

Multiple preverbatation: Stacking of preverbs

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In this paper, I discuss instances of multiple preverbatation focusing mainly on the context of the Modern Greek verbal system and comparing it to Slavic languages. For this, I investigate the nature of preverbs in Modern Greek presenting the properties that lead to the distinction of two types that can attach to a verbal stem, namely prefixes and adverbial preverbs. Both types can participate under different combinations in the formation of multiply-preverbed verbal stems in Modern Greek, though prefixes should always be the innermost ones. On the basis of preverb co-occurrence, the formation of multiply-preverbed verbal complexes leads to two important generalizations that can be supported cross-linguistically: a) For a multiply-prefixed verbal stem P_1 - P_2 -V to be formed, the existence of a simply prefixed verbal stem P_2 -V is required, and b) Regarding a multiply-prefixed verbal stem P_1 - P_2 -V, no verbal stem can be formed as P_1 -V. Moreover, I present a syntactic analysis for the base position of preverbs that captures the phenomenon of multiple preverbatation.

Keywords: *preverbs, adverbial preverbs, prefixes, multiple preverbatation, properties, generalizations*

1. Introduction

The term *preverb* refers to a conventional, more traditional, notion in Indo-European linguistics. It describes morphemes that surface as left adjacent to verb stems and are closely related to them forming a semantic unit. Kuryłowicz (1964), Watkins (1964) and Booij & van Kemenade (2003) discuss the topic of preverbs in Indo-European. Vincent (1999) addresses some intriguing cases in Latin, while the study of preverbs in Dutch and German has drawn attention in recent literature (van Kemenade & Los 2003, Booij 2002). As is the case of the Modern German applicative preverb *be-*, the function of preverbs in many Indo-European languages is widely acknowledged to be the transitivity of intransitive verbs.

Preverbs are heterogeneous and investigation into their nature has also long preoccupied the Greek literature (Gardikas 1924; Philippaki-Warbuton 1970; Sotiropoulos 1972; Malikouti-Drachman & Drachman 1989; Ralli 1992, 2003, 2004, 2005, 2013; Rivero 1992; Drachman & Malikouti-Drachman 1994; Pouloupoulou 1996; Xydopoulos 1996; Alexiadou 1997; Smirniotopoulos & Joseph 1998; Delveroudi & Vassilaki 1999; Karantzola & Giannouloupoulou 2000; Efthymiou 2001a, 2001b, 2002a, 2002b; Efthymiou & Gavriilidou 2003; Dimela & Melissaropoulou 2009; Gavriilidou 2013; Gavriilidou & Giannakidou 2016; among others)¹.

¹ In all the above-mentioned scholar, no unanimous reference to *preverbs* is made, and notions such as *prefixes* and *prefixoids* are also used referring to the same morpheme. To avoid any confusion, the notion *preverbs* is opted to be used here.

- (1) O Petros ant- egrapse ena piima
 the Peter instead.of-wrote.3SG a poem
 ‘Peter copied a poem.’
- (2) O Petros ksana-egrapse ena piima.
 the Peter again-wrote.3SG a poem
 ‘Peter wrote a poem again.’

Given distinct properties (i.e. *(non-)compositional meaning, nominalization, conjoinability, vowel deletion, and stress shift*), Greek preverbs, such as *ant(i)-* in (1), belong to the category of *prefixes*, whereas preverbs, such as *ksana-* in (2), belong to the category of *adverbial preverbs*.

When more than one preverb attaches to a verb, this phenomenon is known as *multiple prevervation*. In this paper, I contend that multiple prevervation between preverbs of different categories is possible. I further indicate that, unlike other languages, such as Slavic (Svenonius 2004; Gribanova 2013), where only the elements equivalent to the Greek adverbial preverbs can co-occur in a verbal complex, multiple prevervation between preverbs of the same category is also feasible in Greek. Although prefixation is the notion that is frequently used in the Slavic literature, here I will use the term *prevervation* as a cover term for both adverbial preverbs and prefixes.

The paper is organized as follows: In Section 2, I discuss the division of preverbs using data from Modern Greek (2.1), presenting the distinct characteristics of prefixes and adverbial preverbs (2.2). In Section 3, I show the phenomenon of multiple prefixation in Slavic and multiple prevervation in Greek presenting different types of ordering of preverbs, i.e. between different preverbs (3.1), and between preverbs of the same types (3.2), and offer two generalizations under which multiple prevervation is formed (3.3). In Section 4, I present my syntactic analysis for the base position of preverbs that captures multiple prevervation. The last section offers a summary of the main arguments.

2. Modern Greek preverbs

2.1 *Two types of preverbs*

The term *preverb* is typically used as a cover term in the literature to refer to preverbal words and preverbal prefixes in the literature (Di Sciullo 1997, 2005; Di Sciullo & Slabakova 2005). The morpheme that serves as a preverb frequently also serves as an adposition or an adverb when it isn't in a preverbal context. Here, I argue that, based on their properties and the properties of the verbal complexes they form, Greek distinguishes two categories of preverbs: PREFIXES and ADVERBIAL PREVERBS.

Prefixes in Modern Greek are elements deriving from Ancient Greek prepositions, mainly those having spatial meaning (Philippaki-Warburton 1970; Sotiropoulos 1972; Malikouti-Drachman & Drachman 1989; Ralli 1992, 2003, 2004, 2005; Drachman & Malikouti-Drachman 1994; Xydopoulos 1996; Smirniotopoulos & Joseph 1998; Efthymiou 2001a, 2001b, 2002a, 2002b; among others):

