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Reduplication of Pluractional Verbs in Ha'ili Arabic

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ABSTRACT

This paper investigates reduplication in pluractional verbs as attested in the Ha'ili dialect of Arabic (HD) by primarily analyzing their form. The paper also makes some observations about the function of these verbs. The data of this study consists of one-on-one interviews, a word list, and observations. Imperfective verb forms are formed by infixing a reduplicative syllable similar to the stem but with a vowel change. The stem of the perfective form of these verbs must necessarily comprise a minimum of two syllables to obey prosodic requirements. Weak verbs with final [a] are formed by prefixing *tə*, changing the first vowel to *a,* and reduplicating (geminating) the second consonant. Weak verbs with medial long [aa] are formed by infixing *ó*ʷ in place of the long [aa] and reduplicating the first consonant. Triconsonantal root verbs are formed by prefixing *tə* and reduplicating the second consonant, resulting in *tə*.C_1*á*C_2.C_2*a*C_3 templatic shape. Furthermore, some reduplicated pluractional verbs seem derived from their corresponding nouns. Despite the seemingly word-based derivation of pluractional verbs in HD, I argue that templatic requirements and reference to the root are also required. From a semantic perspective, there is a relationship in meaning between the stem and the reduplicative form in that it indicates pluractional or intensive actions and even causativization.

Keywords: Reduplication; Pluractional Verbs; Frequentative Verbs; Ha'ili Arabic; Northern Najdi Arabic

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1. Introduction

Reduplication is a morphological process that involves the repetition of a linguistic unit that includes a phoneme, a morpheme, or a lexeme [1]. This phenomenon occurs in the majority of the world's spoken languages. The defining hallmark of the general process of reduplication is that a *reduplicant* is generally constructed with reference to a corresponding *base* within a word in order to meet a particular morphosemantic description. That is, part of the base or the complete base is copied and attached to the base [2]. Reduplication is generally treated as a word-formation process involving derivational patterning [3, 4].

Pluractional verbs are commonly indicated by full (total) or partial reduplication. They explicitly suggest that the event denoted by some verb occurs several times within a certain span. They express a repeated or intensive action [5]. The term *pluractional* was coined by Newman to indicate "multiple, iterative, frequentative, distributive, or extensive actions" [6, 7]. Among the not-so-commonly treated studies in Arabic are pluractional verbs [8, 9]. For Procházka [10], pluractional verbs in Arabic are marked by reduplicating the second root consonant in perfective and imperfective verb forms. Compared with a non-reduplicated stem, a reduplicated verb denotes multiple occurrences of action or event over a given period. On the morphological basis, many forms seem to be formed through derivationally related processes, including reduplication and affixation. The amount of material copied varies according to the number and type of consonantal root and the templatic shape[1] requirements, which determine the length and reduplication of the consonants and the insertion of vowels in the derived stem.

In this paper, we will focus on the properties of reduplication in pluractional verbs in the Ha'ili dialect of Arabic (HD), a sub-variety of Northern Najdi Arabic spoken in the Ha'il region, Saudi Arabia, mainly by members of the Shammar tribe. HD indeed reveals extensive pluractional verbs that share some of the properties of reduplication sketched above. The examples in (1) illustrate that reduplication may serve as a pluractional reading of verbs in HD. (In these examples, the use of boldface indicates emphatic pronunciation.)

(1) **Simplex form** **Reduplicated form**

a. kázz 'he pushed' → káz.kaz 'he pushed frequently'
b. l**áff** 'he turned' → l**áf**.la**f** 'he turned right and left'
c. kí.sar 'he broke' → kás.sar 'he broke into pieces'

While there are various types of reduplicated verbs in HD, there appears to be a semantic relationship between simplex and the reduplicated forms in these verbs. In (1a–b), a CV infix has been inserted to separate the coda geminate in the simplex form, resulting in two syllables. In (1c), however, the second C is reduplicated (geminated) with vowel change.

