1. INTRODUCTION

Most analyses of Chadic languages are unconsciously influenced by patterns of thought established through the study of Hausa.

The influence is particularly evident with regard to the manner in which scholars analyze basic verb forms. As systematically described by Parsonson,\(^1\) the final vowel and tone of a Hausa verb are taken as affixal elements rather than as part of the underlying root. For example, the verb *fad* „to go out” is analyzed as being composed of an underlying lexical root *f/- plus an affix consisting of the terminal vowel -a and the tone pattern Lo-Hi.\(^*\) Similarly, *dafa* „to cook” is composed of *d/-a- as and Hi-Lo, Hi „to follow” is composed of *b/- plus i- and Hi, etc. When we turn away from Hausa and look, for example, at *Lukau’s* description of Boki,\(^6\) we find the same kind of analysis. With the exception

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* This study is the outgrowth of two National Science Foundation supported research projects: The Comparative Chadic Syntax Project (82-2979) and the Description and Classification of Kotonu Project (82-29139). Field research in Nigeria was made possible through the cooperation of the Institute of African Studies, University of Ibadan, and the Centre for the Study of Nigerian Languages, Ahmadu Bello University, Kano.


2 As an abbreviation, high referring to tone will be written Hi, low will be written Lo.

of a small number of verbs of the form CV, all verbs included in
the lexicon are listed without final vowel or tone, e.g. "mot- "to
die", "dapp- "to sow", "bes- "to shoot".

It is probably fair to say that the overwhelming majority of
Chadic scholars have tacitly assumed that an analysis of verb
forms along these lines was not only valid for individual present-
day Chadic languages, but would also prove valid for the recon-
structed verbal system of Proto-Chadic. However, on the basis of
intensive research on Comparative Chadic carried out over the
past five years, I have become convinced that this generally
accepted way of looking at Chadic verbs is incorrect. I propose
instead a radical revision in our approach to Chadic verbs, a re-
vision which requires that the usual assumptions about the role
of tone and final vowel in verbs be rejected. Contrary to previous
approaches to Chadic verbs, I would argue for the adoption of
a system in which these two variables, tone and final vowel, are
deemed to have lexical significance. Specifically, I would wish to
make the following claims about the Proto-Chadic verbal system:

(a) All verbs contained a final vowel as an integral, lexically-
determined component. This vowel was as much a part of the
specification of that lexeme as the consonants and the internal
vowels.

(b) Poly syllabic verbs occurred with two and only two final
vowels, these being -a and -o.

(c) Homosyllabic (CV) verbs in the proto-language also made
use of these two vowels and very possibly occurred with one other
high vowel as well.

(d) Verb tone was also lexically specific and not grammatically
or derivatively.

(e) Tone pattern and final vowel were independent rather than
covarying features. The description and classification of a verb
would thus depend on the intersection of these two variables. For
example, a CV verb could end either in -a or -o (limiting ourselves
to these two) and have either HI or LO tone, thereby resulting
in four possible verb classes, CI, CO, CI and CO.

L7, 1971/2, pp. 114—30. "Bolam" is the Hausa word for the Bol
language.
The Proto-Chadic system suggested above is still clearly reflected in the verbal system of present-day Chadic languages. While some languages have only retained the proto-system to a minor extent, the widespread distribution of the reconstructed features taken as a whole and the similarities in detail found among distantly related languages argue convincingly for the accuracy of the claims being made about the proto-language.

The primary data in this study are drawn from eight Chadic languages representing two major branches of the family, namely Sara, Gu’anda, Margi and Kotoko, representing the Biu-Mandara branch, and Ngizin, Bole, Kanakuru and Hansa, representing the Plateau-Sahel branch. For methodological reasons this study was purposely limited to these eight languages out of the more than sixty to eighty Chadic languages that exist. It was felt that in order to identify underlying morpho-syntactic patterns and reconstruct systems (rather than isolated traits) it was more important to compare a small number of languages that could be analyzed in depth than to treat a large number of languages in a superficial manner. It was also felt necessary to control the quality of the primary data being compared by restricting inclusion to languages that either had been studied by me personally or by one of my co-workers, or one had been the subject of a detailed modern-day description by some other reliable investigator.

1 The three most important sources for Chadic classification are J. H. Greenberg, The Languages of Africa, Bloomington 1963; P. Newman and R. Ma Comparative Chadic: Phonology and Lexicon, Journal of African Languages, V, 1966, pp. 219–31; G. Reiffmann, Provisional Check List of Chadic Languages, Chadic Newsletter (Marburg), 1971. My earlier opinion was that all Chadic languages could be assigned to one or the other of the two major branches, Biu-Mandara and Plateau-Sahel. I now feel that a third co-ordinate branch is needed to accommodate the West Chadic languages spoken in the Chad Republic.

