

A COMPARATIVE STUDY OF WEST CHADIC VERB SUFFIXES¹

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1. Introduction

Herrmann Jungraithmayr, in a 1968 conference paper (Jungraithmayr 1970), cites Hausa word sets like *gume* “have an odor”, *gumke* “begin to have an odor”, *gumRe* “be fully permeated with an odor”, quoted from Lemeshko (1967), and suggests that the majority of Early or Proto-Hausa verb roots were of a CVC or CV type. The large number of more complex verb forms in modern Hausa result from augmentation by morphemes whose origin “still lies in the dark of the yet unknown”. He further notes that “intensive comparative studies not only within Hausa but also between Hausa and other Chad [sic] languages may help to clarify these rather hidden phenomena” (pp. 84-85). Thirty years later, Newman (2000:Chapter 76) has taken up such a comparative study “within Hausa”. This paper seeks to contribute toward the study “between Hausa and other Chad languages”.

2. Data on Remnant Affixes in Three West Chadic Languages

Newman (2000:Chapter 76) presents evidence for eight “remnant suffixes” in Hausa, each of which now “functions as a semantically empty, integral part of the verb” (p. 694). These are among the augmenting morphemes to which Jungraithmayr referred. Even though only one of these suffixes is productive to any extent, the rich lexical resources available for Hausa in Bargery (1934) and Abraham (1962) make it possible to recognize them through statistical recurrence and related words with and without the suffixes. Few other Chadic languages boast sufficiently large published verb vocabularies to provide convincing internal evidence for such affixes, much less comparative evidence which could be used to reconstruct them. This paper will attempt to reduce this lacuna by bringing into the picture data from two other West Chadic languages, Bole and Bade.

In 1982-83, while I was a Visiting Professor at Ahmadu Bello University, I was able to assemble a substantial lexicon of Bole through field work with Abdullahi Idi, a speaker of the Gadaka dialect. From 1995 to the present, I have been collaborating with Alhaji Maina Gimba, formerly a PhD student at UCLA and now a member of the English Department at the University of Maiduguri, on descriptive work of the Fika dialect of Bole. Using the Gadaka data as a starting point, we have assembled a Filemaker Pro database of over 3500 entries, primarily of the Fika dialect, including 594 distinct verbs. While this is only a fraction of the amount of verbal data available for Hausa, it is enough to provide some clear patterns.

In 1973-75, while I was a Senior Research Fellow with the Centre for the Study of Nigerian Languages (then associated with Ahmadu Bello University, now part of Bayero University, Kano), I conducted research on Bade, a West Chadic language of the “B” branch, assembling extensive lexical materials of several dialects of Bade. This material remains unpublished, but I have now entered data from the Western dialect of Bade into a Filemaker Pro database. There are 665 distinct verb roots, a number comparable to that for Bole and likewise a large enough number to reveal clear patterns

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In the following sections, I will briefly summarize Newman’s findings for Hausa. I will then discuss in more detail the patterns that emerge in Bole and Bade, comparing them to Hausa and to each other.

2.1. Hausa

As noted above, Newman (2000:Chapter 76) identifies 8 “remnant suffixes” in Hausa. For some of the suffixes, Newman provides not only the segmental base but also the tone, and he gives extensive lists of verbs carrying each suffix, often with Hausa internal or comparative Chadic evidence for the original ROOT + SUFFIX nature of the verb. Here, I list each suffix with a couple of examples, some not cited by Newman, to facilitate comparison with the other two languages. See Newman’s Chapter 76 for details.

-yà:	kàsàyè ‘defile with excrement’	cf. kàshī ‘excrement’
	mùsàyà ‘exchange’	< PC *masə ‘buy’, cf. Ngizim <i>màsú</i>
-kà:	tساikà ‘stop, come to a standstill’	= tsayà
	nukà ‘ripen fruit by storing’	< PC *nə ‘ripen’, cf. Bole <i>nī</i>
-ga:	waigà ‘look back over shoulder’	= waiwàyā (both from a root /way-/)
	hàngā ‘espy’	< PC *na ‘see’, cf. Bole <i>innā</i>
-nà:	aunà ‘weigh, measure’	cf. awò ‘weighing’
	dainà ‘cease doing’	cf. Bole <i>deyu</i> ‘leave’

-là: I believe that this suffix was originally **-ra**. Nearly all examples with /l/ have geminate **-ll-**, e.g. *bùlla* ‘appear’, and there is at least one doublet with geminate **-ll-** in one form but **-r-** in the other, viz. *kullà* = *kudùrā* ‘knot together’. On the other hand, there are many verbs with **-r-** as the third or fourth consonant, e.g. *faskàrè* ‘split wood’, *tankwàrā* ‘bend flexible object’. More important, there is evidence that where the original final root consonant abutted the suffix, the **-r-** and **-l-** versions of the suffix have emerged in complementary distribution: where the original root final consonant was a coronal, the result has been geminate **-ll-**;² elsewhere, the suffix has retained **-r-**. Root final velars abutting the **-r-** suffix have changed to [w], as have root final labials in Eastern dialects, by the sound change known as “Klingenheben’s Law” (Klingenheben 1927/28).

dallà ‘project by flipping’	cf. d’anà ‘set spring trap, cock gun’
wullà ‘pass by’	cf. wucè ‘pass’
haurà ‘climb over’	cf. hau ‘mount, climb’
daurè ‘put up with’	cf. dāgè ‘be resolute’
d’amrè/d’aurè ‘tie’	cf. d’āmè ‘make taught’, Bole <i>d’imu</i> ‘stretch’

² The geminate **-ll-** might be cited as evidence for reconstructing the suffix as originally having **l*, in line with sound changes proposed in Newman (1970) that original non-initial **r* changed to *y* and original **l* changed to *r* in Hausa. Recent comparative work makes a blanket **r > l* change in Hausa implausible, given a large number of Hausa *r*’s corresponding to *r* in other languages, e.g. Hausa *irì*, Bole *àrè* ‘seed, kind’. The history of Chadic liquids requires further investigation, but **ra* seem to be the more likely reconstruction here given the fact that **-r-** is the UNCONDITIONED suffix variant in Hausa and there is good evidence for an **-r-** suffix in the other languages investigated here but little evidence for **-l-**.³ Only one verb in this selection has more than four different consonants, viz. *jìngiyàyitú* ‘treat mercifully’. The reduplicated *y* counts only once. For Bole, I have treated a voiced stop preceded by homorganic nasal (*ng* in this verb) as a unit, so for purposes of this study, even this verb has only four consonants.

