The phonology of Proto-Central Chadic : the reconstruction of the phonology and lexicon of Proto-Central Chadic, and the linguistic history of the Central Chadic languages

Gravina, R.C.

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2 Genetic and Areal Affiliations

2.1 Introduction

This chapter deals with the genetic classification of the Central Chadic languages, and with the areal influences that have affected the development of these languages. We will first look at the previous research into the classification of Central Chadic, and then look at the areal influences and genetic splits that have been important in the history of the Central Chadic languages. Finally, we will present a new subclassification of Central Chadic.

2.2 Research on the Classification of Central Chadic Languages

2.2.1 Studies in African Linguistic Classification (Greenberg 1950)

As a starting point we will take Greenberg's major work on the classification of African languages. In the (1950) article he identifies a family that he terms 'Hamito-Semitic', though in later works the name 'Afroasiatic' is used (Greenberg 1966).

From this group he excludes certain languages whose classification was a matter of dispute. These were Fulani, which he placed in the West Atlantic branch of Niger-Congo, the 'Nilo-Hamitic' languages, which he linked with the Nilotic languages, and 'Hottentot', which he linked with the 'Bushman' languages.

Of significance for us is his inclusion of the Chad languages as a branch within Afroasiatic. This branch corresponds to the Chad-Hamitic group proposed by Lukas (Lukas 1936).

Greenberg divided up the Chad languages into nine groups as follows:

1. The languages now classified as West Chadic (Newman 1977a), including Hausa
2. The Kotoko languages, amongst which he included Shuwa Arabic
3. The Bata-Margi group, which comprised what are now known as the Bata, Higi, Margi, Tera and Lamang groups, as well as Podoko from the Mandara group
4. The languages now classified in the Daba, Maroua, Mofu and Mafa groups
5. Gidar (as the sole language in the group)
6. Mandara (including Malgwa)
7. Musgu (the Musgum group)
8. The Masa languages (i.e. Newman's (1977a) Masa branch of Chadic)
9. The languages now classified as East Chadic

The group names I've used are from Gravina (2011), and are the ones I use in the rest of the present study. The names are the same as Newman's (1977a) group names, except where the classification differs.

It is interesting to compare Greenberg's classification with Newman's (1977a) classification of Chadic into four branches. Three of the four branches correspond with individual groups in Greenberg's classification. However what is classified by Newman as Central Chadic is spread over six of Greenberg's groups (2 to 7). This highlights the surprising degree of variation found within Central Chadic.

As evidence for the classification of the 'Chad' languages as a single unit within Afroasiatic, Greenberg cites a number of grammatical features shared between the 'Chad' languages and other languages in Afroasiatic, and lists a number of roots that he reconstructs for Afroasiatic.

Although many of the details of Greenberg's classification have not stood the test of time, his work was broadly correct and laid the foundations for more detailed studies of the Chadic languages.

2.2.2 Chadic Classification and Reconstruction (Newman 1977a)

Newman's 'Chadic Classification and Reconstruction' is probably the most influential work on Chadic classification published to date. It followed on from an earlier work, 'Comparative Chadic: Phonology and lexicon' (Newman and Ma Newman 1966). In it he presents a detailed classification of the Chadic languages, divided into branches, sub-branches, major groups, groups and subgroups. He also proposes a phonemic inventory for Proto-Chadic, gives numerous sound laws and presents reconstructions for 150 Proto-Chadic roots.
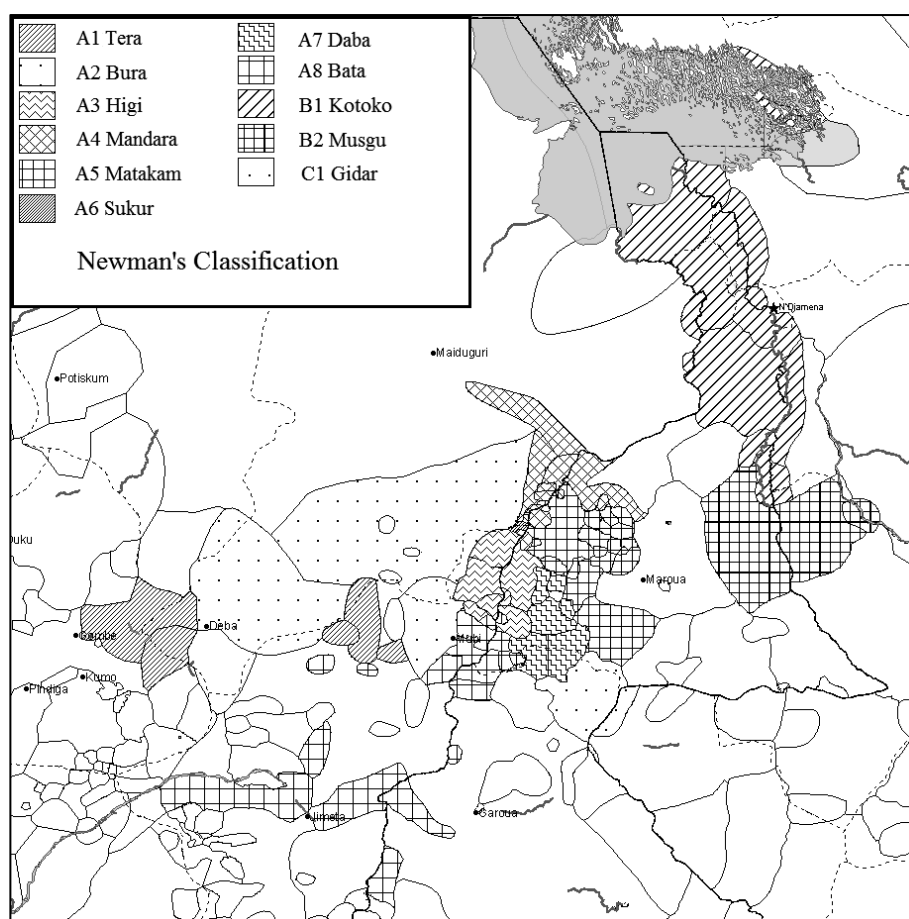
Map 4 - Newman's classification

