

To appear in S. Scalise & I. Vogel (eds.) *The Benjamins Handbook of Compounding*. 2010

COMPOUNDING VERSUS DERIVATION

ANGELA RALLI
University of Patras

ralli@upatras.gr

Department of Philology
University of Patras
26500 Rio-Patras
Greece

Abstract

In this paper, I deal with the demarcation of compounds and derivative items. I argue that the two types of constructions belong to word-formation, and intermingle in such a way that only the same grammatical domain could handle them properly. I propose that this domain should be morphology.

April 14, 2009

COMPOUNDING VERSUS DERIVATION

ANGELA RALLI
University of Patras

In this paper, I deal with the demarcation of compounds and derivative items. I argue that the two types of constructions belong to word-formation, and intermingle in such a way that only the same grammatical domain could handle them properly. I propose that this domain should be morphology.

Regarding the interaction of compounding and derivation, I tackle the following issues:

- a. The order of application of the two processes. I show that there are cases which advocate a non-linear order between the two.
- b. The existence of a specific constraint, which demonstrates the close interaction of the two processes, since the structure of derivative items seems to be accessible to compounding and affected by its application.
- c. A peculiar borderline case, according to which a free lexical item in Standard Modern Greek has acquired a fuzzy categorial status in one dialect, but has become a pure prefix into another. To this end, I stress the crucial role of dialectal evidence to the general enterprise of defining the limits of derivation and compounding.

My claims and proposals are exemplified with data which come from Standard Modern Greek and its dialects, and are drawn from written sources, as well as from the corpus of oral collected material of the *Laboratory of Modern Greek Dialects of the University of Patras*.

Keywords: compounding, derivation, constraints, order of application, prefixation, morphological change, dialects

1. *The issue - previous literature*

It is generally known that compounding denotes the combining of words or stems to form a new complex item, while most derivative items imply the presence of an affix, unless derivative words are formed by conversion (considered also as zero affixation, see Marchand 1969), or stem-internal modification.¹ Traditionally, both processes are considered to belong to word formation, but there are also proposals, such as that put forward by Anderson (1992), who considers compounding to be a fundamentally different mechanism from derivation. More specifically, he argues that word-internal structure does not exist in derivative items but only in compounds.

In more recent literature, the strongest reaction to these views has come from Singh (1996), who claims that there is no difference between derivation and compounding, and that both processes are instances of word formation and should be accounted for by the same rule pattern.² A weaker position is

¹ See Sapir (1921: 61) for the notion of stem- or root-internal modification, and Don, Trommelen & Zonneveld (2000) for the issue of conversion.

² In previous literature, a unified treatment of compounding and derivation within the same grammatical domain is implicitly assumed by Lieber (1980), who claims that both affixes and stems are part of the lexical entries of the permanent lexicon, but also by Kiparsky (1982) and

expressed by other authors, such as Naumann & Vogel (2000), ten Hacken (2000), and Booij (2005), who have argued that, although different, derivation and compounding are not sharply distinguished, and that their borderline can be permeable in both ways. Their main arguments are based on the existence of certain categories of an unclear status, which can be classified as categorially marginal affixes or categorially marginal lexemes, showing properties that can be shared by both affixes and lexemes. In the past, most of these categories had been considered to belong to a different class, situated between lexemes and affixes. They had been called affixoids, pseudo-affixes (cf. Fleischer 1969, Schmidt 1987), semi-affixes (Marchand 1967, 1969), or semi-words (Scalise 1984). To take an example, *-ware* in *hardware* or *-like* in *Godlike* could be classified as suffixoids, since, according to Marchand (1969: 326), they are used as second members of morphologically-complex items, although they are still recognizable as words. Crucially, Booij (2005: 117) has observed that the postulation of affixoids is a convenient description of the fact that the boundary between derivation and compounding is blurred, independently of whether affixoids could form a separate class. This piece of evidence has driven him to propose that derivation and compounding should receive the same treatment within morphology, along the lines of the *Construction Morphology* framework.³ Bauer (2005) has put the problem in another way by arguing that it is not the distinction between the two processes which is questionable, but the fact that diachronically, items do not always maintain their independent status. On the basis of certain borderline cases, he raises an important question, as to whether derivation and compounding are two distinct processes or prototypes at each end of a single dimension (2005: 97). Although he does not provide an explicit answer to this question, his position seems to be towards the direction that compounding should not be assigned to a different grammatical domain from that of derivation.

Another criterion for distinguishing compounding from derivation relates to the kind of units which participate in a morphologically-complex item, and the position which they occupy within a word.⁴ It is usually assumed that compounding involves free items (Fabb 1998), which may appear either as left-hand or right-hand constituents. On the contrary, affixes participating in derivation are bound elements, which obey strict positional restrictions: prefixes precede the base, while suffixes follow. The criterion of the position seems to be more or less valid, although in the so-called ‘neoclassical compounds’, there are elements, which may appear either as left or right-hand

Mohanan (1986), who assign compounding and derivation to different levels of a stratified lexicon.

³ Among the recent linguistic studies which have dealt with the same issue see, for instance, Beard (2000), Naumann & Vogel (2000), Stekauer (2005), Scalise, Bisetto & Guevara (2005), Fradin (2005), and Amiot (2005).

⁴ See ten Hacken (2000: 352-353) for an overview of the different semantic criteria, which have been proposed for the determination of the semantic differences between derivation and compounding.

constituents. *Phil-* is such an element in English words like *philharmonic* and *Franophile*. In fact, the categorial status of these items is not very clear in that they share properties of both affixes and lexemes, and Martinet (1979) has given them the name ‘confixes’. Boundness, however, cannot be a safe criterion. For instance, bound forms can participate as basic components in compound structures, as is the case of Modern Greek (hereafter Greek) compounds, where the first constituent is most of the times a stem, which cannot be used as an autonomous word without the appropriate inflectional ending.

