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VOWELS IN JIBBĀLI VERBS

By K. M. HAYWARD, R. J. HAYWARD and SĀLIM BAKHĪT AL-TABŪKĪ

Considering the unique position of the Modern South Arabian languages within Semitic it is surprising how little has been published concerning them. A case in point is the Jibbāli language of Dhofar, whose extreme phonetic and phonological complexity should arouse the interest of the general linguist as well as of the Semitic specialist. This becomes clear in even a brief perusal of the most notable pioneer study of the language, T. M. Johnstone's *Jibbāli lexicon*.

In addition to a list of Jibbāli words and their English meanings, the *Jibbāli lexicon* (hereafter *JL*) contains a valuable introductory grammatical description. The present paper owes its inspiration to this Introduction, in particular to Johnstone's account of certain irregularities within the verbal system.

I

Johnstone distinguishes two conjugational classes for simple verbs, referring to them as types (a) and (b) (*JL*, p. xvi). The differences between the two conjugations (hereafter C(a) and C(b)) show up clearly in a comparison of the 3 p.m. singular forms for the perfect, imperfect, and subjunctive,¹ e.g.

1.	<i>perfect</i>	<i>imperfect</i>	<i>subjunctive</i>
C(a) <i>kśr</i> ^(a)	<i>k[ɔ]śr</i>	<i>ɣ[ʔ]kśś[ʔ]r</i>	<i>ɣśkś[ʔ]r</i>
C(b) <i>fkr</i> ^(b)	<i>fēk[ʔ]r</i> ~ <i>fēk[ʔ]r</i>	<i>ɣ[ʔ]f [e]kśr</i>	<i>ɣ[ʔ]fkśr</i>

Glosses: ^(a)peel, shell; ^(b)become poor

Johnstone notes that 'Simple verbs with weak radicals ('*w*,*y*), gutturals or with the labials *b* or *m* have various idiosyncrasies.' (*JL*, p. xviii).² Our concern here is only with those verbs that contain guttural radicals (hereafter 'GR verbs').³ In studying Jibbāli, it very soon becomes apparent that one needs to recognize a phonological class of guttural obstruents comprising the laryngeal *h* together with the uvulars (*g*,*x*)⁴ and the pharyngeals ('*h*). A preliminary classification of simple GR verbs yields the five patterns exemplified by the following:⁵

¹ In *JL* a fourth 'principal part', the 3 m.s. conditional, is often included, since C(a) and C(b) verbs show differences here too. Our investigation of this form has not been systematic enough to warrant the inclusion of its consideration in the present study.

² This list does not appear to be exhaustive, for in both the body of *JL* and in our researches it has been noted that there are other systematic 'idiosyncrasies'. In particular, these are observed in (i) verbs in which *C'* and *C'* are identical (cf. also Johnstone's remarks, *JL*, p. xix, n. 30) and (ii) verbs in which *C'* is an alveolar sonorant (cf. the relevant entries in *JL*).

³ It should be noted that there appears to be a co-occurrence constraint governing triradical roots which prohibits the occurrence of more than one guttural, except in cases involving radical reduplication.

⁴ Although *g* patterns within the Jibbāli system as the 'voiced congener' to *x*, it should be noted that its range of realizations includes [g]. It is appropriate at this point to observe that in the representation of this segment and all other consonants of Jibbāli, we have followed the transcription employed in *JL* (for an explanation of this see *JL*, pp. xiii ff.). With regard to the vowels too we have generally followed Johnstone's system. In representing narrower phonetic values of vowels we have in general followed IPA practice, with the addition of a convention that extremely reduced anaptyctic vocoids are represented by means of vowel letters raised above the line.

⁵ A sixth pattern is noted in *JL* for only one verbal root, viz. *bxx* ' (chameleon) make a spitting sound'. Apart from this (possibly phonaesthetic ?) item, roots in which *C'* and *C'* are identical gutturals appear to be lacking.

		<i>perfect</i>	<i>imperfect</i>	<i>subjunctive</i>
2.				
1. C^1 = any guttural	(i) $\dot{g}fk^{(a)}$	$\dot{g}[ɔ]f\dot{z}k$	$y[ʔ]\dot{g}\acute{e}fk$	$y[ʔ]\dot{g}\acute{e}fk$
2.	(ii) $hlf^{(b)}$	$h\acute{e}lf$	$y[ʔ]h[a]l\acute{z}f$	$y[ʔ]h\acute{z}f$
3. C^2 = h	$ghl^{(c)}$	$g[ɛ]h\acute{e}l$	$y[ʔ]g[ɔ]h\acute{z}l$	$y[ʔ]g\acute{h}l$
4. C^2 = \dot{h}, \dot{g} or x	$s'f^{(d)}$	$s[a]\acute{a}f$	$y[ʔ]s[ɔ]\acute{z}f$	$y[ʔ]s'\acute{z}f$
5. C^3 = any guttural ⁶	$fsx^{(e)}$	$f\acute{e}sx$	$y[ʔ]f\acute{z}s[ʔ]x$	$y\acute{z}fs[ʔ]x$

Glosses: ^(a)cheat somebody; ^(b)be sharp; ^(c)take advantage of s.b. one is responsible for, eat more than one's share; ^(d)remove husks; ^(e)(animals) dash away wildly

