

# The linking of denotational and socio-expressive heads in Modern Greek and English compounding

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This paper deals with a comparative analysis of Modern Greek and English compounding by using Ralli's (2007, 2013) and Bisetto & Scalise's (2009) classifications, respectively. The object of investigation are 64 Modern Greek and 132 English compounds marked for positive or negative stance. In the analysis a pragmatic level of meaning with special properties is deployed, i.e. the socio-expressive tier. It is shown that in both languages the linking of denotational (i.e. semantic and/or categorial) and socio-expressive heads yields three corresponding classes. The special linking patterns of Modern Greek can be ascribed to a tendency toward symmetry between the one-word and multi-word strategy and to language contact\*.

## 0. Introduction

In generative morphology pragmatics plays only a minor role. At best, pragmatic elements are added as semantic features to grammatical skeletons (Lieber 2004, 2007, 2009, Scalise *et al.* 2005; etc.).<sup>1</sup> These features do not generate structures but simply restrict them. Formation rules such as the Righthand Head Rule (RHR) in Williams (1981: 248) offer a linear view of morphology, according to which a denotational (DE, i.e. semantic and/or categorial) head always

\* I would like to thank the attendees of the conference "New Territories in Word-formation" (30-31 May 2013, Sofia, Bulgaria) for their valuable comments on a poster I presented referring to the linking of DE and SE heads in MG compounding. I would also like to thank the program committee of the same conference for giving me the chance to submit the present article containing a comparison of MG with EN compounding. My best regards to Jacob Taylor (scholarship student at the University of Cologne, Germany – origin: University of Sydney, Australia) who, in a first pilot survey, examined an extensive list of EN compounds found at [www.havefunteaching.com](http://www.havefunteaching.com) and computed the value of the {s} feature in the compounded constituents. This pilot survey suggested that EN compounds refer to compositional SE patterns. Last but not least, I would like to thank an anonymous referee for inciting me to qualify the SE features and clarify their combinatorial properties (section 1).

appears at the right side of a morphological unit.<sup>2</sup> This linear view is empirically and cross-linguistically supported. By examining about 3000 compounds in 16 different languages, Guevara & Scalise (2009: 123) state that “all languages prefer to form right-headed compounds with a certain extent of language-internal variation”.<sup>3</sup>

Most notably, however, this language-internal variation imposes a major issue for the language-acquisition device. By examining compounding patterns in languages such as Italian, Vietnamese, etc., Hoeksema (1992) concludes that:

We have seen that the position of the head within a certain domain, say that of the verb within the sentence, or that of the modified element within a compound, does not have to be fixed once and for all in a given language, but that there may be mixed systems, often originating through language contact. This means that the task awaiting the language-acquisition device is not just picking the right parameter setting on the basis of positive evidence, but also the more complicated task of separating the data into systematic classes. Otherwise the acquisition device will predict free word-order in cases where the order is not in fact free, but fixed within a certain subsystem of the language (Hoeksema 1992: 130).

In this study I will show that the traditional notion of DE head is insufficient for classifying compounds. Compounds are formed according to pressing pragmatic needs. These needs must find an outlet within the compounded constituents. Consider, for instance, the English (EN) compounds *dog house* and *jewel heist*, discussed in Weiskopf (2007: 162). These [N+N] compounds are mainly pragmatically (contextually) motivated while shifting their reference to extremely counterfactual conditions when interpreted literally by means of set intersection: *dog house* does not denote an X that is both a dog and a house, *jewel heist* does not denote an X that is both a jewel and a heist, etc. (Weiskopf 2007; see also sections 2.2.4 and 2.2.5).

The need for a restricted semantic account of compounding is also suggested by cross-linguistic work on the combination of categories. For instance, by examining the attested combinations of constituents in about 60% of their sample, Guevara & Scalise (2009: 120) state that “the privileged structure is [N+N]. The remaining combinations (i.e. [A+N], [N+A], [A+A], [V+N], [N+V], [V+V], [Adv+A], [Adv+N], and [A+V]) have a much lower incidence, and cluster quite closely, making it extremely difficult to draw any conclusions”. By examining the 92 remaining combinations in the rest of their sample, the same authors state that “there is still a long way to go in order to

fully understand compounding structures and their distribution in world's languages" (Guevara & Scalise 2009: 122).

In an attempt to address these semantic and categorial issues, I will argue that for defining the different compounding classes in a unifying way, one needs the notion of socio-expressive (SE/pragmatic) head in addition to the traditional notion of DE head.

The present study deals with a comparative analysis of Modern Greek (MG) and EN compounding. The object of investigation are 64 MG and 132 EN compounds marked for positive or negative stance, henceforth referred to as 'SE compounds'. The former are taken from Ralli (2007, 2013) and the latter from Algeo (1991).<sup>4</sup> In the analysis, Ralli's (2007, 2013) and Bisetto & Scalise's (2009) classifications are used, respectively.

In particular, this paper will address the following questions:

- What are the linking patterns of DE and SE heads in MG and EN compounding?
- What are the similarities and differences between the head-linking patterns in MG and EN?
- Is a generalization possible?
- Is there a default compounding structure in both EN and MG?
- What does the absence of specific head-linking patterns in MG and/or EN suggest?

Chapter 1 deals with the motivation and the properties of a supracategorial semantic/pragmatic level of meaning, i.e. the SE tier. Chapter 2 presents the linking patterns of DE and SE heads in MG compounds.<sup>5</sup> Chapter 3 deals with the corresponding EN patterns. In Chapter 4 the linking patterns in both languages are compared. Chapter 5 draws the final conclusions from this comparison and points out three tasks for future research.

### *1. The socio-expressive (SE) tier in compounding*

Spatial prepositions (or more generally adpositions) are closed-class morphemes encoding Location or Path in a variety of languages. In Saeed's (2009: 366-377) review of various cognitive models, it is shown that prepositions are subject to typical meaning shifts as extensions from central, ideal schemas.

One of these schemas is the "containment" schema, i.e. the inclusion of a geometric construct in a one-, two-, or three-dimensional geometric construct. For instance, in a nominal phrase such as *the bird in the field*, a bird might be flying or hovering several feet above

the field; however, the containment schema is still referred to by the preposition *in* (Herkovits 1986, in Saeed 2009: 371).

The related schema of CONTAINER (Lakoff & Johnson 1980, in Saeed 2009: 368) motivates the metaphorical uses of prepositions in abstract domains. For Lakoff & Johnson (1980) this schema is one of a group of ontological metaphors, where our experience of non-physical phenomena is described in terms of simple physical objects. For instance, activities and states can be viewed as containers, cf. *I put a lot of energy into washing the windows* (activity), *He's out of the race* (activity), *He's in love* (state), *She got into a rage* (state), etc. (the underlining of the relevant predicates is mine).

As these last examples suggest, the containment schema is associated with a group of implications ('entailments') that can be seen as natural inferences about containment, e.g. that containment limits forces, such as movement, within the container, or that the contained entity experiences relative fixity of location, etc. (Johnson 1987: 367, in Saeed 2009: 367).

Similar implications hold for the "path" schema (Brugman & Lakoff 1988, in Saeed 2009: 372-375). For instance, in a sentence such as *Harry still hasn't gotten over his divorce*, the prototypical 'above-across' sense of *over* is used in relation to the broad metaphor LIFE IS A JOURNEY (Lakoff & Turner 1989, in Saeed 2009: 362) that pervades our ordinary way of talking.

Accordingly, by considering elementary spatial patterns in metaphorical uses of specific EN prepositions, Charitonidis (2012a, 2012b, 2013, *submitted*) elaborated a system of three binary SE features. Table 1 displays the process of identification of the SE features.<sup>6</sup>

The features {measure}, {stance}, and {interpersonal} in Table 1 address all major lexical categories, i.e. nouns, adjectives, and verbs, and may be underspecified. Affixes are lexemes under the sign-based hypothesis (Plag 1999, 2000, Lieber 2004, 2007, Melissaropoulou & Ralli 2010, etc.) and are addressed by these features as well.

Table 2 exemplifies the mapping of the SE features onto lexemes – henceforth, the SE features are given in abbreviated form.

In Table 2 the noun *rébel(os)* 'loafer' is {+m} because a person who spends time idly is engaged in various activities to a limited extent.<sup>7</sup> The adjective *álal(os)* 'stunned', 'dazed' is {+m} because an utterly confused or tangled person deviates from a standard psychological or mental state. Standardly, verbs and verbal affixes refer to dynamic situations and have {+measure} by default. Accordingly, the verbal suffix *-(i)áz(o)* – e.g. in *alaliáz(o)* 'daze', 'drive sb mad' (*álal(os)* 'stunned', 'dazed'), etc. – is {+m} because it denotes pro-

**Table 1.** Spatial prepositions and SE meaning.

SPATIAL PREPOSITIONS	EXAMPLE PHRASES	SE METAPHOR (SE MEANING)	SE FEATURES
Motion	turn <i>into</i> a confrontation	Meaning of measurement/ continuation/progress, i.e. size, intensiveness, strength etc., of a higher (e.g. {+intensive}) or lower (e.g. {+diminutive}) degree	{+measure}
Stasis	<i>at</i> home	Invariable SE content	{-measure}
Orientation towards sth.	<i>along</i> the lines of the system	Positive stance towards a situation or entity	{+stance}
Distancing from sth.	<i>below</i> expectations	Negative stance towards a situation or entity	{-stance}
Horizontal orientation	get <i>along</i> with so.	Estimations and stances explicitly involving the domain of interpersonal relations (reliable social interaction)	{+interpersonal}
Vertical orientation	passed <i>over</i> the governor's veto	Estimations and stances that are to a certain degree orthogonal to the domain of interpersonal relations (non-reliable social interaction)	{-interpersonal}

gress.<sup>8</sup> The noun *irín(i)* ‘peace’ is {-m} because it refers to a situation with an invariable (neutral) socio-expressive content. The adjective *eléfther(os)* ‘free’ is {-m} because it refers to an invariable (independent) attitude or behaviour. The verbal suffix *-év(o)* in its stative interpretation is {-m} because it denotes an invariable state (cf. *vasilév(o)* ‘be a king/queen’ (*vasiliá(s)* ‘king’), etc). The noun *mitér(a)* ‘mother’ is {+s} because it relates to a positive social role. The adjective *ghlik(ós)* ‘sweet’ is {+s} because it standardly refers to a positive sensation. The verb *fil(ó)* ‘kiss’ is {+s} because it is associated with a positive stance towards someone. The noun *rébel(os)* ‘loafer’ and the adjective *álal(os)* ‘stunned’, ‘dazed’ are {-s} because they relate to negative evaluations. The verbal suffix *-(i)áz(o)* is {-s} because as a DE and SE head it imposes its negative structure onto entities not bearing a negative content (cf. the creation *!miteriáz(o)* ‘behave annoyingly like a mother’ (*mitér(a)* ‘mother’) in Charitonidis (2011, 2012a, 2012b)).<sup>9</sup> The noun *kubár(os)* ‘best man’, the adjective *próthim(os)* ‘eager’, and the verb

**Table 2.** The mapping of SE features onto lexemes.

SE FEATURES	LEXEMES	EXAMPLES	
{+m}	N	<i>rébel(os)</i>	‘loafer’
	A	<i>álal(os)</i>	‘stunned’, ‘dazed’
	V <sub>af</sub>	<i>-(i)áz(o)</i>	continuation, progress
{-m}	N	<i>irín(i)</i>	‘peace’
	A	<i>eléfther(os)</i>	‘free’
	V <sub>af</sub>	<i>-év(o)</i> [stative]	invariable SE meaning
{+s}	N	<i>mitér(a)</i>	‘mother’
	A	<i>ghlik(ós)</i>	‘sweet’
	V	<i>fil(ó)</i>	‘kiss’
{-s}	N	<i>rébel(os)</i>	‘loafer’
	A	<i>álal(os)</i>	‘stunned’, ‘dazed’
	V <sub>af</sub>	<i>-(i)áz(o)</i>	negative meaning
{+i}	N	<i>kubár(os)</i>	‘best man’
	A	<i>próthim(os)</i>	‘eager’
	V	<i>fil(ó)</i>	‘kiss’
{-i}	N	<i>fádasma</i>	‘ghost’
	A	<i>álal(os)</i>	‘stunned’, ‘dazed’
	V	<i>klév(o)</i>	‘steal’

*fil(ó)* ‘kiss’ are {+i} because they standardly involve reliable interpersonal relations. The noun *fádasma* ‘ghost’ is {-i} because it refers to entities outside the domain of interpersonal relations. The adjective *álal(os)* ‘stunned’, ‘dazed’ is {-i} because an utterly confused or tangled person cannot fulfil interpersonal relationships properly. The verb *klév(o)* is {-i} because its meaning is orthogonal to a reliable social interaction.

Before I proceed to the properties of the SE tier in compounding, I would like to qualify the SE features presented so far.

