Phonaethemes: evidence from English and Modern Greek

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ABSTRACT
A problem which morphological theory has left unsolved is the status of phonaesthetic elements, the so called phonaesthemes (Firth 1930) which can be classified on the basis of the initial consonants, vowels or final consonants of words, associated with a common component of meaning. For example, the sl- and the pl- sequence in English and Modern Greek respectively, are consistently associated with a particular semantic content, that of 'smoothly wet, slippery; sticky' and in general, something with a negative connotation, (e.g. slime, slither, slip, slick, slobber, slug, etc. and the Modern Greek ylifo 'lick; suck', ylistro 'slip', ylisteros 'slippery', ylios "slimy", and ylitsa 'grime', etc.). These phonaesthetic properties of words, also referred to as onomatopoeic sounds, have been marginally investigated by linguists. They have been referred to as meaningful sub morphemic segments (Weinreich 1953), signs whose sounds have some intrinsic non-arbitrary connections with their meanings (Aronoff 1976) and sensory-based associative meanings (Joseph 1998).

In this study, we will attempt to show that phonaesthemes to a certain limited extent, do meet the criteria for being full morphemes in the sense that they constitute a minimal phonetic-semantic unity (Bloomfield 1933: 161) or a minimal same of form and meaning - an indivisible stretch of phonetic (or phonological) material with a unitary meaning (Anderson 1992: 49). All these properties will be tested on data drawn from both English and Modern Greek.

SECTION I.
Terms like phonetic symbolism and onomatopoeia may be closely associated with word formation cross linguistically in the sense that they constitute "a system of initial and final root-forming morphemes" (Bloomfield 1933: 245).

Sound-symbolic forms, the otherwise features of literary expression in poetry and literature in general, are based on man's ability to use speech sounds in order to express feelings (expressive symbolism: Marchand 1969). The sound-meaning relationship 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, i.e. the sounds of words were imitations of particular natural activities such as flying or flowing movement as in the English fly, flee, flow, flutter, flicker, and the Greek fleva ‘vein’, floya ‘flame’, fleyo ‘burn’, flesvos ‘lapping’, flicheros ‘chatty’.

In a dialogue on language between Cratylus and Plato, says Lyons (1968: 4), the question of meaning and form was raised and it was supported that the meaning of a word was ‘naturally’ appropriate to its sound. In other words, the phonetic shape of a word was ‘naturally’ linked to its meaning. Thus, words appeared to be (a) either imitative of the sounds they referred to, i.e. noises and sounds perceived through senses (direct imitation), for example, words relating to the noises made by animals (e.g. moo, mew, cuckoo, etc.) or (b) speech sounds emotionally expressive, such as words containing the high front vowel /i:/, teeny, gee gee, as well as those ending in a diminutive suffix, such as -let, -ling, and -ie (booklet, catling, girlie) and the Greek counterparts -aki, pedaki ‘little child’, -ula, limnula ‘little lake’, -itsa folitsa ‘little nest’.

Moreover, it would seem safe to say then, that certain sounds are particularly appropriate to suggest certain natural effects. Words like squeal, crack, creep, scratch and graze seem to be especially suited to their meanings. And this is because the actual sound is somehow imitated by the phonetic structure of each word: /skw/ /ktr/ and /grt/ all denote harsh, grating, and discordant sounds. In this light then Onomatopoeic words formed the nucleus of the vocabulary (Lyons 1968: 5). And the very term onomatopoeia 'the creation of names' showed that originally words were imitative of the things they named, i.e the name of the word was the exact rendering of the corresponding noise and its relationship with its meaning was non-arbitrary. To quote Aronoff (1976: 8) "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 dictates its meaning, and vice versa .... What is important is not its meaning, but its arbitrariness" (p. 15). Of course, a similar view was earlier supported by de Saussure (1959 [1916]), Nida (1949), Weinreich (1953), Jensen (1990), et al. in general, as I have already said at the beginning of this talk, apart from a few exceptions, e.g. Bloomfield (1933), Bolinger ([1968] 1975), Marchand (1969) and Adams (1973), the onomatopoeic or phonaesthetic properties of words have been marginally investigated. Following Marchand (1969), I will try to show that segments of words obtaining an initial, final or middle position may gain morphemic status and be useful in word formation. Their morphemic status will be tested by Aronoff’s criteria for morpheme identification (minimal sign, constant form, constant meaning, but also arbitrariness or non-arbitrariness and partial
motivation). In parallel line, I will show that expressive symbolism (sounds emotionally expressive) finds solid ground in diminutive suffixes in both English and ModGreek as well as in ModGreek augmentative suffixes.

