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Pascal Boyeldieu

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## Central Sudanic Languages Pascal Boyeldieu

### 1. Introduction

The label *Central Sudanic* traditionally applies to a group of some 60 languages that are spoken in the center of the African continent and cover parts of Chad, Sudan, C.A.R., D.R.C., and Uganda (see Map). With the exception of the Sara languages of Chad and Moru of Sudan/D.R.C. (more than 1 million each)<sup>1</sup> most languages have less than 100.000 speakers and many of them, just a few thousands. Several languages are declining, namely under the influence of Chadian or Sudanese Arabic.

[Map 'The Central Sudanic Languages' somewhere here]

Typological features include short word shapes (V, CV, VCV, and CVCV), frequent  $\pm$ ATR vowel feature (in the south-eastern part of the area), widespread glottalized consonants (see section 4), and tone systems that may include up to four contrastive levels. Word order is diverse (see section 6).

Tucker & Bryan (1956, 1966) divided these languages in two 'larger units' (1. Moru-Mangbetu, 2. Bongo-Bagirmi) despite some similarities in lexicon and morphology (1956: 141-143). Greenberg (1963) coined the term Central Sudanic (henceforth CSD) and brought all the languages together —first as a part of Chari-Nile, then directly (Greenberg 1971)— within his Nilo-Saharan family. Finally Bender (1992) divided Central Sudanic (renamed 'Family F') in two subgroups ('Peripheral' and 'Central') that roughly correspond to Tucker & Bryan's 'larger units'. These classifications are summarised in Table 1.

[Table 1 somewhere here]

The aim of this paper is to evaluate the situation of these languages in the light of several criteria. I will argue that they probably constitute a genetic, historical unit, made of five, more or less equidistant subgroups, with the exception of some indeterminate languages, the situation of which remains uncertain for the time being. I will not address the relation of CSD with other Nilo-Saharan languages.

### 2. Inventory

CSD includes the following subgroups that basically correspond to those identified by earlier scholars (some representative languages are indicated in brackets):

1. [MMD] *Moru-Madi* (Moru, Avokaya, Logo, Lugbara, Ma'di)
2. [LND] *Lendu* (Lendu, Ngiti)
3. [MAS] *Mangbetu(-Asua)* (Mangbetu, Meje, Lombi, Asua)
4. [MEF] *Mangbutu-Efe* (Mangbutu, Ndo, Mamvu, Lese, Efe)
5. [SBB] *Sara-Bongo-Bagirmi* (Modo, Baka, Bongo, Yulu, Gula dialects, Ndoka, Bagiro, Na, Kenga, Bagirmi, Sara languages)

Every subgroup is relatively well documented for at least two languages. Given its linguistic coherence, each one can be assumed to constitute a historical unit. SBB, that represents the largest and most diversified subset, is also the best established genetic unit (Boyeldieu 2000b; Boyeldieu, Nougayrol & Palayer 2006). The tricky question that

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<sup>1</sup> Estimations from Bender (2000: 51).

is addressed in this paper then concerns the historical unity of Central Sudanic as a whole.

Lastly, and although they are usually considered as Central Sudanic, I provisionally regard the following languages as indeterminate outsiders. Despite obvious similarities, Kresh, Dongo, Woro, Aja, and Birri (Santandrea 1965/66, 1976) do not show lexical and sound correspondences that are significant enough with the above mentioned subgroups. On the basis of limited data (Doornbos & Bender 1983), Sinyar has been counted among the SBB subgroup. However, recent fieldwork of my own shows that Sinyar also differs from SBB in many important features, notably the existence of a case marking system. The specific development of Sinyar therefore remains an open question.

### 3. Lexical evidence

Two types of estimates have been made regarding the lexicon.

Tables 2a-b provide the results of a lexicostatistical study for a sample of 29 languages (based on a 100-word Swadesh list; Branch Average).<sup>2</sup> MAS shows an internal similarity rate of 70%, MMD, LND, and MEF a rate of 60%, while the internal rate of SBB is markedly lower (30%). The similarity rates between subgroups vary from 20% (MMD with LND) to 05% (all subgroups). While the general figure clearly indicates five coherent subgroups, the higher connections between the latter rely on rates that are much less distinctive. As for the indeterminate languages, Sinyar is close to SBB (25%). Kresh, Dongo, Aja, and Birri also stand closer to SBB, although with a low rate of 10%.

