# The Role of the OCP and Syllable Structure in Arabic Hypocoristics

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**Abstract**

This paper provides further insights into the role of the lexical versus output root in the phonology of Arabic. Data from Makkan Arabic hypocoristic formation show that native speakers have access to the lexical or underlying root consonants even when they are absent from the actual name. The present Optimality-Theoretic analysis shows that there is only one native pattern of hypocoristic formation in Makkan Arabic with two manifestations, $C_1aC_2C_2uuC_3$ and $C_1aC_2C_2u$. Syllable structure constraints and the OCP account for the apparent differences between these two forms, as well as for the failure of names related to glide-medial and glide-final roots to form $C_1aC_2C_2uuC_3$ hypocoristics. Names related to glide-final roots form $C_1aC_2C_2u$ hypocoristics where the deletion of the final glide avoids violation of syllable structure constraints. The findings in this paper call for further research on the issue of output vs. lexical root in Arabic hypocoristic formation.

**Keywords**
syllable structure; OCP; hypocoristic formation; Arabic; Makkan Arabic; lexical vs. output root

## 1. Introduction

There are currently two views regarding the lexical status of the consonantal root in Semitic languages in general and Arabic in particular. The first view argues for the existence of the consonantal root as a lexical morphemic unit. This view goes back to the Ancient Arab and Hebrew grammarians who based their choice of the root as the unit in their description on the semantic similarity that exists among forms related to the same root. Among the more recent studies, Rose (2003: 81) argues that the root must be referenced, even in word-based derivation such as the formation of Ethiopian internal reduplication. She further adds that the root must be acknowledged as an independent morphological entity. Faust and Hever (2010:80) argue for the existence of a discontinuous root morpheme in the Semitic languages. They show that in the verbal inflection of Modern Hebrew and Chaha, no surface form can serve as the base for other forms. They argue that similar effects of the root exist in nominal formation. In several studies on Arabic, the root is singled out as an independent entity referenced in processes both in normal as well as impaired speech. To mention just a few, McCarthy's (1979, 1981) extensive work on Arabic grants the root a special status by abstracting it on a separate tier. Al-Mozainy (1981) describes a language game in Bedouin Hijazi Arabic where only root consonants are affected by metathesis. Affixes and vocalic elements do not participate in metathesis. Using data from the speech of an Arabic aphasic subject Prunet et al (2000) present evidence to support the primacy of the root. Metathesis affects the root consonants only. This led to the conclusion that the root consonants of Arabic are underlyingly represented as floating on a root tier. Analyzing additional data from the same aphasic subject Idrissi et al (2008) show that inaudible glides in weak roots resurface in metathesis and template selection errors. They further support their findings by data from hypocoristic forms from Moroccan and Gulf Arabic. They conclude that Arabic consonantal roots are abstract morphemic units rather than surface phonetic units (p. 221).

The other view argues against the morphemic status of the root and calls for the dismissal of the root as a morphological entity and for bringing the Semitic languages to the main stream of other languages. Bat-El (1994, 2003) and Ussishkin (1999, 2000) argue that denominal verb formation in Modern Hebrew is an output-based word formation process that does not make specific reference to the consonantal root. With respect to Arabic, Ratcliffe (1997) and Benmamoun (1999, 2003) argue that much of Arabic verbal morphology is word-based with no reference to the consonantal root.

Hypocoristic formation (HF) is another area that can lend support to either position. Here too we find two approaches. The first approach argues for the primacy of the root in HF as in Abu-Mansour (1995, 2000, 2010), and Davis & Zawaydeh (2001). The assumption in this view is that native speakers can access the root consonants and make them the target of HF. Within this view a further distinction is made between the ***lexical*** or underlying root and an ***output*** root based on the consonants that appear in the actual name. Zawaydeh and Davis (1999) propose an output root different from the lexical root, while Abu-Mansour (2000) argues that hypocoristic formation in Makkan Arabic (MA) targets the lexical root and that there is no need for an output root.

Farwaneh (2007) challenges the primacy of the root and argues that HF is an output-based word formation process with no reference to template, hypocoristic input or root.

This paper argues for the central role of the consonantal root in Arabic, and provides evidence for the existence of the root as an entity that can be accessed by native speakers for HF. The analysis focuses on two issues, the assumption of the lexical vs. an output root and the relationship between the two main patterns of hypocoristics in MA.

As for the first issue, the paper presents an alternative explanation of the failure of glide-medial and glide-final roots to form $C_1aC_2C_2uuC_3$ hypocoristics. This failure has been the main reason for previous analyses to assume an output root different from the input lexical root (cf. Zawaydeh and Davis (1999), Abu-Mansour (2010)). In the present Optimality-Theoretic account, the failure of glide-medial and glide-final roots to form $C_1aC_2C_2uuC_3$ hypocoristics follows from the OCP and other constraints on Arabic syllable structure. These constraints are well motivated and independently needed in the language. Support for the present analysis comes from the fact that glide-final roots in

MA maintain the inability to form $C_1aC_2C_2uuC_3$ hypocoristics even with the assumption of an output root since assuming an output root will still run into conflict with constraints on syllable structure. In addition, the set of data for which an output root was originally proposed (glide-medial roots) is too limited, and can be explained without recourse to the idea of an output root.

The paper cites two different sets of data from MA to support the primary role of the lexical root in HF. First, there is a significant number of hypocoristics for different types of names where the lexical glide [w] surfaces in the hypocoristic despite its absence from the actual name. Conversely, some actual names do include the lexical glide [w] yet these names fail to form $C_1aC_2C_2uuC_3$ hypocoristics because of violation of the OCP. Both situations provide convincing arguments to support the status of the lexical root consonants and further show that native speakers have the ability to abstract and in some cases retrieve those consonants and target them for HF. This result supports what Prunet et al (2000) and Idrissi et al (2008) found in the area of impaired speech.

The other major issue in the paper is the claim that the two most frequently used patterns of HF, $C_1aC_2C_2uuC_3$, and $C_1aC_2C_2u$ are structurally related and represent two different manifestations of one pattern. There is, however, a division of labor in the use of these patterns: $C_1aC_2C_2u$ pattern is followed by exactly those roots that fail for their structural composition to follow Pattern I, $C_1aC_2C_2uuC_3$, i.e. glide-final roots. Abu-Mansour (2010) describes these forms of HF in MA as two separate patterns, and falls short of uncovering the underlying basic similarities of the two forms as well as their differences. In the present analysis, evidence for the claim that we are dealing with two manifestations of one pattern comes from the explanation of the same problems that led earlier analyses to challenge the primacy of the lexical root and to assume an output root instead (Zawaydeh & Davis 1999). The failure of glide-medial and glide-final roots to form $C_1aC_2C_2uuC_3$ hypocoristics is shown to result from the domination of the faithfulness constraints by the OCP and by constraints on syllable codas in MA, respectively. This in itself leads to a very welcome result of the analysis: what has been referred to as Pattern II $C_1aC_2C_2u$ in Davis & Zawaydeh (1999) and Abu-Mansour (1995, 2000, 2010) will in fact provide the only possible way of forming hypocoristics for names related to glide-final roots. In OT terms, this will be the result of only two of the constraints in the grammar of Arabic hypocoristics occupying different places in the constraint hierarchy.[1]

The remainder of this article is organized as follows. Section 2 introduces the two patterns of HF in Makkan Arabic $C_1aC_2C_2uuC_3$ and $C_1aC_2C_2u$. Section 3 provides a detailed analysis of hypocoristics related to all types of roots and supports the fact that only the root consonants are referenced in the hypocoristic. It establishes the role of the OCP and syllable structure constraints in explaining the failure of glide-medial and glide-final roots to form $C_1aC_2C_2uuC_3$ hypocoristics. In addition, it explains the similarities as well as the differences between the two patterns in terms of constraint ranking capitalizing on the idea that $C_1aC_2C_2u$ is, in fact, a variant of $C_1aC_2C_2uuC_3$ selected by glide-final roots. Section 4 discusses the implications of the analysis to the assumption of lexical versus output root in HF. Section 5 summarizes the main points of the paper.

## 2. Data and explanation: Basic patterns of HF in Makkan Arabic

In several Arabic dialects including MA, the main pattern of HF is disyllabic $C_1aC_2C_2uuC_3$. The vowels are invariably /a/ and /uu/, while the consonants coincide with the consonants of the actual name and in most cases with those of the lexical root. The first syllable in the pattern is a CVC syllable. Stress falls on the second syllable of the hypocoristic in accordance with the general rule of stressing final superheavy syllables in the majority of the Arabic dialects. This pattern of HF is very productive especially in the sedentary dialects. In some dialects, for instance MA, it is used in place of the Standard Arabic diminutive form *fuʕayl*. Therefore, a name like *ʕaziiz* will have the nickname *ʕazzuuz* in MA rather than the diminutive *ʕzayyiz*, the usual nickname in most of the Bedouin dialects. $C_1aC_2C_2uuC_3$ hypocorostics have been the focus of several studies (Abu-Mansour 1995, 2000, 2010, Davis & Zuwaydeh 1999, Zawaydeh & Davis 1999, Farwaneh 2007).

In addition to $C_1aC_2C_2uuC_3$ hypocoristics, MA utilizes two other patterns. The following examples serve to illustrate the three patterns. These are identified as Patterns I and Pattern II. Pattern III will not be discussed in this paper.

