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New reasons to root for the Semitic root from Mehri and Neo-Aramaic


Abstract: This paper provides two new arguments for the existence of the root as a level of representation in Semitic languages. The first argument, from the South Arabian language Mehri, presents a case of allomorphy in which the choice of the suffixal exponent is sensitive to the last vowel of its base, but not to its last consonant, even though the latter is closer to the position of the suffix than the former. Only an approach which distinguishes between a root and a template can explain this case by placing the template closer to the suffix than the root, against the linear order of segments. The second argument shows how in two Neo-Aramaic languages (Jewish Urmi and Jewish Arbel), only the consonants of verbs must be stored; all other verbal exponents are predictable on this basis.

Keywords: Allomorphy, Mehri, Neo-Aramaic, Semitic, Root

1 Introduction

In Semitic languages, it is common to find derivationally or inflectionally related words that share nothing but three elements (usually consonants), such as the set in bold in (1). Such clusters of lexical items have led to the common view that in these languages, words should be analyzed as combining a “root” and a “pattern”. For instance, a word like (1b) is decomposed into the discontinuous tripartite set \( \sqrt{\chi_i}ʃ_{fev} - \) the root – and the pattern \(<i,e>\). Importantly, the patterns in (1) can combine with many other “roots”, supporting the decomposition.

(1) Same-root words in Modern Hebrew
   a. \( \chi_{afav}, \chi_{ofev}, j\alphaʃ_{jov} \) ‘think.3M.PST,PRS,FUT’
   b. \( \chi_{ifev} \) ‘he calculated’
   c. \( h\epsilonʃ_{jiv} \) ‘he considered’
   d. \( \chi_{afav} \) ‘accountant’
   e. \( m\alphaʃ_{fev} \) ‘computer’
   f. \( \chi_{afuv} \) ‘important’

With the advent of Generative Linguistics, traditional morphological analyses were put to the test: do they reflect what speakers really “know”, or are they

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simply an efficient way of describing a specific linguistic system? Are they linguistically real, or an analytic artefact? In (1994), Outi Bat-El published a paper that challenged the linguistic reality of roots, based on the transfer of clusters in Modern Hebrew denominal verbs. In later work (Bat-El 2001, Bat-El 2002, and Bat-El 2003), she proceeded to develop a more general claim, according to which roots are always residues: speakers store fully syllabified stems, from which other stems are derived by a process of stem modification (mostly by replacing the vowels).

The debate around the linguistic reality of the Semitic root proved to be fertile ground for research from many angles, including hypocoristic formation, language deficits, and psycholinguistic experimentation (see Prunet 2006 for an overview) or language games (e.g. Lahrouchi and Ségéral 2010). Bat-El’s view has been adopted by several researchers (see survey in Faust and Hever 2010). To this day, the issue remains very much present in the minds of morphologists of Semitic languages. This paper contributes to the discussion by putting forth two new arguments in favor of the decomposition of words into roots and templates, from three Semitic languages that are new to the debate: Mehri, a South Arabian language, and two Neo-Aramaic languages, Jewish Urmi (North-West Iran) and Jewish Arbel (Northern Iraq).

The first argument, from Mehri, concerns a case of dissimilatory suffixal allomorphy triggered by a vowel of the stem. Crucially, a consonant of the stem separates the trigger and the target, but the suffix is not sensitive to that consonant. I will show that this sensitivity can only exist if despite linearity, the stem consonant is in fact further away from the suffix than the stem’s vowel; and this is only possible if the vowels and consonants of stems belong to different morphemes.

A central claim in Bat-El’s language-wide anti-root argument concerns storage: because the distribution of roots among templates is unpredictable, the stored entity cannot be just the root. It must include both the root and the template: it must be a stem. Against this background, the second argument of this paper examines two Neo-Aramaic languages, Jewish Urmi and Jewish Arbel. Jewish Urmi, it is shown, involves only one template, in which all verbs are realized. The realization of the verbal category is therefore perfectly predictable, and speakers of this dialect need only store the consonants of the stem: any other approach to the facts is massively redundant with respect to storage. I conclude that roots are the only stored entity in at least one Semitic language. I then show how the same can be said of Jewish Arbel, whose verbs seem to appear in two templates. Reflecting a generalization in Goldenberg (1994), it is shown that which template a verb will appear in follows from the number of consonants in the base; as a result, the two templates are in fact allomorphs,
and once again, speakers need only store consonantal sets, i.e. roots. For both Neo-Aramaic languages, OT analyses are provided that formalize the selection and positioning of templatic vowels.

The paper is organized as follows. Section 2 introduces Arad’s (2005) formalization of Root and Pattern morphology in Distributed Morphology (Halle and Marantz 1993), and describes Bat-El’s root-less approach in more detail. Section 3 turns to the Mehri data, and claims that only an approach like Arad’s is compatible with it. Section 4 lays out the argument from the two Neo-Aramaic languages. In both, lexical storage is shown to involve only the consonants of stems. Section 5 concludes.

2 Theoretical background

2.1 Formalization of root-and-pattern morphology within Distributed Morphology

The theory of Distributed Morphology (DM; Halle and Marantz 1993; Embick 2010) holds that the derivation of every content word in every language begins with a “root”: an uncategorized, underspecified piece of linguistic material. For instance, the structures of both the noun hammer and the verb hammer begin with a root √hammer, which is then nominalized or verbalized. A similar view can be found in the exo-skeletal model of morphology developed by Borer (2005a, 2005b, 2013).