[Tables 2a and 2b somewhere here]

Table 3a displays the distribution patterns of 267 likely cognates between the five subgroups.<sup>3</sup> Two remarks should be made here. First, the number of likely cognates shared by all the five subgroups (20) or even by four of them (51) is noticeably low. Second, the number of cognates shared by two subgroups (Table 3b) vary from 71=26,6% (MEF with LND, and SBB with LND) to 109=40,8% (MAS with LND), thus revealing no clear-cut predominance in their distribution. Here again the overall figure does not bring out clearly any marked proximity between some of the subgroups, that rather appear as more or less equidistant.

[Tables 3a and 3b somewhere here]

### 4. Sound correspondances

Establishing regular sound correspondences proves to be a difficult task given the restricted number of general cognates, the variety of likely reflexes (especially for vowels and tones), and the shortness of the word shapes to be reconstructed (mostly \*VCV). Bender (1992) fairly tried his hand at it, although his results are not quite convincing in my opinion.<sup>4</sup> In a very limited way Boyeldieu (2006) establishes regular correspondences for labial-velar consonants (intermediate reflexes are summarised in Table 4). Glottalized consonants also show persuasive series of regular reflexes (Boyeldieu, in progress). LND languages display an uncommon contrast of

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<sup>2</sup> I am indebted to Thilo Schadeberg for his LEXISTAT software.

<sup>3</sup> The counting is based on a personal database. An occurrence in one language is considered enough to represent a subgroup. Indeterminate languages are not taken into account.

<sup>4</sup> For instance, out of his four series illustrating a \*kp formula, only one is valid for me (Boyeldieu 2006). As for the glottalized consonants, the author disregards the important voiceless/voiced contrast that characterizes the LND languages (see below).

voiceless/voiced glottalized consonants (Dimmendaal 1986; Kutsch Lojenga 1991) that must be assigned to the likely CSD sound system. This contrast was lost and reflexes have merged in all other subgroups (intermediate reflexes are summarised in Table 5).

[Tables 4 and 5 somewhere here]

## 5. Morphology

Tucker & Bryan (1956, 1966) pertinently pointed up morphological similarities that can be observed in most CSD subgroups. This regards the three following verbal prefixes:

**T(V)-:** Verbal intensive (Tucker & Bryan 1956: 142)

[MMD] e.g. Logo **tV-** (Vallaey 1986: 284)

|            |          |              |                                  |
|------------|----------|--------------|----------------------------------|
| <b>'di</b> | ‘percer’ | <b>ti'di</b> | ‘percer<br>(répétitif/intensif)’ |
|------------|----------|--------------|----------------------------------|

[LND] No evidence

[MAS] e.g. Mangbetu: possible remnants of **-Vt-** ? (after Larochette 1958, *passim*)

|               |                           |                 |                               |
|---------------|---------------------------|-----------------|-------------------------------|
| <b>-etápú</b> | ‘s'évanouir,<br>anéantir’ | cp. <b>-ɔpú</b> | ‘tuer, détruire,<br>anéantir’ |
|---------------|---------------------------|-----------------|-------------------------------|

[MEF] e.g. Mamvu **ṭi-/ṭi-** (Vorbichler 1971: 194-195, *passim*)

|            |            |             |                            |
|------------|------------|-------------|----------------------------|
| <b>ḍma</b> | ‘schlagen’ | <b>ṭima</b> | ‘schlagen (viele,<br>Pl.)’ |
|------------|------------|-------------|----------------------------|

[SBB] e.g. Gula **t-** (Nougayrol 1999: 116-117)

|            |          |                         |                                  |
|------------|----------|-------------------------|----------------------------------|
| <b>èhè</b> | ‘nommer’ | <b>téhè</b> (Gula Koto) | ‘nommer à plusieurs<br>reprises’ |
|------------|----------|-------------------------|----------------------------------|

