Syllabification and Some Phonological Operations in Hiti Iraqi Arabic

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Abstract

This paper aims at investigating some phonological processes in Hiti Iraqi Arabic (HIA) a dialect spoken in Hit town located in the western region of Iraq. Due to the absence of MSA in everyday life, HIA had become the native language of people living in such a region. Some studies has been made to investigate some phonological phenomena existing among some varieties of Arabic. Rahim (1980) researched the phonology of Iraqi Arabic from a functional viewpoint. Dickins (2007) studied the Syllable structure and phonemics of Sudanese Arabic depending on a functionalist approach. Al Yaari (2012) investigated vowel deletion in Yemeni Arabic dialect, and concluded that short vowel deletion occurs in verbs and might extend to include pronouns, but there is no literature concerning this variety of Arabic.

Keywords: Syllabification, Iraqi Arabic, phonological processes, Metathesis, Vowel deletion, Epenthesis

1.Introduction

This paper is intended to fill a gap in the area of dialectological differences among Arabic varieties. HIA tends to have some phonological processes able to distinguish it from other varieties. The paper attempts to answer three main questions:

1. Which phonological processes exist in HIA?
2. What grammatical functions they do?
3. To what extent these processes are determined by syllabification constraints?

The paper adopts two methods in analyzing the data. the first is the derivational rules which are used in order to give a description of the environments governing each process. In contexts where the process is determined by syllabification constraints, the paper depends the Filters model as proposed by Optimality theory with an attempt by the researcher to consult more models in analyzing and evaluating the data. The paper is organized as follows:

Section 1 is an introduction, section 2 presents the methodology adopted by the paper and the nature of the data. Section 3 gives an overview about the phonological system of the language variety under investigation. Sections 4-9 discuss the most observable phonological processes and analyze the data on the basis of OT theory . After that the paper lists the main conclusions arrived at. A list of references is given at the end of the paper.

2. Literature Review

Hīt is a small town of good historical importance which has played a noticeable role in the Iraqi civilization and culture. The original residents of the town are sedentary Sunni Muslims, whose life has depended for ages on agriculture, fishing, and sheep-rearing. The majority of the sociolinguistic studies that have been carried out on IA have basically relied on examining dialect variation and change in the colloquial and standard Arabic use at the lexicon level (Bakir, 1986; Khan, 1997). Another groupf of studies have directed their focus on gender differences in the use of such varieties (Abu Haidar, 1989), while the other group have focused on specific sociolinguistic factors, such as level of education and spatial mobility (Al-Ani, 1978). The earliest sociolinguistic study conducted on IA dialects was that of Blanc (1964), who divided these dialects into two groups. The qiltu 'I said' groups spoken in Mosul and Tikrit on the Tigris and Anah and Hīt on the Euphrates. The four regions are considered as the most ancient urban cities all over Iraq. The second group is the gilit 'I said' group used in the semi-nomadic rural areas in the rest of Iraq geography, including Baghdad (Al-Ani, 1978: 104).

3. Methodology

The paper adopts observation as a technique of data collection. It includes different words extracted from everyday speech in HIA and representing the most frequent instances in which the processes under investigation occur. The population of the paper comprises male and female native speakers of HIA whose words are used as data material. The tokens are discussed and described depending on certain parameters ; The grammatical function concerned, the change in syllable structure, and the sequence of the segments as syllable elements.

4.the Phonological System of Hia.

Being a sub variety of IA, HIA shares many characteristics with it.(Wallace, 2004 cited in Jasim & Shahdan, 2013). Inventory of IA consonants and vowels will be used to refer to those of HIA.

5. Data and Discussion

5.1 Metathesis

Metathesis is a term adopted to refer to a substitution in the normal sequence of sounds, syllables or words. (Crystal 2003, p. 303). When metatheses has grammatical functions, it is called regular or gradual. Metatheses doing no grammatical functions is said to be abrupt or sporadic as in the case of pronunciation error or slips of tongue (Hume, 2001, p. 1). HIA tends to carry various categories of metatheses depending on some variables. These variables include adjacency between the segments, whether the segments are consonants or vowels in addition to the grammatical function metatheses performs if there are any. In the sections that follow an account for the observed categories of metatheses will be given.