(1) Main patterns of hypocoristics in Makkan Arabic

| | **Name** | **Hypocoristic** | **Root** | **Meaning** | **CV-template** |
|---|---|---|---|---|---|
| Pattern I | *ħasan* | *ħassuun(a)* | √*ħsn* | ‘good’ | $C_1aC_2C_2uuC_3$ |
| Pattern II | *ħanaan* | *ħannu* | √*ħn* | ‘affection’ | $C_1aC_2C_2u$ |
| Pattern III | *layla* | *luulu* | √*lyl* | ‘night’ | $C_iV_jV_jC_iV_j$ |

Among the three patterns, $C_1aC_2C_2uuC_3$ is the most common and frequently used by all speakers of MA. As for Pattern II, it is less common than Patten I, and is only used for certain names, yet it is still considered as native to the language. A detailed discussion of Pattern II in MA is found in Abu-Mansour (1995, 2000, 2010). Pattern III is the least common and is considered by many native speakers of MA as innovative or foreign. This pattern has started to make its way to the language only recently, and is mostly used by the younger generation (Abu-Mansour 1995, 2000, 2010). For a detailed discussion of Pattern III, see Abu-Mansour (forthcoming).

The remaining of this section will provide examples of names that form Pattern I hypocoristics followed by those that form Pattern II. The section will conclude with examples of exceptions to Pattern I, namely, hypocoristics of names related to glide-medial and glide-final roots.

### 2.1. *Pattern I: $C_1aC_2C_2uuC_3$ hypocoristics*

Pattern I is primarily used for names that come from sound triconsonantal roots that include no glides. For such roots, the three consonants always appear in the actual name as well as in the corresponding hypocoristic. Representative examples appear in (2):

(2) Hypocoristics from names related to sound triconsonantal roots

| | Name | Hypocoristic | Root | Meaning |
|---|---|---|---|---|
| a. | *ǰamaal* | *ǰammuul(a)* | √*ǰml* | 'beauty' |
| b. | *ħasan* | *ħassuun* | √*ħsn* | 'good' |
| c. | *miħammad* | *ħammuud(a)* | √*ħmd* | 'thank' |
| d. | *ʔaħmad* | *ħammuud(a)* | √*ħmd* | 'thank' |
| e. | *ʔiʕtidaal* | *ʕadduul(a)* | √*ʕdl* | 'fairness' |
| f. | *xadiiǰah* | *xadduuǰ* | √*xdǰ* | 'tender' |
| g. | *farħaan* | *farruuħ(a)* | √*frħ* | 'happy' |
| h. | *ʃams* | *ʃammuusa* | √*ʃms* | 'sun' |
| i. | *gamar* | *gammuur* | √*gmr* | 'moon' |
| j. | *ʔanas* | *ʔannuus* | √*ʔns* | 'sociable' |

Several linguistic features of this pattern can be extracted from the data in (2). All hypocoristics have the pattern $C_1aC_2C_2uuC_3$ where the consonants are the same as the three consonants of the lexical root. Those consonants consistently appear in the actual name. The root consonants appear in the hypocoristic in the same order as in the actual name; the second consonant is always a geminate. One interesting point that emerges from the data in (2) is that only the root consonants are realized in the hypocoristic form; affixal and epenthetic material do not form part of the hypocoristic. For instance, the prefix [m] in (2c), the epenthetic [ʔ] and the infix [t] in (2e) as well as the suffix [an] in (2g) all do not appear in the hypocoristic. Since only root consonants are realized in the hypocoristic, several names may share the same nickname as in (2c) and (2d). Finally, the suffix [a] optionally follows the hypocoristic, and is not decided by the gender associated with the name. Thus, (2a) and (2g) are typical male names, while (2f) and (2i) are usually used for females.

Names with four root consonants also have hypocoristics of this pattern as the examples in (3) show:

(3) Hypocoristics of names with four root consonants

| | Name | Hypocoristic | Root | Meaning |
|---|---|---|---|---|
| a. | *ʔibraahiim* | *barhuum* | √*brhm* | 'steadfast' |
| b. | *maryam* | *maryuum* | √*mrym* | 'Mary' |
| c. | *sundus* | *sanduus* | √*snds* | 'sarcenet' |
| d. | *kaltuum* | *kaltuuma* | √*kltm* | |

The examples in (3) show that this pattern of hypocoristics can indeed accommodate four root consonants. The only difference is that the hypocoristic forms in (3) do not exhibit gemination of the second root consonant since all consonant slots of the template are exhaustively occupied by the four consonants of the root. Similar to (2d) and (2e), the epenthetic non-root consonant [ʔ] in (3a) does not surface in the hypocoristic. Interestingly, the name *kaltuum* in (3d) minimally adds the suffix [a] to be marked as a nickname with no further changes in structure since it already has the vocalic elements of the hypocoristic pattern, [a] in the first syllable and [uu] in the second. A further interesting fact is that Pattern I represents the only option for the names in (3) to form their respective nicknames. Pattern II hypocoristics of these names will delete one of the root consonants (see below); this makes Pattern I the only Pattern that has enough consonant slots to accommodate the four consonants of this group of names.

Full names associated with biconsonantal geminate roots can have a hypocoristic of Pattern I:

(4) Hypocoristics of names with two identical root consonants

| | Name | Hypocoristic | Root | Meaning |
|---|---|---|---|---|
| a. | *dalaal* | *dalluula* | *√dl* | ‘coquetry’ |
| b. | *ṭalaal* | *ṭalluul* | *√ṭl* | ‘dew’ |
| c. | *ħanaan* | *ħannuun(a)* | *√ħn* | ‘affection’ |

The examples in (2), (3), and (4) show that even though Pattern I hypocoristics have one template, $C_1aC_2C_2uuC_3$, they exhibit three different realizations on the segmental level. These are given in (5):

(5) Segmental realizations of Pattern I template:

a. $C_1aC_2C_2uuC_3$ (exhibited by hypocoristics for 3 consonant roots)
b. $C_1aC_2C_3uuC_4$ (exhibited by hypocoristics for 4 consonant roots)
c. $C_1aC_2C_2uuC_2$ (exhibited by hypocoristics for 2 consonant roots with final geminates)

Among the names related to sound triconsonantal roots, a very small group of names does not form Pattern I hypocoristics. This involves only roots whose second consonant is one of the pharyngeal sounds [ħ] or [ʕ]. Representative examples are given in (6):

| (6) | Name | Pattern I | Root | Meaning |
|---|---|---|---|---|
| a. | *waħiid* | **waħħuud* | *√wħd* | ‘lonely’ |
| b. | *suʕaad* | **saʕʕuuda* | *√sʕd* | ‘happiness’ |
| c. | *waʕad* | **waʕʕuuda* | *√wʕd* | ‘promise’ |
| d. | *maʕn* | **maʕʕuun* | *√mʕn* | ‘devotion’ |

For the names in (6), Pattern I hypocoristics with a geminate pharyngeal are ruled out in favor of a singleton pharyngeal in that position as in Pattern II (See section 3.2.3).

## 2.2. *Pattern II: $C_1aC_2C_2u$<u> hypocoristics*

In MA, Pattern II hypocoristics is mainly used for names that cannot form a hypocoritic of Pattern I because of the make up of the roots with which they are associated. These are names related to glide-final roots. Representative examples of this category are given in (7):

(7)

| | Name | Pattern II | Pattern I | Root | Meaning |
|---|---|---|---|---|---|
| a. | *ʃaza* | *ʃazz+u* | **ʃazzuuw* | *√ʃzw* | *'fragrance'* |
| *b.* | *ʃaadyah* | *ʃadd+u* | **ʃadduuy* | *√ʃdw* | 'chanting' |
| c. | *zakiyyah* | *zakk+u* | **zakkuuy* | *√zky* | 'righteous' |
| d. | *nada* | *nadd+u* | **nadduuy* | *√ndy* | 'dew' |
| e. | *fidaaʔ* | *fadd+u* | **fadduuw* | *√fdw* | 'sacrifice' |

Pattern II hypocoristics are also used for names related to biconsonantal geminate roots. The examples in (4) show that these names may have Pattern I hypocoristics, however, Pattern II is more common:[2]

(8)

| | Name | Pattern II | Pattern I | Root | Meaning |
|---|---|---|---|---|---|
| a. | *dalaal* | *dallu* | *dalluul* | *√dl* | 'coquetry' |
| b. | *ṭalaal* | *ṭallu* | *ṭalluul* | *√ṭl* | 'dew' |
| c. | *ħanaan* | *ħannu* | *ħannuun* | *√ħn* | 'affection' |

Very few names associated with sound triconsonantal roots have Pattern II hypocoristics. This happens when the second consonant of the root is one of the pharyngeal consonants [ħ] and [ʕ]. The examples in (6) repeated here in (9) fail to form Pattern I hypocoristics. Instead, they form Pattern II hypocoristics. Note that these hypocoristics will have the template $C_1aC_2C_3u$ where gemination of $C_2$ is avoided.

(9)

| | Name | Pattern II | Root | Meaning |
|---|---|---|---|---|
| a. | *waħiid* | *waħdu* | *√wħd* | 'lonely' |
| b. | *suʕaad* | *saʕdu* | *√sʕd* | 'happiness' |
| c. | *waʕad* | *waʕdu* | *√wʕd* | 'promise' |
| d. | *maʕn* | *maʕnu* | *√mʕn* | 'devotion' |

2.3. *Exceptions to Pattern I*

2.3.1 *Glide-medial roots*

All of the names that do not form Pattern I hypocoristics in MA involve roots that include one of the glides as a second or third member.

Names related to glide-medial roots exhibit dual behavior with respect to HF of Pattern I. If the medial glide of the root is [w], the name fails to take a hypocoristic of Pattern I as in (10).

(10)

| | Name | Hypocoristic | Lexical | Meaning |
|---|---|---|---|---|
| a. | *fawziyya* | **fawwuuz* | */fwz/* | 'victory' |
| b. | *nawaal* | **nawwuula* | */nwl/* | 'achievement' |
| c. | *ʔamwar* | **nawwuur* | */nwr/* | 'light' |

Instead of Pattern I, speakers use different and basically idiosyncratic forms of hypocoristics for names like the ones in (10). Such forms do not show enough similarities to justify categorizing them into independent patterns.