None of the patterns of the 'principal parts' of the verbs in 2 shows any obvious overall affinity with the conjugation types illustrated in 1. Many of the patterns of GR verbs might be described as 'hybrids' since they show characteristics of both C(a) and C(b). Consider, for example, the verbs of the type exemplified in 2.4. Allowing for a vowel difference which could be explained quite naturally in terms of the presence of a pharyngeal or a uvular consonant, they seem to have perfects of the C(a) type. Yet examination of the subjunctive shows that it, at any rate, patterns like C(b); the imperfect too shows greater similarity to this type than to C(a). Precisely the opposite conclusions might be reached in the case of the pattern exemplified in 2.5. Here the perfect is clearly that of C(b), though the imperfect and subjunctive are much more like those of C(a). Do these verbs then belong to separate, 'mixed' conjugations? Or might a more abstract analysis reveal underlying affinities with C(a) and C(b)?

Before these questions can be considered, it is necessary to establish what the underlying canonical forms of the verbs belonging to C(a) and C(b) are. This is not entirely straightforward, because of problems which arise in the analysis of the unaccented stem vowels. It was to highlight these problems that the vowels were transcribed in phonetic brackets in 1 and 2, and we now proceed to consider their phonological status. We shall return to the analysis of the GR verbs in sections III, IV, and V.

II

It is clear that Johnstone recognized the analytical problems raised by the unaccented stem vowels. In his 1975 article, which is a comparative study of the Modern South Arabian languages, the canonical stem forms of the perfect for C(a) and C(b) for Jibbāli are presented as in 3 (see Johnstone, 1975: 12).

3.	C(a)	C(b)
	$C\acute{a}C\acute{z}C$	$C\acute{e}C\acute{a}C$

Three vowels appear in these forms, viz: \acute{a} , \acute{e} , and \acute{a} . Comparison with the appropriate forms of 1 shows that the use of *shewa* here is not intended to distinguish a phonetic quality as such; rather it would seem to be a symbol representing a vowel, the quality of which might be predictable in some way. One might hazard a guess that the vocalic element represented by the *shewa* in these formulae was an epenthetic element, inserted to ensure conformity with

⁶ It should be noted that final radical h is rare. With the exception of krh 'hate', which patterns according to 2.5, all the verbs recorded in *JL* show considerable irregularities, in each case arising on account of other radicals in the roots concerned.

syllable or word structure constraints. If this had been the case, a more abstract representation could have been proposed for these forms, i.e. as *CCɔC* and *CeCC*. Although no arguments are expressly advanced in justification of his decision, this more abstract approach is rejected by Johnstone (1975: 16, n. 14). Later, in *JL*, the semi-abstract representation involving *shewa* is discontinued in favour of a more concrete (more or less phonemic) transcription representing qualitatively distinguished vowels. *Shewa* does indeed appear many times in *JL*, but here it seems to be employed for a relatively fixed phonetic value only, e.g. *tafḍērān* 2 f. pl. conditional of *fḍr* 'shiver with fear' (*JL*, p. xviii); *yǧólād* / *yǧlād* 3 m.s. imperfect and subjunctive of *ǧld* 'punish' (*JL*, 75).

The unaccented vowels of the perfects of C(a) verbs like *kšr* (see 1) are always pronounced with clear [ɔ] vowels, which are virtually identical in quality to the accented vowel, e.g.

4. *f[ɔ]kǔš* 'tap something until it breaks (as, e.g., an egg)'; *g[ɔ]lšs* 'quarrel, nag'; *k[ɔ]šǧf* 'climb'; *l[ɔ]šb* 'request, demand, ask for'; *ǧ[ɔ]rǧš* 'grow a molar tooth'; *d[ɔ]rǧk* 'rescue'

Alongside perfect forms such as these, there are many others in which only the accented stem vowel occurs. In the majority of such cases, it may be observed that *C'* and *C''* are both 'plain' (i.e. voiceless, non-glottalized) obstruents. This is seen in the following C(a) perfects:

5. *fsǧk* 'finish a meeting'; *fšǧl* 'fail'; *ftǧr* 'be unable to move'; *kfǧl* 'be a sponsor'; *ksǧb* 'save money'; *šfǧr* 'recover after sickness'; *tfǧl* 'spit'; *stǧl* 'brandish a sword or dagger'

Similar monovocalic perfect forms are encountered in C(a) verbs in which *C'* is an alveolar non-obstruent liquid or nasal, i.e. *l*, *r*, or *n*:⁷

6. *ndǧk* 'sink (intr.)'; *nfǧg* 'emerge'; *nkǧr* 'deny'; *nšǧb* 'erect the centrepole of a house'; *nšǧš* 'scatter (intr.)'; *nšǧf* 'knock over/aside, deny vehemently'; *ldǧf* 'bang down, as when something heavy drops'; *lkǧt* 'patch leather'; *lkǧf* 'pick off (e.g., scabs)'; *rdǧl* ~ *rǧdǧl* '(s.b.) become base/vile'; *rgǧf* ~ *rǧgǧf* 'shiver'; *rkǧt* ~ *rǧkǧt* 'step on'; *rfǧs* ~ *rǧfǧs* 'trample on'

Logically there are two possibilities for explaining the differences between the forms of 4 on the one hand and those of 5 and 6 on the other. One could regard the unaccented vowels of forms like those of 4 as epenthetically inserted 'copy' vowels. Alternatively one could posit underlying forms with two stem vowels for all C(a) perfects, and account for the surface forms of 5 and 6 in terms of processes of syncope. We adopt the latter course on the grounds that precisely such syncope processes are required elsewhere in the phonology, in situations where epenthesis would not be motivated.