According to this view, roots can never appear without the structure that categorizes them. To bolster this claim, proponents of such root-based theories often turn to Semitic languages, emphasizing that in these languages, uncategorized roots are ubiquitous (see, for instance, Marantz 2001, Borer 2005a, Borer 2005b, and Borer 2013). Items such as those in (1) above are regarded as derived from a root √χʃv, although this root, unlike √hammer, is not homophonous to any of its realizations.¹

¹ There is a debate in the literature on these syntactic theories of morphology regarding whether roots have phonological content, or come to have such content (see Harley 2014 and the papers in the same volume). That debate is tangential to the issues discussed in this paper: the argument from the “no-root” faction is that the consonants of Semitic stems do not correspond to the any morphological piece, either in the syntax or as the result of such a search operation.
There are several in-depth accounts of Semitic systems within DM and related approaches, though they seem to be limited to Modern Hebrew and Arabic (for Modern Hebrew, see Arad 2005; Borer 2005a, Borer 2005b, and Borer 2013; Doron 2003; Faust 2012; Kastner 2016; for Arabic: Arbaoui 2010; Tucker 2011). All of these accounts associate the non-root component of words—the template—to the structure “above” the root. For Arad, for instance, the derivation of an inflected form like Modern Hebrew [χjfv-ti] ‘I calculated’ would proceed as in (2). First, the root is selected by a verbalizing head which carries an index as to the verbal class to be attributed, in this case “II”. Then, in the DM process called “spell-out”, morpho-syntactic information is matched with listed phonemic representations. The vocalization and syllable structure of the base are the phonological exponent of the verbalizing head and the TAM head above it (Q,T,L stand for templatic positions for the root consonants). Further up the tree, the feature [1SG] on the Agr head is spelled out, here as a sequence of segments /ti/. Finally, the phonological representations are linearized, according to the morpho-syntactic structure (following principles that do not concern us here).

(2) Root and Pattern in DM

Arad does not elaborate on linearization and on the division of labor between spell-out and Phonology. These aspects of the derivation will be crucial here. Since McCarthy (1979), the attribution of root elements to positions in the template is a phonological issue (referred to as “Template Satisfaction”), as opposed to a lexical one. Accordingly, it is not the business of spell-out, which, as shown in the top line of (2), provides the Phonology with a root, a template and a linearized affix. As in McCarthy’s original proposal, the Phonology will associate the root consonants to templatic positions.

I will return to this realizational trajectory below. For now, let me reiterate that formalizations such as Arad’s clearly recognize the existence of roots as separate morphemes in Semitic: the root occupies a separate node from that which categorizes it and provides it with a template.
A considerable part of the literature in DM and related approaches is concerned with allomorphy. The recurrent claim is that allomorphy cannot be triggered non-locally: for a node to be sensitive to the content of another node, they have to be close enough. This required proximity can be defined fairly rigorously in the structure: for instance, the head Agr is local to the head TAM, but not local to the root. Similarly, because approaches distinguishing roots and templates view roots as more primary than templates, the template is structurally closer to TAM markers than the root. This position cannot be assumed by proponents of the no-root approach, to which we now turn.

2.2 Non-concatenative morpho-phonology without roots

Around the 1990’s, several linguists pointed out pairs of words with the same root in which the derived form clearly preserves more than just the root of its base (for Arabic, see Hammond 1988; Ratcliffe 1998). Famously, Bat-El (1994) showed how denominal verbs in Modern Hebrew end up preserving the clusters of their input. For instance, in order to designate a U-turn in Modern Hebrew one uses the term [parsa] ‘horseshoe’. In time, a verb was formed [pirses] ‘he did a U-turn’. One may ask why the derived verb was not [pires]; a possible answer would be that this form does not preserve the [rs] cluster of its base.

Instead of assuming a principle of cluster preservation, Bat-El proposed a mechanism of Melodic Overwriting that derived this effect. First, the melody of a verb is added to a base stem (3a); then, the vowels of the stem are overwritten by those of the verb (3b); and finally, reduplication proceeds to fill out the final position (verbal stems mostly end with a consonant; another process that might occur after Melodic Overwriting is Stray Erasure, by which non-overwritten vowels are erased).

(3) Melodic Overwriting
   a. base+vocalization  b. Melodic Overwriting  c. Other processes (reduplication)

   +<i,e>  <i e>  
   parsaparsa pirses

If one were to first extract a root out of a base like [parsa], there would be no access to the basic syllabification of the stem. The base for verb formation would be √prs, which is expected to yield the unattested [pires]. Bat-El concluded that denominal verbs must be derived on the basis of stems, rather than extracted
roots. In the final words of her 1994 paper, she suggested that not only denominal verbs, but all verbs, might be derived from stems, and if this is so, the non-surface-true, abstract concept of the root is unnecessary.

A similar conclusion was drawn by Ussishkin (1999), who, also working on denominal verbs, was the first to propose a full OT analysis of the data. Given a base [min] ‘type’ and a target vocalization <i,e>, constraints on word-size, alignment, syllable structure and faithfulness to the base resulted in [mijen] ‘sort out’, without the need to extract a root.

How exactly a root-less approach can treat non denominal verbs was still not fleshed out. Both Bat-El (2003) and Ussishkin (2006) then proposed that verbs like [χʃev] ‘he calculated’ and [heχʃiv] ‘he considered’ were derived from the more basic verb stem [χaʃav]. This was again achieved with a set of constraints, similar to those in Ussishkin (1999).²

To illustrate, consider (4), which is a fusion of both proposals (all of the constraints appear in one of the proposals). The base [χaʃav] is joined with a prefixed /h-/ and a melody <e,i>. Candidate (a) includes the overwriting of just the last vowel of the base with /i/ and the prefixation of /h, e/. This leaves the first base vowel [a] intact, but the result violates a requirement that stems be no longer than two syllables. Candidate (b) only prefixes the /h-/ , but leaves the vowels of the base unchanged: it incurs two violations of MAXAFFIX, which militates in favor of realizing all of the segments of the affix. Candidate (c) abides by both WORDSIZE and MAXAFFIX, but places the /i/ of the melody after the last consonant: this gives rise to a triconsonantal cluster. The winning candidate is thus candidate (d), which includes no remnant of the vocalization of the base.

(4) Derivation of [heχʃiv] from [xaʃav] in OT

<table>
<thead>
<tr>
<th>Input [xaʃav] + &lt;h-, e, i&gt;</th>
<th>MAXAFFIX</th>
<th>WORDSIZE</th>
<th>*COMPLEX</th>
<th>MAXOO</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. heχʃiv</td>
<td>![]</td>
<td>![]</td>
<td>![]</td>
<td>![]</td>
</tr>
<tr>
<td>b. haχʃav</td>
<td>![]!*</td>
<td>![]</td>
<td>![]</td>
<td>![]</td>
</tr>
<tr>
<td>c. heχʃvi</td>
<td>![]</td>
<td>![]</td>
<td>![]!*</td>
<td>![]**</td>
</tr>
<tr>
<td>d. heχʃiv</td>
<td>![]</td>
<td>![]</td>
<td>![]</td>
<td>![]</td>
</tr>
</tbody>
</table>

² On the issues that arise with evaluating different overwriting strategies see Nevins (2005) and the response in Zimmermann and Trommer (2011).
As shown in Bat-El (2003), the same mechanism can derive a future stem like \[\text{jāχʃov}\] from the past stem \[\text{χaʃav}\], or vice-versa. These authors conclude, therefore, that even outside denominal verbs there is no need for a non-syllabified root.

