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## **THE HISTORY OF LABIAL AND VELAR OBSTRUENTS IN KANURI**

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### **1. Kanuri, Its Genetic Cousins, and Its Geographic Neighbors**

Kanuri is spoken west of Lake Chad in northeastern Nigeria and eastern Niger. It is by far the largest language in the region of Lake Chad. The homeland of the ancestral community from which Kanuri has descended was east of Lake Chad, but about 1000 years ago, the Kanem-Borno Empire expanded west, spreading the Kanuri language with it. Until at least the 19<sup>th</sup> century this empire was the dominant political power in west-central Africa and the main force in expanding Islam as far west as the Niger River.

Kanuri is a member of the Saharan branch of the Nilo-Saharan phylum (Ruhlen 1991:107-114). Its close relatives in the Saharan branch, such as Kanembu and Teda lie to the east and north of Lake Chad. One branch of Nilo-Saharan, Songhai, is west of Saharan, lying along the northern bend of the Niger River. The other branches, by far the largest being Chari-Nile, are all east of Saharan, covering a wide area of central and east Africa. Although Kanuri and its Saharan linguistic cousins are quite similar to each other, resemblances between languages across the branches of Nilo-Saharan phylum are tenuous at best, suggesting that the time depth separating the branches of the Nilo-Saharan phylum must be very great.

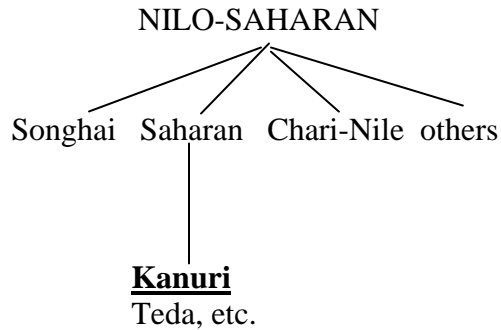
Kanuri, like all other African languages south of the Sahara Desert, lacks records from an ancestral language corresponding to Latin for the Romance languages or Old English for English. The oldest recorded information on Kanuri comes from Koelle (1854). In the mid-19<sup>th</sup> century, Sigismund Koelle, working in Sierra Leone, recorded

linguistic information from over 200 languages spoken by Africans who had been repatriated from slavery in the Americas. These people would have been born around the turn of the 19<sup>th</sup> century, giving a picture of the languages as they were spoken about 200 years ago. Koelle has three Kanuri wordlists. These do show some differences from the modern language, but nonetheless they would look familiar to modern Kanuri speakers.

**Figure 1.** Location of Kanuri



**Figure 2.** The Nilo-Saharan phylum



We have, however, a path to an older stage of Kanuri. Because of the dominance of the Kanem-Borno Empire, Kanuri has had a major influence on the languages with which it has had contact. Kanuri has replaced many of the languages that must have been indigenous to the region, but those that are still spoken preserve evidence of Kanuri influence through large numbers of Kanuri loanwords. Two such languages are Ngizim and Bade, spoken in modern Yobe State, Nigeria. These are not Saharan languages, but rather are Chadic languages and hence members of the Afroasiatic phylum. In Schuh (2003)<sup>1</sup> I document Kanuri influence on Bade and Ngizim and argue that these languages must have been borrowing words from Kanuri since at least the 17<sup>th</sup> century

<sup>1</sup> Research that served as the basis for Schuh (2003) paper was supported by a National Science Foundation grant (award #BCS-0111289, Russell G. Schuh, Principal Investigator). Work done after I wrote (2003) shows that loanword statistics in that paper are low. Bade and Ngizim have a minimum of 15% Kanuri loanwords, and the percentage would probably be higher if a full range of terminology from religious, judicial and other realms were assembled.

and probably before. Since the time that most of these Kanuri words entered these languages, Kanuri itself has undergone phonological changes not shared by the Chadic languages. The Kanuri loanwords as they are now pronounced in the Chadic languages thus give us a picture of how the words must have been pronounced in Kanuri 400-500 years ago. In this paper, we will use data from the Chadic languages to serve as “Middle Kanuri” in order to formulate sound changes that have taken place in Kanuri (we probably cannot go so far as to call it “Old Kanuri” as spoken 1000 years ago, at the time when Kanuri began spreading west of Lake Chad).