5.1.1 Adjacant Metathesis.

This means that the alternated sounds are in a contact sequence to each other. It occurs in word initial, medial and final position. As the data will reveal, metathesis falls on two segments only and might play grammatical functions as will be discussed in the following contexts.

Table 1: Adjacent CV-to-VC word initial metathesis.

Singular	*Plural*	*Syllable no.*	*Syllabification change*
/ba.ʈal/	*[ab.ʈal]*	*same*	*CV-CVC*
/wa. ʈ an/	*[aw .ʈ an]*	*same*	*VC-CVC*
/za.man/	*[az.man]*	*same*	
/na.har/	*[an.har]*	*same*	

The data in Table 1 above illustrate that, when occurring at the beginning of a word, metathesis is open to both sonorant and obstruent consonants. Moreover, metathesis takes place within the same syllable which is the first. The only difference is that the first syllable is changed from open (CV) to closed (VC) while the words keep the same number of syllables (2). As for the second syllable, it keeps the same structure. Applying derivational rules on this sequence , we obtain the following rules:

The syllabification rules for this sequence will have the following paths:

UF: /ba. ʈal/ CV.CVC

R1: [abʈ.al] *VCC.*VC VC is not allowed in word final position and VCC does not exist in HA

R2: [a.bʈal]*V.CCVC HIA prohibits V syllable.

SF: [ab.ʈal] VC.CVC

In initial and medial word metatheses accompanying pluralization, the plural must end with CVC syllable. Therefore, VC.CVC syllabification is the only one applicable. As shown, this type is restricted to the grammatical function of pluralization.

5.1.1.2 Word Medial Metathesis.

Table 2. Adjacent VC-to-CV metathesis in word medial position .

Macsuline	*Feminine*	*Syllable no.*	*Syllabification change*
/a.kala/	*[ak.la.ta]*	*same*	*V- CV-CV* *VC-CV-CV*
/a. ʤa.la/	*[a ʤ .la.ta]*	*same*	*V- CV-CV* *VC-CV-CV*
/a .χ a. ð a/	*[a χ. ð a.ta]*	*same*	*V- CV-CV* *VC-CV-CV*
/ʔ. ma.ra/	*[ʔ m.ra.ta]*	*same*	*V- CV-CV* *VC-CV-CV*
/a.da.ba/	*[ad.ba.ta]*	*same*	*V- CV-CV* *VC-CV-CV*

Table 2 above describes medial word metathesis having the grammatical function of gender shift. As for the syllable number, the words remain trisyllabic , but they have different structures as:

V-CV-CV-to-VC-CV-CV

where the resulting syllable is a combination of nucleus of the second syllable and the onset of the third syllable of the stem. The following the environments governing this syllabification:

UF /a.ka.la/ V.CV.CV

R1: [a.kla.ta]*V.CCV.CV

where V syllable only appears word initial and only when followed by CV syllable.

R2: /akl.a.ta/ *VCC.V.CV

where VCC syllable is not allowed in HIA

R3: /akl.at.a/ VCC.VC.*V where V syllable does not apply word final.

SR: /ak.la.ta/ VC.CV.CV

The filters model applied to this group of words will be illustrated in Table (3) below.

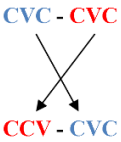
Table 3: Filter model for VC-to-CV word medial metatheses

Input	*Transformational Component*	*Output of Transformational Component*	*Filter Component*	*Output of Filter Component*
/a.ka.la/	*Syllabification metatheses*	*[ak.la.ta]* *[a.kla.ta]* *[akl.a.ta]* *[ak.lat.a]*	**V.CCV* **VCC* **V#*	*[ak.la.ta]* **[a.kla.ta]* **[akl.a.ta]* **[ak.lat.a]*

Table 4. Adjacent VC-to- CV metathesis in word medial position.