If, on the other hand, the lexical medial glide is [y], the name forms Pattern I hypocoristic just like names related to regular triconsonantal roots: the glide appears in the hypocoristic, as (11) illustrates:

| (11) | | **Name** | **Hypocoristic** | **Lexical** | **Meaning** |
|---|---|---|---|---|---|
| | a. | *mufiidah* | *fayyuuda* | */fyd/* | ‘usefulness’ |
| | b. | *bayaan* | *bayyuun* | */byn/* | ‘clarity’ |
| | c. | *ʕayʃa* | *ʕayyuuʃ* | */ʕyʃ/* | ‘living’ |

2.3.2 *Glide-final roots*

All names related to glide-final roots do not form Pattern I hypocoristics either because of syllable structure restrictions specific to MA. Instead, glide-final roots form hypocoristics of Pattern II. See the examples in (7) above.

2.4 *Meaning in Arabic hypocoristics*

It is customary in the literature on Arabic hypocoristics to assume that Arabic names carry with them the meaning of the roots with which they are associated (Abu-Mansour 1995, 2000, 2010; Davis & Zuwaydeh 1999; Zuwaydeh & Davis 1999; Farwaneh 2007). This assumption has been recently questioned by Idrissi et al (2008). They argue that names are different from their word homophones. They discuss views from philosophy and semantics, neurolinguistics, language variation and change, and native intuitions to argue against the generally accepted view that Arabic names have meaning. Their goal was to provide evidence from the speech of an aphasic Arabic speaker to show that inaudible glides in weak roots do in fact resurface in metathesis and template selection errors.

In what follows, I adduce several points to show that a considerable degree of knowledge of meaning in names continues to be available for native speakers of MA.

First, among the social practices of naming and nicknaming in the city of Makkah as documented in Abu-Mansour (1995) is the use of several forms that are related to the same root in naming brothers and/ or sisters. For instance, it is very common to find brothers and sisters with names like *maaǰdah*, *maǰd, ʔamǰaad, and* their correspondent male names *maaǰid, ʔamǰad, and maǰeed* all of which are related to the root √*mǰd* ‘glory’. This tradition extends to names of fathers (and sometimes mothers) and their sons and daughters. It is a frequent practice in Makkan society for families to choose names for their children that are related to the same root of their own names. Examples of such names include names like *ʔaħmad ħaamid* (√*ħmd* ‘thank’) and *maħaasin ħasan* (√*ħsn* ‘beauty’) are frequent.

Second, the famous Arabic expression mentioned by Idrissi at al (2008) *ʔism ʕalaa m-usamma* 'the name suits the named one' is still used in the Makkan society both positively and negatively. It expresses admiration when the name truly suits the bearer, for instance, when a generous person is named *kariim* (M) or *kariima* (F). People also comment negatively if the named person does not live up to the meaning of the name. The reaction of people in both situations point to an awareness of the meaning attached to personal names.

Third, it is very common in the society for people to change their names, if they do not like the meaning of the names given to them by the parents. This practice is legal and widespread. It is even encouraged by the society. In fact, name changing usually happens as a result of people commenting on the meaning of a specific name. This clearly points to a constant presence of the meaning in the mind of the hearers when they hear the names paralleled by equal awareness of the name bearers of the meaning included in their names.

Finally, it is quite common for people to reach out for the root and use one of its derivatives as a nickname for a person, for instance, the use of *daʕwa* 'one prayer' as a nickname for *duʕaaʔ* 'prayer', *waǰan* 'cheeks (collective (pl.)' for wa*ǰanaat* 'cheeks', *ħusun* 'beauty' for *maħaasin* 'beauties', and *ʃafag* 'affection' for *ʃafiigah* 'affectionate'. Note that for the last two names, the use of pattern I hypocoristics is more common. It is surprising though that this practice is chosen mostly by people who had less schooling and are normally among the older generation in their families.

## 3. Analysis

This section presents an Optimality-Theoretic analysis of Pattern I and Pattern II hypocoristics. The analysis will focus on several points. First, the similarities between the two patterns as well as the differences will be stated in OT terms. Second, it confirms the crucial role of the consonantal root in both patterns. Third, it explains the role of syllable structure and the OCP in accounting for Pattern II hypocoristics and in explaining the exceptions to Pattern I.

### 3.1. *Pattern I: Evidence for referencing the consonantal root in HF*

#### 3.1.1 *Triconsonantal and qudriliteral*

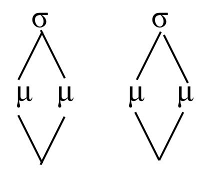
Hypocoristic formation in MA is a process that references the consonantal root. It involves considerable abstraction from the structure of the actual name. This is clear from hypocoristics of names related to triconsonantal roots in (2), to quadriliteral roots in (3), and to biconsonatal roots in (4) where only the root consonants are abstracted from the actual name and mapped into the hypocoristic pattern. No other structural property of the name survives in the hypocoristic. Since in this group of names the consonants that appear in the full name (output root) coincide with the consonants of the lexical root, the question of which root consonants, lexical or output, should be assumed in the input to

HF does not arise. For this reason, I will assume that the full name provides the base for HF. I claim that native speakers have the ability to factor out the root consonants and leave behind non-root material, such as the vowels and affixes.[3]

In addition to the root consonants, the vowels of the pattern [a] and [u] form the other part of the input. All hypocoristics of this type surface with two syllables and each syllable is bimoraic. The input to hypocoristic formation is given in (12):

(12) Input to hypocoristic formation of Pattern I

Base: *ħasan* Hypocoristic*:[ħassuun]* Root: √*ħsn*




Input: Root consonants /ħsn/ + a u

The input for all Makkan hypochoristics in (2), (3), and (4) consists of the consonantal root and the basic vowels of the pattern /a, u/ each of which is realized as a bimoraic heavy syllable. The specific realization of the two heavy syllables in the output of hypochoristics whether CVC or CVV, will be decided by the interaction of two of the markedness constraints.

The other important structural properties exhibited by the examples in (2), (3), and (4) need to be recast in terms of OT constraints. First, each realization consists of two heavy syllables, where the first is a heavy closed syllable, CVC not CVV, and the second is a superheavy syllable that keeps the long vowel /uu/ of the input. Second, the first consonant in the hypocoristic must coincide with the first root consonant and must end with the final consonant of the root, that is, the third, the fourth, or the second in geminate roots. Third, the second consonant of a tri-consonantal root is always geminated. However, in hypocoristics related to quadrilateral roots, gemination is substituted by the third consonant, and in bilateral geminated roots by the second consonant filling up the last three C-positions in the template. The final important property of hypocoristics is that only root consonants appear in the hypocoristic; affixal consonants are left out.

These properties can be accounted for using three types of constraints, Correspondence Constraints (McCarthy and Prince 1995), Alignment Constraints (McCarthy and Prince 1993b), and Markedness Constraints (Prince and Smolensky 1993). The first two types of constraints are undominated in the grammar of Pattern I of Arabic hypocoristics:[4]

Correspondence Constraints (McCarthy and Prince 1995, McCarthy 1995)

(13) MAX–Rt Hypo(C)
Every root consonant must have a correspondent in the hypocoristic- no deletion.

(14) DEP-Rt Hypo(C)
Every consonant in the hypocoristic must have a correspondent in the root- no epenthetic or affixal material.

(15) MAX-IO(μ)
Every mora of the input has a correspondent in the output.

(16) IDENT-IO(V)
Correspondent input and output vowels have the same specification for all features.

Alignment Constraints (McCarthy and Prince 1993b)

(17) Align (Rt, L, Hypo, L)
The left edge (first consonant) of the root must be aligned with the left edge of the hypocoristic.

(18) Align (Rt, R, Hypo, R)
The right edge (last consonant) of the root must be aligned with the right edge of the hypocoristic.

Markedness Constraints (Prince and Smolensky 1993, McCarthy and Prince 1993a)

(19) ONSET

(20) *COMPLEX

(21) NO-LONG-V (*VV)

(22) GEMINE **(**GEM)

The faithfulness constraint in (13) requires that all root consonants are realized in the hypocoristic, while (14) ensures that only root consonants appear in the hypocoristic. The constraint in (15) requires that the four moras of the input be realized in the hypocoristic (McCarthy 1995).[5] The long vowel of the second syllable always counts as heavy following the stress rules of MA where final CVVC and CVCC syllables are heavy and the final consonant is extrasyllabic (Abu-Mansour 1987, Kabrah 2004). This is a general rule that characterizes the majority of the Arabic dialects in stressing a final CVVC or CVCC syllable (McCarthy 1979, Kiparsky 2003). The long vowel of the first syllable in the input surfaces as short, however, the syllable maintains its weight and surfaces as a heavy CVC syllable. There are several ways to account for the realization of the long vowel *aa* of the input as a CVC syllable in this position. For instance, a constraint that bans long vowels in adjacent syllables was originally proposed by Younes (1995) for Rural Palestinian Arabic and adopted by Zawaydeh and Davis (1999) for Ammani Jordanian Arabic. However, such a constraint will not explain the case of MA. Makkan Arabic does allow long vowels in adjacent syllables in basic structures, for instance, /naamuus/ 'mosquitoes', /ǰiihaan/ 'personal name', and /riiħaan/ 'basil'. Adjacent syllables with long vowels may also occur in derived structure. Examples include [ʃaayfiinahum] < /ʃaayif+iin+hum/ 'we are watching them' and [ʔaaxdiini] < /ʔaaxid+iin+i/ 'they are taking me'. This means that the occurrence of the CVC syllable in the case of MA must be the effect of a restriction compatible with the overall structure of the language. It is, in fact, the ranking *VV >> *GEM that insures a CVC syllable instead of CVV in this position.

The other two alignment constraints in (17) and (18) require that a hypocoristic form of this type starts with the first consonant of the root and ends with the last consonant.

The faithfulness constraints in (13), (14), (15), and (16) as well as the alignment constraints in (17), and (18), are all undominated constraints in the phonology of this pattern of hypocoristics. The markedness constraints in (19) and (20) are also undominated in the language. They require syllable well-formedness in the output. Candidates with complex onsets or codas, and syllables that lack onsets are all ruled out in the language.