**K(V)-:** Deverbative- (Tucker & Bryan 1956: 142)

[MMD] e.g. Moru Miza **k-**: formative of adjectives, e.g. in contrast with Avukaya Ojila (Tucker 1940: 286)

|             |                                  |       |
|-------------|----------------------------------|-------|
| <b>kḍzi</b> | (cp. Avukaya Ojila <b>ɔnzí</b> ) | ‘bad’ |
|-------------|----------------------------------|-------|

[LND] No evidence

[MAS] e.g. Mangbetu **k(u)-**: verbal nouns (Larochette 1958: 30-31)

|             |         |               |               |
|-------------|---------|---------------|---------------|
| <b>-ɛgu</b> | ‘voler’ | <b>nékegú</b> | ‘vol, voleur’ |
|-------------|---------|---------------|---------------|

[MEF] e.g. Mamvu **q-**: deverbative function (Vorbichler, 1971: 184-185)

|             |          |              |               |
|-------------|----------|--------------|---------------|
| <b>ḍmvu</b> | ‘faulen’ | <b>qomvù</b> | ‘feucht, naß’ |
|-------------|----------|--------------|---------------|

[SBB] e.g. Bagiro **k-**: infinitives, and nouns/adjectives (Boyeldieu 2000a: 126-129)

|            |              |               |            |              |          |
|------------|--------------|---------------|------------|--------------|----------|
| <b>gyḍ</b> | ‘il enfante’ | <b>k-ḍgyḍ</b> | ‘enfanter’ | <b>kḍgyḍ</b> | ‘parent’ |
|------------|--------------|---------------|------------|--------------|----------|

**O-/E-** or **A-/E-**: a. Itive/Ventive; b. Neuter/Causative (Tucker & Bryan 1966: 34-35)

[MMD] e.g. Moru (Tucker, 1940: 205-211, 360-369)

|    |             |           |            |             |
|----|-------------|-----------|------------|-------------|
| a. | <b>ɔ-gɔ</b> | ‘go back’ | <b>ɛgo</b> | ‘come back’ |
|----|-------------|-----------|------------|-------------|

|    |              |             |             |               |
|----|--------------|-------------|-------------|---------------|
| b. | <b>o-ŋga</b> | ‘to get up’ | <b>eŋga</b> | ‘to raise up’ |
|----|--------------|-------------|-------------|---------------|

[LND] e.g. Ngiti (Kutsch Lojenga, 1994: 290-293, 297-299)

|    |               |                  |               |                       |
|----|---------------|------------------|---------------|-----------------------|
| a. | <b>otseta</b> | ‘to run (itive)’ | <b>itsétá</b> | ‘to run<br>(ventive)’ |
|----|---------------|------------------|---------------|-----------------------|

|  |               |                 |               |                     |
|--|---------------|-----------------|---------------|---------------------|
| b.   | <b>avhítá</b> | ‘to get lost’   | <b>ivhítá</b> | ‘to lose something’ |
| [MAS] e.g. Mangbetu (Larochette, 1958: 27-28, 183-196) |               |                 |               |                     |
| a.   | <b>-ɔku</b>   | ‘repartir’      | <b>-ekú</b>   | ‘revenir’           |
| b.   | <b>-owú</b>   | ‘égoutter’      | <b>-ewú</b>   | ‘laisser égoutter’  |
| [MEF] e.g. Mamvu (Vorbichler, 1971: 191, 199)          |               |                 |               |                     |
| a.   | <b>ɔsi</b>    | ‘gehen’         | <b>esí</b>    | ‘kommen’            |
| b.   | <b>ɔfe</b>    | ‘zu Ende gehen’ | <b>ife</b>    | ‘beenden’           |
| [SBB] No evidence                                      |               |                 |               |                     |

Although the distribution of these similarities between the subgroups reveal some gaps (especially in LND, see Table 6), there is no clear indication that a specific subgroup — especially not SBB— should be left out on this point.