This paper is structured as follows. Section 2 offers a brief background on HD. Section 3 reviews reduplication within the generative framework. This section cursorily glances at reduplication in Arabic. Section 4 presents an overview of pluractional verbs in Arabic. Section 5 discusses two prevalent approaches within the study of Arabic morphology: the root-to-template and the word-based morphology. The methodology of the current study is introduced in Section 6. Section 7 explores instances of reduplication in HD. The section is subdivided according to the verb form: reduplication in biconsonantal pluractional verbs (7.1.), weak verbs (7.2.), and triconsonantal roots (7.3.). Section 8 focuses on the semantic function of pluractional verbs in HD. Finally, Section 9 concludes this paper.

2. Background on Ha'ili Arabic

The Ha'ili dialect of Arabic (HD) is a sub-variety of Northern Najdi Arabic, spoken in the Arabian Peninsula, in the Ha'il Province, Saudi Arabia. According to the 2019 Census, the total population of the Ha'il Province is around 731,147 people[2]. Although HD is a cover term for a mixture of tribes such as Shammar, Anizah, Tameem, Rashāydah, Harb, and others, it is mainly spoken by members of the Shammar tribe. Distinctive features showing tribal affiliation are evident and successive contacts between tribal groups gradually accommodated to form a communal language in Ha'il. Moreover, the population includes sedentary and Bedouin groups where one can predict dialect leveling, especially when inhabitants live in the same area, and frequent contact produces strong bonds. Al-Azzawi assumed that "most of the tribes and clans which are ethnically related to each other or have had close contact through living

[1] That templatic shape refers to the notion that the stem is governed by canonical patterns (templates).
[2] https://www.stats.gov.sa/en/6138

in the same region speak identical dialects"[11]. Prochazka observed that the Shammari dialects of the north stand out as a distinctive subgroup among Najdi dialects (see Prochazka, 1988 for classification of Najdi Arabic dialects)[12]. HD can be viewed as a conservative variety as we find strikingly archaic linguistic features, including the diminutive, internal passive, and nunation, /-in/ ending reminiscent of Classical Arabic, among others[13–16]. Ingham considered this peculiarity of Najdi Arabic to be largely influenced by living isolated by the desert surrounding the area of Najd during the past decade and that no foreign immigration had been attested[16]. **Figure 1** below shows a map of Saudi Arabia, where Ha'il city is located.

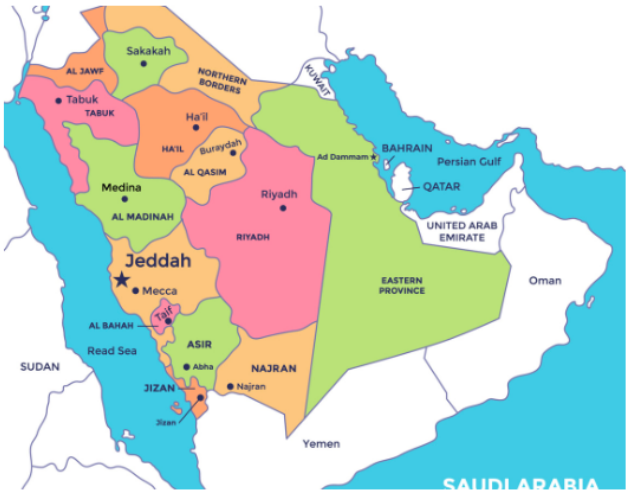

Figure 1. Map of Saudi Arabia.
Source: Retrieved June 11, 2024 from https://www.vector4free.com/detailed-saudi-arabia-map-166003.