The following is a short OT account of the basic features of this pattern. We start with hypocoristics associated with names that have three sound root consonants. For example, *ħassuun* is the nickname for several personal names such as *ħasan*, *ħuseen*, *muħsin*, *ʔiħsaan*, all of which are associated with the root √*ħsn*.

The input to all hypocoristics of Pattern I includes the root consonants and the two bimoraic syllables (cf. (12)). The following establishes the role of the faithfulness constraints in (13-16) in deciding the template shape of this hypocoristic form.

(23) MAX-Rt HYPO(C), DEP-Rt HYPO (C), MAX-IO(μ), IDENT-IO(V) > *GEM

Base: *muħsin* / *ħasan* / *ʔiħsaan* 'good' Hypo: *[ħassuun]* Rt*:* √*ħsn*

| I: μ μ μ μ /ħsn + a u/ | MAX-Rt Hypo(C) | DEP-Rt Hypo (C) | MAX-IO (μ) | IDENT-IO (V) | *GEM |
|---|---|---|---|---|---|
| a. mas.suun | *! | *! | | | * |
| b. maħ.suun | | *! | | | |
| c. ħa.suun | | | *! | | |
| d. ħus.saan | | | | *!* | * |

| | | | | | |
|---|---|---|---|---|---|
| e. ħas.siin | | | | *! | * |
| f.☞ ħas.suun | | | | | * |

Tableau (23) establishes the role of the faithfulness constraints in the grammar of this pattern. The actual hypocoristic (23f) obeys all constraints except the markedness constraint *GEM, while each of the other candidates violates one or two of the faithfulness constraints. The full name *muħsin* has a non-root consonant in the prefix *m-*. Both (23a) and (23b) are excluded for including this consonant. In addition, (23a) does that at the expense of deleting a root consonant *ħ*.

Another crucial aspect of the grammar of this pattern is the inalterability of the vowels in the pattern: [a] in the first syllable and [uu] in the second. The identity constraint IDENT-IO(V) warrants faithful mapping of the vowels of the input in both syllables. Both (23d) and (23e) are not optimal: candidate (23e) changes the identity of one vowel of the input while (24d) incurs two violations of IDENT-IO(V) by reversing the order of the vowels of the input. This allows (24f) to surface as the actual form by obeying all constraints including IDENT-IO(V).

The alignment constraints in (17) and (18) explain why candidates like *ħas.nuu* and *maħ.suun* are not optimal despite their satisfaction of the rest of the constraints.

The interaction of *VV and *GEM in Tableau (24) accounts for the realization of the first syllable of the pattern as a CVC.

(24) *VV > *GEM

Base: *ħasan* ‘good’ Hypo: *[ħassuun]* Rt:√*ħsn*

| I: μ μ μ μ /ħsn + a u/ | *VV | *GEM |
|---|---|---|
| a. ☞ħas.suun | * | * |
| b. ħaa.suun | **! | |

The upshot of the current analysis of triconsonantal roots is that given the input in (12) and the three types of constraints in (13-22), the result will always be a hypocoristic with the template $C_1aC_2C_2uuC_3$. Only the root consonants appear in the hypocoristic, while the template shape of the pattern results from the satisfaction of all faithfulness constraints, alignment constraints and markedness constraints.

Names related to quadriliteral roots (cf. (3)) can be explained in the same way:

(25) Base: *sundus* ‘sarcenet’ Hypo: *[sanduus]* Rt: √*snds*

| I: μ μ μ μ /snds+ a u/ | *COMPLEX | MAX-Rt Hypo(C) | MAX-IO (μ) | *GEM |
|---|---|---|---|---|
| a. saa.nduus | *! | | | |
| b. sna.duus | *! | | * | |
| c. san.nuus | | *! | | * |
| d. saa.duus | | *! | | |
| e. ☞ san.duus | | | | |

The actual hypocoristic in (25e) is the only form in which the four consonants of the root are organized into a CVC.CVVC template. This shape is realized by obeying all the constraints. The failure of candidates (25c) and (25d) to be optimal provides further evidence for referencing the root consonants in the hypocoristic. Both candidates maintain the two moras of the input, one by gemination of $C_2$ and the other by having a long vowel, at the expense of excluding one consonant of the input. Consequently, both candidates lose making Pattern I the only hypocoristic pattern found with names related to quadriliteral roots.

To summarize, this section has established two salient characteristics of the $C_1aC_2C_2uuC_3$ pattern used for names related to triconsonantal and qudriliteral roots. First, only the consonants of the root are referenced in the hypocoristic. Second, the specific template of this pattern is a consequence of the satisfaction of all constraints relevant to this pattern. Apart from *VV > *GEM, the rest of the constraints are unranked with respect to each other thus the optimal candidate must satisfy all of them.

### 3.1.2 *Biconsonantal roots and Pattern I hypocoristics*

The same analysis can be extended to account for Pattern I hypocoristics of names related to biconsonantal roots. Hypocoristics like *ħannuun and dalluul* show that biconsonantal roots are treated exactly in the same way as triconsonantal roots. They have the template $C_1aC_2C_2uuC_2$ and gemination of the second consonant. They obey the constraint that requires the alignment of the last consonant of the hypocoristic with the last consonant of the root, with the exception that in this case the last consonant of the root is in fact the second consonant of a geminate root.

In biconsonantal roots or geminate roots, the second and third consonants are identical. McCarthy (1979) states that these roots are represented formally as biliteral roots. Roots of two, three, and four consonants are all subject to the Obligatory Contour Principle (OCP). Thus, biliteral roots are realized on the surface with gemination of the second consonant. The behavior of biconsonantal geminate roots as having three consonants in HF and perceiving them as such is in fact a consequence of the OCP 'where we know there must be a single consonant in the phonological representation when phonetically there are two' (McCarthy 1986: 210).

This property of the geminate roots allows hypocoristics of names related to biconsonantl roots to be accounted for in the same way as those of triconsonantal roots. It shows that native speakers treat biliteral roots as if they have three consonants. The root in the input is represented as biconsonantal in accordance with the above discussion:

(26) ONSET, MAX-IO (μ), Align (Rt, R, Hypo, R), *VV > *GEM

Base: *ħanaan* 'affection' Hypo: *[ħannuun]* Rt: √*ħn*

| I: μ μ μ μ<br>/ ħn + a u/ | ONSET | MAX-IO (μ) | Align (Rt, R, Hypo, R) | *VV | *GEM |
|---|---|---|---|---|---|
| a. ħa.nuun | | *! | | * | |
| b. ħaa.nuun | | | | ** | |
| c. ħan.uun | *! | | | * | |
| d. ħan.nu | | | *! | | |
| e. ☞ ħan.nuun | | | | * | * |

The actual hypocoristic in (26e) obeys all undominated constraints; it only violates *GEM which ranks low in the grammar of Pattern I hypocoristics. Candidate (26a) deletes a mora of the input and is thus excluded. Candidate (26d) violates the alignment constraint while (26c) violates the constraint that prohibits syllables lacking onsets. This results in the exclusion of all candidates, and (26e) emerges as a nickname for the name *ħanaan*.

The analysis of biconsonantal roots has significant implications for the issue of the template. Biconsonantal roots do not have enough consonants to satisfy the template requirement. Instead the second radical spreads to realize the templatic shape of Pattern I. In this context, compare Pattern I hypocoristic for the two roots √*ħn* and √*ħsn* with respect to the constraint INTEGRITY. Although *ħannuun* does violate INTEGRITY, it is accepted as a hypocoristic. This is not true of triconsonantal roots where **ħas.nuun* and **ħas.ħuun* are ruled out as possible hypocoristics. The explanation here is that given the input in (26) and the combination of constraints, *ħannuun* will necessarily emerge as the optimal form. In biconsonantal roots, INTEGRITY is violated in order to satisfy the requirement of the template. There is no other way to satisfy both in biconsonantal roots, while in the case of triconsonantal roots violation of INTEGRITY is avoided through gemination of the second root consonant.

Tableau (27) shows the low ranking of INTEGRITY with the rest of the constraints considered so far.

(27) ONSET, Align (Rt, R, Hypo, R), *VV > INTEGRITY

Base: *ħanaan* ‘affection’ Hypo.: *[ħannuun]* Rt: √*ħn*

| I: μ μ μ μ / ħn + a u/ | ONSET | Align (Rt, R, Hypo, R) | *VV | INTEGRITY |
|---|---|---|---|---|
| a. ħaa.uun | *! | | ** | |
| b. ħan.u | *! | * | | |
| c. ħan.ħuun | | | * | ** |
| d. ħan.nu | | *! | | |
| e. ☞ ħan.nuun | | | * | * |

INTEGRITY decides between candidates (27c) and (27e). Violation of INTEGRITY is in fact a result of satisfaction of the template of Pattern I. While the template is not specified in the input, satisfaction of the already established constraints results in the actual form of the hypocoristic.

3.2 *Pattern II hypocoristics: The role of syllable structure*

The analysis provided here is along the same lines as that in Abu-Mansour (2010), which offers the first formal analysis of this pattern. However, Abu-Mansour (2010) treats Pattern I and Pattern II as two unrelated patterns, and fails to uncover the underlying similarities in their structure. The analysis also misses the fact that there is a division of labor between the two patterns. Generally, Pattern II is followed mainly by names those that fail to follow Pattern I, i.e. glide-final roots whether the glide is [y] or [w] (cf. Section 2.2). These names represent the majority of names that follow this pattern.

3.2.1 *Glide-final roots: The role of syllable structure*

The main goal of this section is to show that the failure of glide-final roots to form Pattern I hypocoristics is in fact a consequence of syllable structure restrictions in MA. The section will also show the similarities that exist between the two patterns. The following are some examples of names related to glide-final roots. They fail to have Pattern I hypocoristics.