2 My co-workers on the Comparative Chadic Syntax Project, to whom I owe a debt of thanks, were Dr. R. G. Schuh and Dr. R. M. Newman.

3 Since the scope of this study was delimited, a number of new works on Chadic languages have appeared, e.g. J. Carnowahan, Categories of the Verb in Bocasse, African Language Studies, XI, 1979, pp. 81–112; H. Langhammer, Die Nom-Sprache, Gilch.
To fully appreciate the significance of the similarities found in the verbal systems of these eight languages, two facts should be kept in mind. First, these languages were chosen for study before the analysis presented here was developed, i.e. they were not chosen because they exhibited these similarities, but rather were found to share various features only after having been selected for other reasons. Secondly, these languages occupy a wide geographical area and in many cases are distinctly related to one another. While all sub-groups and clusters within Chadic are not represented — the most serious omission is the Haa-Chadic group spoken in the Chad Republic — the diversity of languages included rules out the possibility that the similarities found could be due to borrowing or to chance resemblance.

For purposes of the description that follows, verbs of the form CV will be set apart from the other forms of verbs. The CV verbs will be termed „monoverbs”; verbs of all other shapes, including CVC, CVVCV, and even CVU will be termed „polyverbs”. To simplify the discussion, only polyverbs of the form CVCV and CVC will be included, the assumption being that the less common verbs with more than two consonants could naturally be accommodated within the same system. Within polyverbs the Proto-Chadic distinction between those ending in -a and those ending in -α will referred to as a-verbs and y-verbs („schwa-verbs”) respectively, regardless of the exact quality of the final vowel in the particular modern-day language under consideration.

Apart from the normal orthographic symbols with their recognized IPA values, the following special symbols and conventions will be employed in the examples: β, d = glottalized

\* According to Lukas’ earlier classification, languages such as Margi and Kotoko, or Tera and Hausa, were not even assigned to the same language family. See J. Lukas, The Linguistic Situation in the Lake Chad Area in Central Africa, „Africa” IX, 1939, pp. 332—40. D. Westermann and M. A. Bryan, Languages of West Africa, London 1959 [Chapters 9 and 10 prepared by J. Lukas].
stop; mk, wd, nd, ng = vocalized obstruents (unit phonemes); s, l, r = voiceless and voiced lateral fricatives; t, p, k, x have the values of the initial sounds in English “church”, “judge”, “knee”, and French “vous”; s will represent the palatal semi-vowel in English “you”. Long vowels and geminated consonants will be written with double letters; a tone will be indicated by accents, i.e. á = Hi, ñ = Lo, ñ = Mid, ñ = falling, ñ = rising.

II. VERB CLASSES IN PRESENT-DAY CHADIC LANGUAGES

Bia-Mandara Branch

1. TERA*. Tera has a six vowel system commonly found in Chadic languages of northeastern Nigeria, namely a, ɔ, ɛ, ɑ, u, ɔ. 

Phonemic vowel length exists but is lexically insignificant. Tera has three discrete tones: Hi, Mid, and Lo. Falling and rising tones occur but usually as a result of vowel deletion or contraction. 

Polyverba in Tera end either in ñ or in the morphophones ñ-ñ. The ñ-verbs have three surface realizations:

(a) In an absolute final position they are pronounced with a final /ñ/ due to the fact that /ñ/ does not occur in Tera before phonological junctures, e.g. ɔn ɔpè “he tured”, ɔn ɔ̀ “he pulled (it)”.

(b) In non-final position, the ñ is usually deleted, e.g. ɔn ɔ “she didn’t tire”.

(c) In cases where the ñ may not be deleted for phonetic reasons (e.g. when preceded by abutting consonants or by a voiced obstruent), it remains and is pronounced as such, e.g. ɔn ɔ “she didn’t pull (it)”.