## **2. The Data**

There is considerable dialect variation in both Kanuri and the Bade/Ngizim group. Published data is available for “Standard” Kanuri, the dialect spoken around the capital of Borno State, in east half of the Kanuri speaking area, and Manga, the Kanuri dialect contiguous to Bade to its north and extending into Niger. The main sources consulted for Standard Kanuri are Cyffer and Hutchison (1990) and Cyffer (1994). A Filemaker database based on Cyffer (1994), kindly proved by Georg Ziegelmeier, has been useful for checking Kanuri segment sequence constraints. The main source for Manga is Jarrett (n.d.)<sup>2</sup>, supplemented by my own data, collected in 1973-75. The main sources for Bade/Ngizim are Schuh (1981) and Bedu et al. (2004) for Ngizim, Tarbutu (2004) for the Gashua dialect of Bade, and Dagona (2004) for Western dialect of Bade.

The sound changes that the current paper discusses have affected Standard Kanuri and Manga in almost identical ways. Likewise, the forms of Kanuri loanwords in Bade and Ngizim are similar or identical. Most were probably borrowed before the

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<sup>2</sup> The version of Jarrett (n.d.) available to me is a word-processed document kindly supplied by Roger Blench. This book may have been published, but I have no information on it.

Bade/Ngizim languages had become as differentiated as they are today. I illustrate Kanuri from the Manga since it appears to be closer to the variety of Kanuri that influenced Bade/Ngizim. For example, in Kanuri loanwords in Bade and Ngizim with alveopalatal affricates like **ʧàptu** ‘gather’ and **ḍzāgè** ‘adornment’, Manga has affricates, but Standard Kanuri has alveolar fricatives (Manga **ʧàptu**, **ndzaye** vs. Standard **saptə**, **zayè**). For Bade/Ngizim, I use Ngizim unless otherwise noted. In a few cases, I have used words from Standard Kanuri and from Gashua Bade (marked “GB”) when the word in question was absent from my data sources. Some of the Kanuri words are followed by “< Arabic”. As noted above, the Kanuri people have been at the forefront of Islamicization in this region for around 1000 years, and Kanurized Arabic loanwords have surely been part of Kanuri vocabulary throughout that period. For our purposes, the words of Arabic origin included here count as true Kanuri words.

The tables in (1-4) lay out data illustrating the outcome of the “Middle Kanuri” phonemes /**ϕ**, **b**, **k**, **g**/ in modern Kanuri. NOTE: The only word-initial voiceless labial in Kanuri is the bilabial fricative [**ϕ**]. Ngizim has bilabial stops [**p**, **b**] and labiodental fricatives [**f**, **v**]. The *bilabialness* of [**ϕ**] is apparently more salient to Ngizim speakers than the *fricativity*, since this sound has consistently been borrowed as Ngizim [**p**].

		Ngizim for “Middle Kanuri”	Kanuri (Manga dialect)		
(1)	a.	<b>b &gt; b</b>	<b>bərbə̀r</b> <b>bàdìtu</b>	<b>bərbə̀r</b> <b>bàdìðu</b>	‘dust’ ‘to begin’
	b.		<b>səbdùwà</b>	<b>səbdù</b> < Arabic	‘Saturday’
	c.		<b>làmbò</b> <b>tàmbau</b>	<b>lambo</b> <b>tàmbò</b>	‘need, concern’ ‘to taste’
	d.	<b>b &gt; w</b>	<b>dàbi</b> <b>ngùbùtu</b> <b>làbâr</b> <b>bərbà</b> (GB)	<b>dàwi</b> <b>ngèwùðu</b> <b>làwâr</b> < Arabic <b>bərwà</b>	‘hoe’ ‘to increase’ ‘news’ ‘wealthy person’