{±s} may be assigned to various entities, as a simple index of positive or negative meaning, e.g. the institution *market* ({+s}), the thing/human *potato* ({-s}) in *couch potato*, the event *rape* ({-s}) in *date rape*, the property *soft* ({+s}) in *soft sell*.

As regards the feature {m}, there can be no clear distinction between DE and SE meaning. For instance, the {+m} lexeme *rébel(os)* ‘loafer’ denotes a reduction in various activities (DE meaning) and at the same time evokes a pejorative evaluation (SE meaning), etc. For the most part, {+m} in the lexical categories motivates {-s} (cf. the nouns *mania*, *drain*, *gap*, etc., the adjectives *cold*, *dirty*, *empty*, *luna-*

tic, etc., the verbs *shriek*, *wash* (in *brainwash*), etc., all being {+m}{-s} predicates).<sup>10</sup>

On the other hand, in a considerable number of compounds, {+m} does not motivate {-s}. In the Appendix the reader can find combinations of {+m} and {+s}, e.g. the nouns *boy*, *care*, *dividend*, *enhancement*, the adjectives *affirmative*, *endangered*, *fair*, *hot* and the verb *bargain*. Negative or positive stance does not depend on a valued {m} feature either (cf. nouns *brain* ({m}{+s}), *virus* ({m}{-s}), etc., adjectives *loyal* ({m}{+s}), etc. [in Algeo’s 1991: 21-83 index, no adjectives with {m}{-s} could be found]). Similarly, no verbs with {m}{±s} could be found, but as noted above, this is due to the nature of verbs, referring to {+m} by default.

The feature {i} largely corresponds to the categories SOCIAL ESTEEM and SOCIAL SANCTION in Martin & White (2005), where “[j]udgements of esteem have to do with ‘normality’ (how unusual someone is), ‘capacity’ (how capable they are) and ‘tenacity’ (how resolute they are); judgements of sanction have to do with ‘veracity’ (how truthful someone is) and ‘propriety’ (how ethical someone is).” (Martin & White 2005: 52).<sup>11</sup> As with stance, in my system {±i} can be assigned not only to humans but also to various entities, such as institutions (cf. *trade*: {+i}), activities (cf. *war*: {-i}), events (cf. *gaffe*: {-i}), etc.

Overall, the proposed SE system is very similar to the evaluation system of *appraisal* developed by Martin & White (2005) (see Figure 1).<sup>12</sup>

In the following, I would like to point out a number of general correspondences between Martin & White’s (2005) system and my SE system (in this comparison Martin & White’s categories are indicated in capitals; cf. Figure 1).<sup>13</sup>

GRADUATION largely corresponds to {m}, whereby, in both approaches, DE and SE graduation is intimately interwoven (cf. the above discussion). ATTITUDE corresponds to both {s} and {i}. The close relation of ATTITUDE and {s} is obvious.

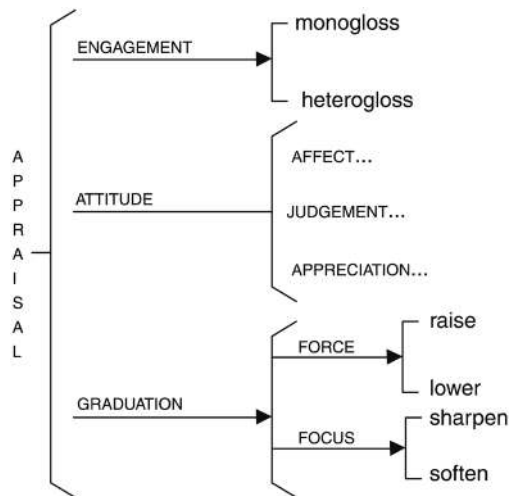


Fig. 1. An overview of appraisal resources (Martin & White 2005: 38).

ATTITUDE corresponds to {i} as well, mainly because it includes the JUDGEMENT subcategories SOCIAL ESTEEM and SOCIAL SANCTION.<sup>14</sup>

ENGAGEMENT has no correlation in my system. It mainly refers to “evidentiality”, i.e. linguistic means for communicating the attitude of the speaker to the source of his/her information, e.g. *perhaps, it’s probable that, this may be, must, it seems to me, apparently*. Whether or not evidential functions are involved in compounding is an open issue.<sup>15</sup> Let us now see what the properties of the presented SE features in combination are.

Charitonidis (2012a, *submitted*) has already pointed out the similarity of SE operations in verbal derivation and (nominal) compounding. In compounding, SE operations play a major role since the constituents involved usually have an explicit SE content, e.g. the SE structure of the adjectival compound *gheroparáksen(os)* ‘old geezer’ in (1).

(1)	[NONHEAD]	[HEAD]	[OUTPUT]
	<i>ghér(os)</i>	<i>paráksen(os)</i>	<i>gheroparáksen(os)</i>
	‘old’	‘odd man’, ‘geezer’	‘old geezer’
	{+m}	{+m}	{+m}
	{-s}	{-s}	{-s}
	{i}	{-i}	{-i}

In [NONHEAD], *ghér(os)* ‘old’ is {+m} because being an old person refers to an extreme on the age scale, {-s} because an old person evokes various negative connotations as regards his health condition, intellectual capacity, etc.,<sup>16</sup> and {i} because his involvement in a reliable social interaction depends on the particular situation (underspecification). In [HEAD], *paráksen(os)* ‘odd man’, ‘geezer’ is {+m} because a peculiar/odd person represents an intensification or absence of standard human properties, {-s} because he is evaluated negatively, and {-i} because this negative evaluation relates to a non-reliable social interaction.

The computation of the SE output in (1) proceeds according to the properties of the SE tier in relation to compounding (see A).

- (A) THE PROPERTIES OF THE SE TIER IN RELATION TO COMPOUNDING
- a. Both constituents in the compounds refer to the same set of features, i.e. {m}, {s}, and {i}.
  - b. SE heads can be on the right or the left. Valued features in the SE heads are also heads.
  - c. Underspecified features in the first or second constituent are merged regardless of their head role.



- d. The SE arguments – linked to the single compound referent – are addressed by the features throughout the derivation, i.e. the SE arguments are evaluated anew in every derivational step including output.

The properties in (A) compute the output in (1) as follows: first, the DE head is identified by means of a simple hyponymy test: *gheropáksen(os)* ‘old geezer’ is a kind of *paráksen(os)* ‘geezer’, hence the right-hand constituent *paráksen(os)* is the DE head of the compound (the IS A’ condition; Allen 1978: 11, in Scalise & Fábregas 2010: 111). According to the linking patterns of MG SE-compounds only the classes  $A_{MG}$  (one-word endocentric compounds),  $B_{MG}$  (one-word exocentric compounds), and  $D_{IMG}$  (phrasal-compound-like (endocentric) phrases) have a right-hand DE head (see Table 7 in section 2.2).

*Gheroparáksen(os)* is not a  $B_{MG}$  compound because it is not exocentric: its head *paráksen(os)* sufficiently identifies the compound referent without a metonymy shift (see section 2.2.2). *gheroparáksen(os)* is not a  $D_{IMG}$  compound either, because it is not phrasal (see section 2.2.4). Therefore, *gheroparáksen(os)* is assigned to the  $A_{MG}$  class, as a non-phrasal (one-word) compound whose right-hand constituent is not subject to a metonymy shift.

In the  $A_{MG}$  class, the right-hand constituent is also the SE head of the compound. *Paráksen(os)* is thus the SE head of *gheropáksen(os)*. This SE head has three valued features, i.e.  $\{+m\}$ ,  $\{-s\}$ , and  $\{-i\}$ . These valued features are also heads because they are within the SE head. Accordingly,  $\{+m\}$ ,  $\{-s\}$ , and  $\{-i\}$  percolate to the output without modification (differently valued features in the [NONHEAD] would not be relevant for the computation of the output). The underspecified  $\{i\}$  in *ghér(os)* is merged with  $\{-i\}$  in *paráksen(os)* to yield  $\{-i\}$  in the output, independently of the head-nonhead pattern.

In this derivation, three steps are necessary: in [NONHEAD] the compound referent is evaluated as  $\{+m\}$   $\{-s\}$   $\{i\}$ , and in both [HEAD] and [OUTPUT] as  $\{+m\}$   $\{-s\}$   $\{-i\}$ . This threefold evaluation is relevant for composition: the meaning of the compound constituents should be computed independently. This derivation also defines the right value of the  $\{s\}$  feature in the [NONHEAD], i.e. it selects the relevant (negative) sense of *ghéros* by means of a head operation – note that an old person can also be a  $\{+s\}$  entity, e.g. the compound *gherólik(os)* ‘old timer’, ‘veteran’ (lit. *ghér(os)* ‘old’ + *lík(os)* ‘wolf’).

The re-evaluation of the compound referent in the [OUTPUT] validates the head and merging operations of SE features in [NONHEAD] and [HEAD]. In addition, this re-evaluation defines the right feature

value to the input constituents in the absence of further evidence. For instance, the output ‘old geezer’ in (1) evaluates the compound referent as {-i} while making clear that {-i} comes from [HEAD] (*ghér(os)* ‘old’ in [NONHEAD] is not necessarily a {-i} term, whereas *paráksen(os)* ‘odd man’, ‘geezer’ in [HEAD] is; it should be noted that {-i} cannot be assigned to *ghér(os)* by means of a head operation). For the opposite merging pattern we can look at the MG endocentric compound *xazokórits(o)* ‘silly girl’ (*xaz(ó)* ‘silly’, ‘stupid’ + *koríts(i)* ‘girl’). In this compound, the {-i} output suggests {-i} for *xaz(ó)* in [NONHEAD], since *koríts(i)* in [HEAD] is standardly underspecified for {i}. Concluding, without the evaluative (SE) hints from the output, the head and merging operations cannot be sufficiently defined.

Before we examine the full set of DE-SE patterns in MG compounding let us first deal with the general properties of MG compounds.

## 2. Compounding in MG<sup>17</sup>

### 2.1. General properties of MG compounds<sup>18</sup>

Compounding is a very productive word-formation process in MG. MG compounds belong to the major grammatical categories, noun, adjective, and verb, and have a binary structure.<sup>19</sup> In Table 3 the categorial status of the compounded constituents is given, together with examples.<sup>20</sup>

In a stem-word view such as that adopted in Ralli (2007, 2013) four morphological structures are possible in MG compounding, i.e. [stem-stem], [stem-word], [word-stem] and [word-word], whereby a stem is defined as a word stripped off its inflectional ending. Standardly, the right-hand element is the denotational head and carries the inflectional ending (cf. RHR in Williams 1981). In most cases a linking vowel -o- shows up between the two constituents.

Regular compounds, such as those presented so far, are phonological words and bear one stress. From this crucial property are excluded two-word NPs with a compound-like behaviour. As Ralli (2013: 243) reports “most of these formations are relatively new, dating back to the last two centuries, and have been introduced under the influence of English and French”. Following the terminology in Ralli (2013), these NPs are (a) phrasal compounds, (b) phrasal compound-like phrases, and (c) constructs – see Table 4.<sup>21</sup>

According to Ralli (2013: 250) only phrasal compounds belong to compounding since they are “semi-visible to syntax”.<sup>22</sup> Similarly,

**Table 3.** The main categories of MG compounds.

Nouns	[N N]	<i>alatopíper(o)</i> salt-pepper	<	<i>alát(i)</i> salt	<i>pipér(i)</i> pepper
	[A N]	<i>stenosókak(o)</i> narrow street	<	<i>sten(ó)</i> narrow	<i>sokák(i)</i> street
Adjectives	[A A]	<i>asprokókin(os)</i> white-red	<	<i>áspr(os)</i> white	<i>kókin(os)</i> red
	[N A]	<i>iliokamén(os)</i> sunburnt	<	<i>íli(os)</i> sun	<i>kamén(os)</i> burnt
	[Adv A]	<i>kakodimén(os)</i> badly dressed	<	<i>kak(á)</i> badly	<i>dimén(os)</i> dressed
Verbs	[V V]	<i>anighoklín(o)</i> open-close	<	<i>anígh(o)</i> open	<i>klín(o)</i> close
	[N V]	<i>xartopéz(o)</i> lit. card play 'play cards'	<	<i>xart(ía)</i> cards	<i>péz(o)</i> play
	[Adv V]	<i>arghophéthén(o)</i> lit. slowly die 'die slowly'	<	<i>argh(á)</i> slowly	<i>pethén(o)</i> die

**Table 4.** NPs with a compound like behaviour.

Phrasal Compounds	[A N]	<i>ethnik(í) odh(ós)</i> 'national road'
	[N N <sub>GEN</sub> ]	<i>aghor(á) erghasí(as)</i> lit. market.NOM.SG job.GEN.SG 'job market'
Phrasal-Compound-Like Phrases	[N N] attributive	<i>nóm(os) plési(o)</i> 'law-frame'
	[N N] appositive	<i>metafrast(ís)-dhierminéa(s)</i> 'translator-interpreter'
Constructs	[A N]	<i>theatrik(í) kritik(í)</i> lit. theatrical criticism 'drama review'
	[N N <sub>GEN</sub> ]	<i>paraghogh(í) kapn(ú)</i> lit. production tobacco.GEN 'tobacco production'
	[N N <sub>ACC</sub> ]	<i>xim(ós) portokáli</i> lit. juice orange.ACC 'orange juice'

some of the attributive phrasal-compound-like phrases are in a process of desyntacticization. They may respond, among others, negatively to tests regarding the change of inflection of the non-head, e.g. the non-head *plésio* in *nómos plésio* ‘law frame’ (nominative), *nómu plésio* (genitive).<sup>23</sup>

Appositive phrasal-compound-like phrases and constructs are products of syntax. The former are examined in section 2.2.5. For the latter see Ralli (2013: 258-261).