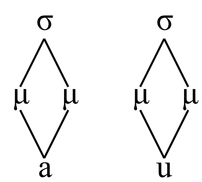
(28)

| | Name | Hypocoristic | Lexical Root | Meaning |
|---|---|---|---|---|
| a. | *zakiyya* | **zakkuuy* | */zky/* | ‘righteous’ |
| b. | *ʃaadaya* | **ʃadduuw*<br>**ʃadduuy* | */ʃdw/* | ‘chanting’ |

The same analysis proposed to account for Pattern I hypocoristics is extended to explain Pattern II. In Pattern I, the actual name provides the base from which native speakers factor out the consonantal root. The input in (12), repeated here in (29), forms the input to Pattern II hypocoristics:

(29) Input to Pattern II hypocoristics

Base: *zakiyyah* Hypocoristic: *[zakku]* Rt.: √*zky*

Input: √zky + 

The input in (29) consists of the consonantal root abstracted from the name and the two bimoraic syllables, exactly the same as the input to Pattern I. Two characteristics differentiate this pattern from Pattern I, and need to be accounted for in term of constraints. First, this pattern ends in an open syllable, and second, this syllable is always light. The first of these differences will be the result of one of the faithfulness constraints ranking low in the grammar of this pattern.

As for the short vowel in the final syllable of the pattern, it follows from an independent characteristic of Arabic including MA, where vowels in final position are realized short unless they represent suffixes (McCarthy 2005). Therefore, no special ranking is required to account for the short vowel in the second syllable of Pattern II hypocoristics, and will be left out of all tableaux.

In addition to the input in (29), we adopt a constraint proposed by Rosenthall (2006) to account for the distribution of vowels and glides in Standard Arabic. This is given in (30):

(30) *AdjHiVoc (Rosenthall 2006: 411)

No two adjacent high vocoids in the same syllable.

The constraint in (30) is specific to Arabic syllable structure. This constraint prohibits two adjacent high vocoids in the same syllable discussed in Rosenthall (2006). Rosenthall observes, 'onset-plus-vowel sequences *[wi], *[yu]; vowel-plus-coda sequences *[uy], *[iw]; and vowel sequences [ui], [iu] are prohibited in the same syllable. These sequences are marked because adjacent syllable positions have a sonority plateau' (Rosenthall 2006: 411). Rosenthall extends this constraint to include not only tautosyllabic sequences but also to any sequence of high vocoids.

The constraint in (30) will figure prominently in the account of hypocoristics related to glide-final roots. However, our use of (30) in accounting for the hypocoristic data will depart slightly from Rosentall's use of the constraint. In MA, the restriction on adjacent high vocoids is restricted to tautosyllabic sequences that are also tautomorphemic. Thus, the constraint in (30) will not rule out sequences like [nis.yu] < /nisy-u/ ‘they forgot’ and [ram.yi] < /ramy-i] ‘my throwing’ where [u] and [i] are tautosyallbic, but they represent independent morphemes, a subject and a possessive pronoun, respectively.

We start with the roots that end in /y/ (cf. (28a)). The input to Pattern II hypocoristics includes the consonantal root and the two heavy syllables. All the constraints that constitute part of the grammar of pattern I hypocoristics will be shown to be active in the derivation of Pattern II. First, tableau (31) establishes the fact that Pattern II hypocoristics end in an open syllable.

(31) *ADJHIVOC > MAX-Rt Hypo (C)

Base: *zakiyyah* ‘righteous’ Hypo: *[zak.ku]* Rt: √*zky*

| I: μ μ μ μ<br>/zky+ a u/ | *ADJHIVOC | MAX-Rt Hypo (C) |
|---|---|---|
| a. zak.kuuy | *! | |
| b.☞ zak.ku | | * |

Candidate (31a) violates the restriction on two adjacent high vocoids by being faithful to the input glide [y], while (31b) avoids this violation by deleting the glide. The long vowel in final position will not surface in accordance with the general restriction on final long vowels in the language. Candidate (31b) emerges as optimal despite deletion of the underlying glide. Pattern II is then the result of the high ranking of the markedness constraint in (30) demoting one of the faithfulness constraints, namely, MAX-Rt Hypo (C) to a rank that is lower than the one it occupies in the grammar of Pattern I. As a result, the optimal form also violates the constraint in (18) which requires the alignment of the last consonant of the root with the right edge of the hypocoristic.

However, Pattern I and Pattern II are more similar than different as tableau (32) illustrates.

(32) ONSET, MAX-IO(μ), *VV > *GEM, MAX-Rt Hypo (C), Align (Rt, R, Hypo, R)

Base: *zakiyyah* ‘righteous’ Hypo: *[zakku]* Rt: √*zky*

| I: μ μ μ μ<br>/zky+ a u/ | ONSET | MAX-IO(μ) | *VV | *GEM | MAX-Rt Hypo (C) | Align (Rt, R, Hypo, R) |
|---|---|---|---|---|---|---|
| a. zak.u | *! | | | | * | * |
| b. za.ku | | *! | | | * | * |
| c. zaa.ku | | | *! | | * | * |
| d.☞ zak.ku | | | | * | * | * |

Tableau (32) confirms the low ranking of MAX-Rt Hypo (C) and Align (Rt, R, Hypo, R) in the grammar of Pattern II hypocoristics. In addition, it shows the similarities between the two patterns. The same constraints established for Pattern I (cf. (23)) apply here with the exception of parsing the final glide. The optimal candidate in (32d) minimally violates *GEM, just like Pattern I hypocoristics. All candidates violate the constraints that requires parsing of the last consonant of the root in the hypocoristic and the alignment at the right edge. This violation represents an inherent property of this pattern and thus part of its grammar. It minimally distinguishes it from Pattern I.

As mentioned above, in MA, the restriction on adjacent high vocoids is restricted to tautosyllabic sequences that are also tautomorphemic. This additional restriction is borne out by the two candidates considered below, namely, _*zak.kuy_ and _*zak.yu<u>_. Both candidates satisfy the relevant constraints (cf. (32)), yet fail to emerge as optimal. This is illustrated in (33):

(33) *ADJHIVOC > MAX-Rt Hypo (C),*GEM

| I: μ μ μ μ /zky+ a u/ | *ADJHIVOC | MAX-Rt Hypo (C) | *GEM |
|---|---|---|---|
| a. zak.kuuy | *! | | * |
| b. zak.yu | *! | | |
| c. ☞ zak.ku | | * | * |

Faithful parsing of the root glide [y] as a coda or an onset when combined with the vowel of the hypocoristic pattern [uu] creates a sequence of two high vocoids that are both tautosyllabic and tautomorphemic. Thus, both (33a & 33b) lose allowing (33c) to emerge as the winning candidate despite its violation of the faithfulness constraint MAX-Rt Hypo (C). This further confirms the role of *ADJHIVOC as a syllable structure constraint in the grammar of this pattern.

A final remark on this group of roots points to native speakers' awareness of the structural difference between triconsonantal and biconsonantal roots. We have seen that *ħannuun* is used as a hypocoristic for *ħanaan* which is related to the biconsonantal root √*ħn*, while *zakkuuk* which is related to tricnsonantal root √*zky* is not a possible hypocoristic form for the name *zakiyyah*, at least in MA. This can be explained as follows: *ħannuun* is Pattern I hypocoristic and obeys the realization of all consonants of the root; *zakkuuk*, on the other hand, has the structure of Pattern I yet it excludes the third member of the root, i.e. /y/ for reasons explained above. Unlike the actual hypocoristic *zakku, zakkuuk* obeys the well-known constraint of Arabic that requires words to end in consonants. However, *zakku* is a Pattern II hypocoristic that typically ends in a vowel. This in itself could be taken to point to some awareness on the part of native speakers that *zakiyyah* is related to a triconsonantal rather than biconsonantal root.

The same ranking obtained in (31) accounts for glide-final roots where the glide is /w/. This is illustrated in (34).

(34) *ADJHIVOC, OCP > MAX-Rt Hypo (C)

Base: *ʃaadyah* ‘chanting’ Hypocoristic: *ʃaddu* Lex. Rt: √*ʃdw*

| I: μ μ μ μ /ʃdw+ a u/ | *ADJHIVOC | OCP | MAX-Rt Hypo(C) |
|---|---|---|---|
| a. ʃad.duuw | *! | *! | |
| b. ʃad.duuy | *! | | * |
| c. ☞ ʃad.du | | | * |

Candidate (34a) is faithful to the underlying glide while (34b) realizes the glide that appears in the actual name, but both lose because of the high ranked constraints on syllable structure. The optimal form in (34c) satisfies the constraints established in the grammar of Pattern II.

The other two groups of names that form Pattern II hypocoristics, biconsonantal geminate roots (cf. (8)) and sound triconsonantal roots in which the second consonant is either [ħ] or [ʕ] (cf. (9)) will be discussed below. For these names, misalignment of the second or third consonant of the root occurs at the right edge of the hypocoristic.

3.2.2 *Biconsonantal roots and Pattern II hypocoristics*

In Sections 2.1 and 2.2, we have seen that biconsonantal roots may form hypocoristics of Pattern I, however, Pattern II is preferred by most bearers of these names (See fn. 2). Recall that the $C_1aC_2C_2u$ template of Pattern II first appeared as a possible candidate `in the analysis of Pattern I (cf. (26d) & (27d)). There, *ħannu* was not optimal since it violates the alignment constraint at the right edge of the hypocoristics, a crucial constraint for Pattern I. This is exactly the candidate that will emerge as optimal in Pattern II of hypocoristics. Tableau (35) is an illustration of the constraint ranking that accounts for Pattern II hypocoristics of names related to biconsonantal geminate roots:

(35) ONSET, *VV, MAX-IO (μ) > Align (Rt, R, Hypo, R), *GEM
Name: *ħanaan* ‘affection’ Hypo: *[ħannu]* Rt: √*ħn*

| I: μ μ μ μ / ħn + a u/ | ONSET | *VV | MAX-IO (μ) | Align (Rt, R, Hypo, R) | *GEM . |
|---|---|---|---|---|---|
| a. ħan.u | *! | | | * | |
| b. ħaa.nu | | *! | | * | |
| c. ħa.nu | | | *! | * | |
| d.☞ħan.nu | | | | * | * |

The low rank of the alignment constraint in the grammar of Pattern II is borne out by the optimal candidate in (35d); it minimally violates the low ranking *GEM and the constraint that aligns the last root consonant with the right edge of the hypocoristic. Unlike *ħannuun* (Pattern I), *ħannu* does not violate the INTEGRITY constraint.