Historically, the fuzzy border between the two processes is reflected in the traditional grammatical descriptions of classical languages, such as Ancient Greek and Latin, where there is a tendency to group together prefixation and compounding, as opposed to suffixation, which is considered to belong to derivation (see, for instance, the work by Grimm 1826 and the neo-grammarians Wilmanns 1896). This tendency is based on the idea that while suffixes are capable of deriving further notions from basic roots, prefixes do not have this capacity. The same idea has led Marchand (1967) to view suffixation as being part of *transposition*, while he classifies prefixation and compounding under the category of *expansion*, that is as processes where the determinatum (head) is situated at the right side of a morphologically complex word, and the determinant (modifier) at the left side.

Today, it is a common practice to put together prefixation and suffixation under the process of derivation. However, the fact that prefixes behave differently from suffixes, in many respects, is questionable, and the demarcation of prefixation and compounding seems to be a challenging task. For instance, in many languages, prefixes are category neutral, while suffixes can change the category of the base. Since this particular property of prefixes is usually shared by left components of right-headed compounds, it could serve as an argument for incorporating prefixation into compounding, and consequently, as an argument for compounding being not clearly distinct from derivation.

Finally, a possible overlap between compounding and derivation can also be diachronically motivated, since many prefixes and suffixes originate from first or second components of compounds (see Wilmanns 1896 and Paul 1920). For instance, as reported by Olsen (2000: 901), this is true for a number of German suffixes, such as *-heit* (e.g. *manheit*), and their English counterparts (e.g. *-hood* in *manhood*).

In this paper, I take the position that derivation and compounding constitute instances of word formation, and as such, they should be accounted for within morphology. However, I do not take an explicit position on whether they are generated by rule (cf. Singh 1996), or are analogically created according to certain basic schemas (cf. Booij 2005). Although their occurrences rely on the presence of different units (for instance, in some languages compounds involve stems, and derivation affixes), I show that they intermingle in several ways. In accordance with Bauer (1983, 2005), I argue that they are parts of a word-formation cline (see also Bybee 1985 for the general notion of

cline), the two poles of which contain the clear-cut phenomena of the two processes, while the borderline cases are situated in the middle.

I base my arguments on the following issues:

- a. The order of application of the two processes. Within a level/strata-based model, it has been claimed that the level of compounding follows that of derivation (see, for example, Mohanan 1986). This claim could be used as an argument for postulating the different character of compounding, and assign it to syntax. In the next section, I show that there is no linear ordering between the two processes, since, on the one hand, there are cases where derivation precedes compounding, and on the other hand, there are several instances of derivational affixes, which are added to productive compound formations.
- b. The existence of morphological constraints, which refer to one process, but may have an impact on the other. More specifically, I deal with a constraint which affects the internal form of Greek compounds by prohibiting derivational suffixes to appear as parts of the first stem components.
- c. The well-known issue of affixoids, which I tackle from a different perspective from that which appears in recent literature, as for instance, in the work by Naumann & Vogel (2000), Olsen (2000), ten Hacken (2000), Bauer (2005), and Booij (2005). Most of these studies point out the crucial role of affixoids in showing the non distinct boundaries between derivation and compounding, since the border of the two processes can be crossed several times in the history of a language. Although new data can always lead to insightful observations, my purpose is not to add another piece of evidence to the already long list of these elements, across languages. Instead, I try to demonstrate the important contribution of dialectal evidence to the discussion about the limits of the two processes because dialects can provide significant testimony to changes, which have occurred in the past, but cannot be detected in the actual form of the Standard Language. To this end, I examine an ongoing cross-dialectal change in Greek, according to which an adverbial lexical item in Standard Modern Greek has acquired a blurry categorial status in one dialect, while it has become a pure prefix in another.⁵

As already mentioned, in this paper, I take a position in favor of compounding being a word-formation process, together with derivation. If there is no clear demarcation between the two processes, and they intermingle and constraint each other, there is no reason why they should be treated separately in different grammatical components. The obvious question that arises though is whether an approach of classifying compounding among the word-formation processes could apply across languages, or depends on the particular language one deals with. A plausible answer to this question goes beyond the limits of this paper. However, I believe that a study, which draws conclusions on a

⁵ As stated in Ralli (to appear a), dialectal evidence is of significant importance for the study of various linguistic phenomena, since dialects may make visible a phenomenon, which can be masked by the Standard language for various reasons. This is the case for Greek. Standard Modern Greek has been developed in the last two centuries, following the constitution of the Modern Greek State, while the dialects are direct descendants of Hellenistic Koine (ca 3rd c. BC – 3rd c. AD). Whereas Standard Modern Greek reflects a conservative linguistic policy to preserve certain structures, dialects constitute a real and rich source of information concerning innovations.

possible interaction between derivation and compounding, as well as on their domain of application, should rely on data from languages with particularly developed derivational and compounding systems. In my opinion, suggestions and proposals are sufficiently motivated if they can be tested against a wealth of possible phenomena. Therefore, I base my argumentation on Greek, which abounds in derivational affixes, suffixes and prefixes, and is extremely rich in compounding. With respect to the latter, it should be noticed that Greek seems to have a bigger variety of compound structures than any other language of the Indo-European family, since it builds productively not only nominal and adjectival compounds, but also verbal ones, of all types and patterns, even [V V] dvandva compounds (e.g. *anigoklino* ‘open-close’ < *anig(o)* ‘open’ *klino* ‘close’), which are unknown, or rare, in the other Indo-European languages.⁶

2. Order of application between derivation and compounding

A simple answer to the question whether compounding is related to derivation can be given by the fact that derivational affixes can appear within compounds. As noticed by Beard (1998: 53) and Fabb (1998: 67), this is the case for synthetic compounds. Another issue with respect to the same question concerns the order according to which the two processes occur.

