

The Fallacy of Discontinuous Morphemes In Semitics: Evidence from Arabic

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Abstract

The usual practice among linguists is to consider what is called in this article the stem in Arabic as two discontinuous morphemes: The root made up of radicals which carries the core meaning and the vocalic patterns which are basically formative devices interlocked with the radicals.

This article shows this approach to be inadequate and that it is more practical, less abstract and, therefore, more desirable to consider the stem to be one continuous morpheme.

Both traditional and modern linguists have described Arabic words as purely consonantal, usually consisting of three radicals and vocalic pattern which are basically formative devices for derivational purposes, and which are functionally interlocked with the radicals. The usual practice among linguists is to consider the root as one morpheme which has a core meaning, and the vocalic pattern another morpheme which has no effect on the core meaning. In other words, two discontinuous morphemes are postulated.

To quote zelling Harris:

Morphemes segments, in most languages, consist of phonemes in immediate succession, there are "however" morphemic segments consisting of non-contiguous phonemes, i.e., consisting of phonemes not in unbroken succession but interrupted by the phoneme of other morphemic segments one type of such mediate sequences may be seen in the root-morphemes and vowel-pattern morphemes of Semitic (Harris, 1957:285) Similarly Archibald Hill States:-

.....Still another class of nonsequential morphemes are the dove-tailed, discontinuous morphemes in Semitic tongues are often an unpronounceable abstraction consisting of three consonants, which are always united with the vocalic morphemes; grammatical in character and occurring between the consonants (Hill, 1958:101-102).

The aim of this article is to show that the usual practice of considering the stem as two discontinuous morphemes is inadequate, and it is better and more practical to consider the stem one discontinuous morpheme.⁽¹⁾

The main differences between the imperfect and the perfect stem of form I may be defined in terms of what Kurylowicz termed apophony (Kurylowicz, 1962:195). Specifically, this is an opposition between a short vowel and zero in the environment $C_1 - C_2 VC_3 -$. There is also a contrast between the perfect and the imperfect in the stem vowel,⁽²⁾ i.e. the vowel after the first radical. The stem vowel may be one of the three possible stem vowel (i,u,a). These must be learned for each form.

Normally, there is only one stem vowel per root. As stated elsewhere, the stem vowel of the perfect can be predicted from the stem vowel of the imperfect, but the stem vowel of the imperfect can not be predicted from the stem vowel of the perfect with as much certainty. Also, the vowels of the derived forms and passive forms can be predicted from the stem of the imperfect (Mahadin, 1982).

Accordingly, there is only one form, the imperfect, in which the vocalism of (C_2), i.e. the stem vowel, is an arbitrary lexical fact, not determined by the phonological shape of the root, and it should be learned individually.

From the above discussion, it is clear that the root itself does not provide evi-

dence to predict the phonemic representative of lexical items except for some derived forms. The minimal stem necessary to decide the morphemic shape of most lexical items must consist of the root and the stem vowel. This can be used as citation form or lexeme in compiling Arabic dictionaries. Evidence for this claim is supplied by the fact that if just the consonantal is taken as the basic form for lexemes, a number of ambiguities result. This is because there are certain lexical items which share the same consonantal root, but their meanings are by no means related. This applies not only to verbs, but also to other parts of speech as the following examples show:-

(laʔuma) "be ignoble"	(salla) "Pullout"
(laʔama) "repair"	(sulla) "have tuberculosis"
(wajada) "find"	(nabala) "shoot arrows"
(wajuda) "love"	(nabula) "be noble"
(saHaqa) "crush"	(8arf) "perfume, fragrance"
(saHuqa) "be far"	(8urf) "beneficence"
(Hasaba) "reckon"	jalada "whip"
(Hasiba) "regard, consider"	jalida "be frozen"
(Hasuba) "being of noble origin"	jaluda "be tough"
(Jimāl) "camels"	(Xall) "vinegar"
(jamāl) "beauty"	(Xill) "friend"
(ša8ar) "hair"	(š8ab) "people"
(ši8r) "poetry"	(Si8b) "mountain path"
(8arb) "width, presentation"	Pl. (8urúd)
(8ird) "honor"	Pl. (?a8rād)
(8urd) "side, middle"	
(8arad) "accident"	Pl. (?a8rād)

From these examples, it is possible to find a large number of lexical items which share the same root but differ at least in one vowel which is responsible for the exact denotation of such lexical items in combination with root, and it is not as claimed that the root gives the meaning and that the vowel is mainly to specify the grammatical function of roots. So, it is impossible for any person to decide the meaning just from the root without resorting to the vowel patterns.