-sa:	gaisà karàsā	‘exchange greetings’ ‘finish off’	cf. gayà ‘tell’ cf. kārè ‘finish, come to an end, be all gone’
-ɗa:	shūdè zākùɗā	‘pass through, pass by’ ‘move aside’	cf. shìga ‘enter’ cf. Bole zākā ‘hitch child up on back’
-ta:	dākātā mântā	‘wait’ ‘forget’	cf. dākò ‘waiting’ cf. Kanakuru <i>monè</i>

2.2. Bole

Below is a table showing counts and percentages for stem consonants C1-C4³ in 594 Bole verbs.

Consonant	C 1 #	C 1 %	C 2 #	C 2 %	C 3 #	C 3 %	C 4 #	C 4 %	C 3 + C 4 #	C 3 + C 4 %
'i, 'e, 'a	12	2.0								
b	42	7.1	9	1.6	1	0.6	0	0.0	1	0.6
ḃ	12	2.0	31	5.4	6	3.7	0	0.0	6	3.3
d	38	6.4	8	1.4	1	0.6	0	0.0	1	0.6
ɗ	30	5.0	18	3.1	16	9.9	3	0.5	19	10.5
g	39	6.6	11	1.9	2	1.2	0	0.0	2	1.1
h	2	0.3	0	0.0	0	0.0	0	0.0	0	0.0
j, z	45	7.6	6	1.0	1	0.6	0	0.0	1	0.6
k	49	8.2	45	7.9	13	8.1	0	0.0	13	7.2
l	30	5.0	67	11.7	22	13.7	5	1.0	27	14.9
m	27	4.5	40	7.0	8	5.0	1	0.2	9	5.0
n	3	0.5	54	9.4	8	5.0	3	0.5	11	6.1
mb	8	1.3	5	0.9	0	0.0	0	0.0	0	0.0
nd	7	1.2	3	0.5	0	0.0	0	0.0	0	0.0
ng	22	3.7	11	1.9	0	0.0	0	0.0	0	0.0
nj, nz	14	2.4	1	0.2	0	0.0	0	0.0	0	0.0
ny	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0
p	30	5.0	26	4.5	5	3.1	0	0.0	5	2.8
r	24	4.0	78	13.6	10	6.2	1	0.2	11	6.1
s, sh	63	10.6	39	6.8	9	5.6	0	0.0	9	5.0
t	38	6.4	50	8.7	48	29.8	6	1.0	54	29.8
w (+ 'o, 'u)	27	4.5	37	6.5	2	1.2	0	0.0	2	1.1
y	13	2.2	18	3.1	8	5.0	0	0.0	8	4.4
'y	18	3.0	15	2.6	5	3.1	0	0.0	5	2.8
No. of verbs	594		572		165		19		184	

Remarks:

(1) **Initial vowels and glottal stop:** As in Hausa, phonological phrases which would otherwise begin in a vowel in Bole, always have a glottal stop as onset (cf. Newman (1976) for glottal stop in Hausa). Glottal stop has marginal status in Bole as a non-predictable contrastive phonological unit, and there are no verbs with medial glottal stops aside from 2 or 3 where original /'y/ is realized phonetically as [ʔ]. I have included these

with /ʔy/ in the table. A few verbs begin with vowels and automatic glottal onset. For verbs beginning in the vowels /i, e, a/, this onset has no medial counterpart. Verbs beginning in /o, u/ all vary between initial gottal onset or initial /w/, e.g. 'odu = wodu 'bite'. I have included these verbs in the "w" row.

(2) **NC (nasal + homorganic voiced obstruent):** Word initial NC functions as a phonological unit, e.g. *m̄bosu* 'count', *n̄dolu* 'want', *n̄goru* 'tie', *n̄zonu* 'submerge'. Medially, such sequences syllabify between the nasal and the consonant. Nonetheless, I have treated them as medial units rather than a sequence C2+C3. Medial NC would have provided the only cases of *b*, *z*, and probably *d* in C3 position, e.g. *t̄ambu* 'make a mistake', *k̄unzu* 'curse', *ḡandu* 'lie down'. Moreover, NC never appear as C3+C4, and C4 seems always to be an augment, not an original root consonant. For the purposes of this paper, the medial sequence *mp* probably would also best be considered a unit. All five examples of *p* as C3 follow *m*, e.g. *d̄umpu* 'butt'.

(3) **j/z, nj/nz, s/sh:** There is considerable variation, even for individual speakers, between the alveolar and alveopalatal variants of [+strident] coronals, e.g. *z̄irdu* = *j̄irdu* 'tighten', *k̄unsu* = *k̄unshu* 'undress'. I have therefore collapsed them for this study.

Most consonants are well represented in both C1 and C2 positions relative to their overall percentage frequency. Thus, /k/, a high frequency consonant, represents about 8% of instances of both C1 and C2, while the palatal nasal /ny/, a consonant of very low frequency in general in Bole, does not appear as C2 at all, and only once as C1. There are some interesting discrepancies. Most striking is the fact that /n/ (excluding nasal onset in prenasalized units) appears as C1 in only 3 verbs and in only 2 distinct roots, viz. *n̄i* 'become ripe', *n̄itu* 'ripen (transitive)', and *n̄ossu* 'rest', but as C2 in 54 roots. Initial /n/ is infrequent in nouns as well, occurring in only 10 words in our database, most of which are recent loans, e.g. *n̄as̄ara* 'European'. Dispreference for word initial [n] seems to be a feature not only in Chadic (for Hausa, Abraham (1962) has about 17 pages of *n*-initial entries compared, for example, with 64 pages for *m*- and 41 for *r*-), but also outside Chadic (see, for example, Zuraw (2000:20) for Tagalog).