Within a strata-ordered framework (see Kiparsky 1982, Mohanan 1986), Ralli (1988) has claimed that in Greek, most derivational processes occur before compounding, and that the stratum of derivation precedes that of compounding. As a corollary of this order, one could predict that derived items should generally appear as constituents of compound words.⁷ This prediction seems to be borne out as far as the second compound constituent is concerned, which, in several instances, constitutes a derived item. Consider the following examples:⁸

(1)a. [A N]	Structure	
mikrovarkada	[[mikr]-o-[vark-ad-a]]	vs. ?mikrovarka
little boating	little-CM-boat-Daff-INFL	little boat
b. [N N]		
nixokoptis	[[nix]-o-[kop-ti-s]]	vs. *nixokov-o
nail clipper	nail-CM-cut-Daff-INFL	cut nails

⁶ Crucially Greek abounds in borderline cases too. Numerous examples can be found either as right-hand constituents, for instance, in the so-called ‘neoclassical compounds’ or as left-hand components, where preverbs originate from Ancient Greek prepositions or adverbs. For more information on Greek preverbs see Ralli (2004), Dimela & Melissaropoulou (2007), and on neoclassical compounds Ralli (2008b, in preparation).

⁷ With respect to derivation, we restrict our attention only to suffixation, since, as already mentioned, the derivational status of several prefixes is not a clear-cut case, and that in many respects several prefixes behave like the left-hand constituents of compounds. For instance, in English prefixation, suffice to mention the characteristics of stress subordination and categorial neutrality that are shared by the so-called Class II prefixes (e.g. *pro-* and *en-* as in the words *proclitics* and *enclitics*) and the left-hand constituents of compounds (see, among others, Stekauer 2005).

⁸ Greek examples are given a broad phonological transcription, and stress is noted only if it is relevant for the argumentation.

where CM= compound marker/linking element,⁹ Daff=derivational suffix, and INFL=inflection.

On the basis of these examples, one could safely claim that the second constituent has been derived before compounding, since formations like **mikrovarka*, and **nixokovo* are either not possible or sound peculiar.

Significant support to the suggestion that the derivation of the second constituent occurs before compounding is provided by the position of stress. As shown by Nespor & Ralli (1996), a compound which is built on a [Stem Stem] pattern is subject to a compound-specific stress rule, which places stress on the antepenultimate syllable of the word, independently of where stress falls when the two constituents are taken in isolation (after being supplied with the appropriate inflectional ending):

- (2)a. $[[\text{Stem-CM-Stem}]_{\text{stem}}\text{-INFL}]_{\text{word}} < [\text{Stem-INFL}]_{\text{word}} [\text{Stem-INFL}]_{\text{word}}$
nixt-o-lúlud-o < *nixt-a* *lulúd-i*
 night flower night flower
 vs. **nixtolulúdo*

In (2), compounding builds the complex stem *nixtolulud-* by combining two stems, *nixt-* ‘night’ and *lulud-* ‘flower’.¹⁰ An inflectional ending *-o* is added to this formation, and the compound word *nixtolúludo* ‘night flower’ gets its stress on the antepenultimate syllable by the compound-specific stress rule. Significant proof to the hypothesis that *nixtolúludo* is a [Stem Stem] compound comes from the fact that it bears a different inflectional ending (i.e. *-o*) from the ending shown by the second constituent (*-i*), when used as an independent word.

Crucially, when the right-hand slot of the compound is filled by a derived item, the application of the antepenultimate stress rule is blocked, and the formation displays the stress of the derived item. Consider the example in (3), where *thalasodarménos* ‘sea beaten’ is stressed in the same way as its second component *darménos* ‘beaten’, while an occurrence such as **thalasodármenos*, bearing a compound-specific stress on the antepenultimate syllable, is not acceptable:

- (3) $[[\text{Stem-CM-}[\text{Stem-Daff-INFL}]_{\text{word}}]_{\text{word}} < [\text{Stem-INFL}]_{\text{word}}[\text{Stem-Daff-INFL}]_{\text{word}}$
thalas-o-dar-mén-os < *thálas-a* *dar-mén-os*¹¹
 sea beaten sea beaten
 vs. **thalasodármenos*

Following work by Nespor & Ralli (1996) and Ralli (2007, 2009, in preparation), the vast majority of compounds with derived items at their left-hand side have a different structure from those illustrated by the example in (2). They belong to a [Stem Word] pattern, where the second constituent is built as

⁹ About compound markers/linking elements in Greek and other languages, see Ralli (2008a).

¹⁰ Stem-based compounds are also found in Mohawk (see Mithun in this volume).

¹¹ For simplicity reasons, I give a flat structure to the item *darménos*, although I should have represented it in a binary way: $[[\text{dar}_V\text{-men}]_A\text{-os}]_A$.

an inflected derived word before entering compounding.¹² As such, it preserves its stress, structure, and its inflectional ending, which are inherited by the compound as a whole.

2.1 The Bare-stem constraint

The prediction that derivation occurs before compounding does not seem to be confirmed as far as the first constituent is concerned, because derivational suffixes do not usually appear within compounds, the first member of which has the form of a bare stem.¹³ However, as noticed by Ralli & Karasimos (to appear), derived material does not surface inside compounds only as far as their overt form is concerned. Semantically, the first constituent may have the meaning of a derived item. For example, in the compound verb *krifomilo* lit. 'secretly speak', 'speak in secret' (4), the first constituent *krif-* 'secretly' does not surface with its derivational affix *-a* (*krif-a*), which is responsible for giving to the constituent the adverbial category and the adverbial meaning.

(4) Compound Structure	Constituent 1	Constituent 2
[[Stem]-CM-[Stem-INFL] _{word}] _{word}	[Stem-Daff] _{word}	[Stem-INFL] _{word}
<i>krif-o-mil-o</i>	<i>krif-a</i>	<i>mil-o</i>
speak in secret	secret-ly	speak

Ralli & Karasimos (to appear) have argued that the non-appearance of derivational suffixes inside compounds, more specifically those attached to the first component, does not depend on the particular order according to which the processes of compounding and derivation occur, but is due to the so-called 'Bare-stem constraint', which requires the two basic constituents of a compound to be tied by a strong structural bond. This requirement follows from the general structure of Greek compounds, where the left-hand position is generally filled by a stem, that is by a bound item deprived of its inflectional ending. According to Ralli & Karasimos the bond between the two compound components is better guaranteed if the first stem is as bare as possible, that is a stem without any affixal material.

