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**From compounding to prefixation:  
diachronic evidence from Modern Greek dialects**

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### 1. Grammaticalization versus Prefixation

The classical concept of grammaticalization (or grammaticization, or even grammatization) originates from Meillet (1912: 131), who has defined it as “the attribution of a grammatical character to a previously autonomous word”. As noted by Hopper (1991: 18), grammaticalization for Meillet refers to an array of forms, which constitute the morphology of a language. It is only latter (following work by Givón 1971, 1979, Heine & Reh 1984, Lehmann 1985, Hopper & Traugott 1993, McMahon 1994, Gaeta 1998) that grammaticalization the process was viewed as encompassing all types of language change.

The emergence of elements with a morphological role from items which were not a matter of morphology in a previous stage is usually called ‘morphologization’. Hopper & Traugott (1993: 135) define morphologization as the creation of a bound morpheme out of an independent word, and Joseph (2003) discusses two types of morphologization, namely desyntactization and dephonologization, on the assumption that there is a wide range of phenomena that show ‘movement into morphology’ (see also Klausenburger 2002). Joseph argues that morphologization has to be kept distinct from grammaticalization, although the two may overlap to some extent: on the one hand, grammaticalization can make claims about changes that are not related to morphology, and on the other hand, morphologization may involve changes that can be accommodated within morphology independently of grammar (see Joseph 2003 for more details).<sup>1</sup>

In this paper, we investigate a morphologization process in Greek, namely prefixation, which is developed out of compounding. We examine a number of items which appear in morphologically complex words, and have become, or tend to become, prefixes.

As Ralli (2007, 2009a, 2010) has shown, Greek compounding and prefixation belong to morphological processes on the basis of the following criteria:

- a) Compound and prefixed formations display one stress, i.e. they are single phonological words,
- b) They involve bound elements. On the one hand, Greek prefixes are non-separable entities, and on the other hand, Greek compounding is mainly stem based<sup>2</sup>, since, with

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<sup>1</sup> For instance, Joseph (2003: 47) criticizes the formation of the German word *heute* ‘today’ from a presumed instrumental phrase *\*hiu tagu* in Old High German, since “...this combination of sounds is as grammatical (or not, as the case may be) before the phrase was reduced as it is afterwards”.

<sup>2</sup> According to Ralli (2005, 2009ab), in Modern Greek, there is no structural difference between a root and a stem, as opposed to Ancient Greek, where stems were usually combinations of roots and thematic vowels. Today, the notion of a thematic vowel is no longer relevant. See Ralli 2007, 2009a, to appear, for more details on Greek compounds.

some exceptions, the first component is a stem, while the second component can be either a stem or a word.

c) Their products are subject to lexical integrity, i.e. no syntactic rules have access to their internal structure.

d) In many cases, prefixed and compound formations are semantically non-compositional.

According to these criteria moving from compounding to prefixation could be seen as an instance of morphologization, in the sense that prefixation implies a greater morphological involvement than compounding, since prefixes are structurally less autonomous and semantically less transparent than stems. For instance, stems can be used as independent words with the appropriate inflectional ending, and have a specific lexical meaning. In contrast, prefixes cannot occur as autonomous entities, and have a rather abstract semantic function which contributes to the determination of the meaning of the word.<sup>3</sup>

It should be noticed that, in a number of frameworks (see, for example, Anderson's (1992) A-morphous morphology), the difference between prefixes and compound constituents is often accounted for by assigning to compounds a rather syntactic structure, while prefixes are inserted through morphological operations. Under this perspective, prefixation could also be seen as an instance of grammaticalization in the classical sense, that is as a process where lexemes acquire a grammatical role.

On the basis of these considerations, one may argue that prefixation involves movement along a scale ('cline') of an increasing grammatical status, by which expression via prefixation can be considered as 'more morphological' as well as 'more grammatical' than expression via compounding. In this paper, we prefer adopting the term of morphologization, since, as also pointed out by Joseph (2003: 478), in grammaticalization studies, there is a tendency to ignore the formal question of where in the grammar a particular phenomenon is located.

## 2. Parameters of prefixation

It is generally accepted that grammaticalization occurs if certain criteria are satisfied, which, under the form of parameters, account for the process (see, among others the theoretical approaches of Lehmann [1982] 1995, Hopper 1991, Heine 2003, Heine & Kuteva 2002, 2005, 2007, Amiot 2005, Marchello-Nizia 2006, van Goethem 2007, 2008). As far as prefixation is concerned, and with some degree of variation from one author to another, there is more or less agreement on the following parameters:<sup>4</sup>

- Phonological erosion
- De- or re-semanticization
- Decategorialization (or transcategorialization according to Ramat 2001)
- Extension

According to Joseph (2003: 477), each of these parameters is in principle independent from the others, and grouping them together is purely stipulative. Moreover, to our knowledge, there are no explicit proposals about the order according

<sup>3</sup> See Iacobini (2004) for a range of abstract meanings, which may be assumed by a prefix.