Out of the nine theoretically possible diglotal patterns available with three discrete tones, ñ-verbs make use of four (Hi-Hi, Hi-

Mid, Lo-Lo, and Lo-Mid, and a-verbs only three, the Lo-Mid pattern not occurring. (For analytical purposes, I am treating the Hi-Mid pattern found with a-verbs as equivalent to the Hi-Mid patterns of a-verbs.) With this adjustment, the inventory of Tese polyverb classes can be presented as follows:

<table>
<thead>
<tr>
<th>a-verb</th>
<th>o-verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi-Hi</td>
<td>undo to swallow</td>
</tr>
<tr>
<td>Mid-Mid</td>
<td>undo to buy</td>
</tr>
<tr>
<td>Lo-Lo</td>
<td>undo to shine</td>
</tr>
</tbody>
</table>

| Lo-Mid | undo to finish |

Fig. 1a. Tese Polyverbs

Tese monverbs occur with final -a, -o, -i, and -i. In addition, two verbs have been found with final -o, kn to sweep and fo to cry. There are no o-final verbs. Because of the rule changing pre-junctival -i to /i/, all o-verbs have two realizations depending on the phonological environment, e.g. see o fihnd undo he went to market", but see of undo he went. In final position the distinction between Oo and Oo verbs is thus neutralized, with resultant unifi
guity possible, though rare, e.g. see did undo he received a shilling", but see did undo he received (ii)", cf. see did undo he paid a shilling", and see did undo he paid (ii)".

Even though /u/ and /o/ are normally contrastive in Tese, the a-final and o-final monverbs exhibit phonological comple
mentarity in that all of the o-verbs contain a bilabial consonant whereas no bilabials are to be found with the o-verbs. The phonological considerations aside, there are internal reasons why one would not want to collapse Ou and o-verbs into a single class in a synchronic description of Tese. But viewed historically, the complementarity of the o- and Oo verbs strongly suggests that

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Contrary to the restriction found with monverbs, note the following examples of /u/ preceded by a non-bilabial consonant and of preceded by a bilabial: hán undo to sing", zíd undo to sing", bâk undo, undo to winnow"
at an earlier period they probably did constitute phonologically conditioned submembers of the same monoverb class.

All four vowel classes of monoverbs in Tera occur with each of the three phonemic tones.

<table>
<thead>
<tr>
<th>High Tone</th>
<th>Mid Tone</th>
<th>Low Tone</th>
</tr>
</thead>
<tbody>
<tr>
<td>ñá to bury</td>
<td>ñá to go</td>
<td>ñá to fall</td>
</tr>
<tr>
<td>ñá to see</td>
<td>ñá to get</td>
<td>ñá to rub</td>
</tr>
<tr>
<td>ñá to drink</td>
<td>ñá to say</td>
<td>ñá to test</td>
</tr>
<tr>
<td>ñá to enter</td>
<td>ñá to jént</td>
<td>ñá to jént</td>
</tr>
</tbody>
</table>

Fig. 1b. Tera Monoverbs

2. GA’ANDA. The vowel system of Ga’anda is just like that of Tera, to which it is closely related. That is, it has /i/ as a sixth and frequently occurring vowel which, as in Tera, may not occur in utterance-final position, being either deleted or realized as /j/. Tonally Ga’anda also has three basic levels, Hi, Mid and Lo; but in addition it has a complex system of morphophonemic changes involving downstep, tone raising, and tone displacement. To simplify the exposition, Ga’anda verb classes will be described simply in terms of underlying basic tones without reference to the morphophonemic changes that verbs undergo in actual utterances.

Polyverbs in Ga’anda and either in /u or in /i, the CVU verbs corresponding to CVU verbs in Tera. Interestingly, the CVU verbs must be analyzed synchronically as having two tones (the second tone being realized on the following subject pronoun or verbal suffix) thereby giving informal evidence of the former existence of the final -u. Both a-verbs and a-verbs (now CVU) utilize five different tone patterns, more than is found with any of the other languages in this study. These tone patterns (Hi-Mid, Lo-Mid, Hi-Mid, and Lo-Hi) plus the two vowel classes, give a total of ten different polyverb forms in Ga’anda.

Monoverbs in Ga'anda are uncommon, less than fifteen having been found. Nevertheless, these monoverbs make use of three final vowels, -e, -e, and -e, and all three tone levels, Hi, Mid and Lo.

### Table: Ga'anda Monoverbs

<table>
<thead>
<tr>
<th>HI</th>
<th>Lo</th>
<th>-e</th>
<th>Mid</th>
<th>Lo</th>
</tr>
</thead>
<tbody>
<tr>
<td>mēd to laugh</td>
<td>mēd to run</td>
<td>mēd' to know</td>
<td>mēd to write</td>
<td>mō to cover</td>
</tr>
<tr>
<td>nēd' to cook</td>
<td>nēd' to collect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nēd to run</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nēd' to be</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

3. **MARGI**

Margi is basically a four vowel language expanded to six by the recent introduction of /i/ and /e/. In this language, the important vowel /a/ occurs finally as well as medially. In final position, its pronunciation tends toward that of a close back vowel. This has prompted Hoffmann to transcribe it with a separate symbol ' even though he himself recognizes that "it is not a phoneme by itself, but an allophone of /a/ in final position." In citing Margi examples from Hoffmann's work, I have therefore used the symbol ' for the schwa phoneme in all of its environments and have discarded the unnecessary symbol ' altogether. The tonal system of Margi is straightforward. There are two level tones, Hi and Lo, plus a common rising tone and an infrequent falling tone.