In 3 f.s. perfect forms the accent always falls on the final -*ɔt* inflectional suffix. Comparison of 3 m.s. and 3 f.s. forms of verbs in which *C''* and *C'''* are plain obstruents shows alternations exactly like those of 5, e.g.⁸

⁷ In *JL*, the forms transcribed here as *lC* or *rC* usually appear with a preceding *ε*, i.e., as *εl* or *εr*. Although it is possible to hear a vocalic segment preceding the consonant, we prefer to regard this as the realization of a syllabic liquid. It should be noted that, in the case of *r*, variant forms in which an initial unaccented stem vowel is pronounced are always possible.

⁸ The point is illustrated here with GR verbs. The fact that we shall later claim that GR verbs of the type illustrated do not really belong to C(a) in no way invalidates the present argument.

7.		3 m.s. <i>perfect</i>	3 f.s. <i>perfect</i>
	<i>bḥt</i> ^(a)	<i>baḥát</i>	<i>baḥtót</i>
	<i>bxs</i> ^(b)	<i>baxás</i>	<i>baxsót</i>
	<i>dḥs</i> ^(c)	<i>daḥás</i>	<i>daḥsót</i>
	<i>zhf</i> ^(d)	<i>zaháf</i>	<i>zahfót</i>

Glosses: ^(a)search for something in the sand; ^(b)grieve somebody; ^(c)annoy somebody; ^(d)crawl

In the same way, comparison of 3 m.s. and 3 f.s. perfect forms of C(a) verbs having *n* as *C*² shows alternations between forms with and without vowels which should be compared with the forms of 7; it should also be noted that in this situation *n* shows phonetic lengthening. Stems containing medial liquids have phonetically short vowels in the 3 f.s. forms, though total deletion does not occur.

8.		3 m.s. <i>perfect</i>	3 f.s. <i>perfect</i>
	<i>knṭ</i> ^(a)	<i>ḵonót</i>	<i>ḵo[n-]tót</i>
	<i>dlf</i> ^(b)	<i>ḍolóf</i>	<i>ḍol[ʔ] fót</i>
	<i>drḡ</i> ^(c)	<i>ḍoróg</i>	<i>ḍor[ʔ]gót</i>
	cf. <i>sgd</i> ^(d)	<i>sogód</i>	<i>sog[o]dót</i>

Glosses: ^(a)(animal) die suddenly/unexpectedly; ^(b)jump; ^(c)become used to walking for the first time (of a young animal); ^(d)bow in worship

For the stem alternations illustrated in 7 and 8, the only possible explanations would be ones involving syncope, and, in view of the identity of the conditions obtaining in the forms of 5 (cf. 7) and 6 (cf. 8), we believe that the syncope explanation should be extended to them also.

The problem with the unaccented stem vowels in the 3 m.s. perfects of C(b) is that, even when they are not syncopated, they are usually reduced to such an extent that it is virtually impossible to be sure whether a vowel is there or not. The problem encountered here is in fact a very general one, for, whereas vowels in an immediately pretonic syllable are pronounced, except when the consonants flanking them cause syncope (as described above), those in an immediately post-tonic syllable are subject to another very pervasive type of syncope. Indeed, it is our impression that a post-tonic vowel is in evidence only when *C*³ is either *r* (cf. *fkr* in 1) or a guttural (cf. below). In establishing the underlying stem vocalism for C(b) perfects, we turn once again to the 3 f.s. forms. Since in these accent occurs on the inflectional suffix, the final stem vowel—now pretonic—is clearly pronounced, and is generally heard as similar in quality to the accented vowel of the masculine form,⁹ e.g.

⁹ There is one regular set of exceptions to this statement. When an initial stem vowel is lost on account of the syncope processes illustrated in 5 to 8, the pretonic vowel usually assimilates totally to the vowel of the inflection, e.g.

	3 m.s. <i>perfect</i>	3 f.s. <i>perfect</i>
<i>šfk</i> ^(a)	<i>šéfḵ</i>	<i>šf[ʔ]kót</i>
<i>rdḡ</i> ^(b)	<i>rédf</i>	<i>rd[ʔ] fót</i>
<i>lḡḵ</i> ^(c)	<i>léfḵ</i>	<i>lḡ[ʔ]kót</i>
<i>nšz</i> ^(d)	<i>n[ī]šz</i>	<i>nš[ī]zót ~ nš[ʔ]zót</i>

Glosses: ^(a)refrain from replying to somebody who speaks rudely to one; ^(b)ride behind another rider; ^(c)drink the top off the milk; ^(d)sip something hot

9.		3 m.s. <i>perfect</i>	3 f.s. <i>perfect</i>
	<i>fḍr</i> ^(a)	<i>fḍr</i> ~ <i>fḍ[ʔ]r</i>	<i>federōt</i>
	<i>ḍkr</i> ^(b)	<i>ḍkr</i> ~ <i>ḍk[ʔ]r</i>	<i>dekerōt</i>
	<i>ṣḍf</i> ^(c)	<i>ṣḍf</i>	<i>ṣedefōt</i>

Glosses: ^(a)shiver with fear; ^(b)remember; ^(c)be dented

We conclude then that the underlying patterns of vocalism for C(a) and C(b) are *CɔCɔC* and *CeCeC* respectively.