3. Reduplication

Reduplication has been the subject of much work in many languages. Studies suggested that there are two basic types of reduplication: full reduplication (total) and partial reduplication. The former refers to the process where a simplex form is copied as a whole, be the simplex form a word, a stem, or a root. The process may occur in nouns, adjectives, and verbs. For instance, the Africans *laag* 'layer' → *lag-laag* 'one layer after the other'[17]. The two copies are semantically matched[18]. Partial reduplication, on the other hand, refers to the notion that a portion of the simplex form is copied. This reduplicated portion can be defined segmentally or prosodically, i.e., a foot, a syllable, a mora, or a phoneme. It may also be a hefty CVC or a single consonant. An example of partial reduplication is the French *fille* 'girl' → *fi-fille* 'little girl'[19]. Newman assumed the plausibility of interpreting gemination as a manifestation of reduplication[7]. For instance, based on approximately 140 or so languages that make up the Chadic family languages, the reduplication may be an infixal, prefixal, and/or suffixal form that appears as a full marker of pluractionality or the process may be accompanied by other morphophonological changes.

The literature attests to the role of iconicity in reduplication. Botha observed that "reduplication is a means of word formation that manifests a measure of iconicity[20]: form and meaning resemble each other quantitatively." In most cases of reduplication, iconic interpretation between reduplication and multiple actions and events remains strikingly constant. Turkish, for instance, uses full reduplication to denote an intensification device, whereas Indonesian and Agta use reduplication to derive plurals[4, 21].

Studies on reduplication first appeared when compiled a study on *Doppelun*[22]. Between this period and Brandstetter's work[23], various studies on the reduplication of Indo-European languages were published. Moravcsik's and Wilbur's seminal works on reduplication appeared within the framework of "modern" typology[24, 25]. Lately, in the 1980s and '90s, research on reduplication was dominated by generative linguistics, where phonological investigations of reduplicative processes predominated with autosegmental theories, prosodic morphology, and optimality theoretic studies. Important theories within this framework included the copy-and-association model and the full-copy model[26, 27]. As a reaction to the purely phonological views of generative approaches, Inkelas and Zoll and Inkelas developed a morphological view of reduplication[18, 28], which they called the morphological doubling theory[19]. This theory assumes the basic structure in (2) for morphological reduplication[18]:

(2) [output]$_{[F + \text{some added meaning}]}$

/input/$_{[F]}$ /input/$_{[F]}$ where [F] = semantic feature bundle

The theory of morphological doubling assumes that the reduplication process between the base and the reduplicant is independent of phonology, where reduplication is viewed as the doubling of a morphological item that satisfies particular morphosemantic requirements[18]. The idea

of reduplication deals with phonology and morphosemantics, although no attention has been given to arguing for one over the other[18]. Phonological duplication sees the reduplicant as an affix onto which features or segments of the base are copied[26, 29]. In contrast, the morphosemantic approach involves semantic rather than phonological identity where reduplication changes the word's meaning by doubling a specific morphological unit[28, 30].

Thomas Stolz[31], reduplication in Arabic indicates "semantic augmentation," which is the intensification of the meaning of a particular object, action, or state. More specifically, the result of the reduplication of a verb stem primarily indicates iterativity in verbs or increased quantity, intensity, or duration of a substance, action, or movement. El Zarka suggested that doubled forms in Arabic denote pluractionality[9], intensity, and perhaps causativization, following the principle of iconicity where "more of the same form signifies more of the same meaning." Although biconsonantal roots have full reduplication, triconsonantal roots have only partial reduplication[32].

4. Pluractional Verbs

Event pluractionality, a common phenomenon across languages, refers to the notion that the event denoted by the verb occurs several times within a certain span. Morphologically marked pluractional verbs have been reported for many languages where different morphological processes have been observed, including full reduplication and affixation, e.g., Niuean[33], Karok[34], ablaut, including vowel alternation, e.g., Chechen[35], and gemination, e.g., Northern Paiute[36].

Pluractional verbs, common to Semitic, are profusely found in Ethio-Semitic languages. It is formed through internal reduplication by infixing a 'reduplicative syllable,' usually by reduplication of the penultimate root consonant and a vowel into a regular verb stem. It serves to encode intensive meaning. Brockelmann noted that pattern-II verbs in Semitic indicate "numeric intensity[37]." See examples in **Table 1**, taken from Rose[5].