[Table 6 somewhere here]

## 6. Word order

Tucker & Bryan (1956: 141-143) further justified their distinction of two larger units, Bongo-Bagirmi (SBB) and Moru-Mangbetu (other subgroups), by a contrast in word order. However, things are not so straightforward. Table 7 displays a selection of typological features as characterized by Dryer & WALS (2011) for Central Sudanic languages. Notwithstanding clear contrasts of MMD and LND with SBB (features 81B and 85A), Mangbetu (MAS) and Mamvu (MEF) show the same SVO order like SBB (81A), while Moru (MMD) shows the same Noun-Genitive order like SBB (86A). Most probably SBB, that extends into the north-western part of the area, reinforced innovations in this respect but, here again, there is no evidence for a clear-cut contrast between SBB and the other subgroups all together.

[Table 7 somewhere here]

## 7. Conclusion

The various observations made in the preceding sections lead to the following concluding remarks:

- there is no clear evidence that SBB should be contrasted with the other subgroups as a whole; CSD rather comprises five, more or less equidistant subsets;
- there is some evidence that the five subgroups may well result from the historical splitting of a single language (or dialect group); however, considerable work is still necessary to confirm this assumption and to explain the diversity of the present-day languages, a diversity that seems somewhat contradictory with their geographical proximity;
- lastly the affiliation of some indeterminate languages remains uncertain; their similarities with CSD could turn out to be the result of different types of contact.

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## Abbreviations


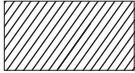
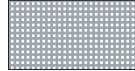

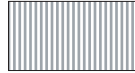

|     |                             |
|-----|-----------------------------|
| CSD | Central Sudanic             |
| LND | Lendu subgroup              |
| MAS | Mangbetu(-Asua) subgroup    |
| MEF | Mangutu-Efe subgroup        |
| MMD | Moru-Madi subgroup          |
| NS  | Nilo-Saharan                |
| Pl. | Plural                      |
| SBB | Sara-Bongo-Bagirmi subgroup |

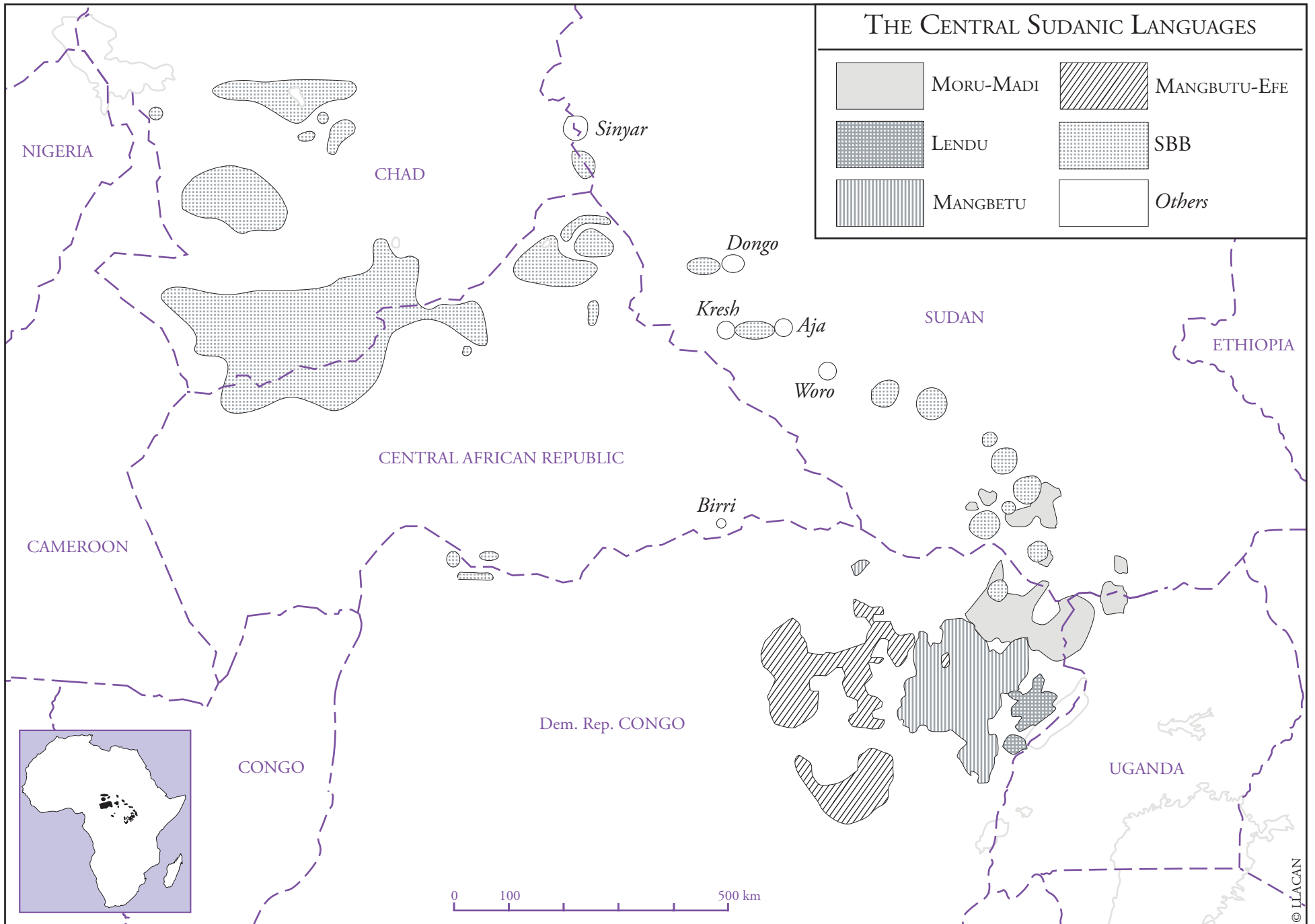
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# THE CENTRAL SUDANIC LANGUAGES

