Phono-semantically Motivated Lexical Patterns: Evidence from English and Modern Greek

Elizabeth Mela-Athanasopoulou

Generally, linguistic theory assumes that the association between sound and meaning is essentially arbitrary: a meaning can theoretically be represented by almost any set of sounds in a language. This study, however, will show that linguistic signs appear to be less arbitrary and their meaning highly motivated by their sound. In particular, of the sound-symbolic forms, as exposed in Hinton et al (1994), I will confine myself only to those referred to as phonaesthemes (Firth, 1930). In Mela-Athanasopoulou (2001), I argued that phonaesthemes do meet the criteria for being full morphemes, due to their ability to recur with the same meaning at the same position operating as root-forming elements. Here, I will provide a more detailed analysis of the multiple parameters of expressive elements in both English and Modern Greek and indicate that the semantic features of such forms are more evaluative and subjective as well as language specific.

Introduction

Linguistic theory must accommodate itself to the fact that sound and meaning can never be fully separated. Rather, human language has aspects where sound-symbolic form and meaning are highly correlated. The question, now, is "How arbitrary is language form? Or, to what extent can the form of language be tied to meaning?" I hope this paper will contribute substantially to answering this age-old question.

The sound-meaning association was a commonplace of Greek philosophical thought, especially among the Greek Stoic philosophers, the so-called *naturalists* who maintained that words were naturally appropriate to the things they signified, that is, they possessed their meanings by nature (φύσει), by virtue of an intrinsic correspondence between sound and meaning. In other words, the sounds of words were imitations of particular natural activities, such as flying or flowing movement, for instance, as in the English *fly, flee, flow, flutter, flicker*, and the Greek *φλέβα* "vein",

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φλόγα "flame", *φλέγω* "burn", *φλοίσβος* "lapping", *φλύαρος* "chatty". In a dialogue on language between Socrates and Hermogenes in Plato's *Cratylus*, the question of form and sense is raised and it is agreed that, indeed, the meaning of a word is naturally appropriate to its sound, i.e., the phonetic shape of a word is naturally linked to its meaning. I quote Plato, cited in Hinton et al (1994:1):

> Hermogenes: I should explain to you, Socrates, that our friend Cratylus has been arguing about names; he says that they are natural and not conventional; not a portion of the human voice which men agree to use; but that there is a truth or correctness in them, which is the same for Hellenes as the barbarians.

The opposite philosophical school, the conventionalists, on the other hand, held that the meaning of a word is a matter of tradition and convention, a kind of linguistic contract (θέσει) (Ullmann, 1972:80), i.e., the relation between form and sense is purely arbitrary. And this arbitrariness is disputed with this study whose main scope is to show that conventional sound forms or phonaesthemes may constitute a phonetic-semantic intrinsic unity.

Phonaesthemes

The morphemic status of phonaesthemes

As mentioned earlier, the term phonaestheme was coined by Firth (1930) to show the correlations of certain word initial or word final phonemes with meanings, e.g., the *fl-* of *flame, flash, flag, flake, flap*, etc., meaning movement. And he claimed that people are affected by initial and final phone groups, and "the more consistently similar sounds function in situations having a similar affective aspect, the clearer their function. In this way, then, *sl-* can be said to be "a pejorative phonetic habit" (Firth, 1930:51). In other words, the phonaesthemic function of these clusters lies in the correlation between their sound and certain "common features of the contexts of experience and of situation in which they are used" (Firth, 1957:44). This sound-meaning association is most eloquently described by Bloomfield (1895): "Every word, in so far as it is semantically expressive, may establish, by haphazard favoritism, a union between its meaning and any of its sounds" (Bloomfield, 1895: 409–410).

Similarly, Aronoff (1976:8) agrees that words like *slurp* and *quack* are said to be partially motivated (non-arbitrary), despite the fact that in his definition of the morpheme he stresses its arbitrariness. "There is nothing in the sound which indicates its meaning and vice versa. What is important is not its meaning but its arbitrariness" (Aronoff, 1976:15). Of course, such a sceptical view of the arbitrariness of the relation between sound and meaning was the tenet of modern linguistics until recently (de Saussure, 1959 [1916]; Nida, 1949; Weinreich, 1953; Jensen, 1990; et al.). On the other hand, a number of linguists have pointed out quite interesting sound-meaning correlations (Bloomfield, 1933; Householder, 1946; Bolinger, [1968] 1975;

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Marchand, 1969; Adams, 1973; and quite recently Hinton, Nichols and Ohala, 1994; Hamano, 1998; Mela-Athanasopoulou, 2001; et al).