It should be noted that the two discontinuous morphemes approach does have some advantages and is, in a sense, correct. However, describing Arabic stems as one continuous morpheme is more efficient, since it explains a number of other phenomena in the language which the approach using two discontinuous mor-

phemes can not. The following are some of these facts which are difficult to explain if the two morphemes analysis is adopted.

First of all, the root by itself is an abstraction. It is unpronounceable by itself and has one or sometimes several meanings. This homophony can be avoided if we consider the root to be the consonants in combination with the stem vowel. However, even if we assume that all verbs sharing the same root could, perhaps, be considered to have some slight degree of semantic relationship with each other, although it is not always obvious, but the lexical value of the stems that occur show enormous variety. Therefore, any attempt to identify the shades of meaning associated with particular roots can be only very imprecise, and that meaning can not be identified unless vowels are provided, and specific words may be defined only in association with a particular vowel pattern.⁽³⁾

Another difficulty with the traditional approach is with certain affixes. If we follow the usual practice, it is not clear whether these affixes are part of the pattern which, according to the traditional analysis, has a grammatical function. Since these affixes are mainly composed of consonants and vowel under the traditional analysis, the pattern must be redefined to include optionally both consonants and vowels. It is not however possible either to consider the affixes parts of the root or to consider them separate elements. This makes the process of derivation more complicated than is desirable. We may illustrate this by examining words begin with (mv-).

(darasa) "he studied"	The root is (drs)
(madrasa) "school"	(madāris) "schools"
(mudarris) "teacher"	(mudarrisīn, mudarrisūn) "teachers"
(madrasī) "scholastic"	(madrūs) "studied"
(kataba) "he wrote"	The root is (ktb)
(maktab) "office"	(makātib) "offices"
(maktab (h) "library"	(maktabāt) "libraries"
(muktatib) "subscriber"	(maktūb) "written"
(makātib) "messages"	(mukātib) "correspondent"

As the glosses of these words indicate (mv-) is generally associated with nouns. It precedes the patterns; - ccaca -, ccaccic-, caccT etc. as the above examples show and it may be, (ma), also associated with other nouns than the above ones, for example with nouns of instrument like (miftāh) "key" or nouns of time like (mawḡid) "date". In other words, the consonants (-mktb-) are not by themselves enough to give the meanings.

Moreover, some linguists have gone further and claimed that the Semitic languages have characteristics which are not found in other languages. One of these

characteristics is that the ratio of consonants to vowels is not the same as in other languages. The claim specifies that consonants predominate over vowels. This is not, however, correct statistically. It also confuses the writing system with the language itself, since it does not take into account the fact that in the Arabic writing system only consonants and some long vowels in certain environments are indicated, while short vowels are marked by diacritics above or under the consonants. The situation is quite different if these diacritics are taken into consideration as Jean Cantineau did. He found that in Classical Arabic, which has twenty-six consonants, and three short and three long vowels, the average text has a distribution of 52% consonants to 48% vowels. This is almost the same as the ratio attested in other languages (Cantineau, 1946:93).

If, on the other hand, it is claimed that consonants are more numerous than vowels because meaning is based entirely on a consonantal root, then this too is completely wrong. This is because, as was stated previously, it is not true that the vocalic pattern has only a grammatical function, while the consonantal pattern alone determines the meaning. Instead, the vowels have at least a secondary semantic significance in addition to the consonantal root, which may be the primary determiner of lexical distinctions in some cases.