Singular	*Plural*	*Syllable no.*	*Syllabification change*
/maw.qif/	*[mwa.qif]*	*different*	*CVC-CVC* *CCV-CVC*
/maq.lab/	*[mqa.lib]*	*different*	*CVC-CVC* *CCV-CVC*
/max.baz /	*[mxa.biz]*	*different*	*CVC-CVC* *CCV-CVC*
/mas .ʤ id/	*[msa .ʤid]*	*different*	*CVC-CVC* *CCV-CVC*
/maf. ʂ al /	*[mfa. ʂil]*	*different*	*CVC-CVC* *CCV-CVC*
/ma ʈ .bax/	*[m ʈa.bix]*	*different*	*CVC-CVC* *CCV-CVC*
/miɦ.bas/	*[mɦa.bis]*	*different*	*CVC-CVC* *CCV-CVC*
/mak.tab /	*[mka.tib]*	*different*	*CVC-CVC* *CCV-CVC*

Table 4 describes medial word metathesis having the grammatical function of pluralization. As for the syllable number, the words remain disyllabic, but the first syllable is changed because its nucleus and coda change positions



This form takes place within the syllable borders as compared to the previous form where the change exceeds to two syllables. Syllabification of this sequence is as follows:

UR: /maw.qif/ CVC.CVC

R1:[mwaq.if] CCVC.*VC where VC does not occur word finally.

SR: [mwa.qif] CCV.CVC

The filters model applied to this group of words will be illustrated in Table (5) below.

Table 5: Filter model for VC-to-CV word medial metatheses

Input	*Transformational Component*	*Output of Transformational Component*	*Filter Component*	*Output of Filter Component*
/maw.qif/	*Syllabification metatheses*	*[mwa.qif] [mwaq.if]*	**VC#*	*[mwa.qif] *[mwaq.if]*

5.1.1.3 Word Final Metathesis.

When occurring in word final position, metathesis has two grammatical functions: Pluralization and gender difference.

As Table 6 will illustrate, both singular and plural nouns are disyllabic.

Table 6: Adjacent CV-to-VC metathesis in word final position

Singular	*Plural*	*Syllable no.*	*Syllabification change*
/sit.ra/	*[si.tar]*	*same*	*CVC-CV CV-CVC*
/miħ .na /	*[mi. ħan]*	*same*	*CVC-CV CV-CVC*
/nax.la/	*[na.xal]*	*same*	*CVC-CV CV-CVC*
/ʃ a ʤ. ra/	*[ʃ a .ʤ ar]*	*same*	*CVC-CV CV-CVC*
/ba ʂ. la /	*[ba .ʂ al]*	*same*	*CVC-CV CV-CVC*

One difference is that the second (CV) open syllable is changed into a (CVC) closed one as:

CVC - CV

CV - CVC

More interesting is that the two syllables are just reversed with each other as :

CVC - CV

CV - CVC

And what happens is that the coda of syllable 1 shifts leftward to occupy the position of the second syllable onset as :

The possible environments of this form can be described as follows:

UR: /si.tar/ CV.CVC

R1: /sit.ar/ CVC.VC* where VC is not allowed word finally.

SR: /si.tar/ CV.CVC

The filters model applied to this group of words will be illustrated in Table (7) below.

Table 7: Filter model for CV-to-VC word final metatheses

Input	*Transformational Component*	*Output of Transformational Component*	*Filter Component*	*Output of Filter Component*
/sit.ra/	*Syllabification metatheses*	*[si.tar] [sit.ar]*	**VC#*	*[si.tar] *[sit.ar]*