For Central Chadic (which he termed 'Biu-Mandara'), Newman's classification is as follows:

Sub-branch A
1. Tera group
    a. Tera, Jara
    b. Ga'anda, Hwana
2/3 Bura/Higi major group
  2. Bura group
      a. Bura-Pabir, Cibak, Putai
      b. Margi, Kilba
  3. Higi Group
      Higi, Bana
4/5/6 Mandara/Matakam/Sukur major group
  4. Mandara group
      a. Mandara, Podoko, Glavda, Guduf, Dghwede, Gvoko
      b. Lamang
  5. Matakam (Mafa) group
      Mafa, Mofu, Giziga, Mada, Hurza, Matal
  6. Sukur group
      Sukur
7. Daba group
      Daba, Gavar, Hina
8. Bata group
      Bata-Bachama, Gude, Nzanyi, Gudu
Sub-branch B
1. Kotoko group
      Kotoko, Lagwan, Buduma
2. Musgu group
      Musgu
Sub-branch C
1. Gidar group
      Gidar

The term 'major group' is used for a level between the group and the sub-branch. Not all groups are part of a major group. The geographical distribution of the groups is shown in

Map 4 above.

The classification of Gidar in a separate sub-branch, Biu-Mandara C, comes from a later publication (Newman 1977b). In the original classification, Gidar was classified as part of Biu-Mandara B.

Newman (1977a) separated off the Masa languages into a separate branch, coordinate with West, Central and East Chadic. This was disputed (Jungraithmayr and Shimizu 1981), with Jungraithmayr and Shimizu considering the Masa languages to be part of Central Chadic. However, later work (Shryock 1990) supported Newman's conclusion. We will be following the analysis proposed by Newman and Shryock, and so the Masa languages do not form a part of this study of Central Chadic.

For a synoptic table of the various sub-classifications discussed here, see section 2.2.5.

Newman's consonantal inventory for Proto-Chadic is as follows:

p	t	ts	k	k^j	k^w
b	d	dz	g	g^j	g^w
ɓ	ɗ	ʄ			
f	ɬ, ʂ	s (ʃ)	x	x^j	x^w
		z			
m	n				
	r				
w		j			

Table 4 - Newman's Proto-Chadic consonantal inventory

The symbol 'ʂ' denoted a 'sibilant distinct from *s and *ɬ but of unknown quality'. The (ʃ) is from Newman's (sh), but the significance of the parentheses is not given.

For vowels, Newman was of the opinion that there were at most four vowels *i, *ə, *a, *u, but possibly only two *ə and *a. He described the vowels in his reconstructions as being extremely tentative. He also allowed the possibility that Proto-Chadic had a long vowel *aː.

Newman has published a slightly revised version of this classification (Newman 2013), though it does not present any further justification for the classification.

2.2.3 *Lexicostatistical Classification (Barreteau, Breton, and Dieu 1984)*

In this classification, Barreteau, Breton and Dieu studied the Chadic languages of Cameroon, and determined their relative degrees of relatedness according to the percentage of shared apparent cognates in a list of core vocabulary items, based upon the Swadesh 100 word list (Swadesh 1955). The classification is given in Table 5. The names and numbering system used are their own.

The principle differences with Newman's classifications concern the Kotoko languages, where the lexicostatistical classification spreads them over three groups, as opposed to Newman's single group. Barreteau et al. also link the Margi group (which here includes only members of Newman's Higi group) and the Bata group into a major group, while Newman does not.

Barreteau further developed this lexicostatistical classification (Barreteau 1987a; Barreteau and Jungraithmayr 1993) to include Chadic languages from all branches, though with a reduced number of languages. The classification of Central Chadic which resulted is given in Table 6.

These and other classifications will be compared to my own classification in section 2.2.5.

| Sub-division	Group	Subgroup	Section	Language
1/2 Wandala-Mafa	1 Wandala	East		Wandala, Glavda, Podoko
		West		Vemgo-Mabas, Hdi, Gvoko
	2 Mafa	North-East		Vame, Mbuko
		North-West		Matal
		South	a)	Ouldeme, Muyang, Mada, Moloko
			b)	Zulgo, Dugwor, Merey
			c)	Giziga N, Giziga S, Mofu N, Mofu S
			d)	Cuvok, Mefele, Mafa
3/4 Margi-Gbwata	3 Margi			Psikye, Hya, Bana
	4 Gbwata	North	a)	Jimi, Gude
			b)	Zizilivakan
			c)	Sharwa, Tsuvan
		Centre		Nzanyi
		South		Bata
	5 Daba	North		Buwal, Gavar
		South		Hina, Daba
	6 Gidar			Gidar
	7 Munjuk			Munjuk
	8 Mida'a			Zina, Mazera
	9 Kotoko	South		Lagwan, Mser
		North		Afade, Maltam, Malgbe, Mpade
	10 Buduma			Buduma