Such accounts, to recapitulate, argued that besides denominal verbs, some verbs are derived from others, and some word-forms in the paradigm of a single verb are based on others. But they did not answer the question of how to treat underived stems. As pointed out by Prunet (2006), there are many verbal entries in the verbal types traditionally regarded as non-basic (in MH, QiTeL and hiQTiL) for which it would be strenuous to claim that a basic QaTaL form exists. For instance, for the MH \[\text{piʃsl} ‘\text{he split (tr.)}’\] or \[\text{hitʃil} ‘\text{begin}’\] there are no basic forms \[\text{pafṣal}\] or \[\text{taʃal}\]. While these are not impossible forms, positing their existence does not seem any more realistic than positing a root. Faust and Hever (2010) further show that this problem extends to inflectional paradigms. In both MH and the Ethio-Semitic language Chaha, there is no single word-form in the paradigm that can be used as the basic form such that all other forms are derived from it through Melodic Overwriting.

The problem of the source, as Prunet calls it, remains unaddressed to this day: proponents of the no-root approach, as I will call it henceforth, have not published reactions to Prunet (2006) or to Faust and Hever (2010). Yet the issue of underived forms is crucial. First, because against the impression that the theory-oriented literature may give, entries in the non-basic verbal types with no recognizable base constitute a large part of the verbs in all Semitic languages. Secondly, there is general agreement that deverbal and denominal verbs are, well, deverbal and denominal, rather than deradical. The argument against roots from such verbs only holds against an opposing claim, according to which they are derived through an intermediary step of root extraction and with no reference to the nominal base. But this is a strawman that has never been proposed to the best of my knowledge by any in-depth study of the topic. Indeed, once one accepts that somehow reference can be made to the base of derivation when it is an existing entry, there is no need for cluster preservation or any other requirement of faithfulness to a base form to be the result of the analysis, rather than one of its principles. And if these are indeed principles, then both a pro-root and a no-root approach can obtain the results that Bat-El and Ussishkin used to argue against the root (for more on this, see Faust and Hever 2010).

To summarize, the real terrain of disagreement is underived verbal stems. According to the pro-root view, the decomposition into root and pattern is linguistically real in these cases; according to the no-root
approach, it is an analytic device that does not correspond to the knowledge of speakers. The following two sections show that this decomposition must be real.

3 Mehri plural allomorphy

Mehri, a South-Arabian Semitic language spoken in Oman (Rubin 2010), exhibits two realizations of 2/3MPL subject agreement on verbs in the imperfective and subjunctive aspects. One either finds [-əm] (5a,b) or the mutation of a stem vowel into [i:] (5c,d). The 2/3FPL form, in contrast, does not exhibit two realizations: it is always realized [-ən]. (All of the forms in (5) are preceded by one of several prefixes, which are irrelevant for the present purpose).³

(5) allomorphy in Mehri 2/3MPL (data are taken from Rubin’s 2010 grammar)

<table>
<thead>
<tr>
<th></th>
<th>a. ‘straighten. SBJV’</th>
<th>b. ‘straighten. IMPF’</th>
<th>c. ‘break.IMPF’</th>
<th>d. ‘ask.IMPF’</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSG</td>
<td>-ərkéːz</td>
<td>-ərkú:kəz</td>
<td>-ətbó:r</td>
<td>-əfxabú:r</td>
</tr>
<tr>
<td>MPL</td>
<td>-ərkéːz-əm</td>
<td>-ərkəz-əm</td>
<td>-ətbí:r</td>
<td>-əfxabí:r</td>
</tr>
<tr>
<td>FPL</td>
<td>-ərkéːz-ən</td>
<td>-ərkəz-ən</td>
<td>-ətboː-ən</td>
<td>-əfxabúːr-ən</td>
</tr>
</tbody>
</table>

I will now argue that the phenomenon in (5) can only be understood if one accepts the traditional morphological analysis of verbs in Semitic as being decomposed into a root and a template.

The first step is to identify the logic behind the distribution. Bendjaballah and Ségéral (2015) provide the relevant generalization:

(6) Distribution of exponents of 2/3MPL (Bendjaballah and Ségéral 2015)

2/3MPL is realized through [i]-mutation if the vowel before the last consonant of the stem is round.

Thus, [-ərkéːz] in (5a) does not undergo this mutation, because the vowel before the last consonant is not round; and in (5b) [-əruːkəz] carries [-əm] because

³ This allomorphy also occurs in some perfective plurals. It is a general fact about Mehri verbs, rather than a peculiarity of the verbs in (5).
although it contains a round vowel, that vowel does not immediately precede the last consonant of the stem. Only (5c,d) fit the description in (6).

While (6) provides a correct generalization, it is not explanatory: one asks what motivates the described distribution. I propose the following logic. Suffixation of /m/ (which will be realized as [-əm] due to phonological epenthesis) is the default case; but mutation is preferred with bases containing a round vowel in the position closest to the suffix, because round vowels and /m/ share a common feature, namely labiality. In other words, the distribution in (6) is motivated by the OCP, the need to separate similar entities that are situated too close to each other. I will assume, along with Element Theory (Kaye et al. 1985; Backley 2011), that the component shared by /m/ and round vowels is the element |U|. The problem raised by /m/ suffixation is presented graphically in (7a). The absence of such a problem in stems with no final round vowel is represented in (7b,c). In (7b) there is simply no |U| in the stem. In (7c), the stem |U| is separated from the suffixal |U| by another vowel: this fact confirms the proposed OCP-based allomorphic logic, because once a contour exists, /m/ resurfaces. 

\[ (7) \quad \text{OCP violation or lack thereof} \]

\[ \begin{array}{c}
\text{a.} & \text{*ə t b o: r - m} & \text{b. ə r k e: z - m} \\
& | & | \\
& \text{|U|} & \text{|U|} \\
\text{c. ə r u: k ə z - m} & | & | \\
& \text{|U|} & \text{v} & \text{|U|} \\
\end{array} \]

Importantly, further support for this analysis is provided by the fact that feminine plurals never exhibit allomorphy. Indeed, the non-labial feminine suffix [-ən] is not expected to entail an OCP violation in contact with round vowels.

