

**COMPARATIVE CHADIC REVISITED**

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The year 2006 marks the 65th birthday of Russell Schuh, a very well-liked and much admired scholar who has established himself as one of the world's leading Chadicists. The year also marks the fortieth anniversary of the publication of Newman and Ma's "Comparative Chadic" (1966), a paper that, as it turned out, played an important role in the development of Chadic linguistics. And looking at milestones, this is the seventieth anniversary of Lukas's seminal paper (1936), which can be said to mark the true beginning of Chadic studies. It thus seems appropriate to use this occasion to step back and see where we stand as far as our knowledge of Chadic is concerned (see Schuh (2003) for a concise overview of the family, and Pawlak (1994) for a fuller study of comparative morpho-syntax). The question is, what do we know with some degree of certainty and what is it that we still do not know?

We certainly ought to understand more about Chadic than we did forty years ago for no other reason than because of the impressive quantity of scholarly research on Chadic since that time. Excluding Hausa—which, strictly speaking one should not since it has always played a major role in our understanding of the family—the scholarly literature contains over 1,000 publications on Chadic. (For a thorough list as of a decade ago, see Newman 1996.) Of these publications, only 10% were published in the century and a half up to 1966 whereas the other 90% were published between then and the present. These modern-day publications include descriptive studies of individual Chadic languages, e.g., Schuh's (1998) comprehensive grammar of Miya, comparative works, e.g., his insightful analysis of Chadic determiners (Schuh 1983), and lexical reconstructions, e.g., his careful treatment of West Chadic verbs (Schuh 1977).

My intention here is to provide a personal assessment of the current situation in comparative Chadic drawing on my years of experience in this field. Hopefully

most of what I say can be considered to be fair and reliable, although naturally not everyone will agree fully with everything that I have to say. The presentation will be in the form of plainspoken, straightforward statements, sometimes with illustrative examples, but without the kind of extensive supporting evidence that would be required if the goal were to “prove” that all of the claims were valid. Some of the statements are presented as “facts”. Most (or at least many) of these are generally accepted by almost all Chadicists. Others of these “factual” statements relate either to matters that are less well known or where I personally am prepared to make a strong claim even though other scholars possibly hold alternative views. Where factual statements are not possible, I have either offered hypotheses requiring verification or refutation or else have simply posed questions, i.e., admitted that we are dealing with an aspect of Chadic linguistics about which we as yet know very little.

## 1. Classification

*1.1.* Chadic is a valid family, i.e., all ( $\pm$  130–150) Chadic languages are genetically closer to one another than they are to any language outside of Chadic. Chadic is thus unlike Cushitic, which in its earlier broader conception included groups like “West Cushitic” (= Omotic) and Beja, some of which various scholars now view as independent Afroasiatic families rather than as branches within Cushitic (see Hetzron 1980, for example).

*1.2.* Chadic is a member of the Afroasiatic (AA) phylum. Whatever doubts may have existed about this even into the 1980s (see Newman 1980 and the review by Cohen 1984), the relationship can now be accepted as fact. (By fact I mean as certain as the inclusion of Iranian, for example, in Indo-European.)

*1.3.* Where Chadic fits into the AA tree, on the other hand, remains unascertained. Two reasonable hypothesis stand out, although there are others that could be explored. The first is that Chadic is a very early offshoot from AA, either the earliest (if Omotic is not the first—either because it is not AA or because it properly belongs within Cushitic) or the second offshoot after Omotic. The other is that Chadic forms a group with Berber, a relationship that is not immediately evident because of the enormous secondary influence of Semitic on Berber and because of the direct and areal influences of sub-Saharan African languages on Chadic extending over millennia. This latter alternative is my own hunch, but at present that is all it is, namely, a hunch.

1.4. The best starting point for Chadic internal classification is Newman (1990), which divides Chadic into four major branches: West, Biu-Mandara (= Central), East, and Masa.