Table 5 - Lexicostatistical classifiation of Cameroonian Chadic languages

Sub-branch	Division	Sub-division	Group	Subgroup	Language
Tera-Dzepaw	Tera-Hwona				Tera, Hwana
	Gbwata				Bata
	Bura-Pelasla	Bura-Gude	Bura-Bana	Bura-Margyi	Bura, Margi
				Higi-Bana	Kamwe
					Psikye, Bana
			Ziziliveken-Gude		Zizilivakan, Gude
		Xedi-Mofu	Xedi-Wandala	Xedi	Hdi
				Parekwa-Wandala	Podoko, Mandara
			Matal-Mofu	Matal	Matal
				Mada	Mada
				Mafa-Mofu	Mafa, Mofu
		Pelasla			Vame
	Kada-Munjuk				Gidar, Musgum
	Buwal-Daba				Buwal, Daba
	Masa-Dzepaw				Masa
Jina-Yedina	Jina				Zina
	Lagwan-Yedina		Lagwan-Mpade		Lagwan, Mpade
			Yedina		Buduma

Table 6 - Lexicostatistical Classification of Central Chadic

This later classification changes the degrees of separation of several groupings, but is otherwise broadly similar to the earlier classification.

The following map shows the geographical distribution of the sub-divisions according to this classification.
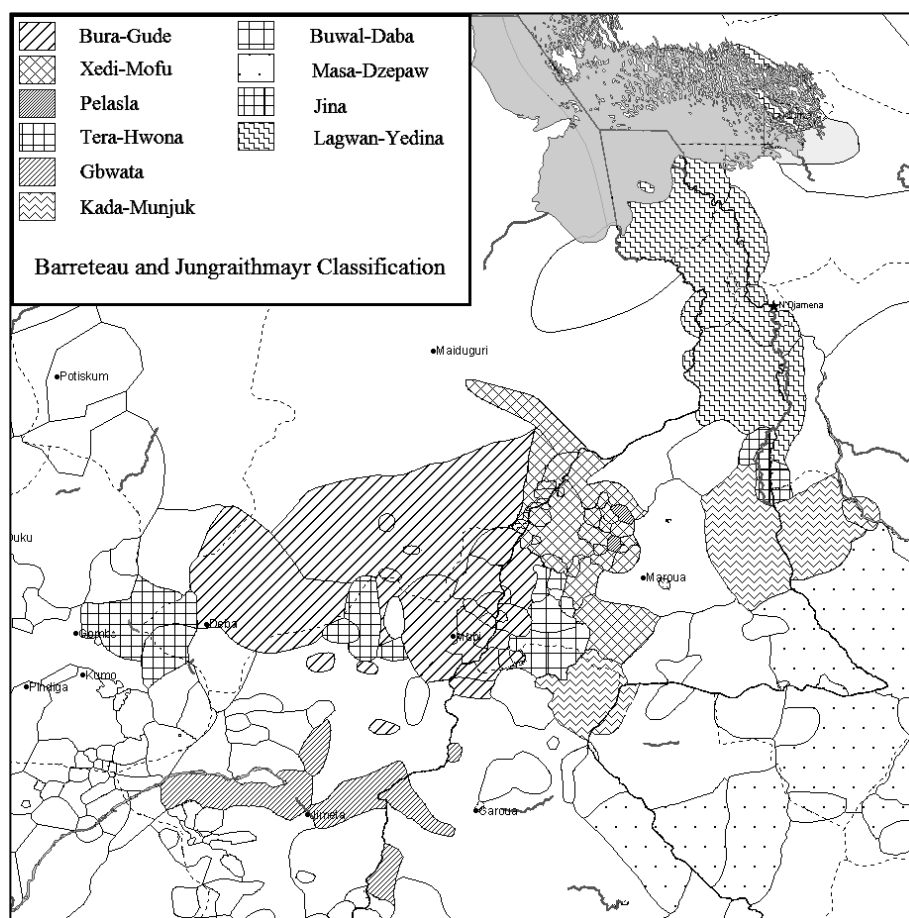
Map 5 - Barreteau and Jungraithmayr (1993) classification

This later classification is important as it covers the whole of Central Chadic, though it lacks some of the fine detail of the earlier classification. The earlier classification is used in the *Atlas Linguistique du Cameroun* (Dieu and Renaud 1983) and is widely cited within Cameroon and in research on Cameroonian languages.

## 2.2.4   The Internal Classification of Chadic Biu-Mandara (Gravina 2011)

In my own classification of Central Chadic languages (Gravina 2007a; Gravina 2011), I followed the techniques of the comparative method, building on Newman (1977a), but restricted to Central Chadic. The same classification is used in this study, except that the existence of a Mafa-Sukur-Daba major group is now considered to be unproven, and Sharwa has been reclassified in the Bata Proper subgroup. The updated classification is presented below. Names in parentheses at the language level are for varieties listed as dialects in the Ethnologue (Lewis 2009). The withdrawn Mafa-Sukur-Daba major group is given in parentheses.