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Margi polyverbs end either in -i or -o. The verbs ending in -o and those without a final vowel can be grouped together as phonologically determined subclasses of the general class of -o-verbs. The consonant final verbs all end in a sonorant (nasal or liquid), whereas the verbs that preserve the original final -o all have an obstructive as the second consonant.

Of the four tone patterns available combining the two basic tones, only three occur; Hi-Hi, Lo-Lo and Lo-Hi; no examples of Hi-Lo having been found. With the CVU-verbs, the Lo-Hi sequence is realized as a rising tone.

<table>
<thead>
<tr>
<th>Hi-Hi</th>
<th>Hi-Lo</th>
<th>Lo-Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>tīk to tow</td>
<td>kī to rest</td>
<td>pīt to thaw</td>
</tr>
<tr>
<td>Lo-Lo</td>
<td>Lo-Hi</td>
<td>Lo-Hi</td>
</tr>
<tr>
<td>kī to rest</td>
<td>pīt to thaw</td>
<td>jām to end</td>
</tr>
<tr>
<td>yāt to tire</td>
<td>pī to lay (eggs)</td>
<td>jī to fly</td>
</tr>
</tbody>
</table>

Fig. 3a, Margi Polyverbs

Margi has a-final, i-final and u-final monoverbs. Hoffmann also cites a number of i-final monoverbs, but in most cases the final /i/ turns out to be an allophone of /j/ after a palatal consonant, e.g. *jī to steal* "steal". Usually the monoverbs make use of the same three patterns as the polyverbs, i.e. Hi, Lo and Lo-Hi (= rising).

<table>
<thead>
<tr>
<th>Hi</th>
<th>Lo</th>
<th>Lo-Hi</th>
</tr>
</thead>
<tbody>
<tr>
<td>tī to turn</td>
<td>sā to pour</td>
<td>jī to mould</td>
</tr>
<tr>
<td>sā to speak</td>
<td>sā to spoil</td>
<td>jī to hide</td>
</tr>
<tr>
<td>sā to spoil</td>
<td>jī to pour</td>
<td>jī to search for</td>
</tr>
</tbody>
</table>

Fig. 3b, Margi Monoverbs

In addition there are a few rare examples of polyverbs ending in /i/, e.g. dāsi to boast; dāsī to beboast.

\(^{20}\) The verb *jī to swallow* is an unexplained exception with final /i/.
4. KOTOKO. Kotoko has the same six vowels as the three preceding languages. In this case, final e poses no problem since it is extremely common and clearly pronounced as such. As for i, have been able to determine, Kotoko has two level tones, Hi and Lo, plus a possible downstep not used in basic verb forms. As in Mbari, polyverbs in Kotoko end either in -e, in -i or in -o and as in Mbari, the CVCC and CVCC verbs are phonologically determined; subjects of the same class, the proto -i having been lost when preceded by a monosyllabic, most Kotoko polyverbs fall within the -i verb class, the -i verbs being numerically quite uncommon. Of the four tone patterns theoretically available, only two are used, namely HI-(Lo) and Lo-(Lo).

<table>
<thead>
<tr>
<th>a-verbs</th>
<th>CVCC</th>
<th>CVCC root</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi-(Lo)</td>
<td>give</td>
<td>want</td>
</tr>
<tr>
<td>Lo-(Lo)</td>
<td>died to buy</td>
<td>go to follow</td>
</tr>
</tbody>
</table>

Fig. 4a. Kotoko Polyverbs

Monoverbs occur with four final vowels, the expected -i and -e, plus -i and -o. The verbs 'he to come' and 'he to bring' stand as exceptions. All four vowel classes are found with each of the two basic tones.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi:  id to kill</td>
<td>id to go</td>
<td>id to marry</td>
<td>id to finish</td>
<td></td>
</tr>
<tr>
<td>Lo:  nd to ripen</td>
<td>nd to see</td>
<td>nd to add</td>
<td>nd to call</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 4b. Kotoko Monoverbs