Table 8: Adjacent VC-to-CV metathesis in word final position

Macsuline	*Feminine*	*Syllable no.*	*Syllabification change*
/mxabal/	*[mxabla]*	*same*	*CCV - CVC CCVC - CV*
/mka.sar/	*[mkas.ra]*	*same*	*CCV - CVC CCVC - CV*
/m ʧ an.ij/	*[m ʧan .ʃa]*	*same*	*CCV - CVC CCVC - CV*
/m ʔ a.zil /	*[m ʔaz.la]*	*same*	*CCV - CVC CCVC - CV*
/mda.θar /	*[mda θ.ra]*	*same*	*CCV - CVC CCVC - CV*
/m ʔ a .z il/	*[m ʔ az.la]*	*same*	*CCV - CVC CCVC - CV*
/mxa.dar /	*[m χad.ra]*	*same*	*CCV - CVC CCVC - CV*
/mka.sar /	*[mkas.ra]*	*same*	*CCV - CVC CCVC - CV*

In these examples, metathesis causes the second CVC closed syllable to become a CV open one and what happens is that the onset of the second syllable in the stem shifts leftward to become the coda of the second syllable of the new word as :

CCV - **CVC**

↙

C**CVC**– CV

As for syllable stress, metathesis falls on the syllable carrying the secondary stress.Syllabification rules can be described as follows:

UR:/m χ a.bal/ CCV.CCV

R1: [m χ abl.a] CCVCC.V* where V syllable is prohibited in HIA

R2: [m χ a.bla] CCV.CCV where HIA does not allow /bl/ sequence within a syllable boundaries.

SR: [m χ ab.la] CCVC.CV

Table 9 : Filter model for VC-to-CV word finall metatheses

Input	*Transformational Component*	*Output of Transformational Component*	*Filter Component*	*Output of Filter Component*
/m χ a.bal/	*Syllabification metatheses*	*[m χ ab.la]* *[m χ abl.a]* *[m χ a.bla]*	**V#* **#CCV*	*[m χ ab.la]* **[m χ abl.a]* **[m χ a.bla]*

Metatheses in word final position appears with another form in which it changes the part of speech of the words it occurs in. The following example illustrates this form:

Table 10: Adjacent VC-to-CV metathesis in word final position

Verb	*Noun*	*Syllable no.*	*Syllabification change*
/fa.ta ħ /	*[fat. ħ a]*	*same*	*CV.CVC* *CVC.CV*
/za.ʔal/	*[zaʔ.la]*	*same*	*CV.CVC* *CVC.CV*

/fata ħ / [fat ħ a]

CV.CVC CVC.CV

This form has the VC-CV metatheses in word final position.When appearing in this environment it has the grammatical function of changing the verb into a noun.The underlying rules governing this category of metatheses are as follows:

Environment 1:

UF: /fa.ta ħ / CV.CVC

R1: [fat. ħ a] CVC.CV

SF: [fat. ħ a] CVC.CV

Here the final VC portion is changed into CV. It is noticeable that the metatheses occurs within the same syllable boundaries. The only syllabification change is that the disyllabic word has

the same sequence but the difference is in the syllable boundaries where the two segments reverse with each other. Table (9) presents a group of words having this form of metatheses.

The same resulting word will have a different meaning and number of segments. It is the case where the word witnesses epentheses of a consonant /t/ which is attached to it. In this environment, a new part of speech will result which is a verb. This will result into a new rule to be added as :

Environment 2:

UF: /fat. ħ a/ CVC.CV

R1: [fat. ħ at] CVC.CVC

SF: [fat. ħ at] CVC.CVC

The main changes accompanying this form is shown in Table (11) below.

Table 11: Final word consonant epentheses

noun	*verb*	*Syllable no.*	*Syllabification change*
/fat. ħ a/	*[fat. ħ at]*	*same*	*CVC.CV* *CVC.CVC*
/daχal/	*[daχ.la]*	*same*	*CVC.CV* *CVC.CVC*
/saʃab/	*[saʃ.ba]*	*same*	*CVC.CV* *CVC.CVC*
/dafaʕ/	*[daf.ʕa]*	*same*	*CVC.CV* *CVC.CVC*
/raʤaʕ/	*[raʤ.ʕa]*	*same*	*CVC.CV* *CVC.CVC*
/nazal/	*[naz.la]*	*same*	*CVC.CV* *CVC.CVC*

Where the underlying form of this environment was R1 of the environment 1.

