The productivity of prepositions in English and Modern Greek

Elizabeth Mela-Athanasopoulou

Abstract

Marginally productive lexical categories such as prepositions are involved in word formation in both compounding and affixation in English and Modern Greek. The main issue of this study is to account for the fact that in English and Modern Greek only very few of the widely used prepositions form compounds, whereas neoclassical (in English) and archaic prepositions (in Modern Greek) functioning as prefixes are considerably productive in both languages. So, my main aim will be to show the role of the preposition both as an independent word, as well as an affix (prefix) within a lexical framework.

Key words: neoclassical, productive, lexically derived composites, non-compositional, distributional gaps, morphological productivity, lexically attached prefixes, non-heads

1. The issue of productivity in the lexicon

The central concern of this paper is to examine the question of productivity in the lexicon, even with marginally productive lexical categories such as prepositions. I will show that irrespective of their function, either as independent words to form compounds or as affixes to form complex words, prepositions in both English and Modern Greek (MG) operate as lexically attached items, i.e. they exhibit a behaviour, morphological in nature. Therefore, my claim will be that the relationship between a preposition and the word or stem it attaches to can best be accounted for by postulating a set of lexical rules possessed by the language user. It is important to distinguish those relationships which can be char-
acterized by productive lexical rules from those which cannot be, because each represents a different aspect of the competence of the language user.

By the term productive I refer to a process which accounts for a speaker's ability to form and understand new words, according to the regularities and conditions inherent in his/her morphological competence. A notorious problem in the description of such a competence is that there are, quite often, unclear restrictions on the possibility of forming and understanding new complex or compound words, to the effect that proposed word formation rules (WFRs) may not yield the correct set of derived words. For instance, some affixes occur with a large number of words, whereas others are only attested by a small number of derivatives).

Assuming, then, the existence of morphological rules according to which complex words are structured or formed, we can easily realize that some rules are very often used for the formation of neologisms, whereas others are less often used, or not used at all for this purpose. In this sense, some rules can be called productive and others unproductive or marginally productive. According to Booij (1977: 5) “the degree of productivity of a WFR can be seen as inversely proportional to the amount of competence restrictions on that WFR”. In view of this position, one would only have to define the WFR with its proper restrictions and limitations and the degree of productivity would naturally fall out.

In general, the role of productivity in the syntax, where it refers to “the creative capacity of language users to produce and understand an indefinitely large number of sentences” (Chomsky 1957: 15), is in general not regarded as problematic or simply ignored in the sense that a syntactic rule is fully productive, but there is hardly any work on word-formation where productivity is not discussed. As Aronoff (1976: 35) points out “there is obviously some intuition behind the usage, but most of the discussion is rather vague”.

Intuitively, the notion of productivity must make reference to the speaker’s ability to form new words and to the restrictions WFRs impose on new words. This leads to the distinction between actual and potential (possible) words. Roughly, the actual words constitute the lexicon of a language, and as such are “inherently unpredictable” (Aronoff and Schvanyeldt 1978: 106), whereas possible but non-occurring words are accomplished by the speaker by following the WFRs patterns. What is interesting, now, is that the class of actual words contains both morphologically regular and morphologically idiosyncratic forms. The crucial difference between actual and potential words is
that only actual words may be idiosyncratic (e.g. phonologically or semantically), i.e. unpredictable (Plag 1999).

To conclude with the notion of morphological productivity with regard to the marginal productivity of prepositions, which is the central theme of this study, I will briefly expose Smirniotopoulos and Joseph’s views (1998) and will also show the prevalence of the lexical rules in the morphological processes the WFR (prep+STEM) undergoes, in both compounding and affixation:
i. Lexical rules need not be productive and can show a significant number of arbitrary exceptions. Distributional gaps can, thus, occur in the output of lexical rules. For example, the neoclassical prepositions in English and the archaic in Greek, functioning as prefixes to render complex forms such as perceive, transfer, consist and αναστέλλω, ‘suspend’, επικεπτομα, ‘visit’, επιβαρύνω, ‘burden’ are in fact the result of a lexical formation process.