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4 The intervening vowel in (7c) is a schwa, and so its elemental make-up is left unspecified. It might be claimed that this vowel is empty, and so should not count as a contour. This is not the place to address the elemental make-up of schwa; once one accepts the OCP logic proposed here for (7a,b), (7c) will have to be explained in some fashion. One possibility is that schwa in this case is not featureless. To that effect, note that in Mehri, many unstressed vowels are reduced; the unstressed [ə] could in principle correspond to an underlying full vowel.
As a consequence of the OCP violation in (7a), the form ends up being realized with an \[i\] instead of the first vowel and with no suffix. There are two rationales through which this can be achieved. In the first, there are two allomorphs, i.e. two underlying representations, the default /m/ and /i/-mutation. If /m/ creates an OCP-violation, /i/-mutation applies. In the second rationale, there is only one underlying representation /m/, and the OCP is repaired through dissimilation: the |U| of the base is transformed into |I|. This rationale has to explain why, once dissimilation takes place, the /m/ is not realized (i.e., the form is not *[ətbiːram]*) Both rationales are possible, and the choice between them is immaterial for the present purpose, as will be explained below. For the sake of simplicity, I will assume the allomorphic analysis.

A crucial piece of data is the masculine plural form of bases with final labial consonants. Consider one such case, the base [¬əhánsam] ‘breathe. IMPF’, whose masculine plural is [¬əhánsɔm-əm].\(^5\) This form is unexpected if OCP is the driving force behind the distribution of the two realizations, since the base’s /m/ is even closer to the suffix than its vowel, as illustrated in (8).

(8) Unexpected (?) OCP violation

\[
\text{¬əhánsɔm-əm} \\
\text{[U] ∏ [U]}
\]

But the violation in (8) is only unexpected if one assumes that linear adjacency is structural adjacency. As we saw in the previous subsection, this is crucially not the case in the pro-root DM analysis of Semitic morphology. In (9), I follow Arad’s structures and the first, allomorphic rationale above. The two plural allomorphs are represented as /m/ and /i/ (a “floating” /i/, to convey its mobility). As shown in (9), these exponents realize the Agr node, which is closer to the templatic information aQTo:L than to the root. For the Mehri case, this view implies that the choice between /m/ and /i/ is made in structural adjacency with the template, but not in structural adjacency with the root. Thus, structurally speaking, the segment that is closest to the suffix is not the last consonant of the root, as the output of phonology might suggest, but the last vowel of the template.

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\(^5\) The first consonant of the stem is affixal and not part of the root of this verb, vnsm.
Let us examine the derivation of this form. I follow the common view that the realization of morpho-syntactic structure proceeds bottom-up (Bobaljik 2000 et seq.) It is generally assumed that category heads trigger the spell-out (i.e. the association of phonemic material) of their complement. Agr and TAM heads, in contrast, are not assumed to trigger such an operation. For the structure in (9), this view implies that the derivation proceeds as in (10):

(10) Derivation of a non-concatenative root and pattern: in prose
1st step: verbalizer is merged, root is spelled out.
2nd step: higher head is merged, Agr, TAM and v are spelled out.
3rd step: phonology maps root elements to template (template satisfaction)

This derivation is graphically represented in (11):

(11) Derivation of a non-concatenative root and pattern: representations

In (11), I propose that the evaluation of the two allomorphs and subsequent elimination of the /m/ and retention of floating /i/ belong to the 2nd step. This must be the case for the analysis to hold: only at this stage are the root consonants not yet associated to their positions. In consequence, the evaluation of {/m/, /i/} cannot be sensitive to the consonant in the L position, simply because there is no consonant there at the relevant stage. In a case
like /-ahansəm-am/, the final /m/ of the base is not adjacent to the suffix at the 2nd spell-out, and therefore will not block the selection of the default /m/. Phonology would be “stuck” with the OCP-violating allomorph. Note that if the choice between allomorphs were to be left to the Phonology, the required effect could not be derived.

Of course, this analysis is unavailable within an approach that denies the linguistic reality of the decomposition into root and template, such as Bat-El’s. Recall that under that view, basic, underived entries are stored in the lexicon as stems. The root is just a “residue”. Accordingly, there is no morphologically-significant structural level at which the stem consonants are separated from its vowels. And as a consequence, the last stem consonant will always be closer to the suffix than the last stem vowel: the selection of /m/ in [-aḥânsəm-əm] would remain unexplained.⁶

A reviewer raises two worries that would be worthwhile addressing here. First, phonologically-optimizing allomorph selection should in principle be the business of phonology, but in (11) it is performed at spell-out; and second, that which is dispreferred at spell-out does not seem to pose a problem for phonology, where the final stem consonant is adjacent to the vowel. For the first issue, it might be noted that a phonological evaluation at spell-out is not unheard of: this is precisely what Nevins (2012) proposes for several cases of haplology, which like the present case are motivated by the OCP (see also Faust 2018). The second issue, I submit, is in fact no cause for worry: in the proposed analysis there is a choice between allomorphs only at spell-out, and this choice no longer exists in the phonology. Therefore, not realizing /m/ does not pose the same problem at spell-out and in the phonology (in OT terms, it incurs a MAX violation only in the Phonology). In this context, consider the second rationale proposed above, according to which there is only one realization, /m/, and dissimilation results in /u,o/ being realized as [i]. However this logic may be formalized, the dissimilation will have to occur “before” the mapping of the final stem consonant to its position: like the allomorphic rationale, it will also require the morphological decomposition of stems into root and pattern.