<sup>4</sup> Paradigmatization has also been proposed by Lehmann (1985) as a parameter for an item to be grammaticalized. This parameter refers particularly to inflection, which has a typical paradigmatic character, while for prefixes, the parameter is meaningful only if we consider them to be distributed into specific paradigms (see van Marle 1985 for the notion of paradigms in derivation).

to which these parameters are met for a prefixization process, with maybe the exception of Booij (2005), who claims that semantic change precedes the formal one.

On the basis of these observations, three basic questions are raised: a) what are the specific parameters which induce prefixization out of compounding? b) Are these parameters the same for all the range of grammaticalization phenomena, or are restricted to morphology, and thus to morphologization? c) Is there a particular order according to which these parameters occur?

Assuming that morphology is an independent grammatical module with its own rules and constraints, we believe that the parameters which lead to the completion of a morphologization process have to be morphological in nature. Other parameters may trigger the process, or may play a role during the process, but do not guarantee completion. Within this spirit, we propose that the general grammaticalization parameters which may be involved in prefixization are resemanticization and phonological erosion, but the specific morphological parameters, which are crucial for determining the final stage of prefixization, are related with

- the expansion of morphological combinatorial properties, and
- the increase of productivity.

We also suggest that the parameters playing a role in prefixization are not of equal weight. In an effort to rate their importance we show that:

a) Resemanticization is compulsory for an item to become a prefix (as also noticed by Booij 2005), but does not guarantee completion.

b) Phonological erosion<sup>5</sup> may play a role in prefixization, but it is not a necessary condition for the process to start, or to be achieved. Furthermore, it may precede semantic and morphological change.

c) The increase of productivity and the expansion of morphological combinatorial properties are strong indications for a candidate to have reached the final stage of morphologization (see also van Goethem 2008 and Amiot 2005 respectively).

Finally, we consider decategorialization to be the result of morphologization, but not part of the process itself.

These suggestions imply a certain degree of hierarchical application of the parameters involved in prefixization: Desemanticization and phonological erosion precede the morphologically-proper parameters, which, in their turn, lead to decategorialization.

Crucial evidence for these proposals comes from research in the dialectal domain. We use data from several Modern Greek Dialects, where three items, *akro*, *moro* and *sjo*, originate from independent words, but have become, or tend to become prefixes, each one demonstrating a number of peculiar properties. The examples are drawn from local dictionaries, grammars, dialectal documents, the archives of the *Centre of Modern Greek Dialects* of the Academy of Athens, and the oral corpora of the *Laboratory of Modern Greek Dialects* (LMGD) of the University of Patras.

### 3. Prefixation vs. Compounding in Greek

There is relative agreement among linguists (see, among others, Iacobini 2004, Štekauer 2005) that typical prefixes display the following properties: they are category neutral, occupy a particular position within prefixed words (preposed to a

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<sup>5</sup> We prefer using the term *phonological erosion* than *phonological reduction*, since as pointed out by Heine & Kuteva (2007: 44), the former implies a wider sense and thus, it can be linked to grammaticalization phenomena.

constituent), are structurally dependent on the base, and do not have a specific lexical meaning. Non-separability, or loss of lexical autonomy may be another property (Iacobini 2004, Booij 2005), but as shown by van Goethem (2007), separability is not a decisive criterion to define an item as a prefix.

As opposed to prefixes, items participating in Greek compounding bear a specific grammatical category (at least for languages like Greek, where there are no verbs and nouns sharing the same form<sup>6</sup>), may appear first or second elements in compound formations, may or may not be structurally dependent on the base (see subordinate vs. coordinate compounds), and have a specific lexical meaning (see Ralli 2009, 2010, to appear for details on Greek compounds)..

However, between the two categories, prefixes and stems, there is no radical separation. There are items, the so-called ‘affixoids’ (Fleisher 1969), which may share properties with both categories: an increased productivity, a decreased semantic specificity, and a link to an existing free stem. As noted by ten Hacken (2000: 355), the first two criteria make affixoids resemble affixes, while the third one distinguishes affixes from affixoids. Following Ralli (2005, 2010), the intermediate category of affixoids can justify the existence of a morphological cline, where the two poles are occupied by typical affixes (prefixes and suffixes) and stems, while affixoids are situated in between. Moreover, the existence of affixoids can also motivate a cline of morphologization, which denotes the fact that the morphological change from compounding to prefixation is gradable,<sup>7</sup> and that there are intermediate stages demonstrating that the boundaries between the two processes are not very clear (Booij 2005, Bauer 2005, Ralli 2010).