ii. The output of a lexical rule can be non-compositional in its semantics and can thus, show meanings unrelated to the individual parts composing it. For example, there is no synchronic semantically compositional relationship between, say, the Greek νπομένω, ‘suffer’, επιμένω, ‘insist’, προσμένω, ‘expect’ and the prefixed prepositions υπό, ‘under’, επί, ‘on’, προς, ‘towards’ or the verb μένω, ‘stay’; that is, the meanings of the composite verbs are not simply the result of the meanings of the prepositions and the verb μένω.

iii. A lexical rule creates a lexical item with properties that are idiosyncratic vis-à-vis its source, and are not in themselves predictable as to their external syntax.

iv. A lexical rule is not a ‘generative’ rule in the strict sense, but only in the sense that it provides a pattern for producing new words. In this sense, it is a one-time-only rule. (Adapted from Smirniotopoulos and Joseph 1998).

In the light of all this, we will now start discussing the marginal productivity of the preposition in both English and MG in forming compound or complex words, within a purely morphological (i.e. lexical) framework.

2. The function of the preposition as an independent word in word formation

Of the most commonly used prepositions as independent words, shown in Table 1, only a limited number are marginally involved or not involved at all in compound formation. Most of them do form compounds, under lexically based patterns (i.e. WFRS).
Table 1. The most common one-word prepositions in English (G. Leech and J. Svartvik 1975: 275)

<table>
<thead>
<tr>
<th></th>
<th>at</th>
<th>by</th>
<th>into</th>
<th>past</th>
<th>under</th>
</tr>
</thead>
<tbody>
<tr>
<td>about</td>
<td>before</td>
<td>down</td>
<td>of</td>
<td>since</td>
<td>until</td>
</tr>
<tr>
<td>above</td>
<td>below</td>
<td>for</td>
<td>off</td>
<td>through</td>
<td>up</td>
</tr>
<tr>
<td>after</td>
<td>beside</td>
<td>from</td>
<td>on</td>
<td>till</td>
<td>with</td>
</tr>
<tr>
<td>along</td>
<td>between</td>
<td>in</td>
<td>over</td>
<td>to</td>
<td>without</td>
</tr>
</tbody>
</table>

According to Leech and Svartvik, all prepositions listed in Table 1 (except: at, beside, for, from, into, of, till, to, until and with) can also behave as prepositional adverbs, i.e. particles. For instance, phrasal verbs constitute a clear-cut case of a verb plus particle (e.g. call off, break off, blow up, turn on, fill in, put up, etc.). I will investigate these cases as exocentric constructions consisting of a verb followed by a particle, towards the end of this section.

Let us consider, first, the structure of all possible combinations prepositions can have with other major lexical categories (Nouns, Adjectives, Verbs) in order to produce compounds. Selkirk (1982: 13) defines compounds as “made up of two constituents each belonging to one of the categories Noun, Adjective, Verb or Preposition; the compound itself may belong to the category Noun, Verb, Adjective”. With regard to their location we can say that they all behave as non-heads, always obtaining a left hand position, as shown in 1a-d.

1a. Compound Noun < Prep.+Noun

<table>
<thead>
<tr>
<th>AFTEReffect</th>
<th>BACKGROUND</th>
<th>OFF-license</th>
<th>OUT-house</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFTERlife</td>
<td>DOWNTOWN</td>
<td>OVERdose</td>
<td>UNDERdog</td>
</tr>
</tbody>
</table>

1b. Compound Adjective < Prep.+Adjective or Adjectival

| ABOVE-mentioned | INGROWN | OUTpatient | OUTspoken |
| OVERcrowded     | OVERwide | UNDERRipe  | WITHdrawn |

1c. Compound Verb < Prep.+Verb

| OFFSET | OUTlive | OVERdo | UNDERfeed | Uplift |

1d. Compound Noun < Prep.+Noun (after Conversion)

| BY-pass | DOWNpour | OFF -print | ONset | OUTcome | UNDERwear |

All compound formations of 1a-d constitute strong evidence of all the characteristics of WFRs, i.e., semantic non-compositionality, distributional ‘gaps’, and absence of synchronic, semantically compositional relationship between the component parts. Like all types of compounds (e.g. Noun + Noun, Noun + Adjective, Adjective + Adjective, etc.) all the compounds of 1a-d follow the pattern of Rule 1 (cf. Selkirk 1982: 15) and the configurations of 2 a-c, shown below.