In some modern Arabic dialects, both biconsonantal and triconsonantal roots are reduplicated with certain metalinguistic functions, such as an intensive or pluractional meaning[8, 9, 38, 39]. Abu-Mansour[8], analyzing internal reduplication in Makkan Arabic, has proposed that the infixal reduplicant in biconsonantal and triconsonantal root verbs is a prefix or suffix that has been misaligned in order to satisfy highly-ranked markedness constraints. Verb Pattern-III in Arabic dialects is mostly indicated as a reciprocal reading. Benmamoun[40], however, has argued that it reflects a verb plurality where the event or state involves more than one participant[41]. It should be noted that even Verb Pattern II exhibits pluractionality. The word *kattab* 'he dictated/wrote many times,' for instance, can function as a causative or pluractional, based on the context. Procházka discusses pluractional marking with pluractional verb by Pattern-II and reduplicated verbs in the Fertile Crescent dialects of Arabic in south-eastern Turkey and the speech of some settlements in the Syrian steppe ecoregion[10]. In these dialects, many transitive pattern-I verbs, on the one hand, and pattern-II and reduplicated verbs, on the other, are mostly determined by the grammatical number of the direct object they govern. Pluractional pattern-II verbs (reduplicated) take a plural object. This indicates that pluractional verbs in these varieties express distributivity over time and space, as well as over arguments, a case Procházka has considered as a development from derivational to inflectional morphology[10].

5. The Root-Based and Word-Based Morphology in Arabic

Languages offer different patterns of complex word processes. The morphological structure of words having prefixes and suffixes that have been added linearly, i.e., where the whole morpheme is attached before or after a stem, is known as concatenative morphology, which is prevalent in many Indo-European languages. Semitic languages, on the other hand, show different morphological structures whereby consonantal roots combine with the morphological pattern (template) to produce nonlinear (or nonconcatenative) formation[42, 43]. There are particularly rich attempts to analyze and regulate word forms resulting from these two processes, which have led to the evolution of two morphological theoretical models: morpheme-based and word-based approaches. In Arabic, like other Semitic languages, word-formation processes are traditionally viewed as a root-template construct combined in paradigmatic relations, which falls within the morpheme-based approach[44, 45]. One prominent theory

Table 1. Pluractional verbs in Ethio-Semitic languages.

Language	Regular Verb	Gloss	Pluractional	Gloss
Amharic	səbbər-	break	səbabbər-	shatter in pieces
Tigre	mədd-a:	stretch	məda:dəd-a:	stretch a little
Harari	kətəf-a	chop	kitatəf-a	chop a lot
Tigrinya	gəlbət'-	turn over	gəlabət'-/gələbabət'-	turn over and over

concerning the Arabic morphological system was proposed by McCarthy[43], namely, the root-and-pattern model as a derivational verbal system in Arabic that could result by mapping out the consonantal roots onto a pattern. For instance, the Arabic verb /ka.tab/ 'he wrote' with the template [CV.CVC] is typically derived from the consonantal root /k-t-b/ by separating a consonantal root, a vowel pattern, and a CV template, representing independent tiers. McCarthy later developed the root-and-pattern notion within autosegmental phonology[46, 47]. A root is viewed as a nonword string that, in most instances, contains three consonants. In contrast, a template is a morphological pattern that combines both consonantal roots and vowels interdigitated discontinuously to form words[48]. This word-formation process is largely based on CV templates provided by nonlinear (or nonconcatenative) affixation of roots and patterns[49, 50]. McCarthy considers the gemination in causative (Pattern-II) to reflect a consonantal mora (μ_C)[51], whereas vowel lengthening in reciprocal (Pattern-III) verbs reflects a vocalic mora (μ_V).