⁶ Recall that derived (denominal etc.) stems do not pose a problem for the no-root approach, because in their derivation, the template (i.e. the vocalization) is separate from the base. By analogy, the no-root approach could, in principle, claim that all imperfective and jussive forms in Mehri are derived from other stems, for instance from the perfective (as indeed proposed by Bat-El 2002 for Modern Hebrew). However, the (/m/, /i/) allomorphy also occurs in some perfective Mehri stems, effectively ruling out this alternative: [hansa:m] – [hansi:m] ‘breathe. PRF.3MSG-3MPL’ vs. [rokez] - [rokezə:m] ‘straighten.PASS.PRF.3MSG-3MPL’.
To summarize, the Mehri case illustrates a prediction of Arad’s (2005) take on root-and-pattern morphology. If stems are further decomposable into roots and patterns, then, like in syntax, mismatches are predicted in Semitic morphology between surface linearity and structural hierarchy. To the best of my knowledge, the Mehri plural is the only documented case of a morphological effect of this mismatch. Insofar as understanding the Mehri data indeed requires such mismatches to be true, their existence serves as an argument not only for the decomposition of seemingly non-derived stems into roots and patterns, but also for word formation in a hierarchical, syntax-like model.

In the next section I will return to Bat-El’s class-based argument against roots.

4 Neo-Aramaic and verbal types

4.1 Storage-based pro-root argument

Another argument that appears in Bat-El’s work concerns storage. In Modern Hebrew, the consonants of a base are simply not enough to identify a lexical entry, because the distribution of these consonants among verbal types is not predictable. Thus, within the verbal system, for every “meaning” speakers need to store information about the verbal class or type (“binyan”) in which the root appears. To illustrate, given the set $\chi,f,v$ in (1), it is impossible to predict whether it will appear in both QaTaL and QiTeL, or only in one of them, or in neither. And when it does appear in both, it is impossible to precisely predict its semantics (as pointed out, for instance, by Arad 2005; Borer 2005b, although see Doron 2003 for some generalizations to the contrary). If this is true, then it is unclear what information the root corresponds to in isolation.

The same claim can be made in terms of realizations. Any given verbal form in Modern Hebrew combines at least two unpredictable realizations: the consonantal set and the vowels. There is always a “template” that is not predictable from the meaning, and “roots” are never realized alone. Again, as the argument would have it, there is no reason to think that roots are ever stored alone, and thus there is no reason for speakers to separate them from the unpredictable exponent of the template. In other words, stored forms should be fully syllabified stems, and no entry should correspond to an unsyllabified consonantal set. From a more general perspective, the analogy between roots in Semitic and $\sqrt{\text{hammer}}$ in e.g. Arad (2005) is therefore incomplete, because in the purported verb $\text{hammer}$, like in the realization of many English verbs, there is only one arbitrary “piece”. This situation is supposedly never encountered in Semitic languages.
As will be shown in the following pages, the last sentence is in fact false. In Jewish Urmí Neo-Aramaic (henceforth JUNA; documented in Khan 2008), even though the morphology is very much non-concatenative, templates and vocalization have disappeared as a means to distinguish between verbal types. As a result, speakers need to store only the consonants of each verb: the vocalization or “template” is the same for all verbs, and therefore needn’t be part of the entry. Moreover, only a little abstraction is needed in order to generalize this conclusion to another Neo-Aramaic language, from the Iraqi town Arbel.

4.2 Jewish Urmí Neo-Aramaic: A Semitic language with no verbal types

In his grammar of JUNA, Khan (2008) distinguishes between two verbal types: T1, whose stems always involve no more than three consonants; and T2, whose stems always involve four consonants. However, there is reason to think that even this distinction is unnecessary. As shown in the rightmost column, it is possible to claim that the vocalization of each stem is identical in both types. The -PST stem is expressed by <a,ə>; the +PST, IMP, are respectively expressed by <ə>, <u> before the last stem consonant; and INF stems carry <a,o,-e>. The additional vowel of quadri-consonantal stems can be regarded as epenthetic ([ə] is the epenthetic vowel of the language; it breaks final and triconsonantal clusters, as well as some initial clusters).

7 Urmí is situated in the extreme north-west of modern-day Iran. Besides the Jewish variety of Neo-Aramaic, another, quite different Christian variety originates from in and around the city (Khan 2016). The Jews and Christian communities of the region have very different histories, and have lived quite separately over the years. Both communities were minorities in the town and region, and both have dwindled enormously during the twentieth century. While a Christian community still exists in the region, there are no Jews left there: the last speakers of JUNA live mostly in Israel and are in their 60’s or older.

8 In fact, Khan identifies three types, distinguishing between quadriradicals with an initial /m/ augment and lexical quadriradicals. But he is aware of the fact that nothing besides this difference motivates this distinction.
The verbal types of JUNA according to Khan (2008)

<table>
<thead>
<tr>
<th></th>
<th>T1 ‘sleep’</th>
<th>T2 ‘heal’, ‘throw’</th>
<th>VOCALIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-PST</td>
<td>qatəl</td>
<td>manxəp</td>
<td>partəf</td>
</tr>
<tr>
<td>+PST</td>
<td>qtaʃ-</td>
<td>manxəp-</td>
<td>partəf-</td>
</tr>
<tr>
<td>IMP</td>
<td>qtiʃ</td>
<td>manxup</td>
<td>partuf</td>
</tr>
<tr>
<td>INF</td>
<td>qatol-e</td>
<td>manxop-e</td>
<td>partof-e</td>
</tr>
</tbody>
</table>

Khan notes that types 1 and 2 “are distinguished by their consonantal pattern, but the vocalic patterns of the bases have been largely levelled across the two stems” (p.67). But such a characterization of the system misses out on the fact that the consonantal pattern is reasonably the result of the number of stem consonants. Once this is accepted, one must acknowledge that there aren’t any verbal types in JUNA. The idiosyncratic information of every verb is only its consonants.

Let me be explicit on one way in which this may be formalized in OT. The production of the T1 -PST stem is presented in (13). The input to stem formation – the lexical information – comprises of (i) the stem consonants /q,t,l/, and (ii) the vocalization /a,ə/.