- (3) Prefixes in Greek
- | | |
|---|-----------------------------------|
| a. anti- (<i>anti</i> ‘instead of, in place of’) | b. apo- (<i>apo</i> ‘from’) |
| c. meta- (<i>meta</i> ‘following’) | d. para- (<i>para</i> ‘despite’) |
| e. epi- (<i>epi</i> ‘on, atop’) | f. dia- (<i>dia</i> ‘through’) |
| g. en- (<i>en</i> ‘in, inside’) | h. ek- (<i>ek</i> ‘from’) |
| i. eis- (<i>eis</i> ‘to, towards’) | j. peri- (<i>peri</i> ‘around’) |
| k. pros- (<i>pros</i> ‘to, towards’) | l. ana- (<i>ana</i> ‘on’) |
| m. pro- (<i>pro</i> ‘prior to, before’) | n. kata- (<i>kata</i> ‘under’) |
| o. hypo- (<i>hypo</i> ‘under’) | p. syn- (<i>syn</i> ‘with’) |

While some prefixes have free counterparts in Modern Greek, which can be used freely in the language (4a-b), some others have only free counterparts in Koine Greek or in Medieval Greek, appearing in fixed expressions (4c-d):

- (4)
- | | |
|--|--|
| a. apo- lamvano from-receive ‘to enjoy’ | apo to spiti from the house ‘from the house’ |
| b. pros- lamvano towards-receive ‘to hire’ | pros ti thalassa towards the sea ‘towards the sea’ |
| c. eis-valo to- attack ‘to invade’ | is igian to health ‘cheers’ |
| d. syn- erxome with-come ‘to recover’ | syn tis alis with the other ‘furthermore’ |

Adverbial preverbs constitute the second category of Greek preverbs. They are bound elements having adverbial function, a degree or repetitive one. They derive from adverbs, as well as from prepositions, adjectives, nouns, and numerals (see also Philippaki-Warburton 1970; Ralli 1988, 1992, 2003, 2004, 2005, 2013; Rivero 1992; Drachman & Malikouti-Drachman 1994; Pouloupoulou 1996; Xydopoulos 1996; Alexiadou 1997; Delveroudi & Vassilaki 1999; Efthymiou 2018; Efthymiou, Fragaki & Markos 20015a, b; Efthimiou & Gavriilidou 2003; Dimela & Melissaropoulou 2009; Gavrilidou 2013; Gavriilidou & Giannakidou 2016; Koutsoukos 2013, 2014; among others).

- (5) Adverbial preverbs in Modern Greek
- | | |
|--------------------------------------|--|
| a. <i>kata</i> - ‘completely, over-’ | <i>kata-xerome</i> ‘to be overjoyed’ |
| b. <i>kalo</i> - ‘well-’ | <i>kalo-pantrevome</i> ‘to have a good marriage’ |
| c. <i>yper</i> - ‘over-’ | <i>yper-analio</i> ‘to over-analyze’ |
| d. <i>para</i> - ‘over-’ | <i>para-kimame</i> ‘to over-sleep’ |
| e. <i>poly</i> - ‘much’ | <i>poly-pino</i> ‘to drink much’ |

| | |
|----------------------------------|--|
| f. <i>miso-</i> ‘half-’ | <i>miso-psino</i> ‘to half-bake’ |
| g. <i>psilo-</i> ‘a bit’ | <i>psilo-troo</i> ‘to eat a bit’ |
| h. <i>koutso-</i> ‘poorly’ | <i>koutso-kataferno</i> ‘to manage poorly’ |
| i. <i>psefto-</i> ‘poorly’ | <i>psefto-doulevo</i> ‘to pretend to work’ |
| j. <i>xazo-</i> ‘poorly/lightly’ | <i>xazo-kimame</i> ‘to sleep poorly/lightly’ |
| k. <i>skylo-</i> ‘to death’ | <i>skylo-varieme</i> ‘to be bored to death’ |
| l. <i>xilio-</i> ‘deeply’ | <i>xilio-efxaristo</i> ‘to be deeply grateful’ |
| m. <i>mirio-</i> ‘deeply’ | <i>mirio-parakalo</i> ‘to beg million times’ |
| n. <i>ksana-</i> ‘again, re-’ | <i>ksana-troo</i> ‘to eat again’ |

Although they have different origins, they fall into the same category based on their properties and the properties of the complexes they form (see Section 2.2).

Interestingly, other languages, like Germanic or Slavic, make a different, although corresponding, distinction splitting between *lexical prefixes* and *superlexical prefixes* (see Svenonius 2004). In Greek, elements which are morphologically prefixes are not excluded from the second category which is named as ADVERBIAL PREVERBS. However, their properties, related also to the verbal complexes they form, make them differ from the elements of the first category which is named as PREFIXES. In addition, elements, such as *poly-*, *psilo-*, *miso-*, *koutso-*, *psefto-*, *skylo-*, *xilio-*, and *mirio*, which are considered as prefixoids in the literature (see Efthymiou 2017), belong to the category of adverbial preverbs.

2.2 Properties of preverbs

Several distinct properties, namely (non-)compositional meaning, nominalization, and conjoinability, vowel deletion, and stress shift, lead to the distinction of the two types of preverbs in Modern Greek. More specifically:

a) (Non-)compositional meaning

Verbal complexes with prefixes tend to become idiomatized (Ralli 2004, 2005). This means that the meaning of a prefixed verb is not transparent, i.e., it does not derive from the meaning of its constituents:

- (6)
- a. apo- lamvano
from-receive
‘to enjoy’
 - b. pros- lamvano
towards-receive
‘to hire’
 - c. anti- gráfo
instead.of-write
‘to copy’

Although Greek prefixes are homophonous to prepositions, the meaning of a prefixed verb is not the same with that of a verb followed by the counterpart preposition. The meaning of prefixed verb structures contrasts with that of preposition-verb structures, as the comparison of the following sentences shows:

- (7) a. O Kostas ant- egrapse to piima sto tetradio.
the Kostas instead.of-wrote.3SG the poet at-the notebook
‘Kostas copied the poet at the notebook.’
b. O Kostas egrapse to piima anti to tragudi sto tetradio.
the Kostas wrote.3SG the poem instead-of the song at-the notebook
‘Kostas wrote the poem, instead of the song, at the notebook.’

