Preverbs in Greek: the case of *ksana, kse-*, para-*

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0. ABSTRACT
In this paper, I deal with the role of three Greek preverbs, *ksana, kse-* and *para-* in verb formation. By examining their characteristics on semantic, structural and phonological grounds, I propose a morphological approach that allows for a unified treatment of the three preverbs and accounts for both their differences and similarities. I show that a distinction into internal and external preverbs, or a division in prefixes and non-prefixes, are not sufficient to take into consideration their peculiar behavior. I argue that the combination of the preverbs with the root verbs is an instance of a word-formation process that is handled within a morphological module of grammar and refers to either derivational prefixation or compounding. Following Di Sciullo 1997, I consider that the combination of the preverbs with the verbal bases occurs at different adjunction sites in grammar. However, I propose that these adjunction sites can be expressed in terms of morphological categories, i.e., as adjunction to stems or adjunction to words. I show that a difference in adjunction sites within morphology can explain the asymmetrical character of certain preverbs that behave like prefixes but share more similarities with word-like preverbs, than with prefix-type ones.

1. GENERAL CHARACTERISTICS
Preverbs constitute a major issue in the grammar of the Greek language. They pose an interesting puzzle with respect to the following properties:

a) There are preverbs that are structurally bound morphemes, i.e., prefixes, while others behave like free elements, e.g., they share features with adverbs.

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b) The preverb-verb formations display properties of phonological words, independently of the specific character of each preverb to behave like a bound or a free morpheme.

c) Preverbs select a verb to combine with, but do not determine the category of the projections they are part of.

d) Some preverbs bring only external specifications to the root meaning of the verb, while there are also preverbs affecting its aktionsart, its argument structure, or may cause a complete change of the root meaning.

_Ksana, kse- and para- are frequently used in Modern Greek, but are of distinct historical development and different behavior. Ksana and kse- appear for the first time in late Medieval Greek with more or less the same characteristics as today (see Gardikas 1924, Hatzidakis 1926, Karantzola & Giannoulopoulou 2000)._ ¹ Para- has an Ancient Greek origin, but as shown in (1), has developed some additional features that can also be traced back in late Medieval Greek. That is why _ksana_ and _kse-_ are usually adjoined to common verbs of Modern Greek, i.e., to verbs that are not marked as _[learned]_, while _para-_ appears with verbs of both types, that is with verbs that are marked and verbs that are not marked as _[learned]_.²

(1) Verb
a. _fuskonó_        _para-³_    _ksana_    _kse-
   to inflate         _parafuskonó_  _ksanafuskonó_    _kesfuskonó_
   to over-inflate    to re-inflate    to deflate

¹According to Gardikas (1924) and Hatzidakis (1926), _ksana_ has been formed from the combination of the Ancient Greek prepositions _ek_ and _ana_ ( _ek + ana > eksana > ksana_), while _kse-_ follows from the combination of the Ancient Greek preposition _ek_, denoting the origin, with the verbal syllabic augment _e- (ek + e > eks + e > kse)_. According to Karantzola & Giannoulopoulou (2000: 194-200), there is still a semantic relation between the new formations and the Ancient Greek prepositions where they come from. The idea of repetition expressed by the ancient _ana_ is present in _ksana_, and the idea of direction, or moving away from inside to outside, expressed by _ek_ is indirectly present in _kse_. For example, in the text of _Palea ke Nea Diathiki _“Old and New Testament”_ by Ioannikios Kartanos (issued in Venice in 1536), the verb _ksananeono_ (_eks+ana+neono_) means the reappearance of youth, while the verb _ksevlasteno_ (_ek+vlastano_) means the growth of buds from inside to outside of the plant.

²Verbs characterized as _[learned]_ are those that come from Ancient Greek, or constitute formations of the so-called “katharevousa”, an artificial, ancient-looking form of language that was developed for political reasons by a group of literary people in the XIXth century.

³Modern Greek examples are given in a broad phonetic transcription, while Ancient Greek ones are given in orthographical characters.
b. kampto [learned] parakampto *ksanakampto *ksekampto
to bend to deviate to rebend to unbend

Furthermore, verbs presenting a form alternation, i.e., a modern form (2b,d) and a form that is (2c) or looks like ancient (2a) freely accept para-, while ksana and kse- are adjoined only to the new form which is not marked as [learned]:

(2) Verb para- ksana kse-
a. διδό paraδιδό *ksanαδιδό *kseδιδό
b. δίνω paraδίνω ksαναδίνω kseδίνω
to give to deliver to re-give to relax
c. λαμβάνω paraλαμβάνω *ksαλαμβάνω
d. λαβέω paraλαβέω ksαλαβέω

to take to receive to retake

The three preverbs do not behave uniformly as sentential elements. Ksana is the adverb for expressing repetition in Modern Greek, and is present either as an adverbial word-form in sentences (3a), or as a preverb in verbal formations (3b).

(3) a. Ο Ιανίς δίταξε μαθήματα to vivlio
The John reads again the book
“John reads again the book”
b. Ο Ιανίς κσαναδίταξε μαθήματα to vivlio
The John again-reads the book

Kse- is used only as a preverb and cannot appear independently as a word-form:

(4a). Ο Ιανίς κσαλιδίσε τον πόρτα
The John unlocked the door
“John unlocked the door”
b. *Ο Ιανίς κσελιδίσε τον πόρτα

The meaning of kse- that is used in its most productive formations is that of reversing the event (4a), but kse- has also an “intensive” character and can denote a high degree of realization of the verbal properties:

(5a). κσαλιπρόνο vs καλιπρόνο
to be awake to stay up
b. κσαλαφρόνο καλαφρόνο

4διδό derives from the Ancient Greek verb διδομεν, after the loss of the ancient ending -μεν. δινο is the commonly used form in Modern Greek.
to relieve to lighten

With the intensive meaning, kse- also appears as a nominal prefix, but it will not particularly concern us here since it falls out of the scope of this study.

(6) kse-
   Noun          Adjective
   a. ksekalokeri kalokeri
      end of summer summer
   b. ksefotio fos
      place with light
      a lot of light
      surrounded by dark
   c. ksekafoaro kafoaro
      clearcut
      clean
      d. kseksaspro aspro
      all-white
      white

In Ancient Greek, para- was used both as a preposition and as a preverb. The ancient prepositional use of para- is extremely limited today. It appears in fixed expressions and still denotes the idea of proximity or parallelism to the notion expressed by the item it is combined with:

In this work, I restrict my attention to the use of para- as a preverb. In my opinion, para- used as a preposition (iia), adverb (iib), or conjunction (iic) to express an opposition (meanings of “despite” and “but”), or an opposition in the process of comparison (meaning of “than”), is synchronically a different homophonous item and will not concern us here.