Unlike clear cases of onomatopoeia, which are more or less similar, cross-linguistically, phonaesthemes are largely language-specific regarding their phonetic shape, and as such they cannot be objectified (cf. the English *sl-* and the corresponding Modern Greek (MG) *γl-*, in *slimy-γλοιώδης γlioδis*). The common sound-meaning correspondence of different languages could provide important evidence of linguistic kinship (Adams, 1973:145). In this study, we will show that, at least to some extent, there is a good number of words both in English and Modern Greek whose meaning is motivated by the same symbol.

Now, despite the scepticism on their status as morphemes (e.g. Rhodes, 1995: 276 characterises them as sub-morphemic entities), in Marchand (1969) they are exhibited as segments of words with a morphemic status; and in Bloomfield (1933: 245) they are described as "a system of initial and final root-forming morphemes, of vague signification", with which the "intense, symbolic connotation of such terms is associated".

Similar sound sequences seem to meet the criteria for morpheme identification as they constitute "a minimal phonetic-semantic unity internal to larger forms" (Anderson, 1992:49). For example, in a sequence such as *gl-* in *glow, glisten, glitter, glimmer*, etc., by removing *gl-* we are left with meaningless remainders *-ow, -isten, -itter* and *-immer,* which nevertheless may occur in different environments as in *blow, listen, bitter*, and *simmer*. One could make the assumption that sequences such as *gl-* or *fl-*, for instance, resemble two other categories of partially motivated forms such as the hapax legomena morphemes (Aronoff, 1976:10) occurring only once with particular words (e.g., *cranberry*); or the so-called Latinate words consisting of Latin or Greek origin stems and prefixes, as in *insist, assist, consist*, etc.:

> Latinate roots such as *-sume, -ceive, -duce, -mit, -fer* in the respective occurrences combined with *re-*, for example, as in *resume, receive, reduce, remit, refer*, etc., have achieved morpheme status because of their ability to appear in new contexts but never with the same meaning (Mela-Athanasopoulou, 2001:183).

Under this light, the morpheme has been considered as a primarily structural rather than a semantic unit. However, the *gl-, fl-, sl-* sequences differ from both categories in the sense that whereas there is no deducible meaning in either *cranberry* or *commit*, in the phonaesthemic words *slime, slush, slobber, slick*, and the MG equivalents *γλύνα, γλοιώδης, γλυφός, γλυστερός*, there is some kind of "associative sensory based meaning" (Joseph, 1998:360) for both *sl-* and *γl-* standing for "smoothly wet" and in general, a negative connotation. Assuming now that the initial constituents of phonaesthemic words are elevated to morphemic status, it follows that the remaining elements of these words must be morphemes, too:

> When we identify a morpheme within (but not co-existive with) some word, it should follow that the residue after extracting this morpheme is another morpheme (or

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> sequence of morphemes). If this residue occurs nowhere else the result is a so-called "bound morph" (Anderson, 1992:49).

In this sense, then, the morpheme becomes an indivisible unit of phonetic or phonological form with or without a unitary meaning. Here the opinions of most linguists seem quite diversified: for Adams, in terms of formal grounds, *gl-* or *fl-* can be considered morphemes because of their ability to appear in new contexts (e.g., *glare – flare*). But their residues "have no claim to separate status at all. [...] It would therefore be awkward to say that fl- represents a morpheme, even though we can argue that it has a kind of meaning" (Adams, 1973:141).

Marchand, on the other hand, believes that phonaesthemes "have developed morphemic character due to the more or less accidental grouping of semantically related words. [...] They differ from full morphemes in that they combine into units which are not syntagmas in a grammatical sense, but monemes (one-morpheme words)" (Marchand, 1969:403). In the same line, Bolinger considers both the initial consonant clusters and their remainders as morphemes in terms of their productivity due to the fact that they may constitute "principal ingredients of new words" (Bolinger, 1975:219).