#### 4. The data

##### 4.1. *akro-*

In Ancient Greek, *akr-* is the root of the noun *akra* (or *akron*) ‘top, extremity, edge’, as well as of the adjective *akros/-a/-on* ‘high, extreme’.<sup>8</sup> Like other lexemes, *akr-* participates in compounds ([N N] or [A N] ones), as in the following examples, where a linking element/compound marker *-o-* appears between the root and the second constituent.<sup>9</sup>

- (1)a. akrokhlíeros < akr- khlíeros<sup>10</sup> (Hippocrates, 5<sup>th</sup> c. BC)  
           ‘little warm’ edge warm  
       b. akropolis < akr- polis  
           ‘high town’ high town

According to Babiniotis (1969: 111) formations with *akr-* have been subject to a semantic drift, the first indications of which date back to the 8<sup>th</sup> c. BC (2a), where *akr-* seems to quantify the meaning of the base by bringing either a weakening (2a) or an intensification (2b).

<sup>6</sup> With the exception of a handful of stems (e.g. *kiniy(os)* ‘hunter’ vs. *kiniy(o)* ‘to hunt’), which share the same form in both verbs and nouns, and only their inflectional endings are different. However, this does not constitute sufficient evidence in order to adopt a model like that of *Distributed Morphology*, where lexical items are categorially underspecified, and get their categorial specifications from the syntactic structures into which they appear.

<sup>7</sup> See Hopper (1991) for the gradable nature of grammaticalization in general.

<sup>8</sup> Most adjectives in both Ancient and Modern Greek have three forms (corresponding to distinct inflectional paradigms), depending on their gender value, i.e. masculine, feminine, and neuter.

<sup>9</sup> See Ralli (2008b) for the notion of compound marking and compound markers in Greek.

<sup>10</sup> In this paper, examples will be given a phonological transcription according to their pronunciation in Ancient or Modern Greek. It should be noticed that the Ancient Greek pronunciation has been drastically changed during the Hellenistic period (ca 3<sup>rd</sup> c. BC – 3<sup>rd</sup> c. AD).

- (2)a. akroknephaios < akr- kneph(as)<sup>11</sup> (Hesiodus, 8<sup>th</sup> c. BC)  
 little dark edge cloudness/darkness  
 b. akromane:s < akr- -mane:s<sup>12</sup> (Herodotus, 5<sup>th</sup> c. BC)  
 very mad extremity mad

In Hellenistic Koine (ca 3<sup>th</sup> c. BC – 3<sup>th</sup> c. AD), the examples of this use become more frequent, where *akr-* appears mainly in contexts, where the meaning of the base is weakened. However, compounds with *akr-* bearing the original meaning of *akr(a/on)* are still common:

- (3)a. akrokarpous < akr- karpous (Theophraste, 4<sup>th</sup> c. BC)  
 with fruits at the top top fruit  
 b. akroliθ(os) < akr- liθos (Palatine anthology, 5<sup>th</sup> c. AD)  
 with stone edges edge stone

Examples demonstrating the weakening function of *akr-* are multiplied during the late medieval period (around the 12<sup>th</sup> c. AD), where there are also instances of verbal formations:

- (4)a. akroeksispazo (Glykas, 12<sup>th</sup> c. AD) < akr- eksispazo  
 to shake a bit to shake  
 b. akrioxitipo (Chronicle of Moreas, 14<sup>th</sup> c. AD) < akri- xitipo  
 to softly knock to knock  
 c. akralafrono (Pseudo Georgilas 15<sup>th</sup> c. AD) < akr- alafrono  
 to lighten a bit to lighten

Today, it still appears in certain dialectal areas, frequently in Crete, and sporadically in Cyprus, Pontus, South Italy, the Dodecanesian islands, Thrace, and the Peloponnese.

- (5) a. akrokuzulizo (Crete) < akr- kuzulizo  
 to softly distract to distract  
 b. krofoume (Cyprus) < (a)kr- foume  
 to be a bit afraid to be afraid  
 c. akriokitrinos (Peloponnese) < akri- kitrinos  
 yellowish yellow  
 d. akranixtos (Pontus, South Italy, Dodecanesian islands, Thrace)  
 a bit open < akr- anixtos  
 open

Crucially, while the ancient noun root *akr-* is attached to nominals (adjectives and nouns), the dialects display many verbal examples with *akr-* as first constituent. This is an indication that *akr-* has become category neutral, in that it does not subcategorize for a particular base it combines with. This property argues in favor of a possible prefixal status. In fact, as pointed out by Amiot (2005: 184), the ability to combine with more than one category can be a criterion according to which a lexeme may be distinguished from a prefix.

It is also important to add that the prefixal status entails a form restructuring, from *akr-* to [*akr-* + *-o-*], since the linking element *-o-* would no longer be considered as a compound marker, and it should be analyzed as being incorporated onto the prefix. Note that this collapsing together of adjacent forms has been proposed by Lehmann ([1982] 1995) to be one of the parameters for grammaticalization (coalescence). However, beside the merger of the root and the linking element, there is no other substantial form change. For instance, in Cretan, where *akro-* is very

<sup>11</sup> Segments which do not surface in the output will be included in parentheses.