## 2.2. The linking of DE and SE heads in MG compounding

As already mentioned, the majority of MG compounds have a single DE head at their right side. In one-word endocentric compounds such as *gheroparáksen(os)* ‘old geezer’ in (1) the linking of the DE with the SE tier is straightforward since *paráksen(os)* ‘odd man’, ‘geezer’ is not only the DE head but also the SE head of the construction. However, there are cases in which DE heads combine with SE heads in a very different manner. In the analysis to follow I will show that in MG compounding a distinct set of classes can be defined according to different linking patterns between DE and SE heads. These linking patterns subsume different morphophonological and syntactic properties and at the same time restrain over-generation.

In Ralli (2007, 2013) six main classes of MG compounds are presented. By showing distinct properties these classes constitute a well-defined set (see Table 5). Table 6 gives one example for each class.<sup>24</sup>

In the analysis to follow, compounds with a bound stem as a second constituent (class  $F_{MG}$ ) were not taken into account.<sup>25</sup> These compounds are (i) old formations with a potential left-hand or right-hand {-s} head, e.g. *thanatifór(os)* ‘fatal’, ‘lethal’ (*thánat(os)* ‘death’ + *-fór(os)* ‘who carries/bears’) and *laoplános* ‘demagogue’ (*la(ós)* ‘people’ + *-plán(os)* ‘who seduces/tempts’), respectively, and (ii) new formations with a potential left-hand and/or right-hand {-s} head, e.g. *burdhológhos* ‘who talks trash’ (*búrdh(a)* ‘trash’ + *-lógh(os)* ‘talker’), *kukulofór(os)* ‘hooded’ (*kukúl(a)* ‘hood’ + *-fór(os)* ‘who carries/bears’),

**Table 5.** The main classes of MG compounds (Ralli 2007, 2013).

$A_{MG}$	One-word endocentric compounds	$D_{MG}$	Phrasal (endocentric) compounds
$B_{MG}$	One-word exocentric compounds	$E_{MG}$	Phrasal-compound-like (endocentric) phrases
$C_{MG}$	One-word copulative compounds	$F_{MG}$	Compounds with a bound stem (endocentric)

**Table 6.** The main classes of MG compounds: examples (SE compounds).

	COMPOUNDS	EXAMPLES (SE COMPOUNDS)	L-CONSTITUENT	R-CONSTITUENT
A <sub>MG</sub>	One-word endocentric	<i>kosmoxalasm(ós)</i> 'uproar of people'	<i>kósm(os)</i> 'people'	<i>xalasm(ós)</i> 'chaos', 'uproar'
B <sub>MG</sub>	One-word exocentric	<i>anixtókardh(os)</i> 'open-hearted'	<i>anixt(i)</i> 'open', 'unbigoted'	<i>kardh(iá)</i> 'heart'
C <sub>MG</sub>	One-word copulative	<i>pikróghlik(os)</i> 'bitter-sweet'	<i>pikr(ós)</i> 'bitter'	<i>ghlik(ós)</i> 'sweet'
D1 <sub>MG</sub>	Phrasal [A N]	<i>mávr(i) aghor(á)</i> 'black market'	<i>mávr(i)</i> 'black' ('illegal')	<i>aghor(á)</i> 'market'
D2 <sub>MG</sub>	Phrasal [N N <sub>GEN</sub> ]	<i>zón(i) asfalí(as)</i> lit. belt safety 'safety belt'	<i>zón(i)</i> 'belt'	<i>asfalí(as)</i> 'safety'
E <sub>MG</sub>	Phrasal- compound- like phrases (attributive) [N N]	<i>eterí(a) maimú</i> lit. company monkey 'fake company'	<i>eterí(a)</i> 'company'	<i>maimú</i> 'monkey' (‘fake’)
F <sub>MG</sub>	Compounds with a bound stem	<i>laoplán(os)</i> 'demagogue'	<i>la(ós)</i> 'people'	<i>-plán(os)</i> 'who seduces/ tempts'

*katsaridhoktón(o)* 'cockroach repellent' (*katsarídh(a)* 'cockroach' + *-któn(os)* 'killer'), etc. However, despite the possibility of marking one or both compounded constituents socio-expressively, the learned character of these words imposes major problems for a synchronic and conclusive SE (evaluative) analysis.

Accordingly, without taking compounds with a bound stem into account, from a raw number of 421 compounds in Ralli (2007: 269-275) 63 compounds marked for positive or negative stance were extracted. After considering *ík(os) anox(is)* 'brothel' (lit. house tolerance/sufferance) found in Ralli (2013) the list ended up containing 64 compounds. The consideration of compounds having the same DE and SE structure defined 57 types.<sup>26</sup>

As will become clear in sections 2.2.1-2.2.5, Ralli's (2007, 2013) main classes of compounds are largely justified by the different linking patterns of DE and SE heads. To anticipate the analysis to follow, (a) one-word endocentric compounds (class A<sub>MG</sub>) are compounds with a right-hand DE head and a right-hand SE head, (b) one-word exocentric compounds (class B<sub>MG</sub>) are compounds with a right-hand DE

head and a left-hand SE head, (c) one-word copulative compounds (class  $C_{MG}$ ) are compounds with two DE heads and one right-hand or left-hand  $\{+m\}\{-s\}$  head, (d) phrasal compounds (class  $D_{MG}$ ) are compounds with a right-hand or left-hand DE head and a left-hand  $\{-s\}$  or right-hand  $\{+s\}/\{-s\}$  head, respectively,<sup>27</sup> and (e) attributive phrasal-compound-like phrases (class  $E_{MG}$ ) are compounds with a left-hand DE head and a right-hand SE head.<sup>28</sup> Table 9 summarizes the patterns in (a)-(e).

**Table 7.** Linking patterns of MG SE-compounds.  $A_{MG}$ : One-word endocentric;  $B_{MG}$ : One-word exocentric;  $C_{MG}$ : One-word copulative;  $D1_{MG}$ : Phrasal [A N];  $D2_{MG}$ : Phrasal [N  $N_{GEN}$ ];  $E_{MG}$ : Phrasal-compound-like-phrases (attributive).

	R{SE}	L{SE}	R{+m}{-s} $\vee$ L{+m}{-s}	R{+s}/{-s}	L{-s}
R{DE}	$A_{MG}$	$B_{MG}$			$D1_{MG}$
L{DE}	$E_{MG}$			$D2_{MG}$	
[DE][DE]			$C_{MG}$		

Let us now discuss the classes  $A_{MG}$  –  $E_{MG}$  in detail.

2.2.1. *One-word endocentric compounds (Class  $A_{MG}$ )*

One-word endocentric compounds are the largest class within the one-word MG compounds. Correspondingly, 30 out of a total of 57 SE compounds (types) in Ralli’s (2007: 269-275) sample belong to this class. As already mentioned, these compounds have a right-hand DE head and a right-hand SE head (see 2).

(2) [NONHEAD]	[HEAD]	[OUTPUT]
<i>kósm(os)</i> ‘people’	+ <i>xalasm(ós)</i> ‘chaos’, ‘uproar’	→ <i>kosmoxalasm(ós)</i> ‘uproar of people’
[+material]	[-material, dynamic]	[-material, dynamic]
$\{+m\}\{s\}\{+i\}$	$\{+m\}\{-s\}\{-i\}$	$\{+m\}\{-s\}\{-i\}$

The composition of this class is extremely heterogeneous with words, bound or unbound stems of various categories as a first constituent and bound stems or words as a second constituent. Some of the first constituents are in a process of morphologization, having lost their immediate reference to independent words, e.g. the first constituent *theo-* ‘extremely’ in *theonístik(os)* ‘famished’, ‘starving’ (*nistik(ós)* ‘not having eaten’) derived from the independent word *the(ós)* ‘god’, etc. Nonetheless, the heterogeneity of morphological units and the

concomitant diversity of relations between them are compensated by the strict right-hand position of both the DE and SE head.

This strict head alignment in both tiers is a much more distinctive criterion than simple DE headedness according to which the compound as a whole is a hyponym of its head (cf. Ralli 2013: 105). For instance, *xazokúti* ‘boob tube’ (lit. silly box; for a television set) is not a kind of box as its head constituent *kut(i)* ‘box’ suggests, or, similarly, *xarokamén(os)* ‘bereaved’ (lit. death seared/burnt) is not a seared/burnt entity as its head constituent *kamén(os)* ‘seared’, ‘burnt’ suggests. By means of SE operations we get a much more restricted interpretation. In both *xazokút(i)* and *xarokamén(os)* the SE head interacts with the SE cluster in the first constituent to yield {+m}{-s}{-i} entities, i.e. entities expressing diminution (pejoration or privation), negative stance and a drawback in interpersonal relations (see (3) and (4), respectively).

(3)	[NONHEAD]		[HEAD]		[OUTPUT]
	<i>xaz(ó)</i>	‘silly’,	+ <i>kutí</i>	‘box’	→ <i>xazokúti</i>
		‘stupid’			‘boob tube’ (for a television set)
	{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}
(4)	[NONHEAD]		[HEAD]		[OUTPUT]
	<i>xár(os)</i>	‘death’	+ <i>kamén(os)</i>	‘seared’,	→ <i>xarokamén(os)</i>
		(pers.)		‘burnt’	‘bereaved’
	{+m}{-s}{-i}		{+m}{-s}{i}		{+m}{-s}{-i}

In other words, in both (3) and (4) the SE operations subsume various lexical-polysemy or metaphorical accounts of the DE heads. *Kut(i)* or *kamén(os)* are just members of two large classes of words which could have been used to refer to the clusters {m} {s} {i} and {+m} {-s} {i}, respectively. In sum, in order to access the essential/generative structure in the compounds we can rely on a simple [HEAD]–[NON-HEAD] configuration and the operations in the SE tier.

### 2.2.2. One-word exocentric compounds (Class $B_{MG}$ )

One-word exocentric compounds represent the second largest class within one-word compounds. Correspondingly, there are 15 exocentric SE compounds in Ralli’s (2007: 269-275) sample. These compounds have a right-hand DE head and a left-hand SE head. The first constituent is standardly more explicitly valued than the second one (see (5)).

(5)	[NONHEAD]		[HEAD]		[OUTPUT]
	<i>elafr(ó)</i>	‘light’ (‘frivolous’)	+ <i>mial(ó)</i>	‘mind’	→ <i>elafrómial(os)</i> ‘light-minded’
	{+m}{-s}{-i}		{m}{+s}{i}		{+m}{-s}{-i}

The present analysis is in line with Booij’s (1992), Lieber’s (2004: 52-54) and Ralli’s (2007, 2013: 110-126) accounts, which argue that “exocentric” compounds do contain a right-hand head and thus are endocentric. In particular, Booij (1992) and Lieber (2004) argue for a metonymy mechanism which shifts the reference from a part, denoted by the right-hand constituent, to its whole. Ralli (2007, 2013) argues for a derivational or zero suffix before the inflectional ending. By regarding the right-hand constituent as a metonymical, self-contained predicate, the SE operations yield the right output in all cases. For instance, in (5) the output {+m} {-s} {-i} for *elafrómial(os)* ‘light-minded’ sufficiently evaluates the metonymic head, i.e. a human, without reference to further information about this human.

The patterns presented in sections 2.2.1 and 2.2.2 are explicitly regular and borne out by a sufficient number of compounds. The patterns in sections 2.2.3-2.2.5 refer only to a small number of compounds but, nonetheless, they are quite distinctive.

### 2.2.3. One-word copulative compounds (Class $C_{MG}$ )

In Ralli’s (2007: 269-275) sample there are four types of one-word copulative compounds explicitly marked for stance.<sup>29</sup> These compounds are exclusively adjectives having two adjectival DE heads in free order and a right-hand or left-hand {+m}{-s} head (see (6) and (7), respectively). It should be noted that in contrast to these [A A] formations, copulative [N N] and [V V] compounds have a fixed constituent order in MG (see Ralli 2013: 168)<sup>30</sup>.

In (6) and (7) two [A A] formations with an alternating constituent order are given. The marking {-s} in the output of *ghlikópikr(os)* / *pikróghlik(os)* ‘bitter-sweet’ refers to a standard (spontaneous) reaction of a human having tasted or eaten/drank something he/she had expected to be sweet<sup>31</sup>.