In a previous paper (Mela-Athanasopoulou, 2001), I gave morphemic value to phonaesthemes due to their ability to recur with the same meaning and function at the same position operating as root-forming elements. I adopted Aronoff's view of partial motivation or non-arbitrariness of phonetically symbolic words, i.e., "words whose meanings can be partially, but not completely, derived from meanings of their parts" (Aronoff, 1976:8). I argued that native speakers of natural languages may have some sort of schema whereby associations of certain phonetic shapes (e.g., *sl-, gl-, -ag,* etc.) with those of other already known words, allow them to make fairly accurate predictions (of their meaning). For example, a native speaker of English may be drawing analogies between root initial and root final clusters with known phonetic combinations.

Phonaesthemes as meaning-carrying composite roots

In this study, phonaesthemes have been characterised as phono-semantic lexical patterns in the sense that they focus upon fixed relationships between phonological units and abstract semantic units, i.e., the natural connection between the symbol and what it stands for, that is iconicity. And it is this belief in the naturalness and rightness of words or their composite segments as representatives of meaning that is probably at work in phonaesthetic association and creation. In this sense phonaesthemes play a significant role in word formation. And whereas in true or primary onomatopoeia, in Ullmann's words, "the sound is truly an echo to the sense: the referent itself is an acoustic experience [...] imitated by the phonetic structure of the word" (Ullmann, 1972:84), in the case of phonaesthemes, "the sounds may evoke an experience (not necessarily acoustic), or contexts of experience and of situation

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in which they [the phonaesthemes] are used" (Firth, 1957:44). For example, fricatives are used for audible motion of an object through air, nasals for reverberating sounds, etc., as will be shown further on in this section with data from both English and Modern Greek.

I will start my description of phonaesthemes based on the assumption that they constitute composite roots, a fact that differentiates them from synaesthemes, which can also be designated affixes (e.g. diminutives) as has already been shown. The key in my analysis is that in terms of their distribution, they may occur either root initially or root finally as segments of the root itself, i.e., the root is visualised as a composite of two morphemic elements, the initial symbol (consonant cluster) and its residue, or the final symbol (vowel-consonant cluster) and its preceding residue as is shown in figures 1 and 2.

Fig. 1 CC-x Fig. 2 x-VC(C)

where CC stand for a consonant cluster preceding x vowel(s); and
VC(C) is a vowel-consonant sequence following x consonant(s).

Consider the cross-linguistic correspondences between English and Modern Greek in the data of 1–17 collected from *The Concise Oxford Dictionary* (1999) and Tegopoulos-Fytrakis (1998) and then tested for general meaning correspondence (exact translation was rather rare) in a series of workshops with Greek students of the English Department, Aristotle University. With all the items of 1–17 Figure 1 has been applied.

	phonaestheme		meaning	English (E)	ModGreek (MG)
1	E	MG	'smoothly wet, slippery, sticky; in general, something with negative connotation'	*sl-ime,* *sl-ip,* *sl-ush*	*γλ΄-ίτσα* 'grime' *γλ-υστρώ* 'slip; slide' *γλ-οιώδης* 'slimy; clammy'
	sl-	γl-			
2	fl-	fl-	'running air or liquid or motion'	*fl-ame,* *fl-ash,* *fl-y,* *fl-ap,* *fl-ood*	*φλ-όγα* 'flame' *φλ-έγω*'burn' *φλ-οίσβος* 'lapping' *φλ-έβα* 'vein'
3	kr-	kr-	'noise; harsh noise'	*cr-ack,* *cr-ash,* *cr-unch,* *cr-ag*	*κρ-ότος* 'noise' *κρ-άζω* 'cry' *κρ-οτώ* 'crack' *κρ-ούω* 'knock'
4	sk-	sk-	'quick movement'	*sc-atter,* *sc-amper,* *sc-our*	*σκ-ορπώ* 'scatter' *σκ-ίζω* 'tear' *σκ-άζω* 'burst'