<sup>12</sup> *-man(e:s)* is a bound nominal form, deriving from the verb *main(omai)* ‘to be in a rage’.

productive (6a), it keeps its original form. A slight change is observed in Cypriot and Peloponnesian, where *akro* appears as *kro-* (6b) or *akrio-* (6c), respectively:

- (6)a. akrovioθo (Cretan) < akro- vioθo  
to help a bit to help
- b. krolalo (Cypriot) < (a)kro- lalo  
to have a small talk to talk
- c. akriokokinos (Peloponnesian) < akrio- kokinos  
little red red

It should be noticed that the change in Cypriot (*kro-* in 6b) is triggered by the application of a general phonological law applying to certain dialects, according to which unstressed vowels are usually deleted at the beginning of words (cf. Newton 1972). The Peloponnesian *akrio-* (6c) is a particularly interesting case, since it establishes a formal link with the Medieval word types *akri* and *akria* ‘edge’<sup>13</sup>, which coexisted with the Classical Greek form *akra*. *akrio-* is firstly detected in the 14<sup>th</sup> century, as illustrated by the examples of the Chronicle of Moreas in (4b), and can be used as an indication that the prefixization of *akr(a/i/ia)* into *akro-* (or *akrio-*, depending on the area) has occurred by that period.

Crucially, parallel to the use of *akro-* as a meaning quantifier, the noun forms *akri/akria* ‘edge’ or *akro* have never disappeared from the language, as shown by the following Standard Modern Greek examples, where they keep their original meaning. They still form compounds (7a) or are used as free items in syntactic structures (7b):

- (7)a. akrokeramo < akr- keram(idi)  
tile of the edge edge tile
- b. Se iða stin akri/sto akro/stin akria tu dromu  
lit. You saw.IP at.the edge of.the road  
‘I saw you at the edge of the road’

Finally, it is important to point out that the coexistence of the old noun with the new prefix is not problematic for the prefixization hypothesis: it illustrates a typical case of ‘divergence’, which is accounted for within the framework of grammaticalization theory. In Hopper’s (1991: 11) terms, “When a lexical form undergoes grammaticization to a clitic or affix, the original form may remain as an autonomous element, and undergo the same changes as ordinary lexical items.”

## 2.2. *moro-*

*moro-* is the root of the Ancient Greek adjective *mo:ros/-a/-on* ‘idiot, silly’, and with this meaning, it appears in a small number of nominal compounds of the Classical period:

- (8) mo:rologos < mo:r- -log-<sup>14</sup> (Aristotle, 4<sup>th</sup> c. BC)  
who talks silly silly who talks

As Babinotis (1969: 154) notes, in the 12<sup>th</sup> century, there are traces of a hypocoristic function in the formations with *moro-*. For instance, *moroipnos* in (9) is ambiguous: it may mean a ‘silly sleep’, where *moro-* keeps the original meaning, but also ‘little sleep’:

- (9) moroipnos < mor- ipnos (Glykas, 12<sup>th</sup> c. AD)  
little sleep sleep

<sup>13</sup> *akra* was the Attic form, while *akri* was the Ionian one.

<sup>14</sup> *-log-* is a bound nominal stem, which derives from the verb *lego* ‘to talk’. See Ralli (2008a) for more information about those nominal elements.

However, there is no other evidence of this hypocoristic meaning in the subsequent centuries, and it is only in the 17<sup>th</sup> c. AD, where examples of a similar use are detected in a chronograph from Serres, a town in Macedonia (northern Greece):

- (10)a. *moroyematos* < *mor-* *γematos*  
 not very full full  
 b. *moropsaltis* < *mor-* *psaltis*  
 who knows some chanting chanter  
 c. *morofovume* < *mor-* *fovume*  
 to be a bit afraid to be afraid

It is crucial that these occurrences do not have only the new hypocoristic meaning, which is not transparently linked to the original meaning ('silly'), but also that *mor-* can be added to verbs (10c). The property to combine with lexemes of various categories leads us to suppose that combinations with *mor-* are not compounds, but derived words, i.e. prefixed words. If *mor-* was an adjective, the only possible combinations would have been those with a nominal base, such as the ones that we find in earlier texts. We further suppose that the prefixal use is also followed by a form restructuring (coalescence) from *mor-* to *moro-*, as already suggested for *akro-*, according to which *-o-* is no longer a compound marker, but a prefix-final vowel.

Today, the prefix *moro-* can be found in a limited number of dialectal formations across Greece, but these examples are not productively created, since native speakers cannot produce new formations:

- (11)a. *moroskotina* (Mykonos) < *moro-* *skotina*  
 little dark dark  
 b. *morovrasto* (Kythera) < *moro-* *vrasto*  
 little boiled boiled  
 c. *moranaxtos* (Chios) < *moro-* *anaxtos*  
 bit open open  
 d. *moroprasinizo* (Macedonia) < *moro-* *prasinizo*  
 to become little green to become green  
 e. *morokeyome* (Epeiros) < *moro-* *keyome*  
 to be a bit burnt to be burnt  
 f. *morovrexixi* (Euboea) < *moro-* *vrexixi*  
 to rain a bit to rain

The restricted number of these occurrences and the lack of productivity of prefixing *moro-* to other lexemes, drive us to the conclusion that *moro-* came close to become a prefix in some parts of Greece. However, for some reason it disappeared, leaving its traces, such of those in (11), as fossilized cases.