At this point, it is possible to say that the present analysis has the advantage of relating Pattern I and Pattern II of hypocoristics showing their minimal difference in terms of constraint ranking. As mentioned earlier, the template that characterizes Pattern II, $C_1aC_2C_2u$, first appeared in the analysis of Pattern I (cf. (26) & (27)). It was evaluated as one of the possible candidates, but it lost there since it violates the constraint that requires the alignment of the last consonant of the hypocoristic with the last consonant of the root for Pattern I. Here, it is this violation that represents the difference between the two patterns.

3.2.3 *Triconsonantal roots and Pattern II hypocoristics: Emergence of the unmarked*

We turn now to the last group of names that form their hypocoristics following Pattern II. It has been established that ticonsonantal roots select Pattern I for HF. However, the few roots where the second member of the root is a pharyngeal sound they follow Pattern II instead. For instance, hypocoristics for the names *waħiid* and *suʕaad* are *waħdu* and *saʕdu*, respectively rather than **waħħuud* and **saʕʕuuda*.

The basic idea of the emergence of the unmarked (TETU) (McCarthy and Prince 1994:1) is that a constraint may be dominated and thus violated in a given language as a whole, but in a particular domain this constraint is obeyed exactly. In that particular domain, the structure unmarked with respect to that particular constraint emerges, and the marked structure is suppressed. Even though the focus of McCarthy and Prince's work has been the emergence of the unmarked in the morphology of reduplication inffixation, and epenthesis, they state that the same remarks apply with equal force to segmental markedness constraints (p. 29). This brings us to the point under discussion, i.e. the specific case of triconsonantal roots forming Pattern II hypocoristics.

Makkan Arabic allows geminate pharyngeals [ħ] and [ʕ] in the coda position in other parts of the grammar. For instance, geminates are found in both patterns of hypocoristics discussed in this paper, In addition, gemination of the second measure of the verb shows that pharyngeals geminate as freely as any other consonant. Examples include *saʕʕar* 'to price', *baʕʕad* 'to push away', *kaħħal* 'to put eye make-up', and *ḍaħħak* 'to make laugh'. However, in a small part of the grammar, i.e. in few tricononantal roots with a pharyngeal as a second radical, hypocoristics of Pattern I with geminate [ħ] or [ʕ] are ruled out in favor of a singleton pharyngeal in that same position. A singleton pharyngeal is available when these roots form Pattern II hypocoristics. This is illustrated in (36) below:

| (36) | | Name | Pattern II | Pattern I | Root | Meaning |
|---|---|---|---|---|---|---|
| | a. | *waħiid* | *waħdu* | **waħħuud* | √*wħd* | 'lonely' |
| | b. | *suʕaad* | *saʕdu* | **saʕʕuuda* | √*sʕd* | 'happiness' |
| | c. | *waʕad* | *waʕdu* | **waʕʕuuda* | √*wʕd* | 'promise' |

d. *maʕn* *maʕnu* **maʕʕuun* *√mʕn* 'devotion'

The difference between Pattern II and Pattern I hypocoristics of the names in (36) is that the former has a singleton pharyngeal as opposed to a geminate in the latter. The singleton pharyngeal in Pattern II follows from a special ranking in which the alignment constraint is ranked below the markedness constraint *GEM.

In the analysis of Pattern I, *GEM ranks at the bottom of the hierarchy of constraints. The optimal form $C_1aC_2C_2uuC_3$ shows that *GEM is dominated by all and every constraint in the grammar of that pattern I (cf. section 3.1.1). The case of Pattern II hypocoristics of triconsonantal roots whose middle element is a pharyngeal is a case of TETU. High-ranking MAX-IO (μ) compels violation of the markedness constraint *GEM, hence the abundant existence of geminates in the language as a whole. On the other hand, *GEM itself dominates Align (Rt, R, Hypo, R); it is a characteristic of Pattern II hypocoristics to terminate in an open syllable. This is shown in the following tableau:

(37) Triconsonantal roots with a middle pharyngeal: Pattern II

MAX-IO (μ), *GEM > Align (Rt, R, Hypo, R)

Base: *waħeed* 'lonely' Hypo: *[waħ.du]* Rt: *√wħd*

| I: μ μ μ μ /wħd+ a u/ | MAX-IO (μ) | *GEM | Align (Rt, R, Hypo, R) |
|---|---|---|---|
| a. wa.ħuud | !* | | |
| b. waħ.ħuud | | *! | |
| c.☞ waħ.du | | | * |

Pattern II of triconsonantal roots with a pharyngeal in the middle is then a case of the emergence of the unmarked. The unmarked form with singleton [ħ] or [ʕ] emerges in this specific context. The rest of the constraints crucial to Pattern II apply to this specific category in the same way as (38) shows:

(38) ONSET, *COMPLEX, MAX-IO (μ) > Algin (Rt, R, Hypo, R)

| I: μ μ μ μ /wħd+ a u/ | ONSET | *COMPLEX | MAX-IO (μ) | Align(Rt,R, Hypo, R) |
|---|---|---|---|---|
| a. waħd .u | *! | *! | | * |
| b. wa.ħud | | | * | |
| c. waaħ.du | | *! | | * |
| d.☞ waħ.du | | | | * |

Candidate (38d) is the only one that satisfies all constraints notwithstanding its violation of the alignment at the right edge of the hypocoristic, but this is part of the structure of Pattern II hypocoristics.

It is worth noting that sound triconsonantal roots whose middle consonant is a uvular or a laryngeal can form hypocoristics of Pattern I, but Pattern II is preferred as indicated by the bearers of such names (cf. fn (2)). This means that, unlike the pharyngeals, geminate uvulars and geminate laryngeals are acceptable. Examples of hypocoristics of both Pattern I and Pattern II of names related to roots with medial uvular or laryngeal sounds are given in (39):

| (39) | **Name** | **Pattern II** | **Pattern I** | **Root** | **Meaning** |
|---|---|---|---|---|---|
| a. | *raɣad* | *raɣdu* | *raɣɣuuda* | √*rɣd* | ‘affluence’ |
| b. | *ʃahad* | *ʃahdu* | *ʃahhuuda* | √*ʃhd* | ‘honey’ |
| c. | *wahiib* | *wahbu* | *wahhuuba* | √*whb* | ‘endow’ |

Finally, the names that never form Pattern II hypocoristics are those related to quadriliteral roots and to sound triconsonantal roots other than the ones with a middle pharyngeal consonant. In order to explain this, we need to remember that Pattern II is used primarily for roots that do not follow Pattern I, i.e. glide-final roots. In the case of sound triconsonantal roots, there is no structural reason for these roots that prevents them from following the most common pattern, which is Pattern I. Thus, **ħasnu* is not a possible hypocoristic for a name such as *ħasan;* rather *ħassuun* is acknowledged by all speakers to be the nickname.

The failure of quadriliteral roots to form Pattern II hypocoristics provides further evidence for referencing all of the root consonants in the hypocoristic. The templatic shape of this pattern allows only for three consonants to be realized. This is illustrated in the diagram in (40):

(40) $C_1$ a $C_2$ $C_3$ +u
| | |
s a n d + u <s> **sandu* (Pattern II)

The representation in (40) leaves one of the root consonants unparsed. Therefore, names related to quadriliteral roots like *maryam*, *sundus* and *ʔibraahiim* can only take Pattern I hypocoristics, *maryuum*, *sanduus*, and *barhuum*, respectively.

This concludes the discussion of Pattern II hypocoristics in MA. The grammar of this pattern consists of a number of undominated faithfulness and alignment constraints. Any hypocoristic that violates any of these constraints is excluded. However, because of the high ranking of the syllable structure constraint *ADJHIVOC Pattern II ends in an open syllable, and is thus minimally different from Pattern I which consistently end in a consonant.

### 3.3 *Glide-medial roots: An OCP violation*

The main argument in this section is that the failure of the medial glide to appear in the hypocoristic is an effect of the OCP. In the data section, the examples in (10) and (11) show that glide-medial roots behave in two different ways. No hypocoristics can be constructed for roots in which the glide is [w]. However, if the medial glide is [y], then the root is treated like any regular triconsonantal root giving Pattern I hypocoristic.

We first consider roots with [w] and explain the impossibility of Pattern I hypocoristics for such roots.[6] Examples were given in (10) and repeated in (41):

| (41) | | Name | Hypocoristic | Lexical | Meaning |
|---|---|---|---|---|---|
| | a. | *fawziyya* | **fawwuuz* | */fwz/* | 'victory' |
| | b. | *nawaal* | **nawwuula* | */nwl/* | 'achievement' |
| | c. | *ʔanwar* | **nawwuur* | */nwr/* | 'brighter' |

Evidence for underlying [w] comes from related words where the glide surfaces, for instance, *fawwaz* 'to choose as a winner' and *nawwal* 'to enable', and *minawwir* 'glowing', respectively.

The same analysis of Pattern I hypocoristics can be extended to account for the problem of glide-medial roots. In the present analysis the appearance of the glide or the failure to do so in hypocoristics for glide-medial names will emerge as a consequence of a well-motivated constraint in the language, the OCP.

(42) Obligatory Contour Principle (OCP) (Leben 1973; McCarthy 1979, 1986; Yip 1988)
Adjacent identical elements are prohibited.

The Obligatory Contour Principle specifies what constitutes possible onsets for the second vowel of the hypocoristic pattern. Simply stated **wuu* in glide-medial hypocoristics is not a well-formed sequence in the syllable structure of MA. In OT terms, they establish the domination of markedness constraints and constraints on what constitute permissible codas in MA.

