (mákhomai vs makhéomai ‘to fight’)
wood-fight
‘to fight in the woods’

A further different case is constituted by *paidopoiéō* (3), whose second member had widely occurred as an autonomous word since very ancient times:

- (12) *paido-poiéō* (poiéō ‘to make, to do’)
child-make
‘to beget children’

To sum up, when we consider complex verbs ending in *-éō*, the whole picture appears to be extremely intricate. We are faced with:

- (a) complex *-éō* verbs whose second member does not occur as an actual word (1)–(2);
- (b) complex *-éō* verbs whose second constituent is an actual word, which parallels a more ancient form with the expected apophony grade (4); in this case, the simple verb in *-éō* is accounted for as a late backformation from the compound;
- (c) complex *-éō* verbs whose second constituent is an actual word with an ancient tradition in Greek documentation (3).

The instances in (a) are more frequent than those in (b), and (c), but none can be merely seen as an exceptional pattern. The aim of this paper is to present an exhaustive account of the whole picture, producing a unifying sketch which includes all the situations briefly described above and focuses on the interplay between them. The main drawback of the traditional interpretation of these data (Sect. 2) is that they usually focus on one single pattern, disregarding the connections with the others.

2 The traditional interpretation: zero derivation

Ancient Greek complex *-éō* verbs have been traditionally described as the result of derivation from nominal or adjectival compounds⁶:

- | | | | |
|------|---|---|---|
| (13) | <i>karpo-lógos</i> (-on)
fruit-gathering
'that gathers fruit' | > | <i>karpo-logéō</i>
fruit-gather
'to gather fruit' |
| (14) | <i>thēro-nómos</i> (-on)
beast-feeding
'feeding, tending wild beasts' | > | <i>thēro-noméō</i>
beast-feed
'to feed, tend wild beasts' |
| (15) | <i>oiko-dómos</i>
house-building
'architect' | > | <i>oiko-doméō</i>
house-build
'to build (a house)' |

In this perspective, the formation of complex *-éō* verbs should be considered an instance of a conversion or transcategorization: the complex verbs in *-éō* are obtained simply by adding a verbal ending to nominal/adjectival compounds, without any overt derivational suffix.⁷ That is to say that *complex -éō* verbs are believed to derive from already pre-existing compounds, usually analyzed as [N + N]_{A/N}, i.e. as constituted by two nominal elements. The latter is most often a deverbal noun, while the former is usually a nominal (referential) root. The link between the two nouns is represented by the same morpho-phonological readjustment that occurs in complex *-éō* verbs, e.g. the vowel *-o-* (Sect. 1.1). Such a process can be represented as follows⁸:

- (16) [N + N]_{N/A} > [N + N]_V

The interpretation of Ancient Greek complex *-éō* verbs as instances of derivation from nominal/adjectival compounds is supported by historical evidence. Indeed, new formations of both types, verbal and nominal/adjectival, are attested during the whole development of the language, but only compounds in *-os* are present in Mycenaean, i.e. the first written testimony of Greek (see e.g. *ipōqowo* = *hippophorbós* 'horse-keeper').⁹ Furthermore, the *-éō* verb is attested after the nominal/adjectival form in many cases. In some respect, complex *-éō* verbs behave like such English formations as *to baby-sit*, *to mountain-climb* or *to word-process*, which are usually considered

⁶See e.g. Schwyzer (1939); Chantraine (1968–1980).

⁷Cf. also Ralli (2008a) for similar claims for the *-é-* element, cf. fn. 1.

⁸On the analysis of [N + N]_{N/A} compounds, and on the problem of the position of nominal/adjectival inflection—either at the end of the whole compound or of the second noun—see Grandi and Pompei (2010).

⁹Cf. Meissner and Tribulato (2002), who give an overview of nominal compounds in Mycenaean and attempt to classify them. Even though they speak of the standard view (according to which all primary compounds are nominal in Greek), they also point out that in new tablets from Thebes, and more in particular in TH Fq 121, *tu-wo-te-to* can possibly be read "either as a *scriptio continua* for *thúos théto* 'a sacrifice was made' or as a haplography for **tu-wo-te-te-to* from a hypothetical verb **thuothetéō* (cf. *ōmothetéō* 'place the raw pieces [on the altar]...') (Meissner and Tribulato 2002: 301).

as backformations from nominal compounds (*baby sitter, mountain climbing, word processing*).¹⁰

Such an account explains how we can get a verbal complex from a nominal one. Nevertheless, it overlooks the fact that suppositions regarding the nature and the genesis of the initial *nominal/adjectival* compounds are far from uncontroversial.

