

On the headship status of Greek diminutive suffixes: a view from Lexical Semantics

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The purpose of this paper is twofold: first, to comment on the headship status of evaluative affixes and, second, to propose a lexical-semantic approach to evaluative morphology with a focus on Greek diminutives. The proposed analysis militates against the idea that the derivation vs. inflection distinction should be identified with the head-nonhead asymmetry and, as a result, it cannot be maintained that the derivational status of Greek diminutives should render these affixes heads of their formations. As far as lexical semantics is concerned, the analysis allows one to elaborate upon the differences between the mechanisms of subordination of functions with and without indexation of arguments.

Keywords: *head, inflection vs. derivation, evaluative morphology, lexical semantics*

1. Introduction¹

A basic notion in morphological theory and especially in frameworks which attribute internal hierarchical structure to words is the notion *head*. Since the seminal works of Lieber (1980)², Williams (1981a), Selkirk (1982), and Di Sciullo and Williams (1987), the syntactic notion head has been extended from syntax to morphology. A corollary of this is that words, like syntactic phrases, are considered to have heads and the identification of head in all morphological configurations, derived words, compounds, and inflected forms, has been central to linguistic morphology. This extension, however, has not been without problems and a number of authors have expressed their skepticism regarding the overall use of the notion head (see for instance Zwicky (1985) and the debate in Bauer (1990) and Štekauer (2001)).

In recent years there has been an upsurge of interest in the study of head and related issues, such as the presence and absence of head, and several approaches have been developed (Bauer 2008, 2010; Guevara and Scalise 2009; Scalise et al. 2009; Scalise and Fábregas 2010; Kageyama 2010; Arcodia 2012; Ralli and Andreou 2012; Ralli 2013; Andreou 2014). A critical approach to the relevant literature reveals that the identification of the head of the word is a much confusing and confused issue. This is mainly due to the fact that head has been used as a cover term which unifies a number of other notions such as the *subcategorizand*, the *governor*, and the *locus inflectionis/morphosyntactic locus*. The application of various headship criteria to affixation and compounding by Andreou (2014) argues in favour of a strictly categorial definition of head, in that the head for the purposes of morphology should be identified with the category determinant.

The purpose of this paper is to tackle the issue of headship in evaluative morphology and to propose a lexical-semantic modeling of evaluative affixation with a focus on Greek diminutives. In section 2, I present a brief overview of the literature on the morphological (inflection vs. derivation) and the headship status of diminutives since it has been voiced in the literature that Greek diminutives are heads of their formations since they are derivational and not inflectional, despite the fact that they have no categorial features (Melissaropoulou and Ralli 2008). In section 3, I delve more deeply into the question of whether evaluatives are

heads of their formations and argue that the criteria used in order to propose that diminutives are heads are ill-defined and, in most cases, not relevant to the head-nonhead asymmetry. In section 4, I propose a modeling of evaluative morphology in the framework of lexical semantics as developed by Lieber (2004 and subsequent work) and compare diminutives to other “category-maintaining” suffixes. The picture which emerges from the discussion is one in which Greek evaluative suffixes are not heads of their formations since they cannot act as category determinants. Section 5, concludes the paper.

2. Inflection vs. derivation and the question of head

Whether evaluative affixes are inflectional or derivational and whether they are heads of their formations have been debated and no consensus has been reached (Scalise 1988; Anderson 1992; Melissaropoulou and Ralli 2008). Anderson (1992), for example, uses data from languages such as Fula and Kikuyu and argues that these affixes should be considered inflectional since they exhibit properties which are characteristic of inflection, e.g. they are very productive. Scholars such as Dressler and Merlini-Barbatesi (1994) and Scalise (1988) also argue that evaluative affixes are not prototypical instances of derivational affixes. Scalise (1988), for example, entertains the idea that evaluative affixes have a special status and that they are situated between derivational and inflectional affixes:

(1) Derivational suffixes → Evaluative suffixes → Inflectional suffixes

According to Scalise (1988), these affixes have no categorial specification and do not obey the *Unitary Base Hypothesis* (Aronoff 1976). Consider the following:

(2) [tavolo]_N + ino]_N ‘table - little table’
 [giallo]_A + ino]_A ‘yellow - yellowish’
 [bene]_{Adv} + ino]_{Adv} ‘good - quite good’

These examples indicate that the affix *-ino* can be added to nouns, adjectives, and adverbs, without altering the category of the base; inflectional affixes do not affect the category of the base either. In addition, *-ino* violates the Unitary Base Hypothesis since it can combine with bases of different categories.

Another characteristic of evaluative affixes is that they are external with respect to derivational affixes, but internal with respect to inflectional ones. Consider the word *contrabbandierucoli* ‘little smugglers’ from Scalise (1988: 235):

(3) *contrabbando* + Der. Suff. *ieri* + Evaluative Suff. *ucolo* + Infl Suff. *i*

In this word, the diminutive *-ucolo* appears after the derivational *-ieri* and before the inflectional *-i*.

Finally, Scalise (1988) argues that evaluative affixes are not heads of their formations since they cannot change the category or the lexical representation of the base they combine with.