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	phonaestheme	meaning	English (E)	ModGreek (MG)
5	skr- sk-	'harsh, grating noise, often unpleasant'	*scr-ap,* *scr-ape,* *scr-atch*	*σκ-άβω* 'dig' *σκ-απάνη* 'mattock' *σκ-επάρνι* 'hammer'
6	sp- vl-	'eject'	*sp-ike,* *sp-it,* *sp-atter,* *sp-ate*	*βλ-αστός* 'sprout' *βλ-αστάνω* 'sprout' *βλ-ήμα* 'missile'
7	spr- pl-	'spread'	*spr-awl,* *spr-ead,* *spr-ee*	*πλ-αταίνω* 'widen; spread' *πλ-άτος* 'platitude' *πλ-αδαρός* 'flabby' *πλ-ανιέμαι* 'hover'
8	st- st-	'stability, firmness, fixed position'	*st-able,* *st-agnant,* *st-ance,* *st-and*	*στ-αθερός* 'stable' *στ-άσιμος* 'still' *στ-άση* 'position' *στ-ύλος* 'column' *στ-έκομαι* 'stand'
9	pl- pl-	'dull impact, esp. in connection with water'	*pl-acid,* *pl-op,* *pl-unge*	*πλ-έω* 'sail' *πλ-ατάγισμα* 'lapping' *πλ-ατσαρίζω* 'dabble'
10	str- str-	'motion, usu. backwards'	*str-ipe,* *str-ide,* *str-etch*	*στρ-έφω* 'turn' *στρ-εβλώνω* 'turn' *στρ-ώνω* 'spread with motion'
11	tr- tr-	'trembling sound or motion'	*tr-emble,* *tr-emor,* *tr-ill*	*τρ-έμω* 'tremble' *τρ-εμούλιασμα* 'trembling' *τρ-εμούλα* 'trembling'
12	gr- gr-	'noise; bad-tempered condition'	*gr-ate,* *gr-avel,* *gr-umble,* *gr-ouch,*	*γκρ-εμίζω* 'hurl down' *γκρ-εμός* 'cliff' *γκρ-ινιάζω* 'grumble'
13	ch- ts-	'act of breaking, biting, cutting sth into small pieces; or the result of sth cut, chopped off, etc.'[1]	*ch-op,* *ch-unk,* *ch-amp,* *ch-ap,* *ch-ip*	*τσ-ακίζω* 'crack' *τσ-εκούρι* 'axe' *τσ-απίζω* 'dig' *τσ-άπα* 'spade'

[1] For a detailed description of MG ts- see Joseph, 1994:222.

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14	gl- l-	'glowing; shining'	*gl-ow,* *gl-amour,* *gl-eam*	*λ-άμπω* 'glow' *λ-άμψη* 'glamour' *λ-αμπυρίζω* 'gleam'
15	sn- sn-	'breath noise; quick separation or movement or creeping'	*sn-iff,* *sn-ore,* *sn-ort,* *sn-ap,* *sn-ake*	Only loan words in ModGreek, e.g. *σν-ομπ* and the archaic root σέρπ- > ἑρπ- 'creep'
16	sm- zm-	'breathing; sense of smoke, blur, suffocation'	*sm-ell,* *sm-oke,* *sm-other*	*σμ-ήνος* 'swarm'
17	θr- θr-	'smash to small pieces; violent movement; continuous noise or chatting'	*thr-ash,* *thr-ow,* *thr-ill,* *thr-ob,* *thr-ust*	*θρ-υμματίζω* 'smash' < archaic θρ-ύπτω 'smash' *θρ-αυστός* 'fragile' < Ancient Greek *θρ-ώσκω* 'throw with force' *θρ-ώισμα* 'continuous sound' *θρ-ύλος* 'legend' < (archaic) *θρ-υλέω* 'whisper'

From this material (1–17), we can formulate the following observations: Firstly, all the items are normally one-syllable or two-syllable phonaesthemic words which are phono-semantically motivated by the root initial consonant cluster: sl-/ γl-, standing for "smoothly wet"; fl- / fl-, standing for "moving light or liquid". Thus, all the CC-x sequences occur with the same meaning and in the same position (root initially) in terms of their distribution, a fact which is one of the principles of morphemehood (Jensen, 1990:34). Secondly, the semantic expressiveness of all the CC-x patterns is not always realised by identical phonaesthemes in the two languages, as is shown in pairs such as E *sl-* / MG *γl-*, *sl-imy* ∪ *γl-ιοδis*, E *fl-* / MG *pl-*, *fl-oat* ∪ *pl-eo*; E *spr-* / MG *pl-*, *spr-awl* ∪ *plateno*, E *sp-* / MG *vl-*, *sp-ike* ∪ *vl-astos*, E *gl-* / MG *l-*, *gl-ow* ∪ *l-ambo*.