For the imperfect stem, the underlying vocalism is clear enough for C(b), i.e. *CeCɔC*; provided that one or other of the syncope processes exemplified in 5 and 6 does not occur, both vowels are distinctly present. In the imperfect of C(a), we encounter another situation of extreme reduction/deletion of post-tonic vowels. In this case, the 3 f.s. form does not have an accented inflectional suffix, so that we cannot turn to it for evidence as to whether a second stem vowel is present or not. Fortunately, however, another member of the imperfect paradigm, the 3 m. dual, is distinguished by means of an -ɔ suffix, and this is always accented. Once again, a stem vowel now appears in pretonic position, and the argument for establishing two underlying stem vowels for the imperfect of C(a) proceeds as in the preceding paragraph.

10.		3 m.s. <i>imperfect</i>	3 m.d. <i>imperfect</i> ¹⁰
	<i>drs</i> ^(a)	<i>ydōrs</i>	(y)d [ɔ]r[ʔ]sɔ
	<i>fgr</i> ^(b)	<i>yfōg[ʔ]r</i> ~ <i>yfōg[ʔ]r</i>	(y)f [ɔ]g[ɔ]rɔ
	<i>ṭlf</i> ^(c)	<i>yṭōlf</i>	(y)ṭ[ɔ]l [ʔ] fɔ
	<i>sgl</i> ^(d)	<i>ysōgl</i>	(y)s[ɔ] g[ɔ]lɔ

Glosses: ^(a)study; ^(b)tell a lie; ^(c)skim; ^(d)tilt something

It seems safe to say that for neither conjugation is there an underlying vowel between *C'* and *C''* in the subjunctive.¹¹ The only remaining problem is whether such an element needs to be recognized between *C''* and *C'''* in the subjunctive stem for C(a). Various forms of the paradigm do indeed show a vowel in this position, though it is not obvious what quality should be assigned to it, for, as the following forms show, both ɔ and ε vowels appear in roughly equal numbers of cases,¹² e.g.

11.	<i>kšr</i> ^(a)	<i>gld</i> ^(b)	<i>ṣḍf</i> ^(c)
3 m.s.	<i>yókš[ʔ]r</i>	<i>yōgl [ʔ]d</i>	<i>yókšd[ʔ]f</i>
3 m.d.	<i>y[ʔ]kšóʔr</i>	<i>y[ʔ] glóʔd</i>	<i>y[ʔ]šdóʔf</i>
3 m.pl.	<i>y[ʔ]kšóʔr</i>	<i>y[ʔ] glóʔd</i>	<i>y[ʔ]šdóʔf</i>
3 f.pl.	<i>ṭ[ʔ]kšérn</i>	<i>ṭ[ʔ] glédn</i>	[s:']dэфn
2 m.pl.	<i>ṭ[ʔ]kšóʔr</i>	<i>ṭ[ʔ] glóʔd</i>	[s:']dóʔf
2 f.pl.	<i>ṭ[ʔ]kšérn</i>	<i>ṭ[ʔ] glédn</i>	[s:']dэфn
1 p.	<i>n[ʔ]kšér</i>	<i>n[ʔ] gléd</i>	<i>nšdэф</i>

Glosses: ^(a)peel, shell; ^(b)punish; ^(c)dent/buckle something

¹⁰ The forms without the prefix are preferred.

¹¹ It should be pointed out that the *i* vowel appearing in this position (as well as between *C''* and *C'''*) in 2 f.s. forms has to be regarded as a very special case. As in certain Ethiopian Semitic languages (e.g. Chaha, Ennemor, Harari), the prefixing paradigms have come to utilize vowel umlaut and/or consonant palatalization as the main exponent of the feminine in 2 p.s. forms.

¹² Support for an analysis in which the second stem vowel is left undetermined is seen in 3 m.s. forms to which a consonantal pronominal object suffix has been added. In such forms (presumably inadmissible) four member consonant clusters would result if the second stem vowel of the subjunctive were not retained. The vowel that is pronounced in these forms is ɔ for some verbs, ε for others, and either ɔ or ε for yet others.

The solution proposed is simply to postulate the underlying presence of a vowel, the quality of which will be determined by morphological factors.

We conclude this section with a table showing the canonical stem forms we have postulated.

12.		<i>perfect</i>	<i>imperfect</i>	<i>subjunctive</i>
	C(a)	<i>CɔCɔC</i>	<i>CɔCɔC</i>	<i>ɔCCVC</i>
	C(b)	<i>CeCeC</i>	<i>CeCɔC</i>	<i>CCɔC</i>

In deriving the pronounced surface forms from these underlying stem shapes, three types of syncope have been invoked, viz.