Sub-branch	Major Group	Group	Subgroup	Language
South	(Mafa-Sukur-Daba)	Mafa		Mafa, Mefele, Cuvok
		Sukur		Sukur
		Daba	Daba	Daba, Mazagway Hidi
			Mina	Mina, Mbudum
			Buwal	Buwal, Gavar
		Bata	Bata Proper	Bachama, Bata, Fali, Gude, Gudu, Holma, Jimi, Ngwaba, Nzanyi, Sharwa
			Tsuvan	Tsuvan, Zizilivakan
		Tera	East	Boga, Ga'anda, Hwana
				Jara, Tera
Hurza		Hurza		Vame, Mbuko

North	Margi-Mandara-Mofu	**Margi**	**Bura**	**Bura, Cibak, Kofa, Putai, Nggwahyi**
			Margi	Kilba, Margi South, Margi
			Mandara	Wandala	Mandara, (Malgwa)
				Glavda	Cineni, Dghwede, Guduf, Gava, Glavda, Gvoko
				Podoko	Podoko, Matal
			Mofu	Tokombere	Ouldeme, Mada, Muyang, Moloko
				Meri	Zulgo, (Gemzek), Merey, Dugwor
				Mofu	Mofu North, Mofu-Gudur
		Higi		Bana, Hya, Psikye, Kamwe
		Lamang		Lamang, Hdi, Mabas
		Maroua		Giziga North, Giziga South, Mbazla
		Gidar		Gidar
	Musgum-North Kotoko	Musgum		Musgum, Mbara, Muskum
		Kotoko North		Mpade, Afade, Malgbe, Maltam
		Kotoko Island		Buduma
		Kotoko Centre		Lagwan, Mser
		Kotoko South		Zina, Mazera

Table 7 - Internal Classification of Central Chadic

The following map shows the geographical distribution of the groups.
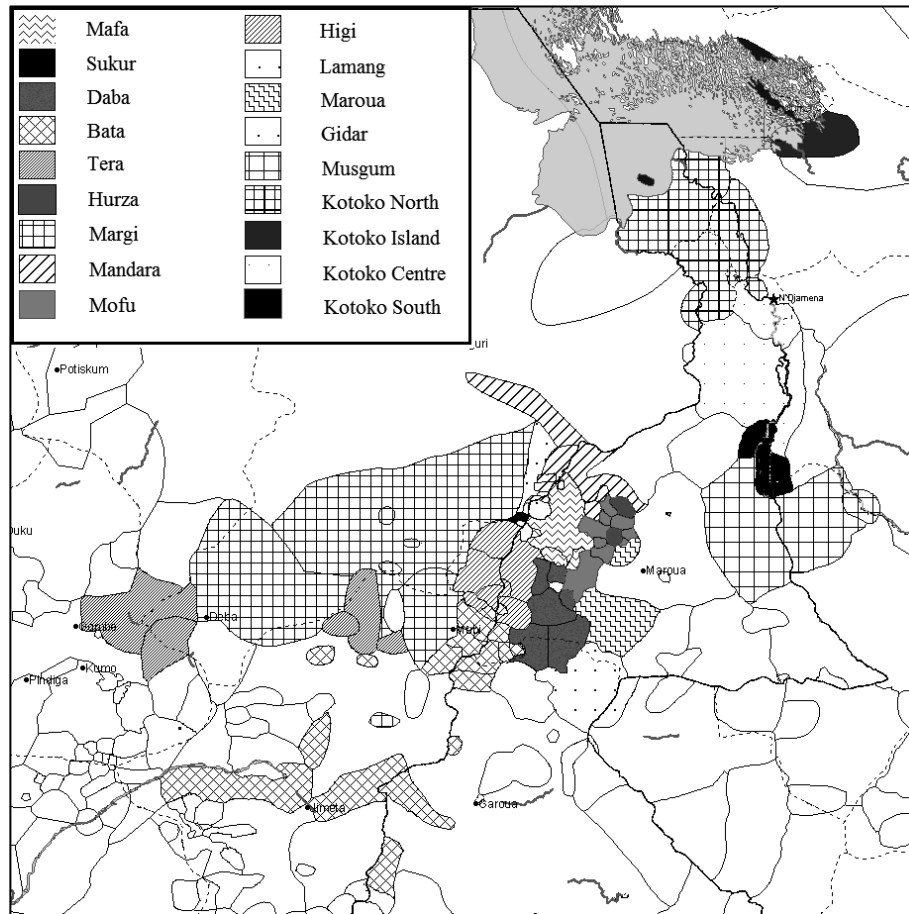
Map 6 – Gravina (2011) classification

2.2.5   Comparison of the classifications

The classifications fall into two types. Newman (1977a) and Gravina (2007a; 2011) base their classifications on shared sound changes, whereas Barreteau et al (1984; 1987a; 1993) use lexicostatistics. The classifications based on sound changes use a methodology designed to focus upon the most reliable indicators of genetic transmission of features (Kaufman and Thomason 1988; Matras 2007), and so can be expected to provide the best genetic classification. Lexicostatistical classifications test for lexical similarity, which is more likely to

be gained through language contact. As such they give classifications which combine both genetic and areal relationships.

In this section we will compare the classifications based on sound changes. In section 2.3 we will compare these classifications with the results from the lexicostatistical classifications, and go on to identify areas of language contact.

The classifications to compare here are those of Newman (1977a) and Gravina (2007a; 2011). They are based on the same methodology, and the differences that exist are due to advances in the quantity and quality of data available in the analysis.

Gravina Sub-branches	Gravina Groups	Newman Groups	Newman Sub-branches
South	Tera	Tera	A
	Bata	Bata	
	Daba	Daba	
	Sukur	Sukur	
	Mafa	Matakam	
Hurza	Hurza		
North	Mofu		
	Maroua		
	Lamang	Wandala	
	Mandara		
	Margi	Bura	
	Higi	Higi	
	Musgum	Musgum	B
	Kotoko South	Kotoko	
	Kotoko Centre		
	Kotoko North		
	Kotoko Island		
	Gidar	Gidar	C

Table 8 - Comparison of Newman and Gravina subclassifications

The groups are for the most part identical between the two classifications, but there are a few exceptions. Newman's Matakam (A5) group has been split up into four separate groups: Mafa, Hurza, Mofu and Maroua. His Wandala (A4) group has also been split into the Mandara group and the Lamang group. At the language level, Matal was classified by Newman in the Matakam group, but has been moved into the Mandara group. Newman classified all the Kotoko

languages in one group, but the differences justify splitting them into four groups: Kotoko Island, Kotoko North, Kotoko Centre and Kotoko South (Tourneux 2001).