1.4.1. The Masa group, which consists of a small number of very closely related languages, is most likely an independent fourth branch of the family. The evidence for including it within Biu-Mandara, as has been suggested by a number of scholars, is unconvincing.

1.4.2. The West and East branches are coherent groups. Biu-Mandara (Central Chadic), by contrast, is much more heterogeneous, the inclusion of Kotoko, and the subgrouping position of Gidar being particularly problematic.

1.4.3. The basic division of the West branch into subbranch A (which includes Hausa) and subbranch B (which includes Bade) is solid. The main subclassification question that needs to be addressed is the position of the Zaar (= "South Bauchi") language group. Although these languages have been classified in subbranch B, and at one time were thought to have a particularly close relationship to the Warji ("North Bauchi") group, they have features that look very A-like. Thus, the Zaar languages possibly need to be extracted from West-B and either placed within West-A, coordinate with the other West-A groups taken as a whole, or else be treated as a third subbranch (West-C) within West Chadic.

1.4.4. Subbranch A of West Chadic has been classified internally as containing four separate groups: Hausa, Angas, Bole, and Ron. The subgrouping relationship of these groups has not been delineated. The hypothesis that strikes me as most likely is that the first cut is Hausa-Angas-Bole vs. Ron, and that the next grouping combines Hausa-Angas as opposed to Bole.

## 2. Phonology

2.1. Proto-Chadic (PC) had a rich consonant system with 3 phonation types (voiceless, voiced, glottalized) and at least three, and probably four, distinctive positions of articulation, namely labial, alveolar, velar, and possibly palatal. In many languages (e.g., Hausa) the palatals constitute partially conditioned variants of corresponding alveolars (or velars in the case of some languages) as well as being contrastive phonemes in their own right. This was possibly the case in PC as well. PC probably also made use of palatalization (e.g.,  $k^y$ ) and labialization (e.g.,  $k^w$ ) as secondary articulations.

The following table presents common Chadic consonants found throughout the family (ignoring secondary palatalization and labialization). This inventory can serve as a reasonable starting point for reconstructing the PC consonant

system. (Comments, both about what is included and what is not, follow the table.)

*Table 1: Common Chadic consonants*

p	t	č	k
b	d	j	g
β	ɗ	ɗʸ	ɡ/ĸ
	ts		
	dz		
f	s	š	x
v	z		ɣ
	ʈ		
m	n	(ɲ)	ŋ
	r		
	l (= [ɭ] ?)		
w		y	

2.1.1. In addition to a full set of stops and fricatives, PC probably had alveolar affricates /ts/ and /dz/, and a voiceless lateral fricative /ʈ/.

2.1.2. We do not know whether PC distinguished bilabial stops from fricatives, i.e., /p/ from /f/ and /b/ from /v/. Some languages, e.g., Tera, have all four, whereas others, e.g., Hausa, have only two, namely, a voiceless labial, with variant phonetic manifestations, and /b/. My guess is that PC had more than just two, i.e., that it either had all four (/p, f, b, v/) or at least three (/p, b, v/).

2.1.3. PC probably had a full set of nasals (/m, n, (ɲ), ŋ/) matching the stops and fricatives. These nasals would have only functioned consonantly and not as syllabic nasals.

2.1.4. Whether PC had a set of prenasalized consonants (/mb, nd, nj, ŋg/) is uncertain. Evidence points in both directions. These consonants are extremely common, almost ubiquitous, in current-day Chadic languages and occur widespread across all branches of the family, thus suggesting that they derive from the proto-language. On the other hand, correspondences between these sounds are erratic and reliable reconstructions containing them lacking. My own guess is that they were *not* present in the proto-language, but if I turned out to be wrong, I would not be surprised.