In (7a), the verbal complex *antegrapse* ‘copied’ is formed by the prefix *anti-* ‘instead of’ attached to the verb *egrapse* ‘wrote’. In (7b), the verb *egrapse* ‘wrote’ is followed by the nominal phrase *to piima* ‘the poem’ and the prepositional phrase *anti to tragudi* ‘instead of the song’. However, although both grammatical, the two sentences have different meanings.

Furthermore, Greek prefixes have various meanings, as the following verbal complexes with the prefix *anti-* show:

- (8) a. dro ‘to act’ anti-dró ‘to react, to respond back’
b. gráfo ‘to write’ anti-gráfo ‘to copy’
c. laló ‘to voice, to crow’ anti-laló ‘to echo’
d. véno ‘to go, to step’ anti-véno ‘to contradict’

In (8), the prefix *anti-* appears to the verb complexes *antidró*, *antigráfo*, *antikrízo* and *antivéno*, but each prefixed verb has an idiomatic meaning which is unique to each structure.

On the other hand, adverbially preverbed verbal complexes have compositional meanings. A verbal complex with an adverbial preverb attached to it has a systematic meaning, in other words, its meaning derives from the meaning of its parts.

- (9) a. kimáme ‘to sleep’ psilo-kimáme ‘to sleep a little’
b. tróo ‘to eat’ psilo-tróo ‘to eat a little’
c. gráfo ‘to write’ psilo-gráfo ‘to write a little’
d. váfo ‘to dye’ psilo-váfo ‘to dye a little’

The variety of meanings which is clear to prefixed verbs cannot be found for verbal complexes with adverbial preverbs. The meaning of verbs, either in simple forms or with an adverbial preverb attached to them, does not change; rather, it is prevented, as seen in (9).

However, some adverbial preverbs have a different distribution with their free counterpart that leads to a slightly different meaning. More specifically, Delveroudi & Vassilaki (1999) first mention the restricted distribution of *poly-* ‘much’ occurring only in negative environments. In Giannoula (2020, 2022), I argue that, under the framework of the *(Non)Veridicality Theory of Polarity* (Giannakidou 1994, 1997, 1998, 2001 et seq.), the bound morpheme *poly-* functions as a

strong *Negative Polarity Item* (NPI) appearing only in antiveridical environments (negation and *without*-clauses), as opposed to its independent counterpart, the degree modifier *poly* ‘a lot, much’ which appears both in negative and affirmative contexts:

- (10) a. I Ioanna dhen kimithike poly xthes vradi.
the Joanne not slept.3SG much yesterday night
‘Joanne didn’t sleep much last night.’
b. I Ioanna kimithike poly xthes vradi.
the Joanne slept.3SG a-lot yesterday night
‘Joanne slept a lot last night.’
- (11) a. I Ioanna dhen poly- kimithike xthes vradi.
the Joanne not much-slept.3SG yesterday night
‘Joanne didn’t sleep much last night.’
b. #I Ioanna poly- kimithike xthes vradi.
the Joanne much-slept.3SG yesterday night
(Lit: ‘Joanna slept much last night.’)

Both the free *poly* and the bound *poly-* are used as degree modifiers. However, unlike the free *poly* in (10), the distribution of the bound *poly-* is restricted only to negative contexts, as the ungrammaticality of the sentence in (11b) shows. Thus, this affects the meaning of a *poly*-verb, which becomes slightly different from that of the construction [verb *poly*]: as seen in the glosses in (10) and (11), the free adverb *poly* can have either the value of ‘a lot’ or the value of ‘much’, whereas the bound morpheme *poly-* assigns only the value of ‘much’ to the verbs it attaches (Giannoula 2020, 2022)².

Therefore, we see that, unlike with prefixes, the meaning of a verb does not change when adverbial preverbs attach to it. And although the meanings of a free-stranding adverb and an adverbial preverb might be different (e.g. free *poly* vs. bound *poly-*), the meaning of the latter is fixed and does not change depending on what verb is attached to.

b) *Nominalization*

Another important distinction between prefixes and adverbial preverbs is related to the process of nominalization. More specifically, Greek can exhibit nominalization patterns with prefixed verbs providing the basis for nominalization:

- (12) a. antigrafo (v.) → antigrafi (n.)
‘to copy’ ‘copying’
b. paragrafo (v.) → paragrafi (n.)
‘to ignore’ ‘ignoring, crossing out’
c. sympiezo (v.) → sympiesi (n.)
‘to compress’ ‘compression’

² According to Ralli (2004:11), composite verbs with *poly-* get the value of ‘not exactly’, ‘not particular’ or ‘almost’.

In (12), the prefixed verbs *antigrafo*, *paragrafo* and *sympiezo* can be nominalized forming the nouns *antigrafí*, *paragrafí* and *sympíesi*, respectively.

Unlike prefixes, adverbial preverbs tend to be excluded from nominalizations, as indicated below:

- (13)
- | | | | |
|----|---|---|-------------------------------|
| a. | ksana-grafo (v.) again-write 'to write again' | → | *ksana-grafi (n.) |
| b. | (den) poly- grafo (v.) not much-write 'not to write much' | → | *poly-grafi (n.) |
| c. | psilo- grafo (v.) a.little-write 'to write a little' | → | *psilo-grafi (n.) |
| d. | para-grafo (v.) over-write 'to over-write' | → | *para-grafi (n.) ³ |

In (13), nouns as *ksanagrafi*, *polygrafi*, *psilografi*, and *paragrafi* are ungrammatical and not accepted by Greek native speakers.⁴

c) Conjoinability

The term *conjoinability* refers to the phenomenon in which two or more elements of the same type are linked together to form complex syntactic structures. The coordinated element then acts and has the same function with the coordinating elements. However, the conjoining of affixal morphemes is exceptional (Okada 1999; Yoon 2017). Bresnan & Mchombo (1995) use the Conjoinability test to show that productive coordination fails to be attested within words:

- (14)
- | | |
|----|---|
| a. | Suzanne out- lasted or out-played her mother. |
| b. | *Suzanne out-[lasted or played] her mother |

The ungrammaticality of the sentence (14b) shows that word-internal constituents cannot conjunct under the scope of the prefix *out-*.