- (i) plain obstruent syncope; cf. 7 and 9
- (ii) sonorant syncope; cf. 8 and 10
- (iii) post-tonic syncope; cf. 11 and 12

III

In section I, we called attention to one problem concerning the GR verbs, namely that it is not at all obvious how, if at all, they fit into the basic dichotomous conjugational scheme set up for other verbs. Our intention in this and the following two sections is to examine each set of GR verbs to see if at least a partial answer can be provided to this question. We begin with those verbs in which the second radical is a guttural consonant (hereafter GR = C²), exemplified in 2.3 and 2.4; section IV will be concerned with verbs having a final guttural radical (cf. 2.5), and section V will be concerned with verbs having an initial guttural radical (cf. 2.1, 2.2).

It is convenient to start with a consideration of GR = C² verbs for at least two reasons. Firstly, these verbs present fewer analytical difficulties; secondly, virtually all the principles and processes needed for the analysis of the other GR verb types will be introduced.

In section I, we observed that, although the perfect of GR = C² verbs shows some similarities to the C(a) type, the subjunctive and, to a certain extent, the imperfect appear to be closer to C(b). This is seen in 2 above, and in the following examples:

13.		3 m.s. <i>perfect</i>	3 m.s. <i>imperfect</i>	3 m.s. <i>subjunctive</i>
	<i>t's</i> ^(a)	<i>t[a]t[á]s</i>	<i>y[ʔ]t[ɔ]t[ɔ]s</i>	<i>y[ʔ]t[ɔ]s</i>
	<i>dhs</i> ^(b)	<i>d[a]h[á]s</i>	<i>y[ʔ]d[ɔ]h[ɔ]s</i>	<i>y[ʔ]dh[ɔ]s</i>
	<i>zġf</i> ^(c)	<i>z[a]ġ[á]f</i>	<i>y[ʔ]z[ɔ]ġ[ɔ]f</i>	<i>y[ʔ]zġ[ɔ]f</i>
	<i>rxs</i> ^(d)	<i>r[a]x[á]s</i>	<i>y[ʔ]r[ɔ]x[ɔ]s</i>	<i>y[ʔ]rx[ɔ]s</i>
	<i>ḍhr</i> ^(e)	<i>ḍ[ɛ]h[é]r</i>	<i>y[ʔ]ḍ[ɔ]h[ɔ]r</i>	<i>y[ʔ]ḍh[ɔ]r</i>

Glosses: ^(a)be stubborn/awkward; ^(b)annoy somebody; ^(c)pour/spill a liquid in large quantities; ^(d)become cheap; ^(e)be finished, run out

It is our opinion that all verbs of this type can be fitted into C(b), provided that we recognize certain phonologically determined processes.

Comparison of the above forms with the canonical stem shapes for C(b) set out in (12) reveals the following discrepancies:¹³

- (i) a mismatch of both vowels in the perfect stem
- (ii) a mismatch of the first vowel in the imperfect stem

The discrepancies noted here can be accounted for by the operation of certain assimilatory processes, all of which could be said to 'conspire' towards the

¹³ A third discrepancy emerges when we consider accent; cf. below.

achievement of stem shapes conforming to the following phonotactic statement:¹⁴

14. Vowels on either side of a guttural consonant agree in quality.

The assimilatory processes affecting vowels preceding and following gutturals are as follows:

- 15 (a) A vowel preceding a guttural will undergo total assimilation to a rounded vowel immediately following the guttural.
 (b) If the vowel following the guttural is not rounded, or if there is no following vowel, then the vowel preceding the guttural will be unrounded and lowered. If the guttural concerned has a back articulation (i.e., ' , *h*, *x*, *g*), the vowel will also be backed.
 (c) An unrounded vowel following a guttural will assimilate totally to a preceding vowel.

The interaction of these rules¹⁵ is seen in the following derivations of (3 m.s.) perfect and imperfect forms for *dħs* 'annoy somebody' and *lḥ* 'pant'.

16.	<i>perfect</i>	<i>imperfect</i>
<i>underlying form</i>	<i>/deħes/</i>	<i>/y + deħəs/</i>
15(a)	_____	<i>yðħəs</i>
15(b)	<i>daħes</i>	_____
15(c)	<i>daħas</i>	_____
<i>pronounced form</i> ¹⁶	<i>d [a]ħ[á]s</i>	<i>y[ʔ]d [ɔ]ħ[ɔ]s</i>

17.	<i>perfect</i>	<i>imperfect</i>
<i>underlying form</i>	<i>/leheṭ/</i>	<i>/y + leħɔṭ/</i>
15(a)	_____	<i>yləħɔṭ</i>
15(b)	<i>leheṭ</i>	_____
15(c)	<i>leheṭ</i>	_____
<i>pronounced form</i>	<i>l [ɛ]ħ[é]ṭ</i>	<i>y[ʔ]l [ɔ]ħ[ɔ]ṭ</i>

As the rounded vowels found in all the forms discussed so far happen also to be low vowels, it might look as if rounding (15a) and lowering (15b) could be collapsed into a single rule in which rounding would be regarded as determined by a second contextual variable, namely, the quality of the post-guttural vowel. That this would be an incorrect interpretation, and that rounding and lowering are quite independent processes, is demonstrated by GR = C² verbs having a nasal third radical, e.g. *ṭ'm* 'taste', *qxm* 'remove, pluck out', *ṭħn* 'mill, grind'. As a result of a very general process brought about by the presence of nasals, all such verbs show vowel raising rather than lowering (15b) in the imperfect,¹⁷ in addition to rounding across gutturals (15a), e.g.