As for the compounds listed in (13)–(15), it is worth noting that none of the second elements ever occurs as an actual word. However, some unbound homophones are attested: for example, *lógos* and *dómos* occur as autonomous words, but they are result nouns, not action nouns, their meaning being ‘verbal utterance’ (rather than ‘gathering’) and ‘house’ (rather than ‘building’) respectively. Moreover, even if the root of both the bound and the unbound *lógos* forms is the same—i.e. the apophonic root *leg-/log-*—the bound form can be traced back to its primary meaning, i.e. ‘to gather’, whereas the unbound form is traced to the secondary meaning, that is ‘to say’ (Chantraine 1968: s.v. *légō*). In a similar way, regarding the compound *thēronómos* (-*on*), it can be observed that its second member, *-nómos*, is also attested as an independent noun meaning ‘grazing, pasture’, i.e. a locative or result noun, though with a different stress (*nomós*).¹¹ In other cases the second element of a compound does not occur at all as an unbound form, as happens, for instance, in such instances as *andrómakhos* ‘fighting with men’, *dorímakhos* ‘fighting with the spear’ or *hippómakhos* ‘fighting on horseback, trooper’.

On the other hand, there are cases in which second elements do occur in isolation as action nouns. Consider, for instance, the case of *androphónos*, a compound linked to the complex verb *androphonēō* ‘to slay men’. This can be used as an adjective (*androphónos* -*on*) meaning ‘man-slaying, murderous’ or as a noun (*androphónos*) designating a killer or a murderer; its second element, *phónos*, occurs as an unbound form meaning ‘killing’. In such a case, we might suppose that the coding of an action is used to identify its performer (forming an agent noun), as it happens, *mutatis mutandis*, in exocentric compounds such as the Italian *portalettere* ‘postman’ or the English *pickpocket*. Such formations are undoubtedly exocentric from another point of view, in that they can modify an external head when they are adjectives.¹²

Therefore, to sum up, it is very improbable that independent words such as *dómos*, *lógos*, *nomós* play a direct role in the formation of compounds such as *oikodómos*, *karpológos* (-*on*) and *thēronómos* (-*on*) respectively. For instance, the actual word *lógos* and the second element of *karpológos* must be different items, even if they can be traced back to the same root. On the other hand, this is not necessarily the case of *phónos*, which might also be considered the same item as the second element in *androphónos*, if we assume the reinterpretation of the coding of an action as an agent. What is clear is that the second element expresses a predication usually codified

¹⁰See Sapir (1911: 256, passim), Mithun (1984: 847), Baker (1988: 78–80).

¹¹Indeed, *nómos* also occurs as an unbound form; however, its meaning is ‘use, custom, law’ which can be traced back to another meaning of the same apophonic root *nem-/nom-*, generally meaning ‘to deal out, to dispense’.

¹²In such cases they have double endings, e.g. -*os* -*on* in the nominative, according to the [\pm ANIMATE] feature of their head.

through the *-o-* grade of an apophonic root; this is basically the same predication expressed in unbounded corresponding forms, even if they do not codify the agent of the predication, but an action or its result, or even the locative, the instrument, and so on.

The explication of complex *-éō* verbs in terms of derivation has the advantage of being a simple analysis, but this actually just shifts (but does not solve) the problem we observed in the first section—concerning the problematic nature of second constituents of *-éō* verbs—from the output to the input of the process. Our hypothesis is that the unclear nature of the last part both of *-éō* verbs and of corresponding nominal/adjectival compounds are two sides of the same coin and that a unitary account for them is preferable.

3 A new hypothesis: a compounding analysis

A deeper investigation of data reveals that the situation is still more complex. Other phenomena suggest an alternative interpretation of some *-éō* verbs, which can be accounted for as the outcome of a primary compounding process. First, in some cases the supposed compound nominal/adjectival base of complex verbs ending in *-éō* is not attested at all: this is the case of **hulomákhos*, which, consequently, cannot be singled out as the starting point of the transcategorization process resulting in *hulomakhéō*:

(17) <i>*hulomákhos</i>	>	<i>hulo-makhéō</i>
wood-fighting		wood-fight
‘fighting in the woods’		‘to fight in the woods’

Of course, this situation might be merely due to the limitations of the corpus, i.e. we cannot exclude that **hulomákhos* existed but that it is not attested: the absence of corpus evidence does not necessarily mean absence of a form.¹³ But the situation described for **hulomákhos* is not isolated; on the contrary, it is quite widespread. Moreover, some [N + N]_{N/A} are attested later than the corresponding complex verb in *-éō*. In this case, they could be analyzed as the result of a derivation from the latter¹⁴:

¹³We thank very much one of the anonymous referees, who brought to our attention the existence in Modern Greek of *Marathonómákhos* ‘Marathon fighter’, where the first N is a locative such as in **hulomákhos*; this supports that also **hulomákhos* can be taken as a possible word. The same considerations apply to opposite—and more frequent—cases, i.e. when a complex verb ending in *-éō* corresponding to a [N + N]_{N/A} compound is not attested, as happens in cases such as *boókleps* ‘stealer of oxen’ or *booklópos*, *-on* ‘ox-stealing’, *ikththuphágos*, *-on* ‘eating fish’, *ikththuphónos*, *-on* ‘killing fish’, *karpospóros*, *-on* ‘sowing fruit’, *karpopoiós*, *ón* ‘making fruit’, etc. The possibility that the non-occurrence of some forms can be due to gaps in the corpus is even more evident if we consider that the corpus on which this study is based is a literary corpus, so the every day usage linguistic varieties are almost completely unattested (Sect. 4).