In addition to the OCP, all the undominated constraints introduced for Pattern I apply here. A hypocoristic has to obey all undominated constraints ((12)-(22)). However, when there is a clash with the OCP, the form that does not violate the markedness constraint is the one chosen. The ranking established in tableau (43) explains why *w*-medial roots fail to form Pattern I hypocoristics. The markedness constraint outranks both the faithfulness and alignment constraints.

(43) OCP, IDENT-IO (V) > MAX-Rt Hypo(C), DEP-Rt Hypo(C)

Base: *fawziyyah* ‘victory’ **fawwuuz(a)* Rt: √*fwz*

| I: μ μ μ μ /fwz+ a u/ | OCP | IDENT-IO (V) | MAX-Rt Hypo(C) | DEP-Rt Hypo(C) | *GEM |
|---|---|---|---|---|---|
| a. faw.wuuz | *! | | | | * |
| b. faw.wiiz | | *! | | | |
| c. fay.yuuz | | | * | * | * |

Candidate (43a) is faithful to the underlying glide [w]; it however loses since it violates the high-ranking OCP that prohibits adjacent identical segments. Candidate (43b) satisfies the OCP at the expense of violating the identity constraint of the template vowel *uu*. Candidate (43c) satisfies the high ranking OCP by changing the underlying glide to [y] but does not win since *fayyuuz* is not the acknowledged hypocoristic for *fawziyyah* in MA. The constraint ranking in (43) explains the failure of the underlying glide to surface in the hypocoristic and thus the failure of names related to glide-medial roots where the glide is [w] to have Pattern I hypocoristics.

The behavior of glide-medial roots where the glide is [y] further confirms that the failure of the underlying glide to appear in the hypocoristic is a matter of avoiding violation of the OCP. These roots behave just like sound triconsonantal roots in forming Pattern I hypocoristics. In this group, the underlying glide [y] appears in the hypocoristic. Representative examples are repeated here:

| (44) | | Name | Hypocoristic | Lexical | Meaning |
|---|---|---|---|---|---|
| | a. | *mufiidah* | *fayyuuda* | */fyd/* | ‘usefulness’ |
| | b. | *bayaan* | *bayyuun* | */byn/* | ‘clarity’ |
| | c. | *ʕayʃa* | *ʕayyuuʃ* | */ʕyʃ/* | ‘living’ |

The impermissible sequence *[wuu] does not arise in the examples in (44) because of the nature of the medial glide. The lexical glide in these names is [y]; it serves as the onset for the vowel [uu] of the hypocoristic pattern, but since it is not homorganic with the vowel of the pattern, the structure is well formed and these roots are treated as if they were regular triconsonantal roots. This is shown in (45).

(45) Base: *ʕeeʃah* ‘living’ Hypo: *[ʕayyuuʃ]* Rt: √*ʕyʃ*

| I: μ μ μ μ /ʕyʃ + a u/ | MAX-IO (μ) | Align ($C_2$, R, H-σ, R) | INTEGRITY | *GEM |
|---|---|---|---|---|
| a. ☞ ʕay.yuuʃ | | | | * |
| b. ʕa.yuuʃ | *! | *! | | |
| c. ʕay.ʃuuʃ | | | *! | |

It is evident from tableau (45) that given the input and the undominated constraints ((12)-(22)), the actual form is the only candidate that satisfies all of the constraints. The other candidates are excluded because of different fatal violations that have been discussed for triconsonantal roots. The OCP has no role in deciding hypocoristics of *y*-medial roots just like in sound triconsonantal roots. No new ranking is established in this case.

The upshot of the discussion is that glide-medial roots behave just like sound triliteral roots, except when [w] is the second member of the root. In this case, the name fails to form Pattern I hypocoristics.

The advantage of this analysis is that it maintains the same input for hypocorostics of names related to all types of roots. Further, it appeals to constraints that are both well established and independently motivated in the phonology of the language. In Section 3.2.1, we have explained the failure of glide-final roots to take Pattern I hypocoristics as a consequence of a syllable structure constraint that prevents **yu,* **uuy* and **uuw.* In this section, we have shown that glide-medial roots fail to form Pattern I hypocoristics only if the glide is [w] since **wuu* violates the OCP. If the lexical glide is [y] instead of [w], the root behaves like a regular triconsonantal root and forms Pattern I hypocoristic.

The following section considers the implications the present analysis has for the assumption of recognizing an output root different from the lexical underlying root.

## 4. The question of lexical vs. denominal root

Studies on Arabic HF agree that only root consonants are referenced in the hypocoristic. Non root material is excluded including epenthetic consonants, prefixes, infixes, as well as the vowels and template of the actual name (Abu-Mansour 1995,2000.2010; Zawaydeh and Davis 1999, 2000). They may vary as to which root consonants are referenced or appear in the hypocoristic, the lexical root consonants or the denominal consonants as they appear in the actual name dubbed as **output root** in studies on hypocoristcs.

In sound triconsonantal roots as well as biconsonantal and quadriliteral roots, the consonants that appear in the full name coincide with those of the lexical root; they appear consistently in the hypocoristic. As a result, hypocoristics of these roots have no bearing on the question of which root consonants are referenced in the hypocoristic, the underlying or the output. In fact, the debate in previous studies on HF centers around glide-final and glide-medial roots and hypocoristics related to them. In what follows, we review the main features of the discussion and the implications the preset analysis has for this issue. We start with the problem of glide-final roots.

The problem exhibited by glide-final roots is that neither the lexical nor the output glide succeeds in forming a hypocoristic of Pattern I.[7] Representative examples are given in

(46). Note that for the examples in (46) positing an output root will not result in a hypocoristic of Pattern I either. Neither **ʃadduuw* nor **ʃadduuy* can serve as hypocoristic for the name *ʃaadaya* in MA.

(46)

| | Name | Hypocoristic | Lexical glide | Output glide | Meaning |
|---|---|---|---|---|---|
| a. | *ʃaadaya* | ** ʃadduuw*<br>** ʃadduuy* | */ʃdw/* | *[ʃdy]* | 'chant' |
| b. | *zakiyya* | **zakkuuy* | */zky/* | *[zky]* | 'bright' |

Zawaydeh and Davis (1999) as well as Abu-Mansour (1995, 2000, 2010) agree that names like the ones in (46) do not form Pattern I hypocoristics.[8] For Zawaydeh and Davis, hypocoristics like ** ʃadduuw* violate a constraint that prohibits a long vowel followed by a glide in syllable-final position. In our account of glide-final roots in section 3.2.1, we have shown this failure to be the result of a constraint that bans two adjacent high vocoids in the same syllable (Rosenthall 2006). Under both analyses, glide-final roots do not form Pattern I hypocoristics. The present analysis goes one step further to show that glide-final roots form Pattern II hypocoristics instead. The structure of Pattern II hypocoristics does not contain the offending sequence of two high vocoids and is minimally different from Pattern I.

We now turn to glide-medial roots. Zawaydeh & Davis (1999) focus on the failure of an analysis that assumes the lexical root as an input to HF to account for names related to glide-medial roots. They cite certain names where the lexical glide does not appear in the hypocoristic and propose positing an output root based on the consonants that appear in the actual name. The following are the examples cited by Zayadeh and Davis of glide-medial roots and names associated with them:

(47)

| | Name | Hypocoristic | Lexical glide | Output glide | |
|---|---|---|---|---|---|
| a. | *faayzah* | *fayyuuza* | */fwz /* | *[fyz]* | 'victory' |
| b. | *ʕaaydah* | *ʕayyuuda* | */ʕwd/* | *[ʕyd]* | 'return' |

The examples in (47) show that the glide that appears in the hypocoristic is the one that appears in the full name, that is, the output glide. The lexical or underlying glide is not part of the hypocoristic. The failure of the lexical glide to surface in the hypocoristic of a relatively small group of names like the ones in (47) led Zawaydeh and Davis (1999) to posit the output root as a base for HF. In fact, they assume an output root for all types of names including those related to sound triconsonantal, quadriliteral, and biconsonantal geminate roots where the lexical and the output roots are the same.

The question that arises at this point is, 'Why is [y] in the examples in (47) copied while it is not part of the lexical root?'. While we do not offer a direct answer to this question, we will adduce several facts that will support the assumption of the lexical root and the use of the OCP to account for the problematic cases. These facts will show that copying of a non-root consonant happens only in a very few cases and under duress to satisfy the template and at the same time to avoid an OCP violation. This will in turn question the necessity of positing an output root just to account for *w*-medial roots, which are very limited in number.

The first point that questions the necessity of assuming an output root is that it fails to account for glide-medial roots where the lexical root is [w] and the actual name does not exhibit an output glide different from the input glide. Names like *fawwaaz* and *ʔanwar* whose roots are √*fwz* and √*nwr* and lack an output glide fail to form Pattern I hypocoristics.

The second point relevant to the issue here is that [y] (cf. (47)) is not the only non-lexical root member that is preferred over [w] and is thus copied in hypocoristics. Some prefixes appear in the hypocoristic as well. This happens only if the root is glide-medial and only if the glide is [w]. In the examples in (48), the prefix [m] appears in the hypocoristics:

| (48) | | **Name** | **Hypocoristic** | | **Lexical** | **Meaning** |
|---|---|---|---|---|---|---|
| | a. | *manaal* | *mannuula* | **nawwuula* | √*nwl* | 'gift' |
| | b. | *muniirah* | *mannuura* | **nawwuura* | √*nwr* | 'luminous' |

Since the underlying medial glide in the examples in (48) is [w] it cannot appear in the hypocoristic; the sequence *[wuu] violates the OCP. Thus, speakers resort under duress to copy a non-root consonant that appears in the full name in order to satisfy the template and at the same time avoid *[wuu] sequences. If the full name includes no such prefixed consonants, the name may not have a Pattern I hypocoristic (cf. *fawwaaz*, *ʔanwar* & the examples in (50) below). If there is a prefix as in the examples in (48), or if the name shows a front glide (the examples in (47)), then it is used in place of $C_1$ of the root, and $C_1$ in turn acts like $C_2$ replacing the medial glide [w], thus forming the hypocoristic and avoiding the impermissible sequence. Note that the actual hypocoristics in (48) violate the faithfulness constraint because of lack of parsing the underlying glide /w/ in addition to misalignment of its left edge with $C_1$ of the root.