Interestingly, the application of the Bare-stem constraint presupposes that

¹² The only examples of compounds bearing a derived right-hand constituent, which are of a [Stem Stem] structure, and thus subject to the compound-specific stress rule, are those whose derived component is a deverbal adjective in *-t(os)*:

(i) Compound	Stem 1	Stem 2
<i>efkolomajireft-os</i>	< [efkol] _{-ADV}	[[majirev] _{V-t}] _A
easily cooked	easily	cooked
vs.		
Adjectival phrase	Adverbial word	Adjectival word
<i>éfkola majireftós</i>	<i>éfkola</i>	<i>majireftós</i>
easily cooked		

See Ralli (2007, in preparation) for more details on these constructions.

¹³ In Modern Greek, there is no structural difference between a stem and a root, on synchronic grounds, since stems can be morphologically simple (in this sense, they may coincide with roots), or morphologically complex, which may contain derivational affixes (derived stems) or more than one stem (compound stems). This position is also diachronically justified because the Ancient Greek thematic vowels have lost their function to form stems by combining with roots.

- a) the process of compounding has access to the internal structure of the derived items, which participate in it, and
 b) compounding affects structures produced by derivation, since it triggers deletion of derivational material, which may be part of the first compound component.

In other words, the Bare-stem constraint provides proof for the interaction between compounding and derivation.

Significant support to the postulation of the *Bare-stem constraint* comes from the domain of verbal dvandva compounds, as shown by Ralli (to appear b).¹⁴ Consider the examples below, from both Standard Modern Greek (SMG) and its dialects (Andriotis 1960), where the derivational suffix of the first constituent is separated from its base by a hyphen:

- (5)a. *alonotherizo* < *alon-iz-* *therizo* (Crete)¹⁵
 thresh and reap thresh reap
 b. *klidabaronο* < *klid-on-* *abaronο* (SMG)
 padlock lock bar
 c. *ksimerovradiazome* < *ksimer-on-* *vradiazome* (SMG)
 be found by dawn- be found by dawn be overtaken by night
 be overtaken by night
 ‘spend all time’
 d. *kuklustsipazumi* < *kukl-on-* *stsipazumi* (Lesbos)
 wrap up and cover wrap up cover
 e. *majirukinonu* < *majir-ev-* *kinonu* (Imbros)
 cook and pour cook pour
 f. *kseromarenome* < *kser-en-* *marenome* (Skiros)
 dry and wither dry wither

Like in other typical dvandva compounds (see Ralli 2007, 2009, in preparation), in these examples, constituents like *aloniz(o)* ‘thresh’, *klidon(o)*, ‘lock’, *etc.* are juxtaposed to items of the same grammatical category, that is to verbs, and express a parallel or opposite meaning. For instance, *klidon(o)* ‘lock’ has a parallel meaning to *abaron(o)* ‘bar’, and *ksimeron(ome)* ‘be found by dawn’ has an opposite meaning to *vradiaz(ome)* ‘be overtaken by evening’. It is important to note that cases, such as the ones described in (5), do not constitute blends, and should be distinguished from them; in these examples, the element which is not overtly realized is only the derivational suffix of the first constituent (the suffix which is responsible for its category and semantics), while in blends, various portions of the two constituents may be subtracted, and subtraction may involve segments of the root. For instance, in Hatzidakis (1905-1907) and Koutita & Fliatouras (2001), there are blends of coordinative verbs, such as *malafo* ‘massage and touch’ (< *malas(o)* ‘massage’ + *psilafo* ‘touch’), and *korojelao* ‘mock and laugh’ (< *korojdev(o)* ‘mock’ + *jela(o)* ‘

¹⁴ These compounds have appeared during the late medieval period (14th c. AD), and belong to the most productive categories of dialectal Greek compounds (see Ralli to appear b for more details).

¹⁵ The geographic area where the examples come from is given in parenthesis.

laugh'), which illustrate that both root components may be subject to segment deletion.

To conclude this section, the absence of derivational material inside Greek compounds may cast doubt on the validity of the hypothesis that derivation occurs before compounding. However, as argued above, this absence is not related to the order according to which the two processes occur, but is due to independent reasons, namely to the existence of the *Bare-stem constraint*, which makes derived stems to look deprived from any suffixal material. In fact, the semantics, the category and the general structure of compounds prove that derived stems are possible as first components of compound words, but the derivational affixes are not overtly realized because this constraint masks them in order to maximize the close bound between the two constituents. More importantly though, this constraint is crucial for proving the close interaction between derivation and compounding, since the structure of derivative items seems to be accessible to compounding, and is affected by its application.

2.2 Order of application revisited

As shown in section 2.1, the non-existence of derived stems as first constituents of compounds is misleading if, on the basis of this absence, we conclude that derivation follows compounding. I have suggested that derivative structures may precede compounds, and the operation of the *Bare-stem constraint* adds proof to this order. As argued in section 2, this order is also advocated by the position of stress in compounds with a derivative item at their right-hand side, as well as by the examples given in (1), where items such as *?mikrovarka* 'little boat', **nixokov-o* 'cut nails' are not actual words. For convenience, the same examples are repeated below:

(6)a. [A N]	Structure	
<i>mikrovarkada</i>	< <i>mikr-o-vark-ad-a</i>	vs. <i>?mikrovarka</i>
little boating	little-CM-boat-Daff-INFL	little boat
b. [N N]		
<i>nixokoptis</i>	< <i>nix-o-kop-ti-s</i>	vs. <i>*nixokov-o</i>
nail clipper	nail-CM-cut-Daff-INFL	to cut nails

However, a closer examination of these words reveals that the absence of *?mikrovarka* and **nixokov-o* may not be due to an extrinsic order between derivation and compounding but to independent reasons. As far as *?mikrovarka* (6a) is concerned, I would like to suggest that its creation is blocked by the presence of the most frequent diminutive formations *varkaki* and *varkula*, which also mean 'little boat', and are built with the attachment of the suffixes –*aki* and –*ula* to the stem *vark-* 'boat'. In other words, I assume that a blocking constraint (see Aronoff 1976) may apply to compound structures in order to prohibit formations expressing the same meaning with certain derivative ones, which are based on the same root. With respect to **nixokovo* (6b), I also believe that its non-occurrence is due to the fact that compounds consisting of a noun and a verb are not particularly productive formations because of the difficulties

which are posed by an internal theta-role saturation.¹⁶ Thus, items, such as the ones provided in (1) (repeated in (6)), do not constitute strong evidence in favor of a derivation >> compounding order. Nevertheless, the operation of a blocking constraint, which affects compound structures by appealing to derivative ones is another instance of the interaction of the two processes.