SECTION II.
In analyzing a language, we are supposed to collect a large corpus of data, i.e. utterances, and then identify the similarities among them, while also determining which utterances contrast with one another. The main principle of such an analysis is that "non-identical utterances may still be partially similar to one another in both form and meaning" (Anderson 1992: 49). A basic task of morphological analysis is thus to identify and characterize these similarities. The minimal primitive unit (in the sense of elemental) of morphological analysis is the morpheme — "a linguistic form which bears no partial phonetic-semantic resemblance to any other form" (Bloomfield 1933: 161). Such a definition regards, for example, -sume of consume, presume, assume, and its allomorph — sumpt of consumption, presumption assumption, as a morpheme, since it occurs in multiple combinations, even though -sume has no meaning by itself. The thrust of this comment is that 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. "There is no meaning which can be assigned to any of those stems and combined with the presumably constant meanings of the prefixes in a consistent way to produce the meanings of all the verbs in that stem" (Aronoff 1976: 12). Under this light the morpheme has been considered as a primarily structural rather than a semantic unit. All the afore-mentioned roots are clearly constant phonetic strings related to a linguistic entity outside that string. Both the roots and the prefixes they combine with are meaningless morphemes. The meaning is determined by each one individual verb arbitrarily, i.e. without any phonetic motivation. Now the fact that they have an identical phonemic form in all their occurrences so that they can become recognizable has made it possible for them to acquire morphemehood.

A problem which the structuralist approach has left unresolved but which has nevertheless been mentioned in the literature of the period is the status of phonaesthemes. Phonaesthemes or sound-symbolic forms are usually considered to be features of literary expression (e.g. poetry or serious imaginative literature). It is true that a comparatively limited number of words in English and Modern Greek are onomatopoeic, i.e. words which have to do with sound or movement and whose meaning is motivated by the sound ("direct imitation": Marchand 1969: 397) - as has already been mentioned. This means that to a certain quality of sound there necessarily
corresponds a certain linguistic symbol. For example, a vibrating sound can be rendered by nasals as well as by the sounds /r/ and /l/ only. A hissing, rustling, sighing or whispering sound will be rendered by /s/, and so on. Onomatopoeia then in its literal sense refers to the purely imitative power of the language. And onomatopoeic effects are attributable to the general 'colour' of sounds as being 'hard' or 'soft' and 'thin' or 'sonorant' (Leech 1969). Although judgment of whether a sound is hard or soft is absolutely subjective, it seems that 'there is enough general agreement on such associations to form the basis of a general system or 'language' of sound symbolism (Leech 1969: 98). Additionally, sound symbolism is a common phenomenon across languages and in particular non-IE languages, Korean, for example, has over a thousand words that are sound - symbolic ... and correspondingly large onomatopoeic vocabulary also occurs in Japanese (Crystal 1987: 174). According to Ullmann (1962: 84) "The referent itself is an acoustic experience which is more or less closely imitated by the phonetic structure of the word". Such phenomena Ullmann sees as language universal. For instance, the association between the sound /l/ and the idea of softness is common in several languages. Leech has listed classes of English consonants impressionistically on a scale of increasing hardness as is shown in Table 1. But let us consider Figure 1 first referring to the division of the English consonants.

**CONSONANTS**

- **SONORANT**
  - NASAL: (m, n, ñ, l, r, j, w)
  - (m, n, ñ)
  - (l, r, j, w)
  - (Vd)

- **ORAL**
  - (p, b, t, d, k, g, ñ, ñ, f, v, θ, ð, h, s, z, ñ, ñ, 3)
  - (p, b, t, d, k, g)
  - (f, v, θ, ð, h, s, z, ñ, ñ, 3)

- **STOP**
  - (p, b, t, d, k, g)
  - (f, v, θ, ð, h, s, z, ñ, ñ, 3)

- **FRICATIVE**
  - SIBILANT: (ñ, ñ)
  - (ñ)
  - (Vd)

- **NON SIBILANT**
  - (p, b, t, d, k, g)
  - (s, z, ñ, ñ, 3)
  - (f, v, θ, ð, h)

- **CONSONANTS**
  - VLS
  - (ñ)
  - (ñ)
  - (p, b, t)
  - (d, k, g)
  - (s, z)
  - (ñ, ñ, 3)
  - (f, θ, h)
  - (Vd)