(ii)
   a. Para to ojavezma tu den perase tis eksetasis
      Lit. In spite of study his, he didn’t pass the exams
      “In spite of his study, he didn’t pass the exams”
   b. den ine ola ta katastimata anixta para mono ta farmakia
      Lit. There are not all the stores open, but only the pharmacies
   c. Ine xirotro na les ti ynomi su para na min ti les
      Lit. It is worse to say your opinion than not to say it

However, Pouloupolou (1996) assumes a different position. Following an analysis based on pragmatics, and with the use of arguments drawn from general discourse considerations, she considers all the para- occurrences as different realizations of the same item. She admits though (p. 86) that there are serious difficulties in this approach.

For details about the meaning of this para, see Delveroudi & Vassilaki (1999). Para in the process of comparison has also been studied by Cheila-Markopoulou (1986).
(7)a. Para liyo ke theta jinotan prothipuryos
Lit. For little and he would have become prime minister
"He almost became prime minister"

b. Ike eksi para tetarto
Lit. It is six to quarter
"It is a quarter to six"

Besides its limited use as a preposition, para- also appears attached to nouns and adjectives (8) or to verbs (9-11). As a prenominal, it keeps the idea of proximity and/or parallelism, and sometimes, develops a pejorative meaning (see (8ab)).

(8) para-
<table>
<thead>
<tr>
<th>Noun</th>
<th>Adjective</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. parapeoia</td>
<td>peoia education</td>
</tr>
<tr>
<td>unofficial side-education</td>
<td>shadow-education</td>
</tr>
<tr>
<td>b. parokeros</td>
<td>keros time</td>
</tr>
<tr>
<td>out of time-ADJ</td>
<td></td>
</tr>
<tr>
<td>c. paromios</td>
<td>omios identical</td>
</tr>
<tr>
<td>similar</td>
<td></td>
</tr>
<tr>
<td>d. parathalasios</td>
<td>thelasios maritime</td>
</tr>
<tr>
<td>sea-side-ADJ</td>
<td></td>
</tr>
</tbody>
</table>

Para- as a preverb still appears with its ancient meaning of proximity or parallelism in several verbs of Ancient Greek origin (9):

(9) Ancient Greek and Modern Greek
a. paravalos valos to compare to put
b. parangelos angelo to order, to command to announce

Notice, however, that in recent times, para- has also developed the meaning of an excessive realization of the notion expressed by the verb (see Triantaphyllides 1991).

(10)a. I Maria parazimishike xtes ke simmera den nistazi
Lit. The Mary overslept yesterday and today she is not sleepy
"Mary overslept yesterday and today, she is not sleepy"

Like kse-, the preverb, para- cannot be separated from the verbal base and used as an independent word:

(11)a. Xtes paraeafaje ke den esthanete kala simmera
Lit. Yesterday (he) ate a lot and (he) does not feel well today.

b. *Xtes efajc para ke δεν εσθανητε kala simera

2. THE SEMANTICS OF KSANA, KSE- AND PARA-

Generally, ksana does not bring any change to the root meaning, the argument structure, or the aktionsart of the verb it combines with. The semantic interpretation of the composite containing ksana with a verb is usually fully compositional: ksana provides an iteration to the event, that is an external specification to the verb. This is evidenced in (12) in which two verbs denoting an accomplishment, vafo “to paint” and ksanavafo “to repaint” allow frame-temporal expressions, e.g., se pende ores “in five hours”, but not durative adverbial expressions such as ja pende ores “for five hours”.

(12)a. *(Ksana)vafo to spiti ja pende ores
He (re)paints the house for five hours
b. (Ksana)vafo to spiti se pende ores
He (re)paints the house in five hours

As opposed to verbs with ksana, the kse- and para- verbal formations do not show a consistent behavior with respect to semantics.

Firstly, there are occurrences where kse- or para- do not affect the aspactual properties and the argument structure of the verbal base, In that sense, they behave like ksana, as seen in (13):

(13)a. Verb b. kse- c. para- d. ksana
kliðono kseklíðono paraklíðono ksanalíðono
to lock to unlock to overlock to relock
vulono ksevulono paravulono ksavanulono
to block to unblock to overblock to reblock

In these examples, both the plain verb and the occurrences with ksana, para- and kse- denote an accomplishment. ksana, para- and kse- provide an external specification to what is expressed by the verb, that is they reverse the event (kse-) or realize it excessively (para-).

Notice, however, that while ksana may combine with all kinds of verbs, that is with verbs that denote a state (15a), an activity (15b), an achievement (15c) and an accomplishment (15d), kse- and para- are submitted to specific restrictions (16-17):

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7See, however, section 3.2. (26-28) for exceptions to this observation.
(14) Verbs used below
kimame “to sleep”, zo “to live”, xorevo “to dance”, trexo “to run”, fiano “to arrive”,
xano “to loose”, niko “to win”, laspono “to cover with mud”, skonizo “to cover with
dust”.

(15) ksana

<table>
<thead>
<tr>
<th>a. ksanakimame</th>
<th>b. ksanaxorevo</th>
<th>c. ksanafiano</th>
<th>d. ksanolaspono</th>
</tr>
</thead>
<tbody>
<tr>
<td>to re-sleep</td>
<td>to re-dance</td>
<td>to re-arrive</td>
<td>to recover with mud</td>
</tr>
<tr>
<td>ksanazoo</td>
<td>ksanalatrexo</td>
<td>ksananxano</td>
<td>ksanaaskonizo</td>
</tr>
<tr>
<td>to re-live</td>
<td>to re-run</td>
<td>to re-loose</td>
<td>to recover with dust</td>
</tr>
<tr>
<td>ksanalipame</td>
<td>ksanakolibo</td>
<td>ksananiko</td>
<td>ksanavafo</td>
</tr>
<tr>
<td>to be sorry again</td>
<td>to re-swim</td>
<td>to re-win</td>
<td>to repaint</td>
</tr>
</tbody>
</table>

(16) kse-

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>*ksezoo</td>
<td>*ksetrexo</td>
<td>*ksexano</td>
<td>kseskonizo</td>
</tr>
<tr>
<td>*kselipame</td>
<td>*ksekolibo</td>
<td>*kseniko</td>
<td>ksevafo</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to unpaint</td>
</tr>
</tbody>
</table>

(17) para-

<table>
<thead>
<tr>
<th>a. parakimame</th>
<th>b. paraxorevo</th>
<th>c. *parafiano</th>
<th>d. paralampono</th>
</tr>
</thead>
<tbody>
<tr>
<td>to oversleep</td>
<td>to over-dance</td>
<td>*paraxano</td>
<td>to over-cover with mud</td>
</tr>
<tr>
<td>parazo</td>
<td>paratrexox</td>
<td></td>
<td>paraskonizo</td>
</tr>
<tr>
<td>to over-live</td>
<td>to overrun</td>
<td></td>
<td>to over-cover with dust</td>
</tr>
<tr>
<td>paralipame</td>
<td>parakolibo</td>
<td>paraniko</td>
<td>paravafo</td>
</tr>
<tr>
<td>to (over)be sorry</td>
<td>to over-swim</td>
<td></td>
<td>to over-paint</td>
</tr>
</tbody>
</table>

As shown by the examples in (16) and (17), kse- productively combines with
verbs denoting an accomplishment, while para- may accept verbs denoting a
state, an activity and an accomplishment. Both kse- and para- cannot be
adjoined to verbs denoting an achievement.