A second discrepancy is seen with /b/, which has almost 5 times as many tokens in C1 position as in C2 position. This discrepancy has a Bole internal explanation, viz. a general sound change of singleton **b > w* /V__V. Evidence for this change is both comparative, e.g. *ḡawa* 'chest', Hausa *ḡab̄a*, and internal, e.g. *ȳawi*, plural *ȳabbi* 'chicken'. All instances of /b/ as C2 in verbs are either geminates (*t̄ubbu* 'push') or loans (*r̄ub̄utu* 'write' < Hausa). Similar explanations from sound change may exist for the discrepancies in counts for /d/, /g/ and /j, z/ (the simple voiced obstruents) in C1 vs. C2 positions, but I have not yet found internal or comparative support for this.

The distribution of consonants in positions C3 and C4 differs markedly from that in positions C1 and C2. First, consider the consonants of low frequency in C3 or C4. Not surprisingly, /h/ and /ny/ do not appear in either position, nor do they appear in C2. Of more interest are /b, d, g, j ~z, w/, with only one or two occurrences each in C3 and none in C4. The sound change **b > w* /V__V cannot account for the low number of /b/ in C3, because /w/ likewise is of low occurrence in this position. If we consider the words that appear to exemplify these four obstruents in C3, it turns out that they can all be eliminated as true exemplars. The words are as follows: /b/ *ḡidibu* 'strike repeatedly'; /d/ *b̄aḡidu* 'make flour fine by pounding a second time'; /g/ *b̄aḡilu* 'dislocate', *b̄urḡulu* 'stir with swizzle stick'; /z/ *r̄uḡuzu* 'raze, collapse'. Bole has a marginally productive method of forming pluractional verbs with an infix *-gi-/-gu-*, or, dialectally, *-ki-/-ku-* (Gimba 2000:§10.1.3.1). These verbs all appear to be lexicalized pluractionals (the /b/ token, *gidibu*, with metathesis of C1 and C2—cf. *duwu* 'strike' < **dubu*), eliminating all examples of /b, d, g, j ~z/ in C3 position, aside from those consonants as the second member of a NC sequence. To claim that any of these consonants originate as remnant suffixes in Bole would thus require the strange restriction that those suffixes appear only

At present, I have no idea what to make of this situation. Examination of cognate items in closely related languages may shed some light on how these words developed.

-m-:	dīngìmu	‘submerge’	
	zòntùmu	‘lend thing (to be returned in kind, e.g. money or grain)’	
	shìrmu	‘become calm’	cf. Hausa <i>shirū</i> ‘quietness’

Newman does not list a suffix **-ma** for Hausa, but there is some evidence for it. Aside from verbs with /m/ as a third or fourth consonant (*burmè* ‘cave in’, *rùngumà* ‘embrace’, *burkùmā* ‘down a wrestling opponent’), there are a few forms where comparative evidence suggests that /m/ is not part of the original root, e.g. *gilmà* ‘cross or lie at right angles’—cf. *gicì* ‘lying at right angles’, *girma* ‘grow up, mature’—cf. Bade *gàru* ‘grow old’.

-n-:	ngàlnu	‘collect into a pile’	cf. ngalu ‘collect, gather, assemble’
	bòsìnu	‘plant seeds in holes’	cf. Hausa <i>bisnè</i> ‘bury’, <i>bisò</i> ‘burial’
-r-:	dùkkùru	‘knead into balls’	= dùkku
	zù’y’yìru	‘purse lips’	= zù’y’yu
	yàfìru	‘pour out, scatter’	cf. Hausa <i>yābà</i> ‘smear on’
-s/-sh-:	bàwùsú	‘singe’	cf. bòkku ‘roast’, Hausa <i>babbàkè</i> ‘singe’
	tàusu	‘pull aside (curtain)’	cf. tàwu ‘cut across, cut through’
	pùnsu	‘cast a spell, curse’	
-t-:	fĩltu	‘open boil or blister’	cf. fĩllu ‘etch, engrave’
	mòntu	‘forget’	cf. monu ‘know’

The examples here illustrate the suffix **-t-** in uses without obvious semantic content. The suffix /t/ is semi-productive in Bole as a transitizer and verbalizer—see §3.2.3.

-y-:	bìdīyu	‘wind rope around’	
	gàrīyu	‘be happy’	
	sàngìyu	‘be paralyzed’	
-’y-:	kàm’yu	‘squeeze, press out liquid’	
	kòn’yu	‘pinch with fingers’	cf. konu ‘pick up’
	wùn’yu	‘break off (plaster), peel off’	

Bole /’y/ usually corresponds to Hausa /ts/, e.g. Bole *’yuru*, Hausa *tsayà* ‘stop’. These examples, and a few others, are reminiscent of Parsons’ (1975) “pressure group” of Hausa verbs, with /ts/ as the second consonant, e.g. *māts-* ‘compress’, *muntsun-* ‘pinch’. Bole /’y/ here might thus be better considered a “phonaestheme” than a “suffix”.

2.3. Bade

Below is a table showing counts and percentages for stem consonants C1-C4 in 665 Bade verbs.