*Figure 1. Adapted from Sadanand, Singh and Kala S. Singh (1976: 36)*
Now consider Leech’s classification of consonants.

i. liquids and nasals: /l/, /l/, /n/, /ŋ/

ii. fricatives and aspirates: /v/, /ʃ/, /h/, /s/, etc.

iii. affricates: /ʧ/, /ʤ/

iv. plosives: /b/, /d/, /g/, /p/, /t/, /k/

Table 1. Adapted from Leech 1969: 98

Nevertheless, sound symbolism may become misleading in the sense that it implies a comparison of impressions from different senses. Von Humboldt, for example, leaves the issue unexplained when he says that "language chooses to designate objects by sounds which ... produce on the ear an impression resembling the effect of the object on the mind" (quote in Jespersen 1922: 396).

Moreover, sound-symbol association may differ from one language to another. According to Marchand, since every language has its own phonological system, onomatopoeic coining depends on the phonemes of the particular language. Words with the initial symbols sl-, for example, would be impossible in Modern Greek (actually there is only one word existing, the word slavos 'Slav' and its derivatives and a few loans from English such as slip, slogan, etc. according to Stavropoulos's Oxford ed. Dictionary 1998: 803). The exact counterpart is γl- having the same sense as that of sl-, i.e. smoothly wet and in general sticky or slimy or sliding association.

Now to deny altogether the word-formation power of onomatopoeic sounds is hardly possible. If we consider the fact that there is a good number of words both in English and Modern Greek whose meaning is motivated by the same symbol, then we cannot deny that the formation of new words could be prompted by the symbol. In other words the common sound-meaning correspondence of different languages may provide important evidence to linguistic kinship (Adams 1973: 145).

Moreover, even though sound symbolism may sometimes not be immediately obvious, there may still be lexical items which are onomatopoeic. In this study, we classified such items into a system of root-forming elements on the basis of either their initial consonants for both English and Greek or their final consonants together with the vowel preceding them, for English only as is shown in 1 below.

Also, a further classification of the sound - sense association was made according to the length of high front vowels in English, implying
smallness, e.g. teeny, weeny, wee, etc. and the corresponding ModGreek designated sound - symbolic diminutive suffix -akiₜᵣₑ.

1. Root-forming elements
word initial clusters of consonants in English (E) and Modern Greek (MGr)

<table>
<thead>
<tr>
<th>E</th>
<th>MGr</th>
<th>meaning</th>
<th>Examples</th>
<th>MGr</th>
</tr>
</thead>
<tbody>
<tr>
<td>sl-</td>
<td>γλ-</td>
<td>'smoothly wet; slippery; sticky'</td>
<td>slime, slick</td>
<td>ylioðis</td>
</tr>
<tr>
<td>fl-</td>
<td>fl-</td>
<td>'moving light'</td>
<td>flame</td>
<td>floya</td>
</tr>
<tr>
<td>gl-</td>
<td>lamb-</td>
<td>'unmoving light'</td>
<td>glow</td>
<td>lambo</td>
</tr>
<tr>
<td>kr-</td>
<td>kr-</td>
<td>'noise'</td>
<td>crash</td>
<td>krotos</td>
</tr>
<tr>
<td>sk-</td>
<td>sk-</td>
<td>'quick movement'</td>
<td>scatter</td>
<td>skorpiço</td>
</tr>
<tr>
<td>skr-</td>
<td>sk-</td>
<td>'grating noise'</td>
<td>scratch</td>
<td>skazo</td>
</tr>
<tr>
<td>pl-</td>
<td>pl-</td>
<td>'dull; placid'</td>
<td>platitude</td>
<td>platos</td>
</tr>
<tr>
<td>sp-</td>
<td>vl-</td>
<td>'jet movement'</td>
<td>plunge</td>
<td>plea</td>
</tr>
<tr>
<td>spr-</td>
<td>pi-</td>
<td>'spread'</td>
<td>spike</td>
<td>vlastos</td>
</tr>
</tbody>
</table>