¹⁴ Concerning the notion of 'conspiracy' (i.e. functional unity) in phonological rules, cf. Kisseberth, Charles W. (1970), 'On the functional unity of phonological rules', *Linguistic Inquiry* 3: 3–33.

¹⁵ None of these rules requires extrinsic ordering relations.

¹⁶ Other rules, such as stress assignment, epenthesis, etc., may need to apply, but since they are not directly relevant to the discussion at hand, they are omitted here.

¹⁷ 'Nasal raising' appears to affect all vowels except low unrounded ones.

18.	<i>perfect</i>	<i>imperfect</i>
<i>underlying form</i>	/tə'em/	/y + tɛ'om/
15(a)	_____	yɔ'om
15(b)	ta'em	_____
15(c)	ta'am	_____
'nasal raising'	_____	yɪʊ'om
<i>pronounced form</i>	t[ā]t[ā]m	y[ʔ]t[ʊ]t[ʊ]m

We can turn from vowel quality differences to the further discrepancy between GR = C² verbs and 'regular' C(b) verbs mentioned above (n. 13), namely placement of the accent in the perfect.¹⁸ Indeed the fact that, in GR = C² verbs, accent falls on the second stem vowel in most members of the perfect paradigm (cf. 19 below) would initially incline one to regard these verbs as somehow basically closer to the C(a) type. It is only when the accentual patterns of GR verb forms as a whole are considered that an interesting distributional constraint emerges. The generalization in question is that the accent never falls on a vowel preceding a guttural (cf. the forms given in 2 above). If we are correct in assuming this constraint to be phonologically motivated,¹⁹ it would seem reasonable to incorporate reference to the occurrence of gutturals into certain of the otherwise morphologically determined rules of accent placement. For the case under consideration we propose the following:

19. Accent placement—C(b) perfect:

Except in the case of 3 f.s., 3 m.d., and 3 f.d. forms (in which accent always falls on the inflectional suffix), the accent falls on the first stem vowel unless this is followed by a guttural, in which case it falls on the second stem vowel.

IV

In this section, we shall consider verbs in which the final radical is a guttural (hereafter GR = C³ verbs). In addition to the example given in 2.5, the following verbs illustrate this pattern:

20.	<i>perfect</i>	<i>imperfect</i>	<i>subjunctive</i>
<i>df</i> ^(a)	déf [a]'	y[ʔ]dɔf'	yɔdf [a]'
<i>lkḥ</i> ^(b)	lék[a]h	y[ʔ]lɔkh	yɔlk[a]h
<i>šrx</i> ^(c)	šér[a]x	y[ʔ]šɔrx	yɔšr[a]x
<i>krh</i> ^{(d) 20}	kér[a]h	y[ʔ]kɔrh	yɔkr[a]h

Glosses: ^(a)push, pay; ^(b)throw a stone from an elevated place; ^(c)splay (branches, legs) apart; to dislocate a joint (used of animals), rip (branch off a tree); ^(d)hate

The imperfect can, beyond all doubt, be identified as that of C(a). The same conclusion may be reached in the case of the subjunctive, provided that we

¹⁸ At least in words spoken in isolation, accent in Jibbāli is manifested primarily by higher pitch. We have not noted any instances of words containing more than one accented syllable (cf. Johnstone, 1975: 12; *JL*, p. xv).

¹⁹ According to the entries in *JL*, many derived verbs (notably those with causative and intensive-conative stems) based on roots containing gutturals have forms in which the accent occurs on a pre-guttural vowel. We have not investigated such forms, but if the accentual patterns recorded in *JL* are correct, the negative constraint on pre-guttural accent would be restricted to simple verbs.

Concerning the general effects of gutturals on syllabification in certain dialects of Arabic see Johnstone, 1967: 6 ff.; Ingham, 1976: 73.

²⁰ See n. 6 above.

recognize the operation of rule (15).b, spreading lowness and backness to the undetermined vowel preceding the guttural, viz:

21. 3 m.s. *subjunctive*
- | | |
|-------------------------------------|-------------|
| <i>underlying form</i> | /y + ɔdfV'/ |
| 15(b) | yɔdfa' |
| <i>accent assignment</i> | yɔdfa' |
| <i>post-tonic reduction/syncope</i> | yɔdf [ə]' |

The fundamental problem in the case of GR = C³ verbs concerns the perfect, where both the vocalism and the location of accent point unmistakably to C(b) rather than C(a). Regarding the accent, we may note that if these verbs followed the pattern of the 'regular' C(a) verbs, it would fall on a vowel preceding a guttural. We should like to suggest, therefore, that accent placement in the C(a) perfect is also affected by the presence of a guttural radical, viz:

22. Accent placement—C(a) perfect:

Except in the case of 3 f.s., 3 m.d., and 3 f.d. forms (in which accent always falls on the inflectional suffix), the accent falls on the second stem vowel unless this is followed by a guttural, in which case it falls on the first stem vowel.