(2)	a.	$\phi > \phi$	pəs pàltu pùtai (GB)	φəs φàlðu φəðe	‘nose stud’ ‘to change’ ‘west’
	b.	$\phi > p$	tʃàptu ngənəptu adʒàp	tʃàptu ngənəptu adʒàp < Arabic	‘to gather’ ‘to importune’ ‘astonishment’
	c.	$\phi > b$	kàmpōyi kàmpiki	kàmbōi kàmbiwù	‘haste’ ‘dispute’
	d.	$\phi > w$	səpādī ngənəpù kurpàk kurpì	sìwādù ngənəwù kirwo kərwì (Standard)	‘leather shoe’ ‘imposition’ ‘cane switch’ ‘well-bucket’
(3)	a.	$g > g$	gàru gərətu gurjəm	gàru gəretu gurjəm	‘wall’ ‘to put side by side’ ‘huge person’
	b.		(see comments below)		
	c.		naŋgùwà kəmaŋgàr	naŋgù kəmaŋgàr	‘shame’ ‘evil’
	d.	$g > \emptyset$	kàgalà jāgànà	kàalà jānà	‘advice’ ‘sibling w. same mother’ <sup>3</sup>
	e.	$g > w$	māgi (GB māgù) kàdugù dugùl kàrgûn nògatà = nòkatà sùlge = səlke	mawù kàduwù dowòl kàrwûn nòwatà (Standard) sùlwe	‘week’ ‘descendants’ ‘morsel of meat’ ‘medicine’ ‘well-known’ ‘quilt armor’
	f.	$g > j$	bīgèlà dʒāgè dège	biyilà ndʒaye diye	‘hot season’ ‘adornment’ ‘indeed’
(4)	a.	$k > k$	kādu kəmâr kukutèrà	kādu kəmâr kuðèrà	‘pursuit’ ‘patience’ ‘mirror’
	b.		baktâ dʒəktu kəskê mənāfêk	baktà (Standard) dʒəktu kəskê mənəfə̀k < Arabic	‘shroud’ ‘to become upset’ ‘easy’ ‘hypocrite’
	c.	$k > g$	aŋkâl daŋkà	haŋgâl damgà	‘intelligence’ ‘hawk’
	d.	$k > \emptyset$	kàsakàr	kàʃaàr (Standard)	‘sword’

<sup>3</sup> This is an area where polygyny is common, so children in a household may have the same father but different mothers. The Kanuri expression is actually a lexicalized compound < yâ gâna ‘little mother’.

		<b>wàkàtu</b>	<b>wààðu</b> < Arabic	‘to happen’
<b>k &gt; w</b>		<b>kukú</b>	<b>kuwà</b> <sup>4</sup>	‘baobab’
		<b>d̥zākuwa</b>	<b>d̥zawa</b> < * <b>d̥zawuwa</b>	‘cap’
		<b>bàrkù</b>	<b>bàrwù</b> < Arabic	‘complaint’
		<b>bàlkên</b>	<b>bàlwù</b>	‘fool’
		<b>ŋgalkò</b>	<b>ŋgalwò</b>	‘it’s better that...’
		<b>kàmpìkì</b>	<b>kàmbiwù</b>	‘dispute’
f.	<b>k &gt; j</b>	<b>arzàkin</b> (WB)	<b>arsiyi</b>	‘wealth’
		<b>màlèkà</b>	<b>màlaiyà</b> < Arabic	‘angel’ (Ng) female name

### 3. Sound Changes

We can summarize the outcomes of “Middle Kanuri” labials and velars as follows:

- (1a, 2a, 3a, 4a) **b, φ, g, k** remain **b, φ, g, k** respectively / #\_\_\_

In the strong *word initial position* (1a, 2a, 3a, 4a), there have been no changes. We therefore need not discuss this position further.

- (1b, 2b, 4b) **b, φ, k > b, p, k** respectively / \_\_\_]σ; **k > k / s**\_\_\_

When two obstruents come in contact with each other, both are preserved. The distribution of the voiceless labials [φ] / #\_\_\_ vs [p] / \_\_\_C is the result of an active allophonic rule, not a sound change *per se*. The only obstruent sequences that seem to have ever existed in Kanuri are VELAR+CORONAL, LABIAL+CORONAL, **sk**, and **pk**. Of these, the sequences **gd** and **pk** are absent from current Kanuri loanword data in Bade/Ngizim but these sequences exist in modern Kanuri, e.g. Manga **ləgdà** ‘young beans’ and **karapkà** ‘entourage’. Obstruents in contact conform to the widespread requirement that they must agree in voicing, and all obstruents are voiceless in word final position. In short, the velar and labial consonants illustrated in the “b” sets of (1-4) have undergone no apparent historical sound changes since Middle Kanuri.

<sup>4</sup> The word **kuwà** ‘baobab’ is a very old borrowing from some long-lost Chadic language into Kanuri. Ngizim **kuku** is thus a cognate with the Kanuri word rather than a loanword from Kanuri. Nonetheless, it supports the **k > w** change in Kanuri, since it shows what the consonants of the Chadic source word for Kanuri must have been.

- (1c, 2c, 3c, 4c) **b, ɸ > b** and **g, k > g** / [+nasal]\_\_\_

Following a nasal consonant, labial and velar obstruents have become the corresponding voiced stops, thus neutralizing the original voicing distinction.