The following examples provide further support for the claim that a non-root material like a prefix is copied in the hypocoristic ***only*** if there is need for it to replace the medial glide [w]. Unlike the examples in (48), the prefixes [m] and [y] are not copied in the hypocoristic in (49):

| (49) | | **Name** | **Hypocoristic** | **Lexical** | **Meaning** |
|---|---|---|---|---|---|
| | a. | *misfirah* | *saffuura* | √*sfr* | 'travel' |
| | b. | *mawaahib* | *wahhuuba* | √*whb* | 'talents' |
| | c. | *yaziid* | *zayyuuda* | √*zyd* | 'superabundant' |
| | d. | *yaʕmur* | *ʕammuur* | √*ʕmr* | 'thrive' |

In (49), $C_2$ of the root is a regular consonant, not the glide [w]. In other words, there is no need to utilize the prefix in HF since the root is sound and the use of the second root consonant in the hypocoristic will not create *[wuu] sequence. There is no need to resort to other than the elements of the lexical root to form the hypocoristic.

Third, the following group of names common in many varieties of Arabic challenges the very basic tenet of assuming an output root and therefore supports our assumption that it is the effect of satisfying the OCP that prevents certain names (cf. (47)) from having hypocoristics of Pattern I. The assumption of an output root was based solely on the justification that for a lexical root consonant to appear in the hypocoristic it must appear in the full name. This is the reason behind positing an output root to guarantee its appearance in the hypocoristic. In the names in (50), the lexical glide [w] ***does*** appear in the full name not only as a single segment but in some names as a geminate; however, it ***does not*** appear in the hypocoristic. In other words, the glide whether a singleton or a geminate, appears in the full name, yet, it is not referenced in the hypocoristic. The following examples represent just a small number of such names:

(50)

| | Name | Hypocoristic | Lexical Root | Meaning |
|---|---|---|---|---|
| a. | *ʕawwaad* | **ʕawwuud* | *√ʕwd* | ‘recurrence’ |
| b. | *nawwaaf* | **nawwuuf* | *√nwf* | ‘lofty’ |
| c. | *fawziyyah* | **fawwuuz* | *√fwz* | ‘victory’ |
| d. | *fawwaaz* | **fawwuuz* | *√fwz* | ‘victory’ |
| e. | *ǰawwaad* | **ǰawwuud* | *√ǰwd* | ‘generosity’ |
| f. | *raw*ħiyyah | **rawwuuħ* | *√rwħ* | ‘soul’ |
| g. | *rawḍah* | **rawwuuḍ* | *√rwḍ* | ‘ |

Names like the ones in (50) may not have hypocoristics of Pattern I even though the glide [w] forms part of the full name. The medial glide [w] followed by the vowel of the template for the hypocoristic creates an impermissible sequence *[wuu], and is thus avoided despite its appearance in the full name. The result is that such names fail to follow Pattern I. Sporadic forms of hypocoristics are used by native speakers for these names. Tableau (51) provides an example of a hypocoristic frequently used for the name *fawziyyah*:

(51) OCP > MAX-IO (μ)

Base: *fawziyyah* ‘victory’ Hypo: *foozu* Rt: √*fwz*

| I: μ μ μ μ<br>/fwz+ a u/ | OCP | MAX-IO (μ) |
|---|---|---|
| a. fawwuuz | *! | |
| b. ☞ foozu | | * |

In (51a), violation of OCP results in excluding Pattern I as a possible hypocoristic for this name and all the names in (50). It should be noted here that *fayyuuz* which references [y] is not a possible hypocoristic for the name *fawziyyah* in MA despite the appearance of [y] in the actual name. The optimal candidate in (51b) wins since it obeys the high ranked OCP despite its violation of several constraints that were shown to be active in Pattern I. This clearly shows that the appearance of the lexical glide in the actual name does not guarantee its survival in the hypocoristic. The failure of the names in (50) to have Pattern I hypocoristics will pose a problem for analyses that assume an output glide for HF.

Finally, further evidence for the psychological reality of the lexical root comes from a unique set of names where the lexical glide is absent from the full name, yet it ***does surf*****ace** in the hypocoristic. Some examples are given in (52):

| (52) | | **Name** | **Hypochoristic** | **Root** | **Meaning** |
|---|---|---|---|---|---|
| | a. | *hibah* | *wahhuuba* | √*whb* | ‘endowment’ |
| | b. | *ʔiihaab* | *wahhuuba* | √*whb* | ‘giving’ |
| | c. | *simah* | *wassuuma* | √*wsm* | ‘trait’ |
| | d. | *miiʕaad* | *waʕdu* | √*wʕd* | ‘promise’ |
| | c. | *ʔiilaaf* | *walluufah* | √*wlf* | ‘loveable’ |

None of the actual full names in (52) includes the underlying glide [w] in the full name, yet it is recovered in the hypocoristic for each name. The significance of these examples to the discussion is that they provide evidence to support the assumption that native speakers have access to the lexical root. In these specific examples, they can retrieve the underlying root consonants and target them for HF, even when they do not appear in the actual name.

To summarize, we have shown how the OCP, a well-motivated constraint in Arabic phonology, accounts for problems posed by hypocoristics of names related to glide-medial roots. The upshot of this argument is that the assumption of an output root has to be reconsidered for the following reasons. First, the number of hypocoristics shown (in previous studies) to require reference to an output glide is quite small and restricted to roots with medial [w]. This in itself does not justify positing an output root for all types of names just because it explains that limited set of data. Second, we have shown that the failure of this set of names to form Pattern I hypocoristics is a result of a well-motivated constraint, the OCP. The steady status that the underlying root enjoys is borne out by facts coming from different sets of names in the language.

## 5. Conclusion

This paper has provided new insights into the status of the lexical root in Arabic. Data from Makkan Arabic show that native speakers can access, and sometimes retrieve the lexical root consonants as an input to HF. First, the paper agrees with previous studies that for the majority of names either the lexical or the output root can serve as an input to HF.

Second, paper offers an alternative explanation of the failure of glide-medial and glide-final roots to form Pattern I hypocoristics without any recourse to the idea of an output root. This failure is attributed to the effects of two constraints the OCP and the constraint against having two adjacent high vocoids in the same syllable. Both constraints are well motivated and form a basic part of the phonology of Arabic in general. It is worth noting that these names continue to fail to form Pattern I hypocoristics even under the assumption of an output root.

Third, further evidence for these two constraints comes from the structure of Pattern II hypocoristics. Glide-medial and glide-final roots posed problems for previous treatments of Arabic hypocoristics prompting them to assume an output root different from the lexical root. In the present analysis, glide-medial roots continue to fail to form Pattern I hypocoristics because of violation of the OCP. However, it is the unique structure of glide-final roots that resulted in the emergence of Pattern II as a variant of Pattern I. Pattern II avoids violation of both constraints. The present analysis shows that there is only one basic pattern of HF in the language. What used to be treated as two different patterns in previous accounts is shown here as one pattern with two different, yet similar variants. The analysis establishes the role of the markedness constraints and Arabic syllable structure in defining these two variants, the points where they converge, and where they diverge.

Fourth, the analysis provides evidence for the importance of the template in MA morphology. Satisfaction of the template was crucial in the grammar of both patterns. However, the template is not stipulated, rather it results from the interaction of the constraints.

Finally, while the focus of the study is HF in MA, similarities in HF with other varieties of Arabic are too strong to be overlooked. Hypocoristic formation in MA is overwhelmingly similar to the same process in some dialects like Palestinian, Jordanian, and Egyptian Arabic. This forms a fertile area for future research in the grammar of HF in other dialects including the Bedouin varieties in the Arabian Peninsula, Syria, and North Africa.

**Notes**

[1] For the sake of clarity of reference, these two manifestations will continue to be referred to as Pattern I and Pattern II throughout the paper.

[2] This preference is based on the results obtained from a questionnaire that was conducted back in 1995 by the author as part of a research paper. In addition to investigating the linguistic features of hypocoristic formation in MA, the paper discussed the basic practices of the naming system in the dialect. The results revealed statistically significant preference for Pattern II hypocoristics for this category of names. The preference was true for both bearers of these names as well as their family members and friends.

[3] Each tableau will be preceded by the full name, which gives the base for the hypocoristics. Inside the tableaux, only the consonantal root is mentioned. As explained in the text this is the result of separating the consonants that belong to the root from epenthetic and affixal material.

[4] The following abbreviations will be followed in stating the constraints:

| | |
|---|---|
| Root | Rt |
| Consonant | C |
| Hypocoristic | Hypo |

[5] According to McCarthy (1995) moras are subject to correspondence relation called MAX-IO(μ), which requires all moras in the input have a correspondent in the output. The relation between linking of moras in the input and output is characterized by IDEN-IO, which states that correspondent vowels have identical value for weight. See also Rosenthal (1997) for the use of this constraint in accounting for the distribution of prevocalic vowels in a variety of languages.

[6] Hypocoristics like *fawwuuza* and *nawwuua* are well-formed hypocoristics in Gulf Arabic according to Idrissi et al (2008: 252).

[7] Evidence for the underlying glide in these roots comes from related forms such as *ʃadwa-ha* ‘her chanting’ and *ʔzkiya* ‘bright (pl.)’, respectively.

[8] Hypocoristics like *ʃadduuy* and *zakkuuy* are well formed hypocoristics in Gulf Arabic (Idrissi et al 2008: 250).

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