Crucially, the language provides a considerable number of counter-examples to this particular order. Consider, for instance, the verb *ladoksidono* ‘pour oil and vinegar’, the adjective *xartopektikos* ‘card-playing, gambling’ and the noun *pederastia* ‘pederasty’. They are built on the basis of compound nouns, as depicted in (7), where segments in parentheses denote the inflectional endings of the compound nouns, which do not participate in the formation of the compound verbs:

(7) Compound verb	Compound noun	Deriv. affix	Derived item
a. <i>ladoksidono</i> pour oil and vinegar	<i>ladoksid(o)</i> oil-vinegar	-on-	vs. * <i>ksidono</i> pour vinegar
b. <i>xartopektikos</i> gambling	< <i>xartopekti(s)</i> card player	-ik	vs. * <i>pektikos</i> playing
b. <i>pederastia</i> pederasty	< <i>pederasti(s)</i> child lover, pederast	-ia	vs. * <i>erastia</i> love

In (7), there are no actual derived words **ksidono*, **pektikos* and **erastia*, which would have justified a possible order according to which derivation occurs before compounding. On the contrary, the existence of compounds, like *ladoksido* ‘oil (and) vinegar’ (< *lad-* ‘oil’ *ksid(i)* ‘vinegar’), *xartopektis* ‘card player, gambler’ (< *xart-* ‘cards’ *pektis* ‘player’) and *pederastis* (< *ped-* ‘child’ - *erastis* ‘lover’), indicate that in these cases, compound formation precedes derivation.

The same order seems to be advocated by certain verbs produced by conversion, since they imply a nominal compound converted into a verb without the presence of an overtly realized derivational suffix:

(8) [stem-CM-stem-INFL] _{verb}	[stem-CM-stem-INFL] _{noun}	Original verb [stem-INFL]
a. <i>anth-o-for-ó</i> carry flowers	< <i>anth-o-fór-os</i> flower-carrier	<i>fer-o</i> carry
b. <i>vivli-o-det-ó</i> bind books	< <i>vivli-o-déti-s</i> book binder	<i>den-o</i> tie/bind
c. <i>dani-o-dot-ó</i> give a loan	< <i>dani-o-dóti-s</i> loan giver	<i>din-o</i> give

As shown by Ralli (2008b, to appear), verbs like the ones of the first column of (8) are not primary compound formations, since they derive by

¹⁶ It should be noticed though that verbal compounds are structurally possible in Greek, as for example, cases such as *xartopezo* ‘play cards’, and *thalasodernome* ‘be beaten by the sea’:

(ii)a. <i>xartopezo</i> play cards	< <i>xart-</i> card	<i>pezo</i> play
b. <i>thalasodernome</i> be beaten by the sea	< <i>thalas-</i> sea	<i>dernome</i> be beaten

See Di Sciullo & Ralli (1999) for an examination of compound-internal theta-role saturation in Greek.

conversion, on the basis of those of the second column, which are nominal compounds. The composition of the latter is based on the combination of two stems. The second of these stems is a deverbal nominal (in this case, *-for-*, *-det-*, and *-dot-*), which is derived from the verbs *fer-(o)* ‘carry’, *den-(o)* ‘tie/bind’, and *din-(o)* ‘give’, respectively. The same stems appear in other derived formations as well, such as *for-a* ‘course, direction’, *de-ti(s)* ‘binder’ and *do-ti(s)* ‘giver’. Corroborating evidence for the suggestion that items, like those of the first column, constitute derivative structures, which are based on nominal compounds, comes from diachrony, since the examples of the second column are attested before those of the first. This order is also motivated in pure morphological terms, because the conversion process of forming verbal stems out of compound nominal ones is well known in Greek morphology throughout its long history, and is still productive today. For instance, it can also be shown in a number of verbal constructions, which are built on the basis of exocentric (bahuvrihi) nominal compounds, like the example given in (9):

(9) [stem-CM-stem-INFL] _{verb}	[stem-CM-stem-INFL] _{noun}	Constituent stems
<i>kak-o-glos-ó</i>	< <i>kak-o-glos-os</i>	< <i>kak- glos-</i>
talk badly	who has a bad tongue	bad tongue

In this example, **glos-o* is not an actual verb. Therefore, a construction like *kakogloso* is a secondary formation, created on the basis of the primary nominal exocentric compound, *kakoglosos*, consisting of two stem constituents, *kak-* ‘bad’ and *glos-* ‘tongue’.

Additional proof to the claim that the items of the left column are not primary compound formations, but derive from nominal compounds without the presence of an overtly realized suffix, is also provided by the fact that they display a different inflectional paradigm from that which would have been shown if their second constituent was a non-derived verb. In fact, they belong to the second inflection class, while the original verbs, *fero* ‘carry’, *deno* ‘bind’ and *dino* ‘give’ (see (8)), are conjugated according to the first inflection class.

To sum up, there is no clear-cut proof about an extrinsic order of application of the two processes, since derived items can be created before or after compounds. Nevertheless, constraints such as the *Bare-stem constraint* and the *Blocking constraint*, which refer to both processes, show the intermingling of derivation and compounding, and add a serious argument against their separation in different domains of application. If derivation is accounted for by morphology, compounding should receive a morphological treatment as well.

3. Prefixization and the role of dialectal evidence

As already stated in section 1, most authors who have stressed the non-radical distinction between derivation and compounding have drawn their main arguments from certain categorially unclear items, which are situated at the border between the two processes. The blurry status of these items is generally accepted as the product of historical evolution. For instance, Wilmanns (1896) and Paul (1920) have provided several examples of affixes which originate

from stems, and the actual derived structures into which they participate were once compounds.