That evaluative affixes are category-less is also evident in Greek evaluative morphology. The Griko *-uddhi* and the Aivaliot *-el(i)*, for example, can attach to both nouns

and adjectives without affecting the category of the base. Consider the following from Melissaropoulou and Ralli (2008):

- (4) a. -uddhi
 aderf-uddhi < aderf(o)
 little brother.N brother.N
 ftex-uddhi < ftex(o)
 little poor.A poor.A
- b. -el(i)
 purt-el(i) < port(a)
 little door.N door.N
 umurf-el(i) < omurf(u)
 little beautiful.A beautiful.A

Despite the fact that these affixes have no categorial features, Melissaropoulou and Ralli (2008), nevertheless, argue that evaluative suffixes should be considered heads. In more detail, they argue that in order to examine whether these affixes could serve as heads, we should first deal with whether these affixes are derivational or inflectional. Their argument is the following: if we can show that evaluative suffixes are derivational, then these affixes are heads. If we, however, conclude that these affixes are inflectional, evaluative affixes cannot be considered heads, since inflectional affixes do not generally function as heads.

With respect to the fact that Greek evaluative affixes cannot change the category of the base, Melissaropoulou and Ralli (2008) argue that this property (or the lack thereof) is not an exclusive characteristic of these affixes since other (true) derivational affixes exhibit categorial neutrality. Consider for example the Greek nominal suffixes *-dzis* and *-ia* which combine with nouns and create nouns:

- (5) a.]_N -dzis] _N
 kafe-dzis < kafe(s)
 coffee-man.N coffee.N
- b.]_N -ia] _N
 anthrop-ia < anthrop(os)
 humanness.N man.N

As I will show in this paper, this argumentation is not accurate and Greek evaluative affixes should not be considered heads.

3. On the headship status of Greek evaluatives

In what follows, I focus on certain criteria by which evaluatives are considered as heads and show that these criteria are ill-defined and in most cases not relevant to the head-nonhead asymmetry. In particular, I comment on the following: (a) the inflection vs derivation distinction, (b) meaning specialization, (c) the morphosyntactic determinant, (d) the subcategorizand, and (e) the semantic test of hyponymy.

Let us first test the validity of the argument that derivational affixes are heads, whereas inflectional ones are not. This argument is not helpful with respect to the identification of head simply because there are derivational affixes, namely prefixes, which do not function as heads. It is frequently voiced in the relevant literature that the distinction between prefixes which are heads and prefixes which are non-heads is based on the categorial criterion (Plag 2003, 2004; Ralli 2005). This accounts for the fact that *en-* is considered as the head of the prefixed verb *en-throne*, whereas, *counter-*, as in *counter-attack* or *counter-productive*, is the non-head since it does not bear categorial features (Williams 1981a; Plag 2003). The derivation vs. inflection distinction should, therefore, not be identified with the head-nonhead asymmetry.

In order to solve this issue, one could argue that this comparison should not be made between derivational affixes (in general) and evaluative suffixes, but between derivational suffixes (in particular) and evaluative suffixes. This solution would not take into consideration derivational prefixes. It seems, however, that such a comparison would be arbitrary and would not be accurate either since it would raise a number of issues.

(a) Why should evaluative suffixes be compared to derivational suffixes and not prefixes? Any argument which is based on the derivation vs. inflection distinction must take into consideration all affixes and not only some of them.

(b) Why should this comparison be made between evaluative suffixes and derivational suffixes and not between evaluative suffixes and inflectional suffixes? This question is of paramount importance since there are authors (Williams 1981a) who argue that even inflectional suffixes are heads. Williams' Right-hand Head Rule renders inflectional suffixes heads since the head of a word is identified positionally as the right-most constituent of that word.³

(c) Why should we a priori accept that derivational suffixes are heads? Which is the property that renders derivational suffixes heads, but prefixes and inflectional suffixes non-heads?

A review of the literature on headship in relation to affixation (see Andreou (2014) for such a review) reveals that the answer to these questions is that derivational suffixes, contrary to (most) prefixes and inflectional suffixes, do have categorial properties. If anything, this highlights the importance of the categorial criterion with respect to the identification and definition of head and casts serious doubts on the validity of the proposal that Greek evaluatives should be considered heads despite the fact that they bear no categorial features.

A word of caution must be added here. It should be stressed that I do not claim that all evaluative affixes are not heads. On the contrary, I suggest that only those affixes with categorial characteristics must be considered heads of their formations. In addition, I do not claim that all evaluative affixes in the same language must be considered as either heads or nonheads. In other words, I propose that in languages in which evaluatives come with categorial properties, these affixes should be considered heads. This means that whether an item is a head or a nonhead should be decided on the basis of the well-defined criterion of the categorial determinant and not on whether it is derivational, inflectional, evaluative or agent-forming.⁴ Consider for instance the diminutive *-(t)je* of Dutch which is a head since it attaches to adjectives and verbs and creates nouns (Booij 2007: 53):

- (6) blond “blond” (A) blondje “blond girl” (N)
 speel “to play” (V) speeltje “toy” (N)

Another argument in favour of the idea that Greek diminutives should be considered heads is that evaluative affixes can specialize the meaning of the base they attach to (Melissaropoulou and Ralli 2008). A critical evaluation of the various head-like notions, however, shows that being able to specialize the meaning of the base does not render an element head because prefixes such as *re-* and *counter-* and non-heads in compounds can specialize or even change the meaning of the whole. To adduce an indicative example, the compound *psarovarka* ‘fishing boat’, does not denote any ‘kind of’ *varka* ‘boat’ since the non-head acts as modifier and specializes the meaning of the compound; the nonhead specifies the meaning of the head and limits its denotation since the compound denotes a particular boat used for fishing. It does not seem theoretically justified, however, to propose that specialization of meaning should be used as a criterion for headship.