The output in R2 above can be a path into a third rule which is achieved by means of lengthening the vowel of the second syllable so that we get a plural form. Thus, the rewrite rules will be as :

Environment 3:

UF: /fat. ħ at/ CVC.CVC

R1: [fat. ħ aat] CVC.CVC

SF: [fat. ħ aat] CVC.CVC

The main changes accompanying this form is shown in Table (12) below.

Table 12: Adjacent VC-to-CV metathesis in word final position

noun	*verb*	*Syllable no.*	*Syllabification change*
/fat.hat/	*[fat.haat]*	*same*	*None*
/saʃ.bat/	*[saʃ.baat]*	*same*	*None*
/daf.ʕat/	*[daf.ʕaat]*	*same*	*None*

/raʤ.ʕat/	[raʤ.ʕaat]	same	None
/naz.lat/	[naz.laat]	same	None

Once again the underlying form of this environment was R1 of the environment 3.

Environment 3 expand to result another rule and a new part of speech. This happens by lengthening the vowel of the first syllable leading to rules like:

Environment 4:

UF: /fat. ħ aat/ CVC.CVC

R1: /faat. ħ aat/ CVC.CVC

SF: /faat. ħ aat/ CVC.CVC

Combining the four environments together we have the following derivational rules:

UF: /fa.ta ħ / CV.CVC

R1: [fat. ħ a] CVC.CV

R2: [fat. ħ at] CVC.CVC

R3: [fat. ħ aat] CVC.CVC

R4: [faat. ħ aat] CVC.CVC

SF: [faat. ħ aat] CVC.CVC

5.1.1.4 Double positioned metathesis.

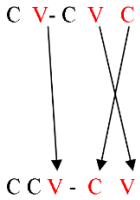
There are cases where metathesis is able to occur in two positions of the word at the same time. HIA has instances of this form of metathesis which also has a grammatical function of pluralization.

Table 13:Adjacent VC-to-CV metathesis in word medial and final positions.

Singular	Plural	Syllable no.	Syllabification change
/ka.rak/	[kra.ka]	same	CV- CVC CCV- CV
/da.raʤ/	[d3ra.ʤa]	same	CV- CVC CCV- CV

Here the four metathesized consonants whereas the vowels move leftward. What happens is that three of them remain in their original boundaries, but they alternate positions i,e one moves from being the onset of the second into the onset of the first as:

As for the movement of the other three metathesized sounds , they have the form below:



The syllabification rules governing this sequence of segments are described as :

UR: /ka.rak/CV.CVC

R1: [krak.a] CCVC.V* where V syllable is not allowed in HA.

SR: [kra.ka] CCV.CV

The filters model applied to this group of words will be illustrated in Table (14) below.

Table 14: Filter model for medial and final word metatheses.

Input	*Transformational Component*	*Output of Transformational Component*	*Filter Component*	*Output of Filter Component*
/ka.rak/	*Syllabification metatheses*	*[kra.ka] [krak.a]*	**V#*	*[kra.ka] *[krak.a]*

4.1.1.5. CC-to- CC Adjacent Metathesis

This form occurs in HIA to fall on consonants only where both occupy word medial positions. It is represented by two syllable margins. Noteworthy is that this form has no grammatical function and that it is only a form of speech errorsspecially by children and illiterate people whose native language variety is HIA. Instances of this form will be mentioned in Table (15) below:

Table (15) :Adjacent CC-to-CC metathesis in word medial position.

Original word	*Metathesized word*	*Syllable no.*	*Syllabification change*
[mus.taʃ.fa]	*[mus.taf.ʃi]*	*same*	*CVC-CVC-CV*
[mab.zal]	*[maz.bal]*	*Same*	*CVC-CVC*

More interesting, this form has no effect on neither syllable number nor structure as the examples illustrate. The rules underlying the syllabification are described below:

UR: /mus.tash.fa/ CVC.CVC.CV

R1: [mu.staf.shi/] CV.CCVC*.CV where CCVC is not occurring word medial.