There are more significant differences in the division of Central Chadic into primary sub-branches. Newman divided Central Chadic into three sub-branches. Sub-branch C comprised just the single language Gidar. Sub-branch B included the Kotoko languages (B1) and the Musgum group (B2). Sub-branch A was much the largest, containing all the other Central Chadic groups. In an earlier paper (Gravina 2011), I argued that Newman's division into sub-branches was not justified by the linguistic data, but was essentially geographical. Instead, I divide Central Chadic into two main Sub-branches, North and South, which do not correlate with Newman's sub-branches. I also have the Hurza group as a third separate sub-branch. Evidence for this classification will be given in chapter 3, though it should be noted that the evidence for these higher level groupings is limited, and may be subject to future revision.

There are also differences in the major groupings that have been proposed (a level between the sub-branches and the groups). Newman proposed two major groupings. The first was the Bura/Higi major group. There are no sound changes given to justify this grouping, though the languages do share some typological characteristics (see chapter 6). The second major grouping is the Mandara-Matakam-Sukur major group. The languages are all spoken on or around the Northern Mandara Mountains. Again there are no sound changes to justify this grouping, but it does represent a linguistic area (see section 2.3). This grouping covers seven groups in Gravina (2011).

Gravina (2011) included three major groups. The first is the Mafa-Sukur-Daba major group, the second is the Margi-Mandara-Mofu major group and the third is the Northern Kotoko-Musgum major group. However, the Mafa-Sukur-Daba major group was proposed on the basis of a sound change *t→ts in word-final position. A review of the data has led to *ts being considered here as the original Proto-Central Chadic phoneme in the words where this change was proposed. This means that there was no regular sound change in these groups, and the basis for proposing the Mafa-Sukur-Daba major group no longer exists. The definition of the remaining two major groups is justified by shared sound changes, but further data from morphology or from isoglosses is needed before these groupings can be considered to be fully established. For the Margi-

Mandara-Mofu major group, there is some backing from historical studies (Seignobos 2000; MacEachern 2002). For the Northern Kotoko-Musgum major group, there is a no known historical backing.

The classification used in this study is presented in chapter 3, along with the supporting data used to justify the existence of the different groupings. Overall, whilst the different groups within Central Chadic are fairly well defined, the higher relationships between these groups are less well understood and further research is needed.

It is surprising that so few lexical roots have been reconstructed for either Central Chadic or Chadic as a whole. Newman (1977a) includes 150 Chadic roots, and Gravina (2007a) gives 219 Central Chadic roots. Jungraithmayr and Ibriszimow (1994) give several hundred Chadic roots and roots found within Chadic, and Stolbova (1996; 2005; 2006) gives a very large number of Chadic roots, though not all of them are reliably established.

In the roots that have been reconstructed by all these authors, the focus has been on reconstructing the consonants, with little attention given to reconstructing vowels or prosodies.

2.3   Contact-induced Change

In order to understand the processes involved in the history of the Central Chadic languages, it is necessary to look both at the genetic linguistic history and at the history of language contact. In this section we will look at the linguistic evidence for areas of contact between languages.

We will first look at the geography of the region, and its role in language contact.

The second section compares the classification used in this study with the classifications based on lexicostatistics, in order to build a picture of the interplay between genetic and areal relationships amongst the Central Chadic languages. There will be a particular focus on the mismatches between the two types of classification.

The third section presents a brief summary of the phonological types found within Central Chadic, and their geographical distribution.

The fourth section combines the results of the comparison of the classifications with the geography and the phonological typology, leading to the identification of four primary areas of language contact.

2.3.1 Geography

The geography of the Central Chadic region divides into four broad areas.

Firstly there is the area of the Mandara Mountains. The main massif – the Northern Mandara Mountains – is home to the Mafa group languages. Around the periphery of the Northern Mandara Mountains we have the Sukur and Lamang groups to the west, the Mandara group to the north, the Mofu and Hurza groups to the east, and the Daba group to the south.

The second geographic area is the Nigerian Plains area, situated to the west of the Mandara Mountains. It is in this area that the Bata, Margi, Tera and some Higi languages are spoken. The Tera group is quite distinctive, and shows few signs of contact with the other Central Chadic languages of the Nigerian Plains.

The third area is the Eastern Plains, another area of plains lying to the south and east of the Mandara Mountains. Here we find the Maroua, Gidar and Musgum groups.

The final area is the Lake Chad Area around the southern end of Lake Chad and along the rivers that flow into it. In this area we find the languages of the four Kotoko groups.

To the east and west there has been influence from other Chadic languages. In the east, the Masa group languages have had some effect on the languages of the Musgum group, and possibly also the Kotoko languages. To the west there has been contact with the West Chadic languages, especially Hausa.

In the following sections we shall examine in more detail how the linguistic evidence combines with the geographic situation to establish the areas of contact-induced change.

2.3.2 Synthesis of the classifications

Barreteau et al's classifications based on lexicostatistics (1984; 1987a; 1993) differ markedly from the classifications based on sound changes, and comparing these classifications can help to highlight what are genetic groupings and what are areal groupings. Where languages and groups of

languages appear closely related in lexicostatistical classifications, but are more distant in the genetic classifications, this can be attributed to contact between the languages or groups. The opposite situation – where languages that are genetically closely related appear distant in the lexicostatistical classifications – does not exist in the classifications of Central Chadic. In the following paragraphs we will highlight where there is a mismatch between the genetic and lexicostatistical classifications, and discuss the reasons for the mismatches.