It is also important to add that with respect to its form, *moro-* has not undergone any specific phonological changes across centuries, with the exception of the shortening of the ancient root vowel /o:/, which, however, has affected all Greek long vowels in the Hellenistic period.

At this point, it is worth noticing that parallel to the appearance of the hypocoristic function found in Serres (17<sup>th</sup> c. AD), in two other areas, Cyprus and Crete, the adjective *moros* 'silly' seems to have undergone a recategorization as noun, *moro*, with the meaning of 'baby'. This noun use is detected in various texts dating of the 16<sup>th</sup> and 17<sup>th</sup> century, where *moro* appears as a free item in syntax (12a), and as a stem constituent in [N N] compounds (12b,c):

- (12)a. Cretan (Erotoikritos by Kornaros, A2239, 17<sup>th</sup> c. AD)

San to moro opu kianis fajto ðen t' arminevji ke kin ot ora jeniθi na vri vizi  
jirevji

Lit. Like the baby that nobody food NEG it recommend.3SG and it any time  
bear.3PassSG PRT look.3SG for breast

‘As for the baby for whom nobody recommends any food, but by the time he is  
born he looks for breast-feeding’

b. Cypriot :

moron peðin (Poèmes d'amour, 16<sup>th</sup> c. AD)  
baby child

c. Cretan

morokopelo (Stathis, 17<sup>th</sup> c. AD)  
young man

As a noun, *moro* has spread all over the Greek speaking world, since it is part of  
today's common vocabulary, while its adjectival ancestor *moros* has disappeared from  
the common language.<sup>15</sup> Cross-dialectally, compounds containing the noun *moro* as  
one of their constituents are not rare, especially in the dialects of Lesbos and Aivali<sup>16</sup>,  
as the following examples illustrate:

(13) Lesbian / Aivaliot

- a. mur-u-klégu<sup>17</sup> < mur- klegu  
to cry like a baby baby to cry  
b. mur-ó-panu < mur- pan(i)  
baby cloth baby cloth

In addition, in the dialect of Apiranthos (island of Naxos), which is genetically  
related to Cretan, the noun *moro* seems to have developed a new evaluative function.  
In fact, in this dialect, there are formations, where *moro* can be seen as a diminutivizer  
of the meaning of the base:

(14) Apiranthos (Naxos)

- a. moragaθo < mor(o) agaθ(i)  
little thorn little thorn  
b. moromagazo < moro magaz(i)  
little shop little shop

However, we believe that this evaluative use should be considered as an  
independent development from that of the Serres dialect. Beside the fact that the new  
diminutivizing *moro* appears in a different geographic and dialectal area from that of  
Northern Greece (both Naxos and Crete are located in South Greece and their dialects  
belong to a different group<sup>18</sup>), it is attached only to nouns, and its semantic and formal  
relation with the new noun formation *moro* ‘baby’ is very transparent. Therefore, it is

<sup>15</sup> It subsists only in some expressions of a very formal type of language (in the so-called  
‘katharevousa’), which are close to Ancient Greek.

<sup>16</sup> Aivaliot is the Asia Minor dialect of the former Greek-speaking town of Kydonies (also called  
Aivali), till 1922. This dialect is still spoken in certain dialectal enclaves in Greece, which are inhabited  
by first, second, and third generation refugees, who have settled there after a population exchange  
between Christians and Muslims, enforced by the Lausanne treaty in 1923.

<sup>17</sup> -u- is the linking vowel/compound marker. It is an underlying /o/ which has become /u/ in unstressed  
position because of a dialectal phonological law which raises the mid unstressed vowel /o/ into /u/,  
applying to the northern Greek dialects, among which those of Lesbos and Aivali (compare 13a with  
13b). Modern Greek dialects are divided in two major groups depending on the type of their vocalism,  
the northern and the southern. Dialects belonging to the first group are subject to high vowel deletion  
and mid-vowel raising in unstressed position. Both phenomena are absent from the dialects of the  
southern group.

<sup>18</sup> See footnote 16.

reasonable to assume that the Apiranthos *moro* retains its lexical character, and does not have acquired the prefixal status yet. If this is the case, the Apiranthos examples in (14) are compounds, where *moro* should be analyzed as consisting of the stem constituent *mor-* and the compound marker *-o-*.