In addition, diminutives could be considered heads since they can change the morphosyntactic features of the base. The diminutive *-el(i)*, for example, uniformly creates neuter nouns, regardless of the gender of the base. In (7), *-el(i)* attaches to the feminine *porta* ‘door’ and turns it into neuter:

- (7) *port-el(i)* < *port(a)*
 little door.Neut door.F

The attribution of morphosyntactic features, however, should not be used as a criterion for headship since the morphosyntactic features of the whole are not always a matter of the head-nonhead asymmetry.⁵ Consider for example the attribution of gender and inflection class to the compounds in (8):

- (8) a. *ambelopaxt-on* < *ambel(i)* *paxt-os*
 vineyard tax-Neut.IC5 vine tax-M.IC1
- b. *agrotóspit-o* < *agrot(is)* *spit-i*
 farmhouse-Neut.IC5 farmer house-Neut.IC6
- c. *androgín-o* < *andr-* *gín-*
 man_woman-Neut.IC5 man.M woman.F
 ‘married couple’

The compound in (8a) is neuter and belongs to Inflection Class 5⁶, despite the fact that its head, namely *paxtos*, is masculine and inflects according to IC1. In (8b), we observe that although the compound bears the gender specification of its head, i.e. both are neuter, the compound as a whole inflects according to IC5 and not IC6 which is the inflection class of its head. Finally, the coordinate compound in (8c) is neuter despite the fact that its constituents are masculine and feminine respectively. This characteristic behavior, however, is not a matter of the head-nonhead asymmetry since several Greek compounds exhibit a gender or inflection class specification which is not the gender or inflection class of their head. In addition, other notions such as “collectiveness” and not the notion head should be employed

in order to account for the neuter gender of coordinate compounds such as *androgino* ‘married couple’.

Another criterion is the one of subcategorization. This factor is important for the headship status of evaluatives since the criterion of subcategorization has been central to the identification of the head of the word. In more detail, based on this criterion, the head is the element which is subcategorized in terms of the bases with which it can co-occur. To put it bluntly, the head is the element which selects the non-head.

As far as suffixation is concerned, one of the main characteristics of suffixes is that in their lexical entry they come with a subcategorization frame which specifies the properties of the base they attach to and various analyses have been proposed in order to account for their selectional properties. It is usually assumed that an affix selects a stem to combine with on the basis of the categorial specification of the base (c-selection) and Aronoff (1976), for example, has proposed the Unitary Base Hypothesis, according to which affixes combine with bases of a single category. This hypothesis, however, has proven untenable since certain affixes, evaluatives included, select for bases which belong to different categories.

Recent developments (mostly in the field of Lexical Semantics) show that what is needed to capture the distribution of affixes is not the category, but the semantic specifications of the base instead (s-selection). Lieber (2004, 2007) and Plag (2004) are some notable works which entertain this idea and try to work out how selection can be semantic instead of syntactic.

Suffixes can also be subcategorized in terms of the morphemes with which they can co-occur based on the diacritic features of the latter. The Greek deverbal suffix *-aro*, for example, very often attaches to bases which are specified as [-Native]:

- (9) skoraro < skor (Engl. score) -aro
‘to score’

In this example, *-aro* combines with the English borrowed word *skor* to derive the word *skoraro* ‘to score’.

The foregoing discussion shows that in category-changing suffixation, the affix is the subcategorizand since it selects the base it attaches to on categorial and semantic grounds. In any case, by the criterion of subcategorization, the base is considered to be the non-head.

Let us now turn to the examination of non-category changing evaluative morphology. In (10), we observe that *-eddha* acts as a subcategorizand, in that it requires [feminine] bases (Melissaropoulou and Ralli 2008). Consider the following:

- (10) a. ornit-eddha < ornit(a)
 little hen.F hen.F
- b. *ner-eddha < ner(o)
 little water.Neut water.Neut

Observe that although (10a) is grammatical, (10b) is ungrammatical, for the base, *nero*, is of neuter gender. A question which arises is whether we should consider *-eddha* as the head of the word since it is the subcategorizand. The criterion of subcategorization should not be used as a test for the identification of head, however, since there are other affixes such as prefixes which also act as subcategorizands. The negative prefix *in-*, for example, selects for bases

marked for Latinateness, hence the difference between *uneatable* and *inedible*. In this respect, I align myself with Melissaropoulou and Ralli (2008) who also argue that subcategorization should not be used as a criterion for the identification of headship in relation to evaluatives.

The last criterion to be examined relates to the so-called “semantic head” of the word.⁷ According to this criterion, the head serves as the hyperonym of the whole. In the case of evaluative morphology, the head by this criterion is certainly the base and not the affix. Consider for example that *ornit-eddha* ‘little hen’ is a hen, *purt-el(i)* ‘little door’ is a door and *aderf-uddhi* ‘little brother’ is a brother.

To sum up, based on the foregoing discussion, the provisional conclusion to be drawn is that Greek evaluative suffixes should not be considered heads since the criteria by which they are heads are not always relevant to the head-nonhead asymmetry and, in addition, the base is the head by the semantic test of hyponymy.