(6)	[HEAD]		[HEAD]		[OUTPUT]
	<i>ghlik(ós)</i>	‘sweet’	+ <i>pikr(ós)</i>	‘bitter’	→ <i>ghlikópikr(os)</i> ‘bitter-sweet’
	{+m}{+s}{i}		{+m}{-s}{i}		{+m}{-s}{i}
(7)	[HEAD]		[HEAD]		[OUTPUT]
	<i>pikr(ós)</i>	‘bitter’	+ <i>ghlik(ós)</i>	‘sweet’	→ <i>pikróghlik(os)</i> ‘bitter-sweet’
	{+m}{-s}{i}		{+m}{+s}{i}		{+m}{-s}{i}



As regards the DE tier, the compounds of this class could be considered as headless since, as Ralli (2013: 166) notes, “headedness in [N N] and [A A] coordinative (i.e. copulative, CC) compounds cannot be tested and confirmed on the basis of the features of gender and inflection class”. I propose that the headedness issue can be decided at the level of tier coordination. For instance, in alternating orders like those in (6) and (7) it is always the {-s} feature IN ONLY ONE constituent which percolates to the output word. Accordingly, this {-s} constituent is the head of the compound. In other words, two DE heads are mapped onto one SE head. Since, under the current approach, the existence of the SE tier presupposes the existence of the DE tier, the headlessness option mentioned above comes out of the question<sup>32</sup>.

The class of copulative compounds was the last one-word class under examination. Let us now see how the DE tier combines with the SE tier in multi-word compounds, i.e. phrasal (endocentric) compounds (section 2.2.4) and phrasal-compound-like (endocentric) phrases (section 2.2.5).

#### 2.2.4. Phrasal (endocentric) compounds (Class $D_{MG}$ )

In this multi-word class there are two distinct patterns, i.e. one right-hand DE head with one left-hand {-s} head (class  $D1_{MG}$ , see (8)) and one left-hand DE head with one right-hand {+s} head in the genitive (class  $D2_{MG}$ , see (9)). Compounds such as *ík(os) anox(ís)* ‘brothel’ (lit. house tolerance/sufferance) found in Ralli (2013: 244) suggest that in  $D2_{MG}$  the right-hand SE head can also be {-s} (see (10)).<sup>33</sup>

(8)	[NONHEAD] (A)		[HEAD] (N)		[OUTPUT] (N)
	<i>mávr(i)</i>	‘black’	+ <i>aghor(á)</i>	‘market’	→ <i>mávr(i) aghor(á)</i>
		(‘illegal’)			‘black market’
	{+m}{-s}{-i}		{-m}{+s}{+i}		{+m}{-s}{-i}
(9)	[HEAD] (N)		[NONHEAD] ( $N_{GEN}$ )		[OUTPUT] (N)
	<i>zón(i)</i>	‘belt’	+ <i>asfalí(as)</i>	‘safety’	→ <i>zón(i) asfalí(as)</i>
					‘safety belt’
	{m}{s}{i}		{+m}{+s}{i}		{+m}{+s}{i}
(10)	[HEAD] (N)		[NONHEAD] ( $N_{GEN}$ )		[OUTPUT] (N)
	<i>ík(os)</i>	‘house’	+ <i>anox(ís)</i>	‘tolerance’,	→ <i>ík(os) anox(ís)</i>
		(MEL)		‘sufferance’	‘brothel’
	{m}{+s}{i}		{-m}{-s}{+i}		{-m}{-s}{+i}

As can be seen in (8)–(10) the crucial unifying factor in these denotationally different structures is the SE tier. The DE heads in two different configurations, i.e. [NONHEAD A] ~ [HEAD N] and [HEAD N] ~ [NONHEAD N<sub>GEN</sub>] combine with reverse SE heads. I introduce the term ‘SE bounding’ for this combination type.

Following the analysis in Weiskopf (2007) I argue that none of the compounds in this class have a straightforward interpretation based on set intersection, e.g.  $\lambda x$  (mávr(os)´ (x) & aghor(á)´ (x)) for *mávr(i) aghor(á)* ‘black market’ (see (8)).<sup>34</sup> ‘Black market’ is not an  $x$  that is both a market and black. Statements containing *mávr(i) aghor(á)* together with hedges such as ‘literally’ or ‘strictly’ shift the reference of these compounds to extremely counterfactual conditions (Weiskopf 2007: 170).

In the present framework the pragmatic context can change the value of the SE features in the SE head, prior to the semantic composition between the constituents. The SE features in the SE head can be thought of as context-sensitive indices, similar to the indexical, context-sensitive expressions which Weiskopf (2007: 175ff) introduces for the EN compound nominals. For instance, in the case of *mávr(i) aghor(á)* ‘black market’ in (8) the SE head *mávr(os)* ‘black’ does not enter the construction with the meaning ‘(of colour) black’, i.e. as a {–m} {s} {i} entity, but referring to an activity outside of government-sanctioned channels, i.e. as a {+m} {–s} {–i} entity. In combination with the DE head *aghor(á)* ‘market’ this SE head determines the meaning of the whole construction. The consistency of the respective pragmatic context establishes this construction as a compound. The same argumentation holds for the rest of the compounds in this class.

Let us now turn to the second multi-word class, i.e. the phrasal-compound-like phrases.

### 2.2.5. Phrasal-compound-like (endocentric) phrases (Class $E_{MG}$ )

Attributive phrasal-compound-like phrases are [N N] constructs having one left-hand DE head and one right-hand SE head (see (11)).

(11) [HEAD]		[NONHEAD]		[OUTPUT]
<i>eterí(a)</i>	‘company’ +	<i>maimú</i>	‘fake’	→ <i>eterí(a) maimú</i> ‘fake
			(lit ‘monkey’)	company’
[+material]		[+material]		[+material]
{+m}{+s}{+i}		{+m}{–s}{–i}		{+m}{–s}{–i}

Attributive phrasal-compound-like phrases have properties similar to common NPs but the [NONHEAD] may not agree with the [HEAD].

In many cases the [NONHEAD] has an invariable form (nominative singular) independent of the case and number marking of the [HEAD] (cf. (12)). This invariance suggests that attributive phrasal-compound-like phrases are under the process of becoming phrasal compounds (Ralli 2013: 252-255).

- (12)
- a. *etería maimú*  
company.NOM.SG monkey.NOM.SG  
'fake company'
  - b. *eterías maimú*  
company.GEN.SG monkey.NOM.SG
  - c. *eterión maimú*  
company.GEN.PL monkey.NOM.SG

As with the phrasal compounds in section 2.2.4 attributive phrasal-compound-like phrases do not have a straightforward interpretation. They resist an intersection mapping of their constituents and are pragmatically exceptional when combined with hedges such as 'literally' or 'strictly' and the like. For instance, if *eterí(a) maimú* in (11) were to denote an entity which is both a company and a monkey, then we would have to refer to a highly counterfactual context according to which this entity can exist.

As with the phrasal compounds, a recurrent pragmatic context can change the value of the SE features in the SE head, prior to the semantic composition between the constituents. In the case of *eterí(a) maimú* 'fake company' in (11) the SE head *maimú* does not enter the construction with the meaning 'monkey', i.e. as a {m} {s} {i} entity, but with the meaning 'fake', 'crafty', and the like, i.e. as a {+m} {-s} {-i} entity. In combination with the DE head *eterí(a)* 'company' this SE head determines the meaning of the whole phrase.

Within the general class of phrasal-compound-like phrases there is another subcategory of [N N] constructions which mostly denote professions and are *appositive*, such as *metafrast(ís) dhiermin(éas)* 'translator-interpreter', *arxitékton(as) arxeológh(os)* 'architect-archaeologist', etc. These constructions are similar to the copulative compounds in several European languages (Ralli 2013: 255; see also sections 3.1.2 and 3.2.3 for EN).<sup>35</sup> Contrary to the attributive phrasal-compound-like phrases, the [NONHEAD] must always agree with the [HEAD].

Appositive phrasal-compound-like phrases are not included in the present analysis, because they are not explicitly marked for stance. A certain pragmatic conditioning is also evident in these phrases since a more prominent role is assigned to the constituent

appearing first (Anastassiadis-Simeonidis 1996: 108, Ralli 2013: 256). Accordingly, both constituents can be thought of as DE heads and the first constituent as the single SE head of the construction.<sup>36</sup>

This SE head is affected only slightly in composition – contrary to the phrasal compounds and the attributive phrasal-compound-like phrases in which the SE head is mostly subject to a heavy SE shift.<sup>37</sup> Since there is no SE (pragmatic) bounding in these phrases, the order of their constituents can vary.

Concluding, I regard appositive phrasal-compound-like phrases as “products of syntax” in line with Ralli’s (2013: 256) description.

### 3. Compounding in EN

#### 3.1.1. General properties of EN compounds

Lieber & Štekauer (2009) examine a variety of phonological, syntactic, and morphological criteria to distinguish compounds from phrases or other sorts of derived words. According to these authors, the strongest hints for establishing a word complex as a compound in EN are left-hand stress (*cart-horse*), inseparability (\*[*black ugly bird*] for *blackbird*, a bird species), impossibility of first-stem modification (\**a very blackbird*), inability to replace the second stem with a pro-form (*a riding horse...* \**the carriage ones*), and inflection on the rightmost constituent (head; *cart-horse-s*). However, the same authors conclude that for establishing a word complex as a compound none of these hints can be regarded as an absolute criterion (Lieber & Štekauer 2009: 14).

According to Plag (2003: 132) compounding is the most productive type of word-formation process in EN. An inventory of compound types containing two constituent words is displayed in Table 8, taken from Plag (2003: 144). Compounds with more than two constituent words can be broken down into binary substructures, e.g. the binary structure [[*bathroom towel*] *designer*] for *bathroom towel designer*.

**Table 8.** Inventory of compound types in EN (Plag 2003: 144).

	NOUN (N)	VERB (V)	ADJECTIVE (A)
noun	film society	brainwash	stone-deaf
verb	pickpocket	stir-fry	-
adjective	greenhouse	blindfold	light-green
preposition <sup>38</sup>	afterbirth	-	-

As opposed to MG, EN is a language with poor inflection and (almost) no linking elements between the constituents.<sup>39</sup> It is therefore expected that the distinction between morphological structures as regards possible combinations of stems and words becomes a minor issue.

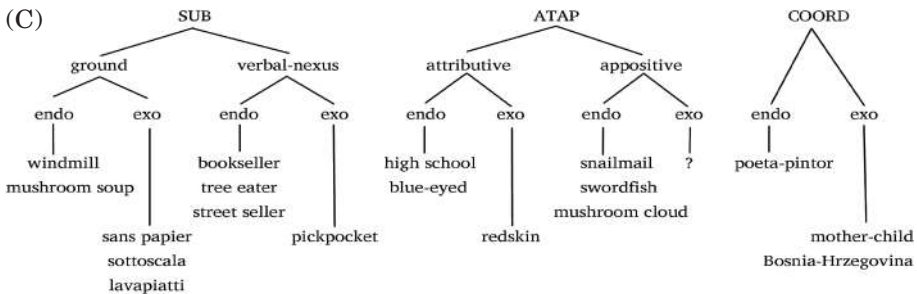
The structure of EN compounds can be formalized as in (B), taken from Plag (2003: 137). Bound roots are elements such as *astro-*, *bio-*, *photo-*, *-graphy*, *-logy* in the so called ‘neo-classical compounds’, i.e. learned formations with one or both constituents being of Latin or Greek origin, e.g. *astrophysics*, *sonography* (Plag 2003: 155-159). Phrases are syntactic sequences such as *live-and-let-live* in *live-and-let-live attitude*. As in MG, the right-hand constituent is usually the DE head (cf. RHR, Williams 1981) and carries the inflectional ending.<sup>40</sup> This DE head transmits its grammatical properties to the compound word.

- (B) The structure of EN compounds
- a. [X Y]<sub>Y</sub>
  - b. X = {root, word, phrase}
  - Y = {root, word}
  - <sub>Y</sub> = grammatical properties inherited from Y

Let us now examine the categorization of EN compounds according to Bisetto & Scalise (2009) and the crucial issue of subordinate compounds within this categorization.