Consider now the Greek sentence in (15), where both verbal complexes *paretakse* and *paratirise* are formed by the same prefix, *para-*:

³ Notice that the ungrammatical **paragrafi* where *para-* is an adverbial preverb and has the meaning 'excessively' is different from the grammatical *paragrafi* 'deletion' where *para-* is a prefix meaning 'instead of'.

⁴ Nouns, such as *psilovroxo* 'drizzle, light rain' and *psilodouleia* 'fiddly', do not constitute counterexamples of nominalizations of adverbial preverbs; rather, they are cases in which a noun creates a compound with an adjective that appears as a free counterpart of an adverbial preverb (e.g. *psili vroxi* → *psilovroxo* 'drizzle', *psili douleia* → *psilodouleia* 'fiddly'). Therefore, in such cases, the complex nouns do not derive from the adverbially preverbed verbal complexes.

- (15) O Petros par- etakse ke para- tirise ta
 the Peter instead.of-arrayed.3SG and instead.of-obeyed.3SG the.PL
 stratiotakia tu.
 toy-soldiers his
 ‘Peter lined up and observed his toy soldiers.’

The syntactic process of Conjoinability within words renders the sentence in (16) ungrammatical:

- (16) *O Petros par- [etakse ke tirise] ta stratiotakia tu.
 the Peter instead.of-arrayed.3SG and obeyed.3SG the.PL toy-soldiers his
 ‘Peter lined up and observed his toy soldiers.’
 (Lit. ‘Peter lined up and obeyed his toy soldiers.’)

In (16), the Greek prefix *para-* does not take scope over the verbs *etakse* and *tirise*, and so the two verbs cannot conjoin. Therefore, Greek prefixes, as sub-words, are opaque to the syntactic process of Conjoinability.

On the other hand, adverbial preverbs, as opposed to prefixes, are transparent to the syntactic process of Conjoinability. More specifically, a Greek verbal complex can coordinate with another one when the same adverbial preverb is attached to both verbs.

- (17) a. O Petros den ksana-efage i den ksana-ipie tipota se parti.
 the Peter not again- ate.3SG or not again-drunk.3SG nothing at party
 ‘Peter didn’t eat again or didn’t drink again anything at a party.’
 b. O Petros den ksana-[efage i ipie] tipota se parti.
 the Peter not again- ate.3SG or drank.3SG nothing at party
 ‘Peter didn’t eat or drink again anything at a party.’
- (18) a. I Anna den poly- efage i den poly- ipie xthes.
 the Anna not much-ate.3SG or not much-drunk.3SG yesterday
 ‘Anna didn’t eat much or didn’t drink much yesterday.’
 b. I Anna den poly-[efage i ipie] xthes.
 the Anna not much-ate.3SG or drank.3SG yesterday
 ‘Anna didn’t eat or drink much yesterday.’

The verbal complexes in (17) are formed by the adverbial preverb *ksana-*. In (17a), the conjugator *i* ‘or’ conjoins the verbal complexes *ksanaefage* ‘he ate again’ and *ksanaipie* ‘he drank again’. Interesting though, in (17b), *ksana-* takes scope over the verbs *efage* ‘ate’ and *ipie* ‘drank’. The two verbs can be conjoined, and the grammatical sentence (17b) is equivalent to (17a). Similarly, in (18), the verbal stems *efage* ‘ate’ and *ipie* ‘drank’ are conjoined under the scope of the adverbial preverb *poly-* ‘much’.⁵

⁵ Adverbial preverbs having free adverbial counterparts are more likely to be subject to the process of conjoinability, as seen in (17) and (18) with the adverbials *ksana-* ‘again’ and *poly-* ‘much’ that have *ksana* ‘again’ and *poly* ‘a lot/much’ as their free alternative, respectively. However, this is not the rule and other adverbial preverbs can

d) *Vowel deletion*

The phonological process of vowel deletion is another distinction between prefixes and adverbial preverbs in Modern Greek. More specifically, when a verb begins with a vowel, the prefix attached to it undergoes vowel deletion (Ralli 2004: 9): the phonological process occurs obligatorily at the boundaries between the prefix ending to a vowel and the verb beginning with a vowel, with the prefix vowel being deleted.

- (19) a. apo-éxo → apéxo but *apoéxo, *apóxo
‘to be off’
b. ypo-árxo → ypárxo but *ypoárxo, *ypórxo
‘to exist’

Vowel deletion is also present with verbs having the past augment. As with verbal complexes with verbs beginning with vowels, the vowel of prefix that directly attaches to the verb is deleted, given the presence of the augment:

- (20) a. ap- éfyga
from-left.1SG
‘I avoided’
b. *apo-éfyga
c. *apo-fyga

Regarding the phonological process of vowel deletion in adverbial preverbs, when a vowel, like the past augment *e-*, is present and leftward to the verb stem, this vowel is not deleted:

- (21) a. psilo- éfaga
a.little-ate.1SG
‘I ate a little’
b. *psil-éfaga

The phonological process of vowel deletion reinforces the existence of two different morphemes *para-* (Triantafyllidis 1998, cf. Ralli 2004).

- (22) a. par- exis
despite-have.2SG
‘You provide’
b. para-efages
over-ate
‘You over-ate’

participate to this syntactic process (e.g. *O Petros xilio-parakalese ke xilio-efxaristise gia ti doulia* → *O Petros xilio-parakalese ke efxaristise] gia ti doulia* ‘Peter begged and thanked a thousand times for the job’).