9 I assume that by dint of its structural position, the vocalization is suffixed rather than prefixed: it “starts out” at the right edge of its base. Besides the standard constraints *CCC (ungoverned in JUNA), *COMPLEX and DEP, I assume two more specific constraints. First, a constraint ALIGNR(BASE) requires that the final consonant of the base be aligned with its right edge, ruling out [qatla] in (13a) (see Tucker 2011 for a similar proposal). Second, since /a,ə/ is a suffix, the further away that its parts get from the right edge, the more violations of LINEARITY are incurred (Bye and Svenonius 2012). A form like [qətal] (13b), incurs four violations: /a/ ends up three segments away from its original position (/t,a,l/), and /a/ one (/l/). In contrast, the candidate that maintains the order between the vowels of the vocalization incurs only three violations: two for /a/ and one for /a/. It is therefore preferred.10

9 In other words, the following analysis will assume that the templates of the different verbal stems in JUNA can be reduced to their vowels. As I have argued in the past (Faust 2015), this cannot be the case in Semitic in general. Indeed it might not even be the case in the JUNA nominal system.

10 Here and below, I assume that both *HIATUS and ONSET, a constraint penalizing onsetless syllables, are undominated in Urmi. These assumptions are supported by the general JUNA facts.
(13) Stem formation in JUNA: triconsonantal base with bi-vocalic suffix

<table>
<thead>
<tr>
<th>/q,t,l/ + /a,ə/</th>
<th>*CCC</th>
<th>DEP</th>
<th>ALIGNR(BASE)</th>
<th>*COMPLEX</th>
<th>LINEARITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. qatla</td>
<td></td>
<td></td>
<td></td>
<td>!</td>
<td>**</td>
</tr>
<tr>
<td>b. qatal</td>
<td></td>
<td></td>
<td></td>
<td>!</td>
<td>***!</td>
</tr>
<tr>
<td>c. qatal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>***</td>
</tr>
</tbody>
</table>

The same constraints and hierarchy derive [partəf] from the suffixation of the same exponent /a,ə/ to the purely consonantal /p,r,t,f/ in (14). Again, high-ranked ALIGNR(BASE) rules out pure suffixation of /ə/ (candidate a). Candidate (b) involves a complex onset, and for the remaining candidates, changing the order of the vowels of the suffix incurs one violation more than not doing so, ruling out candidate (c) *[pərtəf].

(14) Stem formation in JUNA: quadriconsonantal base with bi-vocalic suffix

<table>
<thead>
<tr>
<th>/p,r,t,f/ + /a,ə/</th>
<th>*CCC</th>
<th>DEP</th>
<th>ALIGNR(BASE)</th>
<th>*COMPLEX</th>
<th>LINEARITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. pratfa</td>
<td></td>
<td></td>
<td></td>
<td>!</td>
<td>**</td>
</tr>
<tr>
<td>b. pratəf</td>
<td></td>
<td></td>
<td></td>
<td>!</td>
<td>***</td>
</tr>
<tr>
<td>c. pərtəf</td>
<td></td>
<td></td>
<td></td>
<td>!</td>
<td>*****</td>
</tr>
<tr>
<td>d. partəf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>*****</td>
</tr>
</tbody>
</table>

The same set of constraint derives the correct output in the case of single-vowel suffixes. Consider the imperative stems [qtul] ‘kill!’ presented in (15). Pure suffixation is ruled out by both ALIGNR(BASE) and *CCC. DEP eliminates candidate (b), which does abide alignment, but also inserts an epenthetic vowel. Both remaining candidates violate *COMPLEX, but more violations of LINEARITY are incurred by placing the single lexical vowel after the first consonant (candidate c) than before the last, winning candidate (d).

(15) Stem formation in JUNA: triconsonantal bases with mono-vocalic suffix

<table>
<thead>
<tr>
<th>/q,t,l/ + /u/</th>
<th>*CCC</th>
<th>DEP</th>
<th>ALIGNR(BASE)</th>
<th>*COMPLEX</th>
<th>LINEARITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. qtlu</td>
<td>!</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. qatul</td>
<td>!</td>
<td></td>
<td>!</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>c. qutl</td>
<td>!</td>
<td></td>
<td>*</td>
<td></td>
<td>**!</td>
</tr>
<tr>
<td>d. qutl</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
</tbody>
</table>
The same suffix is added to the purely consonantal input /p,r,t,f/ in (16). Again, any candidate which aims to maintain the suffixal status of /u/ (16a) will violate both *CCC and ALIGNR(BASE). In the case of quadriradicals, *CCC is violated even by a candidate that satisfies ALIGNR(BASE), but does not insert an epenthetic vowel between the first two consonants (candidate b). Of the three candidates that do involve epenthesis, candidate (c) is eliminated because it involves a cluster; and the choice between candidates (d) and (e) is an effect of LINEARITY again.

(16) Stem formation in JUNA: quadriconsonantal base with mono-vocalic suffix

<table>
<thead>
<tr>
<th>/p,r,t,f/ + &lt;u&gt;</th>
<th>*CCC</th>
<th>DEP</th>
<th>ALIGNR(BASE)</th>
<th>*COMPLEX</th>
<th>LINEARITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. prtfu</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. prtuf</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. prətuf</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. purtəf</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>e. pərtuf</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If so, it is possible to derive the basic stems of all JUNA verbs by applying the general exponents of verbs to only the consonants of the stem.11 As a reviewer notes, it remains to be seen whether the OT formalization above is confirmed by other phenomena in the language or outside it. I will not attempt to prove this, because the point made by the OT analysis is merely a technical one; the more important theoretical claim is that learners of JUNA do not store full stems. They do not need to, since all stems are realized using the same exponents, whose positions within the root are phonologically predictable. The only aspect of each verb whose distribution is not systematic is its consonants. Consequently, while a word-based analysis claiming that this or that stem serves as a base for all others is not impossible, such an analysis would be far less economic than a root-based one, because it would miss out on a basic generalization of the system.

