

A shared pronominal canon in the Macro-Sudan belt: typological, areal and genealogical aspects

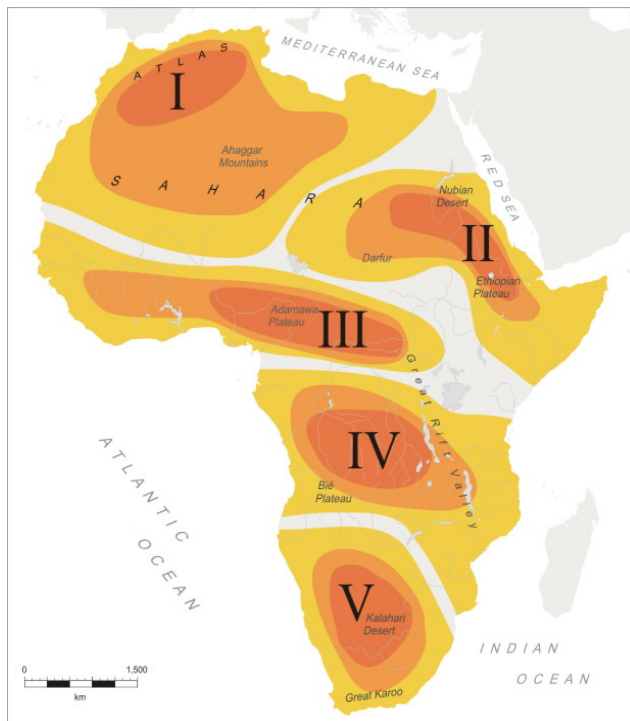
Tom Güldemann

Humboldt University Berlin and Max-Planck-Institute for the Science of Human History Jena

1 The problem

1.1 The Macro-Sudan belt

+ within a continental macro-areal profile, Macro-Sudan belt (III) as a large partly contact-mediated area south of Sahara, north of rain forest, and west of Ethiopian plateau, pre-figured by Greenberg (1959, 1983) but established in more detail by Güldemann (2003, 2008) and Clements and Rialland (2008)



Note: I = Sahara spread zone (genealogical offshoot of II), II = Chad-Ethiopia, III = **Macro-Sudan belt**, IV = Bantu spread zone (genealogical offshoot of III), V = Kalahari Basin

Map 1: Linguistic macro-areas in Africa proposed by Güldemann (2010)

1.2 The relationship of Niger-Congo and Central Sudanic

- + Macro-Sudan belt dominated by two large language families: Niger-Congo throughout and Central Sudanic in the east
- treated as genealogically distinct by Greenberg (1963): Niger-Congo within Niger-Kordofanian vs. Central Sudanic within Nilo-Saharan
- but subsumed under various areal concepts:
 - Tucker's (1940) "Eastern Sudanic": Central Sudanic and Ubangi of Niger-Congo
 - Greenberg's (1959, 1983) "African core": coextensive with Macro-Sudan belt
- subsequent genealogical hypotheses of a super-group joining Niger-Kordofanian and Nilo-Saharan:
 - Gregersen (1972)
 - Boyd (1978, 1996)
 - Blench (1995, 2000, 2007): particular relation between Central Sudanic and Niger-Kordofanian, also based on quirky typological features that are alternatively claimed for the Macro-Sudan belt
 - Dimmendaal (2001)

1.3 Shared pronoun patterns in the eastern Macro-Sudan belt

+ partly similar pronoun systems in the eastern part of the Macro-Sudan belt > **Table 1**: maximally diverse set of 11 (of ca. 1500) Niger-Congo and 6 (of ca. 65) Central-Sudanic languages > cf. Map 2 for rough geographical distribution of language groups

- + types of pronouns chosen for the sake of demonstrating the similar pattern and maximal comparability > not necessarily the same series from a morpho-syntactic perspective:
 - speech-act participants only, 3rd persons often part of different morphological subsystem
 - exclude also other language-specific speech-act participant forms, notably for 1st-person inclusive in some Niger-Kordofanian languages
 - one representative series with little contextual phonological assimilation

+ three recurrent observations across the sample of Table 1:

- set-symbolic contrast of singular vs. plural number first of all/only by means of tone:
 - all Central Sudanic and Day
- set-symbolic contrast of 1st vs. 2nd person exclusively by means of vowel quality:
 - all but Yulu and Ngiti
- alliteration of 1st vs. 2nd person based on initial nasal consonant /m/:
 - all but Yulu and Ngiti

> more detailed characterization of affinities by means of family-internal reconstruction

Language	Family/ Highest-order family		S	P	Source
<i>Dadiya</i>	Tula-Waja in ADAMAWA/ Niger-Congo	1	<i>mì</i>	<i>bèn</i>	Jungrraithmayr (1968/9: 171, 195-6)
		2	<i>mo</i>	<i>jièn</i>	
<i>Burak</i>	Bikwin-Jen in ADAMAWA/ Niger-Congo	1	<i>mì</i>	<i>gbo</i>	Jungrraithmayr (1968/9: 171, 203)
		2	<i>mo</i>	<i>ya</i>	
<i>Mundang</i>	Kebi-Benue in ADAMAWA/ Niger-Congo	1	<i>mè</i>	<i>rù</i>	Elders (2000: 157)
		2	<i>mò</i>	<i>wì</i>	
<i>Doyayo</i>	Samba-Duru in ADAMAWA/ Niger-Congo	1	<i>-mì</i>	<i>-wε</i>	Wiering and Wiering (1994: 74)
		2	<i>-mɔ</i>	<i>-nε</i>	
<i>Mumuye</i>	Mumuyic in ADAMAWA/ Niger-Congo	1	<i>mí-</i>	<i>wó-</i>	Shimizu (1983: 58)
		2	<i>mó-</i>	<i>nó-</i>	
<i>Day</i>	Isolate in ADAMAWA/ Niger-Congo	1	<i>-mà</i>	<i>-nā</i>	Nougayrol (1979: 167)
		2	<i>-mɔ</i>	<i>-mɔ</i>	
<i>Fali</i>	Isolate in ADAMAWA/ Niger-Congo	1	<i>mì</i>	<i>òtò</i>	Kramer (2014: 156)
		2	<i>mù</i>	<i>ùnù</i>	
<i>Mbodomo</i>	Gbayaic in UBANGI/ Niger-Congo	1	<i>mí</i>	<i>élé</i>	Boyd (1997: 66)
		2	<i>mé</i>	<i>éné</i>	
<i>Geme</i>	Zandic in UBANGI/ Niger-Congo	1	<i>mì</i>	<i>hàáɲ</i>	Boyd and Nougayrol (1988: 71)
		2	<i>mɔ</i>	<i>hènɛ</i>	
<i>Togoyo</i>	Raga in UBANGI/ Niger-Congo	1	<i>mì</i>	<i>ye</i>	Santandrea (1969: 103)
		2	<i>mo</i>	<i>ni(i)</i>	
<i>Mayogo</i>	Mundu-Baka in UBANGI/ Niger-Congo	1	<i>ma</i>	<i>ya</i>	Sawka (2001: 22)
		2	<i>mu</i>	<i>yi</i>	
<i>Yulu</i>	Bongo-Bagirmi/ Central Sudanic	1	<i>mà</i>	<i>máá</i>	Boyeldieu (1987: 195)
		2	<i>kìn</i>	<i>jìkè</i>	
<i>Birri</i>	Isolate in Central Sudanic	1	<i>má</i>	<i>maà</i>	Santandrea (1966: 201-2)
		2	<i>mú</i>	<i>muù</i>	
<i>Ngiti</i>	Lenduic in MORU-MANGBETU/ Central Sudanic	1	<i>ma</i>	<i>mà</i>	Kutsch-Lojenga (1994: 192)
		2	<i>nyì</i>	<i>nyì</i>	
<i>Efe</i>	Mangbutu-Efe in MORU-M./ Central Sudanic	1	<i>mū</i>	<i>àmū</i>	Vorbichler (1979: 437), Demolin (1988: 78-9)
		2	<i>ímí</i>	<i>àmì</i>	
<i>Moru</i>	Moru-Madi in MORU-M./ Central Sudanic	1	<i>má</i>	<i>mà</i>	Kilpatrick (2006: 271)
		2	<i>mí</i>	<i>mì</i>	
<i>Mangbetu</i>	Mangbetu-Asua in MORU-M./ Central Sudanic	1	<i>ímá</i>	<i>àmà</i>	Demolin (1992, app. 2: 25, 49, 32, 53)
		2	<i>ímí</i>	<i>àmì</i>	