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1 A preposition plus participial adjective < V/N+Infl. (e.g. outspoken, overcrowded, etc) is more productive than preposition plus clear Adjective, as shown in 1b.
RULE 1. \[\text{[COMPOUND WORD]}_{\text{N,A,V}} \rightarrow \text{[PREP]} + \text{[WORD]}_{\text{N,A,V}}\]

Normally, no category change is effected by the attachment of the preposition, e.g. a preposition plus Noun will generate a compound Noun, a preposition plus Adjective will form a compound Adjective, and so on. The statement that "... the rightmost element determines the category of the word" (Disciullo and Williams 1987: 24), is also documented in Williams (1981) in his Righthand Head Rule. Only in 1d when the verbs function as Nouns (by Conversion), do their compounds with the preposition as left hand constituent, come out as Nouns or Verbs, accordingly.

Concerning headedness, all the compounds of 1a-d are endocentric right-headed composites, as is the case of all compounds in English (Selkirk 1982:19). Nevertheless, when the preposition follows the word, usually a Verb, thus behaving like a prepositional adverb (i.e. a particle), then it forms a left-headed compound Noun or Adj., as is shown in 3a-b. These are exocentric constructions similar to headless exocentric \([V+N]_\text{N}\) compounds, such as cutthroat, scarecrow, daredevil, pickpocket, etc.

All the V plus particle compounds (i.e. phrasal verbs) fall under this category and have a similar structure. But I will leave the investigation of these for a future paper.

Consider now the construction of the MG data in 4a-c according to the Compound formation Rule 2.

Rule 2. \[[\text{PREP}+\text{STEM}]_\text{STEM} + \text{INFL. SUF.}]_\text{W}\]
4a. Comp V ⟷ \([\text{PREP}+\text{STEM}]_V^{STEM} + \text{INFL.} \ \text{SUF.}]_V\)

παρακάνω, μεταθέτω, καταθέτω, αντιμιλώ, αποκαλύπτω

‘overdo’ ‘transfer’ ‘confess’ ‘counter argue’ ‘reveal’

4b. Comp N ⟷ \([\text{PREP}+\text{STEM}]_N^{STEM} + \text{INFL.} \ \text{SUF.}]_N\)

προβολή, αναβολή, περιποτή, προκοπή

‘projection’ ‘postponement’ ‘reduction’ ‘success’

4c. Comp N ⟷ \([\text{PREP}+\text{STEM}]_A^{STEM} + \text{INFL.} \ \text{SUF.}]_A\)

κατακτρινος, παραμελημένος, προσκαλεσμένος, προκλητικός

‘all yellow’ ‘neglected’ ‘invited’ ‘challenging’

Unlike the typical MG compounding, there is no linking vowel between the preposition and the stem to which it is attached. Thus, though independent words, prepositions behave like affixes.

Notice that of the MG prepositions of Table 2, occurring as free forms only a small number form compounds: αντί, από, προς, κατά, παρά, μετά. Instead, most of the ancient Greek prepositions (actually the left hand column) are extremely productive, functioning as prefixes as we shall see in the following section.