Arabic broken plurals are clearly related to their singular counterparts[45, 46, 52], which constitutes a problem for the traditional root-and-pattern approach proposed by McCarthy[53]. Opposition to this traditional root-based approach is word-based derivation, where words are viewed to be formed from independent words[45, 50, 52]. The word-based approach considers templates as constraints on vowel-consonant combinations or independent morphemes where an affix, in most instances, a suffix, is added to the base form to create a new word. Heath[54], Ratcliffe[45], Benmamoun[50], and Ussishkin have argued that verb formation is word-based and not root-based[55]. Benmamoun assumed the Arabic imperfective verb form to be the default form that can be used in the derivational processes to produce derived stems by ablaut[50, 56], affixation, or both.

6. Methodology

6.1. Participants

The current study is a qualitative analysis of data collected from 16 middle-aged male participants whose ages range from 24 to 39 years old to shed light on the reduplication of pluractional verbs in HD. All of the participants provided their approval and consent for the current study. The data comes from different sources: one-on-one interviews, a word list, and observations. The selection was a judgment sampling where participants had to meet the criterion that they were members of the Shammar tribe living in Ha'il for a long time. Moreover, the researcher is a native speaker of HD who used his native speaker's intuition, which could be helpful. The participants' verbalizations were recorded using a Marantz tape recorder.

6.2. Instrument and Design

The study sought informal, spontaneous, and natural speech from HD native speakers. The qualitative data was collected through both structured and semi-structured techniques in addition to the researcher's observations. Interviews were carried out to capture casual speech in various contexts, notably, between friends and family members. The meetings were informal and took place at a range of venues, including the researcher's house, a coffee shop, and the house of one of the participants. These settings seemed comfortable enough for the participants to share their stories and comment on pluractional formation in HD without the pressure of social formality. Each interview lasted for around 30 minutes. The interviews were open-ended, which provided the flexibility to follow up on any answer given.

The researcher prepared a word list containing 60 verbs of different syllable structures, e.g., with biconsonantal roots, weak verbs, triconsonantal roots, and nouns where participants were instructed to produce pluractional forms of these verbs. This semi-structured, word-list technique helped to gather pluractional forms in HD. Although these verbs were

written in Modern Standard Arabic (MSA) script, each participant was instructed to respond only in the dialect (HD) and not in MSA. In order to stimulate the participants to form pluractional verbs from the list of verbs, the researcher performed a few examples before starting the task. A few instances of variations appeared and were subsequently eliminated from the analysis.

The secondary data collection tool featured ethnographic observations, which were undertaken over a 4-month period by the researcher himself. These observations took place at social gatherings of families and friends. Observations were achieved via informal spoken interactional data with random groups of HD speakers. The researcher employed notetaking techniques to yield naturally occurring data [57].

7. Findings and Discussion

HD exhibits several instances of reduplication in pluractional verbs. These can be grouped into various syllable structures: biconsonantal root verbs, weak verbs, and triconsonantal root verbs. These patterns of reduplication in pluractional verbs account for most of the occurrences of reduplication found in HD, although some other exceptional cases require a separate treatment. It should be noted that the formation of pluractional verbs in Arabic and HD involves internal modification of the simplex verb form.

7.1. Reduplication in Biconsonantal Pluractional Verbs

Reduplication in biconsonantal verbs is a part of Arabic and most Semitic morphology [58]. Biconsonantal verbs have two consonantal roots, the second being geminate, i.e., *CVGG*. This is shown in **Table 2**. From a semantic perspective, there is a relationship in meaning between the stem and the reduplicative form in that it indicates pluractional or intensive actions.

Table 2. Reduplication in the biconsonantal perfective (PF) pluractional verbs.