4. A lexical-semantic approach to evaluatives

In this section, drawing on Greek data, I offer a lexical-semantic account of evaluative morphology in the framework of Lieber (2004). Based on the distinction between subordination of functions with and without indexation of arguments (Andreou 2014), which I will present in what follows, evaluative affixes with no categorial properties should be accounted for by the latter, i.e. subordination of functions without indexation of arguments.

In order to account for the fact that several distinct parts, an affix and a lexical base in the case of derivation and two stems/lexemes in the case of compounding, integrate into a single referential unit that projects its arguments to the syntax, Lieber (2004) introduces the *Principle of Co-indexation* which reads as:

(11) Principle of Co-indexation

In a configuration in which semantic skeletons are composed, co-index the highest nonhead argument with the highest (preferably unindexed) head argument. Indexing must be consistent with semantic conditions on the head argument, if any (Lieber, 2004: 61).

Lieber (2004: 50) argues that the highest argument of the skeleton is the argument of the outermost lexical function of the head. In addition, she proposes that there are two ways to create a skeleton, as schematically shown below:

(12) a. [α F1 ([], [β F2 ([])))]

b. [α F1 ([])] [β F2 ([])]

(12a) illustrates subordination of functions which is manifested in affixation, and the schema in (12b) shows the mechanism of concatenation of functions which is needed for the purposes of compounding. In this paper, I will focus only on the former, that is, subordination of functions.

In particular, according to Lieber, affixation involves the integration of two distinct skeletons; that of the affix and that of the base. Since affixes have their own skeleton, affixation involves the addition of this skeletal material as the outermost function to the

skeleton of a base. The derivation of *driver*, for example, involves the co-indexation of the highest argument of the non-head, which is the verb *drive*, with the only argument of the head, which in this particular case is the affix *-er*. The skeletons of *-er* and *drive*, as well as the application of the principle of co-indexation are illustrated in (13):

- (13) *-er*
 [+material, dynamic ([], <base>)]
drive
 [+dynamic ([], [])]
driver
 [+material, dynamic ([i], [+dynamic ([i], [])))]

Since there are no semantic conditions on the head argument, the highest argument of *drive*, is co-indexed with the “R” argument of *-er*. The result of the co-indexation process is that the derived word should be interpreted as bearing the role of the external argument of the verb; in this case it is an agent.

Based on the analysis of non-argument bearing prefixation and inflection, I proposed (Andreou 2014) that the mechanism of subordination of functions should be split into subordination of functions with (14a) and without (14b) indexation of arguments as shown below:

- (14) a. [α F1 ([], [β F2 ([])))]
 b. [α F1 ([β F2 ([])))]

Observe that in (14a), the affix has both a Function and an argument, i.e. [α F1 ([])], and the principle of co-indexation is needed in order to regulate the indexation of the arguments of the affix and the base. In (14b), however, the affix is deprived of arguments, i.e. [α F1], and as a result the principle of co-indexation is not relevant to this schema. The distinction between the two schemata will be of importance to our analysis of evaluative morphology since it will allow us to compare diminutives to other (true) derivational affixes which do not change the category of the base they attach to.

4.1 Functions and arguments

In what follows, I propose a modeling of the conceptual structure of Greek diminutives with a focus on (a) whether they should come with an argument position and (b) the semantic feature(s) which are relevant to them. I use the Aivaliot diminutive suffix *-eli* as an indicative example.

Let us first focus on the skeletal architecture of evaluative affixes and, in particular, on whether Greek evaluative affixes should come with an argument position in their skeleton. In my opinion, the skeletal part of these affixes should be deprived of arguments, for Greek evaluatives belong to no major ontological class and do not affect the reference of the base word.

First, according to Lieber (2004), arguments are characteristic of the major ontological classes. We saw for example that *-er* bears an “R” argument, which shows referentiality (Williams 1981b; Higginbotham 1985). In addition, a verb such as *drive* in (13),

also comes with two arguments. Greek evaluative affixes, however, have no categorial features of their own, belong to no major ontological class and, consequently, should not come with an argument position.

Second, consider the skeleton of the plural suffix *-s* (from Lieber 2004: 151):

- (15) Plural suffix *-s*
 [-B, +CI (<base>)]⁸

Observe that *-s* comes with the quantificational features [Bounded] and [Composed of Individuals] in its skeleton. A closer inspection reveals that *-s* does not have an argument position. Lieber argues that inflectional affixes do not bear an argument simply because they cannot alter the reference of the base they attach to. Greek evaluative affixes do not affect the reference of the base either and should, therefore, be deprived of arguments.

Let us now turn to the features which are relevant to evaluation. Of the various semantic features available to us, the one that is the most relevant to evaluative morphology is the feature [scalar]. Lieber (2007) defines this feature as follows:

- (16) [\pm scalar]: This feature signals the relevance of a range of values to a conceptual category. With respect to [-dynamic] SITUATIONS it signals the relevance of gradability. Those SITUATIONS for which a scale is conceptually possible will have the feature [+scalar]. Those SITUATIONS for which a scale is impossible will be [-scalar]. With respect to SUBSTANCES/THINGS/ESSENCES the feature [scalar] will signal the relevance of size or evaluation (i.e. this will be the feature which characterizes augmentative/diminutive morphology in those languages which display such morphology).

Based on the foregoing discussion, the skeleton of an evaluative affix should be as follows:

- (17) [scalar (<base>)]

It follows from (17) that an evaluative suffix is deprived of arguments and expresses gradability since it comes with the feature [scalar] in its skeletal part.