### 3.1.2. The classification of compounds according to Bisetto & Scalise (2009)

Bisetto & Scalise (2009) present a cross-linguistic classificatory system of compounds, while placing special focus on EN (see (C)).<sup>41</sup>



In (C) SUB refers to *subordinate* compounds, i.e. compounds with two constituents sharing a (broadly construed) head-complement/adjunct relation, e.g. *apron string* ‘string of an apron’, ‘string resting on an apron’, ‘string threaded into an apron’. Subordinate compounds are divided into *ground* and *verbal-nexus* compounds. Ground compounds are “formations that are traditionally defined as *root*, i.e. lexemes that can be both simple and complex” (Bisetto & Scalise 2009: 51).<sup>42</sup> The semantic relation between the two constituents is actually determined by the semantico-encyclopedic information associated with the component lexemes (the ‘semantic/pragmatic body’ in Lieber’s 2004, 2007 terms).<sup>43</sup> Verbal-nexus compounds contain a base verb in the derived second constituent that defines the argumental status of the first constituent, e.g. *bookseller* ‘someone selling books’ (*books*: object/complement), *tree eater* ‘someone eating on a tree’ (*tree*: location/adjunct). Ground and verbal-nexus compounds are further divided into *endocentric* (presence of a head constituent) and *exocentric* (absence of a head constituent). An exocentric ground compound is the Italian *lavapiatti* ‘dishwasher’ (lit. ‘wash dishes’). An exocentric verbal-nexus compound is *pickpocket*.

ATAP refers to ATTRIBUTIVE and APPOSITIVE compounds.<sup>44</sup> In particular, attributive compounds are formations in which the non-head constituent, usually an adjective or a verb, expresses a property or quality of the head constituent, e.g. *high school* (A–N), *shriek alarm* (V–N). Appositives, such as *snail mail*, *swordfish*, etc., are “compounds in which the non-head element expresses a property of the head constituent by means of a noun, an apposition, acting as an attribute” (Bisetto & Scalise 2009: 51). In the appositives the non-head always has a metaphorical interpretation. As in the SUB category, there is a distinction between *endocentric* and *exocentric* formations. An exocentric attributive compound is *redskin* and an exocentric appositive compound is *egghead*. Exocentric appositive compounds are very rare.

COORD refers to coordinate compounds (labelled as “copulative” in the present paper). According to Bisetto & Scalise (2009: 46), coordinates are formations whose constituents are syntactically identical and can be connected with the conjunction AND (N+N, A+A, V+V, Adv+Adv). Semantically/pragmatically, coordinates contain highly similar constituents. As in the SUB and ATAP categories they are divided into *endocentric*, e.g. *author-actor*, and *exocentric*, e.g. *mother-child*.

By elaborating Bisetto & Scalise’s (2009) categorial system, Lieber (2009: 89-93) defines four types of EN coordinate compounds,

i.e. compounds with a simultaneous (*producer/director*, endocentric), a mixture (*blue-green*, endocentric), a relationship (*mother-child*, exocentric), or a collective (*mother-child*, exocentric) interpretation.<sup>45</sup>

Concluding, I would like to discuss Lieber's (2009: 88-89) point of disagreement with Bisetto & Scalise's (2005, 2009) analysis. Bisetto & Scalise regard all NN compounds referring to an 'of' relation as subordinate, e.g. *apple cake*, *apron string*. Lieber disagrees with this categorisation by opposing that the heads of these compounds, i.e. the rightmost constituents, have no argument structure other than the single R (referential) argument. As Lieber (2009: 88) argues, "the quintessential subordinate compounds are 'synthetic' compounds like *truck driver* and *cost containment*, where the non-head bears a complement relation to the head". Accordingly, Lieber regards compounds such as *apple cake* and *apron string* as attributive.

Despite Lieber's objections, in my analysis I adopted Bisetto & Scalise's view because it is closer to a pragmatic account of compounding. Bisetto & Scalise's categorisation implicitly addresses the linking of DE and pragmatic heads in the compounds. For instance, *apple cake* and *apron string* have a right-hand DE head and a right-hand pragmatic head. The first constituent of these compounds, i.e. *apple* and *apron*, respectively, is not subject to an explicit pragmatic shift as opposed to the compounds in the ATAP class (that is, the first constituent is not 'metaphorical' in Bisetto & Scalise's terms). Similarly, *dog bed* is a subordinate compound and not an attributive one as Lieber (2009: 88-89) argues. The former constituent of the compound is not subject to a pragmatic shift as opposed to the latter: *bed* may denote any kind of object conceived of as a bed or underlay for a dog. In other words, *bed* is the pragmatic head of the compound, etc.

### *3.2. The linking of DE and SE heads in EN compounding*

As already mentioned in the Introduction, the object of investigation as regards EN are 132 SE-compounds taken from Algeo's (1991) dictionary of neologisms (1941-1991).

From the classes of EN compounds identified in Bisetto & Scalise (2009: 49-52) and Lieber (2009: 67-69) it becomes clear that the respective authors regard as compounds proper compositional combinations of nouns, verbs, and adjectives, i.e. combinations of major lexical categories with an unrestricted predication. No attention is paid to combinations of words/roots and affix-like elements, e.g. neo-classical compounds, prefixed nominals, words containing suffix-like combining forms, etc. Accordingly, I excluded from the analysis words containing prefixes such as *anti-*, *neo-*, *super-*, *over-* or combining

forms such as *-buster*, *-gate*, *-happy*, *-speak*, which are found in Algeo’s (1991: 21-83) index.<sup>46</sup>

3.2.1. *Subordinate endocentric compounds (Class AEN)*

In the SE compounds selected from Algeo’s (1991: 21-83) index, subordinate endocentric compounds (SUB-ENDO compounds) are the second largest class, the largest class being attributive/appositive compounds (see next section). Correspondingly, 51 out of a total of 132 SE compounds are SUB-ENDO compounds. As with the A<sub>MG</sub> compounds, the compounds of this class have a right-hand DE head and a right-hand SE head (see (13) and (14)).

(13)	[NONHEAD]		[HEAD]		[OUTPUT]
	brain	+	drain	→	brain drain
	{m}{+s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}
(14)	[NONHEAD]		[HEAD]		[OUTPUT]
	gender	+	gap	→	gender gap
	{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}

Again, the right-hand position of both the DE and SE head is a much more distinctive criterion than simple DE headedness according to which the compound as a whole is a hyponym of its head (cf. Lieber 2009: 89, Ralli 2013: 105). In (13) *brain drain* is not a kind of drain ({+m} {s} {i}), as its head constituent would suggest in the default case, but a kind of emigration ({+m} {-s} {-i}). Similarly, the compound *gender gap* in (14) does not (simply) denote a kind of gap ({+m} {s} {i}) but a kind of interpersonal conflict ({+m} {-s} {-i}), etc. In both (13) and (14) the SE head interacts with the SE cluster in the first constituent to yield {+m} {-s} {-i} entities, i.e. entities expressing diminution (privation), negative stance and a drawback in interpersonal relations.<sup>47</sup>

As with the MG compounds *xazokúti* ‘boob tube’ and *xarokamén(os)* ‘bereaved’ in section 2.2.1, the SE operations subsume various lexical-polysemy or metaphorical accounts of the DE head. *Drain* or *gap* in (13) and (14), respectively, are just members of two large classes of words that could have been used for referring to the cluster {+m} {-s} {-i}. This also means that forced compounds such as *!brain gap* or *!gender drain* would be possible under relevant pragmatic conditions. In a nutshell, in order to access the essential/generative structure in the A<sub>EN</sub> compounds we can rely on a simple [HEAD]–[NONHEAD] configuration and the operations in the SE tier.



### 3.2.2. Attributive/appositive compounds (Class BEN)

Class  $B_{EN}$  contains attributive/appositive endocentric compounds and appositive exocentric compounds (the ATAP class in Bisetto & Scalise 2009).<sup>48</sup> It is the largest SE class, containing 80 compounds out of a total of 132. Appositive exocentric compounds correspond to class  $B_{MG}$  and attributive/appositive endocentric compounds correspond to class  $D1_{MG}$ . As with the  $B_{MG}$  and  $D1_{MG}$  compounds,  $B_{EN}$  compounds have a right-hand DE head and a left-hand SE head, see (15)-(17).

(15)	[NONHEAD]	[HEAD]	[OUTPUT]	ATAP-APP-EXO
	egg	+ head	→ egg head	
	{+m}{-s}{-i}	{m}{s}{i}	{+m}{-s}{-i}	
(16)	[NONHEAD]	[HEAD]	[OUTPUT]	ATAP-ATT-ENDO
	eager	+ beaver	→ eager beaver	
	{+m}{-s}{-i}	{+m}{+s}{+i}	{+m}{-s}{-i}	
(17)	[NONHEAD]	[HEAD]	[OUTPUT]	ATAP-APP-ENDO
	spin	+ doctor	→ spin doctor	
	{+m}{-s}{-i}	{m}{+s}{i}	{+m}{-s}{-i}	

*Egg head* in (15) is the only one exocentric compound in class  $B_{EN}$ . As with the MG exocentric compounds (class  $B_{MG}$ ) the right-hand constituent of this compound can be thought of as the DE head. A metonymy mechanism shifts the reference of the DE head from a part to its whole, in this case [HEAD] → [HUMAN].

As with the  $B_{MG}$  and  $D1_{MG}$  compounds, the first constituent in the  $B_{EN}$  compounds is more explicitly valued than the second one. As with the  $D1_{MG}$  class, since two independent *words* are brought together, there is standardly an explicit SE shift in the first constituent. As already implied in section 2.2.4 the main motivation behind this strategy is to maintain a non-counterfactual interpretation of the compounds based on set intersection.

For instance, in (16) *eager* does not enter the compound with the meaning ‘full of keen desire or appetite’, ‘intense’, or ‘impatient’, i.e. as a {+m} {±s} {i} entity, but with the explicitly negative meaning ‘overzealous’, ‘officious’, i.e. as a {+m} {-s} {-i} entity.<sup>49</sup> In combination with the SE cluster in the DE head *beaver*, this SE head determines the meaning of the whole construction. As with the compounds in class  $D1_{MG}$  – but also in the overall  $D_{MG}$  class – the consistency of the pragmatic context establishes the respective sequence as a compound.

### 3.2.3 Coordinate (copulative) double-headed compounds (Class *CEN*)

In the SE compounds selected from Algeo’s (1991: 21-83) index only one coordinate (copulative) compound could be found, i.e. *boy toy / toy boy*, having a mixture interpretation and a double-valued {±s} interpretation (‘a handsome young man’ ({+s}) vs. ‘a man as an object of sexual interest’ ({-s}) (Algeo 1991: 29)). In a similar way as in the *C<sub>MG</sub>* class (section 2.2.3), DE headedness cannot be tested and confirmed on the basis of morphosyntactic features. Correspondingly, I propose two DE heads for *toy boy/boy toy*. This DE pattern licences the operations in the SE tier. In particular, by resorting to a structure with two DE heads, the {±s} feature can be assigned to the SE head *toy* as the right-hand or left-hand constituent (see (18) and (19), respectively). In other words, in both (18) and (19), the constituent carrying {±s} decides headedness.

- |      |                               |   |                               |   |                                     |
|------|-------------------------------|---|-------------------------------|---|-------------------------------------|
| (18) | [HEAD]<br>boy<br>{+m}{+s}{i}  | + | [HEAD]<br>toy<br>{+m}{±s}{-i} | → | [OUTPUT]<br>boy toy<br>{+m}{±s}{-i} |
| (19) | [HEAD]<br>toy<br>{+m}{±s}{-i} | + | [HEAD]<br>boy<br>{+m}{+s}{i}  | → | [OUTPUT]<br>toy boy<br>{+m}{±s}{-i} |

Concluding, the patterns of EN SE-compounds examined in sections 3.2.1-3.2.3 are subsumed under three distinct classes, see Table 9.

**Table 9.** Linking patterns of EN SE-compounds. *A<sub>EN</sub>*: Subordinate endocentric; *B<sub>EN</sub>*: Attributive/appositive; *C<sub>EN</sub>*: Coordinate (copulative) endocentric.

	R{SE}	L{SE}	R {+M}{±S} ∨ L {+M}{±S}
R[DE]	<i>A<sub>EN</sub></i>	<i>B<sub>EN</sub></i>	
[DE][DE]			<i>C<sub>EN</sub></i>

Let us now compare these linking patterns with the patterns of the MG SE-compounds described in sections 2.2.1-2.2.5.

## 4. The comparison of linking patterns in MG and EN compounding

The linking patterns of MG SE-compounds in Table 7 are repeated in Table 10 and the linking patterns of the EN SE-compounds in Table 9 are repeated in Table 11. In Table 12 the respective linking patterns are juxtaposed, together with examples.

**Table 10.** Linking patterns of MG SE-compounds. **A<sub>MG</sub>**: One-word endocentric; **B<sub>MG</sub>**: One-word exocentric; **C<sub>MG</sub>**: One-word copulative; **D1<sub>MG</sub>**: Phrasal [A N]; **D2<sub>MG</sub>**: Phrasal [N N<sub>GEN</sub>]; **E<sub>MG</sub>**: Phrasal-compound-like-phrases (attributive).

	R{SE}	L{SE}	R{+M}{-s} ∨ L{+M}{-s}	R{+s}/{-s}	L{-s}
R[DE]	A <sub>MG</sub>	B <sub>MG</sub>			D1 <sub>MG</sub>
L[DE]	E <sub>MG</sub>			D2 <sub>MG</sub>	
[DE][DE]			C <sub>MG</sub>		

**Table 11.** Linking patterns of EN SE-compounds. **A<sub>EN</sub>**: Subordinate endocentric; **B<sub>EN</sub>**: Attributive/appositive; **C<sub>EN</sub>**: Coordinate (copulative) endocentric.