PF	Gloss	Pluractional	Gloss
a. kazz	he pushed	káz.kaz	he pushed frequently
b. hazz	he shook	ház.haz	he shook violently
c. dagg	he knocked	dág.dag	he knocked severely
d. ball	he wet	bál.bal/bál.lal	he soaked in liquid

In **Table 2**, biconsonantal pluractional verbs having the syllable shape $C_1aG_2G_2$ change into $C_1aG_2.C_1aG_2$ to satisfy the templatic requirements. The stem must comprise an absolute minimum of two syllables to obey prosodic requirements [25, 57]. The reduplicative syllable in the PF pluractional suggests that the pluractional is formed by infixing *Ca* to divide the geminate into two syllables. Indeed, the forms are entirely predictable. There are two variants in example 2 (d), where the second seems more common. While biconsonantal pluractional verbs in HD appear word-based and have their templatic shape, imperfective verb formation (IPF) indicates that this is not a straightforward case, as shown in **Table 3**.

Table 3. Reduplication in biconsonantal IPF pluractional verbs.

IPF	Gloss	Pluractional	Gloss
a. yi.kiz	he pushes	ykáz.kiz	he pushes frequently
b. yi.hiz	he shakes	yház.hiz	he shakes violently
c. yí.dig	he knocks/rings	ydág.dig	he knocks severely
d. yí.bil	he wets	ybál.bil/ybál.lil	he soaks in liquid

One should observe that a vocalic pattern changes according to the aspect in Arabic. In PF, for instance, the biconsonantal verb template is *CáGG,* whereas the IPF is *yí.CiC*. Moreover, the lack of correspondence between the templatic shape of PF pluractional forms in **Table 2** and their corresponding IPF pluractional forms in **Table 3** indicates that IPF pluractionals are formed differently. When we compare the regular IPF (Col. 1) to the IPF pluractional (Col. 3), we observe that the templatic shape $yí.C_1iC_2$ in the IPF column changes to $yC_1áC_2.C_1íC_2$. The high vowel in the first syllable is not maintained in the pluractional, and an infix *CáC* is inserted to form one syllable; the remaining $C_1íC_2$ forms a second syllable. This means that each verb form (PF or IPF) requires a separate template to accommodate. By merely relying on a specific templatic shape for each verb form, the analysis misses the generalization. In the environment of emphatics, /i/ changes to /u/, as shown in **Table 4**.

Based on the IPF pluractional forms in the IPF column of **Table 4**, one would expect the IPF pluractional forms in the IPF pluractional column to replicate the features of the IPF form in the IPF column, including the vowel quality and emphaticness of the second syllable, i.e., to have the $*yC_1áC_2.\boldsymbol{C_1uC_2}$ templatic shape. However, vowel quality and emphaticness are not carried over to form the corresponding IPF pluractional. It takes $yC_1áC_2.C_1iC_2$, instead. The

Table 4. Reduplication in biconsonantal emphatics.

PF	Pluractional	IPF	IPF Pluractional	Gloss
a. láff[1]	láf.laf	yí.luf	yláf.lif	he turned right and left/wrapped
b .ʃámm	ʃám.ʃam	yí.ʃum	yʃám.ʃim	he sniffed
c. fárr	fár.far	yí.fur	yfár.fir	he roamed /turned
d. kább	káb.kab	yí.kub	ykáb.kib	he poured continuously

Note: Emphatic pronunciation is a characteristic of HD dialect, which seems to be subject to Bedouin-sedentary dichotomy. More investigation and analyses are needed.

notion that IPF pluractionals are formed from corresponding IPF forms seems unwarranted as it fails to capture all properties of the IPF. We now turn to the weak verbs and the formation of pluractional verbs.

7.2. Weak Verbs

According to Qafisheh[59], a weak verb is either a defective or a hollow string. A defective verb has a final weak radical, as shown in **Table 5**, whereas a hollow verb has a medial long vowel [aa] with no radical, as shown in **Table 6**. The Pluractional column of **Table 5** shows the corresponding pluractional verbs.

Pluractional verbs having defective corresponding verbs, as shown in **Table 5**, are formed by prefixing *tə*, changing the first vowel to *a,* and reduplicating the second consonant, which results in a templatic shape of *tə.*$C_1aC_2.C_2a$.