Secondly, the three preverbs do not only differ with respect to the
selectional restrictions that they impose to the base. As opposed to ksana,
there are also occurrences with kse- and para- where the two preverbs do not
have the same meaning as the one shown in the examples of (15-17), that is
they do not reverse (kse-) or overdo the event (para-). Look at the examples
in (18):

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8In these examples, the verb xano “to loose” is taken as intransitive and not with
its transitive use as in the phrase xano xrimata “to loose money” where it denotes
an accomplishment.
(18)a. Verb  
  kaθarizo  
  to clean  
 elafrono  
  to lighten  
amolo  
  to lance  
pulo  
  to sell  
  vlepo  
  to see  
kino  
  to move  
γrafo  
  to write  
akuo  
  to hear  

b. kse-  
ksekaθarizo  
to clear-up  
kslafrono  
to relieve  
ksamolo  
to let loose, release  
ksepulo  
to sell-out  

c. para-  
paravlepo  
to overlook, to neglect  
parakin  
to instigate  
paragrafo  
to erase  
paraku  
to misunderstand, to disobey  

Considering the verb to be a notional domain with a set of properties, kse-, in the examples of (18), contributes to bring all these properties to a high degree of realization and assumes a function of intensifying the meaning of the root verb. A similar behavior is attested with the occurrences of para- in (18): para denotes a proximity, a parallelism to the meaning of the verb, a meaning also found in Ancient Greek formations\(^9\), but also bears the notion of depassing what is denoted by the verb. It is under the intensive meaning that kse- can combine with some verbs of achievement, and form verbs with a non-compositional, and highly lexicalized meaning, something that would not have been possible if kse- had a reversative meaning (see (19a,b)). It is under the meaning of proximity, or parallelism to what is expressed by the verb, that para- may also be combined with some verbs of achievement, a combination that would have been impossible if para- had the meaning of excess (see (19b,c)).

(19) Verb  
  a. fevvo  
to leave  
ksefeyvo  
to escape  
  b. pefeto  
to fall  
ksepefeto  
to degrade  
  c. vijeno  
to go out  
ksevi  
to compete  

Furthermore, if \textit{kse-} and \textit{para-} can affect the aspectual structure of the root verb, we would also expect that the two preverbs can also alter the argument structure of the root verb.\footnote{There are two major issues which I only tackle here:} In fact, the examples in (20) illustrate this phenomenon.

(20) a. Verb  
\begin{tabular}{llll}
  aplono & ksaplono & kse\textit{aplono} & para\textit{aplono} \\
  to lay & to lie-down & to wash-up, & to wash ashore, to throw-out \\
  vrazo & kse\textit{vrazo} & to relax & \\
  to boil & to wash-up, & kse\textit{vrazo} & \\
  dino & kse\textit{dino} & to relax & \\
  to give & to relax & kse\textit{dino} & \\
  jelo & kse\textit{jelo} & to cheat & \\
  to laugh & to cheat & kse\textit{jelo} & para\textit{jelo} \\
  derno & to cheat & para\textit{jelo} & to drift \\
  to beat & & & \\
\end{tabular}

Following the difference in meaning and syntactic behavior, the question that arises now is whether there are instances of homophonous \textit{kse-} and \textit{para-}, or we deal with cases of polysemous items.

In accordance with Lieber and Baayen 1994 (hereafter L&B), I claim that each of these preverbs exhibits a polysemous meaning, since both \textit{kse-} and \textit{para-}, in their various uses, are more or less semantically coherent. I would like to propose that, in the lexicon, there are only two lexical entries, \textit{kse-} and \textit{para-}, to which a semantic variation can occur, depending on their combination with specific verbal bases.\footnote{That we may deal with only one \textit{kse-} is also proposed by Efthimiou (2000) and Karantzola & Giannoulopoulou (2000: 201).}

If we consider that there is a single \textit{kse-} in the lexicon, we may tentatively suppose that

a) \textit{kse-} has a general semantic interpretation as the item which intensifies the meaning of the root verb, and

b) \textit{kse-} assumes the reversative meaning when its ability of inducing the verbal properties to a high degree of realization crosses the limits of the
notional domain of the verb, up to a point of the complete refutation of its properties.

A similar argumentation may also be used for para-

a) We saw before that para- expresses the idea of proximity or parallelism to the meaning of the verb.

b) It is this notion of proximity or parallelism that is pushed to an exaggeration, and may trigger an excessive realization of the verbal properties (see the examples in (17). That is why the “excessive” para- is used with verbs of states only when their meaning is taken to be a series of repeated processes. In this case, para- contributes to a confirmation of the process denoted by the verb. For instance, as seen below, the derived parazo “to over-live” < para + zo “to live” cannot be used without a heavy stress and an adverbial expression denoting the situation or the conditions under which these processes have taken place.

(21)a. *O Janis parazi
 Lit. The John overlives
   Vs.
   b. O Janis parazi kala meto yamo tu.
 Lit. The John overlives well after the marriage his
   “John lives well indeed after his marriage”

In L & B’s (1994) paper, there is a connection between the semantics of polysemous preverbs and their productivity suggesting that the more determined the semantic representation of a lexical item is, the more productive the item can be (L&B: 70). In fact, this is what we see in the case of ksana instances compared to kse- and para- ones. As already said, ksana has only one particular meaning. It expresses the iteration and can be combined with all kinds of verbs (see (15)). As such, it is an extremely productive preverb. Kse- and para-, on the other hand, are less determinate in meaning. They are not freely adjoined to all kinds of verbs, and are certainly less productive than ksana. Moreover, if we leave aside ksana and compare kse- and para-, we see that para- is more productive than kse- since para- can combine with more types of verbs (compare (16) and (17) above). This can also be explained by the fact that the semantic representation of para- is more fixed than the one of kse-. We saw before that para- expresses the idea of proximity or parallelism since Ancient Greek, while kse- has a general semantic interpretation as the item which provides a high degree of realization of the verbal properties.