¹⁴Also in this case it is necessary to proceed with caution, since the first occurrence of a form in a written corpus does not automatically coincide with the first ever occurrence: *phōnaskéō* is older than *phōnaskós* in written documentation, but we cannot exclude that the reverse is true for oral use. The later occurrence of *phōnaskós* with regard to *phōnaskéō* is emphasized by Chantraine (1968–1980, s.v. *askéō*).

(18)	<i>phōn-askéō</i> voice-train 'to train one's voice'	>	<i>phōn-askós</i> voice-training 'who train(s) one's voice'
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In any case, the most relevant argument against the generalization by default of the derivational analysis (Sect. 2) is that there are some complex *-éō* verbs whose second constituent occurs as an autonomous word, such as, for instance, *poiéō* 'to make, to do', *metréō* 'to measure', *askéō* 'to train', *rhophéō* 'to gulp down, to drain dry' (Sect. 1.1), and so on: postulating a conversion process even when a simple verb in *-éō* is attested is counterintuitive. In these cases, a compounding account based on the pattern [N + V]_V is no doubt more economical and largely to be preferred. These data suggest that a productive compounding pattern [N + V]_V is also present in Ancient Greek. This seems to be an instance of noun incorporation, which is a phenomenon that is widespread from a cross-linguistic point of view, and not limited to polysynthetic languages.¹⁵ The 'traditional account', based on the conversion explanation, does not cover this situation.

4 Relation between derivation and compounding

What is really intriguing in complex *-éō* verb formation is the fact that there seem to be two parallel morphological processes that 'feed into' each other: nominal/adjectival compounds in *-os* can generate complex *-éō* verbs, and, *vice versa*, compound *-éō* verbs can generate nominal/adjectival formations ending in *-os*.¹⁶ Moreover, both of these complex formations can give rise to new free simple words (both nouns and verbs) by means of a process of reanalysis¹⁷:

(19)	<i>oiko-doméō</i> house-build 'to build (a house)'	>	<i>doméō</i> 'to build'
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¹⁵On the possible existence of noun incorporation in Ancient Greek see Pompei (2006), who shows that the selection of either a [N + V]_V pattern or an analytic verb and noun construction seems to answer the same semantic and pragmatic needs as noun incorporation in polysynthetic languages (Mithun 1984). For instance, the choice between *paidopoiéō*—which occurs in the tragedy and in the oratory—and the analytic form *paída/páidas poiéō* to express the meaning 'to beget children' is semantically due to the need of labeling through a single word a central concept in a society where the female role exactly is to beget children for the husband's family continuance; from the pragmatic point of view, the choice of *paidopoiéō* implies a loss of referentiality of the noun, which is backgrounded and cannot be focalized. Moreover, Ancient Greek and polysynthetic languages are similar also as to the semantic role that incorporated nouns can have and to the syntactic devices that this form of compounding can imply, e.g. the promotion of an adjunct in object position. On noun incorporation see Mithun (1984, 1986) and Baker (1988).

¹⁶On the bi-directionality of conversion pairs cf. Lieber (1980).

¹⁷On the reanalysis of nouns, such as *pompós* see, among others, Chantraine (1968: 8–9), who claims (1) that agent nouns in *-ós* are usually attested after their compounded equivalents (cf. e.g. *dēmobóros* 'devourer of the common stock', which occurs in the Iliad, vs *borós* 'gluttonous', which occurs only starting from the comedy, and the Attic-Ionic forms *puróphoros* 'wheat-bearing' and *diáphoros* 'different' vs *phorós* 'bearing', attested in the koiné), and (2) that agent nouns in *-ós* are very often backformed (he considers also *trophós* 'feeder, rearer' as backformed from compounding (15) such as *kourótróphos* 'nursing-mother').

- | | | | |
|------|--|---|--------------------------|
| (20) | <i>psukho-pompós</i>
soul-guide
'guide of souls' | > | <i>pompós</i>
'guide' |
|------|--|---|--------------------------|

Reanalysis processes such as those in (19) and (20) and the consequent formation of verbs such as *doméō* and nouns such as *pompós* imply the priority of complex forms. In the case of *doméō* it is necessary to postulate the earlier formation of a complex *-éō* verb from a $[N + N]_N$ compound and the subsequent reinterpretation of the second element as an autonomous form. In the case of *pompós* in (20), we can consider the second element as an agent noun only if the $[N + N]_N$ compound is endocentric. In all these processes, analogy plays a crucial role.

From a historical perspective, a $N > V$ cline, in which $[N + N]_{N/A}$ formations are older than complex *-éō* verbs, is unquestionable (Sect. 2).¹⁸ But this is, precisely, a process that explains the genesis of the forms, but does not say anything about what speakers probably felt about them. In other words, this process describes the development of complex *-éō* verbs in the long history of the Greek language, but does not give us any information about the place of these forms within the competence of speakers, at least at a certain stage, when the processes considered were all developed (of course, with different degrees of productivity). This means that in our analysis we refer to the Ancient Greek attested by alphabetic writing,¹⁹ considering the language as a whole, namely from a 'synchronic' perspective. Since the Ancient Greek corpus is made up of a long-lasting written tradition, which often maintains an even more ancient oral tradition, we consider many 'synchronies' as compressed into a single paradoxical 'synchrony', in which time differences are not the crucial parameter. It is worth mentioning that the documentation on which studies such as the one presented here rely upon, is necessarily and irreparably incomplete since the orality component of the language system is almost completely unattested. This gap makes any conclusion on the relative chronology of almost all Ancient Greek linguistic phenomena provisional, and indirectly justifies the choice, which is common and almost unanimously accepted in studies on Classical languages, of extending the label 'synchronic' to a linguistic documentation that would be not synchronic strictly speaking. From this perspective, what is of interest, and what we really want to focus on, is the occurrence in Ancient Greek of all the processes mentioned in the previous sections:

- (a) Conversion from a N/A compound to a complex *-éō* verb $[N + N]_{A/N} \rightarrow [N + N]_V$
- (b) Conversion from a complex *-éō* verb to a N/A formation: $[N + V]_V \rightarrow [N + N]_{A/N}$
- (c) Formation of a simple noun by reanalysis of N/A compound: $[N + N]_{A/N} \rightarrow [N]_N$

¹⁸This is indirectly supported also by the fact that a backformation such as *pompós* is already present in Homeric poems, whereas *doméō* is a late reanalysis, attested in the Hellenistic period.

¹⁹That is, excluding the Mycenaean.

(d) Formation of a simple verb by reanalysis of a complex $-éō$ verb: $[N + N]_V \rightarrow [N]_V$ ²⁰

This sketch would be even more complex and intricate if it also included the other possible variable, that is, whether the second member of the compound corresponds to an actual word or not.

Apart from the relative chronology, based on the history of the single forms, what clearly emerges from a generalization is a global picture in which four different patterns are growing increasingly intertwined. Of course, the productivity of these patterns is not the same. Nevertheless, the fact that some instances of (d) are attested clearly shows that in the competence of the speaker the initial formation of $-éō$ verbs by derivation is not significant. In the same way, the possibility of (c) means that the speaker is not interested in the real categorial status of the second member in nominal/adjectival compounds.

The explanations found in the literature often account only for parts of the whole picture. What is missing is a conclusive explanation which cannot be obtained by focussing on one single pattern, and just glancing at the others; it entails a global overview.

5 A constructionist approach

The data presented so far reveal that the formation of complex verbs ending in $-éō$ is a process at the centre of an intricate net of interactions between various derivational and compounding processes: for Ancient Greek it is very hard to establish the nature of the relationship between complex $-éō$ verbs and complex $-os$ ($-on$) nouns/adjectives, on the one hand, and the analysis of both patterns in the competence of speakers, on the other. Thus, it seems that within the piece of lexicon in question the role of analogy systematically exceeds that of ‘regularity’.

The traditional representation of word formation rules, elaborated above all in generative and lexicalist theoretical models, based on a clear input, a unique category operation and a clear output is unsuitable to represent this kind of complex forms. Moreover, in the formation of complex $-éō$ verbs, items are often involved that do not correspond to actual words (Sect. 1.1).

In this picture, Construction Morphology seems to represent and to explain these word formation processes better. As it is well known, Construction Morphology is a recent application to morphology of the theoretical framework proposed by Goldberg (1995).

According to Booij (2005, 2007, 2010), the coining of new words is governed by constructional schemas, that is, patterns displaying different degrees of abstraction that speakers infer from a set of actual words that instantiate them. In other words, constructional schemas (Fig. 1) are generalizations regarding a set of complex words (Booij 2005: 125).

²⁰Even if we write $[N]_V$ for the output, it is likely that the language user perceived the second element in the complex $-éō$ verb as an unbound verb, but ignoring its original nominal nature.

In this way, we can explain the apparent simultaneous co-occurrence of different word formation patterns in the coining of new complex words. This co-occurrence manifests itself in different ways. First, two or more word formation processes that seem to act in succession, or one after the other, can be unified. Another possible effect of conflation is the co-occurrence, in the coining of one complex word, of word formation patterns that usually do not match, so that the outcome is a sort of 'hybrid'. As we stated above, if we analyze the whole sample of complex verbs in *-éō*, different processes, or constructional schemas, seem to be involved in both the ways just explained; that is, the simultaneous application of schemas that usually occur in combination and the simultaneous occurrence of schemas that usually do not have anything to do with each other.

If we go back to the four situations listed at the end of Sect. 4, we observe, at first, the formation of complex verbs in *-éō* ($[N + N]_V$) from nominal/adjectival compounds ($[N + N]_{N/A}$) (a), traditionally explained as a process of conversion. We can assume that this process is an effect of the unification of two independent schemas: $[[X]_N -éō]_V$, which represents the formation of simple verbs from simple nouns (e.g. as in $[[metr]_N -éō]$, i.e. 'to measure' from *métron* 'measure', $[[oik-]_N -éō]_V$, i.e. 'to live' from *oikos* 'house', etc.; see fn. 1), and $[[X]_N [Y]_{N/A}]_V$, which represents compound nouns and adjectives such as *androphónos* 'man-slaying, murderer' (Sect. 2). In the $[[X]_N -éō]_V$ schema the variable indicated by X can be filled not only by simple nouns, but also by compound nouns (and adjectives), such as *androphónos*, giving rise to seemingly compound verbs as *androphonéō* 'to slay men'. This process can be represented by the schema $[[[X]_N [Y]_{N/A} -éō]_V]$, in which the schema $[[X]_N [Y]_{N/A}]_V$ replaces the variable of the schema $[[X]_N -éō]_V$. In other words, a pattern is incorporated into another one, giving rise to a new pattern that triggers the formation of complex verbs in *-éō* from compounds with a nominal or adjectival value. This process is probably strengthened by the analogical pressure of the formation of simple verbs from simple nouns through the $[[X]_N -éō]_V$ schema, which is quite productive in Ancient Greek.