Let us now delve more deeply into the question of gradability and, in particular, the expression of size or evaluation. Grandi (2002, 2005) argues that evaluative morphology has a descriptive and a qualitative perspective. In more detail, evaluation concerns the two axes SMALL \leftrightarrow BIG and GOOD \leftrightarrow BAD. The first axis refers to the “physical” properties of an entity (SMALL, BIG), whereas the latter refers to the way the speaker perceives the quality of the entity (GOOD, BAD). Consider the following from Grandi (2005) which illustrates the various functions expressed by evaluation in the languages of the world. Any language with such affixes is expected to exhibit at least some of these functions:

- (18) Descriptive perspective: SMALL/BIG
 a. ANIMATE NOUNS
 a'. *temporal* dimension:
 SMALL: ‘young X’
 BIG: ‘old X’
 a''. *physical* dimension:

- SMALL: '(bodily) small X'
 BIG: '(bodily) big X'
- b. INANIMATE AND COUNTABLE NOUNS:
- b'. *temporal* dimension:
 SMALL: 'short X'
 BIG: 'long X'
- b''. *physical and spatial* dimension:
 SMALL: '(physically/spatially) small X'
 BIG: '(physically/spatially) big X'
- c. INANIMATE AND UNCOUNTABLE NOUNS
- c'. *quantitative* dimension:
 SMALL: 'small quantity of X'
 BIG: 'big quantity of X'

Qualitative perspective: GOOD/BAD

- a. ANIMATE NOUNS
- a'. *speaker's feelings*:
 GOOD: 'dear X' (expressing appraisal and affection)
 BAD: 'bad X' (expressing contempt)
- a''. *attributes of the referent*
 GOOD: 'X to a high degree' (intensification)
 BAD: 'X to a low degree' (attenuation)
- b. INANIMATE AND COUNTABLE NOUNS:
- b'. *speaker's feelings*:
 GOOD: 'dear X' (expressing appraisal and affection)
 BAD: 'bad X' (expressing contempt)
- b''. *attributes of the referent*
 GOOD: 'X to a high degree' (intensification)
 BAD: 'X to a low degree' (attenuation)
- c. INANIMATE AND UNCOUNTABLE NOUNS:
- c'. *speaker's feelings*:
 GOOD: 'good-quality X' (expressing appraisal)
 BAD: 'bad-quality X' (expressing contempt)
- c''. *attributes of the referent*
 GOOD: 'X to a high degree' (intensification)
 BAD: 'X to a low degree' (attenuation)

It should be noted that from a diachronic point of view, the qualitative meaning (GOOD, BAD) is secondary, that is, it derives from the descriptive one (SMALL, BIG) via metaphorical extension. The conceptual structure in (19) generalizes over these observations:

- (19) [scalar (<base>)]
 <± size>

Based on (19), a diminutive or augmentative affix bears the feature [scalar] in its skeleton, which signals gradability, and the specification of <size> is part of its pragmatic body since

the ‘physical’ properties of an entity (SMALL, BIG) are not to be represented in the grammatical skeleton.⁹

The foregoing discussion suggests that the lexical-semantic representation of a Greek diminutive such as *-eli*, should be as in (20):

- (20) *-eli*
 [scalar (<base>)]
 <-size>

Consider now the derivation of the suffixed word *porteli* ‘little door’:

- (21) *-eli port(a)* ‘door’
 [scalar ([+material ([]))]
 <-size>

The derivation of this word proceeds as follows: *-eli* subordinates the skeleton of the base word, *porta*, and contributes its semantic features to the whole. Given that *-eli* has no argument position, this is an instance of subordination without indexing of arguments. As far as the category of the whole is concerned, this comes from *porta* which is the head of the formation. It follows from this lexical-semantic representation that *porteli* denotes a kind of *porta* with a [scalar] component of meaning.

4.2 Evaluatives and other ‘category-maintaining’ affixes

Let us now turn to the comparison of evaluative affixes to *-ia* and *-dzis*, since these affixes and evaluative ones do not “change the category” of their bases. In my opinion, we cannot analyze these affixes on a par with evaluative ones since a lexical-semantic analysis reveals that they differ from one another with respect to (a) the internal organization of their lexical semantic representation and (b) the semantic features which are relevant to them.

To begin with, let us comment on what we mean by “change of category”. There are several suffixes which are considered category-maintaining. Consider for example the word *manhood* which is created by affixation of *-hood*. This affix could be considered as category-maintaining since it attaches to nouns and creates nouns. As Scalise (1988: 231) puts it “the noun ‘remains’ a noun”. Scalise (1988), nevertheless, mentions that although *manhood* “remains” a noun, *-hood* changes a number of features of the base:

- (22) man.N, <-abstract>, <+countable>
 manhood.N, <+abstract>, <-countable>

Observe that the suffix *-hood* changes the value of two features of the base, namely, <abstract> and <countable>. These features of course come from the suffix. Melissaropoulou and Ralli (2008) argue that diminutive suffixes are heads because at least some of them can also change the semantic feature <countable> of the base. A lexical-semantic approach, however, does not favour such a proposal, since there are several affixes, such as the plural suffix *-s* or the iterative prefix *re-*, which are not heads of their formations and which can also affect the quantitative characteristics of the base.