|   |           |   |              |
|---|-----------|---|--------------|
|  | MORU-MADI |  | MANGBUTU-EFE |
|  | LENDU     |  | SBB          |
|  | MANGBETU  |  | Others       |





[Tables to be inserted into the text, where indicated; the Map is in a distinct file]

| Tucker & Bryan (1956)   | Greenberg (1963)  | Greenberg (1971)   | Bender (1992)   |
|---|---|--|---|
| <p>1. MORU-MANGBETU<br/> Moru-Ma'di (LG)<br/> Mangbutu-Efe (LG)<br/> Mangbetu (LG)<br/> Lendu (SU)</p> <p>2. BONGO-BAGIRMI<br/> Bongo (LG)<br/> Kresh (LG)<br/> Sinyar (SU)<br/> Kara (SU)<br/> Sara (LG)<br/> Bagirmi (LG)</p> | <p>CENTRAL SUDANIC (&lt; CHARI-NILE &lt; NS)</p> <p>4. Moru, Avukaya, Logo, Keliko, Lugbara, Madi<br/> 5. Mangbetu, Lombi, Popoi, Makere, Meje, Asua<br/> 6. Mangbutu, Mamvu, Lese, Mvuba, Efe<br/> 7. Lendu</p> <p>1. Bongo, Baka, Morokodo, [...], Sara dialects ([...]), [...], Bagirmi, Kuka, Kenga, [...]<br/> 2. Kreish<br/> 3. Binga, Yulu, Kara</p> | <p>CENTRAL SUDANIC (&lt; NS)</p> <p>3. Moru-Madi<br/> 4. Mangbetu<br/> 5. Mangbutu-Efe<br/> 6. Lendu</p> <p>1. Bongo-Bagirmi<br/> A. Bongo<br/> B. Sara, Kara, Bagirmi<br/> C. Yulu<br/> 2. Kreish</p> | <p>FAMILY F</p> <p>PERIPHERAL<br/> F1: Moru-Madi<br/> F2: Mangbutu<br/> F3: Mangbetu<br/> F7: Kresh<br/> F8: Baadha (= Lendu)</p> <p>CENTRAL<br/> F4a: Bagirmi-Sar<br/> F4b: Yulu-Binga<br/> F4c: Fongoro<br/> F5: Shemya (= Sinyar)<br/> F6: Bongoid</p> |

(LG = Language group ; SU = Single unit)