R2: [mus.ta.fshi] CVC.(CV.CCV*) where this sequence is not preferred.

SR: [mus.taf.shi] CVC.CVC.CV

The filters model applied to this group of words will be illustrated in Table (16) below.

Table 16: Filter model for CC-to-CC adjacent word medial metatheses

Input	*Transformational Component*	*Output of Transformational Component*	*Filter Component*	*Output of Filter Component*
/mus.taʃ.fa/	*Syllabification metatheses*	*[mu.staf. ʃi]* *[mu.staf. ʃi]* *[mus.ta.ffi]*	*CCVC word medial* *CV.CCV sequence*	*[mu.staf. ʃi]* **[mu.staf. ʃi]* **[mus.ta.ffi]*

5.2.Vowel deletion

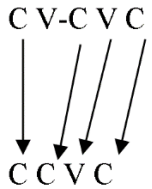
In addition to metatheses, Pluralization in HIA is sometimes achieved by means of deleting vowels of open syllables from the singular noun. Where deletion takes place, it affects the syllable structure and number . Table (17) below illustrates the way this process works.

Table 17: Vowel deletion in plural nouns/ First syllable

singular	*plural*	*Syllable no.*	*Syllabification change*
[qa.lam]	*[qlaam]*	*different*	*CV-CVC* *CCVC*
[sa.ham]	*[shaam]*	*different*	*CV-CVC* *CCVC*

As shown, elements of the second syllable keep the same sequence but they shift leftward attaching the onset of the first syllable to build up the monosyllabic word as:

Disyllabic



Monosyllabic

This form of deletion is accompanied by vowel lengthening which falls on the nucleus of the resulting monosyllabic word.

The filters model applied to this group of words will be illustrated in Table (18).

Table 18 : Filter model for voweldeletion

Input	*Transformational Component*	*Output of Transformational Component*	*Filter Component*	*Output of Filter Component*
/qa.lam/	*Syllabification deletion*	*[qlaam]* *[q.laam]*	*C*	*[qlaam]* **[q.laam]*

Deletion also falls on the second open syllable of the singular word as in Table 19.

Table 19: Vowel deletion in plural nouns/ Second syllable

singular	*plural*	*Syllable no.*	*Syllabification change*
/moo.za/	*[mooz]*	*different*	*CV-CV* *CVC*
/tii.na/	*[tiin]*	*different*	*CV-CV* *CVC*

As shown, a disyllabic word is changed into a monosyllabic. It is due to deleting the nucleus of the second syllable and attachig its onset to be the coda of the resulting monosyllabic word . The environments gorerning this transition is described as follows:

UF: /moo.za/ CV.CV

R1: /moo.z/ CV.C* where C syllable is not allowed in HA

R2: [mooz] CVC

SF: [mooz] CVC.

5.3. Vowel Substitution

Epenthesis is a term used to refer to intruding a sound in the word (Crystal 2009, p.171). Another phonological process which in distinguished in HIA is vowel substitution. It is occurs with pluralization and therefore it has a grammatical function.

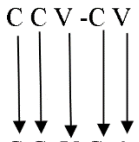
None of the processes previously described occur with monosyllabic words. In contrast, substitution does. Table (20) shows some examples:

Table 20: Vowel substitution in plural nouns.

singular	*plural*	*Syllable no.*	*Syllabification change*
/smiin/	*[smaan]*	*same*	*CVC.VC* *CCVC*
/kbiir/	*[kbaar]*	*same*	*CCVC* *CCVC*

It is clear that this process has no affect on neither the syllable number nor structure. In addition, both vowels are long ones and the resulting plural noun is the same whatever the singular is (masculine or feminine) The only difference is that with feminine stem (singular), substitution is accompanied with deletion of the final vowel. In this case, plural results into new syllable number and structure as:

/s m i n a/



[s m aa n]

5.4.Feature changing processes

HIA is rich with environments where segments have some of their features changed under the influence of neighboring segments which are mostly likely to following them. Below are some observed cases:

5.4.1Regressive assimilation of [ɣ] .