Finally, there are phonaesthemic sounds which are non-existent in one of the two languages due to their morphophonemic rules. For example, initial *ps-, pn-, kn-,*[2] *mn-*, in English, loans from MG, have become unintegrated, by dropping the first of the two consonant sounds (cf. *psycho-, pneumonia, know, mnemonic*, etc.) and thus losing their phonaesthemic value (i.e., meaning); whereas the same sounds in MG

[2] For example, the word *know* is etymologically related to Gr. *γιγνώσκειν*, L. (*g*)*noscere* and (*g*)*novisse*, F. *connaître* < L. *cognoscere,* Ger. *können* and *kennen* "to know by the senses" (*The Compact Edition of the Oxford English Dictionary*, Vol. I, 1971:1549; also, in Konteos, 1994:162–63), Gr. *γιγνώσκω* "I know" derives from the root *kn-/gn-*; *γν-* < *ν-* < *νό-os* "brain".

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do function as phonaesthemes (cf., *ps-ichros* "cold", *pn-euma* "spirit", *pn-oi* "breath", *pn-iyo* "cease breath", *kn-ismos* "itching", *tsukn-iδa* "plant that causes itching", *mn-imi* "memory", etc.). Similarly, sounds such as *sn-*, heard as [zn-], and *sl-*, in MG, occur only in loan words without any phonaesthemic value, e.g. *snob, slavos* "Slav" (Philippaki-Warburton, 1997:10).

On the other hand, in most of the CC-x sequences exhibited in the data, there is an exact correspondence between the two languages. Interestingly, Ullmann speaks of word formations expected to be similar across languages. "This is actually so in many cases, best known among them the names of the cuckoo [...]: French *coucou*, Spanish *cuclillo*, Italian *cuculo*, Rumanian *cucu*, Latin *cuculus*, Greek *κόκκυξ*, German *kuckuck*, Russian *kukushka*, Hungarian *kakuk*, Finish *käki*, etc." (Ullmann, 1972:86).

Moving on, we notice that root-final phonaesthemes of Fig. 2 x-VC(C) are unlikely to occur in MG due to the WFRs of the language (Ralli, 1986:32). I will return to this issue later in this study. Let us consider the application of Fig. 2 with the English data in 18–25.

	phonaestheme	meaning	example in English
18	-ag	'slow, tired or tedious action'	*f-ag, s-ag, dr-ag, l-ag*
19	-ump	'clumsy, awkward'	*b-ump, h-ump, d-ump, l-ump.*
20	-atter	'short knocking sound'	*b-atter, cl-atter, ch-atter*
21	-url / -irl	'turn; twist, change direction'	*c-url, f-url, wh-irl*
22	-ash	'violent movement'	*b-ash, cl-ash, d-ash, sm-ash*
23	-are	'strong light or noise'	*bl-are, gl-are, fl-are*
24	-ip	'quick movement'	*cl-ip, sk-ip, sl-ip*
25	-id	'dull, unpleasant impact, lack of interest and movement'	*ar-id, pall-id, ranc-id, sord-id*

In all the items 18–25 the x-VC(C) phonaesthemic formation always obtains root final position and is steadily semantically motivating. The data were tested with University students at London University, SOAS Linguistics Department, all native speakers of English.

Now, returning to the claim I made earlier regarding root final phonaesthemes and the improbability that such a phenomenon occurs, I can only argue that, being a stem language, MG produces new words from a stem and a sequence of derivational and inflectional suffixes. Thus, concerning the utmost part of the root, one can talk only of synaesthemic suffixes[3] in MG rather than phonaesthemic rhyming roots in the sense of Marchand's rhyme derivation (Marchand, 1969: 419). As already mentioned in this study we can only speak of designated suffixes functioning as synaesthemes, ie, with a sound-symbolic meaning. These are

[3] I used the term phonaesthemic suffixes in Mela-Athanasopoulou, 2001:189.

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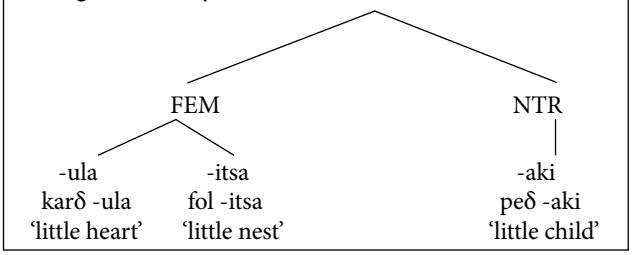
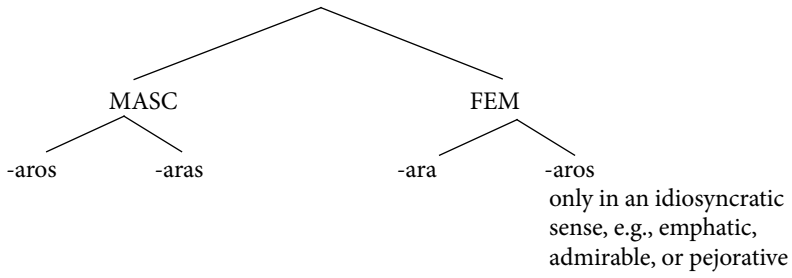
diminutives, associative of the idea of "smallness or endearment and tenderness", and augmentatives associated with the notion of "enormity or contempt".