To sum up, on the basis of the selectional restrictions and the general semantic specifications that the three preverbs bring to the verbal base, I would like to suggest that ksana, kse- and para- can be distributed into two
categories, internal and external preverbs, following a distinction proposed by Di Sciullo (1997) for the French preverbs. I assume that ksana is an external preverb, while kse- and para- display rather a dual character.\textsuperscript{12} We have already seen that ksana does not require any particular selectional restrictions in the combination with verbs, and provides an external specification to the verbal notional domain, since it does not trigger any change to the aspectual structure or to the argument structure of the root verb. kse- and para-, however, constitute interesting cases. On the one hand (see (18)-(20)), they seem to determine the internal properties of the root verb since they affect its meaning, its aspectual properties and its argument structure. On the other hand, in other cases, they bring only adverbial and external specifications to the verb (see (16), (17)). In the latter, they resemble to ksana, but contrary to it, are submitted to selectional restrictions with respect to the verbal bases they attach to, in that they do not combine with all kinds of verbs. An approach that would treat the kse- and para-cases as pure syntactic adjunction (e.g., through verb raising) or as clearcut instances of incorporation would fail to account for their peculiar behavior: their characteristics do not fulfill the basic criteria of full productivity and semantic compositionality that are proper to syntactically relevant processes. Thus, on the basis of considerations taken from semantics, there are reasons to provide a morphological account for both kse- and para-, while for ksana further evidence should be looked for. In fact, after testing the criteria of productivity and compositionality with 36 verbs combined with ksana, Smyrniotopoulos and Joseph (1997, 1998) note that, in spite of some exceptions, a syntactic treatment of the ksana-verb combinations may be possible since ksana occurs more or less freely with verbs.

3. STRUCTURAL CONSIDERATIONS

3.1 The notion of headedness

As already shown, ksana, kse-, and para- are productively combined with verbs to form verbs. Thus, they do not bring any categorial change to the verbal base.

\begin{center}
\begin{tabular}{lll}

(22)a. ksana\texttildelow jemieme & $<$ & ksana jemieme \\
& to be reborn & re & to be born \\
& ksana\texttildelow djavazo & $<$ & ksana djavazo \\
& to reread & re & to read \\

b. kse\texttildelow fev\texttildelow y & $<$ & kse fev\texttildelow y \\
& to escape & & to leave
\end{tabular}
\end{center}

\textsuperscript{12}See Bisetto, Mutarello and Scalise (1989) for the Italian preverbs which have the same form but display various semantic characteristics.
\begin{align*}
\text{ksekliðono} &< \text{kse} \quad \text{kliðono} \\
to \text{unlock} & \quad \text{un} \quad \text{to \ lock} \\
c. \quad \text{parajemizo} &< \text{para} \quad \text{jemizo} \\
to \text{overstuff} & \quad \text{over} \quad \text{to \ stuff} \\
\text{paraserno} &< \text{para} \quad \text{serno} \\
to \text{beguile} & \quad \text{to \ drag}
\end{align*}

However, while \textit{ksana} is always combined with a verbal base, it is possible for \textit{kse-} and \textit{para-} to combine with a nominal base. In the latter case, the derived word either keeps the nominal category of the base (see (6) and (8) above), or is a verb (23):

\begin{align*}
(23)a. \quad & \text{ksefonizo,} \quad \text{*fonizo,} \quad \text{foni} \\
& \text{to \ shout} \quad \text{voice} \\
\text{b. \ ksemaljazo} & \quad \text{*maljazo} \quad \text{mali} \\
& \text{to \ ruffle, \ to \ dishevel} \quad \text{hair} \\
\text{c. \ paragoniz} & \quad \text{*agonizo} \quad \text{agonas} \\
& \text{to \ push \ aside} \quad \text{elbow} \\
\text{d. \ parastrato} & \quad \text{*strato} \quad \text{strata} \\
& \text{to \ stray} \quad \text{road} \\
\text{e. \ kremoxjazo} & \quad \text{*monaxjazo} \quad \text{monaxos} \\
& \text{to \ isolate} \quad \text{alone}
\end{align*}

A closer look at the examples in (23) reveals that the string that follows \textit{kse-} and/or \textit{para-} is not an attested word. For instance, \text{*fonizo} does not exist, while \textit{ksefonizo} “to shout” (23a) is a well-attested verb. I would like to claim that strings like \textit{foniz-} may be viewed as “bound stems”, that is as stems that do not become words with the addition of appropriate inflectional endings (in our case with the addition of \textit{-o}).\textsuperscript{13} Bound stems are most common in the history of the Greek language, since the Homeric period. Notice also that in (23), the verbal category is not given by one of the preverbs, but by one of the verbal derivational suffixes \textit{-iz-, -az-, -ev-, -on-, -o}\textsuperscript{14} that most productively participate in Greek verbal derivation. Thus, even in cases involving a bound stem, \textit{kse-} and \textit{para-} could not be considered to be responsible for changing the category of the bases they are combined with.

Since no category change is involved in the combination of verbs with one of the preverbs, we may conclude that the three preverbs are not

\textsuperscript{13}See Ralli (1988) for a detailed account of “bound stems” in Greek morphology. See also section 4 (36) for further details on these formations.

\textsuperscript{14}In the case of \textit{parastrato} (23d), the \textit{-o} ending is stressed and assumes the role of a derivational affix. As shown in Ralli (forthcoming), one of the productive derivational processes in Greek is the one that forms verbs out of nouns with the addition of a stressed \textit{-o}. 
heads of their structures. This conclusion is in accordance with the general property of Modern Greek to have right-headed structures in word formation (see Ralli 1988 for the notions of headedness and directionality). If heads are the rightmost categories in words (or $X^0$ expressions), and the leftmost preverbs are non-heads, I would further propose, following Di Sciullo (1997), that the preverbs are either adjuncts or complements. The preverbs do not saturate any of the arguments of the verbal heads, therefore, they can only be adjuncts in the structures they are part of.