Consonant	C 1 #	C 1 %	C 2 #	C 2 %	C 3 #	C 3 %	C 4 #	C 4 %	C 3+C 4 #	C 3+C 4 %
b	30	4.5	26	4.0	6	2.4	0	0.0	6	1.8
ḃ	6	0.9	12	1.8	5	2.0	1	1.2	6	1.8
c	23	3.5	11	1.7	1	0.4	0	0.0	1	0.3
d	25	3.8	26	4.0	8	3.1	0	0.0	8	2.4
ɗ	32	4.8	29	4.5	20	7.9	5	6.1	25	7.4
ɗy	1	0.2	1	0.2	0	0.0	0	0.0	0	0.0
f	13	2.0	10	1.5	2	0.8	0	0.0	2	0.6
g(w)	55	8.3	53	8.2	4	1.6	3	3.7	7	2.1
gh	3	0.5	0	0.0	1	0.4	0	0.0	1	0.3
h(w)	22	3.3	7	1.1	0	0.0	0	0.0	0	0.0
j	14	2.1	4	0.6	0	0.0	0	0.0	0	0.0
jl	14	2.1	7	1.1	1	0.4	0	0.0	1	0.3
k(w)	62	9.3	62	9.5	18	7.1	3	3.7	21	6.3
l	20	3.0	20	3.1	1	0.4	0	0.0	1	0.3
m	35	5.3	57	8.8	19	7.5	3	3.7	22	6.5
n	26	3.9	46	7.1	12	4.7	1	1.2	13	3.9
ny	1	0.2	0	0.0	0	0.0	0	0.0	0	0.0
p	35	5.3	30	4.6	3	1.2	0	0.0	3	0.9
r	43	6.5	104	16.0	13	5.1	3	3.7	16	4.8
s	56	8.4	24	3.7	9	3.5	1	1.2	10	3.0
t	46	6.9	30	4.6	98	38.6	45	54.9	143	42.6
tl	34	5.1	13	2.0	10	3.9	0	0.0	10	3.0
v	13	2.0	16	2.5	3	1.2	0	0.0	3	0.9
w	21	3.2	30	4.6	4	1.6	2	2.4	6	1.8
y	2	0.3	20	3.1	13	5.1	5	6.1	18	5.4
z	33	5.0	12	1.8	3	1.2	1	1.2	4	1.2
No. of verbs	665		650		254		73		327	

Remarks:

(1) **Orthographic conventions:**⁵ “j” and “t” are voiced and voiceless lateral fricatives respectively; “gh” and “h” are voiced and voiceless laryngeal fricatives respectively.

(2) **Labialized velars and laryngeals:** Velars and laryngeals (which pattern as velars) have a contrast between non-labialized and labialized variants in all positions, including preconsonantal (cf. *sàktu* ‘be stingy’ vs. *sàkwtu* ‘prod’). I have combined them here to facilitate comparison with Bole, which does not contrast labialized and non-labialized consonants, and Hausa, where, with a few exceptions, the contrast is limited to word initial position.

⁵ These orthographic conventions were worked out in consultation with a group of Bade speakers in 1974 (Schuh 1974).

(3) **Initial nasals and prenasalized consonants:** Bade has changed all prenasalized stops to syllabic nasal + stop, e.g. *ngùmu* ‘answer’ (cf. Ngizim *ngùmu*), *ngàltu* ‘measure’ (< Kanuri *ngál-ngin*). Such verbs now pattern with verbs having an initial light *Cə* syllable, e.g. the verbal noun of the verb ‘measure’ is *ngàltan*, with a LLH tone pattern, whereas if the initial NC were a phonological unit, the verbal noun would have the form **ngaltán* with a HDownstep tone pattern found with verbs have an initial syllable other than *Cə*—cf. *galtán* ‘sharpen a blade’. The effect, in terms of root structure, has been to increase the number of simple nasals in C1, to push the stop portion of the etymological prenasals into C2, and to push the etymological C2 into C3. This effect has added only 3 tokens to initial *m-*, but it has added 14 tokens to initial *n-*. Eliminating these non-etymological /n/’s, the new counts for /n/ would be C1 = 12, C2 = 46, a skewing similar to that already noted for Bole. In order to avoid skewing in C3 position, I omitted “new” C3’s in the counts in the table, e.g. the /l/ of *ngàltu* is not included in C3.

Bade likes long verbs. My database totals 665 verbs. This includes 317 verbs with three stem consonants and another 104 with at least four stem consonants,⁶ i.e. 421 verbs—63.3% of the total—have 3 or more stem consonants.⁷ The counts for C3 and C4 in the table above do not include consonants repeated from earlier in the stem, e.g. *fàfàdu* ‘toast’ does not count as an example of *d* = C3, *wùd’wùdu* ‘sprinkle on’ counts *w* and *d* only as C1 and C2 respectively, *vàrnàniyu* ‘roll over and over’ counts /n/ as C3 and /y/ as C4. By compensating for the Bade penchant to create long verbs through a variety of reduplicatory processes, we can highlight the consonants which appear in proportionately high numbers in positions C3 and C4. I propose as potential remnant suffixes only those consonants which account for 3% or more of the total of C3 + C4 (plus /g(w)/, which, though it comprises only 2.1% of the C3+C4 total, has cases that look suffixal).

-d’-:	<i>àgbèdu</i>	‘pound in mortar’	cf. <i>àgbú</i> ‘split in two’
	<i>tènk’wàkùdu</i>	‘rub body to remove dirt’	cf. <i>tènkùku</i> ‘press’
	<i>tàtkèdu</i>	‘show’	cf. Ngizim <i>tàtku</i>
	<i>tàgdu</i>	‘step on’	cf. Hausa <i>tākà</i>
-g-:	<i>sèd’gwu</i>	‘move a bit’	
	<i>tàrbàgbu</i> ⁸	‘hobble, fetter’	cf. <i>tàrbu</i> ‘hobble front feet of animal’
	<i>bàjègwu</i>	‘pinch’	cf. Ngizim <i>bàdu</i> ‘pinch, pinch off’
-k-:	<i>tlèrku</i>	‘tear off (leaf from stem)’	cf. <i>tlèru</i> ‘separate thing from group’
	<i>tàkpu</i> ⁹	‘spit’	cf. Hausa <i>tōfā</i> ‘spit’
	<i>gàptàku</i>	‘remain, be left over’	= <i>gàptu</i>
	<i>dànànk’wu</i>	‘stoop over’	= <i>dànu</i>
-m-:	<i>àbjèmu</i>	‘invert’	
	<i>kàrmu</i>	‘chop’	
	<i>pàrd’àm’u</i>	‘disperse in disorder’	

⁶ Many verbs have 5 stem consonants, but no verbs in my database have more than 4 *different* stem consonants. All verbs with five consonants have at least one reduplicated consonant, e.g. *kàrcàciyu* ‘take a firm stance’, *zàrzàrtu* ‘make stripes’.

