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Arabic Hypocoristics and the Status of the Consonantal Root

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There is currently a controversy regarding the lexical (morphemic) status of the consonantal root in the Semitic languages. Bat-El (1994) and Ratcliffe (1997) have argued against the lexical status of the consonantal root in Hebrew and Arabic, respectively. However, Prunet, Béland, and Idrissi (2000) present Arabic aphasic evidence supporting the lexical (morphemic) status of the consonantal root for Arabic. In this article we offer supporting evidence from Arabic hypocoristics for the morphemic status of the consonantal root. We argue that hypocoristic formation is an output-to-output word formation process that nonetheless references the consonantal root. We then discuss implications.

Keywords: Arabic, hypocoristic, root, Semitic, word-based morphology

1 Introduction

Prunet, Béland, and Idrissi (2000) present evidence from the metathesis errors of an Arabic/French bilingual aphasic (ZT) for the existence of the consonantal root as a lexical (morphemic) unit in Arabic. ZT's aphasic speech in Arabic is characterized by metathesis of root consonants (but not

of affixal consonants and vowels), whereas his aphasic French speech is characterized neither by metathesis nor by anything that specifically singles out a set of root consonants to the exclusion of other consonants and vowels. The authors conclude that such evidence supports very different representations in the two languages: the root consonants of Arabic are underlyingly represented as floating on a root tier, while French consonants are preanchored and interspersed with the vowels. Their finding thus supports the autosegmental analysis of Semitic root consonants, as in McCarthy 1981.

The importance of Prunet, Béland, and Idrissi's conclusion can be understood in light of the current controversy among linguists working on Semitic languages regarding the status of the consonantal root. While some linguists have specifically argued for the morphemic status of the consonantal root (e.g., Prunet 1998, Rose 1998, 2000), other linguists working on Hebrew or Arabic either have denied this characterization or have downplayed its importance. For example, both Bat-El (1994) and Ussishkin (1999) show that Modern Hebrew denominal verb formation, an output-based word formation process, does not make specific reference to the consonantal root. Denominal verbs can reflect properties of the corresponding noun, including vowel quality and the presence of consonant clusters, without singling out the consonantal root. Largely on this basis, Bat-El denies the independent role of the consonantal root for Modern Hebrew and explicitly suggests (pp. 593–594) that the consonantal root may have no role in Arabic either. Moreover, some linguists working on Arabic who take a stem- or word-based view of morphology, such as Ratcliffe (1997), Benmamoun (1999), and Gafos (1999), downplay the special status of the consonantal root. Both Ratcliffe and Benmamoun argue that much of Arabic verbal morphology is word-based, without any need to reference a consonantal root. While Benmamoun leaves open whether some aspects of Arabic morphology might require reference to a consonantal root, Ratcliffe specifically denies this possibility. Nonetheless, Ratcliffe does say that operations on the consonantal root can be phonologically defined as operations on sonority troughs (i.e., consonants). He concludes (p. 169), ''To the extent that the consonantal root plays a role in the morphology it is an intermediate form extracted during a process of derivation.'' He thus denies that the consonantal root could be part of the underlying representation. This is why Prunet, Béland, and Idrissi's conclusion is of some significance: the metathesis errors of ZT's aphasic Arabic speech provide strong external evidence for the existence of the consonantal root as a morphemic unit in the mental lexicon of Arabic. These errors would be difficult to explain without reference to the morphemic status of the root.

While Prunet, Béland, and Idrissi's work focuses on the disagreement regarding the underlying lexical (morphemic) status of the consonantal root, there is an interesting related issue that they touch upon only briefly. In discussing work like that of Bat-El (1994), Ussishkin (1999), and Ratcliffe (1997) on output-based word formation, Prunet, Béland, and Idrissi suggest (p. 642) that the evidence from these researchers does not argue against the lexical status of the consonantal root as much as it argues for the necessity of output-to-output word formation processes. This suggestion leaves open the possibility that there could be output-to-output processes that make reference to the consonantal root. However, implicit in the stem- or word-based approach advanced

by Ratcliffe, Bat-El, and others is that a consonantal root could not be referenced by an output-based word formation process. This is because the root is not viewed as constituting a lexical unit; moreover, even if one were to allow for a phonological extraction process involving sonority troughs (i.e., consonants) as Ratcliffe does, at the word level root consonants would not be distinguishable from affixal consonants since both types of consonants constitute sonority troughs. Thus, a stem- or word-based view of Semitic morphology such as Bat-El's or Ratcliffe's predicts, contrary to Prunet, Béland, and Idrissi's view, that there cannot be output-to-output word formation processes that make reference to the consonantal root.