In HIA, the voiced velar fricative [ɣ] is changed into a voiceless uvular fricative [x] when occurring before another fricative. The environments governing this type of assimilation is described in terms of derivational representation as follows by means of parentheses rules:

When [ɣ] is followed by an alveolar fricative [s] as in :

/jiɣ.sil/ ⟶ [jiχ.sil]

the parentheses rules are represented as:

/y/ ⟶ /x/ / #/s/. ———

In another case, when followedby a labiodental fricative [f] as in:

/jiɣ.fir/ ⟶ [jiχ.fir]

where their parentheses rules are given as:

/y/ ⟶ /x/# / ~~/f/.~~

5.4.2 Place Assimilation of [m] into [n]

This case of feature changing operations is assimilation of place of articulation of [m] into [n] when followed bythe alveolar plosive [t]as in :

/mumtaaz/ [muntaaz]

Their parentheses rules will be represented as follows:

/m/ /n/ # ~~/t/~~

The same feature changed in the environment when /m/ is followed by a retroflex plosive [ʈ] as in :

/tumʈir/ [tunʈir]

where the rules are written as :

/m/ /n/ # ——— / t /

The interesting finding with this phenomenon is that it is the mirror image ofplace assimilation occurring in MSA where [n] is changed into [m] when followed by a voiced bilabial plosive [b]as in:

/anbar/ [ambar]

which has the parentheses representation as:

/n/ /m/ # / / b/

5.4.3 Voice Assimilation of [ʤ].

[ʤ] is uttered [ʧ] when followed by [f] as in:

/ʤfuun/ [ʧfuun]

5.5 Vowel Epenthesis

This phonological operation is noticeably present in HIA and restricted to monosyllabic words (verbs) where one of three vowels [i,a,u] is inserted within a final two consonant cluster . This insertion expands the number of the syllables and gives the word new syllabification as shown in Table 19 below. Noteworthy is that the inserted vowel is the same vowel representing the nucleus of the original word. In other words, when the original word nucleus is [i] , the inserted vowel should also be [i].

Table 21. [i,a,u] Vowel Epentheses in monosyllabic words.

MSA	*HIA*	*Syllable no.*	*Syllabification change*
/qir ʃ/	*[qi.ri ʃ]*	*different*	*CVCC* *CV- CVC*
/misk/	*[mi.sik]*	*different*	*CVCC* *CV- CVC*
/fahd/	*[fa.had]*	*different*	*CVCC* *CV- CVC*
/ʕumr/	*[ʕu.mur]*	*different*	*CVCC* *CV- CVC*

The reason of vowel insertion is that HIA prohibits a CVCC structured monosyllabic words which is the case of the original words described above. In this case vowel insertion is basically adopted for ease of both production and perception.

This form of epenthesis has the following rules:

UF: /qir ʃ/ CVCC

R1: [qir.i ʃ] CVC.*VC where VC does not apply word finally.

SF: [qi.ri ʃ] CV.CVC

5.6 Reduplication

Reduplication is a term adopted to refer to a repetition of where the form of the added morpheme has some phonological implications and effects. HIA has some evidences of this phonological process where a word or part of it is repeated to result into a different part of speech. One of the main features of this process is that it takes place in mono and disyllabic words only and does not exceed to larger words. Following are some observed stances with their syllabification changes and their parts of speech.

5.6.1Reduplication in monosyllabic words.

The following groups of words are monosyllabic words which are, when reduplicated, changed from verbs to nouns.