	R{SE}	L{SE}	R {+M}{±s} ∨ L {+M}{±s}
R[DE]	A <sub>EN</sub>	B <sub>EN</sub>	
[DE][DE]			C <sub>EN</sub>

**Table 12.** Comparison of linking patterns in MG and EN SE-compounds.

LINKING	MG CLASS	MG EXAMPLES	EN CLASS	EN EXAMPLES
1. R[DE] ~ R{SE}	A <sub>MG</sub>	<i>kosmoxalasm(ós)</i> people uproar 'uproar of people'	A <sub>EN</sub>	brain drain
2. R[DE] ~ L{SE}	B <sub>MG</sub> (EXO)	<i>elafrómial(os)</i> 'light-minded'	B <sub>EN</sub> (EXO)	egg head
	D1 <sub>MG</sub>	<i>mávr(i) aghor(á)</i> 'black market'	B <sub>EN</sub> (ENDO)	eager beaver
3. [DE][DE] ~ R{SE} ∨ L SE}	C <sub>MG</sub>	<i>ghlikópikr(os) / pikróghlik(os)</i> 'bitter sweet'	C <sub>EN</sub>	boy toy / toy boy
4. L[DE] ~ R{SE}	D2 <sub>MG</sub>	<i>ík(os) anox(ís)</i> 'brothel'	∅	∅
	E <sub>MG</sub>	<i>eterí(a) maimú</i> company monkey 'dummy corporation'	∅	∅

The examples in Table 12 illustrate a fundamental difference between MG and EN: the patterns of MG compounds are morphologically elaborated (*elafrómial(os)*: [stem]-[stem], *kosmoxalasm(ós)*, *ghlikópikr(os) / pikróghlik(os)*: [stem]-[word], *mávr(i) aghor(á)*, *eterí(a) maimú*: [word]-[word]), whereas the respective EN patterns always involve the composition of two words. Classes D1<sub>MG</sub> and B<sub>EN</sub> show the highest symmetry by always involving the composition of two words, whereby the first constituent enters the compound with a heavy SE shift, i.e. it strongly deviates from a default or neutral interpretation.

The linking patterns 1-3 are quite uniform. In the fourth linking pattern there are no EN correlates. The exceptional character of the respective  $D2_{MG}$  and  $E_{MG}$  classes is mainly due to contact with French. In French many compounds have (i) a second *de*-constituent containing a right-hand SE head, e.g. *zóni asfalías ~ ceinture de sécurité* ‘safety belt’, *pólemos névron ~ guerre des nerfs* ‘war of nerves’, or (ii) a noun as a second constituent representing an SE head, e.g. *léks(i) klidhí ~ mot-clé* ‘keyword’ (lit. word key), *nómos plésio ~ loi-cadre* ‘blueprint law’ (lit. law frame). Instead of this fourth linking pattern, EN standardly uses the [N N] or [A N] strategy by deploying a right-hand DE head together with a left-hand SE head (the ATAP class in Bisetto & Scalise 2009).<sup>50</sup>

The multi-word  $D1_{MG}$  class correlates to the one-word  $B_{MG}$  class, both having a left-hand SE head. Therefore, I assume that the patterns in classes  $D2_{MG}$  and  $E_{MG}$  referring to a right-hand SE head became productive in MG because the symmetry of the system required two-word correlates for the one-word  $A_{MG}$  compounds also having a right-hand SE head.

At the same time, class  $E_{MG}$  can provide candidates for the one-word  $C_{MG}$  class, referring to an alternating constituent order. Possible constructions such as *?maimú etería*, which have the SE head at the left side may compete with established constructions such as *etería maimú*, which have the SE head at the right side.

## 5. Conclusion and prospectus

The analysis in this paper has shown that there are explicit similarities between the patterns of MG and EN SE-compounds. In particular, both Ralli’s (2007, 2013) and Bisetto & Scalise’s (2009) classes of compounds are sufficiently mapped onto just three linking patterns, i.e. (i)  $R[DE] \sim R\{SE\}$ , (ii)  $R[DE] \sim L\{SE\}$ , and (iii)  $[DE][DE] \sim R\{SE\} \vee L\{SE\}$ . A fourth linking pattern, i.e.  $L[DE] \sim R\{SE\}$ , was only attested in MG but this is due to language contact, in particular contact with French.

In both MG and EN the proposed linking patterns subsume a variety of lexical categories. This suggests that compounding is mainly a pragmatic process whereby syntactic operations play a secondary role. Only in A–N constructions do left-hand adjectives seem to be unexceptionally mapped onto SE heads, in both MG and EN, e.g. the MG compounds *elafrómial(os)* ‘light-minded’ or *mávr(i) aghor(á)* ‘black market’, the EN compound *eager beaver*. This pattern should

not surprise us because at the interface of components, in this case at the interface of syntax and morphology, explicit mappings should occur in order to define prototypical domains.<sup>51</sup> Lieber's (2009) assessment that attributive compounds are the default semantic type supports my claims (see note 44).

The absence of a double SE-head pattern and the absence of a L[DE] ~ L{SE} pattern in both languages can be easily explained. As regards the first pattern, the presence of a second SE head would be redundant because a single SE head suffices for bounding the compounding structures (see section 2.2.4). In addition, two SE heads would be a distracting factor in the generation process because a native speaker would have to decide which of the two compounded constituents is most relevant pragmatically.

As regards the non-existence of the compounding pattern L[DE] ~ L{SE}, the coincidence of a DE and SE head at the left side of a constituents' pair would identify the first constituent as an autonomous word so that syntax would necessarily handle the second constituent as a further independent word.

Concluding, the present study paves the way towards a universal theory of compounding in which DE and pragmatic/SE heads are linked together to yield the different compounding classes. In the previous section, the similarities and differences between EN and MG were pointed out. Further similarities and differences will emerge from the analysis of compounds in many different languages.

The SE features used in the analysis should be validated empirically, e.g. by means of simple evaluation tasks with native speakers. Sets of parameters should be developed to define each SE feature in a restricted way, e.g. in form of sub-conditions.

Last but not least, in the MG and EN SE-compounds stance was marked explicitly. However, such an explicit marking does not show up in all compounds. One task for future research is to isolate the full set of contextual (pragmatic) elements which are relevant in the formation of compounds and instantiate them as context-sensitive features in the compound constituents.

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Notes

<sup>1</sup> In line with Lieber's (2004, etc.) analysis I propose two parts of semantic representation, i.e. the Semantic/Grammatical skeleton (or skeleton, for short) and the Semantic/Pragmatic Body (or body, for short). The skeleton is the decompositional and hierarchically arranged part of the representation. It seeks to isolate all and only those aspects of meaning which have consequences for the syntax. The body is encyclopedic by comprising bits of perceptual and cultural knowledge that form the bulk of the lexical representation. It includes many of the aspects of meaning that Pustejovsky (1995: 85-86) encodes in his Qualia Structure, i.e. information concerning material composition, part structure, orientation, shape, colour, dimensionality, origin, purpose, function, etc. (see Lieber 2004: 9-10). It should be noted that I do not share Lieber's (2004: 10) assumption that the body is holistic and non-decompositional – my socio-expressive (SE) features and their combinatorial properties will show that the body is atomistic and decompositional.

<sup>2</sup> The term 'DE head' is used by the author to refer to semantic and/or categorial heads in contrast to socio-expressive (SE/pragmatic/evaluative) heads. Following the definitions in Scalise & Fábregas (2010: 124) the semantic head is the unit that defines the semantic class of the whole word and the categorial head is the unit that defines the lexical category of the word. The distinction between a DE and a SE level of meaning ('DE tier' and 'SE tier', respectively) was first made in Charitonidis (2011).

<sup>3</sup> Guevara & Scalise's (2009) sample included Romance, Germanic, Slavic, and East Asian languages.

<sup>4</sup> Algeo's (1991) dictionary of neologisms (1941-1991) is an excellent work, giving precise definitions and recording the context in which new words have emerged.

<sup>5</sup> The combinatorial patterns of DE and SE heads in MG compounding (section 2.2; for an overview see Table 7) were first presented at the Conference "Universals and Typology in Word-Formation II" (Šafárik University, Košice, Slovakia. Conference date: August 26-28, 2012). The same patterns are presented in Charitonidis (*submitted*).

<sup>6</sup> In this paper SE elements are included in curly brackets and DE elements in square brackets.

<sup>7</sup> The inflectional ending *-os* in *rébel(os)* spells out the morphosyntactic properties 'nominative, singular, masculine' (property set determining the citation form of (i) MG adjectives and (ii) MG nouns with a masculine form).

<sup>8</sup> The inflectional ending *-o* in *-(i)áz(o)* spells out the morphosyntactic properties 'first person, singular, present, active' (property set determining the citation form of MG verbs). Henceforth, I do not give details on the citation form of MG lexemes.

<sup>9</sup> In Efthymiou (2010, 2013a, 2013b) the preference of *-(i)áz(o)* for negatively marked bases is mentioned, together with its capability to place a negative interpretation on derivatives whose bases are not negatively marked, e.g. *thróniáz(o)* 'enthroned' (*thrón(os)* 'throne'; ironically). It should be noted that Efthymiou refers to a {-s} operation of this suffix, whereas my approach refers to a threefold {+m} {-s} cluster in base, suffix, and output (for details see Charitonidis 2012a, 2012b, *submitted*).

<sup>10</sup> The author has first reported the entanglement of the features {+m} and {-s} in the derivation of the MG verbs in *-(i)áz(o)* (Charitonidis 2012a: 311). This entanglement is also evident in the appraisal system of Martin & White (2005: 189): "A good deal of ... criticism and condemnation is strongly amplified with respect to both **graduation: quantity** ... and **graduation: intensity**" (boldface by Martin & White; cf. Figure 1).

<sup>11</sup> In particular, in Martin & White's (2005) system POSITIVE SOCIAL ESTEEM (*clever*,

*reliable*, etc.) is juxtaposed to NEGATIVE SOCIAL ESTEEM (*stupid, unreliable*, etc.) and POSITIVE SOCIAL SANCTION (*honest, polite*, etc.) is juxtaposed to NEGATIVE SOCIAL SANCTION (*dishonest, rude*, etc.).

<sup>12</sup> I would like to thank an anonymous referee for pointing out this similarity. It should be noted that my SE system is developed independently of Martin & White's (2005) system.

<sup>13</sup> For details on the categories displayed in Figure 1, the reader is referred to Martin & White (2005).

<sup>14</sup> For a definition of SOCIAL ESTEEM and SOCIAL SANCTION see the above discussion and note 11.

<sup>15</sup> An overview of the ENGAGEMENT system can be found in Martin & White (2005: 134).

<sup>16</sup> The DE and SE head *paráksen(os)* 'odd man', 'geezer' defines {-s} in *ghéros* (cf. the discussion on this head operation in various parts of this section).

<sup>17</sup> This section is adopted from Charitonidis (*submitted*) with minor changes.

<sup>18</sup> This section follows Ralli's (2013) description.

<sup>19</sup> Adverbial compounds are secondary formations (Ralli 2013: 37).

<sup>20</sup> For secondary combinations of constituents see Ralli (2013: 29-44).

<sup>21</sup> For a detailed presentation of these NPs see Ralli (2013: 243-270).

<sup>22</sup> According to Ralli (2013: 250), the semantics of the phrasal compounds may be non-compositional, but "their structure is derived in syntax, in that, it is not based on morphologically proper units and is not the product of a morphological process". For further properties of phrasal compounds see Ralli (2013: 246-252).

<sup>23</sup> For further details see Ralli (2013: 254-255).

<sup>24</sup> The class labels in Tables 5 and 6 have been adapted by the author to meet the requirements of the analysis. In Ralli (2013) class  $C_{MG}$  is labelled as 'coordinative compounds'. In Ralli (2007) classes  $D_{MG}$  and  $E_{MG}$  are labelled as 'loose multi-word compounds' and 'special nominal phrases', respectively.

<sup>25</sup> The compounds of this class are endocentric and right-headed. The right-hand stems are nominal and derive from verbal bases of AG origin, usually by means of a simple change of their stem-internal vowel. However, these stems cannot become words in combination with inflectional suffixes (see Ralli 2013: 201-203).

<sup>26</sup> The full list of compounds can be found in Charitonidis (*submitted*).

<sup>27</sup> The combinations  $R[DE] \Leftrightarrow L\{-s\}$  and  $L[DE] \Leftrightarrow R\{+s\}/\{-s\}$  correspond to the categories  $D1_{MG}$  and  $D2_{MG}$ , respectively (see Tables 6 and 7).