The morpheme *para-*, as in (22a), belongs to the category of prefixes allowing vowel deletion. It derives from the Ancient Greek preposition *pará* ‘despite’ and its meaning in a complex formed is non-compositional. By contrast, the morpheme *para-*, as in (21b), belongs to the category of adverbial preverbs not undergoing vowel deletion. It derives from the adverb *pára* ‘very’ and has a compositional meaning with the function of exaggeration in the complex it forms with the verb stem.

e) *Stress shift*

Given the observations found in Drachman & Malikouti-Drachman (1994) and Malikouti-Drachman (1996), verbal complexes with prefixes in Greek undergo stress shift when they are in the imperative form:

- (23) a. para- gráfo
 instead.of-write
 ‘to ignore’
 b. Pará- grapse!
 instead.of-ignore.2SG.IMPER
 ‘Ignore!’

While the verbal complex is stressed on the penultimate syllable (23a), the imperative form of the verb does not preserve the stress and it is stressed on the antepenultimate syllable (23b). The process of stress shift is assumed to be the outcome of a syntactic unit, or what Watkins (1964) refers to as *univerbation*. Kuryłowicz (1964) asserts that this univerbation has the effect of either enclitizing the verb to the preverb (as here in Greek or in Sanskrit) or proclitizing the preverb to the verb (as in Old Irish, Germanic, and Blato-Slavic).

On the other hand, verbal complexes with adverbial preverbs in Greek do not undergo the process of stress shift when they are in the imperative form:

- (24) a. ksana-gráfo
 again-write
 ‘to rewrite’
 b. Ksana-grápse!
 again- write.2SG.IMPER
 ‘Rewrite!’

The verbal complex in (24a) is stressed on the penultimate syllable and the stress is prevented even when the preverbed verb is in the imperative form (24b). Table 1 summarizes the properties of the two types of preverbs in Modern Greek.

Table 1: Properties of Greek preverbs

| | <i>Prefixes</i> | <i>Adverbial preverbs</i> |
|-----------------------|-----------------|---------------------------|
| Compositional meaning | X | ✓ |
| Nominalization | ✓ | X |
| Conjoinability | X | ✓ |
| Vowel deletion | ✓ | X |
| Stress shift | ✓ | X |

From this, we conclude that verbal complexes with prefixes tend to have non-compositional meaning, allow the processes of nominalization, vowel deletion and stress shift, but are excluded from the process of conjoinability. Verbal complexes with adverbial preverbs, on the other hand, have compositional meaning, allow the process of conjoinability, but tend to be excluded from the processes of nominalization, vowel deletion and stress shift.

3. Multiple preverbatation: Ordering the preverbs

Multiple preverbatation is the phenomenon where more than one preverb attaches to a verb. Although *prefixation* is the notion that is frequently used in the Slavic literature, here I will use the term *preverbatation* as a cover term for both prefixes and adverbial preverbs (a category that includes prefixes and prefixoids) in Modern Greek. In this section, we examine the ordering of preverbs in verbal complexes showing that the combination of preverbs of different categories is possible. I further indicate that, unlike other languages, such as Slavic (Svenonius 2004; Gribanova 2013), where only the elements equivalent to the Greek adverbial preverbs can co-occur in a verbal complex, multiple preverbatation between preverbs belonging to the same category is also feasible in Greek. Finally, I offer two generalizations necessary for the formation of multiply-preverbed verbal complexes.

3.1 Preverbs of different categories

In Greek, it is common to have a prefix and an adverbial preverb attaching to a verb stem⁶. The same phenomenon is observed in Slavic languages (Ludwig 1995; Babko-Malaya 1999; Istratkova 2004; Svenonius 2004).

- (25) a. ksana-kata- theto (Modern Greek)
 again-under-put
 ‘to testify again’

⁶ See also Ralli 2004.

- b. psilo- dia- fero
a. little-through-carry
'to differ a little'
- (26) a. po- vy- brasyvatj (Russian)
DISTR-out-throw
'throw out one by one'
- b. po- w-chodzili (Polish)
DISTR-in-walk
'walk in one by one'
- (Svenonius 2004)

However, the ordering of preverbs is strict. Preverbs cannot attach to a verb in a free order, but rather there is a restriction in their ordering: adverbial preverbs precede prefixes, but not vice versa.

- (27) a. ksana-anti- grafo (Modern Greek)
again-instead.of-write
'to copy again'
- b. poly- dia- fero
much-through-carry
'to differ much'
- c. *anti- ksana-grafo
instead.of-again-write
- d. *dia- poly- fero
through-much-write
- (28) a. po- vy- brasyvatj (Russian)
DISTR-out-throw
'throw out one by one'
- b. *vy- po- brasyvatj
out-DISTR-throw
- c. po- w-chodzili (Polish)
DISTR-in-walk
'walk in one by one'
- d. *w-po- chodzili
in-DISTR-walk
- (Svenonius 2004)

In (27a), the Greek prefix *anti-* attaches to the verb *grafo* 'to write', and the adverbial preverb *ksana-* 'again' attaches to the already prefixed verb *antigrafo* 'to copy' having the repetition function to the action of copying. In (27b), the adverbial preverb *poly-* 'much' attaches to the prefixed verb *diafero* 'to differ'. Examples (27c) and (27d) show that shifting the order of preverbs leads to ungrammaticality. The same holds for the Russian and Polish verbal complexes, as in (28).

3.2 Preverbs of the same category

Working on prefixation in Slavic languages, Svenonius (2004) discusses the distinction between *lexical* and *superlexical* prefixes. The former type is equivalent to the first class of Greek preverbs, namely prefixes, and the latter is equivalent to the second class of Greek preverbs, namely adverbial preverbs. Based on that split, Svenonius claims that multiple superlexical prefixes can co-occur in a verbal complex: a second superlexical prefix can attach to an already superlexically prefixed verb in Slavic, as in (29):

- (29) a. po- na- razkaža (Bulgarian)
DLMT-COMLT-narrate
'to tell a little of many' (DLMT for "delimitative")
- b. iz- pre- razkaža
COMPL-RPET-narrate
'to renarrate completely' (RPET for "repetitive")
- c. za- pre- razkaža
INCP-RPET-narrate
'to start renarrating' (INCP for "inceptive")
- d. iz- po- razkaža
COMPL-DISTR-narrate
'to narrate completely one by one'
- e. iz- po- na- pre- razkaža
COMPL-DISTR-CMLT-RPET-narrate
'to renarrate completely one by one, of many' (CMLT for "cumulative")
(Istratkova 2004)