Table 2. ModGreek and Ancient Greek prepositions (Mela-Athanassopoulou 1996: 169)

<table>
<thead>
<tr>
<th>Modern Greek Prepositions</th>
<th>Meaning</th>
<th>Ancient Greek prepositions</th>
</tr>
</thead>
<tbody>
<tr>
<td>με</td>
<td>unity, instrument</td>
<td>εἰς</td>
</tr>
<tr>
<td></td>
<td>manner, agreement</td>
<td>εν</td>
</tr>
<tr>
<td>σε</td>
<td>location, agreement</td>
<td>εξ/εκ</td>
</tr>
<tr>
<td>γα</td>
<td>benefactive, purpose, distance, time</td>
<td>πρός</td>
</tr>
<tr>
<td></td>
<td>distance, purpose, distance, time, anaphora, manner, agreement</td>
<td>πρός</td>
</tr>
<tr>
<td>ως/έως</td>
<td>time, place, identity</td>
<td>σύν</td>
</tr>
<tr>
<td>σαν</td>
<td>similarity</td>
<td>ανά</td>
</tr>
<tr>
<td>προς</td>
<td>location</td>
<td>διά</td>
</tr>
<tr>
<td>κατά</td>
<td>distance, time, anaphora, manner, agreement</td>
<td>κατά</td>
</tr>
<tr>
<td>μετά</td>
<td>time, distance</td>
<td>μετά</td>
</tr>
<tr>
<td>παρά</td>
<td>lack</td>
<td>αντί</td>
</tr>
<tr>
<td>αντί</td>
<td>concession</td>
<td>αμερί</td>
</tr>
<tr>
<td>από</td>
<td>material, cause, distance, time</td>
<td>επί</td>
</tr>
<tr>
<td>δίχως</td>
<td>separation, lack</td>
<td>από</td>
</tr>
<tr>
<td>χωρίς</td>
<td>separation, lack</td>
<td>υπό</td>
</tr>
<tr>
<td>ισομε</td>
<td>distance</td>
<td>υπέρ</td>
</tr>
</tbody>
</table>
3. The role of the neoclassical preposition in word formation as prefixed to stems

In this section\(^2\), my main concern will be with the productivity of the neoclassical preposition, functioning as a prefix attaching to stems of Latin and Greek origin to form an abundance of lexically derived composites, in English and ModGreek. Consider the application of Rule 3 in the data of 5.

Rule 3. \([\text{PREP}_{\text{Affix}} + \text{STEM}]^V_{\text{Latinate}}\)

5. \begin{align*}
\text{TRANS} &- \text{FER} & \text{AD} &- \text{MIT} & \text{CON} &- \text{MIT} & \text{SUB} &- \text{PLY} \\
\text{transfer} & & \text{admit} & & \text{commit} & & \text{supply} \\
\text{RE} &- \text{FUTE} & \text{PRO} &- \text{DUCE} & \text{IN} &- \text{SPIRE} & \text{OB} &- \text{TAIN} \\
\text{refute} & & \text{produce} & & \text{inspire} & & \text{obtain} \\
\end{align*}

Greek origin prepositions and stems are shown in 6 realized by Rule 4.

Rule 4. \([\text{PREP}_{\text{Affix}} + \text{STEM}]^N_{\text{Greek}}\)

6. \begin{align*}
\text{ANA} &- \text{ΛΟ} - \text{ΓΙΑ} & \text{ANA} &- \text{ΛΥΣ} - \text{Η} & \text{ΑΠΟ} &- \text{ΛΟΓ} - \text{ΙΑ} & \text{ΚΑΤΑ} &- \text{ΣΤΡΟΦ} - \text{Η} \\
\text{analogy} & & \text{analysis} & & \text{apology} & & \text{catastrophy} \\
\text{ΔΙΑ} &- \text{ΓΡΑΜΜ} - \text{Α} & \text{ΕΠΙ} &- \text{ΓΡΑΦ} - \text{Η} & \text{ΠΑΡΑ} &- \text{ΔΟΞ} - \text{Ο} & \text{ΠΑΡΑ} &- \text{ΓΡΑΦ} - \text{ΟΣ} \\
\text{diagram} & & \text{epigraph} & & \text{paradox} & & \text{paragraph} \\
\end{align*}

In both 5 and 6, the affix like segments \textit{trans-}, \textit{ad-}, \textit{com-}, \textit{per-}, \textit{intro-}, \textit{δια-}, \textit{παρα-}, \textit{απο-}, etc., once archaic prepositions in Latin and Greek, produce a great number of lexically derived composites, despite the fact that they behave as lexically attached prefixes displaying non-compositional semantics and distributional gaps (Mela-Athanasopoulou 2000).