2.1.5. Chadic languages typically have two liquids, /r/ and /l/. A number of languages (e.g., Hausa) distinguish between two different R sounds, a flap and a roll, but this is invariably the result of independent parallel innovations. Although /ɽ/ is phonetically the voiced counterpart of /ʎ/, and in some languages functions as its pair, its historical connection is probably with the liquid /l/. That is, from a historical perspective, /ɽ/ should be thought of as a liquid, albeit with fricative articulation, as contrasted with /ʎ/, which should be thought of as a fricative related to /s/ and /ʃ/, albeit with lateral articulation.

2.1.6. The glottalized/laryngealized “implosives” /ɓ/ and /ɗ/ are found throughout the family and generally appear as such. Glottalized palatals appear variably as /ɗʎ/ or /ʎʎ/, or as ejective /cʼ/. Glottalized velars in Chadic are much less common, but they do occur. They appear as an implosive /ɠ/ (Tera), an ejective /kʼ/ (Hausa and some varieties of Kotoko), and as glottalized /ʷw/ (Margi), the original Proto-Chadic form being undetermined. Other glottalized consonants, e.g. /ʔ/ or /tʼ/ (Warji) are sporadic. Languages belonging to the Goemai subgroup of West Chadic are reported to have an ejective consonant series (/pʼ, tʼ/, etc.) that contrasts with the normal “implosive” series (/ɓ, ɗ/, etc.). This is a recent innovation without broader historical significance.

2.1.7. PC did *not* have glottal stop /ʔ/ in its phonemic inventory nor did it have /h/ (see Newman 1976). The presence of glottal stop in current-day Chadic languages is typically a secondary development, emerging from an allophone of /ʎ/ or /ʷw/ or representing a non-distinctive phonetic feature of word onset. Quite often, it is just a linguist’s “invention”, i.e., the unjustified postulation of a non-existent phoneme based on preconceptions drawn from Arabic. Similarly, the /h/ that appears in various languages invariably represents a secondary innovation, e.g., a development from /f/ or from /x/ (or from merger of /x/ and /χ/) or from nothing, i.e., from a phonetic characteristic of word onset articulation.

### 3. Vowels

3.1. Current-day Chadic languages are found with as few as two vowels (/a/ and /ə/) and as many as nine vowels plus vowel length. Although we lack a good picture of what the PC system looked like, we can, nevertheless, make some negative statements with a reasonable degree of certainty. For example, we can be sure that PC did *not* have a balanced /i, e, ε, a, ɔ, o, u/ 7-vowel system such as is found in numerous East Chadic languages. We can also be sure that PC did not have ATR-type vowel harmony, attested, inexplicably, in Tangale. Finally, PC did not have distinctive nasalized vowels nor did it employ syllabic nasal consonants.

3.2. My current hypothesis—which is different from the one I held ten years ago (and probably the ten years before that)—is that PC had 3 vowels (/i, u, a/), although there may have been only a two-way contrast (i/u vs. a) in word-initial position. The /ee/ and /oo/ that one finds in many present-day West and East Chadic languages probably developed independently, either from diphthongs /ai/ (< /ay/) and /au/ (< /aw/) or from lowering of original /ii/ and /uu/.

In word-medial position the three vowels could all occur both long and short. There was no length contrast in word-initial position, where the vowels were short, nor in word-final position, where the vowels were also short except for /a/ which may have been long in CV words, e.g., *saa* ‘drink’, *taa* ‘cow’. The four-vowel system typical of Biu-Mandara, namely /i, u, ə, a/ without length, could easily have arisen from an original 3-vowel system with length by means of a diachronic scenario such as the following: *\*i* and *\*u* merged to /ə/, *\*ii* and *\*uu* lost vowel length and changed to /i/ and /u/, and *\*aa* and *\*a* merged to /a/.

### 4. Tone

As far as we are aware, all current-day Chadic languages are tonal, both two tone levels (e.g., Bole) and three tone levels (e.g., Tera) being common, sometimes accompanied by downstep. Falling tones are common whereas rising tones, such as are found in Margi, are uncommon. At present we have no idea at all about tone at the PC level. Tone ought to be reconstructable at the level of the major groups and branches but it has not been done yet: this is research crying out to be done. Whether tone can be reconstructed all the way back to PC or whether PC was characterized by stress or pitch-accent is an open question.