There are also other languages, beside Semitic, in which vowel changes have grammatical and lexical significance. For example, in English vocalic contrast may mark both grammatical function and lexical significance as in the following words:-

Sing	Sang	Song
Speak	Spoke	Spoken
give	gave	given
man	men	
goose	geese	

This is comparable to more widespread alternations in Arabic, such as the alternation in the verbs between the base form, the perfect and the forms of the imperfect, or the alternations between the singular and the broken plural ⁽⁴⁾

(walad) "boy"	(ʔawlád) "boys"
(bint) "girl"	(banát) "girls"
(rajul) "man"	(rijál) "men"

As in English, vowel contrast can also mark lexical distinctions. Alternations such as the following in English, cat vs. cut, hat vs. hot, fat vs. fit, have parallels in Arabic in examples such as these:

(ša8r) "hair"	vs. (ši8r) "poetry"
(baʔusa) "be strong"	vs. (baisa) "be miserable"
(laʔuma) "be ignoble"	vs. (laʔama) "repair"

In English, grammatical function may also be indicated solely by inflexional endings as in the following:

cat	cats
dog	dogs
wait	waited
write	writes

Similarly, in the Arabic language, the "sound" or regular plural is formed simply by suffixation:-

Singular

(mu8al lim)
(mu8allimah)
(bináyah)
(muhandis)

Plural

(mu8allimún) "teachers"
(mu8al limát) "female teachers"
(bináyát) "building"
(muhandisún) "Engineer"

It is therefore erroneous to consider these characteristic peculiar to the Semitic languages. It is also misleading to identify meaning only on the basis of the consonantal root since the vowels also contribute to determining the exact meaning. It should also be noted that this special relation between vowels and consonants is mostly confined to the verbal conjugations and even there it is not the only grammatical process.

This relationship between consonants and vowels is also not limited to the Arabic language. The following examples from Hebrew, quoted from . (Ullendorff, 1958:70) show that the relationship between consonants and vowels does not differ significantly from that which is found in other languages.

?ab "father",	?em "mother,	zar "stranger,"
?ob "bag",	?im "if"	zer "border"

There are also numerous words in Arabic in which vowels form an integral part of the semantic pattern in a way which indistinguishable from what occurs in other languages. For example, there is a large number of words borrowed from Indo-European languages which cannot be analyzed as consisting of a root plus vocalic pattern as the following examples show:-

stúdyo "studio"	rádyo "radio"
sikritér "secretary"	bank "bank"
male	
bar "bar"	rútín "routine"
rádár "radar"	daktúr "doctor"

It has also been claimed, for example by M. Sa'íd, (Sabid, 1967) that there are borrowed words which resemble Arabic words, and can be analyzed having tri-consonantal roots. Examples of such words are: (munáwara) "maneuver" and (biyáno) "piano". These have the roots (nwr) and (byn) which are homonyms with existing Arabic roots which have the general lexical meanings "light" and "clarity" respectively. This is a possible analysis but it is preferable to analyze such lexical items as one continuous morpheme. In this way, we avoid undesirable homonymy. Moreover, the existence of such homophonous root is a strong argument to show that vowels have more than simply a grammatical function as is claimed.

Other examples of words in Arabic in which vowels form an integral part of the semantic pattern in a way which is indistinguishable from what occurs in other languages, are: pronouns, prepositions, particles, and relative clauses. These provide more evidence for the semantic function of the vowels in Arabic. In these, which do not participate in the vocalic alternations that verbal roots do, the stems are the primary determinants of meaning.

Examples are:

Pronouns: huwa, hiya, hum, ?ana etc.

Numerals: waHid, ?i8nin, 8ala8 etc.

Demonstrative Pronouns: ha 8a, 8a aka etc.

Conjunctive pronouns: man, máetc.

Prepositions: ba, ta, waetc.

Interrogative pronouns: ma, kam, haletc.

Similarly, primary nouns are also not subject to the apophonic laws which govern verbs. In these too, vocalism should be considered a stable part of the stem morpheme. One group of such nouns are the deverbatives. Another group is the denominative nouns. In both types the formation of nouns does not follow a fixed pattern or patterns. For example, there are more than forty-four verbal noun patterns (wright, 1955-1971: 110-113). It is not possible to predict consistently the pattern a verbal noun may take solely on the basis of its verb. This is even true of some verbal nouns of derived or quadri-consonantal verbs. In short, vowel patterns should be learned individually.