3.2 The separability criterion
As already shown, $kse$- appears only in clusters/composites and never as an independent word (see (4)), while $para$- is always a bound form when used as a preverb (see (11)). Contrary to $kse$- and $para$-, however, $ksana$ can combine with a root verb (24a) or may be used as an independent word-form in several positions of the sentence (25), without any significant change to the meaning of the sentence:

(24)a. $Ksana\deltajavasa$ to iôjo vivlio jati itan enôiaferon
Lit. (I) re-read the same book because (it) was interesting
vs.

b. $\deltajavasa$ $ksana$ to iôjo vivlio jati itan enôiaferon
Lit. “(I) read again the same book because (it) was interesting”

(25)a. $\deltajavasa$ $ksana$ to iôjo vivlio jati itan enôiaferon
b. $\deltajavasa$ to iôjo vivlio $ksana$ jati itan enôiaferon

c. $ksana$ $\deltajavasa$ to iôjo vivlio jati itan enôiaferon

Thus a plausible hypothesis would be that the [$ksana$-verb] composite is formed in syntax by a process such as incorporation (see Baker 1988), or

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15Notice that sometimes a category change may occur after the combination of $kse$- and $para$- with nouns, which results into the creation of adjectives or adverbs (see the examples below). I consider these cases as instances of conversion through zero-suffixation, in the way that Neeleman & Schipper (1993) propose for the Dutch preverbs.

(iv)a. $parakeros$ $< para$ keros
    out-of-time-ADJ time, weather-N
b. $paranomos$ $< para$ nomos
    outlaw-ADJ/N law-N
c. $ksexora$ $< kse$ xor(os)
    out-of-place-ADV place
indeed

16In the context of the last example, $ksana$ carries a heavy stress.
verb raising (surface-structure adjunction). In fact, an incorporation analysis has been postulated by Rivero (1992) who justifies her proposal by claiming that ksana belongs to the argument structure of the verb and structurally, can be analyzed as VP-internal. Rivero’s claims about a syntactic account of ksana have been severely questioned by Kakouriotes, Papastathi and Tsangalidis (1997) who claim that she offers no sufficient and independent evidence for distinguishing ksana from other similar adverbs that fail to incorporate (e.g., pali “again” vs. *paliyrafo “write again”). In the same vein, Smyrniotopoulos and Joseph (1997: 120) note that although the ksana-verb formations are very productive, they do not fully respond to the following predictions that usually should hold in case of a syntactic incorporation account.

a) For every phrasal combination of Verb +Adverb, there exists a corresponding composite. The dubious acceptability of the verb *?ksanaperijelo “re-mock” (< ksana + perijelo “mock”), as opposed to the perfectly acceptable phrasal form ton perijelasan ksana “they mocked him again”, constitutes an exception to this prediction (S&J 1998: 456).

b) If there is no phrasal combination, there is no corresponding composite and every composite has a phrasal counterpart. It should be noticed that to the composite ksananjono “to rejuvenate, to become young again”, there is no independent phrase njono ksana or independent verb njono.18

c) Every composite is compositional in meaning, and shows no idiosyncratic meaning differences from its phrasal source. However, there are ksana-verb composites that develop a non-predictable meaning (as well as a non-predictable syntactic behavior) that is not determined compositionally from the combination of ksana with the verb. Consider the examples in (26) for an illustration to this last observation.

(26) a. ðen prosekte ke ksanakilise
Lit. (S/he) wasn’t careful and relapsed
ksanapjanete me tin ðoja ñulja
Lit. (S/he) is re-taken with the same job
“She starts again the same job”

b. *ðen prosekte ke kilise ksana
*ðen pjanete ksana me tin ðoja ñulja

---

17As Booij (1991: 53-59) correctly points out for similar structures in Dutch, a deep-structure adjunction should be excluded because it would require that the verb is optionally or obligatorily subcategorized for ksana. Note that Booij adopts a lexical analysis for the Dutch preverbs, although he considers them as parts of phrases created in the lexicon (pp. 59-61).

18Njono may occur in some dialects with the meaning of “feel”
c. ḏen prosekse ke kilise ksana sto vurko
Lit. (S/he) wasn’t careful and scrolled again in the mud
 ḏen pjancte ksana stin pājiōa
Lit. (S/he) is taken again in the trap

In addition, it should be noticed that there are also verbs that do not clearly accept ksana in the preverbal position, while they accept ksana as a separable modifier in the same context:

(27)a. Ise ksana stin iōja δulja?
Lit. Are (you) again in the same job?
b. Exis ksana tin iōja δulja?
Lit. Have (you) again the same job?

But

(28)a. ??Ksanaisse stin iōja δulja?
Lit. Re-are (you) in the same job?
b. ??Ksanaisexis tin iōja δulja?
Lit. Re-have (you) the same job?

To sum up, on the basis of the separability criterion, there is little doubt that kse- and para- are bound morphemes. As such, they could be given the prefixal status, while for ksana the situation is not so clear and further evidence should be looked for. On the one hand, ksana may be separated from the verbal base and used as an independent word in several positions of the sentence (see (24) and (25)). As such, it shares the properties with adverbs. On the other hand, as pointed out by Smyrniotopoulos and Joseph (1997, 1998), and further illustrated in (26-28) some ksana formations exhibit a behavior that is close to kse- and para- formations.

3.3 Co-occurrence and alternation between preverbs
As expected, very productive preverbs may co-occur and alternate between them. In fact, this is usually attested with occurrences containing para- and ksana:

(29)a. parafuskono ksanaparafuskono fuskono
to re-inflate to over-re-inflate to inflate
b. ksanafuskono paraksanafuskono
to re-inflate to over-re-inflate
c. paratendono ksanaparatendono tendono
to over-stretch to re-over-stretch to stretch
d. ksanatendono paraksanatendono
to re-stretch to over-re-stretch
Notice, however, that an alternation between the two preverbs is possible only when \textit{para-} is used as external. When \textit{para-} is internal, the ordering between the two preverbs imposes the presence of \textit{para-} to be close to the verb, while \textit{ksana} is added outside the cluster [\textit{para-verb}]:

(30)a. \textit{parakino} \textit{ksanaparakino} *\textit{paraksanakino} \textit{kino} to instigate to re-instigate to move
b. \textit{paravlepo} \textit{ksanaparavlepo} *\textit{paraksanavlepo} \textit{vlepo} to overlook to re-overlook to see

With respect to \textit{kse-}, it is crucial that there is no alternation when both \textit{kse-} and \textit{para-} are external, or between external \textit{kse-} and \textit{ksana} (31a). External \textit{kse-} is always closer to the verbal root, while \textit{para-} and \textit{ksana} appear at the periphery. This strict ordering between \textit{kse-}, \textit{ksana} and external \textit{para-} also holds when \textit{kse-} assumes an internal role, that is when it has the intensive meaning (31b).