Fig. 3 MG Synaesthetic Diminutive suffixes



MG feminine name suffix -ula:[4] e.g. V-ula, R-ula, S-oula, K-ula, N-ula.

Fig. 4 MG Synaesthetic Augmentative suffixes



Both diminutives and augmentatives constitute the so-called emotionally expressive synaesthemes. Such synaesthemic morphemes involve the generalisation of a particular phonetic shape with a particular semantic effect, i.e., following a schema rather than a rule. Thus, for the MG *-ula,*[5] *-ara, -aros, -aki,* etc., the English

[4] The feminine name suffix *-ula* and to some extent *-itsa* (e.g., Kitsa, Litsa, Nitsa, etc.), are extremely productive. Of the two, -ula would attach to any MG consonant sound (with the exception of /δ/ (δ-ula meaning "servant") and produce a feminine name. Both suffixes have undergone attrition as diminutives (meaning "smallness or endearment") because they have lost their synaesthemic value.

[5] The masculine diminutive suffix *–ulis* is marginally used and only with forms of either kinship, e.g. *aδelfulis* "little brother" or certain adjectives, e.g. *mikrulis* "tiny".

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counterparts will roughly be *-let, -ling,* or *-ie,* e.g., *booklet, princeling* and *girlie.* Interestingly, the notions of smallness and endearment may be expressed in English by the phonaesthemic morpheme /i:/ (long front vowel), e.g. *teeny, weeny*, etc. In MG, on the other hand, the picture is enormous due to their affixal nature, i.e. behaving like full morphemes and being extremely productive. What is interesting here is that their productivity is attributed to their phonetic shapes.

Another area of phonaesthemic function is the phenomenon of reduplication in both English and MG. Though extremely productive in non-European languages, it is marginally productive in English and idiosyncratically used in MG. Consider the data below:[6]

English	Modern Greek		
Partial reduplication (vowel alteration) (Bloomfield, 1933:243)	Only in Perfect Participles. Reduplication of the initial consonant plus the vowel /e/.		
ding-dong	βε-βιασμένος	ve-viasmenos	'forced'
snip-snap	τε-τριμένος	te-trimenos	'well-worn'
sniff-snaff	πε-πεισμένος	pe-pismenos	'convinced'
see-saw	δε-δηλωμένος	δe-δilomenos	'declared'
flim-flam	δε-δομένος	δe-δomenos	'given'
dilly-dally	τε-τελεσμένος	te-telesmenos	'finished'

Conclusion

Concluding, I have shown in this study that the lexicon does not contain only arbitrary signs; it also contains words whose structure is phono-semantically driven. Languages such as English and Modern Greek may have small classes of such words, but there are also languages, like Japanese for instance, with large classes of phonaesthemes (Hamano, 1998). We have also shown that the expressive elements of the lexicon are morphemes for sense impression such as onomatopoeias, synaesthemes and phonaesthemes, and we have made their distinction clear. The particular root forming elements in both languages are sound symbolic in the sense that they clearly motivate meaning, despite their specificity and subjectivity cross-linguistically (cf. The E *sl-* / MG *γl-* counterpart). Moreover, such lexical patterns not only motivate meaning but can also be indicative of syntactic features, such as word category. Sereno (1994) has demonstrated this for the part-of-speech symbolism in English. There are great possibilities for future research. Reaction time experiments (Hinton, Nichols and Ohala, 1994) show that for humans correct judgements about the meanings of words are faster for sound-symbolic words than for arbitrary words.

[6] In Classical Greek, reduplication was the rule for the formation of all the perfective forms of the verb.

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I hope I have answered the question I posed at the beginning of this paper "How arbitrary is language form?" Phonaesthemes show that meaning and sound cannot be separated. What remains to be investigated is to study how people of different cultures use phonaesthemes as a word formation mechanism differently.

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