In this article we will consider exactly this issue: whether an output-to-output word formation process can reference the consonantal root. We will focus on the formation of hypocoristics in colloquial Arabic. While we have written on this topic before (see Davis and Zawaydeh 1999, Zawaydeh and Davis 1999), we have not specifically focused on the relevance of the hypocoristic data for the prediction under discussion. In Davis and Zawaydeh 1999 we describe three patterns of hypocoristics found in colloquial (Ammani-Jordanian) Arabic; in Zawaydeh and Davis 1999 we offer an optimality-theoretic analysis of one of the patterns. In both papers we refer to the importance of root consonants in the description and analysis of hypocoristics. Prunet, Béland, and Idrissi (p. 626) briefly mention our work on Arabic hypocoristics as providing additional evidence that supports the morphemic status of the consonantal root in Arabic. But here we would like to show that hypocoristic formation in Arabic is an example of an output-to-output word formation process that references the consonantal root. This has implications for word-based theories of morphology. We first present data from one pattern of hypocoristic formation in colloquial Arabic, showing how they crucially make reference to the consonantal root (section 2). We then argue that hypocoristic formation is an output-to-output word formation process and conclude by discussing some consequences of this finding (section 3).

2 Arabic Hypocoristics as Evidence for the Consonantal Root

Hypocoristics are common in colloquial Arabic, but they have not been well studied. We are unaware of any work besides our own that attempts to describe and analyze Arabic hypocoristic patterns. Below we will exemplify one common pattern of hypocoristics. The formation of these hypocoristics crucially references the root. While the data we present are based on the Ammani-Jordanian dialect, informal discussions with Arabic-speaking colleagues lead us to believe that the pattern we present is pan-dialectal.[1]

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[1] The specific data we present are based on the judgments of the second author, a native speaker of the Ammani-Jordanian dialect, as well as on a hypocoristic questionnaire in Arabic given by the second author to 11 native speakers of the dialect in Amman in the summer of 1998. See Zawaydeh and Davis 1999 for an optimality-theoretic analysis of these data.

First, consider the full names and hypocoristics given in (1).[2]

(1)

	Full name	Hypocoristic		Full name	Hypocoristic
a.	basma	bassuum	j.	ħuseen	ħassuun
b.	raaʔed	raʔʔuud	k.	ħaamed	ħammuud
c.	xaaled	xalluud	l.	bušra	baššuur
d.	ʕaamer	ʕammuur	m.	saliim	salluum
e.	raafeʕ	raffuuʕ	n.	žamaal	žammuul
f.	yaasir	yassuur	o.	ṣabaaħ	ṣabbuuħ
g.	waliid	walluud	p.	ʔamal	ʔammuul
h.	wasan	wassuun	q.	hind	hannuud
i.	ħasan	ħassuun	r.	faxri	faxxuur

Descriptively, the hypocoristics in (1) are characterized by a template of the shape $C_1aC_2C_2uuC_3$, where the consonants of the hypocoristic appear in the same order as they do in the full name and where the second consonant is geminated. Syllable structure properties of the consonants from the full name are irrelevant. The hypocoristics always have the same templatic shape regardless of the syllable position where consonants appear in the corresponding full name.

None of the full names in (1) have consonants that are affixal or epenthetic. All the consonants of these names would traditionally be considered as part of the consonantal root. Now consider the full names in (2), which have affixal or epenthetic consonants in addition to root consonants. Their hypocoristics are given on the right. (Nonroot consonants are underlined.)