5.2 On the nature of the second member of nominal/adjectival compounds

What this interpretation does not explain is that in many cases the second constituent of the compounds surfacing the schema $[[X]_N [Y]_{N/A}]_V$ —that can be incorporated in the schema $[[X]_N -éō]_V$ (Sect. 5.1)—does not correspond to an actual word, not being attested at all (e.g. *andrómakhos*, *dorímakhos*, *hippómakhos*, where the second element, *-makhos*, is not an existing word) or being attested only as an homophone (*dómos*, *lógos*), therefore with a different meaning from what it has in the compounding (Sect. 2). Nevertheless, in Ancient Greek derivational morphology the use of forms that do not have lexical autonomy is not unusual, being widely attested, among others, in the formation of deverbal nouns, e.g. *logeía* 'gathering' (from the affixation of the suffix *-eía* to the *-o-* grade of the apophonic root *leg-/log-*) (Sect. 1.1) or of adjectives like *ádikos* (*-on*) 'unjust' (from *díke* 'right'). Generally speaking, Ancient Greek derivational morphology cannot truly be defined as word-based. Consider the case of *ádikos* (*-on*) 'unjust'. Here, we can clearly identify the negative prefix *a-*; the form **dikos* is unattested, even if it can easily be traced back to the noun *díke* 'right'.

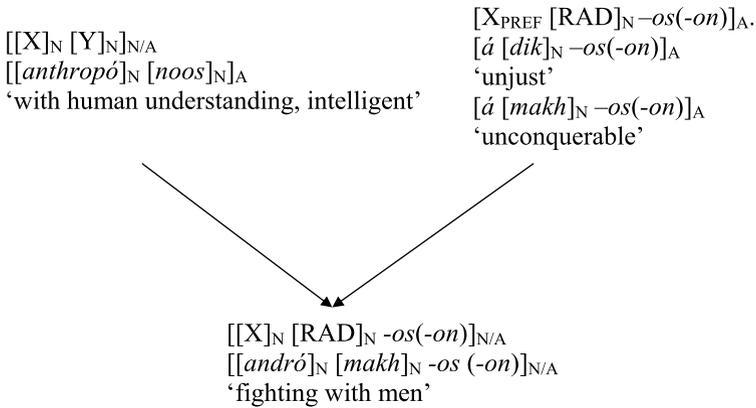


Fig. 2 Conflation between the general schema of nominal/adjectival compounds and the general schema of double-ended adjectives

In this case, we have a sort of parasynthesis, that is the simultaneous application of a prefix and an adjectival ending, according to the schema $[a[\text{RAD}]_N -os(-on)]_A$ or, at a higher, and more abstract level $[X_{\text{PREFIX}} [\text{RAD}]_N -os(-on)]_A$. The same happens in the case of *ámakhos* (-on) ‘unconquerable’, which can be easily linked to the deverbal noun *mákhe* ‘battle’, whereas an adjectival form **makhos*, as said above, is not attested.

Problematic forms like *andrómakhos*, *dorímakhos* and *hippómakhos*, mentioned at the beginning of this section, seem to be placed midway between the schema representing adjectives like *ádikos*(-on) and *ámakhos* (-on) ($[X_{\text{PREFIX}} [\text{RAD}]_N -os(-on)]_A$) and the schema representing nominal/adjectival compounds ($[[X]_N [Y]_N]_{N/A}$; Sect. 5.1): their structure is that of two-member compounds; but they surface as double-ended adjectives. And they share another important property with forms like *ádikos*(-on): one of their constituents is not an actual word (**makhos* behaves like **dikos* in this respect), unlike compounds as *anthropónoos* ‘with human understanding, intelligent’ (from *ánthrōpos* ‘man’ and *nóos* ‘intellect, mind’) where both members are existing, autonomous words. Thus, on the one hand we derived adjectives of the $[X_{\text{PREFIX}} [\text{RAD}]_N -os(-on)]_A$ kind, in which the base is clearly identifiable, but does not correspond to an actual word; on the other hand we have ‘typical’ compound adjectives (or nouns) represented by the $[[X]_N [Y]_N]_{N/A}$ schema, such as, for instance, *anthropónoos* ‘with human understanding, intelligent’. In this case, the two schemas seem to merge into a third (Fig. 2), providing compounds in which one member is not an actual word (see Grandi and Pompei 2010: 217).

The first part of the schema $[[X]_N [\text{RAD}]_N -os(-on)]_{N/A}$, namely $[[X]_N]$, is taken from the compound schema; the second part ($[\text{RAD}]_N -os, -on$) is taken from the double-ended adjectives schema.