## 5. Syllables and Words

Chadic languages are remarkably similar in their syllable structure pointing to the following as features reconstructable for the PC stage.

5.1. PC did not have consonant clusters, i.e., CC functioning as complex onsets or codas. PC almost certainly *did* have abutting consonants C.C, i.e., a coda consonant closing one syllable followed by a consonant beginning the next syllable (e.g., Hausa *gul.bii* ‘stream’). In monomorphemic words, the two C’s probably had to be different, i.e., geminates were not allowed, although geminates very possibly did occur as a result of morphological/grammatical processes.

5.2. Overheavy syllables consisting of long vowels (or diphthongs) in closed syllables, i.e., CVVC, were not allowed.

5.3. Word-final consonants, including a range of obstruents, were probably more prevalent in PC than they are in many current-day languages. Thus a PC word such as ‘fish’, for example, could just as easily have been *\*kirif* as *\*kirfi*.

5.4. Vowel-initial syllables *were* allowed at the beginning of words, e.g., *\*am* ‘water’. The requirement that words begin with a consonant, such as exists in Hausa, has been introduced independently a number of times in different Chadic languages, representing a Chadic “drift” rather than a retention from proto-Chadic. (In the canonical patterns in the next paragraph, the convention is that the initial C can be zero.)

5.5. Words typically were either monosyllabic, CV or CVC, or disyllabic, CVCV, CVCCV, CVCVC (and CVCCVC?). Underived monomorphemic words were rarely trisyllabic or longer.

## 6. Gender

6.1. PC had grammatical gender as part of its Afroasiatic inheritance. Current-day Chadic languages that lack gender have all lost it at one level or another. The typical Chadic gender pattern is to distinguished two genders only, masculine and feminine. This gender distinction was restricted to the singular. Plurals represent a third category that is impervious to gender. The oft-cited statement about Hausa, which is often extended to other Chadic languages, that plurals are all masculine

is an inaccurate characterization of the facts. It is true that plural and masculine singular nouns in Hausa use the same linking particle /*na* ~ *-n*/ as opposed to the feminine particle /*ta* ~ *-r̃*/; but with other categories such as demonstratives, pronouns, and adjectives, the plural and the masculine singular remain distinct, e.g., *farii* (m.), *faraa* (f.), *faràaree* (pl.) ‘white’.

6.2. The most pervasive gender marker, one that is found in demonstratives, pronouns, and various grammatical morphemes, is the feminine *\*t*, almost certainly a PC feature retained from proto-AA. The two most common masculine grammatical markers are *\*n* and *\*k*.

6.3. Adjectives typically agree in gender and number with the nouns they modify.

6.4. Pronouns typically distinguish gender in the second person (singular) as well as in the third person, e.g., Hausa *ka/ki* ‘you (sg.) m/f’, *shi/ta* ‘him/her’.

## 7. Plurality (Nominal and Verbal)

7.1. A striking feature of Chadic languages is the multiplicity of means employed in forming noun (and adjective) plurals, including (i) a number of suffixes (but rarely prefixes!), e.g., *-n*, *-ki*, *-ai/-ay*, (ii) internal vowel ablaut, including “internal /a/”, (iii) gemination, and (iv) reduplication. The first two likely go back to PC; gemination and reduplication are probably more modern developments.

7.2. Chadic languages typically contain pluractional verbs, namely verb stems indicating multiplicity of action in time or space or actions affecting a number of objects of transitive verbs or subjects of intransitive verbs. (Pluractionals are also common in Niger-Congo languages of Nigeria such as Kaje and Efik; see, e.g., Wolff & Gerhardt 1977). In Chadic, pluractional usage is usually optional and expressive rather than being required by agreement rules.