Discussing the phenomenon of multiple preverbation in Modern Greek mentioning to it as accumulation of preverbs, Ralli (2004) points out that Greek adverbial preverbs are also productive and may co-occur in verbal complexes:

- (30) ksana-poly- troo
again-much-eat
'to eat much again'

In (30), both the preverbs *poly-* and *ksana-* attach to the verb *troo* 'to eat'. *Poly-* is closer to the verb having the function of the low degree of the action described by the verb. *Ksana-* is expected to be added to the [*poly*-verb] complex to function as a modifier of repetition of the action that happens in a low degree. However, there are also cases with multiple preverbs that are ungrammatical:

- (31) */?? (den)poly- para-troo
not much-over-eat

I argue that the ungrammaticality in (30) is due to the fact that both *poly-* and *para-* have a degree function with two contrastive meanings (mitigation and exaggeration, respectively). Thus, it is unacceptable to have a verbal complex with two adverbial preverbs with contradictory degree meanings, as it is also unacceptable to have a verb being modified by two adverbs of contradictory degrees in a sentence:

- (32) #O Petros ipie ligo poly sto parti.
 the Peter drank.3SG a-little a-lot at-the party
 (Lit. ‘Peter drank a little a lot at the party.’)

Regarding multiple prefixation, i.e. the phenomenon where more than one prefix attaches to the verb stem, Svenonius points out that lexical prefixes cannot co-occur in Slavic, strongly arguing for the structural uniqueness of lexical prefixes. Since lexical prefixes are generated in the predicative position for resultative predicates, he indicates that they are unique, as the syntactic position for resultatives is unique. Further evidence for the uniqueness of lexical prefixes comes from Gribanova (2013), who demonstrates that multiple Russian prefixes of the category Preposition can co-occur under no circumstances:

- (33) *Vasja za- v- bival gvozdi/ gvozdej v stenu.
 vasja behind-in-hit.2IMPF.SG.M nails.ACC/nails.GEN in wall.ACC (IMPF for “imperfect”)
 (Tatevosov 2007)

The ungrammaticality of (33) proves that Russian lexical prefixes occupy only one morphological slot in the verbal complex, as Gribanova points out.

However, evidence from Greek shows that this restriction is not universal, rather it is common in Modern Greek to have two prefixes of the category Preposition surfacing in one verb: a verbal complex can be formed by a verb and more than one prefix, as the verbal complexes in (34) show.

- (34) a. apo- sym- piezo
 from-with-press
 ‘to decompress’
 b. epi-syn- apto
 to- with-touch
 ‘to attach’
 c. en-dia- fero
 in- through-carry
 ‘to interest’
 d. pros- ypo- grafo
 towards-under-write
 ‘to countersign’

The phenomenon of multiple preverbatation in Greek has received some attention in the literature, mostly from a typological perspective. More specifically, Imbert (2008, 2010) explores multiple preverbatation in Homeric Greek as a way of coding multiple portions of Path in one Motion event, focusing only on motion verbs and prefixes having a spatial meaning:

- (35) xiphos arguróe:lon kouleô:i (Odyssey 11.98)
 sword.ACC silver-studded.ACC ARGi/sheath.DAT
 en- kat- épe:x'
 RelPi/in- SatP/down thrust.AOR.1SG
 [+PATH] [+PATH]
 'I thrust my silver-studded sword down into its sheath.' (ARG for "verb argument", AOR for "aorist", SAT for "satellite") (Imbert 2010: 8)

Thus, multiple preverbatation, i.e. the co-occurrence of more than one preverb in a verbal complex, is possible not only for adverbial preverbs, but also for prefixes: prefixes can attach to already-prefixed verbs in Greek.

3.3 Generalizations

So far, we have seen that multiple preverbatation in Greek is possible between preverbs belonging to different categories, as well as preverbs of the same category. A question that arises now is how a multiply-preverbed verbal complex is formed.

- (36) a. apo- sym-piezo > sym-piezo
 from-with-press with-press
 'to decompress' 'to zip, to squeeze'
 b. en-dia- fero > dia- fero
 in- through-carry through-carry
 'to interest' 'to differ'

In (36a), the multiply-prefixed verbal complex *aposympiezo* 'to decompress' derives from the simply prefixed verbal complex *sympiezo* 'to zip, to squeeze' (< *piezo* 'to press'). Similarly, in (36b), the highest-level verbal complex *endiafero* 'to interest' derives from the first-level verbal complex *diafero* 'to differ' (< *fero* 'to carry').

The example above shows that there seems to be a requirement for multiple preverbatation: all verbal complexes, at each level of preverbatation, must exist independently. This observation can be captured under the following generalization:

- (37) *Generalization 1*
 For a multiply-prefixed verbal complex P₁-P₂-V to be formed, the existence of a simply prefixed verbal complex P₂-V is required.

However, a verbal complex with two prefixes attached to it does not allow a simpler prefixed verbal complex with just the outer prefix to be formed.

- (38) a. apo- sym- piezo > *apo- piezo
 from-with-press from-press
 ‘to decompress’
- b. en-dia- fero > *en-fero
 in- through-bring in- bring
 ‘to interest’

Therefore, this observation leads to another generalization:

- (39) *Generalization 2*
 Regarding a multiply-prefixed verbal complex P₁-P₂-V, no verbal complex can be formed as P₁-V.