We must now turn to the question of vocalism. In contrast to the case of the GR = C² verbs, it does not appear possible to explain this with reference to the general phonological principles of the language, and the appearance of *e* rather than the expected *ɔ* must be considered irregular. The historical origin of this irregularity may well have been analogical restructuring. Shift of the accent to the first stem vowel would have created completely anomalous forms having the vocalism of C(a) but the accentual pattern of C(b). It does not seem impossible to suppose that if pre-guttural unrounding (see 15b) had already been operative prior to accentual shift, the loss of half of the characteristic vocalism of C(a) would have been a major catalyst in the recategorization process, viz:

23. *CɔCɔG → *CɔCáG → *CɔCaG → CéCaG (G = guttural)

Quite strong support for this piece of internal reconstruction appears in 3 f.s. perfect forms of some GR = C³ verbs,²¹ where, due to the presence of a post-thematic rounded vowel in the inflection, the hypothesized underlying roundness of the pre-guttural stem vowel is maintained (cf. 14). Significantly, the first stem vowel also remains rounded in such forms, so that the 3 f.s. forms emerge with a vocalism identical to those of regular C(a) verbs—and in marked contrast to those of the C(b) type, e.g.

- | | | |
|------------|---------------------------|----------------------------------|
| 24. | 3 m.s. <i>perfect</i> | 3 f.s. <i>perfect</i> |
| | <i>gl'</i> ^(a) | <i>g[ɔ]l [ɔ]'ót</i> |
| | <i>frx</i> ^(b) | <i>f[ɔ]r[ɔ]xót</i> |
| | <i>gdh</i> ^(c) | <i>g[ɔ]d[ɔ]hót</i> |
| cf. C(a):— | <i>kdr</i> ^(d) | <i>k[ɔ]d [ɔ]rót</i> |
| cf. C(b):— | <i>dkr</i> ^(e) | <i>d[e]k[e]rót ~ d[ɔ]k[ɔ]rót</i> |

Glosses: ^(a)gnaw; ^(b)(egg) to split open; ^(c)drift ashore (shipwrecked people); ^(d)be able; ^(e)remember, mention

²¹ In 3 f.s. perfect forms in which C' or C' and C² condition either sonorant syncope or plain obstruent syncope (see end of section II) one or both of the stem vowels are lost altogether, e.g. 3 f.s. [fɛ]tʰót, but 3 m.s. fét[ə]h; cf. fih 'loose'.

V

GR = *C'* verbs fall into two distinct patterns, as noted in 2; 25 and 26 give further examples of both types.

25.	3 m.s. <i>perfect</i>	3 m.s. <i>imperfect</i>	3 m.s. <i>subjunctive</i>
<i>ḥrf</i> ^(a)	<i>ḥ[ɔ]rɔf</i>	<i>ɣ[ʔ]ḥérf</i>	<i>ɣ[ʔ]ḥérf</i>
<i>ʿdf</i> ^(b)	<i>[ɔ]dɔf</i>	<i>ɣ[ʔ]ʿédf</i>	<i>ɣ[ʔ]ʿédf</i>
<i>gẓf</i> ^(c)	<i>g[ɔ]ẓɔf</i>	<i>ɣ[ʔ]gézf</i>	<i>ɣ[ʔ]gézf</i>

Glosses: ^(a)put something aside; ^(b)chop; ^(c)tuck up one's legs

26.	3 m.s. <i>perfect</i>	3 m.s. <i>imperfect</i>	3 m.s. <i>subjunctive</i>
<i>ʔkr</i> ^(a)	<i>ʿék[ʔ]r</i>	<i>ɣ[ʔ][a]kɔr</i>	<i>ɣ[ʔ]kɔr</i>
<i>ḥrd</i> ^(b)	<i>ḥérd</i>	<i>ɣ[ʔ]ḥ[ʔ]rɔd</i>	<i>ɣ[ʔ]ḥrɔd</i>
<i>gdl</i> ^(c)	<i>géd[ʔ]l</i>	<i>ɣ[ʔ]g[ʔ]dɔl</i>	<i>ɣ[ʔ]gdɔl</i>

Glosses: ^(a)fall short in one's duty; ^(b)be strong; ^(c)to carry on one's back

Verbs of the type illustrated in 2.1(ii) and 26 present minimal difficulty, for they are immediately recognizable as C(b) verbs. Indeed, the only feature that requires comment is the appearance of a low unrounded vowel between the pronominal prefix and the initial guttural in the imperfect and the subjunctive.

With the exception of the accented prethematic vowel of the C(a) subjunctive (see 12), it is almost certainly true to say that any vocoid appearing between the prefix and *C'* in any of the prefixing paradigms is anaptyctic rather than phonological. This statement is based on the following reasons:

(i) The vocoid appearing in this position is not only of extreme brevity, but its basic [ʔ] quality seems often to be influenced by articulatory features of the preceding or following elements, e.g. *ɣ[ʔ]frɔk* 3 m.s. subjunctive of *frk* 'be afraid'; *ɣ[ʔ]ltɔf* ~ *ɣ[ʔ]ltɔf* 3 m.s. subjunctive of *ltf* 'be pleasant/kind to s.b.'; *ɣ[ʔ]rhɔl* ~ *ɣ[ʔ]rhɔl* 3 m.s. subjunctive of *rhl* 'bring water from a distance'; *ɣ[ʔ]flɔx* ~ *ɣ[ʔ]flɔx* 3 m.s. subjunctive of *flx* ' (animal) turn wild'.