Table 1. Previous groupings of Central Sudanic languages

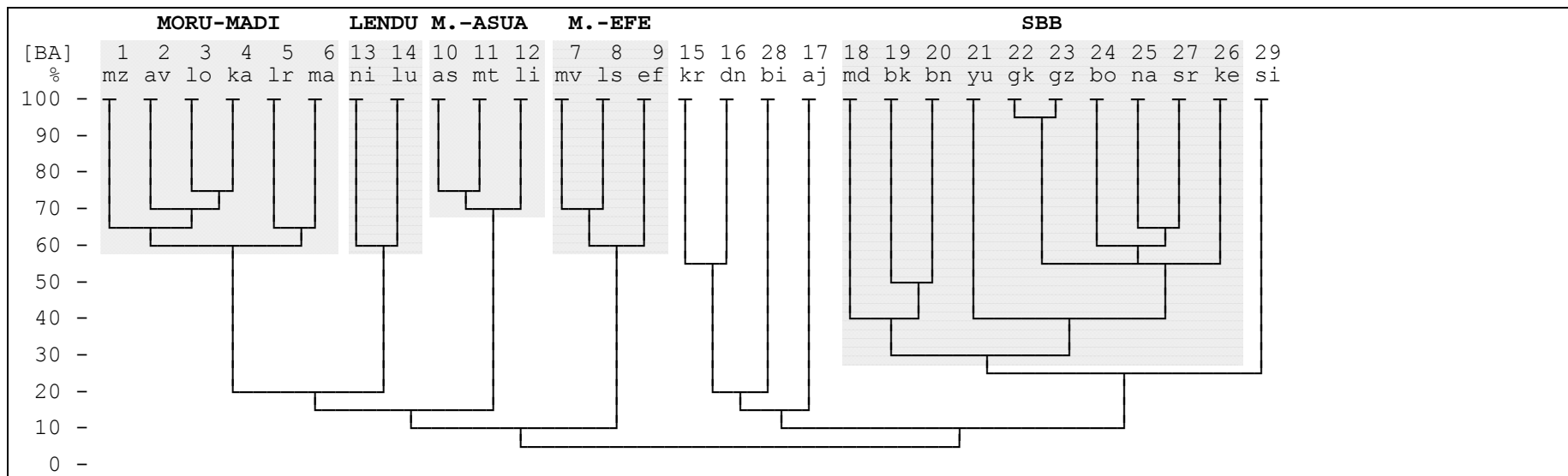


Table 2a. Lexicostatistical distances between 29 CSD languages (based on a 100-word Swadesh list; Branch Average)

| MORU-MADI |    |           | LENDU |          | MANGBETU-ASUA |    |          | MANGBUTU-EFE |    |       | SBB |    | Indeterminate |    |    |        |
|-----------|----|-----------|-------|----------|---------------|----|----------|--------------|----|-------|-----|----|---------------|----|----|--------|
| 1         | mz | Moru Miza | 13    | ni Ngiti | 10            | as | Asua     | 7            | mv | Mamvu | 18  | md | Modo          | 15 | kr | Kresh  |
| 2         | av | Avukaya   | 14    | lu Lendu | 11            | mt | Mangbetu | 8            | ls | Lese  | 19  | bk | Baka          | 16 | dn | Dongo  |
| 3         | lo | Logo      |       |          | 12            | li | Lombi    | 9            | ef | Efe   | 20  | bn | Bongo         | 17 | aj | Aja    |
| 4         | ka | Kaliko    |       |          |               |    |          |              |    |       | 21  | yu | Yulu          | 28 | bi | Birri  |
| 5         | lr | Lugbara   |       |          |               |    |          |              |    |       | 22  | gk | Gula Koto     | 29 | si | Sinyar |
| 6         | ma | Ma'di     |       |          |               |    |          |              |    |       | 23  | gz | Gula Zura     |    |    |        |
|           |    |           |       |          |               |    |          |              |    |       | 24  | bo | Bagiro        |    |    |        |
|           |    |           |       |          |               |    |          |              |    |       | 25  | na | Na            |    |    |        |
|           |    |           |       |          |               |    |          |              |    |       | 26  | ke | Kenga         |    |    |        |
|           |    |           |       |          |               |    |          |              |    |       | 27  | sr | Sar           |    |    |        |