Although the presence of pluractionals in Chadic is standard, the morphological formation varies widely from language to language, ranging from simple affixation (e.g., *-n*) to total suppletion. Commonly found formatives include partial reduplication (sometimes prefixal, sometime suffixal, occasionally infixal), gemination (probably representing reduced reduplication), and internal vowel ablaut (often internal /a/).

7.3. Grammatical number agreement between verb and subject such as exists in many European nominative-accusative languages is unusual in Chadic, but it does occur. It is found in the Bole subgroup (West Chadic), e.g., (Bole) *isi pata wo* ‘he went out’ vs. *mate peten go* ‘they went out’ (tone not indicated), as well as in Gisiga and Gidar, more distantly related Biu-Mandara languages. (Bole itself is unique in having feminine agreement as well.)

## 8. Pronouns

A typical Chadic pronoun paradigm contains at least eight pronouns indicating person, number, and gender. In the first person plural there is a widespread, though not ubiquitous, inclusive vs. exclusive distinction. This was probably a PC feature and thus nine rather than eight pronouns constitute the norm. (One also finds a dual in some languages, but this is less common.) The following table can be taken as a reasonable starting point for reconstructing PC pronouns.

*Table 2: Common Chadic pronouns*

	<u>sg.</u>	<u>pl.</u>
1	ní	mun (incl.), na (excl.)
2m	ka	kun
2f	ki(m)	
3m	nì	sun
3f	ta	

8.1. Absent in the above list is an impersonal subject pronoun. Pronouns comparable to Hausa *an/a* ‘one, they’, are not common in Chadic. In many languages the impersonal marker tends to be derived from the noun ‘person’.

8.2. In PC, the second person feminine would have been distinguished from the corresponding masculine by /i/ vs. /a/ and in some functions by the presence of a final consonant /m/ as well. A characteristic of the plural pronouns is the final *-n*, presumably related to the plural marker *-n*.

8.3. It is typical of Chadic to employ different pronoun paradigms in different cases/functions. The forms of individual items often differ only in vowel length or tone, or, in the case of the plural pronouns, the presence or absence of final /-n/. However, two pronouns display greater variation in their case forms, namely the first person singular with *\*na/ni* and *\*(w)a*, and the third person masculine singular, with *\*sa/shi*, *\*ya*, and *\*ni*. (In Hausa this archaic *\*ni* is preserved only in the masculine singular determiner *wani* ‘some’, cf. the corresponding third person feminine singular form *wata* (containing *-ta* ‘her’) and the third person plural form *wasu* (containing *-su* ‘them’).)

8.4. A widespread feature of Chadic, presumably inherited from PC, is the use of “intransitive copy pronouns” (ICPs). This pronoun paradigm, which is often similar to that of possessive or indirect object pronouns, is suffixed directly to intransitive verbs, e.g., (Kanakuru) *na yilo-no* ‘I got up’, cf. *mə yilo-mu* ‘we got up’. The exact semantic contribution of ICPs is unclear, but it is fairly certain that their role was semantic/thematic rather than narrowly grammatical/obligatory (see Frajzyngier 1977).

## 9. Reflexives and Reciprocals

9.1. The two most common reflexive formations in Chadic are ‘body’ + possessive pronoun (e.g., Tera *va-mi* ‘ourselves’ lit. ‘body-our’), and ‘head’ plus possessive pronoun (e.g., Kanakuru *ko-mu* ‘ourselves’, lit. ‘head-our’). Some languages, e.g., Bole, allow both formations.

9.2. We have less information about reciprocals, but it appears that the formation is much more varied, including ‘body’ (but generally not ‘head’) + pronoun or else a distinct formative.

9.3. What the situation was like in PC is not known. The hypothesis that I would propose is that PC used “body” to form both reflexives (with a pronoun) and reciprocals (perhaps with a suffixal particle). Fairly early on, reflexives with ‘head’ were introduced, this formation spreading (and continuing to spread) throughout the family, either driving out the ‘body’ formation or restricting its function to reciprocals.