This second generalizations reinforces the first one showing that a multiply-preverbed verbal complex is built upon the simply preverbed one.⁷

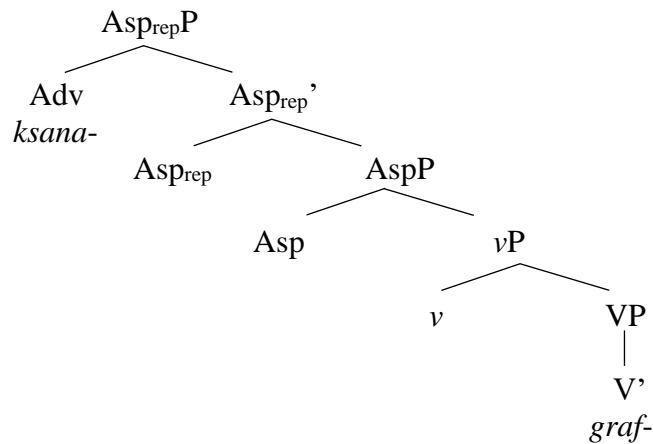
4. Syntactic analysis

In this section, I provide a syntactic analysis for the base position of adverbial preverbs and prefixes that captures multiple preverbatation. More specifically, I propose a unified analysis for Greek preverbed verbal complexes without focusing only on verbal complexes with motion verbs or prefixes having a spatial/directional meaning (cf. Imbert 2008, 2010; Daskalaki & Mavrogiorgos 2016).

Beginning with adverbial preverbs, I argue that they are generated as Adv[erb]s in the specifier position of functional phrases (Cinque 1999). For instance, the position of the adverbial preverb *ksana-* in the verbal complex *ksana-grafo* ‘to write again’ is depicted in (40):

⁷ Many thanks to one of the reviewers for suggesting possible counterexamples. However, I argue that it is not possible that those counterexamples of verbal complexes are formed as P₁-V. For instance, the simply prefixed verbal complex *απο-θέτω* is a P₂-V from which the P₁-P₂-V *εν-απο-θέτω* is formed. The verb stems *syg-grafo* ‘to write, to author’ and *eg-krino* ‘to approve, to authorize’ are just simply prefixed verbal complexes that do not form multiply prefixed verbal complexes. Besides, multiple prefixation is possible but not mandatory to verbal complexes with preverbs.

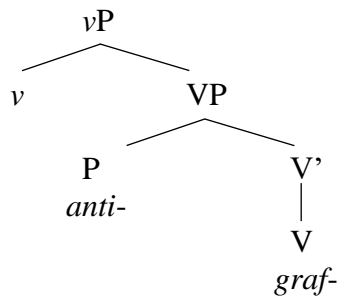
(40)



In the emerged configuration, the adverbial preverb *ksana-* is introduced as adverb in the specifier position of $Asp_{rep}P$ (see Cinque 1999).

Regarding prefixes, I propose that they are introduced as P[reposition]s in [Spec, VP] functioning as the argument of the verbal root⁸. This is because Modern Greek prefixes are reminiscent of Ancient Greek prepositions, in other words, the former derive from the latter. The syntactic derivation depicted in (41) shows the base position of the prefix *anti-* of the verbal complex *anti-grafo* ‘to copy’:

(41)



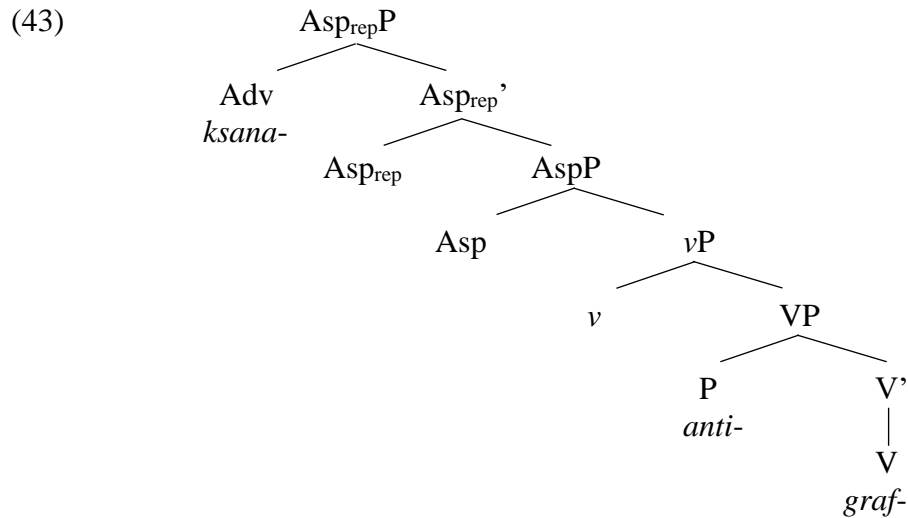
In (41), *anti-* of the category of prefixes is generated as P in the specifier of VP. This position shows that prefixes are arguments of the verbs they attach to. My analysis differs from that of Daskalaki & Mavrogiorgos (2016) who take Modern Greek prefixes attached to motion verbs as low applicative heads (in the sense of Pykkänen 2008) licensing the addition of a locative DP argument (e.g. *yperíptame tis polis* ‘fly over the city’). However, evidence that prefixes are in P comes from the observation that, given multiple prefixation, as in (42), not every prefix has to introduce an additional argument:

- (42) a. O Petros syn- elege gramatosima.
 the Peter with-said.3SG stamps
 ‘Peter collected stamps.’

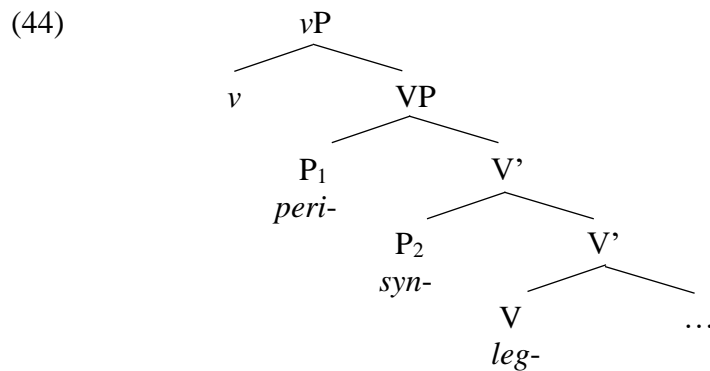
⁸ See also Myler (2017) for Sanskrit verb forms with prefixal particles.