(2)

	Full name	Hypocoristic
a.	muħammed	ħammuud
b.	ʔamžad	mažžuud
c.	ʔibtisaam	bassuum

The initial consonant of the full names in (2a) and (2b) is a prefix, while that in (2c) is epenthetic. None of these surface in the hypocoristic. The [t] in the name in (2c) is an infix that marks a morphological class. It too fails to appear in the hypocoristic even though in the full name it is between two root consonants. Thus, we observe that only the root consonants surface in the hypocoristic. As a consequence, different full names with identical root consonants, like those in (2a) and (1k) and those in (2c) and (1a), have identical hypocoristics.

One could conjecture that the extra consonants in (2) do not surface because the hypocoristic template does not permit more than three consonants. However, names with four root consonants have hypocoristics in which each consonant surfaces. Consider the name in (3).

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[2] The hypocoristics can be pronounced with a final inflectional vowel, realized as [a] after a guttural consonant, otherwise as [e].

(3) *Full name*   *Hypocoristic*
    maryam   maryuum

The templatic shape of the hypocoristic in (3) is exactly like that in (1) and (2). Instead of a geminate between the two vowels of the hypocoristic, though, the two medial consonants from the full name appear. This shows that the templatic pattern of the hypocoristic can accommodate four consonants. Thus, the failure of the affixal consonant (or epenthetic consonant) to surface in (2) cannot result from the template's being restricted to three consonants.

Furthermore, phonological reasons are not a factor in the failure of the initial consonant of the full names in (2) to surface in the corresponding hypocoristics. For example, while the initial [m] of [muħammed] does not surface in the corresponding hypocoristic in (2a), the initial [m] of [maryam] does surface in the hypocoristic in (3). Similarly, while the initial glottal stop does not surface in the hypocoristics for (2b) and (2c), it does surface in the hypocoristic for (1p). This follows directly from the different status of the glottal stop and [m] in these forms: as root consonants in (1p) and (3), but as prefixal or epenthetic consonants in (2). Moreover, compare the hypocoristic in (4a) with that in (4b).

(4)   *Full name*   *Hypocoristic*   *Root*
    a. salmaa<u>n</u>   salluum   slm
    b. ʔiħsaan   ħassuun   ħsn

The comparison is interesting since both full names end in a long vowel [aa] followed by [n]. (The initial glottal is epenthetic in (4b).) However, in (4a) the [n] is suffixal while in (4b) it is part of the root. This difference is reflected in the corresponding hypocoristics. In (4a) the final [n] is not incorporated into the hypocoristic whereas in (4b) it is. Thus, taken together, the data in (1)–(4) provide compelling evidence that hypocoristic formation in Arabic crucially references the consonantal root, distinguishing root consonants from affixal and epenthetic consonants.

3 Hypocoristic Formation as an Output-to-Output Word Formation Process

While we have provided evidence that Arabic hypocoristics reference the consonantal root, we have not yet provided evidence regarding the level at which the hypocoristic word formation process occurs. In what follows we will claim that it is an output-to-output word formation process taking the prosodified full name as its base. It thus provides an interesting example of an output-to-output word formation process referencing the consonantal root. At first glance, it might not seem possible that hypocoristic formation could be an output-to-output word formation process given the observation in the discussion regarding (1) that syllable structure properties from the full name are irrelevant. Specifically, whether the consonant in the full name is an onset, coda, singleton, or geminate does not matter; only its status as a root consonant is critical for its appearance in the hypocoristic. This characteristic would seem to suggest that hypocoristics are sensitive to the underlying consonantal root before syllabification occurs. Here, though, we present evidence that hypocoristic formation does in fact make reference to the consonantal root as it appears in the prosodified full name and thus reflects an output-to-output derivation.

The key data supporting our claim involve names that contain a medial glide as a root consonant. Consider (5), where we show the (potential) hypocoristic forms of names where the second of the three root consonants is a medial glide. Hypocoristic forms shown in parentheses are not acceptable for the given name. We also indicate the lexical root and meaning of the root.