In this section, I show that there is a way to have a synchronic look at the diachronic fact that the boundary of the two processes with respect to their units can be crossed. Corroborating evidence is given from the comparison of certain contemporaneous dialectal systems of the same language, in this case Greek, where a clear-cut lexeme in one system, may behave as an affixoid in a second, while it may have acquired the status of an affix in a third. In this respect, dialectal evidence is precious in providing a synchronic confirmation to the development of borderline cases between compounding and derivation.

More particularly, I examine an item, which is an autonomous word in SMG and a number of dialectal varieties (e.g. Corfiot and the Peloponnesian dialects), a prefix in Cretan (the dialect of the island of Crete), and an affixoid in Lesbian (the dialect of the island of Lesbos), Aivaliot and Moschonisiot (LAM).¹⁷

SMG has a directional adverb *isja* ‘straight’, which can be used as a modifier in verbal phrases (10a) as well as in locative adverbial ones, where it bears an intensifying function (10b):

- (10) SMG
- a. *vale to isja*
put it straight
 - b. *ela isja pano*
come straight up.there

As shown by Dimela (2005), this adverb has been reduced into a prefix in the Cretan dialect, where it functions as a pure intensifier, and has the form of *sjo-* in Western Crete and *so-* in the eastern part of the island. Being a prefix, it can be combined with several categories, i.e. with verbs (11a), adjectives (11b), and adverbs (11c):

- (11) Cretan
- a. *sojerno* < *so- jerno*
become very old become old
 - b. *soaspros* < *so- aspros*
very white white
 - c. *sodreta* < *so- dreta*
very straight straight

The Cretan *s(j)o* is extremely productive, and participates in the creation of everyday neologisms, some of which cannot be detected 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 further shown by the fact that, on synchronic grounds, native speakers make no link between its initial lexical meaning of ‘straight’ and the actual

¹⁷ Aivaliot and Moschonisiot are two dialectal varieties which belong to the same dialectal group as Lesbian. They were spoken once in Northwest Asia Minor, and today are still in use by second and third generation refugees, who settled on the island of Lesbos after the exchange of populations between Greece and Turkey (Lausanne treaty in 1923).

intensifying function. For instance, they often mix up *s(j)o-* originating from *is(j)a* ‘straight’, with *so-*, which comes from the preposition *sin* ‘with, plus’.¹⁸ Interestingly, in the files of the *Centre of Research of Modern Greek Dialects of the Academy of Athens*, the verb *sofiliazó* (< *filiázó*¹⁹ ‘apply’) is given two different interpretations: in certain files, *so-* is attributed to the word ‘straight’, while in others, an anonymous lexicographer claims that *s(j)o-* comes from the preposition *sin*.

It is important to notice that *isja* behaves differently in LAM. Consider the following examples, which are taken from Ralli & Dimela (to appear):

- | | |
|-------------------------------------|----------------------------|
| (12) <i>sapera</i> ‘far away’ | < <i>sa- pera</i> ‘away’ |
| <i>sadju</i> ‘over here’ | < <i>sa- edju</i> ‘here’ |
| <i>saki</i> ‘over there’ | < <i>sa- iki</i> ‘there’ |
| <i>sakatu</i> ‘straight down there’ | < <i>sa- katu</i> ‘down’ |
| <i>sapanu</i> ‘straight up there’ | < <i>sa- apanu</i> ‘above’ |
| <i>samesa</i> ‘more inside’ | < <i>sa- mesa</i> ‘inside’ |

(12) exhibits a number of locative adverbs containing an adverb and a bound element *sa*, which also acts as an intensifier of the locative adverbial meaning. As opposed to Cretan speakers though, all native speakers of LAM are aware of the relationship that *sa* bears with the original word *isja* ‘straight’, which, under the form of *isa*, still exists as an autonomous adverb, and can also act as a verbal modifier, in the same way as in SMG:

- | | |
|---------------------|-------------------|
| (13)a. SMG | b. LAM |
| <i>vale to isja</i> | <i>val tu isa</i> |
| put it straight | |

However, when *isa* modifies a locative adverb, it always appears with the short bound form *sa*.

- | | |
|------------------------|------------------------|
| (14)a. SMG | b. LAM |
| <i>ela isja epano</i> | <i>ela sapanu</i> |
| come straight up.there | come straight.up.there |

Compared to the original *isja*, *sa* has undergone a phonological attrition with an initial /i/ deletion and the internal loss of the semi-vowel /j/. As argued by Ralli & Dimela (to appear) though, this phonological attrition cannot constitute a safe criterion for assigning to *sa* a prefixal status, since both phonological changes are due to general phonological laws, which apply to several Modern Greek dialects, independently of the particular morphological environment of *sa* formations: as shown by Newton (1972), unstressed /i/ is deleted at the beginning of words, and /j/ is deleted in word-internal contexts between a /s/ and a vowel. More importantly, the appearance of *sa* in morphologically complex adverbs is of limited productivity, since it is restricted to a handful of examples containing a locative adverb, and does not combine with all local adverbs, as illustrated by the ungrammatical example of **saksu* in (15):

¹⁸ The final vowel /o/ of *s(j)o-* is nothing else but the linking element which appears inside Greek compounds. The presence of this vowel constitutes a piece of evidence that *so-* has its origin in compounding.

¹⁹ The verb either comes from *thiliazo* (< *thilia* ‘noose, eyelet’) or is of an unknown etymology.

(15)**saksu* ‘more outside’ < *sa-* *oksu* ‘outside’

The fact that *sa* in LAM is still semantically transparent with respect to *isja* casts doubt on the hypothesis that *sa* is a prefix. If it is a lexeme, its combination with the locative adverbs could be analyzed as an instance of compounding. In fact, *sa*, under its full adverbial form *isa*, also appears at the right-hand position of adverbial compounds, as for instance, in the following formation:

(16) *uloisa* ‘all straight’ < *ulu* ‘all’ *isa* ‘straight’²⁰

However, the ‘compounding’ hypothesis runs against the fact that *sa* in (12) combines only with locative adverbs, since categorial restrictions do not usually characterize compounds. Moreover, the meaning of *isa* as a second member of compounds, like in the example of (16), is not reduced into the general intensifying function displayed by *sa*.