⁷ Compare these figures to the figures for Bole: of 594 verbs, 146 have 3 consonants and 22 have four or more, totaling 166 verbs—27.9% of the total—with 3 or more consonants.

⁸ The original stem final /g/ has metathesized, with the preceding /b/. Methathesis of /labial + velar/ sequences has been a fairly regular process in Bade—cf. Hausa *bugà* ‘hit, strike’ with Bade *pàgu* ‘split (intr.)’ (< **bàgu* with voicing dissimilation), but *pàgbu* ‘split repeatedly’, *àgbu* ‘split (tr.)’.

⁹ See preceding footnote for metathesis of **-pk-*.

As in Bole and Hausa, comparative evidence for the suffixal status of **-m-** is less strong than for some of the other consonants, but it is common enough as C3 or C4 to merit consideration.

-n-:	èskùnu ràkènu bàrtènu	‘increase’ ‘travel’ ‘roll thing over’	cf. Hausa <i>sākè</i> ‘do again, change’ cf. Hausa <i>rakà</i> ‘accompany’ cf. Hausa <i>birgimā</i> ‘rolling of donkey’
-r-:	ètkèru èdgàgèru tlèkpàru	‘finish’ ‘pound floor to harden’ ‘go mad’	cf. Bole <i>tākā</i> cf. Hausa <i>dakà</i> ‘pound’
-s-:	dènsu tèkpàsu	‘lean thing against’ ‘begin’	cf. <i>dènu</i> ‘stoop over’
-t-:	èzɡètu ègbàmtu	‘pierce’ ‘swell (belly)’	cf. Bole <i>zùkā</i> ‘prod, poke into’

The examples here illustrate the suffix **-t-** in uses without obvious semantic content. The suffix **-t-** is productive in Bade as a verbalizer—see §3.2.2.

-tl-:	èdʷàtlu càkwtlu gàrtlu	‘become tired’ ‘poke in ribs’ ‘cut into small pieces’
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I have not found any comparative evidence for the suffixal nature of **-tl-** in Bade. It would correspond to *l* in West Chadic “A” languages—see §3.1.

-y-:	rèkwàyu tèbàyu sàvìyu	‘become thin’ ‘push’ ‘clear bush for farming’	cf. Bole <i>rùkku</i> cf. Bole <i>tùbbu</i> cf. Hausa <i>sassàbē</i>
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3. Reconstructing West Chadic Verbal Suffixes

3.1. Augmentative suffixes of uncertain meaning

The data in this paper strongly confirm, on the one hand, that proto-West Chadic must be reconstructed with a rather rich set of suffixes which could be added to verb roots, but on the other hand, that this set of suffixes was limited to a certain group of consonants. The latter observation provides particularly strong evidence that we are dealing with a true *morphological* phenomenon, i.e. were we simply pulling off the third and fourth consonants of verb roots and calling them suffixes because of an *a priori* belief that Chadic verb bases should have only two consonants, there would be no reason to expect either that the putative suffixes would not include the full spectrum of consonants in a language or that they would be essentially the same limited set of consonants in three rather distantly related languages within West Chadic.¹⁰

¹⁰ To place a time depth on proto-West Chadic, let alone proto-Chadic is pure speculation, but my own feeling, having worked on West Chadic languages for about 30 years and having some familiarity with comparative Indo-European through teaching historical linguistics for many years, is that the time depth of West Chadic alone approximates that of Indo-European.

The consonants that appear to be affixal in Bole and Bade jibe closely with the consonants that Newman (2000:Chapter 76) identifies for Hausa: **-d-**, **-n-**, **-s-**, and **-y-** are well represented, with good comparative data supporting their affixal nature in all three languages; evidence for the velars **-g-** and **-k-** is weak in Bole, but evidence for **-k-** is particularly strong in both Hausa and Bade. Evidence is likewise strong for **-g-** in Hausa, and while in terms of sheer numbers of examples, **-g-** is less manifest in Bade, some instances have good comparative support.

There is no question that we can reconstruct at least one liquid suffix. I argued that for Hausa, the reconstruction should be **-r-**, not **-l-** as suggested by Newman, mainly because the two are in near complementary distribution, with **-l-** appearing almost exclusively as geminate [ll], and judging from available evidence, with roots whose original C2 was a coronal. Both Bole and Bade provide evidence supporting an **-r-** suffix. Evidence is equivocal as to whether we should reconstruct a lateral suffix in addition to **-r-**. Bade data suggests that if such a suffix existed, it probably was a lateral fricative **-tl-**, not a sonorant. The West Chadic “A” reflex of **tl* is sonorant *l*, and a large number of Bole verbs do have *-l-* as C3 or C4, but in nearly all these examples, *-l-* occurs in conjunction with reduplication or an apparent pluractional infix.

In addition to the suffixal consonants listed above, all included for Hausa by Newman, there is limited evidence for the suffixal nature of **-ḃ-**, **-m-**, and possibly **-’y/-ts-**. Evidence for **-m-** is the best in terms of number of examples, and Hausa and Bade, at least, present some comparative support for this suffix. Evidence for **-ḃ-** is weaker, and I suggested that **-’y/-ts-** might be a phonaestheme rather than a true suffix.

The affixes listed in the preceding paragraphs resist clear semantic characterization. They are reminiscent of the prefixes of Slavic languages and some of the prefixes of German, such as *er-* in word pairs such as *bauen* ‘build’ vs. *erbauen* ‘erect’, *fragen* ‘ask’ vs. *erfragen* ‘inquire’, *geben* ‘give’ vs. *ergeben* ‘yield’, *greifen* ‘seize, grip’ vs. *ergreifen* ‘seize’, *kennen* ‘know, be familiar with’ vs. *erkennen* ‘recognize’, *schießen* ‘shoot’ vs. *erschießen* ‘shoot dead’, etc.. The roots and the respective forms with the *er-* prefixes are semantically related, but there is no common meaning which the prefix adds across the set. I suggest that most or all of these Chadic suffixes are of a similar nature. Some speaker of some language at some time felt the need to differentiate verbal meanings and used available morphological material to do so. I believe it would be a fruitless task to attempt to sort out specific meanings for any of these affixes because the absence of specific meanings probably dates to the ancestral language.