The following table shows the higher level groupings from Barreteau and Jungraithmayr (1993), along with the corresponding groups as defined in the classification presented here. (See Table 6 on page 24 for the full classification.)

Sub-branch	Division	Sub-division	Groups
Tera-Dzepaw	Tera-Hwona		Tera
	Gbwata		Bata (Bata language only)
	Bura-Pelasla	Bura-Gude	Bata (excluding Bata language)
			Margi, Higi
		Xedi-Mofu	Lamang, Mandara (excluding Matal)
			Mandara (Matal only), Mofu, Mafa (possibly Maroua)
		Pelasla	Hurza
	Kada-Munjuk		Musgum, Gidar
	Buwal-Daba		Daba
	Masa-Dzepaw		Masa branch (not included within Central Chadic)
Jina-Yedina	Jina		Kotoko South
	Lagwan-Yedina		Kotoko Centre, Kotoko North
			Kotoko Island

Table 9 - Overview of Barreteau and Jungraithmayr (1993)

In Barreteau and Jungraithmayr (1993), the Kotoko languages (i.e. their Jina-Yedina grouping) are placed in a separate sub-branch, coordinate with the rest of Central Chadic. In the genetic classifications, the Kotoko languages are not separated to this extent. This degree of lexical separation is due to to the effect

of language contact. The Kotoko languages have gained a large number of lexical items from Kanuri (Allison 2007), displacing part of the Chadic lexicon and reducing the lexical similarity of the Kotoko languages with the rest of Central Chadic. Within this division, the Kotoko South group (i.e. Zina and Mazera) has a very low degree of similarity with the rest of Kotoko, which ties in with their lower degree of genetic affiliation to the other Kotoko languages in the classification presented here. Buduma (or Yedina, the only language in the Kotoko Island group) is separated from the remaining Kotoko languages, but at a less distant level. The lower degree of similarity is possibly due to increased contact with Arabic and Kanembu.

Barreteau and Jungraithmayr divide the rest of Central Chadic into six divisions. One division contains the Masa languages, which have been classified as a separate branch of Chadic, coordinate with Central Chadic (Newman 1977a; Shryock 1990). Lexical similarities with the rest of Central Chadic may be due to contact between the Masa languages and the Musgum group, and it is this that has resulted in the closer relationship found in the lexicostatistical classification.

Two of the divisions – Tera and Daba – correspond to individual genetic groups. For the Tera group, this degree of separation is in agreement with the genetic data. For the Daba group, the low lexical similarity with the rest of Central Chadic may be due to the geographical separation of the Daba group, or possibly to contact with Adamawa languages such as North Fali, Mundang or their ancestors.

A fourth division in this sub-branch includes two groups, the Musgum and Gidar groups. In Newman's classification Gidar is in a different sub-branch from Musgum. In Gravina (2011), they are less distant, but still quite distinct. Their lexical similarity is possibly due to contact between the two groups at some point in the past. These are not currently neighbouring groups, but are separated primarily by Fulfulde speakers around Maroua, and by Tupuri and Mundang speakers further south. However, these languages are all comparatively recent arrivals in the area, and it is possible that Proto-Musgum and Proto-Gidar were in contact in the area to the south of Maroua.

Bata is given as a separate fifth division, though it includes only the Bata language and not the other languages from the Bata group of Newman/Gravina. The low lexical similarity implies a high degree of separation between Bata and

the other languages of the Bata group. This can be explained as being a result of the geographical separation of Bata (spoken near Jimeta, see Map 7 below) from the other Bata group languages (spoken near Mubi), which also resulted in different environments for contact-induced change.

The sixth of Barreteau and Jungraithmayr's divisions covers the remaining Central Chadic genetic groups, namely Margi, Higi, Lamang, Mandara, Mafa, Mofu and Hurza, along with the rest of the Bata group. (The Sukur and Maroua groups are not represented in this classification, though the Maroua languages are placed close to the Mofu languages in the earlier (1984) classification.) These are divided into three sub-divisions.

The first sub-division covers the Margi and Higi groups and most of the Bata group, which are not genetically closely related. These share a phonological type (see section 2.3.3) and are located around the plains of north-east Nigeria. This all provides good evidence for contact between the languages in this area.

The second sub-division covers the Lamang, Mandara, Mafa and Mofu groups. Genetically, the Mandara and Mofu groups are close, the Lamang group less so, and the Mafa group is quite distantly related. The languages belonging to these groups are all found in the Northern Mandara Mountains, and so we can propose another area of language contact on the main massif of these mountains.

The Hurza languages (Vame and Mbuko), spoken on hills at the eastern edge of the Northern Mandara Mountains, form a third sub-division in Barreteau and Jungraithmayr's classification. This group has a varied classification history. Newman included the languages within his Matakam group (A5), i.e. at the lowest level of separation from other languages, whereas in Gravina (2011) they appear on their own as a sub-branch of Central Chadic, i.e. at the highest level of separation. The lexicostatistics place them halfway between the two, showing a certain similarity with the languages around them, but no close relationships. Vame and Mbuko do not neighbour each other, but are neighboured by Mofu group languages and Mandara for Vame. The most likely scenario is that there is a high genetic distance between the Hurza group and the rest of Central Chadic, and the degree of proximity to other groups shown by the lexicostatistics is due to contact with the surrounding Mofu group languages.