Table 2b. Identification of subgroups and languages

| distr. | MMD | LND | MAS | MEF | SBB | tot. | tot. |
|--------|-----|-----|-----|-----|-----|------|------|
| 5x     | +   | +   | +   | +   | +   | 20   | 20   |
| 4x     | +   | +   | +   | +   | -   | 10   | 51   |
|        | +   | +   | +   | -   | +   | 14   |      |
|        | +   | +   | -   | +   | +   | 7    |      |
|        | +   | -   | +   | +   | +   | 11   |      |
|        | -   | +   | +   | +   | +   | 9    |      |
| 3x     | +   | +   | +   | -   | -   | 14   | 91   |
|        | +   | +   | -   | +   | -   | 11   |      |
|        | +   | -   | +   | +   | -   | 12   |      |
|        | -   | +   | +   | +   | -   | 7    |      |
|        | +   | +   | -   | -   | +   | 6    |      |
|        | +   | -   | +   | -   | +   | 12   |      |
|        | -   | +   | +   | -   | +   | 3    |      |
|        | +   | -   | -   | +   | +   | 9    |      |
|        | -   | +   | -   | +   | +   | 4    |      |
| -      | -   | +   | +   | +   | 13  |      |      |
| 2x     | +   | +   | -   | -   | -   | 23   | 105  |
|        | +   | -   | +   | -   | -   | 16   |      |
|        | -   | +   | +   | -   | -   | 7    |      |
|        | +   | -   | -   | +   | -   | 8    |      |
|        | -   | +   | -   | +   | -   | 3    |      |
|        | -   | -   | +   | +   | -   | 8    |      |
|        | +   | -   | -   | -   | +   | 8    |      |
|        | -   | +   | -   | -   | +   | 8    |      |
|        | -   | -   | +   | -   | +   | 17   |      |
| -      | -   | -   | +   | +   | 7   |      |      |
|        |     |     |     |     |     | 267  | 267  |

Table 3a. Distribution patterns of likely cognates in the CSD subgroups (excluding indeterminate languages) and number of occurrences

|     | MMD          | LND         | MAS         | MEF         |
|-----|--------------|-------------|-------------|-------------|
| LND | 105<br>39,3% |             |             |             |
| MAS | 109<br>40,8% | 84<br>31,5% |             |             |
| MEF | 88<br>32,9%  | 71<br>26,6% | 90<br>33,7% |             |
| SBB | 87<br>32,6%  | 71<br>26,6% | 99<br>37,1% | 80<br>30,0% |

Table 3b. Absolute occurrences and percentages (out of 267) of shared likely cognates in pairs of subgroups

|     |         |           |                   |             |           |
|-----|---------|-----------|-------------------|-------------|-----------|
| CSD | *VCV    | *kp       | *gb               | *ngb        | *ɲm       |
| MMD | *(V)CV  | *kw-a/E/i | *gw-ε/i, (*g-u ?) | *ngw        | *ɲw-a/u   |
| LND | *VCV    | *kp / *ts | *gb / *dz         | *ngb / *ndz | *m ?      |
| MAS | *VCV    | *kw-a/ε   | *g ?              | *ngw-a/ε    | *ɲw-a/ε ? |
| MEF | *(C)VCV | *kp       | *? / *g-u ?       | *ngb ?      | *?        |
| SBB | *(C)VCV | *kp       | *gb / *g-u ?      | (*ngb ?)    | *ɲm       |

Table 4. Central Sudanic correspondence formulas for labial-velar consonants

|     |         |                      |    |            |    |      |    |      |
|-----|---------|----------------------|----|------------|----|------|----|------|
| CSD | *VCV    | *ɸ                   | *ɓ | *ɸ         | *ɗ | *ɕ   | *ʃ | *ʔ   |
| MMD | *(V)CV  | *ɓ                   |    | *ɗ (/ *ɗw) |    | *ʃ   |    | *ʔ   |
| LND | *VCV    | *ɸ                   | *ɓ | *ɸ         | *ɗ | *ɕ   | *ʃ | *ʔ   |
| MAS | *VCV    | *ɓ / *ɓ <sub>B</sub> |    | *ɗ         |    | *ʃ ? |    | *ʔ   |
| MEF | *(C)VCV | *ɓ                   |    | *ɗ         |    | *ʃ   |    | *VØV |
| SBB | *(C)VCV | *ɓ                   |    | *ɗ         |    | *ʃ   |    | *ʔ   |