(5)
	Root	Meaning of root	Full name	Hypocoristic
a.	ʕwd	'return'	ʕayda	ʕayyuud, (*ʕawwuud)[3]
b.	dwm	'continue'	diima	(*dayyuum), (*dawwuum)
c.	fyd	'benefit'	mufiida	(*fayyuud), (*maffuud)
d.	dyn	'lend'	dyaana	dayyuun
e.	nwr	'shine'	ʔanwar	nawwuur[4]

The forms with glides in (5) are interesting because they show that the hypocoristic is based on the root consonants as they appear in the full name. Looking first at (5d) and (5e), note that the underlying glide appears as such in the full name and surfaces unchanged in the hypocoristic. However, glides in Arabic can undergo alternation depending on both morphological and phonological factors.[5] For example, the name [ʕayda], grammatically, is a participle (feminine) form of the verb and would have the underlying representation /ʕaawida/ (abstracting away from the multitiered structure). In many dialects the participle form of verbs with medial glides (called hollow verbs in traditional Arabic grammar) always surface with [y] regardless of the nature of the underlying glide. This happens in dialects as diverse as Cairene Arabic (El-Tonsi 1982), Damascus Arabic (Ferguson 1961), and Gulf Arabic (Qafisheh 1977). Additionally, /ʕaawida/ is affected by regular phonological processes of syncope and closed-syllable shortening. Derivationally, then, [ʕayda] results from /ʕaawida/ by the stages shown in (6). Thus, an underlying /w/ surfaces as [y] in the full name.

(6) /ʕaawida/ → ʕaayida → ʕaayda → ʕayda [ʕayda]

Furthermore, a glide can delete or vocalize in certain environments. Consider the name [mufiida] in (5c). This, too, is a participle (feminine) form of a verb, though of a different

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[3] One might be tempted to maintain that the lexical root for [ʕayda] should have a medial /y/ and not /w/ as shown in (5a). However, it is clear from other forms of the paradigm that the lexical root must contain /w/. For example, the (dialectal) form of the verb with a medial geminate is [ʕawwid] 'go back to' and the (so-called) reciprocal form of the verb is [ʕaawid] 'to recur'. If the lexical root contained /y/, then [y] would surface in these forms rather than [w]. Similar arguments can be used to justify the other lexical roots shown in the first column in (5).

[4] Some of our Ammani-Jordanian Arabic consultants found [nawwuur] to be marginal, while others found it perfectly acceptable. We believe that the marginal judgments may be due to a weak effect of a phonological constraint militating against a sequence of a labial glide followed by a round vowel (see Ohala and Kawasaki 1984). This should be distinguished from the ungrammaticality of *[ʕawwuud] and *[dawwuum] in (5a) and (5b), respectively. In Zawaydeh and Davis 1999 we do note some general phonological constraints that affect hypocoristics. The main one relevant for the present discussion is a constraint prohibiting a long vowel followed by a syllable-final glide. As a consequence, a name with a glide as the final root consonant cannot form a hypocoristic of the pattern $C_1aC_2C_2uuC_3$. For example, [fadduuw] is not a possible hypocoristic for the name [fadwa].

[5] The phonology of glides in Arabic is complicated. Moreover, their phonology in colloquial dialects differs from their phonology in Classical (or Standard) Arabic. For discussion and analysis of the latter, see Brame 1970 and Rosenthall 1999.

morphological class than [ʕayda]. Its underlying representation would be /mufyida/, where /mu/ is the participle prefix of this class and where /f/, /y/, and /d/ are the root consonants. The /y/ in /mufyida/ is in a context where it would vocalize by the regular phonology of the language, resulting in a long vowel. Thus, the underlying /y/ of [mufiida] does not surface as such.