/sim/ [sim.sim]

/ ʤar/ [ʤar. ʤar]

In these stances the whole monosyllabic CVC word is doubled and then changed into a disyllabic CVC.CVCone.Moreover is that this form of reduplication is regular i.e. performs grammatical functions

Compared to the previous group, reduplication in the following group of words have no grammatical functions and therefore it is abrupt. They are structured in the same way of the first group. Moreover, both words are nouns. Following is a group comprising reduplicated words from this type:

/han/ [han.han]

CVC CVC.CVC

/fal/ [fal.fal]

/dam/ [dam.dam]

In the two groups of words above, reduplication plays a role in expanding the number of syllables. i.e. changing monosyllabic words into disyllabic ones.

5.6.2 Reduplication in disyllabic words

HIA allows reduplication to take place in disyllabic words. It affects the syllabification in changing the structure and boundaries of the two syllables. As was the case with monosyllabic words, the whole word is repeated and reduplication is done by means of adding /b/ in a way similar to consonant epenthesis but the difference is that there is no evidence that HA allows a consonant epenthesis. Notice the following word where reduplication is gradual in that it has the grammatical function of pluralization.

/ ʈu.ba/ [ʈu.bab]

/hu. ʂa/ [hu. ʂa ʂ]

/mu.da/ [mu.dad]

CV.CV CV.CVC

Where the underlined consonants are identical and seemingly reduplication is done by just repeating this consonant. Noteworthy is the observation that these same words might have different syllable structure and numbers. This happens when they are produced by elderly

people as monosyllabic word when they make vowel deletion. In this case we obtain the following transformational rules:

/tu.ba/ [tbab]

/ ɦu ʂa ʂ/ [ɦʂa ʂ]

/mu.da/ [mdad]

CV.CVC CCVC

As noticed, they are reduced into monosyllabic words.

6 CONCLUSIONS AND RECOMMENDATIONS FOR FUTURE RESEARCHES

In order to answer the research questions raised, the present paper concludes the following:

RQ1: HIA exhibits the following phonological processes:

Metathesis, Elision, Vowel lowering, assimilation

RQ2: Syllabification in HIA performs the following grammatical functions:

Word Initial metathesis performs pluralisation

Word medial metathesis performs pluralisation

Word final metathesis performs pluralisation and gender

Elision performs pluralisation

RQ3: The phonological processes, namely metathesis, were found to be determined by syllabification limitations. Metathesis is determined depending on a number of factors; 1) adjacency between the segments, 2) whether the segments are consonants or vowels, and 3) the grammatical function it performs if there are any. Furthermore, vowel substitution is found to be regular i.e. has a grammatical function (Crystal, 2003).

RQ4: It has been found that such phonological processes cause changes in syllable structure and number.

The present paper has a number of recommendations and suggestions for future research:

1. It is recommended that investigating the speech of Hiti residents to examine whether the way they speak has been affected by the gilit immigrants to Hit after 2003.
2. This paper focused only on the HIA qiltu dialect. It could be interesting to carry out a socio(linguistic) study on qiltu dialects spoken in Anah and Tikrit to test any similarities and/or differences.
3. It is recommended to conduct a study that examines any gilit dialect to see to what extent they approximate towards the qiltu dialects.

The inventory of consonants (HIA)

	Bilabial		*Interdental*		*Dental*		*Palatal*		*Velar*		*Uvular*		*Pharyngeal*		*Glottal*			
Stops	*p*	*b*			*t*	*d*			*k*	*g*	*q*				*ʔ*			

Sibilants	*f*	*v*			*s*	*z*			*χ*	*ɣ*					*ħ*			
Affricates																		
Nasals		*m*				*n*												
Laterals						*l*												
Flaps						*r*												
Semivowels		*w*						*j*										

The inventory of monophthongs (HIA)

		Front	*Central*	*Back*
High	*short*	*i*		*u*
	Long	*ii*		*uu*
Mid	*short*			*o*
	Long	*ee*		*oo*
Low	*short*		*a*	
	Long		*aa*	

The inventory of diphthongs (HIA)

	Gliding to j	*Gliding to w*
High		*iw*
Mid	*ooj*	*eew*
Low	*aaj* *aj*	*aaw* *aw*

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