I started this section with Bat-El’s claim that roots in Semitic are not like Arad’s [hammer]: there is always more information in the basic entry than just the alleged root, and since the distribution of that information is unpredictable, it must be

11 A reviewer correctly notes that the present ranking wrongly predicts *[parotef], instead of *[partofe], for quadriradical infinitive stems. The same is true for the JANA infinitives in (18) below. This problem can be solved in several ways. For instance, one can devise a constraint against two-sided open syllables, *VC_CV, which [partotef] would violate. I do not explore this further here, since the goal of this paper is not to provide a full OT analysis of the verbal system, but to show that the number of stem consonants suffices in order to predict the surface form.
stored with the root. In Arad’s morpho-syntactic tree, that information is embodied in the diacritic “II” that appears on the verbal head in (17a), and whose distribution is a function of the root. In Modern Hebrew, this diacritic stands for the realization of the imperative as type II QaTeL, and not, say, type I QToL. But in JUNA, roots are exactly like Arad’s vhammer, as shown in (17b): the rest of the realization is not a function of the root itself or of a type of verbal head. There is no diacritic on the verbal head, and the realization is possibly only associated with a TAM feature.

(17) Root and Pattern in DM: Modern Hebrew vs. JUNA

a. Modern Hebrew

```
Agr =⇒ [χafev] ‘speak!’
```

```
Agr
```

```
TAM
```

```
vP
```

```
QaTeL
```

b. JUNA

```
Agr =⇒ [qtul] ‘kill’
```

```
Agr
```

```
TAM
```

```
vP
```

```
\nx\n```