3.2. The verbalizing suffix **-t-**

While absence of a specific meaning is probably an ancient feature of the suffixes listed in the previous section, there is one suffix, for which I believe we CAN reconstruct a specific function, viz. a verbalizing suffix **-t-**. All the languages which I have discussed in this paper have verbs with /t/ as the last consonant, where the /t/, if it was ever an affix, is now part of the root, with no particular meaning associated with it. Examples in the respective language sections have been of this type. However, all three languages also have productive or semi-productive **-t-**suffixation processes.

3.2.1. Hausa. Newman (2000:Chapter 79) describes what he refers to as the “Verbalizer {-TA}”. This verbalizer has two principal allomorphs, *-Vnta* and *-(a)ta*. The function of {-TA} is to derive verbs from nouns or adjectives. I present a few examples with the simple *-(a)ta* allomorph here. See Newman for details on form and function.

tsòratà	‘to fear’	< tsòrō ‘fear’	daidàitā	‘straighten’	< daidai ‘correct’
tsiyàtā	‘impoverish’	< tsiyā ‘poverty’	gajàrtā	‘shorten’	< gājērē ‘short’

3.2.2. Bade. The figures for /t/ in the Bade table indicate that something special is going on. There are as many /t/'s in C4 as in C1 (45 vs. 46 respectively) and almost TWICE as many in C3 as in C1 (98 vs. 46). In fact, /t/ alone represents over 40% of the C3+C4 total. There are three principal types of exemplar for /t/ as the final consonant of Bade verb stems: (1) those which, like the other remnant suffixes, are now part of the stem and have no obvious function (see §2.3), though as we learn more about Bade, many of these will undoubtedly shift into the other groups; (2) loanwords, primarily from Kanuri, but some from Hausa; (3) a **-t-** verbalizer with function like that of Hausa illustrated in the preceding section.

Let us first consider loanwords. The source for Kanuri data is Cyffer and Hutchison (1990). The head entries for verbs in Cyffer and Hutchison are the 1st singular and 3rd singular imperfect, which together reveal the conjugation class and the root. In the examples below I give their head entries as well as the verbal noun in parentheses:

Bade	gàltu	‘sharpen blade’	< Kanuri	gálngin, gáljin (gáltá)
	kàlàktu	‘return’	<	kálánggin, kálákcín (káláktá)
	rètu	‘cut in two’	<	réngin, réjin (rétá)

My guess is that Kanuri verbs are borrowed as verbal nouns, which have a **-t-** suffix in Kanuri. If this is correct, the **-t-** suffix in these words is an accidental convergence with the native Chadic **-t-** suffix. Kanuri verb morphology is complex, and Kanuri verbs all have at least one affix. In borrowing a verb from Kanuri, it seems more likely that Bade speakers would adapt an actual word rather than extract an abstract root, then add a native suffix to it. The problem with this hypothesis is that a **-t-** is usually also added to loan verbs from Hausa, which do not have forms with suffixed **-t-**, e.g. *fùtátú* ‘rest’ < Hausa *hūtà*. This may either be an extension of a perceived pattern, modeled on Kanuri loans, that borrowed verbs require /t/ as the last consonant or it may be an extension of the native “verbalizer” function, which converts any borrowed word for use as a verb in Bade, even if that word was already a verb in the source language.

The native **-t-** suffix can convert any grammatical category into a verb. Inasmuch as this function is essentially identical to that of Hausa, which is not closely related to Bade nor did the two languages have much contact until the 20th century, we can be fairly confident in reconstructing not only a verbal suffix **-t-** for proto-West Chadic, but also its function as a verbalizer.

bàrbàrtu	‘roll around in dust’	< bərbərən ‘dust’ (Noun)
jàgètu	‘decorate’	< jǎgèn ‘decoration, finery’ (Noun)
bìtlàtu	‘become red’	< bìtla ‘red’ (Adjective)
dàm̀tòtu	‘draw near’	< dàmto ‘near’ (Adverb)
gàwàtu	‘be abundant’	< gàwa ‘many, much’ (Quantifier)
nàbètu	‘die’	< nàbe ‘there isn’t any’ (Existential predicator)

3.2.3. Bole. With respect to the suffix **-t-**, Bole presents a different picture from that of Hausa and Bade. As in the other languages, most /t/'s in Bole in positions C3 or C4 of a verb are now part of the stem with no obvious function. Bole has not borrowed nearly as extensively from Kanuri as has Bade, but the small number of attested verbs from Kanuri, like those in Bade, have a **-t-** suffix (*rètu* ‘cut in two’, *làptu* ‘load an animal’). I suspect that, as in Bade, this is the /t/ of the Kanuri verbal noun, not the Chadic **-t-**. Hausa is the major source of recent loans, which are adapted to Bole verb morphology with no additional affixation, e.g. *gàdu* ‘inherit’ < Hausa *gàdā*, *shàshu* ‘change’ < Hausa *sākè*.

Bole does use **-t-** as a verbalizer, though I cannot say whether it is as productive in this function as it is in Hausa and Bade:

wòntu	‘dance, shake’	< wònà ‘dancing’
kùdàutu	‘become lame’	< kùdàu ‘lame person’
mbùkùmtu	‘become blind’	< mbùkùm ‘blind, blind person’

The best represented function of **-t-** in Bole is as a transitizer of intransitive verbs. In just one verb, **-t-** also functions to causativize a transitive verb (see *gòjjìtu* below).

ḃòltu	‘break (stick)’ (tr.)	< ḃolu ‘break (stick)’ (intr.)
ḃòutu	‘seat’	< ḃòwu ‘sit down’
’yòrtu	‘bring to a stop’	< ’yòru ‘come to a stop’
ngì’yìtu	‘sneer at’	< ngì’yu ‘sneer’
gòjjìtu	‘sell’	< gòjju ‘buy’

One senses a semantic connection between **-t-** functioning as a verbalizer and **-t-** functioning as a causativizer—each function allows the addition of clausal arguments to a verb. I believe that it is this connection that has led to an innovative transfer of function to the Chadic verbalizing suffix **-t-** in Bole from the original causativizer, an extension **-d-**, which still exists in all three languages.