Such 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, bitter, listen, simmer, etc. 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; or the so called Latinate words, referred to earlier in this study, consisting of Latin or Greek origin stems and prefixes as in insist, assist, commit, diagram, paraphrase, analysis, catastrophe, etc. (Aronoff 1976, Mela-Athanasopoulou 1999). However, the gl-, fl-, sl- sequences differ from both categories in the sense that whereas there is no deductible meaning in either cranberry or commit, in the phonaesthetic words slime, slush, slobber, slick, and the ModGreek equivalents γλινα, γλιοðις, γλιφος, γλιστερος there is some kind of associative sensory based meaning (Joseph 1998: 360) for both sl- and γl- standing for 'smoothly wet' and in general, negative connotation. Assuming now that the Initial constituents of phonaesthetic words are elevated to morphemic status, it follows that the remainders of these words must be morphemes, too. "When we identify a

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1 Diminutives in ModGreek are normally of neutral or feminine gender. Only very few of them are masculine and indicate kinship, e.g. adelfulis 'little brother'.
morpheme within (but not co-existive with) some word, it should follow that the residue after extracting this morpheme is another morpheme (or 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/is 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). Likewise, Nida rejects the morphemic value of such initial consonant clusters "on the ground that they do not occur ... with forms which occur in other combinations" (Nida 1949: 61). For the same reason, Jensen (1990) excludes their morphemic status because the remainders of [those] words are not morphemes. In other words you cannot isolate a morpheme in a word that leaves the rest of the word stranded, with no morphemic content (Jensen 1990: 34).

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) (p. 403). In the same line, Bolinger considers both the initial consonant clusters and their remainders as morphemes in terms of their productivity in the sense that they may constitute "principal ingredients of new words (Bolinger 1975: 219). We consider productivity here as an entity tied to certain phonetic shapes. In other words, the native speakers 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.

In our analysis based on both English and Greek data and subjects (10-11 year old English and Greek students) we would argue with Marchand and render morphemic value to phonaesthemes due to their ability of reoccurrence with the same meaning and function at the same position operating as root-forming elements. We would also adopt 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 the meanings of their parts (p. 8).
We will start our description of phonaesthemes based on the assumption that they constitute composite roots. The key in our analysis is that in terms of their distribution, they occur either root initially or root finally as segments of the root itself, i.e. the root is visualized 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 χ vowel(s); and VC(C) is a vowel-consonant(s) sequence following x consonant(s). Consider the data:

<table>
<thead>
<tr>
<th>la. CC-x</th>
<th>1b. CC-x</th>
<th>1.c</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>MGr</td>
<td></td>
</tr>
<tr>
<td>sl-imc</td>
<td>γl-itsa</td>
<td>'grime'</td>
</tr>
<tr>
<td>sl-ip</td>
<td>γl-istro</td>
<td>'slip; slide'</td>
</tr>
<tr>
<td>sl-ush</td>
<td>γl-ioðis</td>
<td>'slimy; clammy'</td>
</tr>
<tr>
<td>sl-oosh</td>
<td>γl-ifio</td>
<td>'lick'</td>
</tr>
<tr>
<td>sl-oppy</td>
<td>γl-ifos</td>
<td>'brackish'</td>
</tr>
<tr>
<td>fl-ame</td>
<td>fl-oya</td>
<td>'flame'</td>
</tr>
<tr>
<td>fl-ash</td>
<td>fl-eyo</td>
<td>'burn'</td>
</tr>
<tr>
<td>fl-y</td>
<td>fl-isvos</td>
<td>'lapping'</td>
</tr>
<tr>
<td>fl-ap</td>
<td>fl-eva</td>
<td>'vein'</td>
</tr>
<tr>
<td>kr-</td>
<td>kr-</td>
<td>'noise'</td>
</tr>
<tr>
<td>crack</td>
<td>krotos</td>
<td>'noise'</td>
</tr>
<tr>
<td>crash</td>
<td>krazo</td>
<td>'cry'</td>
</tr>
<tr>
<td>crunch</td>
<td>kroto</td>
<td>'crack'</td>
</tr>
<tr>
<td>crag</td>
<td>kruo</td>
<td>'knock'</td>
</tr>
<tr>
<td>creak</td>
<td>krio</td>
<td>'cold'</td>
</tr>
<tr>
<td>crisp</td>
<td>krimnizo</td>
<td>'hurl down'</td>
</tr>
<tr>
<td>sk-</td>
<td>sk-</td>
<td>'quick movement'</td>
</tr>
<tr>
<td>scatter</td>
<td>skorpo</td>
<td>'scatter'</td>
</tr>
<tr>
<td>scamper</td>
<td>skizo</td>
<td>'tear'</td>
</tr>
<tr>
<td>scour</td>
<td>sk- skazo</td>
<td>'burst'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.e</th>
<th>1.f</th>
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<tr>
<td>sk-</td>
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<th>1.e</th>
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<tbody>
<tr>
<td>sk-</td>
<td>sk-</td>
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</tbody>
</table>