The geographical locations of the groups in the classification presented here can be seen from the following map (repeated from page 28). The green arrows represent paths of language contact, and the red arrows represent paths of separation where there was once contact.
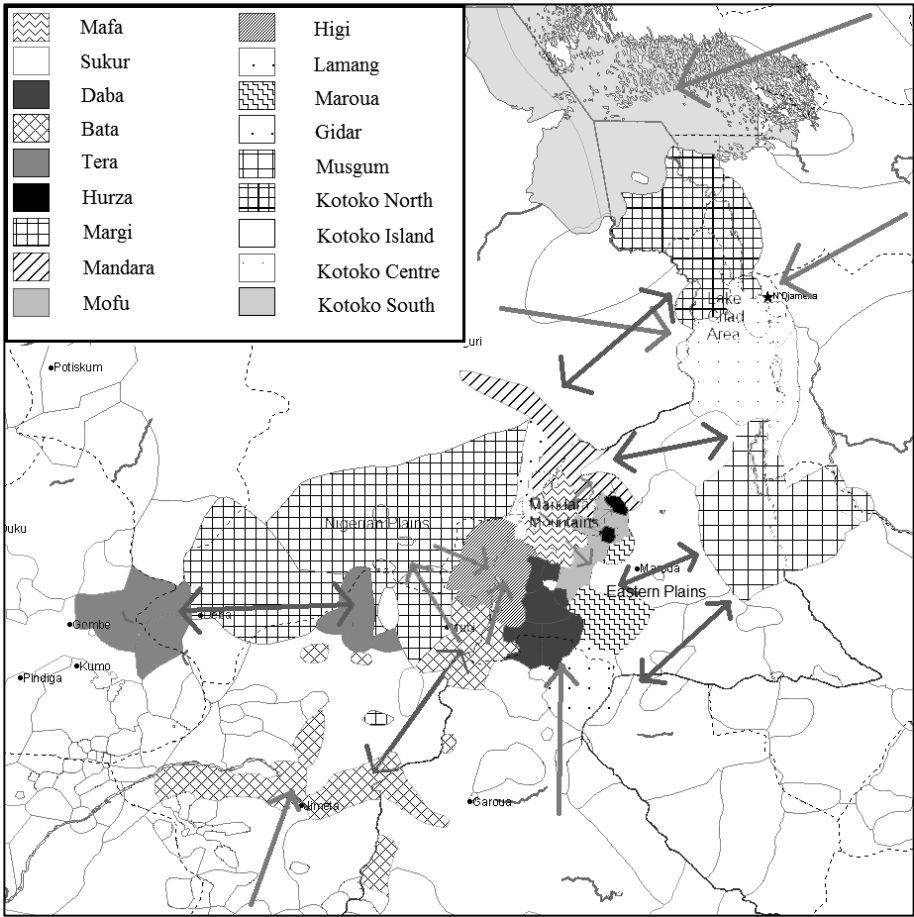

Map 7 - Location of the groups within Central Chadic

2.3.3 Phonological Systems

We will see later in this study that there are three broad phonological systems operating amongst the Central Chadic languages, namely the Consonant Prosody system, the Vowel Prosody system and the Kotoko system. In addition there are languages described as using a Mixed Prosody system, combining features of the Consonant Prosody and Vowel Prosody systems.

The phonological systems do not correspond directly with the genetic structure established on the basis of regular sound changes. Broad phonological systems are more easily influenced by language contact than regular sound changes on the core vocabulary. When we find neighbouring groups that are not closely related, but which share a phonological system, this can be taken as evidence for contact between these groups.

These phonological systems correspond with the areas we have described in the previous section. The Consonant Prosody system is the system used in the Nigerian Plains area. The Vowel Prosody system is used in the Mandara Mountains area (including the Daba group) and in the Eastern Plains area. The Kotoko system is used in the Lake Chad area. The Mixed Prosody is used in the groups in the area covering the western edge of the Mandara Mountains and the adjacent part of the Nigerian Plains. It is unclear which phonological system is used in the Tera group.

The following map shows the geographical distribution of the different phonological types.
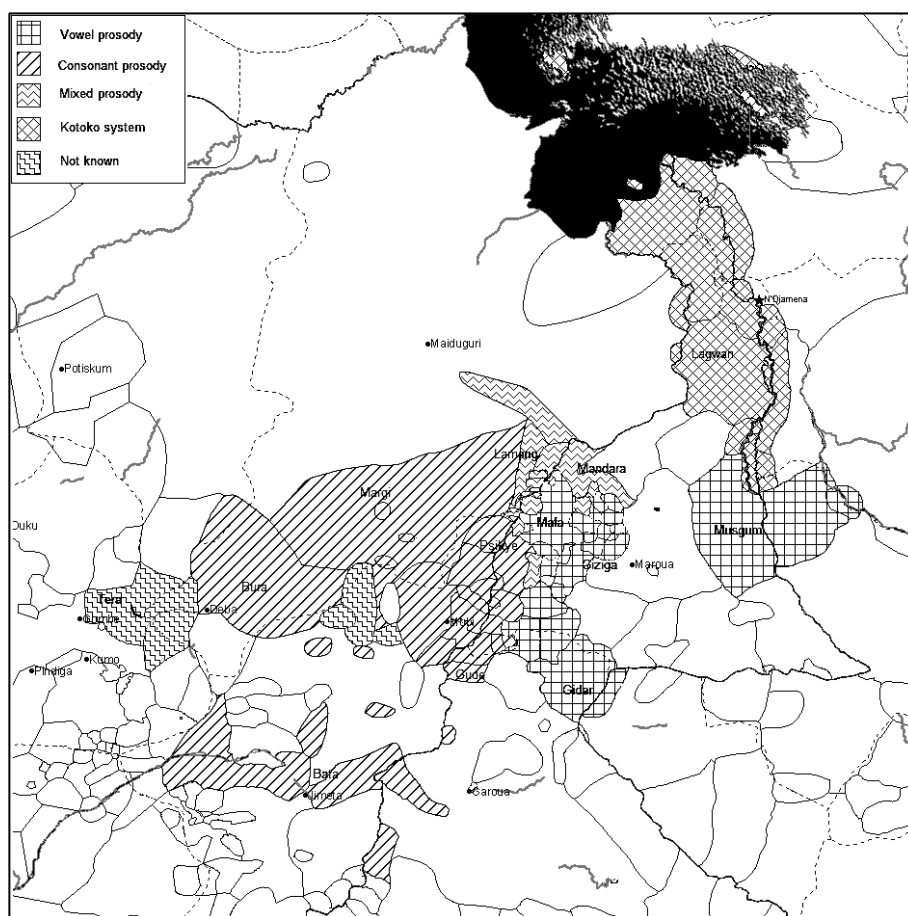
Map 8 - Phonological types