Likewise, in MG, only the archaic prepositions are extremely productive when prefixing to verbal or nominal stems to render lexically derived forms, which are semantically unrelated and idiosyncratic, i.e. their meanings are not deducible from the meanings of the preposition and the stem they attach to. That is, there is no synchronic, semantically compositional relationship between the derived composite and either the preposition or stem, e.g. \textit{επιβάλλω} < \textit{ἐπι} + \textit{βάλλω}, \textit{αμφιβάλλω} < \textit{αμφι} + \textit{βάλλω}, etc. Moreover, all these archaic prepositions are distributionally unpredictable as far as the choice of the stem they will attach to is concerned. In other words, the process is purely morphological obeying a set of lexical WFRS. Evidence is provided by the data in 7a-b to 9a-b.

\(^2\) As far as the Greek data are concerned, this section is an extended version of Mela-Athanasopoulou (1996).
7a. [[PrepAf[stel-]VInflAf]V

αναστήλω αποστήλω διαστήλω *επιστήλω ?ςουστήλω/σουστήλωμαι

'cancel' 'send' 'dilate' —

Composite verb

7b. [[PrepAf[stol-]NInflAf]N

αναστολή αποστολή διαστολή επιστολή σουστολή

'cancellation' 'mission' 'dilation' 'letter' 'contraction'

Composite nominalization

8a. [[PrepAf[men-]VInflAf]V

προσμένω διαμένω επιμένω υπομένω περιμένω απομένω

'expect' 'stay' 'insist' 'suffer' 'wait' 'remain'

8b. [[PrepAf[mon-]NInflAf]N

προσμονή διαμονή επιμονή υπομονή *περιμονή *απομονή

'expectation' 'stay' 'persistence' 'patience' — —

9a. [[PrepAf[skept-]VInflAf]V

συνεκέπτομαι *διασκέπτομαι επισκέπτομαι *περισκέπτομαι

'confer' — 'visit' —

9b. [[PrepAf[skept-]NInflAf]N

σύνεκπη διάσκεψη επίσκεψη περίσκεψη

'conference' 'deliberation' 'visit' 'circumpection'

All the items of 7a-9a are treated as lexical units, even though they can be segment-ed morphologically into, say, ανα+στήλω/στέλνω, υπο+μένω, επι+σκέπτομαι, as can be proved by the existence of the prepositions ανα, 'around; again', υπο, 'under', επι, 'on; during' and the verbs στέλνω, 'send', μένω, 'stay' and σκέπτομαι, 'think'. Nevertheless, there is no synchronic semantically compositional relationship between, say, υπομένω, 'suffer' and the preposition υπο or the verb μένω. That is, the meaning of υπομένω is not the plain result of adding together the preposition υπο and the verb μένω. The role of the prefixed preposition is only contrastive, changing the meaning of the verb stem it attaches to. This is further shown in the nominalizations in 7b-9b, in which the stem by itself does not exist as an independent word (*στολή, *μονή, *σκέψη (unstressed)). It acquires meaning after the attachment of the preposition.

In conclusion, archaic prepositions — despite the fact that they produce lexically derived composite verbs and nominalizations, suffering all the consequences of such rules (distributional gaps, non-compositionality, etc)— are nev-
ertheless, significantly productive, in the sense that they tend to combine with a considerable number of stems to produce new composites, thus contributing a lot to word formation.

4. Conclusion

In this study I have tried to establish two points: first, that independent prepositions in English and Modern Greek functioning as non-heads produce a significant number of compounds; and second, that neoclassical prepositions in English and archaic prepositions in Modern Greek behave as affixes, in attaching to verbal or nominal stems and so producing a considerable number of lexically derived composites. In both processes, the prepositions follow purely morphological rules, which are, nevertheless, extremely productive.

References