27 The Kotoko data presented in this paper are taken from my unpublished field notes of the Gnamo dialect. The speech of Logoya represented in Lukas' description (J. Lukas, *Die Logoya-Sprache im Zentralen Sudan*, Leipzig 1896) is sufficiently different from Kotoko as to be considered a separate language and not just a sub-dialect.
Plateau-Sahel Branch

S. NGEBM. Phonetically, Ngaim looks like a six-vowel language, although the structural status of /i/ is questionable. According to Schuh's description, /i/ is not phonemic, even though it is extremely common, since it does not contrast with the high vowels /i/ and /u/. Nevertheless, he does make use of the symbol /i/ in his transcription system, sometimes to represent an epenthetic vowel inserted between two consonants, sometimes as a phonic realization of the phonemes /i/ and /u/, and sometimes as a cover symbol for the high vowel archiphone which includes /i/, /u/, and /i/. Tonal, Ngaim has two distinct levels, Hi and Lo, and a morphophonemically produced Downstep.

Regarding polyverbs, Schuh states, "Verbs fall into two lexical classes, final -a and final -e depending on which final vowel they have in the perative." The final -e is often hidden due to the addition of the perative marker -a and a rule that changes it to u. However, if a direct object immediately follows the verb, the -a shows up clearly, e.g.,

*nd kiKew "I ate (Hi)" *nd kiKew-e
but *nd kiKew tiKew "I ate the meat"

Compare an e-verb in the same context:

*nd eKew "I smited (Hi)"
*nd eKew-dak "I smited a hoe"

Tonally, polyverbs fall into two lexical classes, Hi and Lo depending on the tone of the first syllable. The tone of subsequent syllables is predictable by rule. To a great extent, moreover, even the lexically specified initial tone is predictable: Lo if the initial vowel is /e/; Hi otherwise. However, since the correlation of initial vowel and tone is far from perfect, the tone of Ngaim polyverbs still has to be treated as a lexical feature even though the functional load of this tone is extremely low.

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*ibid.*, [1972], p. 15.
All Ngizim monovers (except the highly irregular verbs "go" and "come") have a tone on their lexical vowel, the usual a/p contrast having been lost. (Compare, for example, Ngizim a'd and a'd 'eat' and 'drink' with Bole n'e, Hausa a'd and Tana a'd/mu.) Phonetically, both basic tones are found with the monovers, but the tone assignment is completely predictable. If the consonant of the verb is voiceless, the tone is automatically Hi; if the consonant is voiced, the tone is automatically Lo, e.g. ti "to eat", p4 "to pour" vs. a" to shoot" and s4 "to take". In short, from a lexical point of view, all Ngizim monovers belong to a single class, no contrast existing either in final vowel or in tone.

Fig. 5a. Ngizim Polyverbs

<table>
<thead>
<tr>
<th>a-verbs</th>
<th>o-verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi</td>
<td>a'da to push</td>
</tr>
<tr>
<td>Lo</td>
<td>a'da to marry</td>
</tr>
<tr>
<td></td>
<td>a'da to grow up</td>
</tr>
</tbody>
</table>

Fig. 5b. Ngizim Monoverbs

6. BOLE a. Bole, like Hausa, has a five vowel system, having completely lost the /i/ so widespread in Chadic. All five of the vowels may occur long or short and this vowel length is basically important. By contrast, the two basic tones, Hi and Lo, play a small role in lexical discrimination.

Polyverbs end either in a's or a's (where the a's constitute the present-day Bole reflex of the Proto-Chadic final a's). These sources:
uxically determined vowels, -as and -i, appear only in the perspectives in other aspects they are replaced by morphologically specific vocalic suffixes used in forming the future, subjunctive, imperative, etc. In the case of Bole verbs, both polyverbs and monoverbs, tone is a completely predictable, redundant feature. The -s-final verbs are all Hi-Hi if the first syllable is light (i.e., CV), Lo-Hi if the first syllable is heavy (i.e., CVV or CVVC). The tone of the -s-verbs shows a dialectal variation: in the Gombbe dialect the -s-verbs are all Hi-Hi, in the Fika dialect they are all Lo-Hi. In neither dialect is a tonal contrast involved. Thus we find that the tendency seen in N'gizim to "de-lexify" the tone of polyverbs has been carried to completion in Bole. In contrast to Ga'anda which has five, Tern which has four, Mergi which has three, and N'gizim which has two, Bole has a single tone class to which all of its polyverbs belong:

<table>
<thead>
<tr>
<th>-s-verbs</th>
<th>1-s-verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Gombbe dialect)</td>
<td>(Fika dialect)</td>
</tr>
<tr>
<td>Hi-Hi/ dàmà</td>
<td>Hi-Hi/ dàmà</td>
</tr>
<tr>
<td>Lo-Hi to sweep (assigned, by rule)</td>
<td>Lo-Hi to sweep (assigned, by rule)</td>
</tr>
<tr>
<td>dàmà to sweep</td>
<td>dàmà to sweep</td>
</tr>
<tr>
<td>to obey</td>
<td>to obey</td>
</tr>
</tbody>
</table>

Fig. 4a. Bole Polyverbs

Bole monoverbs occur with two final vowels, -as and -i. Consistent with the general Chadic principle that the number of tone classes of monoverbs can never exceed the number of tone classes found with polyverbs, all Bole monoverbs belong to a single class with Hi tone.

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2. According to R. G. Schuh (personal communication) the tone of polyverbs also appears to be completely predictable in Bade, a language belonging to the same cluster as N'gizim.
KANAKRU 18. Kanakru has six vowels, including /i/, within a word, five vowels in final position. The few words that do end in /i/ are thus considered to be prefixes rather than free forms, e.g. /m hid/ "we remembered" /h i di hi/ "you (pl.) wear". Unlike the other Pktaw-Senah languages in this study, Kanakru has just two distinct tone levels. In addition, it has a complicated system of Downstep caused by tonal displacement rules.

Kanakru polyverbs end either in /i/ or /a/. Taking the Pros- Chadic a/e opposition as being basically a contrast in vowel height, we can identify the Kanakru a-final verbs with the proto-a-verb class and the i-final verbs with the a-verb class. Both of these vowel classes make use of two tone patterns, Hi-Lo and Lo-Hi. These tone patterns, however, are only partly distinctive since the distinction is predictable to a great extent depending upon the nature of the initial phoneme of the verb. If the verb begins with a voiced obstruent, it will definitely have Hi-Lo tone; if it begins with a non-voiced obstruent (either voiceless or glottalized), it will almost always have Lo-Hi tone, only a few exceptions having been found. If on the other hand, the verb begins with a sonorant (nasal, liquid or semivowel) or with a vowel, its tone is not predictable.

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19. Theoretically, one could argue Kanakru as having a word-final morphophonemes which in all cases is either deleted or realized.
Kasankur has no true monoverbs. Instead it has verbs of the form CVV which have to be treated as a special type of polyverb. Some of these CVV verbs seem to have developed from monoverbs by the addition of a final vowel, e.g. addi “to get” cf. Bole sedi; pidi “to do”, cf. Hausa yedi. Others seem to have derived from CVUV verbs by the loss of the intervocalic consonant, e.g. bofi “to shed” < bisi, cf. Bola bisea; tafi “to go” < tasi, cf. Hausa tafi. Like the regular polyverbs, CVV verbs end either in -i or in -e and have either Hi-Lo or Lo-Hi tone, subject to the same conditions described above.

a-verbs
c-verbs

Hi-Lo
[predictable] addi to end
[not predictable] pidi to pat aside

Lo-Hi
[predictable] bisi to grink
[not predictable] pidi to do

di to prevent
ebi to eat

Fig. 12. Kasankur CVV Polyverbs

8. HAUSA. Like Bole, Hausa has a five vowel system, all of which occur long or short. Also like Bole, it has a straightforward system of two level tones, Hi and Lo, with falling tone occurring as a combination of these two. At first glance, the Hausa verbal system looks markedly different from that of the other languages included in this study. However, under closer analysis — which involves a reinterpretation of Parsons’ grade system as well as efforts at internal reconstruction — Hausa can be shown to share the major features of Chadic verb classification. Essentially this means that

as in. However, unlike the case of Tork, where such an analysis is required there is little synchronic motivation in Kasankur for adopting this abstract approach.


* F. W. Parsons, op. cit.*
Hausa has retained the opposition between monovebs and polyverbs, and that within polyverbs it has continued to distinguish two and only two subclasses on the basis of the final vowel.

As I have demonstrated elsewhere, the contrast between grades I and II in Yoruba's well-known system is merely a survival of the Proto-Cladic distinction between a-verbs and o-verbs (the latter ending in -i in present-day Hausa). While this identification is not evident if one looks at Hausa verbs in their citation form only, it becomes immediately apparent as soon as one's focus is shifted to the verb form used before nouns direct objects, e.g.

plâd to roast the plâd ndâmâ she roasted meat (a-verb)
sâpâ to buy the sâpâ ndâmâ she bought meat (o-verb).