Given the fact that there is no sufficient semantic or formal justification for the hypothesis that *sa* is a lexeme, or that it has been morphologized into a prefix, one may suppose that it is in the process of losing its word independence, and thus, can be considered as a kind of prefixoid (see Ralli to appear a, Ralli & Dimela to appear). In other words, although *sa* does not have all the properties of a real prefix, and there is no guarantee that it will result into being one, there are certain indications (e.g. form reduction and reduced meaning), which could suggest a morphologization (or grammaticalization) in progress.²¹

Items, the structural status of which is unclear, have always been a problem for morphological theory in synchronic terms: they cannot be classified into one particular category and the processes into which they participate cannot be adequately delimited. *sa* seems to be an instance of these problematic cases, since no synchronic morphological analysis could decide whether it should be registered as a prefix or a lexeme, and whether its combination with locative adverbs should be treated as prefixation or compounding. I would like to suggest that the existence of problematic cases, such as the Greek adverb *isja*, which may also appear under the form of *so* or *sa*, depending on the dialect, adds support to Bauer’s (1983, 2005) idea that items involved in derivation and compounding can be placed on a cline (see also Ralli to appear a). In this cline, the SMG adverb *isja* (or *isja* in Corfiot and the Peloponnesian dialects) is situated in one of the poles, together with the other lexemes. The Cretan *s(j)o*, which has a prefixal character, appears with other affixes on the other pole, and *sa* in LAM, whose status is unclear, is situated between the two poles.

5. Conclusions

In this presentation, I have shown that derivation and compounding interact in several ways, and not only as far as the units which they involve are concerned. More specifically, I have demonstrated that there is no extrinsic

²⁰ In this case, there is no need for /i/ deletion, since /i/ is not in the initial position.

²¹ For details about morphologization, see Joseph (2003).

ordering between the two processes, since derivation may occur before or after compounding, and that there are constraints which apply to compounds but affect derivational material within their structure. On the basis of this close interaction, I have argued that derivation and compounding should not be treated as separate processes of different grammatical domains, but as processes of the same domain, i.e. morphology. Finally, with the help of data drawn from Modern Greek Dialects, I have pointed out the important role of dialectal evidence into providing synchronic testimony to the view that the border of the two processes is not clearly distinct and that can be easily crossed.

References

- Amiot, Dany. 2005. "Between Compounding and Derivation: Elements of Word formation corresponding to Prepositions". *Morphology and its Demarcations*, ed. by Wolfgang Dressler, Dieter Kastofsky, Oskar Pfeiffer & Franz Rainer, 183-196. Berlin: de Gruyter.
- Anderson, Steven. 1992. *A-morphous Morphology*. Cambridge: Cambridge University Press.
- Andriotis, Nikolaos. 1960. *Simvoli sti Neolliniki Sinthesi* [Contribution to the Greek Composition]. Athens: National Library, vol. 7.
- Aronoff, Mark. 1976. *Word formation in Generative Grammar*. Cambridge, Mass.: MIT Press.
- Bauer, Laurie. 1983. *English Word Formation*. Cambridge: Cambridge University Press.
- Bauer, Laurie. 2005. "The Borderline between Derivation and Compounding". *Morphology and Its Demarcation* ed. by Wolfgang Dressler, Dieter Kastofsky, Oskar Pfeiffer & Franz Rainer, 97-108. Amsterdam: Benjamins.
- Beard, Robert. 1998. "Derivation". *The Handbook of Morphology* ed. by Andrew Spencer & Arnold Zwicky, 44-65. Oxford: Blackwell.
- Booij, Geert. 2005. "Compounding and Derivation. Evidence for Construction Morphology". *Morphology and its Demarcation*, ed. by Wolfgang Dressler, Dieter Kastofsky, Oskar Pfeiffer & Franz Rainer, 109-131. Amsterdam: Benjamins.
- Bybee, Joan. 1985. *Morphology*. Amsterdam: Benjamins.
- Di Sciullo, Anna-Maria & Angela Ralli. 1999. "Theta-Role Saturation in Greek Compounds". *Studies of Modern Greek Generative Syntax*, ed. by Artemis Alexiadou, Geoffrey Horrocks & Melita Stavrou, 185-200. Dordrecht: Kluwer.
- Dimela, Eleonora. 2005. *I prothimatopoiisi stin Kritiki dialecto. I periptosi ton sin-, sjo-, so-* [Prefixation in Cretan Dialect. The case of *sin-*, *sjo-*, *so-*]. M.A. Thesis. University of Athens.
- Don, Jan, Mieke Trommelen & Wim Zonneveld. "Conversion and Category Indeterminacy". *Morphology*, ed. by Geert Booij, Christian Lehmann & Joachim Mugdan, 943-951. Berlin: de Gruyter.