### 2.3. *s(j)o-*

*s(j)o-* (< *sio-*) as first constituent of morphologically complex words originates from the adverb *isja* ‘straight’. It appears under the form of *sjo-* in Western Crete, while in the eastern part of the island, an independently motivated palatalization law reduces *sjo-* into *so-*. In the early texts of the 16<sup>th</sup> and 17<sup>th</sup> century, the original adverbial stem *is(i)-* is a compound constituent, as illustrated by the examples in (15).<sup>19</sup> In these examples, the unstressed initial vowel /i/ is deleted, due to a phonological law erasing initial unstressed vowels, as already mentioned for *akro-* and a compound marker *-o-* appears between the two compound constituents:

(15)a. Ta kanu ki apomenusi me texni *sotthemena* (Panoria A 416)

Lit. They make.1SG and remain.3PL with art straight-put

‘I make them and they remain as such with an artistic straight manner’

b. *sopato horafi* (Varuchas, notary. 1598.353.2)

Lit. straight-stepped land

‘flat land’

Dimela (2005) and Ralli & Dimela (to appear) have shown that parallel to the original word where it came from, *sjo-* is used in today’s Cretan as an intensifying prefix, and is attached to several categories, i.e. to verbs (16a), adjectives (16b), adverbs (16c), and nouns (16d):

(16) Cretan

- |                       |   |            |                  |
|-----------------------|---|------------|------------------|
| a. <i>sojerno</i>     | < | <i>so-</i> | <i>jerno</i>     |
| to become very old    |   |            | to become old    |
| b. <i>soaspros</i>    | < | <i>so-</i> | <i>aspros</i>    |
| very white            |   |            | white            |
| c. <i>sodreta</i>     | < | <i>so-</i> | <i>dreta</i>     |
| very straight         |   |            | straight         |
| d. <i>sogopanisma</i> | < | <i>so-</i> | <i>kopanisma</i> |
| thrash                |   |            | walloping        |

*sjo-* is very frequent, and participates in the creation of everyday neologisms, some of which cannot be found in the most updated Cretan dictionaries (e.g. Idomeneas 2006 and Ksanthinakis 2000). For instance, Dimela (2005) reports the verb *sjoksejivedizo* ‘highly humiliate’, which has been produced by native speakers during her field work.

The prefixal status of *s(j)o-* is also proved by the fact that, on synchronic grounds, native speakers make no link between its initial lexical meaning ‘straight’ and the actual intensifying function. For instance, they often mix up *s(j)o-*, originating from *isja* ‘straight’, with a prefix *sin-*, derived from the Ancient Greek preposition *sin* ‘together, plus’ (Charalabakis 2001). Following Dimela (2005), this confusion is due not only because *sjo-* and *sin-* are not very distant phonologically, but also because there is a certain degree of similarity in the interpretation of their morphologically produced words. The first traces of such a mixing date back to the 17<sup>th</sup> c. AD. Consider the following examples:

<sup>19</sup> The final vowel *-a* does not surface in compounds due to the so-called ‘Bare-stem constraint’ which requires stems to be as bare as possible, that is, deprived of their affixal parts, when used as first compound constituents (see Ralli & Karasimos 2009 for more details on this constraint).

(17) a. k`i djo *sobropatusasi* (Erotokritos A 37)<sup>20</sup>

Lit. and.the.two straight-stepped.3PL

‘And both of them have the same age’

b. *sjotseros* < *sjo ker(os)* / *sigeritis* < *sin ker-itis*  
of the same age weather/time / of the same age time/weather-DAFF

(17a) Is ambiguous with respect to which of the two lexemes, (*i*)*sja* or *sin* is used: formally, the first constituent *so-* appeals to the original *isja*. However, the fact that the initial consonant of the base (*propato* or *porpato* ‘to walk’) becomes a voiced /b/ shows that the previous constituent ends in a nasal /n/ which belongs to *sin*. The confusion is further illustrated by (17b), where without any change in the meaning, the same base is prefixed by either *sjo-* or *sin*. Further proof is found in the archives of the *Centre of Research of Modern Greek Dialects* of the *Academy of Athens*, where the verb *sofiliazō* (< *filiazo*<sup>21</sup> ‘apply’) is given two different interpretations: in certain files, *so-* is attributed to the word *isja*, while in others, an anonymous lexicographer claims that it comes from the preposition *sin*.<sup>22</sup>

Crucially, as noted by Ralli & Dimela (to appear) and Ralli (2009b, 2010), in some northern dialects, mainly in Lesbian and Aivaliot, a corresponding item *sa*, also originating from the adverb *isja*, appears preposed to locative adverbs.

Consider the examples in (18):

(18) *sapera* ‘far away’ < *sa pera* ‘away’  
*sadju* ‘over here’ < *sa edju* ‘here’  
*saki* ‘over there’ < *sa iki* ‘there’  
*sakatu* ‘straight down there’ < *sa katu* ‘down’  
*sapanu* ‘straight up there’ < *sa apanu* ‘above’  
*samesa* ‘more inside’ < *sa mesa* ‘inside’

Ralli (to appear) has suggested that the combination of *sa* with the specific adverbs does not originate from a compound formation but from the lexicalization of an adverbial phrase containing the degree adverb *isja* and a locative adverb. This hypothesis is corroborated by the fact that there are no compounds in Modern Greek consisting of two adverbs and also by the absence of the compound marker *-o-*.