- b. I naftiki peri- syn-eleksan tus navagus.
 the naval around-with-said.3SG the shipwrecked.PL
 ‘The navy collected around the shipwrecked people.’

Assuming the tree in (43) depicting both the position of prefixes and adverbial preverbs in the syntactic derivation, my analysis accommodates the properties of multiple preverbatation.



As we have seen, unlike other languages, such as Slavic, Greek allows multiple preverbatation where more than one preverb of the same category attaches to the verb stem. Introducing prefixes as Ps in the specifier position of VP can explain multiple prefixation by adding additional specifiers into the derivation, as with the verb like *perisyllego* ‘to collect around’ having two prefixes, *peri-* and *syn-*⁹:

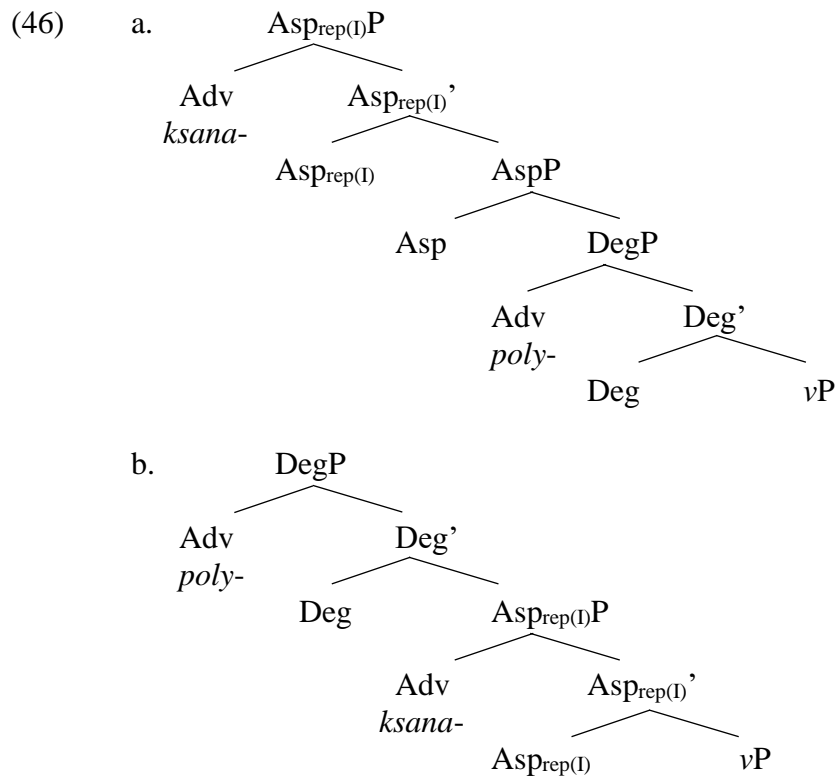


⁹ The consonant [n] of the prefix *syn-* undergoes complete assimilation and changes to [l] after being attached to the verb.

Regarding adverbial preverbs, we saw that they are introduced in the specifier of functional heads following Cinque (1999), and the attachment of multiple adverbial preverbs to the verb under different combinations is also possible:

- (45) a. (dhen) ksana-poly- dhiavazo
 not again-much-study
 ‘(not) to study much again’
 b. (dhen) poly- ksana-dhiavazo
 not much-again-study
 ‘(not) to study again much’

The different positions of *ksana-* ‘again’ proves specific scope positions. In (45a), the ‘higher’ *ksana-* takes scope over *poly-* qualifying over the event of studying much, i.e. over the degree of studying. In (45b), *poly-* takes scope over a ‘lower’ *ksana-* qualifying over the events of studying by restricting the number of the studying events.



The different scope positions can be captured under Cinque’s proposal for the hierarchies of adverbial specifiers and clausal functional heads. I assume that the ‘higher’ *ksana-* is in the specifier position of an $Asp_{rep[etitive](I)}P$, whereas the ‘lower’ *ksana-* is the specifier position of an $Asp_{rep[etitive](II)}P$ at the immediate right of the adverbial *poly-* in the specifier position of $Deg[ree]P$.

5. Conclusion

In this paper, my aim has been to discuss instances of multiple preverbatation in Modern Greek comparing it to Slavic languages. For this, I made a distinction between prefixes and adverbial preverbs in Modern Greek demonstrating that this distinction relies reasonably on the properties of the two types of preverbs, namely the (non-)compositional meaning, the morphological process of nominalization, the syntactic process of conjoinability, and the phonological processes of vowel deletion and stress shift. Both types can participate under different combinations in the formation of multiply-preverbed verbal complexes in Greek, though prefixes should always be the innermost ones: multiple preverbatation is possible with preverbs of different categories (like Slavic languages), as well as with preverbs of the same category (unlike Slavic). On the basis of preverb co-occurrence, the formation of multiply-preverbed verbal complexes leads to two important generalizations that can be supported cross-linguistically: a) For a multiply-prefixed verbal complex P_1 - P_2 -V to be formed, the existence of a simply prefixed verbal complex P_2 -V is required, and b) Regarding a multiply-prefixed verbal complex P_1 - P_2 -V, no verbal complex can be formed as P_1 -V. Based on the phenomenon of multiple preverbatation and the fact that adverbial preverbs always preceding prefixes, I proposed a syntactic analysis for the base position of adverbial preverbs and prefixes, arguing that prefixes are introduced as Ps in [Spec, VP], whereas adverbial preverbs are introduced as Adv_s in [Spec, FP].

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Abbreviations

ACC (accusative), ARG (verb argument), AOR (aorist), CMLT (cumulative), COMPL (completive), DAT (dative), DLMT (delimitative), DISTR (distributive), GEN (genitive), IMPER (imperative), IMPF (imperfect), INCP (inceptive), M (masculine), PL (plural), REL (relative), RPET (repetitive), SAT (satellite), SG (singular)

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