Table 5. Defective verbs.

PF	Gloss	Pluractional	Gloss
a. bí.t͡sa	he cried	tə.báts.t͡sa	he cried repeatedly
b. mi.ʃa	he walked	tə.máʃ.ʃa	he roamed around
c. ʃí.ka	he complained	tə.ʃak.ka	he complained repeatedly

Table 6. Hollow verbs.

PF	Gloss	Pluractional	Gloss
a. tˤáaħ	he fell	tˤów .tˤaħ	he swung
b. láaħ	he appeared	lów.laħ	he waved repeatedly
c. ʃaaħ	he threw	ʃów.ʃaħ.	he threw very long

Pluractional verbs having corresponding hollow verbs, as shown in **Table 6**, form the pluractional by replacing the first vowel [a] with *ów* and reduplicating the first consonant, yielding $C_1ow.C_1aC_2$as its templatic shape. Reduplicating one consonant is a strategy triconsonantal root verbs also employ to form pluractional verbs. This is shown in **Table 7**.

7.3. Triconsonantal Roots

Triconsonantal root verbs form pluractionals by prefixing *tə* and reduplicating the second consonant, resulting in *tə.*$C_1áC_2.C_2aC_3$ for its templatic shape, as shown in **Table 7** (cases a and b). This, however, does not apply to 7 (cases c and d), where $C_1áC_2.C_2aC_3$surfaces in (cases c and d) and $C_1áC_2.C_3aC_3$ appears as a second variant in (case d). The expression *tə.kás.SAR* 'it is broken into pieces' can also appear but without the involvement of an experience. The prefix *tə* appears only with verbs involving an experiencer subject.

Table 7. Pluractional verbs of triconsonantal root.

PF	Gloss	Pluractional	Gloss
a. ðá.ħak	he laughed	tə.ðˤáħ.ħak	he laughed frequently
b. rí.gasˤ	he danced	tə.rág.gasˤ	he danced repeatedly
c. kí.sar	he broke	kás.sar	he broke into pieces
d. ʃá.ʕal	he lighted	ʃáʕ.ʕal/ ʃáʕ.lal	he ignited into flames/inspired

7.4. Reduplication of Nouns

Some rare reduplicated pluractional verbs seem to be derived from their corresponding nouns. If the corresponding noun is a quadrilateral, the pluractional form becomes $C_1áC_2.C_3aC_4$, but when it is triconsonantal, the pluractional verb takes $C_1aC_2.C_1aC_3$. This is seen in **Table 8**.

Table 8. Pluractional verbs of nouns.

Noun	Gloss	Pluractional	Gloss
a. tˤara.tˤíiʕ	firework	tˤár.tˤaʕ	angered
b. bax.ʃiiʃ	tip	báx.ʃaʃ	Tipped
c. fa.ráa.ʃ-ah	butterfly	far.faʃ	cheered

Reduplication (or gemination) also appears in occupation nouns, which may give a pluractional notion. There are two patterns, as shown in **Table 9**.

Table 9. Occupational nouns with pluractional.

Form	Gloss	Noun	Gloss
a. xá.**baz**	baked	xab.**báaz**	Baker
b. tˤí.bax	cooked	**tˤab.báax**	cook
c. ħá.lag	shaved	ħal.láag	barber
d. ħír.f-ah	craft	ħir.ríif	craft man
e. ʃáɣ.l-ah	work	ʃíɣ.ɣíil	work hard
f. dí.faʕ	paid	dif.fíiʕ	pay a lot

In **Table 9**, the first template is the occupational noun $C_1aC_2.C_2aaC_3$, whereas the second is an exaggeration or intensive pattern $C_1iC_2.C2iiC_3$. Both templates give a pluractional notion, even though they denote occupational nouns, exaggeration, or intensive patterns, respectively, in traditional Arabic grammar.