```
\-\-u/
```


I conclude that word-formation in at least one Semitic Language is not stem-based. It is not true that speakers of a human language cannot store “abstract”, exclusively consonantal, unsyllabified morphemes. In the next subsection, I will show that the same point can be made for a system which does have different vocalizations in different verbs.

4.3 Jewish Arbel Neo-Aramaic: Another Semitic language with no verbal types?

The system to be explored in this subsection is another Neo-Aramaic language, that of Jews from in and around the town of Arbel in modern-day northern Iraq. This language was documented in Khan (1999). To give a sense of the geography, a 320 kilometer drive separates the towns of Arbel and Urmi nowadays.

In the verbal system of Jewish Arbel Neo-Aramaic (henceforth JANA), Khan identifies two verbal types (18). As in JUNA, each verbal type is associated with several stems. Unlike in JUNA, the stems of the two verbal types of JANA differ in their vocalization in a way that cannot be derived phonologically. At first sight, these differences might justify the division into two verbal types. However, such
an analysis would ignore the fact that all T1 verbs involve three consonants, whereas all T2 verbs involve no less than four consonants.\textsuperscript{12}

\textbf{(18)} The verbal types of JANA according to Khan (1999)

<table>
<thead>
<tr>
<th></th>
<th>T1 'stand'</th>
<th>T2 'stand (caus.)', 'roll'</th>
</tr>
</thead>
<tbody>
<tr>
<td>-PST</td>
<td>xam\textsuperscript{a}l</td>
<td>maxmil</td>
</tr>
<tr>
<td>+PST</td>
<td>xmil-</td>
<td>mixmil-</td>
</tr>
<tr>
<td>IMP</td>
<td>xmol</td>
<td>maxmil</td>
</tr>
<tr>
<td>INF</td>
<td>xma:\textsuperscript{a}l-a</td>
<td>maxmol-e</td>
</tr>
</tbody>
</table>

Because T1 is always triconsonantal, and T2 is always quadriconsonantal, it is possible to propose an analysis that derives the differences in vocalization and syllabification between the two types from the different number of consonants. To take the example of the IMP stem, let us assume that /o/ and /a,i/ are allomorphs. Furthermore /o/ is the default allomorph (this relation is signaled by the symbol “>”). To express that default status, I will introduce a constraint \textsc{priority} (Mascaró 1996), which is violated when the default is not used. Using the same constraints and hierarchy as for JUNA, and placing \textsc{priority} between \textsc{dep} and \textsc{*complex}, the choice between the two “types” can be made to follow from the number of consonants.

Let us examine exactly how. In (19i), a quadriconsonantal stem is introduced to the phonology with the two allomorphs /o/ and /a,i/. Selecting the default allomorph violates high-ranked \textsc{*ccc} (candidate a), and resolving \textsc{*ccc} by epenthesis violates \textsc{dep} (candidate b; [ɪ] is the epenthetic vowel of JANA in initial clusters according to Khan). Thus, selection of the non-default allomorph (candidate c) is imposed. In (19ii), the same two allomorphs follow a triconsonantal base. In this scenario, neither allomorph results in a violation of \textsc{*ccc}, and so the selection is due to lower constraints. Selecting the bi-vocalic

\textsuperscript{12} As in JUNA, Khan in fact distinguishes three verbal types, two of which I grouped under T2. These are: i. stems that involve four consonants as a lexical fact (e.g. [gandir] in (18)) or as a result of reduplication of a bi-consonantal set (e.g. [laflif] ‘wind around’), and ii. stems that come to involve four consonants as a result of the “prefixation” of /m/ to a root, either one that appears in T1 (e.g. [maxmil] in (18)), or one for which regarding /m/ as a prefix is motivated by other considerations. The causativization of T1 roots by /m/-prefixation is productive according to Khan. Following Goldenberg (1994), I will consider /m/-prefixed roots as augmented roots, rather than prefixed stems (root augmentation is represented below in (20c) and further argued for in Faust 2015).
allomorph violates PRIORITY (candidate a). Selecting the non-default allomorph is therefore imposed. The absence of epenthesis in the initial cluster is due to the positioning of PRIORITY below DEP but above *COMPLEX. Note that the selection of the allomorph in this JANA case, unlike in the Mehri case, is determined by the phonological computation.

(19) Stem formation in JANA: quadri- and triconsonantal bases with {/o/ > /a,i/} allomorphs

<table>
<thead>
<tr>
<th></th>
<th>/g,n,d,r/ + {/o/&gt;/a,i/}</th>
<th>*CCC</th>
<th>DEP</th>
<th>PR</th>
<th>*COMPLEX</th>
<th>LINEARITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>a. gndor</td>
<td>*!</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. gindor</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. gandir</td>
<td></td>
<td>*</td>
<td></td>
<td>*</td>
<td>****</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>/x,m,l/ + {/o/&gt;/a,i/}</th>
<th>*CCC</th>
<th>DEP</th>
<th>PR</th>
<th>*COMPLEX</th>
<th>LINEARITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>ii.</td>
<td>a. xamil</td>
<td>*!</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. ximol</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. xmol</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Goldenberg (1994) originally proposed that vocalization in the Semitic verbal system follows from the number of elements in the root. This is indeed the case for JANA: allomorphs need not be lexically-specified to apply to bases with three or four consonant, as their distribution can be left to the phonology. More crucially for the present purpose, the two vocalizations are allomorphs: they have different underlying representations but correspond to the same morphosyntactic information, and are in complementary distribution. Once this is accepted, then just like JUNA, JANA does not involve verbal types. There is only one verbal structure, to which two allomorphs correspond. But the choice between them is not a lexical one.

To be explicit, the verbal structures corresponding to the three JANA verbs under consideration are provided in (20). In all three, the same two allomorphs expressing the imperative are inserted at spell-out as the Vocabulary Item corresponding to the contents of the TAM head. The phonology will operate as in (19) above to select the correct allomorph for each case. Note the structure of the causative [maxmil] in (20c). Following Goldenberg (1994) and Faust (2015), I submit that such verbs are built on augmented roots. For the present purpose, the augmentation is expressed below the category head, such that
when the realization of TAM is considered, the root is as quadriconsonantal as the root in (20b).

(20) Structures of JANA imperatives

a. \[
\begin{align*}
\text{TAM} & \Rightarrow /xml/+\{/o/,/a,i/\} \Rightarrow [\text{xmol}] \\
\text{TAM}_{[\text{Imp}]} & \quad \text{vP} \\
\{/o/,/a,i/\} & \quad \text{v} \quad \sqrt{\text{xml}}
\end{align*}
\]

b. \[
\begin{align*}
\text{TAM} & \Rightarrow /gndr/+\{/o/,/a,i/\} \Rightarrow [\text{gandir}] \\
\text{TAM}_{[\text{Imp}]} & \quad \text{vP} \\
\{/o/,/a,i/\} & \quad \text{v} \quad \sqrt{\text{gndr}}
\end{align*}
\]

c. \[
\begin{align*}
\text{TAM} & \Rightarrow /mxml/+\{/o/,/a,i/\} \Rightarrow [\text{maxmil}] \\
\text{TAM}_{[\text{Imp}]} & \quad \text{vP} \\
\{/o/,/a,i/\} & \quad \text{v} \quad \sqrt{\text{P}} \quad \sqrt{\text{xml}}
\end{align*}
\]

To summarize, like in JUNA, the JANA system can be derived with no mention of verbal types. Indeed, the only lexical information that speakers need to store corresponds to the consonants of the item. Any analysis that claims that stems, and not only consonants, are stored, is massively uneconomical, because the vowels of those purported stems and their positions are predictable. If so, despite the different vocalizations of Khan’s T1 and T2, JANA is another Semitic system in which word-formation is not based on syllabified and/or vocalized stems, but on the consonantal ensembles traditionally referred to as the root.

4.4 The importance of the JUNA and JANA findings in the debate on the root

The JUNA and JANA systems support the proposition that vocalization, and possibly template form by extension, are predictable in some sense, rather
than part of lexical entries. Once that is accepted, there is no escape from the conclusion that the speakers of these languages store consonantal sets, rather than vocalized stems, supporting the pro-root view. But these systems are admittedly simple, and I will not make the error of generalizing to “Semitic” the findings from two very closely related Semitic languages. Indeed, the other systems mentioned in this paper, Modern Hebrew and Mehri, do not easily lend themselves to the analysis proposed for JUNA and JANA. Even other dialects of Neo-Aramaic, like the Christian dialect from the town of Urmî (Khan 2016), require more abstraction in order for arbitrary types to be eliminated as a primitive of their verbal systems. Further study will reveal whether the abstractions that this endeavor requires in each system can be convincingly argued for (see Faust 2015 for one attempt in this direction). Nevertheless, and more importantly for the present paper, the claim made by the no-root approach was not about Modern Hebrew, or Arabic, or any other specific language: it aimed at stripping Semitic languages in general of their status as an illustration of the high level of abstractness of stored items. This claim, in my opinion, is downright falsified by the JUNA and JANA data.

To generalize on the present findings even further, the analysis of JUNA and JANA illustrates how the stored items of a language needn’t correspond to any surface form. In doing so, it argues for the validity of the notion of the root (possibly as opposed to “the stem”) in any human language.\footnote{For more on this debate in the context of Latin and Romance, see for instance, Embick and Halle (2005) and Bermúdez-Otero (2013). I thank an anonymous reviewer for urging me to generalize these findings.}

5 Conclusion

Discontinuous roots have been part of the traditional analysis of Semitic morphology. The linguistic reality of these entities has nevertheless been challenged by a number of researchers, mostly on the basis of derivational processes that must refer to more than the consonants of the base. A second type of argument was based on the abstract nature of the purported discontinuous root: unlike the stems of most languages, it never appears alone. As a consequence, lexical entries in Semitic must always involve other exponents, such as class or type markers, and the traditional root is deemed “a residue”.

In this paper, I presented two empirically-based counter-arguments to this logic. First, I showed a case from Mehri, in which the selection of one of two...
allomorphs is sensitive to the final vowel of the stem, but not to its final consonant, even though the former is further away from the suffix than the latter. This situation is compatible with the view of root-based analyses, which place the stem vowels between the root and the affixes; it is incompatible with a view that regards such “stems” as simplex entries. In addition to this pro-root argument, the Mehri analysis also illustrated DM’s potential of analyzing two phonetically-distant morphemes as morpho-syntactically adjacent (while the intervening phonetic material in fact does not intervene morpho-syntactically).

The second counter-argument began by showing that in the the Jewish dialect of Urmi Neo Aramaic, there is no need for any underlying information besides the basic consonants in order to predict accurately the different forms of the verb, and it would be redundant to store such information. Then, the analysis was extended to another Neo-Aramaic language, that of the Jews of Arbel. It was shown that the two verbal types in the system are distributed according to the number of consonants in the root, and can therefore be considered as two allomorphs, whose distribution follows from phonological optimization. In this case, too, it would be massively redundant for speakers to store stems, rather than just consonant sets. This argument can be generalized beyond Semitic and to show how it is possible for a language to have a morphological level of representation that does not correspond to any surface realization.

This paper joins a growing body of work which counters the attack on the Semitic root as cognitively real. It calls for a reply on the issues raised both here and elsewhere: can one still claim that in Semitic, stem decomposition into roots and patterns is not linguistically real?

References