The a/o opposition also shows up when so-called "irregular" verbs ending in -i are incorporated into the Hausa verb system, e.g.

tâ sâpâ "she entered" (a-verb)
tâ sîfî "she went" (o-verb).

Contrary to what was previously thought, tone of basic verbs in Hausa is not a reducible feature. While the functional load of verb tone is admittedly low, nevertheless it is lexically determined and has to be marked as such. In the case of Hausa polyverbs, two tone patterns are used, Hi-Lo and Lo-Hi, both of which occur with both vowel classes.

<table>
<thead>
<tr>
<th>a-verbs</th>
<th>o-verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hi-Lo</td>
<td>gâli to go</td>
</tr>
<tr>
<td>Lo-Hi</td>
<td>sâpâ to buy</td>
</tr>
</tbody>
</table>

Fig. 12. Hausa Polyverbs

The Hausa monoverb system is practically identical to that of Bole. The monoverbs make use of the same two final vowels, /o/ and /i/, and occur with the same Hi tone. Hausa monoverbs such as sâpâ "to go" and gâli "to want" are derivative forms (grades IV

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and VI in Parsons' system) and thus do not constitute examples of other final vowel classes.

-ii

III. a to drink | ši to eat

Fig. 8b. Ixvas Monoverbs

III. DISCUSSION AND CONCLUSIONS

The evidence from the eight languages surveyed above clearly supports the claim that Proto-Chadic Polyverbs fell into two phonologically distinct classes depending on the lexically intrinsic final vowel, either /a/ or /i/. As best as can be determined, these verb classes were purely phonological classes with no semantic correlates. Considering the time depth that must be involved from Proto-Chadic times to the present day, it is remarkable that this basic a/i dichotomy has been retained so faithfully in the languages in this study, and, moreover, that the original two vowels themselves have undergone such minimal change.

Having said that all the languages in the study manifest the original distinction between a-verbs and i-verbs, it is important to point out a noticeable difference between the Platean-Sahel languages and the Bin-Mandara languages. While the Platean-Sahel languages do preserve the a/i dichotomy, the contrast is much more fragile than in the case of the Bin-Mandara languages. That is to say, in all four Platean-Sahel languages, one finds the a/i dichotomy limited to verb forms used in certain environments, whereas in other morpho-syntactic environments the distinction is obliterated. In Ngizim, for example, verbs in the perfective aspect exhibit the a/i contrast (e.g., șebas „to marry” vs. šiša „to enter”) whereas in the the subjunctive, they all have the underlying final vowel by /i/, (e.g. șebi „that one marry”, šii „that one enter”). In Kanakuru, the „second perfective” (an aspect used in place of the perfective in the context of negation or emphasis) requires the addition of a suffix /a/ to the verb.
thereby obliterating the distinction between the two verb classes, e.g.

\[
\begin{align*}
\text{nt ad} & \quad \text{but} \quad \text{winda ad} \quad \text{nt} \\
\text{I burned it} & \quad \text{I didn't burn it} \\
\text{nt en} & \quad \text{but} \quad \text{winda en} \quad \text{nt} \\
\text{I remembered} & \quad \text{I didn't remember}
\end{align*}
\]

In Bele, interestingly, the distinction between the two vowel classes is retained (in modified form) in the singular imperative but eroded in the plural imperative, e.g.

\[
\begin{align*}
\text{basic verb} & \quad \text{sg. imperative} & \quad \text{pl. imperative} \\
\text{minda to wash} & \quad \text{minda} & \quad \text{minda} \\
\text{pôrd to say} & \quad \text{pôrd} & \quad \text{pôrd}
\end{align*}
\]

Finally, we can illustrate the same phenomenon in Hausa by comparing basic verbs with verb forms containing a derivational extension, e.g.

\[
\begin{align*}
\text{basic verb} & \quad \text{extended verb} \\
\text{fâld to go out} & \quad \text{flush to come out} \\
\text{fâld to fall} & \quad \text{flush to fall (in this direction)} \\
\text{âldâ to cook} & \quad \text{âldû to cook all} \\
\text{âldû to buy} & \quad \text{âldû to buy all}
\end{align*}
\]

With monoverbs, it is also clear that Proto-Chadic distinguishes between those that were lexically a-final as opposed to those that were lexically a-final. Whether the Proto-language also distinguished a third vowel class is not clear. Since all of the Bis-Mandara languages in this study contained at least three vowel classes of monoverbs and none of the Plateau-Sahel languages contained more than two, it seems likely that this difference must date back to the time of the split between the two branches. Proto-Bis-Mandara would thus be reconstructed with three monoverb vowel classes, -a, -i and -i/u (the exact quality of the third vowel unknown) whereas Proto-Plateau Sahel would be reconstructed with two monoverb classes, namely final -a and final -i/ -u. For the time being I would not like to guess which
branch best represents the original system of Proto-Chadic, and which branch has innovated by adding or losing the extra vowel class. Further analysis of unanalyzed intervocalic forms is needed.