<sup>28</sup> Appositive phrasal-compound-like phrases are products of syntax. They are examined in section 2.2.5 together with the attributive phrasal-compound-like phrases.

<sup>29</sup> The actual number of copulative SE compounds is six (see Appendix in Charitonidis *submitted*).

<sup>30</sup> Ralli (2013: 168) reports that "only few cases of [A A] constructions show a fixed order which is due either to phonology or to lexicalization". For instance, the compound *ghlikanálat(os)* 'namby-pamby', 'insipid' (lit. sweet unsalted) never shows up as *\*analatóghlikos* because of the considerable length of *análat(os)* (four syllables), etc.

<sup>31</sup> I exclude from the analysis lexicalized {+s} instances of *ghlikópikr(os)* referring to things with a standard bittersweet flavour, such as chocolate, fruit, etc.

<sup>32</sup> This approach is closer to pragmatic accounts of headedness like those presented in Anastasiadis-Simeonidis (1996) and Ralli (2007). For objections to pragmatic approaches of MG copulative compounds see Ralli (2013: 169-170).

<sup>33</sup> In MG the noun *anax(i)* 'tolerance', 'sufferance' predominantly expresses a non-acceptance attitude, i.e. negative stance.

<sup>34</sup> Weiskopf's (2007) analysis relies considerably on the notion of 'primary pragmatic processes' (Recanati 1993, 2004).

<sup>35</sup> Lieber (2009) labels the respective EN compounds as ‘coordinate compounds with a simultaneous interpretation’ (see also section 3.1.2).

<sup>36</sup> In line with my analysis, Scalise et al. (2009, note 13) argue that coordinative compounds of the type *poet painter* have two semantic heads while denoting subsets of the two constituents (see also Guevara & Scalise 2009: 112). As regards the salience of the first constituent, Scalise & Fábregas (2010: 21) report: “in the Italian *prete-operaio* ‘priest worker’, the semantic head seems to be solely the first constituent, since the usual interpretation of the word is a priest who, in addition to being a priest, has another occupation” (italics by Scalise & Fábregas).

<sup>37</sup> The SE head (first constituent) of one-word exocentric compounds (class B<sub>MG</sub>, section 2.2.2) bears an explicit SE marking as well. However, this SE head is not subject to a SE shift.

<sup>38</sup> For reasons explained at the beginning of section 3.2, compounds with a preposition as their first element are not included in the analysis.

<sup>39</sup> A linking element *-o-* often occurs in ‘neoclassical compounds’ such as *anthropo-morph*, *laryng-o-scope*, etc. (see below in this section).

<sup>40</sup> For the *-s-* element in EN compounds such as *craft-s-man*, *deer-s-man*, etc., regarded as a plural marker or linking element, see Lieber & Štekauer (2009: 13).

<sup>41</sup> This system is an elaborate version of the compounding classes in Bisetto & Scalise (2005). In the presentation of the classes SUB, ATAP, and COORD I largely follow Bisetto & Scalise’s (2009) description with minor changes in wording, addition of examples, etc.

<sup>42</sup> See the two-word compound *apron string* ([apron] first constituent, [string] second constituent), the three-word compound *university teaching award* ([university] first constituent, [teaching award] second constituent), etc.

<sup>43</sup> In Lieber (2009) a further division of the pragmatic component into “pragmatic body” and “encyclopedia” is made.

<sup>44</sup> As Lieber (2009: 97) argues, ATAP compounds cannot be interpreted in the same way as subordinates or coordinates and thus constitute “a kind of default semantic type”. Attributive compounds occur “when the skeletons (the referential/grammatical part, CC) and bodies (the pragmatic part, CC) of compounding elements are too disparate to be interpreted as coordinates and lack the sort of argument structure that gives rise to subordinates”.

<sup>45</sup> As Lieber (2009: 91-92) argues, in coordinate exocentric compounds a third noun determines what kind of interpretation the compound as a whole is given, e.g. *mother-child discussion* (relationship) vs. *mother-child party* (collective).

<sup>46</sup> Some of these combining forms are subject to predefined meaning shifts – see, for instance, the definitions for *-happy* in Algeo (1991: 49), etc.

<sup>47</sup> In (16) the valued {–s} feature is inside the SE head (right-hand constituent). Hence, this {–s} prevails over the valued {+s} feature in the SE non-head (left-hand constituent). Recall that according to the properties of the SE tier, valued features in the SE heads are also heads (see (A) in section 1).

<sup>48</sup> In Algeo’s (1991: 21-83) index, attributive exocentric SE-compounds could not be found (cf. *redskin* in (C)).

<sup>49</sup> For these definitions see the entry ‘eager, adj.’ in the OED online.

<sup>50</sup> It should be noted that in the D<sub>2MG</sub> and E<sub>MG</sub> compounds it is not always possible to define French or EN as the origin language (*pólem(os) néuron* (MG) ~ *war of nerves* (EN) / *guerre de nerves* (French). See also Kitsa (2006).

<sup>51</sup> See the analysis of EN nominal derivatives in *-hood*, *-dom*, and *-ship* in Lieber (2010) and the analysis of MG verbal derivatives in *-(i)áz(o)* in Charitonidis (2012a, 2012b).



*Abbreviations*

APP	Appositive compounds (B&S 2009)
ATAP	Attributive/appositive compounds (B&S 2009)
ATT	Attributive compounds (B&S 2009)
B&S	Bisetto & Scalise
CC	Author's note
COORD	Coordinate compounds (B&S 2009)
DE	Denotational
EN	English
ENDO	Endocentric
EXO	Exocentric
GD	Ground compounds (B&S 2009)
GEN	Genitive
MG	Modern Greek
NOM	Nominative
OED	Oxford English Dictionary
RHR	Righthand Head Rule (Williams 1981)
SE	Socio-expressive
SG	Singular
SUB	Subordinate compounds (B&S 2009)

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## Appendix

## Full list of English (EN) socio-expressive (SE) compounds

In ALGEO John (ed.) 1991, *Fifty Years Among the New Words: A Dictionary of Neologisms, 1941-1991*. Cambridge: Cambridge University Press, 21-83.

**Special note.** In the following list of EN SE-compounds some constituent lexemes show up, already produced in the analysis of MG compounds in Charitonidis (*forthcoming*). There are some revisions as regards the value of the {m}, {s}, or {i} feature (see Table 1 below). These revisions were suggested by the compositional patterns in corresponding or different EN compounds. In all of the cases, the revisions result in the underspecification of one of the features.

MG SE-CLUSTER	MG COMPOUNDS	EN SE-CLUSTER (REVISIONS)	EN COMPOUNDS
<i>aghor(á)</i> {-m}{+s}{+i}	<i>mávr(i) aghor(á)</i> 'black market'	market {m}{+s}{+i}	gray/white/ yellow market
<i>eksusí(a)</i> {+m}{+s}{+i}	<i>eksusioman(ís)</i> 'obsessed with power'	power {+m}{+s}{i}	power user
<i>meghál(os)</i> {+m}{+s}{i}	<i>meghaloapateón(as)</i> 'notorious conman' <i>meghaloghiatr(ós)</i> 'famous doctor' <i>meghaloghínék(a)</i> 'mature woman'	big {+m}{s}{i}	big lie
<i>ghiatr(ós)</i> {m}{+s}{+i}	<i>meghaloghiatr(ós)</i> 'famous doctor'	doctor {m}{+s}{i}	spin doctor

**Table 1.** Feature revisions in EN SE-compounds.

<i>acquaintance</i>	+	<i>rape</i>	→	<i>acquaintance rape</i>	SUB-GD-ENDO
{-m}{s}{+i}		{+m}{-s}{-i}		{+m}{s}{-i}	
<i>air-sea</i>	+	<i>rescue</i>	→	<i>air-sea rescue</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{+s}{+i}		{+m}{+s}{+i}	
<i>auto</i>	+	<i>mania</i>	→	<i>automania</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>boy</i>	+	<i>toy</i>	→	<i>boy toy</i> (female person)	SUB-GD-ENDO
{+m}{+s}{i}		{+m}{±s}{-i}		{+m}{±s}{-i}	
<i>brain</i>	+	<i>drain</i>	→	<i>brain drain</i>	SUB-GD-ENDO
{m}{+s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	

The linking of denotational and socio-expressive heads

<i>brain</i>	+	<i>wash</i> (V)	→	<i>brainwash</i> (V)	SUB-GD-ENDO
{m}{+s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>China</i>	+	<i>syndrome</i>	→	<i>China syndrome</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{i}		{+m}{-s}{i}	
<i>computer</i>	+	<i>virus</i>	→	<i>computer virus</i>	SUB-GD-ENDO
{m}{s}{i}		{m}{-s}{i}		{m}{-s}{i}	
<i>couch</i>	+	<i>potato</i>	→	<i>couch potato</i>	SUB-GD-ENDO
{m}{s}{i}		{m}{-s}{-i}		{m}{-s}{-i}	
<i>daddy</i>	+	<i>track</i>	→	<i>daddy track</i>	SUB-GD-ENDO
{+m}{+s}{+i}		{m}{s}{i}		{+m}{+s}{+i}	
<i>date</i>	+	<i>rape</i>	→	<i>date rape</i>	SUB-GD-ENDO
{m}{s}{+i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>death ray</i>	+	<i>bomb</i>	→	<i>death ray bomb</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>death</i>	+	<i>squad</i>	→	<i>death squad</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>dollar</i>	+	<i>gap</i>	→	<i>dollar gap</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>domino</i>	+	<i>theory</i>	→	<i>domino theory</i>	SUB-GD-ENDO
{+m}{-s}{i}		{m}{s}{i}		{+m}{-s}{i}	
<i>elder</i>	+	<i>care</i>	→	<i>elder care</i>	SUB-GD-ENDO
{+m}{s}{i}		{+m}{+s}{+i}		{+m}{+s}{+i}	
<i>empty nest</i>	+	<i>depression</i>	→	<i>empty nest depression</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>empty nest</i>	+	<i>syndrome</i>	→	<i>empty nest syndrome</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{+m}{-s}{i}		{+m}{-s}{-i}	
<i>energy</i>	+	<i>crisis</i>	→	<i>energy crisis</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{i}		{+m}{-s}{i}	
<i>gas</i>	+	<i>hog</i>	→	<i>gas hog</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>gender</i>	+	<i>gap</i>	→	<i>gender gap</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>libel</i>	+	<i>sue</i> (V)	→	<i>libel-sue</i> (V)	SUB-GD-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>mall</i>	+	<i>rat</i>	→	<i>mall rat</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>Medicaid</i>	+	<i>mill</i>	→	<i>Medicaid mill</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>notch</i>	+	<i>baby</i>	→	<i>notch baby</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{+m}{+s}{+i}		{+m}{-s}{-i}	
<i>notch</i>	+	<i>year</i>	→	<i>notch year</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>peace</i>	+	<i>dividend</i>	→	<i>peace dividend</i>	SUB-GD-ENDO
{m}{+s}{+i}		{+m}{+s}{+i}		{+m}{+s}{+i}	

Chariton Charitonidis

<i>pot</i>	+	<i>vague</i>	→	<i>pot vague</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>roid</i>	+	<i>rage</i>	→	<i>roid rage</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>security</i>	+	<i>blanket</i>	→	<i>security blanket</i>	SUB-GD-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>shooting</i>	+	<i>war</i>	→	<i>shooting war</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>soap</i>	+	<i>opera</i>	→	<i>soap opera</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{i}		{+m}{-s}{i}	
<i>sofa</i>	+	<i>spud</i>	→	<i>sofa spud</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>spud</i>	+	<i>suit</i>	→	<i>spud suit</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>terror</i>	+	<i>bombing</i>	→	<i>terror bombing</i>	SUB-GD-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>T-V (total victory)</i>	+	<i>day</i>	→	<i>T-V day</i>	SUB-GD-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>Watergate</i>	+	<i>fallout</i>	→	<i>Watergate fallout</i>	SUB-GD-ENDO
{m}{-s}{-i}		{+m}{-s}{i}		{+m}{-s}{-i}	
<i>Watergate</i>	+	<i>man</i>	→	<i>Watergate man</i>	SUB-GD-ENDO
{m}{-s}{-i}		{m}{s}{i}		{m}{-s}{-i}	
<i>wedgie</i>	+	<i>attack</i>	→	<i>wedgie attack</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>wedgie</i>	+	<i>master</i>	→	<i>wedgie master</i>	SUB-GD-ENDO
{m}{s}{i}		{+m}{+s}{i}		{+m}{+s}{i}	
<i>wedgie</i>	+	<i>patrol</i>	→	<i>wedgie patrol</i>	SUB-GD-ENDO
{m}{s}{i}		{m}{s}{-i}		{m}{s}{-i}	
<i>boob</i>	+	<i>baiting</i>	→	<i>boob-baiting</i>	SUB-VN-ENDO
{+m}{-s}{-i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>Catholic</i>	+	<i>baiter</i>	→	<i>Catholic-baiter</i>	SUB-VN-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>energy</i>	+	<i>guzzler</i>	→	<i>energy guzzler</i>	SUB-VN-ENDO
{m}{s}{i}		{+m}{-s}{i}		{+m}{-s}{i}	
<i>fag</i>	+	<i>bashing</i>	→	<i>fag-bashing</i>	SUB-VN-ENDO
{+m}{-s}{-i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>granny</i>	+	<i>bashing</i>	→	<i>granny-bashing</i>	SUB-VN-ENDO
{+m}{s}{+i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>name<sub>1</sub></i>	+	<i>calling</i>	→	<i>name calling</i>	SUB-VN-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>name<sub>2</sub></i>	+	<i>dropper</i>	→	<i>name dropper</i>	SUB-VN-ENDO
{m}{+s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	