Table 5. Central Sudanic correspondence formulas for glottalized consonants

|   | MMD | LND | MAS | MEF | SBB |
|---|-----|-----|-----|-----|-----|
| <b>t(V)-</b> : Verbal intensive   | +   | –   | ?   | +   | +   |
| <b>K(V)-</b> : Deverbative  | +   | –   | +   | +   | +   |
| <b>O-/E-</b> or <b>A-/E-</b> : a. Itive/Ventive;<br>b. Neuter/Causative | +   | +   | +   | +   | –   |

Table 6. Evidence of the verbal prefixes through the subgroups

|        |                     | 57A                                       | 81A                               | 81B   | 85A                                 | 86A                        |
|--------|---------------------|---|-----------------------------------|---|-------------------------------------|----------------------------|
|        |                     | Position of Pronominal Possessive Affixes | Order of Subject, Object and Verb | Languages with two Dominant Orders of Subject, Object, and Verb | Order of Adposition and Noun Phrase | Order of Genitive and Noun |
| MMD    | Avokaya             | –   | No dominant order                 | SOV or SVO  | Postpositions                       | No dominant order          |
|        | Logoti              | –   | No dominant order                 | SOV or SVO  | Postpositions                       | Genitive-Noun              |
|        | Lugbara             | –   | No dominant order                 | SOV or SVO  | Postpositions                       | Genitive-Noun              |
|        | Ma'di               | –   | No dominant order                 | SOV or SVO  | Postpositions                       | No dominant order          |
|        | Moru                | Possessive suffixes                       | No dominant order                 | SOV or SVO  | Postpositions                       | Noun-Genitive              |
| LND    | Lendu               | Possessive prefixes                       | No dominant order                 | SOV or SVO  | Postpositions                       | Genitive-Noun              |
|        | Ngiti               | Possessive suffixes                       | No dominant order                 | SOV or SVO  | Postpositions                       | Genitive-Noun              |
| MAS    | Mangbetu            | Possessive suffixes                       | SVO                               | –   | –                                   | No dominant order          |
| MEF    | Lese                | –   | No dominant order                 | –   | –                                   | No dominant order          |
|        | Mamvu               | Possessive prefixes                       | SVO                               | –   | –                                   | No dominant order          |
| SBB    | Bagirmi             | Possessive suffixes                       | SVO                               | –   | Prepositions                        | Noun-Genitive              |
|        | Bagiro              | Possessive suffixes                       | SVO                               | –   | No dominant order                   | Noun-Genitive              |
|        | Baka (Sud.)         | –   | SVO                               | –   | Prepositions                        | Noun-Genitive              |
|        | Binga               | Possessive suffixes                       | –                                 | –   | –                                   | –                          |
|        | Bongo               | Possessive suffixes                       | SVO                               | –   | Prepositions                        | Noun-Genitive              |
|        | Gula (CAR)          | –   | SVO                               | –   | No dominant order                   | Noun-Genitive              |
|        | Jur Mödö            | –   | SVO                               | –   | Prepositions                        | Noun-Genitive              |
|        | Kara (CAR)          | Possessive suffixes                       | SVO                               | –   | Prepositions                        | Noun-Genitive              |
|        | Kenga               | Possessive suffixes                       | SVO                               | –   | No dominant order                   | Noun-Genitive              |
|        | Mango               | –   | –                                 | –   | –                                   | Noun-Genitive              |
|        | Mbay                | Possessive suffixes                       | SVO                               | –   | No dominant order                   | Noun-Genitive              |
|        | Ngambay             | Possessive suffixes                       | SVO                               | –   | Prepositions                        | Noun-Genitive              |
| Yulu   | Possessive suffixes | SVO                                       | –                                 | Prepositions  | Noun-Genitive                       |                            |
| Others | Aja                 | –   | SVO                               | –   | Prepositions                        | Noun-Genitive              |
|        | Kresh               | Possessive suffixes                       | SVO                               | –   | Prepositions                        | Noun-Genitive              |
|        | Birri               | –   | –                                 | –   | –                                   | –                          |

Table 7. A selection of WALS typological features for CSD languages (Dryer and WALS 2011)