Interestingly, Ralli & Dimela (to appear) have shown that, contrary to Cretan speakers, all native speakers of Lesbian and Aivaliot are aware of the relationship that *sa* bears with the original word *isja*. In these dialects, the fact that *sa* is still semantically transparent with respect to *isja* casts doubt on the hypothesis that *sa* is a real prefix. In fact, the appearance of *sa* in morphologically complex adverbs is of limited productivity, since it is restricted to a handful of examples containing specific locative adverbs, as illustrated by the ungrammatical example of *\*saksu* in (19):

(19) *\*saksu* ‘more outside’ < *sa oksu* ‘outside’

Like *sjo-*, *sa* has undergone a phonological change with an initial /i/ deletion and the internal loss of the semi-vowel /j/ (palatalization). However, both phonological changes are due to general phonological laws, which apply to several Modern Greek dialects, independently of the particular morphological environment of the *s(j)o-/sa* formations.

<sup>20</sup> Literary texts of the 17<sup>th</sup> century are written in the dialectal variant of Eastern Crete, where the prevalent form is *so-*. Therefore, it is not a coincidence that *so-* is phonologically confused with *sin-*, since it is more similar with the latter than its variant *sjo-*.

<sup>21</sup> The verb either comes from *thiliazo* (< *thilia* ‘noose, eyelet’) or is of an unknown etymology.

<sup>22</sup> A number of comparable cases can be shown in Cypriot, the dialects of some Cycladic islands (e.g. Naxos, Thera), and those of Euboea and Samos, although not with the same frequency.

## 5. Discussion

As seen in the data above, there is no doubt that *akro-* in several dialects, and *s(j)o-* in Cretan are prefixes resulting from a prefixation process. The evolution of *akro-* cuts across the history of Greek, since the first indications of a semantic change appeared in the early years of the historical period (8<sup>th</sup> c. BC), while *s(j)o-* is a recent formation. *moro-* is a different case: there are traces of a prefixal use in the post medieval period (17<sup>th</sup> c. AD), but, as shown in 2.2., this use has disappeared from the language. In contrast, the original adjectival lexeme (with the meaning of ‘silly’) has been transposed into a noun (with the meaning of ‘baby’), and from that, a new evaluative use seems to be under development, especially in the dialect of Apiranthos. However, this new form is not a true prefix yet, since the connection with its source is quite transparent on both semantic and structural grounds. For instance, it is significant that *moro-* as a diminutivizer cannot combine with adjectival bases, as opposed to other diminutive affixes in Greek, which can be attached to both nouns and adjectives.

The status of a real prefix is doubtful with respect to the Lesbian and Aivaliot *sa* too, which is also transparently linked to its source, and has specific combinatorial properties, since it is combined with a small number of locative adverbs.

As mentioned in section 1, prefixation is an instance of morphologization, and its realization is due to a number of parameters. With respect to the two general parameters that are usually assumed to be involved not only in morphologization, but in every grammaticalization process, that is the phonological and the semantic ones, our data have shown the following two facts:

a) Phonological erosion may precede or follow resemanticization, but it is not a compulsory criterion for an item to be morphologized. In fact, we have seen that *akro-* has become a prefix in a number of Modern Greek dialects, without being subject to any phonological change, and that the slight change that is attested with respect to the Cypriot *kro-* is not related to the process of prefixation itself but is due to a general phonological law. Nevertheless, the Cretan *s(j)o-* proves that phonological change, although independently motivated, is part of the prefixation process of the adverb *isja*, as it led to the confusion with the preposition *sin* (see section 2.3).

b) Resemanticization has affected all three examined items. Our data have provided support to Booij’s (2005) statement that semantic change precedes the formal one. Nevertheless, as shown by *moro* in the dialect of Apiranthos, and by *sa* in Lesbian and Aivaliot, resemanticization is not a sufficient parameter to ensure completion of prefixation. In fact, those two items are still close to lexemes, and speakers still link them to their sources.