Note: GENEALOGICAL POOL, **form** involved in set-contrast and/or alliteration

Table 1: Speech-act participant pronouns in the eastern Macro-Sudan belt

2. Towards reconstructing pronoun paradigms

2.1 Niger-Congo

2.1.1 Genealogical status

- largest language family globally
- considerable internal complexity that is little understood
- recognition of a genealogical “Niger-Congo” core as early as Westermann (1927, 1935), despite absence of a robust family tree and historical-comparative reconstructions
- dominated in terms of research history, depth of documentation, and comparative approach by the demographically central but genealogically shallow Bantu subgroup
- many secure subgroups are “genealogical pools” rather than proven subfamilies:
 - Benue-Kwa, Atlantic, Gur, Adamawa, Ubangi, Kru
- > pool-internal subgroups (~70) to be taken into account on a par with traditional higher-order subgroups
- uncertain membership of some, partly under-researched subgroups and languages:
 - Ijoid, Mande, Dogon, *Pere*, *Bangime*; entire domain: Kordofanian, Katlaic

No.	Basic unit	Number of languages	Geographic location
1	BENUE-KWA (> 20)	~1000	Ivory Coast to southern Africa
2	<i>Pere</i> *	1	northern Ivory Coast
3	Dakoid*	5	northwestern Nigeria
4	Ijoid*	10	Niger delta (Nigeria)
5	KRU (2)	~40	Liberia, Ivory Coast
6	ATLANTIC (7)	~65	western Atlantic coast (except Fula)
7	Mande	~70	western half of West Africa
8	Dogon ^o	20	Bandiagara M. (Mali, Burkina Faso)
9	<i>Bangime</i> *	1	Bandiagara M. (Mali)
10	GUR (7)	~100	central interior West Africa
11	ADAMAWA (14)	~90	western Nigeria to southern Chad
12	UBANGI (7)	70	Cameroon to South Sudan
13	KORDOFANIAN* (4)	~30	Nuba M. (Sudan)
14	Katlaic*	2	Nuba M. (Sudan)
	Total	~1500	

Note: GENEALOGICAL POOL; (n) = number of potentially separate subgroups;

without comprehensive modern and published description ^o before 2000, * today;

Table 2: Basic genealogical units in the Niger-Kordofanian domain

2.1.2 Pronoun reconstruction

+ major methodological steps:

(I) assemble maximally large set of comparative (proto)-forms > **APPENDIX 1**

a. specific forms of single-language units (marked by italics)

b. reconstructions of subgroups established in literature (marked by *X)

c. establish preliminary “pseudo-reconstructions” based on representative samples of member languages (marked by *.X*) - for example, Bəna-Mboi (Adamawa) > **Table 3**

Language	1S	2S	1P	2P
Bəna (Yungur) of Dumne	<i>i.ná</i>	<i>i.ngá</i>	<i>i.(n)da</i>	<i>í.sá</i>
Bəna of Pirambe	<i>i.ná</i>	<i>i.ngá</i>	<i>i.nda</i>	<i>í.sá</i>
Voro	<i>í.nà</i>	<i>í.ngà</i>	<i>í.ndá</i>	<i>ì.za</i>
Bəna of Bodei	<i>na.shè</i>	<i>gá.shé</i>	<i>ndaá.shè</i>	<i>njáá.she</i>
Bəna of Yang	<i>ná.jé</i>	<i>gá.jé</i>	<i>daa.z(h)á</i>	<i>jha.jhá</i>
Mboi of Livo	<i>nə</i>	<i>ngə</i>	<i>ndá</i>	<i>zá</i>
Mboi of Haanda	<i>ni.shè</i>	<i>ngí.s(h)è</i>	<i>ndá gənà</i>	<i>za</i>
Kaan (Libo)	<i>na.yá</i>	<i>ga.yá</i>	<i>ta.nyá</i>	<i>za.nyá</i>
Proto-Bəna-Mboi	<i>.na</i>	<i>.(n)ga</i>	<i>.(n)da</i>	<i>.Sa</i>