As a further step, this new schema, which can be considered as a special case of the general schema of compounds $[[X]_N [Y]_N]_{N/A}$, becomes another potential input for the conversion process providing *-éō* verbs ($[[[X]_N [Y]_N]_{N/A} -éō]_V$) (Sect. 5.1): from $[[X]_N [\text{RAD}]_N -os(-on)]_{N/A}$ to $[[[X]_N [\text{RAD}]_N -os(-on)]_{N/A} -éō]_V$ (cf. $[[hippó]_N [makh]_N -os(-on)]_{N/A}$ ‘fighting on horseback’ > $[[hippó]_N [makh]_N]_{N/A} -éō]_V$ ‘to

fight on horseback'). Consistently, the schema $[[[X]_N [RAD]_N -os (-on)]_{N/A} -\acute{e}\bar{o}]_V$ is a special instance of the general schema $[[[X]_N [Y]_N]_{N/A} -\acute{e}\bar{o}]_V$ and can be placed at a lower degree of abstraction with respect to it.

Until now, two different situations have been presented:

- 'typical' nominal/adjectival compounds can provide complex $-\acute{e}\bar{o}$ verbs, by means of conversion, probably due to the analogical pressure of the formation of simple $-e\bar{o}$ verbs from simple nouns;
- as a special case, this kind of conversion takes place also with nominal/adjectival compounds formed from an actual word and a non existing word, in the same way as adjectives like *ádikos(-on)*: in this case conversion involve a schema generated by a conflation (Fig. 2).

However, there is another possible interpretation of complex $-e\bar{o}$ verbs, mentioned in Sect. 3: in some cases the simple verb in $-\acute{e}\bar{o}$ is attested as an actual, autonomous word (e.g. *askéō* 'to train' and *poiéō* 'to make'); in these cases, complex $-\acute{e}\bar{o}$ verbs can be better explained as $[[X]_X + [Y]_V]_V$ compounds, where slot X can be filled by a noun or a so-called preverb²¹ or an adverb, according to quite a productive tendency of Ancient Greek (Fig. 3).

5.3 Interplay among different schemas

Now, the crucial point is to give a general explanation for the various processes at work. As stated above (Sect. 4), there seem to be two parallel morphological processes that 'feed into' each other. Nominal/adjectival compounds in $-os (-on)$ can generate complex verbs in $-\acute{e}\bar{o}$, but also complex verbs in $-\acute{e}\bar{o}$ can lead to complex nouns/adjectives in $-os (-on)$. Moreover, both can give rise to new free simple words by means of reanalysis and backformation.

As we see, it is difficult and almost impossible to orientate ourselves within all these schemas. And probably it is fruitless to try to understand the correct direction in these word formation patterns, simply because a 'correct' direction probably does not exist at all. What all these schemas clearly demonstrate is that there are parts of the lexicon in which the pressure of analogical tendencies on the single processes plays a crucial and pervasive role.

In the case of complex $-\acute{e}\bar{o}$ verbs, we are dealing with a complex interaction between different derivational patterns, analogical attraction, processes of compounding, reanalysis, and backformation. It is quite counterintuitive and not sufficiently economical to give different descriptions of each of them. But if we try to put forward a unitary picture of all the processes involved in the formation of complex $-\acute{e}\bar{o}$ verbs, we have to pay a price: that is, to give up the traditional representation of rules, including a single input, a single output and a single categorial operation:

$$(21) \quad []_X \rightarrow [[]_X \text{ Suf}]_Y$$

(cf. Scalise 1994: 96)

²¹On the initial adverbial nature of preverbs see, among others, Horrocks (1983).

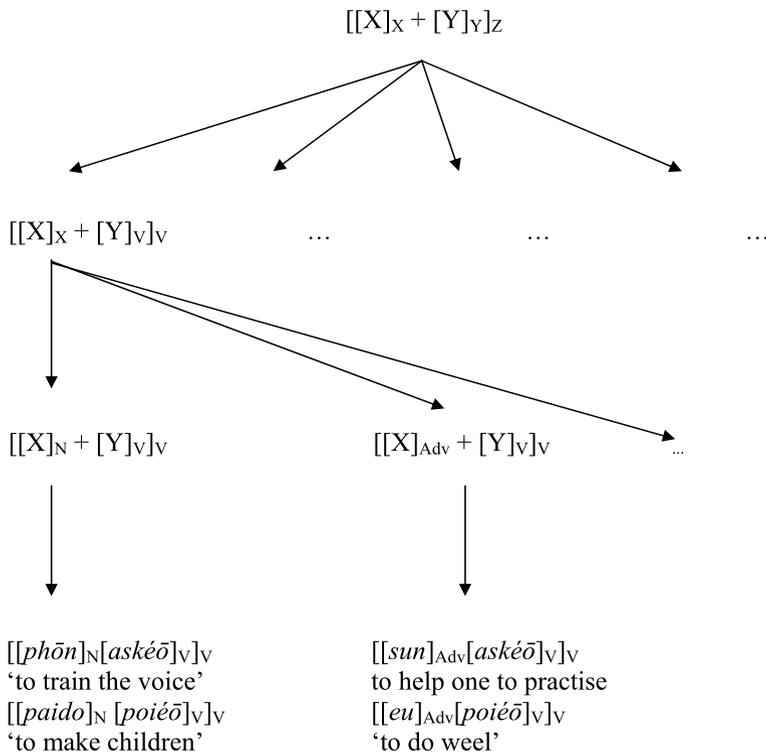


Fig. 3 Schemas of verbal compounding

To sum up, we are faced with four different types of linguistic item, which directly affect the complex *-éō* verbs formation:

- simple verbs in *-éō*
- compound verbs in *-éō*
- simple nouns in *-os*
- compound nouns (and/or adjectives) in *-os* (*-on*)

These four items can interrelate in all possible directions: simple verbs can give rise to compound verbs via a mere compounding process, based on actual words; simple nouns in *-os* can be the second element of nominal/adjectival compounds in *-os* (*-on*); complex verbs in *-éō* can be the result of a conversion of these nominal/adjectival compounds (and in this case their second member is not, by default, an actual word); simple verbs in *-éō* can derive from a reanalysis of complex verbs, in turn formed through conversion; simple nouns in *-os* can be formed by a transcategorization of *-éō* verbs,²² etc.

²²Indeed, this is a not frequent case. See, e.g., *thróos* ‘noise’ from *thréomai* ‘to shriek’ or *thoós* ‘quick’—an adjective, but with the stress of agent nouns (Chantraine 1968: 8)—from *théō* ‘to run’.

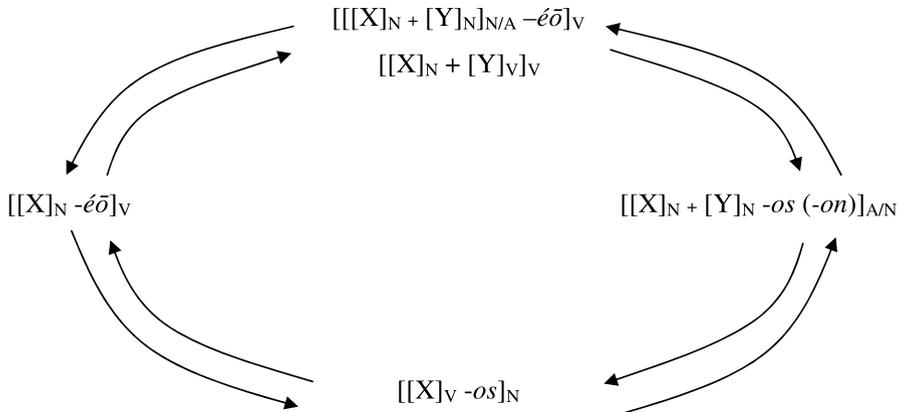


Fig. 4 Interplay between the schemas described above

In the formation and in the analysis of complex verbs in *-éō* different possible operations seem available. Due to analogical influence, each of these operations can trigger the others.

So, within the Ancient Greek written documentation, each schema can be the starting point of a complex (both in a historical and synchronic perspective) series of word formation processes. Figure 4 can be navigated in both directions. For example, if we assume as the starting point the schema $[[X]_V -os]_N$, we can navigate Fig. 4 in a clockwise direction: by means of conversion, it can lead to a simple *-éō* verb ($[[X]_N -éō]_V$); this verb can become the second member of a complex *-éō* verb; on its turn, by means of a new conversion, complex *-éō* verbs can provide a nominal/adjectival compound ($[[X]_N + [Y]_N -os (-on)]_{A/N}$). But if we assume the schema of nominal/adjectival compounds $[[X]_N + [Y]_N -os (-on)]_{A/N}$ as the starting point, and if we navigate Fig. 4 counterclockwise, we can obtain a complex *-éō* verb by means of conversion $[[X]_N + [Y]_N]_{N/A} -éō]_V$, which can give rise to a simple *-éō* verb ($[[X]_N -éō]_V$) through backformation; on its turn, simple *-éō* verbs can produce new nominal formations.

This figure represents the whole picture described in this article; of course, not all these schemas necessarily coincide with actual words in the derivational history of each complex word.

6 Conclusions

This paper has aimed to demonstrate that all the word formation processes considered cannot be accounted for separately, but that it is necessary to provide a single picture describing all of them, exploring and explaining all possible interrelations, even if in some cases a possible relative chronology of these processes can be drawn, and, as a consequence, different degrees of productivity can be postulated.