The problems of the traditional analysis become clear in the case of non-derivative (solid) nominal morphemes. In these, the non-functional character of the vocalism, mainly in the singular, is obvious. In other words, the difference in the vocalism of various nouns has no connection with their semantics and, therefore, must be learned on an individual basis. Accordingly, it is completely wrong to consider non-derivative nominal morphemes such as (kalb) "dog", (jamal) "camel", (naHl) "bee", (yamm) "see", (?atan) "female-donkey", (jimál) "camels" and (batt) "duck" as having two discontinuous morphemes. They should be considered as having only one morpheme consisting of vowels together with consonants. In short, in all primary nominal derived or non-derived patterns, broken plurals and adjectives, in which

there is no definite pattern to be followed, the vowel patterns should also be considered as morphologically determined, and must be learned individually.

Moreover, there is doubt to the psychological reality of the root as an underlying form for native speakers since the root, being wholly consonantal, is unpronounceable in isolation by itself without the vowels. In other words, it is not experienced directly.

I asked many native speakers to supply the meanings for a list of consonantal roots. Most of them, however, asked me to supply the appropriate vowels because they were aware of the fact that there are many homophonous roots in the language. I also asked non-native speakers who are majoring in Arabic the same question, and in most cases they were not able to supply the exact vowels. From this, it would be tempting to say that the psychological reality does not belong to the root, but instead, to some pronounceable forms, for example, the stem ⁽⁵⁾

The above demonstration raises the question of whether to consider the stem one continuous morpheme or two discontinuous morphemes. An ideal root and pattern analysis would have a regular, productive system of word formation, in which only roots, which can be combined with any vocalic pattern, are listed in the lexicon. The result of combining a root and a pattern would be completely predictable. As demonstrated above, however, this is not the case, and that the Arabic language as a whole does not work this way. Therefore, a word (or stem) based system of morphology would provide a more efficient analysis, since the root and pattern analysis is partial and does not explain all the facts in the language. In such analysis (one continuous morpheme), words, whose meanings are completely predictable from their parts, would not be listed in the lexicon and any word, derived or non-derived, whose properties are not totally predictable, would. In such a system, it is possible to describe all the facts adequately and efficiently and it is therefore preferable to a partial system employing the two discontinuous-morpheme analysis.

NOTES

1. One of the reasons behind the traditional treatment, as well as the modern practice, is the fact that there is no infinite form in Arabic which one can derive the other forms of the verb. Since the root itself is an abstraction, not a linguistic event, it is the perfect of the verbal stem, specifically the third person singular of the masculine, which is most commonly cited to give the root meaning in dictionaries, and as the basic form for other derivations.
2. The stem is defined as the sequence of some root plus some pattern, as opposed to it, the root. The root is defined as the group of consonants presented in a specific order.
3. If the root were perfectly systematic, the lexicographer would only have to list roots and the reader's only task would be to provide the desired pattern, which should be predictable. However, as was shown above, at least one vowel, the vowel of the imperfect stem, must be learned. So a dictionary which is arranged by roots is therefore not enough to elucidate the semantic content of the root. On the other hand it is very simple to do this if a dictionary is arranged with lemmata which include both the consonantal stem, and at least one stem vowel.

4. "Generally Speaking, the pluralization processes in broken plurals are characterized by vowel changes only or these plus affixation and/or deletion." Jafar Ababneh, "The Morphophonemics of pluralization in Biblical Hebrew and classical Arabic" Ph.D. Dissertation, University of Utah, 1978, pp. 76-77. There are exceptions to these rules, see for the same author, pp. 77-85.
5. It may be Arabic orthography, which represents only consonants and some long vowels which has led some people to speak of roots rather than stems. Further analysis is, however, needed to decide what the idea of psychological reality can contribute to this subject, and at this stage, any conclusions must remain speculative.

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