## 10. Possessives

10.1. The (almost) exclusive word order for Chadic possessives is possessed + possessor, e.g., (Hausa) *gida-n Muusaa* ‘Musa’s house’, lit. house-of Musa.

10.2. Chadic languages (but not Hausa) typically distinguished alienable vs. inalienable possession, the latter generally being used for body parts and some kinship relations. Regular alienable possession typically involves the use of an overt genitive particle; inalienable possession is indicated by direct juxtaposition of the two nominals, sometimes with a different pronoun set, e.g., (Tera) *kaskar ba-ŋa* ‘my sword’, lit. ‘sword poss.-my’ vs. *xar-a* ‘my hand’ lit. ‘hand-my’; *ƙinndɔ ba-nu* ‘your (pl.) teeth’ (that you bought in the market) vs. *ƙinndɔ-nu* ‘your (pl.) teeth’ (in your mouth).

## 11. Verbal Extensions

11.1. Chadic languages typically have numerous affixal verbal extensions indicating categories such as ventive/ingressive (\*-aw-), totality (\*-any-), completive, partitive, applicative, efferential/egressive, etc. It remains to be determined exactly how many extensions can be reconstructed for PC and what their precise forms were.

11.2. Most likely PC did *not* have a morphological causative extension per se. (The similarity between the Hausa -s grade 5 efferential suffix (formerly termed “causative”) and a similar formative in Semitic is accidental and of no historical significance.) Rather, causatives were expressed *syntactically* by sentences of the type X caused Y (that) Y do Z (where ‘caused’ would be expressed by a verb such as ‘to put’).

## 12. Tense/Aspect/Mood

TAM marking in Chadic is accomplished by the use of overt TAM markers combined with distinct preverbal pronoun paradigms, sometimes accompanied by inflection in the verb form itself (see Wolff 1979). Also common is the use in certain tense/aspects of a verbal noun in place of the finite verb.

12.1. TAM markers typically occur between the subject and the verb, often fused with or closely tied to a weak subject pronoun, e.g., (Tera) *Ali wa masa koro* ‘Ali

(perf.) bought a donkey’, *taa* (< *to* + *wa*) *masa koro* ‘You (perf.) bought a donkey’. (Examples of Tera TAM markers are *wa* ‘perfective’,  $\emptyset$  [zero] ‘relative perfective’, *nə* ‘negative perfective’, *a* ‘continuous’, *ka* ‘future’; *kə* ‘subjunctive’, and *tə* ‘sequential’.) Much less common, but still far from rare, is the use of post verbal TAM particles, either immediately after the verb or after the VP including objects. Examples from widely distant languages are *ko* in Gidar (Biu-Mandara) and *ko/wo* in Kirfi (West Chadic).

12.2. Different TAMs often make use of different subject pronoun paradigms, e.g., (Hausa) ‘they’: *sun* (completive) vs. *sù* (subjunctive and aorist); (Kanakuru) ‘she’:  $\emptyset$  [zero] (perfective) vs. *shèe* ‘continuous’.

12.3. In some languages (e.g., Hausa and Tera), the verb itself is invariant as far as TAM is concerned, the specification being done by an overt TAM marker and/or by the form of the subject pronoun. In others, especially in West and East Chadic, verbs undergo stem modification in different TAMs. In some cases, there are only two different stem forms, often referred to as perfective vs. imperfective, one or the other of which might be basic and other marked. But equally often there are three or even four different stems, that is, the verb displays different forms depending on whether the stem is, for example, the basic unmarked form (Grundstamm), the perfective stem, the imperfective stem, or the subjunctive stem. The various stems typically differ in terms of vocalization (qualitative and/or quantitative, internal and/or suffixal) and/or tone.