3.3. The transitivizing/causativizing extension **-d-**

3.3.1. Hausa. In what has now become the standard frame of reference for Hausa verb forms, Parsons (1960) proposed a system of 7 “grades”. Roughly speaking, Grade 5 has a causative function.¹¹ There are two forms for grade 5, a “long” form and a “short” form. I illustrate both forms with an intransitive and a transitive base. The parenthesized *dà* for the long form is required if a following direct object is present; the short form requires a following object and hence the preposition is never absent.

fità	‘go out’	fitar (dà) = fid dà	‘take out, remove’
sàyā	‘buy’	sayar (dà) = sai dà	‘sell’

The long form derives from the root plus a suffix *-as*, still heard as such in some dialects, but changed to *-ar* in the “standard” dialect. The short form is generally considered to be derived from the long form by apocopation of the *-as/-ar* suffix. In modern standard Hausa, both the long and short forms require the multifunctional preposition *dà* before direct objects. In Western and Northern dialects, however, *-dà* is part of the verb, as shown by the lengthening of the final *-a* before pronominal objects, which, moreover, take the form of a verbal clitic (*nā fiddā shi* ‘I removed it’), and by the addition of the verbal noun suffix *-wā* to the verb + *-da* (*fiddāwā* ‘removing’).

Newman (1971) proposed that the Western/Northern forms represented the original situation, whereas the standard dialect has reanalyzed the *-da* suffix/extension as a

¹¹ Newman (1983) argues that the term “causative” is inaccurate as a label for grade 5. For a fair number of Hausa verbs, the grade 5 extension does not have causative function, e.g. *zubar dà* ‘throw away’ < *zubā* ‘pour’, *halakar* (grade 5) = *halākā* ‘destroy’. More generally, even for a pair like *sàyā/sayar* ‘buy/sell’, the grade 5 *sayar* ‘sell’ does not literally mean “cause to buy”. Newman labeled grade 5 “efferential”, a term which is meant to capture the more general grade 5 function of “action directed out and away” (Newman 2000:655). This term may be more appropriate than “causative” for Hausa grade 5, which has a functional range considerably expanded over the reconstructable core function of transitizing intransitive verbs, but I find the traditional label “causative”, widely used by typologists, to be entirely appropriate for a morphological form whose primary function is to transitivize intransitive verbs and, less commonly in Chadic languages, to signal transfer by an agent of the effect of a transitive action (as in “buy” → “sell”, “learn” → “teach”).

preposition, probably because of its phonological resemblance to the preposition and the fact that some verbs (perhaps including the long form grade 5) require a pleonastic *dà* before objects. More recently, Newman has moved away from this earlier position (Newman 2000:661). In §3.4 I will suggest that neither hypothesis may be wholly correct, but I am confident that his 1971 proposal is the closer. On internal Hausa grounds, Newman (1971) noted the anomaly that the “apocopation” proposal requires deletion of the very morpheme that is the primary marker of grade 5 function! Comparative evidence further supports the claim that the dialectal forms with *-dà* incorporated into the verb are close to the earlier situation. Modern Hausa grade 5 clearly conflates two forms (the “long” and “short” forms) which at one time must have been functionally different. This probably accounts for the fact that Hausa grade 5 has a functional range considerably broader than that of transitivized (or causativized) forms in other Chadic languages. The source of the grade 5 suffix *-as/-ar* remains a mystery from a comparative Chadic point of view,¹² but the “short” form grade 5 (ROOT-*dà*) comes from a reconstructable proto-West Chadic transitivizing/causativizing extension **-d-**.

3.3.2. Bade. Bade has a verbal extension **-d-**. In modern Western Bade, the dialect under consideration here, this extension functions only as a transitizer of intransitive verbs, and moreover it is restricted, with just a couple of exceptions in available data, to verb roots of the form CVC- which, historically, had a light first syllable.¹³

ègvədù	‘make fall, knock over’	< ègvu ‘fall’
èkƒədù	‘put in’	< èkƒu ‘enter’
gùdƒədù	‘hurry with, speed up’	< gùdƒu ‘hurry’
pàwudù	‘put up, lodge’	< pàwu ‘dismount, stay at a place’
sèdƒgwudù	‘adjust, e.g. load on animal’	< sèdƒgwu ‘move a bit’

It is worth noting that the near restriction to CVC- light syllable roots parallels the near restriction of Hausa “short” grade 5’s (Newman 2000:652) to monosyllabic roots and disyllabic CVC- roots with a light root syllable. At this time, it is not possible to know whether this is a reconstructable property of **-d-** or an accidental convergence. Bade has developed other means for distinguishing intransitive/transitive function for longer verbs, and Hausa, in parallel fashion, may have ceased adding the **-d-** extension to long verbs following the development of the *-as/-ar* suffix.

3.3.3. Bole. Lukas (1971) described a **-d-** Bole verbal extension which he called the *Wiederholungserweiterung* ‘repetitive extension’. As Lukas’s term implies, his focus was the meaning “do again”, but he also noted other functions, including a sort of pro-instrument or pro-manner function meaning “with it” or “like that”. Gimba (2000:128-133), notes that this extension has a broad set of functions, all of which involve some kind of “addition” to the base verb meaning, such as doing the action itself again, conjoining a second action, and in general, adding some sort of “oblique” argument (something other than a direct or indirect object) to the action. Here are examples from Gimba (2000).

Bamoi tī-dù ottò.	‘Bamoi ate food <u>again</u> .’
Lengì sa’ àmma tī-di ottò.	‘Lengi drank water and, <u>in addition</u> , ate food.’

¹² Newman (2000:697) suggests that the *-s-* remnant suffix may, in fact, be the grade 5 suffix frozen as a stem formative. Since the Bole and Bade comparative evidence suggests that we can reconstruct a suffix *-s-*, the opposite of Newman’s suggestion may be the case, viz. that Hausa extended the *-s-* suffix to become a productive “efferential” extension and the Hausa examples of the *-s-* suffix actually represent the older situation!