The linking of denotational and socio-expressive heads

<i>plea</i>	+	<i>bargain</i> (V)	→	<i>plea-bargain</i> (V)	SUB-VN-ENDO
{+m}{-s}{-i}		{+m}{+s}{+i}		{+m}{+s}{+i}	
<i>revenue</i>	+	<i>enhancement</i>	→	<i>revenue enhancement</i>	SUB-VN-ENDO
{+m}{s}{i}		{+m}{+s}{i}		{+m}{+s}{i}	
<i>yuppy</i>	+	<i>bashing</i>	→	<i>yuppy-bashing</i>	SUB-VN-ENDO
{+m}{-s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>affirmative</i>	+	<i>action</i>	→	<i>affirmative action</i>	ATAP-ATT-ENDO
{+m}{+s}{+i}		{+m}{s}{i}		{+m}{+s}{+i}	
<i>big</i>	+	<i>lie</i>	→	<i>big lie</i>	ATAP-ATT-ENDO
{+m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>Black</i>	+	<i>Monday</i>	→	<i>Black Monday</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>black</i>	+	<i>spot</i>	→	<i>black spot</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>captive</i>	+	<i>audience</i>	→	<i>captive audience</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>cold</i>	+	<i>call</i> (V)	→	<i>cold-call</i> (V)	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>cold</i>	+	<i>war</i>	→	<i>cold war</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>creative</i>	+	<i>accounting</i>	→	<i>creative accounting</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>defensive</i>	+	<i>medicine</i>	→	<i>defensive medicine</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{+s}{i}		{+m}{-s}{-i}	
<i>dim</i>	+	<i>viewer</i>	→	<i>dim viewer</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>dirty</i>	+	<i>trick</i>	→	<i>dirty trick</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>double</i>	+	<i>think</i>	→	<i>double think</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>dry</i>	+	<i>drunk</i>	→	<i>dry drunk</i>	ATAP-ATT-ENDO
{+m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>eager</i>	+	<i>beaver</i>	→	<i>eager beaver</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{+s}{+i}		{+m}{-s}{-i}	
<i>empty</i>	+	<i>calorie</i>	→	<i>empty calorie</i>	ATAP-ATT-ENDO
{+m}{-s}{i}		{m}{s}{i}		{+m}{-s}{i}	
<i>empty</i>	+	<i>nest</i>	→	<i>empty nest</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{+s}{+i}		{+m}{-s}{-i}	
<i>endangered</i>	+	<i>species</i>	→	<i>endangered species</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>fair</i>	+	<i>trade</i>	→	<i>fair trade</i>	ATAP-ATT-ENDO
{+m}{+s}{+i}		{m}{s}{+i}		{+m}{+s}{+i}	

*Chariton Charitonidis*

<i>fast</i>	+	<i>lane</i>	→	<i>fast lane</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>feminine</i>	+	<i>hygiene</i>	→	<i>feminine hygiene</i>	ATAP-ATT-ENDO
{m}{s}{i}		{+m}{+s}{+i}		{+m}{+s}{+i}	
<i>forever</i>	+	<i>wild</i>	→	<i>forever wild</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{+m}{s}{i}		{+m}{+s}{i}	
<i>free</i>	+	<i>spinner</i>	→	<i>free spinner</i>	ATAP-ATT-ENDO
{-m}{+s}{+i}		{+m}{-s}{-i}		{-m}{+s}{+i}	
<i>front<sub>1</sub></i>	+	<i>organization</i>	→	<i>front organization</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>front<sub>2</sub></i>	+	<i>runner</i>	→	<i>front runner</i>	ATAP-ATT-ENDO
{+m}{+s}{+i}		{m}{s}{i}		{+m}{+s}{+i}	
<i>golden</i>	+	<i>goodbye</i>	→	<i>golden goodbye</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{m}{+s}{+i}		{+m}{+s}{+i}	
<i>gray</i>	+	<i>market</i>	→	<i>gray market</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{+s}{+i}		{+m}{-s}{-i}	
<i>hard</i>	+	<i>sell</i>	→	<i>hard sell</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{+i}		{+m}{-s}{-i}	
<i>hidden</i>	+	<i>hunger</i>	→	<i>hidden hunger</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>hot</i>	+	<i>pants</i>	→	<i>hot pants</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>hot</i>	+	<i>shot</i>	→	<i>hotshot</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{+m}{s}{i}		{+m}{+s}{i}	
<i>idiot</i>	+	<i>board</i>	→	<i>idiot board</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>idiot</i>	+	<i>girl</i>	→	<i>idiot girl</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{+s}{i}		{+m}{-s}{-i}	
<i>loyal</i>	+	<i>opposition</i>	→	<i>loyal opposition</i>	ATAP-ATT-ENDO
{m}{+s}{+i}		{+m}{-s}{-i}		{+m}{+s}{+i}	
<i>lunatic</i>	+	<i>fringe</i>	→	<i>lunatic fringe</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>negative</i>	+	<i>amortization</i>	→	<i>negative amortization</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{+s}{+i}		{+m}{-s}{-i}	
<i>nuclear</i>	+	<i>blackmail</i>	→	<i>nuclear blackmail</i>	ATAP-ATT-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>orphan</i>	+	<i>drug</i>	→	<i>orphan drug</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>phoney</i>	+	<i>war</i>	→	<i>phoney war</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>protective</i>	+	<i>custody</i>	→	<i>protective custody</i>	ATAP-ATT-ENDO
{+m}{+s}{+i}		{m}{-s}{-i}		{+m}{+s}{+i}	



The linking of denotational and socio-expressive heads

<i>psychological</i>	+	<i>warfare</i>	→	<i>psychological warfare</i>	ATAP-ATT-ENDO
{m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>reversed</i>	+	<i>discrimination</i>	→	<i>reversed discrimination</i>	ATAP-ATT-ENDO
{+m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>reverse</i>	+	<i>integration</i>	→	<i>reverse integration</i>	ATAP-ATT-ENDO
{m}{s}{i}		{m}{+s}{+i}		{m}{+s}{+i}	
<i>ruly</i>	+	<i>English</i>	→	<i>ruly English</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>silent</i>	+	<i>virus</i>	→	<i>silent virus</i>	ATAP-ATT-ENDO
{+m}{s}{i}		{m}{-s}{i}		{+m}{-s}{i}	
<i>social</i>	+	<i>ecology</i>	→	<i>social ecology</i>	ATAP-ATT-ENDO
{m}{+s}{+i}		{m}{+s}{+i}		{m}{+s}{+i}	
<i>soft</i>	+	<i>landing</i>	→	<i>soft landing</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{+m}{s}{i}		{+m}{+s}{i}	
<i>soft</i>	+	<i>sell</i>	→	<i>soft sell</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{m}{s}{+i}		{+m}{+s}{+i}	
<i>starry</i>	+	<i>eyed</i>	→	<i>starry-eyed</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>subterranean</i>	+	<i>economy</i>	→	<i>subterranean economy</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{s}{+i}		{+m}{-s}{-i}	
<i>total</i>	+	<i>war</i>	→	<i>total war</i>	ATAP-ATT-ENDO
{+m}{s}{i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>ultimate</i>	+	<i>weapon</i>	→	<i>ultimate weapon</i>	ATAP-ATT-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>white</i>	+	<i>market</i>	→	<i>white market</i>	ATAP-ATT-ENDO
{+m}{+s}{+i}		{m}{+s}{+i}		{+m}{+s}{+i}	
<i>yellow</i>	+	<i>market</i>	→	<i>yellow market</i>	ATAP-ATT-ENDO
{+m}{-s}{-i}		{m}{+s}{+i}		{+m}{-s}{-i}	
<i>baseball</i>	+	<i>diplomacy</i>	→	<i>baseball diplomacy</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{s}{+i}		{+m}{-s}{-i}	
<i>bonanza</i>	+	<i>baby</i>	→	<i>bonanza baby</i>	ATAP-APP-ENDO
{+m}{+s}{i}		{+m}{+s}{+i}		{+m}{+s}{+i}	
<i>courtesy</i>	+	<i>patrol</i>	→	<i>courtesy patrol</i>	ATAP-APP-ENDO
{+m}{+s}{+i}		{m}{s}{-i}		{+m}{+s}{+i}	
<i>crash</i>	+	<i>show (or TV)</i>	→	<i>crash show (or TV)</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>doorkey</i> (‘neglected’, CC)	+	<i>children</i>	→	<i>doorkey children</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{+m}{+s}{+i}		{m}{-s}{-i}	
<i>four-letter</i>	+	<i>word</i>	→	<i>four-letter word</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>four-two-one</i>	+	<i>syndrome</i>	→	<i>four-two-one syndrome</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{+m}{-s}{i}		{+m}{-s}{-i}	

<i>goulash</i>	+	<i>communism</i>	→	<i>goulash communism</i>	ATAP-APP-ENDO
{+m}{-s}{i}		{m}{s}{i}		{+m}{-s}{i}	
<i>gunboat</i>	+	<i>diplomacy</i>	→	<i>gunboat diplomacy</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{s}{+i}		{+m}{-s}{-i}	
<i>phantom</i>	+	<i>limb</i>	→	<i>phantom limb</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>police</i>	+	<i>state</i>	→	<i>police state</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>power</i>	+	<i>user</i>	→	<i>power user</i>	ATAP-APP-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>sandwich</i>	+	<i>generation</i>	→	<i>sandwich generation</i>	ATAP-APP-ENDO
{+m}{-s}{i}		{m}{s}{i}		{+m}{-s}{i}	
<i>shriek</i> (V)	+	<i>alarm</i>	→	<i>shriek alarm</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>seed</i>	+	<i>money</i>	→	<i>seed money</i>	ATAP-APP-ENDO
{+m}{s}{i}		{+m}{+s}{+i}		{+m}{+s}{+i}	
<i>shadow</i>	+	<i>factory</i>	→	<i>shadow factory</i>	ATAP-APP-ENDO
{+m}{s}{-i}		{m}{s}{i}		{+m}{s}{-i}	
<i>shirt-sleeve</i>	+	<i>diplomacy</i>	→	<i>shirt-sleeve diplomacy</i>	ATAP-APP-ENDO
{+m}{+s}{+i}		{m}{s}{+i}		{+m}{+s}{+i}	
<i>spaceman</i>	+	<i>economy</i>	→	<i>spaceman economy</i>	ATAP-APP-ENDO
{m}{s}{i}		{m}{s}{+i}		{m}{s}{+i}	
<i>spin</i>	+	<i>control</i>	→	<i>spin control</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{+m}{s}{i}		{+m}{-s}{-i}	
<i>spin</i>	+	<i>doctor</i>	→	<i>spin doctor</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{+s}{i}		{+m}{-s}{-i}	
<i>trash</i>	+	<i>sport</i>	→	<i>trash-sport</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>trash</i>	+	<i>television</i>	→	<i>trash television</i>	ATAP-APP-ENDO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>vaccination</i>	+	<i>program</i>	→	<i>vaccination program</i>	ATAP-APP-ENDO
{m}{+s}{i}		{m}{s}{i}		{m}{+s}{i}	
<i>Water</i>	+	<i>gaffe</i>	→	<i>Watergaffe</i>	ATAP-APP-ENDO
{m}{-s}{-i}		{+m}{-s}{-i}		{+m}{-s}{-i}	
<i>wonder</i>	+	<i>drug</i>	→	<i>wonder drug</i>	ATAP-APP-ENDO
{+m}{+s}{i}		{m}{s}{i}		{+m}{+s}{i}	
<i>yuppie</i>	+	<i>disease</i>	→	<i>yuppie disease</i>	ATAP-APP-ENDO
{+m}{-s}{i}		{+m}{-s}{i}		{+m}{-s}{i}	
<i>egg</i>	+	<i>head</i>	→	<i>egg head</i>	ATAP-APP-EXO
{+m}{-s}{-i}		{m}{s}{i}		{+m}{-s}{-i}	
<i>boy / toy</i>	+	<i>toy / boy</i>	→	<i>boy toy / toy boy</i> (male person)	COORD-ENDO
{+m}{+s}{i} / {+m}{±s}{-i}		{+m}{±s}{-i} / {+m}{+s}{i}		{+m}{±s}{-i}	