- (1d, 2d) **b, ɸ > w** / V, **r**\_\_\_V

Between vowels or between **r** and a vowel, the labials have changed to **w**.

- (3d, 4d) **g, k > Ø** / **a**\_\_\_**a**
- (3e, 4e) **g, k > w** in the environment of a round vowel (w. or w.o. intervening liquid)
- (3f, 4f) **g, k > j** in the environment of a front vowel

Between **a**'s, the velars have been completely lost, creating an internal onsetless syllable [əa...].<sup>5</sup> In other intervocalic environments, if one of the vowels is rounded, a round glide **w** appears where the original velar was found (3e, 4e) and if one of the vowels is front, a palatal glide **j** appears where the velar was found (3f, 4f). A liquid may intervene between a preceding vowel and the velar. The question arises as to what happens when a round vowel is on one side of the velar and a front vowel on the other. The words **sùlwe** 'quilt armor' (3e) and **kàmbiwù** 'dispute' (4e) suggest that the round vowel "wins" regardless of whether it precedes or follows.

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<sup>5</sup> The vowel system of Kanuri is **i, e, u, o, ə, a** ("ə" in the transcription tradition of Nigerian languages = [ɪ]). In my own data from Manga I have transcribed many words with sequences **əə** and **aə**. Jarret (n.d.) and Cyffer and Hutchison (1991) usually transcribe these words with a **g** between the vowels, e.g. Schuh **dəəl**, Jarrett **dəgəl** 'bed', Schuh **kəmaən**, Jarrett **kəmagəən** 'elephant'. I have also transcribed an alternate for many of these words with **ɣ** between the vowels. Examples that I have found in Kanuri of əVELARA sequences show variation within Kanuri. For example, Schuh **mòròon**, Jarrett **mòròwon**, Cyffer and Hutchison **màrgəgan** = **màrwan** 'monitor lizard'. The only example of a Kanuri loanword in Bade/Ngizim that I have so far found with any of the vowel sequences discussed in this footnote is Ngizim **ləgāɽi**, Jarrett **ləgāɽi**, Cyffer and Hutchison **ləgāɽi** = **lùwali** 'judge' < Arabic. Ngizim has an alternative form, **lijāri**, which is probably a recent loan from some unrecorded variety of Kanuri. Because of the complexity of this picture and the paucity of current data from Bade and Ngizim that might shed further light on it, I will not try to work out sound changes for the sequences discussed here.

I suggest that the “d-f” groups of (3-4) can be generalized as a single change VELAR > Ø / V\_\_\_V. Most of the glides in groups “e” and “f” appear to be not reflexes of the earlier velars, but rather epenthetic insertions to provide syllable onsets in certain vowel configurations. Neither Manga nor Standard Kanuri have sequences of **Vu** or **uV** where the vowels comprise separate syllable nuclei (both dialects allow **au** as a diphthongal syllable nucleus). There is dialectal variation between **VV** and **VjV**, where one of the V’s is front, e.g. Manga **wanejè** vs. Standard **waneè** ‘perhaps’ (GB **wanagè**), Manga **kàd̥ʒiji** vs. Standard **kàzii** ‘emergency’ (not found in Bade/Ngizim). On the other hand, in words like (3e) **kàrwûn** ‘medicine’ (Ngizim **kàrgûn**) and (4e) **ngalwò** ‘it is better that...’ (Ngizim **ngalkò**), where the velar follows a liquid, the **w** must be a reflex of the velar. Preservation of the trace of the original velar here is parallel to other environments (post-nasal and abutting an obstruent) where the velars have not been lost.

One may wonder why this paper has concentrated on velars and labials and has omitted coronals. It turns out that coronals have been preserved with no change except that original **t** > **ð** between sonorants in Manga, a change that, surprisingly, has not affected **d**.

(5)		Ngizim	Manga	Standard	
a.	Initial	<b>təlo</b>	<b>tulo</b>	<b>tolo</b>	‘mud’
		<b>d̥t̥ʒi</b>	<b>d̥d̥ʒi</b> <sup>6</sup>	<b>d̥d̥ʒi</b>	‘that’s that’ (K) ‘it stands’
b.	Post-nasal	<b>sant̥əràm</b>	<b>samð̥əram</b>	<b>sant̥əràm</b>	‘antimony’
		<b>k̥əndē</b>	<b>k̥ənd̥ai</b>	<b>k̥ənd̥ai</b>	‘basket’
c.	Intervocalic	<b>d̥ātù</b> (GB)	<b>daðù</b>	<b>dat̥è</b>	‘height’
		<b>k̥àdu</b>	<b>kadu</b>	<b>kadu</b>	‘pursuit’

We are now in a position to provide a formal summary of the changes that have taken place in labial and velar consonants from “Middle Kanuri” to modern Kanuri.