(31)a. \textit{fuskono} \textit{ksefuskono} \textit{paraksefuskono} \textit{ksanaksefuskono} \textit{paraksanaksefuskono} to inflate to deflate to over-deflate to re-deflate to re-over-deflate \textit{*kseparafuskono} \textit{*kseksanafuskono}
b. \textit{kaθarizo} \textit{ksekaθarizo} \textit{paraksekaθarizo} \textit{ksanaksekaθarizo} \textit{paraksanaksekaθarizo} to clean to clear-up to over-clear-up to re-clear-up to re-over-clear-up \textit{*kseparakθarizo} \textit{*kseksanakθarizo}

Contrary to the examples of (31) that show a strict ordering between external \textit{kse-} and \textit{para-}, there is usually a mutual exclusion between the two in their internal use (see 32a-e).

(32)a. \textit{kino} to move
b. \textit{ksekino} to start-up, to move-off
c. \textit{parakino} to instigate
d. \textit{*kseparakino}
e. \textit{*paraksekino}
In (33), the external preverbs *ksana and *para- allow iteration while the external *kse- that adds an endpoint to the meaning of the verb shows no iteration.

<table>
<thead>
<tr>
<th>(33)a. kaθarizo</th>
<th>ksanakaθarizo</th>
<th>ksanaksanakaθarizo</th>
</tr>
</thead>
<tbody>
<tr>
<td>to clean</td>
<td>to re-clean</td>
<td>to re-re-clean</td>
</tr>
<tr>
<td>b. paraθarizo</td>
<td>paraθarizo</td>
<td></td>
</tr>
<tr>
<td>to over-clean</td>
<td>to over-over-clean</td>
<td></td>
</tr>
<tr>
<td>c. ksekθarizo</td>
<td>*ksekθarizo</td>
<td></td>
</tr>
<tr>
<td>to clear-up</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Finally, as shown in (34), an iteration of *para- is possible when the most left-handed occurrence acts as an external prefix and the other occurrence as an internal one (34d), but not in the opposite order (34e).

<table>
<thead>
<tr>
<th>(34)a. verb</th>
<th>b. internal *para</th>
<th>c. external *para</th>
<th>d. para_ext-paθarivlopo</th>
<th>e. paθarivlopo</th>
</tr>
</thead>
<tbody>
<tr>
<td>to see</td>
<td>to overlook</td>
<td>to over-see</td>
<td>to over-overlook</td>
<td></td>
</tr>
</tbody>
</table>

4. PHONOLOGICAL EVIDENCE

Evidence taken from phonology supports the prefixal status of *kse- and *para-. In Greek nominal prefixation, there is usually a stress shift to the antepenultimate syllable. For example, the adjective ‘aνnωστοσ “unknown” is stressed on the prefix a- “un”, while the adjective γνωστοσ “known” bears a stress on the last syllable. As claimed by Nespor & Ralli (1996), the stress shift is caused by the prefixation of a- to γνωστοσ. If we look at the formations of (6) and (8), we observe that the same stress-shift phenomenon occurs in words like κσεκαλόκεροσ, παράκεροσ, etc., which I repeat here for convenience:

<table>
<thead>
<tr>
<th>(35) Noun</th>
<th>kse-</th>
<th>para-</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. καλόκεροσ</td>
<td>κσεκαλόκερο</td>
<td>παρακερόσ</td>
</tr>
<tr>
<td>summer</td>
<td>end of summer</td>
<td>out of time</td>
</tr>
<tr>
<td>b. κερόσ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Stress-shift is not a safe criterion for deciding about the prefixal status of ksana, since ksana appears only with verbs, and prefixed verbs are not generally submitted to a stress-shift procedure. However, it is crucial that all [ksana-verb] clusters bear only one stress, that is they constitute one phonological word, while ksana and the root verb constitute phonological words on their own if they are taken separately. Since in Greek the boundaries between structural words and phonological words generally
coincide, we may, thus, assume that the ksana formations display word-like properties.

It should be noticed that when a preverb is attached to a verb root beginning by a vowel, a vowel deletion may occur at the morpheme boundary between the two. As the following examples illustrate, this vowel deletion is not obligatory for all preverbs though.

(36) Verb  
<table>
<thead>
<tr>
<th>kse-</th>
<th>para-</th>
<th>ksana</th>
</tr>
</thead>
<tbody>
<tr>
<td>to have</td>
<td>to provide</td>
<td>to re-have</td>
</tr>
<tr>
<td>kse-exo</td>
<td>*paraexo</td>
<td>ksanaexo</td>
</tr>
<tr>
<td>to have</td>
<td>*paraexo</td>
<td>[ksana+exo]</td>
</tr>
<tr>
<td>[kse+exo]</td>
<td>[para+exo]</td>
<td></td>
</tr>
<tr>
<td>to have</td>
<td>*paraexo</td>
<td>to re-have</td>
</tr>
</tbody>
</table>
| [kse+anigo]| [para+anigo]| [ksana+anigo]| to have

b. aniyo      | paraaniyo   | to open      |
| ksaniyo     | paraaniyo   | to open      |
| [kse+anigo] | [para+anigo]| [ksana+anigo]| to open |
| to open     | to open     | to open      |
| to open-out | to open-out | to open      |

In (36), a vowel deletion always occurs in case of kse-, in both its internal and external use, and optionally occurs in case of ksana. As for the formations with para-, they are subject to an optional vowel deletion when para- functions as an external preverb and to an obligatory vowel deletion when para- has an internal character. kse- and internal para- seem to be more lexically bound with the verb root since an obligatory vowel deletion occurs at the boundary between the two. Given the fact that no obligatory vowel deletion occurs in case of external para- and ksana, they seem to have a more loose structural relation with the verbal base. Thus, a possible

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19 According to Kaisse (1985), the vowel deletion in Greek is subject to the restrictions imposed by a vowel hierarchy, according to which, at the contact between two vowels, the stronger [a] triggers the deletion of the less strong [e].

20 A similar behavior with respect to word-internal phonology is also attested when a preverb is combined with a verbal form preceded by the augment e- which marks the past tense:

(v) Verb  
<table>
<thead>
<tr>
<th>int. kse-</th>
<th>ext. kse-</th>
<th>int. para-</th>
<th>ext. para-</th>
</tr>
</thead>
<tbody>
<tr>
<td>to fall</td>
<td>(s)he degraded</td>
<td>(s)he fell aside</td>
<td>ksana</td>
</tr>
<tr>
<td>ksepe /</td>
<td>*ksepe /</td>
<td>*paraepse /</td>
<td>*paraepse /</td>
</tr>
<tr>
<td>[kse+e+pese]</td>
<td>[para+e+pese]</td>
<td>ksanaepese /</td>
<td>ksanaepese /</td>
</tr>
<tr>
<td>to fall</td>
<td>(s)he degraded</td>
<td>(s)he fell aside</td>
<td>ksana</td>
</tr>
<tr>
<td>ksepe /</td>
<td>*ksepe /</td>
<td>*paraepse /</td>
<td>*paraepse /</td>
</tr>
<tr>
<td>[kse+e+pese]</td>
<td>[para+e+pese]</td>
<td>ksanaepese /</td>
<td>ksanaepese /</td>
</tr>
<tr>
<td>to dress</td>
<td>(s)he undressed</td>
<td>(s)he over-dressed</td>
<td>(s)he re-dressed</td>
</tr>
</tbody>
</table>
distinction into internal and external preverbs, as well as a distinction between prefixes and non-prefixes, does not capture the peculiarity of vowel deletion. It follows that a more refined account of the various differences and similarities displayed by the three preverbs is necessary.