'ejject'  'sprout'
'vl-astoso'  'sprout'
'sprout'
'damage'
'damage'
'blite; daft'
'missile'
'idiot'
'turn my eyes to see'
'grating noise'
'dig'
'mattock'
'hammer'
'loot'
"dull impact, esp. in connection with water"
'sail'
'lapping'
'platsarizo'  'dabble'
Phonaesthemes: Evidence from English and Modern Greek

skopelos  'reef

1.g
spr- pl- 'spread'
spread platos 'platitude'
sprawl plateno 'widen; spread'
gr- gr- 'noise'
grate gremizo 'hurl down'
gravel gremos 'cliff'

<krimnos

graze grafiti 'grafitti'
grade grafinia 'grizzling'
grenade <ital

(krup

grind gkrup 'group'

2. x-VC(C)
 -ag -ash -ump -are action' -atter
'slow, tired or 'violent 'strong light 'short
tedious action' movement or noise' knocking

sound'

2. a
f-ag b-ash b-ump gl-are b-atter
s-ag cl-ash h-ump fl-are cl-atter
dr-ag d-ash d-ump bl-are ch-atter
l-ag m-ash l-ump st-are sp-atter
sl-ash sl-ump sh-atter

All the items of 1a, 1b and 1c are normally one-syllable or two-syllable phonaesthetic words which in terms of meaning are partially motivated by the initial consonant cluster: sl-, gl- standing for 'smoothly wet', 'slippery' and in general a negative connotation as well as fl-standing for 'moving light or liquid and sp-, pl- meaning 'eject'. Thus, all the CC-x sequences occur with the same meaning and obtain the same position in terms of their distribution; one of the principles of morphemehood (Jensen 1990: 34).

Now with regard to Fig. 2, exemplified in 2a, only the English data are phonaesthetic words. The x-VC(C) sequence -ag and -ash, for example, implies 'a slow, tired, tedious action' and 'violent movement', respectively.

In Modern Greek, phonaesthemes of the x-VC(C) sequence, i.e. as a final symbol of the root are impossible to occur due to the WFRs of the language (Ralli 1986: 32). In other words, being a stem language, Modern Greek 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 phonaesthetic suffixes in Modern Greek and not phonaesthetic
rhyming roots (cf. Marchand, rhyme derivation). As such we can only refer
to both diminutive suffixes always associated with the idea of 'smallness or
endearment or tenderness' and augmentative suffixes associated with
largeness or enormity, shown in 3a and 3b.

3 a. Diminutive suffixes

<table>
<thead>
<tr>
<th>FEM</th>
<th>NTR</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ula</td>
<td>-itsa</td>
</tr>
<tr>
<td>kardula</td>
<td>folitsa</td>
</tr>
</tbody>
</table>

'little heart' 'little/loving' 'little child'

<table>
<thead>
<tr>
<th>FEM</th>
<th>MASC</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ara</td>
<td>-aro</td>
</tr>
<tr>
<td>yinekara</td>
<td>skilaros</td>
</tr>
</tbody>
</table>

'big dog' 'big woman'

Both diminutives and augmentatives constitute the so-called
emotionally expressive phonaesthemes, as has already been mentioned
earlier in this study. Such phonaesthetic morphemes involve the
generalization of a particular phonetic shape with a particular semantic
effect, i.e. following a schema rather than a rule. Thus for the Greek -ula, -
Usa, -aki the English counterparts will be -let, -ling, or -ie, e.g. booklet,
princeling and girlie. Clear-cut cases of phonaestemic morphemes indicative
of smallness are very few in English and expressed with a long front vowel /iː/, e.g. weeny, teeny. In ModGreek, on the other hand, the picture is large
due to their affixal nature, thus behaving like full morphemes and being
extremely productive. What is interesting here is that their productivity is
related to their phonetic shape.

CONCLUSION

While we cannot draw any firm conclusions from these results given
a relatively small number of both subjects and phonaesthemes, it may be that
other factors are at least as important as their sound - sense consistency,
factors such as the amount of competition a phonaestheme faces from other
word formation devices (e.g. affixation) in the language (i.e. their degree of
productivity). This is an area which clearly needs further investigation.

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