The formation of pluractional verbs in HD presents a formal diversity based on the syllabic structure of the simplex verb form. The earlier discussion leads us to the conclusion that neither infixation processes nor word-based formation alone can correctly capture all the properties of the pluractional verb formation. The reduplication is integral to forming the pluractional, and the root is also important in mapping pluractional verbs. It is, therefore, more appropriate to posit that ignoring the reference to the root would make it impossible to predict based on word formation alone. However, both requirements are necessary for the production of the pluractional form.

8. The Semantics of Pluractional Verbs

Moravcsik assumed that reduplication is mostly used to increase the meaning of the simplex form[60], either in quantity or quality. For Lieber[61], reduplication denoted iconicity, where the derived form indexes its meaning. In HD, reduplication denotes pluractionality and events that fall under the semantic domain of pluractionality, including frequentativity, iterativity, and intensity. Pluractional verbs in HD result from internal events, yielding prolonged continuation where plural internal events are distributed both on the event and time. The derived form is a morphologically and semantically compositional notion building on the regular base form. The base form (simplex form) is considered a measure function providing a unit for pluractionality. Moreover, gemination may entail a collective patient, e.g., *kí.sar 'he broke'* → *kas.sar* 'he broke many' and *ja.raħ 'he wound'* → *jar.raħ* 'he wound many'. Such forms can be viewed as participant-based pluractionals denoting a meaning where events are distributed over participants of those events. Diachronically, geminating the second consonantal root is assumed to be an older operation cross-Semitic as it signifies intensity or verbal plurality[8]. This means that form and function work hand in hand in providing motivation for this class of verbs.

9. Conclusions

Summing up, we have addressed reduplicated pluractional verbs in HD. We divided pluractional verbs based on the syllable structure of the simplex form into biconsonantal root verbs, with the second being geminate, i.e., $C_1aG_2G_2$. The reduplicated pluractional verb of this type is $C_1aG_2.C_1aG_2$. It should be noted here that the IPF has a different template where *yí.CiC* (and *yí.CuC* with emphatic sounds) become $yC_1áC_2.C_1íC_2$. Second, weak verbs with final [a], e.g., $C_1í.C_2a$, are formed by prefixing *tə*, changing the first vowel to *a* and reduplicating (geminating) the second consonant, resulting in *tə*.$C_1aC_2.C_2a$ templatic shape. Weak verbs with medial long [aa], C_1aaC_2 is formed by infixing *ów* in place of the long [aa] and reduplicating the first consonant, yielding $C_1ow.C_1aC_2$templatic shape, e.g., *láaħ* 'he appeared once' → lów.laħ 'he waved repeatedly.' Third, triconsonantal root verb where the pluractional verb is formed

by prefixing *tə* and reduplicating the second consonant, resulting in *tə*.C_1áC_2.C_2aC_3 templatic shape. Furthermore, some reduplicated pluractional verbs seem to be derived from their corresponding nouns. When the is a quadrilateral, the pluractional verb takes C_1áC_2.C_3aC_4 templatic shape, and when it is triconsonantal, the pluractional verb takes C_1aC_2.C_1aC_3 templatic shape. Despite the apparent word-based formation of pluractional verbs in HD, I argue that the formation of these verbs is not straightforward. Each verb form (PF or IPF) requires a separate template to accommodate. This supports our argument for the impossibility of obtaining the pluractional from root-to-template mapping alone or word-based alone, and the relationship cannot be treated as simple accommodation, but reference to both is required.

However, we find some systematicity between the syllable structure of the simplex form and the reduplicated form, in addition to the semantic correlation. The most common semantic value for a reduplicated form is pluractionality, i.e., iterativity or frequentativity. This notion of internal events to form plurality connects morphology and semantics and casts some light on why pluractional verbs in HD may exploit the same morphological tools, e.g., reduplication. One of the limitations of this study is the small and homogeneous sample size. Future research may shed light on whether other related dialects form pluractional verbs in a similar manner or differently.

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Conflicts of Interest

The author declares no conflict of interest.

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