5. PARTIAL CONCLUSIONS
Following evidence from semantics, the separability criterion, and further evidence taken from phonology, we have already concluded that kse- and para- are prefixes. As such, they should be subject to a word-formation analysis. Evidence from the co-occurrence and alternation between preverbs shows that ksana freely alternates with the external para (see examples in (29)). This free alternation leads us to suppose that both the para- and ksana formations should be accounted for in a similar manner. That is, if prefixation is to be treated as a morphological procedure, the ksana formations should receive a morphological account too. These observations do not force us to consider the formations of [ksana-Verb] as cases of prefixation, but they do show that these formations cannot be a matter of syntax. This would explain why some ksana formations are peculiar with respect to their meaning, their structural behavior, as shown in (26-28) above, and their word-like stressing properties. A morphological account of ksana would raise the question, however, of whether ksana is a prefix or a word participating in compound formations. Since ksana is not a bound morpheme and can appear independently in sentences (see (24-25), a plausible answer would be that ksana is a word form that actively participates in compound formations. This solution would accommodate the following issues:

a) it would provide a unified account for the three preverbs, kse-, para- and ksana, that is a morphological account, since prefixation (cases of kse- and para-) and compounding (ksana) are clearly morphological processes in Greek, as shown by Ralli 1988 and 1992.

b) It would allow us to differentiate between ksana on the one hand and kse- and para- on the other, since prefixes are more bound with the stem bases on several aspects, phonological, structural and semantic, while

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21 On the basis of the fact that ksana is recurrent in many words, Philippaki-Warburton (1970) has analyzed it as a prefix. In Xydopoulos (1996) and Kakouriotes et al. (1997), however, the ksana formations have the lexical status, but it is not clear whether the preverbs are analyzed as prefixes or compound constituents.

22 The same question is raised in Smyrniotopoulos and Joseph (1998:481-482). Comparing para- with ksana, the authors propose a prefixal analysis for the first, while for the second they seem to be in favor of a compound status.
compounding displays a greater transparency in both form and meaning. As shown above, kse- and para- can impose selectional restrictions on the verbal root, while ksana combines more or less freely with all kinds of verbs (see (15)). It should be noticed that the attested differences in the co-occurrence and alternation between kse- and para-, as well as with respect to vowel deletion, suggest that the two preverbs should also be distinguished. As seen in (31a), although the reversative kse- may act as an external preverb, it appears to be the closest to the verbal root since it does not alternate neither with external para- nor with ksana. Para- though displays a more differentiated character. With the external function (meaning of exaggeration and excessive realization of the verbal properties), it alternates with ksana (29), and appears outside the [kse-Verb] clusters (31a). With the internal function (meaning of proximity/parallelism, and/or that of depassing the verbal properties), para- and kse- are mutually exclusive (32a-e). Furthermore, as seen in section 4, in the para- formations an obligatory vowel deletion occurs when an internal para- is involved, as opposed to all kse- formations (i.e., involving either an internal kse- or an external one) that are always subject to vowel deletion in the appropriate context. A simple distinction between internal and external preverbs is not sufficient to account for these differences. In the following section, we will see how the distinct behavior of kse- and para- is taken into account in a unified morphological analysis that can also accommodate ksana.

6. THEORETICAL ANALYSIS
Structurally, kse- and para- behave like prefixes, while ksana is a word, since it appears independently in syntactic formations. As such, kse- and para- participate in the derivational process of prefixation, while ksana takes part in compounding. Phonological evidence has shown that the structural relation between kse- and internal para- is more bound than the one involving ksana and external para-, since the latter are not subject to an obligatory vowel deletion in the appropriate context. Finally, no category change is involved in the structures where the preverbs participate. Assuming that Greek word formation is right-headed, ksana, kse- and para- are thus adjuncts in their structures. Generally, adjuncts can add information

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23It should be noticed that the word status of ksana prevents it from combining with a linking vowel –o- in compound formations. As noted by Ralli (1999b), –o- appears between the members of a compound when the first member is a stem (e.g., tirosalata “cheese salad” < tir-o-salata).
without changing the syntactic category of the configuration they are part of, and without serving as an argument to the head.\textsuperscript{24}

We will see now how a morphological account takes into consideration the relevant structural, phonological and semantic differences between prefixes on the one hand, and between prefixes and simple compound members on the other.

The basic assumptions of this approach, as presented in Ralli (1999a, 2001), are the following:

a) Morphology is a grammatical module\textsuperscript{25} generating morphological expressions in the computational space of the faculty of language.

b) In an inflectionally rich language, e.g., Greek, a morpheme-based lexicon feeds both Morphology and Syntax, where entries may be words (\(X^0\)), but also units smaller than words (i.e., stems).

c) Morphology is responsible for constructing binary well-formed structures in a sequence of steps, relating heads and non-heads, that is adjuncts or complements with heads.\textsuperscript{26} Non-heads with the role of complements are usually found in synthetic/verbal compound structures, where the non-head member saturates one of the arguments of the verbal head.\textsuperscript{27} The rest of non-heads function as adjuncts.

Within the spirit of these assumptions, I would like to propose that prefixed and compound words involving the addition of \textit{ksana}, \textit{kse-} and \textit{para-} have

\textsuperscript{24}Following a minimalist framework, Di Sciullo (1997:58) claims that in an adjunction structure, adjuncts do not satisfy any obligatory selectional features of the head and no checking occurs between the features of the adjunct and those of the head. Di Sciullo (1997:57) proposes the Adjunct Identification Principle which accounts for the identification of underspecified features of heads. However, as will be clear below, the configurational analysis that I use in this paper is not based on the syntactic minimalist structure involving the structural constituents of Specifier, Complement, Head and Adjunct. In this paper, the terms of “adjunct” and “head” are used only in the general sense, that is as basic components of a general binary structural relation involving the morphological combination of two constituents, the basic of which is the head and the modifying one acts like an adjunct.