- Fabb, Nigel. 1998. "Compounding". *The Handbook of Morphology*, ed. by Andrew Spencer & Arnold Zwicky, 66-83. Oxford: Blackwell.
- Fleischer, Wolfgang. 1969. *Wortbildung der Deutschen Gegenwartssprache*. Leipzig: EB Bibliographisches Institut.
- Fradin, Bernard. 2005. "On a semantically grounded difference between derivation and compounding". *Morphology and its Demarcation*, ed. by Wolfgang Dressler, Dieter Kastofsky, Oskar Pfeiffer & Franz Rainer, 161-182. Amsterdam: Benjamins.
- Garefalakis, Nikolaos. 2002. *Lexiko Idiomatismwn Kritikis Dialektou (Perioxi Sitias)* [Lexicon of Cretan Dialect]. Sitia Crete: Ekdoseis Dimou Sitias.
- Grimm, Jacob. 1826. *Deutsche Grammatik*. Göttingen: Günther.
- Hatzidakis, George. 1905-1907. *Meseonika ke Nea Ellinika* [Medieval and Modern Greek]. Athens: Sakellariou.
- Joseph, Brian D. 2003. «Morphologization from Syntax». In B.D. Joseph & R. Janda. *Handbook of Historical Linguistics*. Oxford: Blackwell. 472-492.
- Idomeneas, Marios 2006. *Kritiko Glossari*. [Cretan Glossary]. Athens: Academy of Athens.
- Kiparsky, Paul. 1982. *Lexical Morphology and Phonology. Linguistics in the Morning Calm*. Seoul: Hanshin.
- Koutita-Kaimaki, Mirto & Asimakis Fliatouras. 2001. Blends in Greek Dialects. A Morphosemantic Analysis. *Proceedings of the First International Conference of Modern Greek Dialects and Linguistic Theory*, ed. by Angela Ralli, Brian D. Joseph & Mark Janse, 117-130. Patras: University of Patras.
- Ksanthinakis, Antonios 1996. *To Glossiko Idioma tis Ditikis Kritis. Leksilogio me Ermineftika kai Etimologika Scholia*. [The dialect of Western Crete: A Vocabulary with Comments on Interpretation and Etymology]. Chania: Dimotiki Politistiki Epixeirisi Chanion.
- Lieber, Rochelle. *On the Organization of the Lexicon*. Ph. D. Diss., MIT.
- Marchand, Hans. 1967. «Expansion, Transposition and Derivation». *La Linguistique* 1: 13-26.
- Marchand, Hans. 1969. *The Categories and Types of Present-day English Word-formation*. München: Beck.
- Martinet, André. 1979. *Grammaire Fonctionnelle du Français*. Paris: Didier.
- Mithun, Marianne. To appear. "Compounding and Incorporation". In this volume.
- Mohanan, Karuvannur Puthanveetil. 1986. *The Theory of Lexical Phonology*. Dordrecht: Reidel.
- Naumann, Bernd & Petra M. Vogel. 2000. "Derivation". *Morphology*, ed. by Geert Booij, Christian Lehmann & Joachim Mugdan, 929-942. Berlin: de Gruyter.
- Nespor, Marina & Angela Ralli. 1996. „Morphology-Phonology Interface: Phonological Domains in Greek Compounds“. *The Linguistic Review* 13: 357-382.

- Newton, Brian. 1972. *The Generative Interpretation of a Dialect. A Study of Modern Greek Phonology*. Cambridge: Cambridge University Press.
- Olsen, Susan. 2000. "Composition". *Morphology*, ed. by Geert Booij, Christian Lehmann & Joachim Mugdan, 897-915. Berlin: de Gruyter.
- Paul, Hermann. 1920. *Deutsche Grammatik*. Vol. V. Wortbildungslehre. Halle/Saale: Niemeyer.
- Ralli, Angela 1988. *Eléments de la morphologie du grec moderne: La structure du verbe*. Ph.D. Diss., Université de Montréal.
- Ralli, Angela 1992. "Compounds in Modern Greek". *Rivista di Linguistica* 4: 143-174.
- Ralli, Angela. 2004. «Stem-based vs. Word-based Morphological Configurations: The Case of Modern Greek Preverbs». *Lingue e Linguaggio* 2004: 241-275.
- Ralli, Angela. 2007. *I Sinthesi Lekseon* [Word Composition]. Athens: Patakis.
- Ralli, Angela. 2008a. "Compound Markers and Parametric Variation". *Language Typology and Universals (STUF)* 61: 19-38.
- Ralli, Angela. 2008b. "Composés Déverbaux Grecs à 'radicaux liés'". *La Composition dans une Perspective Typologique*, ed. by Dany Amiot, 189-210. Arras: Artois Presses Université.
- Ralli, Angela. 2009. "I.E. Hellenic: Modern Greek". *The Oxford Handbook of Compounding*, by Rochelle Lieber & Pavol Stekauer (eds.), 453-463. Oxford/New York: Oxford University Press.
- Ralli, Angela. To appear a. "Morphology meets Dialectology: Insights from Modern Greek Dialects". *Morphology* (2009).
- Ralli, Angela. To appear b. "Greek [V V] Dvandva Compounds: A Linguistic Innovation in the History of Indo-European Languages. *Word Structure* (2009).
- Ralli, Angela. In preparation. *Greek Compounds*. Springer.
- Ralli, Angela & Eleonora Dimela To appear. "On the Borderline between Prefixation and Compounding: The *sa-adverbs* in the Dialectal Varieties of Lesbos, Kydonies (Aivali) and Moschonisia". *Proceedings of the 3rd International Conference of Modern Greek Dialects and Linguistic Theory*, ed. by Mark Janse, Brian D. Joseph, Pavlos Pavlou & Angela Ralli. Nicosia: University of Cyprus.
- Ralli, Angela & Athanasios Karasimos. To appear. "The Bare-stem Constraint in Greek Compound Formation". *Gengo Kenkyu* 135 (2009).
- Sapir, Edward. 1921. *Language: An Introduction to the Study of Speech*. New York: Harcourt, Brace.
- Scalise, Sergio. 1984. *Generative Morphology*. Dordrecht: Foris
- Scalise, Sergio, Antonietta Bisetto & Emiliano Guevara. 2005. «Selection in Compounding and Derivation», *Morphology and its Demarcations*, ed. by Wolfgang Dressler, Dieter Kastofsky, Oskar Pfeiffer & Franz Rainer, 133-150. Berlin: de Gruyter.

- Schmidt, Günter Dieterich. 1987. "Das Affixoid: Zur Notwendigkeit und Brauchbarkeit eines beliebten Zwischenbegriffs der Wortbildung". In H. Gabriele (ed.) *Deutsche Lehnwortbildung*. Tübingen: Narr. 53-101.
- Singh, Rajendra. 1997. *Trubetzkoy's Orphan*. Amsterdam: Springer.
- Stekauer, Pavol. 2005. "Compounding and Affixation. Any Difference?" *Morphology and Its Demarcation*, ed. by Wolfgang Dressler, Dieter Kastofsky, Oskar Pfeiffer & Franz Rainer, 151-159. Amsterdam: John Benjamins.
- Ten Hacken, Pius. 2000. "Derivation and Compounding". *Morphology*, ed. by Geert Booij, Christian Lehmann & Joachim Mugdan, 349-359. Berlin: de Gruyter.
- Wilmanns, Wilhelm. 1896. *Deutsche Grammatik*. Abt. 2. Strassburg.