A closer inspection of (22) also reveals that although *manhood* remains a SUBSTANCE/THING/ESSENCE, it changes into a [+abstract] one. To put it bluntly, affixation of *-hood* has an important impact on the classification of the derived word in terms of lexical semantics since it turns it into an abstract noun. This militates against the proposal that we could compare Greek evaluative suffixes to a suffix such as *-hood* since the former do not have an impact on the classification of a word into an ontological class; evaluatives are deprived of categorial properties.

The proposed analysis shows that the distinction between category-changing and category-maintaining affixation is not subtle enough to deal with the difference between the contribution of *-hood* and a diminutive such as *-eli*; based on this distinction, both affixes are considered as category-maintaining. In my opinion, a distinction should be drawn between category-determining (and not category-changing) and category-maintaining affixation. This would take into consideration the fact that *-hood* and *-eli* differ with respect to their headship status and the contribution they make to the derived word. In other words, *-hood* is a category-determining affix that comes with specific categorial information in its conceptual structure and imposes this information on the whole. On the contrary, *-eli* has no categorial features, is category-maintaining, and adds a [scalar] component of meaning to the base. A comparison between *-ia*, *-dzis*, and evaluative suffixes will allow us to elaborate upon this issue since for Melissaropoulou and Ralli (2008) all these affixes do not change the category of the base. As I will show in this section, this proposal is not accurate since *-ia* and *-dzis* are category-determining, whereas diminutives are not.

The suffix *-ia* as illustrated by *anthropia* ‘humanness’ and *palikaria* ‘bravery’ creates abstract nouns:

(23)	anthrop-ia	< anthrop(os)	-ia
	‘humanness’	man	Dsuf
	palikar-ia	< palikar(i)	-ia
	‘bravery’	brave	Dsuf

In the word *anthropiá*, for example, *-ia* combines with the word *anthropos* ‘man’ and creates an abstract noun of feminine gender. In terms of lexical semantics this means that *-ia* is a [–material] SUBSTANCE/THING/ESSENCE and, as such, should be attributed the following lexical-semantic representation:¹⁰

(24)	<i>-ia</i>
	[–material ([], <base>)]

A comparison between the skeleton of *-ia* and the skeleton of the diminutive suffix *-eli* in (19) reveals that there is a major difference between the two affixes; the former can be assigned a category, whereas the latter has no categorial features.

Another major difference is that *-ia*, contrary to the diminutive *-eli*, has an argument position in its skeleton; *-ia* bears the ontological feature [material] which corresponds to the category of N(oun) and, as result, an “R” argument is part of its conceptual structure. The presence of an argument in the skeleton of *-ia* has implications for the way it combines with other skeletons on a lexical-semantic level. It follows from the present analysis that *-ia* should be accounted for by subordination of functions with indexation of arguments,

whereas, as I have already shown, co-indexation is not relevant to the affixation of a diminutive suffix such as *-eli*. Consider the derivation of the word *anthropia* ‘humanness’:

- (25) *-ia* *anthropos* ‘man’
 [–material ([_i], [+material ([_i])))]

In this example, the affix subordinates the skeleton of the base and the “R” arguments of both the affix and the base word are co-indexed.

The next affix to be examined is *-dzis*. This affix creates nouns which often denote profession. The derived word *kafedzis* ‘coffee-man’, for example, denotes the man who prepares *kafé* ‘coffee’. In the framework of lexical semantics (Lieber 2004), this means that *-dzis* creates concrete processual SUBSTANCES/THINGS/ESSENCES. The skeleton of *-dzis* is given below:

- (26) *-dzis*
 [+material, dynamic ([], <base>)]
 <masculine>

In the lexical-semantic representation of *-dzis* we could add the feature [+animate] to the body part of the affix in order to capture the observation that it creates concrete processual animate nouns:

- (27) *-dzis*
 [+material, dynamic ([], <base>)]
 <masculine>
 <+animate>

Consider the derivation of *kafedzis* ‘coffee man’:

- | | | |
|------|--|----------------------------------|
| (28) | <i>-dzis</i> | <i>kafes</i> ‘coffee’ |
| | [+material, dynamic ([_i], | [+material ([_i])))] |
| | <masculine> | <masculine> |
| | <+animate> | <-animate> |

Once more, we observe that we cannot account for *-dzis* and evaluative affixes on a par since this affix has specific categorial features and an argument position. As such, it should be accounted for by subordination of functions with co-indexation.

The analysis presented so far suggests that evaluative affixes are not heads, since they do not change the category of the base they combine with. On the contrary, affixes such as *-ia* and *-dzis* are considered heads because they have specific categorial specification which is imposed on the derived word; *-ia* is characterized as [–material ([_i], <base>)] and creates abstract feminine nouns, and *-dzis* is [+material, dynamic ([_i], <base>)] and, as such, creates concrete processual nouns. In addition, the internal organization of the conceptual structure of a suffix like *-eli* and most importantly the absence of an argument position means that Greek evaluative affixes and suffixes such as *-ia* and *-dzis* are accounted for by different mechanisms on a lexical-semantic level. As a result, we cannot analyze these affixes on a par

with evaluative ones since they differ both in the contribution they make to the whole formation and in the way they contribute their features.