\textsuperscript{25}About morphology seen as an autonomous level of grammar, see also Aronoff (1994:63) who claims that morphology is not entirely reducible to another level, and follows principles of its own, in addition to other principles that may apply to other levels as well.

\textsuperscript{26}See Di Sciullo (1996) on the exclusion of Specifiers in morphological structures.

\textsuperscript{27}See Di Sciullo & Ralli (1999) for further details on argument saturation within synthetic compounds.
the structures as in (37), where the basic morphological categories are those of Word, Stem, Prefix and Inflectional Suffix.\(^28\)

\[
\begin{array}{ll}
(37) & a. \text{Word} & b. \text{Word} & c. \text{Word} \\
& / \backslash & / \backslash & / \backslash \\
& \text{Stem} \quad \text{Infl} & \text{Prefix} \quad \text{Word} & \text{Word} \quad \text{Word} \\
& / \backslash & (\text{ext. para}-) & (\text{ksana}) \\
\text{Prefix} & \quad \text{Stem} \\
\text{(kse-),} & \text{int. para-)}
\end{array}
\]

In (37a), a prefix is added to a stem to build a prefixed stem that becomes a word after the addition of the appropriate inflectional affix. I claim that this is the case of all kse- prefixation (internal and external) and the less productive part of para- prefixation, the one involving internal para- (see examples in (18) and (19)). In (37b) and (37c), a prefix, or a word, are added to another word to form a prefixed or a compound word respectively. These structures generate the ksana compounds (37c) or the most productive external para- formations (37b). In other words, the distribution of adjunction sites is asymmetrical with respect to the distribution of prefixes in internal and external ones: while kse- is added only to stems, and ksana only to words, there are two possible adjunction sites for para-, dependently on its particular meaning and structural behavior seen so far.\(^29\)

\(^{28}\)These structures are generally motivated on further empirical grounds, that is on the basis of morphological data taken from Greek. For instance, it is important to note that Greek verbal and nominal categories are generally analyzed into a stem and an inflectional affix (see the upper part of the structure in (35a). All inflection and most derivation (prefixation and suffixation) are stem based, that is they involve the combination of a stem and an affix. Compounding has two kinds of structures, both of them equally productive, that is stem-based and word-based structures, where the head may be a stem or a word respectively (see Ralli 1992 and Nespor & Ralli 1996 for further details).

\(^{29}\)Notice that the idea of different adjunction sites is found in Di Sciullo's (1997) work. She proposes that prefixes are adjoined outside or inside the verbal projection, depending on their internal or external status. Although Di Sciullo adopts a morphological approach, the configurations she proposes follow a syntactic account in that they include positions such as Specifier, Complement and Head. Another significant difference between Di Sciullo's approach and the one adopted in this paper, is that in the first, the distinction between the internal and the external status is translated into a configurational difference, while in the latter there is no 1:1 correspondence between an internal/external categorization and a difference in adjunction sites.
It is crucial that the distinction between stem adjunction and word adjunction for the study of the three preverbs accounts for both the similarities and the differences between them.

More specifically, the configurational difference between the structures generating the three preverbs, as presented in (37), correctly predicts the following characteristics:

a) Prefixes of the same semantically-defined category (e.g., external) may display a different structural behavior since they may have different adjunction sites in word formation. For instance, we saw that although kse- can be external (i.e., with a reversative meaning), it does not alternate with another external prefix, such as para-.

b) A word-based prefix must precede a stem-based one. Data exposed in the section of the co-occurrence and alternation of the preverbs show that this is exactly the case with the preverbs under consideration. Ksana and the most productive part of para precede the internal kse- as well as the less productive part of para-, while they freely alternate between them.

c) The difference in adjunction sites cuts across the difference between bound and free morphemes (e.g., between prefixes and words). For instance, we saw that although the external para- is a prefix, it shares more similarities with the non-prefix ksana than with the prefix kse-.

d) In a morpheme-based language like Greek, the possibility to have adjunction to words allows us to account for cases of lexical insertion in both morphology and syntax, involving the same lexical item. For example, a word like ksana has an active role in syntax (see (25)), but this does not prohibit it from participating in the process of compounding in morphology. Adjunction to stems in word formation predicts that the morphological structure could involve constituents that may not appear as actual words after the addition of the appropriate inflectional affix. We saw above that kse- and internal para- are prefixes that participate in derivational processes where the verbal part following the prefix is not an actual word. This has been illustrated in (23). It is important to note that nominals containing the word-based para- and ksana do not allow similar formations, since a word-based adjunction would require that the word that functions as the base of the formation is part of the existing words of the language.

e) Finally, the different adjunction sites for ksana, kse- and para- also predict that there must be some phonological differences in the items involving the combination of a preverb with a verb. In fact, as illustrated in (36), in a stem-based structure involving all instances of kse- and para-, an obligatory vowel deletion occurs if the verbal base begins by a
vowel. On the contrary, in a correspondent word-based structure involving external para- and ksana vowel deletion has no obligatory character.

7. SUMMARY
In this work, three productive Greek preverbs have been examined, namely ksana, kse- and para-. On the basis of their semantic interpretation, structural characteristics and phonological behavior in the structures they are part of, it was shown that the three preverbs are distinguished into the following categories:

a. Internal and external preverbs, according to the specifications that they bring to the verbal base, that is with respect to the root meaning, the aspectual structure or the argument structure of the verb. Kse- and para-display a dual character, since they can assume an internal or an external role, while ksana is used only as an external preverb.

b. Prefixes and non-prefixes (words), depending on the ability to appear as bound or independent elements in words and sentences respectively, and according to phonological phenomena that are triggered when a preverb is combined with a verbal base. While there is no doubt about the prefixal status of kse- and para-, ksana is rather a word, since it can be separated from the verbal base without any change to the meaning of the sentence it is part of. It was claimed that ksana actively participates in compound word-formations, while kse- and para- are handled as cases of derivational prefixation.

It was shown, however, that this subcategorization of the three preverbs does not take into consideration all differences and similarities between the preverbs and that there are some properties that cut across these categories. In order to account for the peculiar behavior of the three preverbs, it was proposed that the combination of each preverb with a verbal base may occur in different adjunction sites within morphology. Kse- that appears to be closest to the base is generated as an adjunct to stems, ksana that has a loose relation with the base is an adjunct to words, while para- can be both as a stem or a word adjunct depending on the case.

An approach that handles the three preverbs within morphology, and explains their characteristics in terms of different configurations in word formation, seems to provide a better account than an approach that would have ignored morphology.

REFERENCES


Hadzidakis, Georgios (1926). “About the Use of the Preposition “ek, eks (kse-) in Modern Greek”. Athina 26, 8-43.