¹³ If the root vowel was *ə* and if the consonants formed a permissible consonant sequence, Bade has resyllabified the verb root to become *əCCV-*. See Schuh (1978).

Lengi kònas shòwi sùwwad-dù' 'yàla.	'Lengi took a piece of wood and threshed corn <u>with it</u> .'
M̄ pòràni yaddà n̄ ì-dù-wo.	'I will tell him how I did(<u>additive</u>) it.'
kòrì là Bamoi kàppu-dù' 'yàla yê	'the farm that Bamoi planted corn <u>on (it)</u> '
jàjìl là Bamoi kàppu-dù' 'yàla yê	'the time that Bamoi planted corn (<u>then</u>)'

Bole does *not* use the additive extension as a transitizer or causativizer. Nonetheless, there is a semantic connection between these functions and “additiveness”, roughly, extending the valency of the verb. While the exact path of innovation is not clear, it seems that Bole has transferred the transitizing/causativizing function, originally expressed by **-d-**, to the verbal suffix **-t-**, which originally had verbalization of non-verbs as its primary function. Cut loose from its function as a causativizer, the **-d-** extension broadened its function in a way somewhat like the apparent broadening of grade 5 function in Hausa.

It is possible that the shift of function in Bole **-d-** was aided by syncretism. In addition to transitizing function, Bade uses an extension **-d-** as a pro-instrument very much like the third Bole example above, e.g. Bade *sana nà nā bì kabón nà nà kīd'ə-dù wainán* ‘tomorrow I’ll get a *kobo* and eat a fried cake using it’. Ngizim also uses **-d-** in this function. My own belief is that we should reconstruct a single causative **-d-**, with use as a pro-instrument as an areally limited functional broadening, but if there were two **-d-** verbal extensions, their functions could easily have been confounded, leading to the sorts of innovations we see in the modern languages.

3.4. Suffixes vs. extensions

In this paper I have focused on verb *suffixes*, but I have referred to **-d-** in the previous section as an *extension*. The two are formally distinct. Suffixes are part of the verb stem, to which tone patterns and inflectional vowel changes or affixes are added. Extensions are clitics which are added to the stem with its inflections and tone pattern already in place. Compare Bole and Bade verbs in two TAM’s (Tense/Aspect/Mood forms) each, with and without the **-d-** extension.

Bole

Future	à sòrà	‘he will fall’	à sòrà-dí	‘he will fall again’
Habitual	à soro	‘he falls’	à sòrò-dí ¹⁴	‘he falls again’

Bade

Subjunctive	da-gwzì	‘that he return’	da-gwzə̀-dù ¹⁵	‘that he replace’
2 nd Subjunctive	dù-gza	‘he should return’	dù-gza-dù	‘he should replace’

Hausa differs from its West Chadic cousins in two ways. First, Hausa does not inflect verbs for TAM. All TAM marking is done through preverbal formatives (some of which are a portmanteau with the subject pronoun), e.g. *sun zō* ‘they came’, *sù zō* ‘they should come’, *zā sù zō* ‘they will come’. Second, Hausa has no extension clitics of the Bole and Bade types. Hausa marks semantic functions corresponding to extensions in other West Chadic languages with different vowel terminations and tone patterns on the verb, e.g. *sàya* ‘buy’, *sayà* ‘buy for’, *sayō* ‘buy and bring’, *sayè* ‘buy all’. The one exception to this latter statement is the *dà* used with “short” form grade 5 verbs, which, in Standard Hausa, looks and behaves like a preposition, but which must always directly follow the verb, e.g.

¹⁴ Bole lowers a High tone between a preceding High and any clitic. The Low tone on the second syllable of the verb is not specific to the additive **-d-**.

¹⁵ All short high vowels in Bade become ə when not phrase final.

nā fid dà kāyā/shī ‘I removed the goods/it’, but **nā fid masà dà kāyā* ‘I removed the goods for him’. If anything intervenes between verb and object, the “long” form grade 5 is required, e.g. *nā fitar masà dà kāyā* ‘I removed the goods for him’.

I believe that the two differences between Hausa and its Chadic cousins are not unrelated. Let us reconstruct the *dà* as a clitic extension, similar to the modern Bole and Bade situation. In early or pre-Hausa, this clitic probably interacted phonologically and perhaps morphologically with an inflected verb to which it was cliticized. When Hausa lost TAM inflection on the verb, shifting this function to preverbal formatives, the erstwhile extension clitic became a strange orphan—was it a verbal suffix or was it a separate word (a preposition)? This equivocal status may account for some dialects making it a full-fledged suffix and others a separate word, albeit one with restricted distribution.

4. Conclusion

As a starting point for this paper, I cited Herrmann Jungraithmayr’s suggestion, made over 30 years ago, that many verbs in Hausa might be built from mono- or biconsonantal roots extended by affixal consonants. Paul Newman, working from his extensive study of the Hausa lexicon, has demonstrated the correctness of Jungraithmayr’s suggestion by documenting 8 “remnant suffixes” of uncertain function that recur on significant numbers of Hausa verbs. Finding Newman’s observations of considerable historical interest, I decided to see whether apparent remnant suffixes could be detected in other Chadic languages for which I had data. I approached the data with no preconceptions of what such suffixes, if any, might look like. The results have been gratifying to say the least. Two West Chadic languages that are relatively distant linguistic cousins of Hausa have provided evidence for essentially all eight of the suffixes Newman identified, and perhaps more significantly, those languages do not cloud the picture with large number of apparent suffixes NOT found in Hausa.

Since this paper is in a festschrift for I.M. Diakonoff, probably the foremost comparativist of the Afroasiatic (or, as he preferred, the Afrasian) phylum, I should point out the significance of this study for a broader picture. As I see it, the reconstructability of root augmenting suffixes in Chadic should lead those who have not already done so to rethink the Semitic-influenced concept of “loss of radicals” as a way to account for verbs with fewer than three consonants in language families such as Berber or Chadic. A much more likely picture, sketch broadly in Newman (1991), is an ancient and continuing process of ADDING radicals as one of a number of stem augmenting processes in all families, Semitic included.

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