5. Conclusions

To sum up, in this paper, I commented on the headship status of evaluative affixes in Greek morphology. In particular, I argued that the derivation vs. inflection debate should not be identified with the head-nonhead asymmetry and, as a result, it cannot be maintained that the derivational status of Greek diminutives should render these affixes heads of their formations. In addition, I argued that a number of criteria used in order to propose that diminutives are heads (e.g. semantic specification, morphosyntactic determinant) are ill-defined and, in most cases, not relevant to the head-nonhead asymmetry.

The modeling of evaluative morphology in the framework of lexical semantics as developed by Lieber (2004) which I defended allowed us to compare diminutives to other so-called “category-maintaining” suffixes. The picture which emerged from the discussion is one in which affixes such as *-hood*, *-ia*, and *-dzis* cannot be dealt with on a par with evaluative ones since a lexical-semantic analysis reveals that they differ from one another with respect to (a) the internal organization of their lexical semantic representation and (b) the semantic features which are relevant to them.

In addition, I argued that the distinction between category-changing and category-maintaining affixation is not subtle enough to take into consideration the differences between evaluatives and affixes such as *-hood*, *-ia* and *-dzis*. As a result, a distinction should be drawn between category-determining (e.g. *-hood*, *-ia*, *-dzis*) and category-maintaining affixation (e.g. Dim. *-eli*).

To conclude, first, the proposed analysis militates against the idea that Greek evaluatives are heads of their formations and, second, allows one to enquire into the difference between the mechanism of subordination of functions with and without indexation of arguments on the level of lexical semantics.

Notes

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² Although Lieber (1980) does not make direct reference to the notion head, her percolation conventions derive the same result.

³ For a discussion, see Bauer et al. (2013: 542-543).

⁴ Should we find evidence for category-determining evaluative affixes in Greek, this proposal can also be extended to Greek data.

⁵ For a detailed investigation of the use of morphosyntactic features as a headship criterion, the reader is referred to Andreou (2014).

⁶ For Greek Inflectional Classes see Ralli (2000).

⁷ It should be noted that the semantic test of hyponymy is not always helpful and, as such, it should be used as a complementary and not as a primary test for the identification of head. For more on this issue see Andreou (2014).

⁸ [B(ounded)] and [C(omposed of) I(ndividuals)] are the two features which account for the quantificational characteristics of lexical items and read as follows:

i. [± B]: This feature stands for ‘Bounded’. It signals the relevance of intrinsic spatial or temporal boundaries in a SITUATION or SUBSTANCE/THING/ESSENCE. If the feature [B] is absent, the item may be ontologically bounded or not, but its boundaries are conceptually and/or linguistically irrelevant. If the item bears the feature [+B], it is limited spatially or temporally. If it is [-B], it is without intrinsic limits in time or space.

ii. [± CI]: This feature stands for ‘Composed of Individuals’. The feature [CI] signals the relevance of spatial or temporal units implied in the meaning of a lexical item. If an item is [+CI], it is conceived of as being composed of separable similar internal units. If an item is [-CI], then it denotes something which is spatially or temporally homogeneous or internally undifferentiated (Lieber 2009: 80).

For more on the use of these features with respect to both SITUATIONS and SUBSTANCES/THINGS/ESSENCES, the reader is referred to Lieber (2004, 2007, 2009).

⁹ It should be noted that affixes which relate to the qualitative meaning of evaluative morphology, that is, affixes which only show endearment or contempt are distinguished from diminutives and augmentatives in that they have the conceptual structure in (iii):

(iii) [scalar (<base>)]
<± evaluation>

Observe that such affixes come with the feature <evaluation> and not <size> in their body.

¹⁰ For a discussion on whether there are multiple *-ia* suffixes or not, see Efthymiou (1995). Of importance to my argumentation is that *-ia*, contrary to evaluative affixes, has an impact on the classification of the word into an ontological class. Whether *-ia* only bears [-material] or other features as well in its skeleton, is orthogonal to my argumentation since the main argument is based on the presence of an ontological feature in *-ia* but not in evaluatives.

References

ANDERSON, Stephen R. 1992. *A-Morphous Morphology*. Cambridge: Cambridge University Press, 1992.

ANDREOU, Marios. 2014. *Headedness in word formation and lexical semantics: evidence from Italiot and Cypriot*. Ph. D. Thesis. University of Patras, 2014.

ARCODIA, Giorgio F. 2012. Constructions and headedness in derivation and compounding. In *Morphology*, 2012, vol. 22, no. 3, pp. 365-397.