(ii) Under certain conditions no vocoid is present at all. Those prefixes that have an initial *t* (found in 3rd person feminine and all 2nd person forms—though see footnote 11 regarding the 2 f.s. form) exhibit a systematic lack of a following vocoid whenever *C'* is a dental or alveolar obstruent other than *s* or *ʃ*. In such cases the prefix undergoes total assimilation to *C'*, resulting in words with an initial geminate. Such forms are relatively easily accounted for in terms of a failure of epenthesis to apply to a sequence of identical segments.²² On the other hand it would be difficult to find a plausible phonetic explanation for an alternative analysis in terms of syncope, e.g. *[t:]ɔgɔl* (= /*t* + *šegɔl*/) and *[t:]gɔl* (= /*t* + *šgɔl*/) 3 f.s. imperfect and subjunctive of *šgl* 'keep somebody busy/distracted'; *[t:]ɔgɔk* (= /*t* + *tegɔk*/) and *[t:]gɔk* (= /*t* + *tɔgɔk*/) 3 f.s. imperfect and subjunctive of *tɔk* 'be attached to something'; *[s:]ɔɔk* (= /*t* + *šeɔk*/) and *[s:]ɔk* (= /*t* + *šɔk*/) 3 f.s. imperfect and subjunctive of *ʃk* 'shout, yell'; *[ð:]ɔɔr* (= /*t* + *deɔr*/) and *[ð:]ɔr* (= /*t* + *dɔr*/) 3 f.s. imperfect and subjunctive of *dɔr* 'spill/pour something'; etc.

In the case where the anaptyctic vocoid precedes a guttural it undergoes lowering according to rule 15(b). As far as one can judge in the case of such an evanescent segment it also has a back quality, even where *C'* is the laryngeal *h*

²² If we assume that there is an underlying geminate sequence the fact that epenthesis does not apply is entirely to be expected; see the discussion in Kenstowicz, Michael J. and Charles Pyle (1973), 'On the phonological integrity of geminate clusters', pp. 27–43 in Michael J. Kenstowicz and Charles W. Kisseberth (ed.), *Issues in phonological theory*, The Hague: Mouton.

(cf. 15*b*). Thus, epenthesis and guttural lowering account for the prethematic vowels of the imperfects and subjunctives of verbs of the type illustrated in 26. The low back quality of the first stem vowel of the imperfect of such verbs is explained by the assimilation rule 15(*c*). The derivations of the 3 m.s. imperfect and subjunctive of *gdl* 'carry on ones back' are given in 27.

27.	3 m.s. <i>imperfect</i>	3 m.s. <i>subjunctive</i>
<i>underlying form</i>	/y + ġedəl/	/y + ġədəl/
<i>epenthesis</i>	yġedəl	yġədəl
15(<i>b</i>)	yaġedəl	yaġədəl
15(<i>c</i>)	yaġadəl	_____
<i>pronounced form</i>	y[^a]ġ[a]dəl	y[^a]ġədəl

The last type to be considered are GR = C' verbs having the pattern of principal parts set out in 2.1(i) and 25. The perfects of such verbs are absolutely regular C(a) verbs, so that one is led to expect a situation which is complementary to that of verbs having the pattern of 2.1(ii) and 26, which we have just analysed as underlyingly belonging to C(b). Unfortunately the remaining principal part does not meet our expectations, since the single common form found for both imperfect and subjunctive appears to be quite unique and has stubbornly resisted all our attempts to analyse it as having a basic affinity with either C(a) or C(b). In consequence we have had to conclude that such verbs constitute a further distinct conjugational type.

The fact that not all Jibbāli simple-stem verbs can be fitted into the two-term classification originally proposed by Johnstone is not in itself too disturbing, since it is quite apparent that there are certain other simple-stem verb types (notably those in which C² and C³ are identical) that cannot be accommodated within this binary taxonomy either. A more serious challenge concerns how we might explain the fact that such an additional conjugation class is restricted to verbs the initial radical of which is a guttural, for the existence of such a correlation almost certainly implies that the defining morphological properties of the conjugation would have arisen as a function of the phonological properties of the lexical root. Regrettably, we are at present in no position to explain such a development. There is, moreover, another not altogether dissimilar question. If one assumes (pace Johnstone *JL*, p. xvi, n. 18) that the C(a):C(b) distinction was originally correlated with a semantic/syntactic transitivity difference, one would like to know why *all* simple verbs in which the guttural radical is C² belong to C(b), while *all* simple verbs in which the guttural radical is C³ belong to C(a). Careful lexical comparison of Jibbāli with the other Southern Arabian languages—as yet unattempted—will probably provide an answer to this question; but any such answer will be likely to involve a good deal of analogical recategorization.

The present study, then, has implications for the historical development of the South Arabian languages, as well as for the synchronic description of Jibbāli itself. Although it has dealt with a limited area of the grammar (simple verbs) only, and has left some questions unanswered, we hope that it will provide a useful basis for further research in this field.

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