From this perspective, if we question which is the basis of Ancient Greek complex verbs in *-éō* in the whole development of the language and not simply at the very beginning, we risk entering a dead end street, since actually there is not an answer. The

process of complex *-éō* verb formation does not operate in just one direction. Therefore, there seem to be as many answers as problematic cases. These answers could be useful for a statistical investigation or for an historical survey of complex verbs in *-éō*, but they do not support an analysis aimed to observe a general tendency, which presupposes a certain degree of generalization and regularity. Of course, a 'word formation rule' such as that in (21) is not appropriate for a situation in which a 'linear path' (with a clear input, a clear output and a clear morphological operation) cannot be identified. As we stated above (Sect. 5), in the formation of complex verbs in *-éō* the leading role seems to be played by analogy, on the basis of general and abstract schemas that speakers infer from samples of actual words. In order to describe and explain the data we have presented so far, we think that a framework in which there is no a clear-cut separation between lexicon and 'rules' is preferable, where lexicon and 'rules' interact in both directions, and where usage, in terms of both type and token frequency, highly influences the emergence and the spread of word formation processes. As already stated by Bybee (1995), sets of words sharing similar patterns of semantic and phonological connections reinforce one another and create emergent generalisations describable as schemas. The higher the number of items reducible to the schema, the higher the probability that the schema will be used to create new items:

If the defining properties of the schema are very specific, the schema will be restricted in its application to new forms, and result in lower productivity. If the schema is very open, placing few restrictions on the items to which it can apply, its productivity will be greater. The other determinant of productivity is the strength of the schema, which is based directly on its type frequency—the higher the type frequency of the pattern described in the schema, the greater are its chances of applying to new items (Bybee 1995: 430).

From this perspective, we suggest that the analogical relations we have observed in the formation of complex *-éō* verbs can be accounted for by the model of Construction Morphology:

Language users acquire knowledge of these abstract morphological schemas on the basis of their knowledge of a set of words that instantiate this pattern. Once they have come across a sufficient number of words of a certain type, they can infer an abstract scheme, and will be able to extend that class of words (Booij 2005: 125).

As data presented so far reveal, this framework allows us to explain both the absence of a unique direction in the word formation patterns described above, and the possible co-occurrence of different word formation patterns in the same piece of lexicon.

References

- Anastasiadi-Symeonidi, A. (1983). La composition en grec moderne d'un point de vue diachronique. *LALIES—Actes des Sessions de Linguistique et de Litterature*, 2, 77–90.
- Baker, M. C. (1988). *Incorporation: a theory of grammatical function changing*. Chicago: University of Chicago Press.

- Booij, G. (2005). Compounding and derivation—evidence for Construction Morphology. In W. U. Dressler, D. Kastovsky, O. E. Pfeiffer & F. Rainer (Eds.), *Morphology and its demarcations* (pp. 109–132). Amsterdam: John Benjamins.
- Booij, G. (2007). Construction morphology and the lexicon. In F. Montermini, G. Boyé & N. Hathout (Eds.), *Selected proceedings of the 5th Décembrettes: morphology in Toulouse* (pp. 34–44). Somerville: Cascadilla Proceedings Project.
- Booij, G. (2010). *Construction morphology*. Oxford: Oxford University Press.
- Bybee, J. (1995). Regular morphology and the lexicon. *Language and Cognitive Processes*, 10, 425–455.
- Chantraine, P. (1968). *La formation des noms en grec ancien*. Paris: Klincksieck.
- Chantraine, P. (1968–1980). *Dictionnaire étymologique de la langue grecque*. Paris: Klincksieck.
- Croft, W. (1991). *Syntactic categories and grammatical relations: The cognitive organization of information*. Chicago: Chicago University Press.
- Givón, T. (1979). *On understanding grammar*. New York: Academic Press.
- Goldberg, A. (1995). *Constructions. A Construction Grammar approach to argument structure*. Chicago: University of Chicago Press.
- Grandi, N., & Pompei, A. (2010). Per una tipologia dei composti del greco. In I. Putzu, G. Paulis, G. Nieddu & P. Cuzzolin (Eds.), *La morfologia del greco tra tipologia e diacronia* (pp. 209–232). Milano: Franco Angeli.
- Horrocks, G. C. (1983). *Space and time in Homer*. New York: Arno Press.
- Lieber, R. (1980). *On the organization of the lexicon*. Bloomington: Indiana University Linguistic Club.
- Meissner, T., & Tribulato, O. (2002). Nominal composition in Mycenaean Greek. *Transactions of the Philological Society*, 100, 289–330.
- Mithun, M. (1984). The evolution of noun incorporation. *Language*, 60, 847–894.
- Mithun, M. (1986). On the nature of noun incorporation. *Language*, 62, 32–37.
- Pompei, A. (2006). Tracce di incorporazione in greco antico. In P. Cuzzolin & M. Napoli (Eds.), *Fonologia e tipologia lessicale nella storia della lingua greca* (pp. 216–237). Milano: Franco Angeli.
- Ralli, A., & Raftopoulou, M. (1999). The diachrony of Greek compounding. *Studies in Greek linguistics* (pp. 389–403).
- Ralli, A. (2008a). Composés déverbaux grecs à 'radicaux liés'. In D. Amiot (Ed.), *La composition dans une perspective typologique* (pp. 189–210). Arras: Artois Presses Université.
- Ralli, A. (2008b). Compound markers and parametric variation. *Linguistic Typology and Universals—STUF* 61, 19–38.
- Sapir, E. (1911). The problem of noun incorporation in American languages. *American Anthropologist*, 13, 250–282.
- Scalise, S. (1994). *Morfologia*. Bologna: Il Mulino.
- Schwyzler, E. (1939). *Griechische Grammatik, I*. München: Beck.