- ARONOFF, Mark. 1976. *Word Formation in Generative Grammar*. Cambridge; MA: MIT Press, 1976.
- BAUER, Laurie. 1990. Be-heading the word. In *Journal of Linguistics*, 1990, vol. 26, pp. 1-31.
- BAUER, Laurie. 2008. Exocentric compounds. In *Morphology*, 2008, vol. 18, pp. 51-74.
- BAUER, Laurie. 2010. The typology of exocentric compounding. In SCALISE, S., VOGEL, I. (eds.), *Cross-disciplinary Issues in Compounding*. Amsterdam: John Benjamins, 2010, pp. 167-176.
- BAUER, Laurie, LIEBER, Rochelle, PLAG, Ingo. 2013. *The Oxford reference guide to English morphology*. Oxford: Oxford University Press, 2013.
- BOOIJ, Geert. 2007. *The grammar of words: An introduction to linguistic morphology* (2nd ed.). Oxford/New York: Oxford University Press, 2007.
- DI SCIULLO, Anna Maria, WILLIAMS, Edwin. 1987. *On the definition of word*. Cambridge, MA: MIT Press, 1987.
- DRESSLER, Wolfgang U., MERLINI-BARBARESI, Lavinia. 1994. Italian diminutives as nonprototypical word formation. In TONELLI, L., DRESSLER, W. U. (eds.), *Natural Morphology: perspectives for the nineties*. Padova: Unipress, 1994, pp. 21-29.
- EFTHYMIIOU, Angeliki. 1995. Kataskevasmenes leksis se -iá: mia protí proseggisi [Words with -iá: a first approach.] In *Studies in Greek linguistics 1994, 1995*, pp. 485-494.
- GRANDI, Nicola. 2002. *Morfologie in contatto. Le costruzioni valutative nelle lingue del Mediterraneo*. Milano: Franco Angeli, 2002.
- GRANDI, Nicola. 2005. Sardinian evaluative morphology in typological perspective. In PUTZU, I. (ed.), *Sardinian in typological Perspective*. Bochum: Dr. Brockmeyer University Press, pp. 188-209.
- GUEVARA, Emiliano, SCALISE, Sergio. 2009. Searching for universals in compounding. In SCALISE, S., MAGNI, E., BISETTO, A. (eds.), *Universals of language today*. Amsterdam: Springer, pp. 101-128.
- HIGGINBOTHAM, James. 1985. On semantics. In *Linguistic Inquiry*, 1985, vol. 16, pp. 547-594.
- KAGEYAMA, Taro. 2010. Variation between endocentric and exocentric word structures. In *Lingua*, 2010, vol. 120, no. 10, pp. 2405-2423.
- LIEBER, Rochelle. 1980. *On the organization of the lexicon*. Ph. D. thesis, Massachusetts Institute of Technology, Cambridge, MA, 1980. [Published by Indiana University Linguistics Club, 1981 and Garland Press, 1990.].
- LIEBER, Rochelle. 2004. *Morphology and lexical semantics*. Cambridge: Cambridge University Press, 2004.
- LIEBER, Rochelle. 2007. The category of roots and the roots of categories: What we learn from selection in derivation. In *Morphology*, 2007, vol. 16, no. 2, pp. 247-272.

- LIEBER, Rochelle. 2009. A lexical semantic approach to compounding. In LIEBER, R., ŠTEKAUER, P. (eds.), *The Oxford handbook of compounding*. Oxford: Oxford University Press, 2009, pp. 78-104.
- MELISSAROPOULOU, Dimitra, RALLI, Angela. 2008. Headedness in diminutive formation: Evidence from Modern Greek and its dialectal variation. In *Acta Linguistica Hungarica*, 2008, vol. 55, pp. 183-204.
- PLAG, Ingo. 2003. *Word-formation in English*. Cambridge: Cambridge University Press, 2003.
- PLAG, Ingo. 2004. Syntactic category information and the semantics of derivational morphological rules. In *Folia Linguistica*, 2004, vol. 38, no. 3–4, pp. 193-225.
- RALLI, Angela. 2000. A feature-based analysis of Greek nominal inflection. In *Glossologia*, 2000, vol. 11–12, pp. 201-228.
- RALLI, Angela. 2005. *Morphologia* [Morphology]. Athens: Patakis, 2005.
- RALLI, Angela. 2013. *Compounding in Modern Greek*. Dordrecht: Springer, 2013.
- RALLI, Angela, ANDREOU, Marios. 2012. Revisiting exocentricity in compounding: evidence from Greek and Cypriot. In KIEFER, F., LADÁNYI, M., SIPTÁR, P. (eds.), *Current issues in morphological theory: (Ir)regularity, analogy and frequency, Selected papers from the 14th International Morphology Meeting, Budapest, 13–16 May 2010*. Amsterdam/Philadelphia: John Benjamins, 2012, pp. 65-81.
- SCALISE, Sergio. 1988. The notion of ‘head’ in morphology. In BOOIJ, G., van MARLE, J. (eds.), *Yearbook of Morphology 1988*, 1988. Dordrecht: Foris, pp. 229-246.
- SCALISE, Sergio, FÁBREGAS, Antonio. 2010. The head in compounding. In SCALISE, S., VOGEL, I. (eds.), *Cross-disciplinary issues in compounding*. Amsterdam/Philadelphia: John Benjamins, 2010, pp. 109-126.
- SCALISE, Sergio, FÁBREGAS Antonio, FORZA, Francesca. 2009. Exocentricity in compounding. In *Gengo Kenkyu*, 2009, vol. 135, pp. 49-84.
- SELKIRK, Elisabeth. 1982. *The syntax of words*. Cambridge, MA: MIT Press, 1982.
- ŠTEKAUER, Pavel. 2001. Beheading the word? Please, stop the execution. In *Folia Linguistica*, 2001, vol. 34, no. 3–4, pp. 333-355.
- WILLIAMS, Edwin. 1981a. On the notions of ‘lexically related’ and ‘head of the word’. In *Linguistic Inquiry*, 1981, vol. 12, pp. 245-274.
- WILLIAMS, Edwin. 1981b. Argument structure and morphology. In *Linguistic Review*, 1981, vol. 1, pp. 81-114.
- ZWICKY, Arnold M. 1985. Heads. In *Journal of Linguistics*, 1985, vol. 21, no. 1, 1-29.

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