12.4. Whatever the general TAM marking system that exists, many Chadic languages have a special distinct imperative verb form indicated by final vowel change and/or tone, e.g., Kanakuru *-u* (e.g., *kàpu* ‘plant!’ cf. *kapè* ‘to plant’), Hausa L-H tone (e.g., *tsàyaa* ‘stop!’ cf. *tsayàa* ‘to stop’). This imperative form is normally used without an overt subject pronoun. Many languages also have a distinct plural imperative, e.g., Tera *ja* ‘to break’, *jo* ‘break!’ (you (sg.)), *ja-ma* ‘break!’ (you (pl.)). This system almost certainly goes back to PC. Less certain, but still quite possible, is the reconstruction for the proto-language of the phonological shape of the suffixes, namely *\*-i* (sg.) and *\*-ma* (pl.).

### 13. Syntax

13.1. With noun arguments, the most common basic word order throughout Chadic is S-V-O. (Pronouns often appear as verb clitics in different positions.)

This almost certainly represents the word order of PC. V-S-O, which occurs in a handful of Biu-Mandara languages spoken in the Nigeria-Cameroon border area (e.g., Gude and Ga'anda), is almost certainly an areal innovation.

13.2. A widespread Chadic pattern, probably inherited from PC, is to have two different word orders for indirect objects depending on the nature of the object. If the IO is a pronoun, then it appears as a clitic attached to the verb before the DO (something like, "He told her a story."). If the IO is a noun, it appears as a prepositional-type phrase after the DO (something like, "He told a story to his mother.")

13.3. Chadic languages are invariably prepositional. In genitive (possessive) constructions, the usual pattern is  $N_1$  of  $N_2$ , e.g. horse of chief = 'chief's horse'. Adjectives follow the modified noun as do numerals and determiners.

13.4. Many Chadic languages have double, discontinuous negative markers, where the  $neg_1$ , which is pre-verbal, and the  $neg_2$ , which is clause final, are sometimes identical (or nearly so), e.g., Hausa *bà ... ba*, and sometimes different, e.g., Bura *adi ... wa*. More common, however, is to have a single negative marker at the end of the sentence, this undoubtedly being the situation in PC.

## 14. Lexicon

There are two readily available reconstructions of PC lexicon, namely Newman (1977) (building on the earlier Newman & Ma (1966)), and Jungraithmayr & Ibrizimow (1994) (building on the earlier Jungraithmayr & Shimizu (1981)). Newman (1977) suffers from a paucity of supporting data, a somewhat simplistic approach to reconstruction, and a neglect of possible PC words that are well attested in one branch of the family only. Jungraithmayr & Ibrizimow (1994) suffers from the presentation of too many alternatives, thereby creating excessive scientific "noise", the tendency to be influenced by preconceptions about what PC ought to look like (specifically the misguided search for mystical triliteral roots), and the failure to provide adequate consideration of vowels. (We know that vowels were lexically significant in PC and that they can be reconstructed, at least in some crude fashion, e.g., *\*wa* 'who?' vs. *\*mi* 'what?', *\*sa(a)* 'drink' vs. *\*ti* 'eat', *\*ba(a)* 'mouth', vs. *\*zi* 'body'.) The main weakness of both works is that the number of reconstructions is so small, barely over 150 items. When originally presented, these first stab reconstructions served a useful purpose; but Chadic

really needs a more extensive, properly-done reconstruction of the proto-language, one that could serve as a point of reference for the next generation of scholars. Independent of or in conjunction with PC reconstruction, Chadic could also benefit greatly by detailed lexical reconstructions of the four branches of the family approached from within those branches.

## 15. Conclusion

The above sketch provides a picture of Chadic linguistics as it exists at this point in time. In some respects, we can be proud of what we have accomplished; in others, we have to admit that our ignorance is still greater than we would have liked. Nevertheless, due to the work of prolific Chadicists such as Russell Schuh, our knowledge of this family has progressed a long way over the past forty years. Let us hope that a new generation will take up the challenge and in the next forty years we will witness even greater strides than we were capable of in the past.

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