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<sup>6</sup> The voicing of intervocalic coronal affricates is a regular change, e.g. Ngizim **būʒi**, Manga **bud̥ʒi** ‘mat’, Ngizim **k̥aʒ̥um**, Manga **k̥ad̥ʒ̥əmù** ‘clothes’.

- (6) [+labial] VOCALIZATION  $\left[ \begin{array}{l} - \text{sonorant} \\ + \text{labial} \end{array} \right] > [+ \text{sonorant}] / \left[ \begin{array}{l} + \text{sonorant} \\ - \text{nasal} \end{array} \right] \text{---} [+ \text{syllabic}]$

See (1d, 2d). (Labial obstruents become **w** between liquid or V and V.)

- (7) VELAR DELETION  $\left[ \begin{array}{l} - \text{sonorant} \\ + \text{dorsal} \end{array} \right] > \emptyset / [+ \text{syllabic}] \text{---} [+ \text{syllabic}]$

See (3d-f, 4d-f). (Velars are deleted between vowels.)

VELAR DELETION would be followed by (or accompanied by) glide epenthesis in some cases to form syllable onsets in certain vowel sequences (see discussion, previous page).

- (8) VELAR VOCALIZATION  $\left[ \begin{array}{l} - \text{sonorant} \\ + \text{dorsal} \end{array} \right] > [+ \text{sonorant}] / \left[ \begin{array}{l} - \text{vocalic} \\ + \text{approximant} \end{array} \right] \text{---} [+ \text{syllabic}]$

See (3e, 4e). (Velars become **w** between a liquid and a vowel.)

- (9) [+grave] VOICING  $\left[ \begin{array}{l} - \text{sonorant} \\ + \text{grave} \end{array} \right] > [+ \text{voice}] / [+ \text{nasal}] \text{---} [+ \text{syllabic}]$

See (1c, 2c, 3c, 4c). (Labials and velars become voiced after nasals.)

Because coronals do not become voiced after nasals (5b)—the change **t** > **ḑ** in Manga is relatively late and took place after all sonorants—we need a way to group labials and velars, while excluding coronals. The feature [+grave] is an acoustic feature that does this (it refers to a resonating cavity—the oral cavity in this case—that is closed at one end).

- (10) LABIALS and VELARS remain unchanged elsewhere, taking into consideration productive allophonic variation and widespread voicing assimilation phenomena See (1a-b, 2a-b, 3a-b, 4a-b.).

#### 4. Remaining Issues

This paper has documented historical sound changes involving labial and velar obstruents from “Middle Kanuri”, attested through loanwords in Bade/Ngizim, to modern Kanuri, with special reference to the Manga dialect. The discussion in section 3, summarized in (6-9), accounts for nearly all the available data. A few problems remain.

In particular, many words are presented in the Manga and Standard Kanuri references with intervocalic **g**, sometimes as an alternative to absence of any consonant, as would be predicted by (7) VELAR DELETION. Compare, for example, **magə** ‘week’ from Cyffer and Hutchison (1990) with Manga **mawù** in (3e). See also footnote 5. My guess is that these transcriptions as “**g**” may actually be phonetic [ɣ], as in my Manga data, and that the **g** > Ø is still in progress. Such data from living languages belie the Neogrammarian Hypothesis of absolutely regular sound change, which looks only at the beginning and end points of sound changes that have fully run their course.

The fate of the coronals poses another puzzle. The concept of a point of articulation “strength” hierarchy labial > coronal > velar has the implication that if velars and labials undergo changes (generally of increasing sonority), that coronals will also do so. Although Manga has undergone a **t** > **ð** change between sonorants, this change must have taken place later than the changes in labials and velars because the latter changes have affected all of Kanuri, but **t** > **ð** is specific to Manga. One explanation for why the Kanuri voiceless labial may have changed earlier than the coronals is that this labial is a fricative [ɸ] and hence may be considered weaker than stops, even those at the “stronger” coronal place of articulation. This does not explain, however, why **b** also weakened before the coronals or why, in Manga, voiceless **t** has weakened to **ð** whereas voiced **d** has remained unchanged.

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