What is critical for our discussion is the observation that the hypocoristics in (5) are based on the root consonants as they appear in the full name, not on the underlying root. For example, the hypocoristic for [ʕayda]—namely, [ʕayyuud]—is based on the root consonants [ʕyd], not [ʕwd]. Consider also the name [mufiida] in (5c). This does not have a hypocoristic of the pattern under discussion. Specifically, it does not have the hypocoristic [fayyuud] even though /y/ is part of the lexical root. [fayyuud] is not a possible hypocoristic because, as discussed above, [y] does not surface as such in the name [mufiida]. Furthermore, [maffuud] is not possible since it incorporates an affixal element from the full name. Consequently, hypocoristic formation is sensitive to root consonants, but only as they appear in the full name. This strongly suggests that hypocoristic formation is an output-to-output word formation process (based on the full name) that nonetheless references a consonantal root.

This conclusion poses a challenge for work (see, e.g., Bat-El 1994, Ratcliffe 1997) that denies the morphemic status of the consonantal root. It also presents a challenge more generally for strong versions of the word-based morphology hypothesis (see, e.g., Ford, Singh, and Martohardjono 1997) that contend that units smaller than the word cannot be the object of a morphological strategy. Clearly, the consonantal root is the object of a morphological strategy in Arabic hypocoristic formation.[6]

Finally, the hypocoristic evidence discussed here raises an interesting question regarding Prunet, Béland, and Idrissi's (2000) interpretation of their aphasic speech data. Prunet, Béland, and Idrissi maintain that the Arabic aphasic speech of their informant ZT involving the metathesis of root consonants provides evidence that the root consonants of Arabic are underlyingly represented as floating on a root tier. However, given our demonstration that Arabic hypocoristic formation is an output-based word formation process that references the consonantal root, one could interpret the Arabic aphasic metathesis data in a similar way, namely, as showing that the consonantal root of an output form is being accessed, not necessarily the underlying root. Potential evidence for this comes from the following observation (Prunet, Béland, and Idrissi 2000:615, fn. 10): ''Even radical glides that do not surface in some patterns (e.g., *w* in /mawat/ → *maat* 'died') should be able to undergo root consonant reversal since we view metathesis as affecting the root tier. We have no data from ZT bearing on this prediction . . .'' Given this comment, Prunet, Béland, and Idrissi would predict, for example, that a possible metathesis error for [maat] could be [wamat] since /w/ is part of the underlying root of [maat], though it does not actually surface. However, if ZT's aphasic metathesis errors are like hypocoristics in referencing the consonantal root of an output form, then the prediction would be that [wamat] should be an

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[6] Moreover, as an anonymous reviewer correctly points out, Arabic hypocoristics (or any other output-to-output process that requires access to a consonantal root) pose a problem for Lexical Phonology (as in Mohanan 1986) since the bracket erasure convention would have the effect of disallowing access to the consonantal root.

impossible metathesis for [maat]. ZT's utterances cited by Prunet, Béland, and Idrissi do include words where underlying root glides have been deleted or vocalized, but these do not participate in the metathesis. Two examples are given in (7) (from Prunet, Béland, and Idrissi's (4) and (13)). We have included the underlying root.

(7) | | *Root* | *Target* | *ZT's output* | *Target gloss* |
|---|---|---|---|---|
| a. | rwh | ʔis-t-iṛaaħ-a | ʔis-t-iħaaṛ-a | 'pause' |
| b. | byḍ | biiḍ | ḍiib | 'eggs' |

The fact that no data from ZT show the reappearance of a deleted glide supports the interpretation that it is an output root that is being referenced. If this is correct, then both ZT's metathesis data and the hypocoristic patterns provide strong evidence that Arabic speakers can access the consonantal root of output forms.[7] In any case, the Arabic hypocoristic data presented here provide an interesting case of an output-to-output word formation process that references the consonantal root and as such present a challenge to strictly word-based approaches to morphology.

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[7] The Arabic slips of the tongue and ludlings (language games) discussed by Prunet, Béland, and Idrissi could also be viewed as providing evidence for an output consonantal root, especially if it can be shown that such phenomena are based on a fully prosodified output form as with the Japanese language game discussed by Itô, Kitagawa, and Mester (1996). Additionally, the experimental evidence cited by Frisch and Zawaydeh (2001) regarding the psychological reality of the Obligatory Contour Principle in Arabic is supportive of an output consonantal root.

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