2.3.4   Linguistic areas

We will now summarise the relationship between geography and areas of language contact.

The lexicostatistical classifications argue for the existence of four broad areas of contact, namely the Lake Chad area, the Nigerian Plains, the Northern Mandara Mountains, and the Eastern Plains.

Each of these geographic areas corresponds broadly with a linguistic area within which certain phonological and lexical features have been shared. (There may also be shared grammatical features, but that is beyond the scope of this study.)

In the Lake Chad area there are the four groups of Kotoko languages. They have a low degree of lexical similarity with the rest of Central Chadic, which may be due to the prolonged separation of these languages from the rest of Central Chadic, and also to contact with Kanuri and other languages. The languages share a phonological type and many lexical items, but they do not form a distinct genetic unit. The similarities between the groups can be put down to the effect of language contact, and to the shared environment of contact with languages such as Kanuri.

In the Nigerian Plains area we find the Margi, Bata, Tera and Higi groups. These groups are genetically very distinct. Margi and Higi are from the North sub-branch and Bata and Tera from the South sub-branch. Even within the sub-branches these groups are not closely related. Tera is the most lexically dissimilar of the groups, with the other three falling mostly into the same lexicostatistical grouping. Not enough is known about the Tera group to reach conclusions about the pattern of language contact or separation from related languages. The other three groups share the same phonological type and many lexical items, which is due to language contact rather than genetic inheritance. The contact between the Bata and Margi groups appears to be older than the contact between these groups and the Higi group. Within the Bata group, the Bata language has a low degree of lexical similarity with the other members of the group. This is most likely due to its present geographical separation from the rest of the group, and the resultant contact with the surrounding Niger-Congo languages.

The Northern Mandara Mountains area is home to the Mafa group, with the Sukur, Lamang, Mandara, Mofu, Hurza and Daba groups being spoken around the edge of the main massif and on the smaller mountains nearby. For many groups, the mountains afforded protection from attack, and so created a separation from the languages of the Nigerian Plains and the Eastern Plains. However, within the mountains there has been much language contact through trade and inter-marriage. Most of the groups follow the same phonological type and there are widespread isoglosses in this area.

The languages of the Daba group live around the smaller mountains to the south of the Northern Mandara mountains, resulting in a degree of geographical separation, and increased contact with Niger-Congo speakers. These languages are now quite lexically distinct from the rest of the languages in this area.

The fourth linguistic area is the Eastern Plains area. This is the hardest area to interpret. Within this area we find the Maroua, Gidar and Musgum groups. However the area is also now occupied by speakers of Kanuri (Nilo-Saharan), Fulfulde (Niger-Congo: Atlantic), Mundang and Tupuri (both Niger-Congo: Adamawa), with the Waza game park creating an uninhabited zone at the northern end of the area. Up until about five centuries ago this was not the case, and the area was most likely occupied by speakers of Central Chadic languages, though it is not possible to know which ones. There is evidence of contact between Gidar and the Musgum group, and also between Mandara and Kotoko Centre. The Kotoko South languages share some isoglosses with languages from the Mandara Mountains area, which may imply a time of contact in the past. The Mbuko (Hurza group) moved to the edge of the Mandara mountains as recently as 1800 when the Fulani arrived in Maroua, but it isn't known where their home was before this. The Giziga lived in a large area that included Maroua until this same event. There is strong evidence of close contact with the Mofu-Gudur people (Mofu group) of the Mandara mountains (Vincent 1987), but also evidence of contact with other Eastern Plains groups, and languages of the Daba group. In this area, we have evidence of contact, but also the reality of separation between groups. This leads to competing interpretations of the relatedness of the groups to each other.

There are also outside influences on the Central Chadic languages. To the south of the area there are various Niger-Congo languages spoken, though their influence on Central Chadic languages may be marginal (Blench 2012). A far stronger influence comes from Kanuri, a Nilo-Saharan language spoken to the north of the Central Chadic area. This was the language of the empires of Kanem and Bornu, and has had a strong effect since around 1400 AD (Collelo and Nelson 1990; Seignobos 2000), particularly on the Kotoko languages (Allison 2005a).

We will be looking at the relationship between language, geography and history again in section 3.5, where we will be focussing on the patterns of genetic inheritance and the factors that caused proto-languages to split into separate linguistic communities.