Considering the fact that tone has generally been ignored in treating Chadic languages at a comparative level, it is an exciting discovery to find that aspects of tone can be incorporated in a reconstruction of the Proto-Chadic verbal system. The major fact about Proto-Chadic tone that emerges from the evidence presented above is that tone was lexically significant for Chadic verbs and that the tonal patterns used were independent of (not varying with) the vowel classes. It seems likely that the tonal patterns available for any one of the polyverb or monoverb vowel classes would have been available for any of the others.

Reconstruction of the actual tone patterns used with Proto-Chadic verbs is complicated by the fact that we do not know for certain whether the proto-language had two or three basic tone levels. Nevertheless, assuming an original two tone system, a consideration of the evidence does point to certain generalizations. If we compare Tena and Galanda, eliminating the Mid tone, with Margi and Kotoko, both of which are two tone languages, we can reconstruct three verb tone patterns for Proto-Bin-Mandara polyverbs, namely Hi-Hi, Lo-Lo, and Lo-Hi. There is no evidence for the existence of the theoretically possible fourth pattern, Hi-Lo.

Proto-Plateau Sahel, on the other hand, probably utilized only two tone patterns for its polyverbs, namely Hi-(Lo) and Lo-(Hi). As in the case of monoverb vowel classes, we find Bin-Mandara with a richer inventory than Plateau-Sahel—and again we cannot decide which branch reflects the Proto-Chadic system.

Monoverbs in Proto-Bin-Mandara undoubtedly occurred with two and only two tones, namely Hi and Lo. The rising tone now found with Margi monoverbs, for example, must represent a secondary development from the Lo-Hi polyverb pattern. In neither Agirm, Bol or Hausa of the Plateau-Sahel branch is tone distinctive with monoverbs—RanaKar has no true mono-

While we cannot be certain about this, a broad look at Chadic languages suggests that the postulation of a two-tone system for Proto-Chadic is a much better working hypothesis than the postulation of an original three-tone system.
verbs — nevertheless we cannot conclude that this was already
the case with the proto-language. It may be true that all Proto-
Plateau-Sahel monoverbs belonged to a single tone class; but it is
also possible that the proto-language lexically distinguished Hi
vowel from Lo tone monoverbs and that the loss of this contrast
in the few languages surveyed represents convergent development.
In any case, while there are doubts about when and where the
contrast was lost, we can be sure that Proto-Chadic monoverbs
were lexically distinguished on the basis of tone, either Hi or Lo.
To summarize, we can say the following about verb classes
in Proto-Chadic. All verbs ended in a vowel. The major distinction
was between verbs of the form CV ("monoverbs") and those with
other canonical shapes ("polyverbs"); the most common type
being CVCV. Polyverbs ended either in -a or in -u and utilized
at least two and possibly three tonal patterns, namely Hi-Lo,
Lo-Lo, and possible Lo-Lo. Monoverbs occurred with final -a and -
and possibly with a third vowel (e.g. monoverbs with both (or at
least three) final vowels occurred both with Hi and Lo tone. The
reconstructed system of Proto-Chadic verb classes is depicted in
the following diagram:

<table>
<thead>
<tr>
<th>Polyverbs</th>
<th>Monoverbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>-a</td>
<td>-a</td>
</tr>
<tr>
<td>Hi-Lo</td>
<td>Hi-Lo</td>
</tr>
<tr>
<td>Lo-Lo</td>
<td>Lo-Lo</td>
</tr>
<tr>
<td>Lo-Lo</td>
<td>Lo-Lo</td>
</tr>
</tbody>
</table>

Fig. 9. Proto-Chadic Verb Classes

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In some Plateau-Sahel languages not included in this study e.g. Sira, there are tonally distinct classes of monoverbs. For further information, see H. Jungraithmayr, "Die Sprache der Sira (Mugbara) in der Region "Arka und Cruise" XLVII, 1923/24, pp. 3-99, 301-3.