In section 1.3, we have put forward the hypothesis that since compounding and prefixation are morphological processes, at least for Greek, the decisive criteria for an item to become a prefix should be morphological. With few exceptions, researchers agree that one of these criteria refers to the property of boundness (see, among others, Booij 2005). However, as already mentioned in section 1.1., in a language like Greek, both prefixes and the first constituents of compounds are bound, the latter being stems deprived of their inflectional endings. Seen from this perspective, the distinction between the first constituent of a compound and the prefix of a prefixed word should not be based on the non-separability property of these items. In fact, van Goethem (2007) has also reached the same conclusion in her examination of Dutch preverbs. In this paper, we would like to suggest that the application, or non-application, of this parameter should be viewed as being language dependent. In Greek, prefixes have a

'more bound character' than stems, since they do not appear in syntactic constructions as free items (stems can be used as free words with the appropriate inflectional endings).<sup>23</sup> In this sense, the non-separability criterion is not irrelevant to a prefixation process in this language, since it makes a morphologized item to gain a greater degree of boundness. Nevertheless, we would also like to claim that it should be considered as a criterion for distinguishing a Greek prefix from a non-prefix, and not as a parameter, which may be directly involved in a prefixation process.

The same considerations apply to the decategorization of an item, and the property of occupying a specific position within a morphologically complex word. A constituent which is category neutral, and appears at the left-hand position<sup>24</sup> of a word, has already become prefix, as opposed to stems, which belong to specific grammatical categories, and may appear as first or second items, depending on the case. Therefore for a particular item, boundness, decategorialization, and fixed position are strong indications of a prefixal status. These properties signal the final stage (the result) of prefixation, and should not be viewed as parameters, which may induce the item to become a prefix.

A question that still requires an answer concerns the parameters which are typical of a prefixation process, and characterize the incipient stages, where variable phenomena occur. We would like to propose that the decisive factors for the completion of a prefixation process are a) the expansion of the combinatorial properties of an item (in accordance with Amiot 2005), and b) the raise of productivity of a candidate prefixation pattern. For instance, in Ancient Greek, *akr-* and *mor-* are attached to nouns to form compounds. In contrast, much later (*akro-* around the 12<sup>th</sup> century and *moro-* at the 17<sup>th</sup> century) the two items appear to be combined with nouns, adjectives and verbs. In other words, they have become category neutral, like true prefixes. However, while formations with *akro-* have been multiplied, and since the 12<sup>th</sup> c. are massively used in a number of dialects, those with *moro-* have disappeared. The spread of the *akro-* formations, and the disappearance of those with *moro-*, are mainly due to the degree of productivity according to which their combining processes occur. As shown in section 2.2, occurrences with *moro-* are found only in a single 17<sup>th</sup> century document from Serres. Low productivity prohibits the use of *moro-* to spread, and thus, its prefixal status is doubtful.

The same considerations apply to *s(j)o-*: there is evidence that *s(j)o-* combines with nouns, adjectives and verbs, and after being confused with the prefix *sin-* (around the 17<sup>th</sup> century) there is a significant raise of productivity of the process. We suggest that category neutrality, as well as the high productivity of attaching *s(j)o-* to bases has induced it to emerge as a real prefix. Nevertheless, as seen in section 2.3, there is no sufficient justification for the hypothesis that its cognate Lesbian and Aivaliot *sa* is a prefix. Given the unclear status of *sa*, we may suppose that it is in the process of losing its lexeme independence, and thus, it may be considered as a kind of prefixoid. Although there are certain indications (e.g. form reduction and extended meaning), which suggest a morphologization in progress, there is no guarantee that it will result into being one: for instance, it shows no expansion of its combinatorial

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<sup>23</sup> Some Modern Greek prefixes though share the same form with prepositions that are free items. For instance, the prefix *apo*, in a prefixed verb like *apografo* 'to record', has the same form with the preposition *apo* denoting the origin (e.g. *Erxome apo tin Athina* 'I come from Athens'). In accordance with Ralli (2005), we consider the prefix *apo* to be a bound item, and distinct from the preposition.

<sup>24</sup> Note, however, that detecting the exact position of constituents in morphologically complex words requires an accurate documentation, something which is very difficult to have if one deals with diachronic sources, where crucial evidence is often missing.

properties, being combined only with certain locative adverbs. It is important to point out that *sa* illustrates the intermediate stage of a prefixization cline, where true prefixes occupy one pole, lexemes the other pole, and prefixoids are situated in between (cf. Bauer 2005, and Ralli 2010 for the notion of cline). Thus, it confirms the general claim that grammaticalization changes are accomplished gradually, as proposed by many linguists (see, among others, Meillet 1912, Lehmann 1985, Lichtenberk 1991).

## 6. Summary

In this paper, we have examined a prefixization process by using evidence from the diachrony of Greek and certain of its dialects. We have investigated the parameters which account for grammaticalization, and have concluded that phonological erosion and resemanticization may be involved in the process but do not ensure its completion; moreover, decategorialization, boundness, and first position signal the final stage of prefixization but are not directly involved in the process itself. Assuming that prefixization belongs to morphology, we believe that the parameters leading to the completion of prefixization should be morphological in nature. To this end, we have proposed that they are related to the raise of productivity and the expansion of the combinatorial properties of a particular item. Finally, we have commented on the difference between morphologization and grammaticalization and stressed the importance of dialectal data, since crucial evidence is often missing from the standard form of languages.

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Comment [A4]: Να συμπληρωθεί