Table 3: Pronominal pseudo-reconstructions of Proto-Bəna-Mboi (Adamawa) based on Kleinwillinghöfer (2011c)

(II) compare forms/reconstructions across Niger-Kordofanian and search for:

- recurrent forms in each of 4 person/number values

- recurrent paradigmatic patterns across the 4-term paradigm

(III) establish preliminary proto-forms also taking geographical distributions of individual attestations into account

+ reconstruction result:

1S: 3 recurrent abstract forms: **mV^{front}** (> 30 attestations), mV (7), and N(V^{front}) (15)
mV^{front} most frequent and plausible source for other forms (cf., e.g., §2.2.2 for contextual emergence of N(V^{front}))

2S: 4 recurrent abstract forms: **mV^{back}** (> 20 attestations), mV (2), (B)V^{back} (13), BV (3)
mV^{back} most frequent and plausible source for other forms (cf. Bandaic for (B)V^{back})
(B)V^{back} as second-most frequent form clusters in Benue-Kwa pool

1P: overall diverse, thematic alveolar obstruent T most frequent (16 attestations)

2P: overall diverse, thematic alveolar/palatal nasal N most frequent (23 attestations)

Paradigm contrast 1: m-based alliteration in the singular (18 attestations) vs.

Paradigm contrast 2: TV~NV rhyme in the plural (12 attestations)

> all 6 predominant features geographically widespread: Atlantic, Gur, Adamawa, Ubangi

+ approximative reconstructions for all four forms possible whereby historical depth of plural forms is unclear (?genealogical status of Ubangi core groups) > **Table 4**

> reconstruction does not necessarily inform the question about the genealogical status of families that cannot (yet) be shown to share (parts of) the pronoun pattern

Genealogical pool	Lineage	1S	2S	1P	2P
BENUE-KWA	Bantoid: Bantu	<i>.mi/ *-n-</i>	<i>*u-</i>	<i>*-cú-</i>	<i>*-nú-</i>
BENUE-KWA	<i>Oko</i>	<i>-mɛ</i>	<i>-wɔ</i>	<i>-tɔ</i>	<i>-nɔ</i>
ATLANTIC	Mel: Temnic	<i>.mi</i>	<i>.mO</i>	<i>.sV</i>	<i>.nV</i>
ATLANTIC	<i>Sua</i>	<i>meN-</i>	<i>mɔɔ</i>	<i>nrɔ</i>	<i>nɔɔ</i>
GUR	Central: Oti-Volta	<i>*mV</i>	<i>*bV/(f)V</i>	<i>*tV</i>	<i>*(n)yV</i>
ADAMAWA	Mumuyic	<i>.mE/ .N</i>	<i>.mo</i>	<i>.rO</i>	<i>.noO</i>
ADAMAWA	<i>Kwa~Baa</i>	<i>ÿÿ</i>	<i>-mù</i>	<i>-(t)</i>	<i>-n</i>
ADAMAWA	Fali	<i>(-)mì</i>	<i>*mu</i>	<i>.-to</i>	<i>*-no</i>
UBANGI	Gbayaic	<i>*mí</i>	<i>*mé</i>	<i>*(-)lé</i>	<i>*(-)né</i>
Early Niger-Congo (preliminary)		<i>.mV^{front}</i>	<i>.mV^{back}</i>	<i>.TV^{back}</i>	<i>.NV^{back}</i>

Note: see Appendix 1 for sources

Table 4: Pronoun paradigms in Early Niger-Congo and conservative subgroups

2.2 Central Sudanic

2.2.1 Genealogical status

- compared to Niger-Congo, smaller inventory of languages and fewer and genealogically better articulated subgroups > **Table 5**

- inconclusive status as a family (cf. Boyeldieu and Nougayrol 2008, Boyeldieu 2010)

No.	Basic unit	Number of languages	Geographic location
1	Sinyar	1	on Chad-Sudan border
2	Bongo-Bagirmi	~40	Chad, CAR, Sudan, South Sudan
3	Kresh	1	western South Sudan
4	Aja	1	western South Sudan
5	Birri	1	eastern CAR
6	Moru-Madi	10	DRC-South Sudan-Uganda triangle
7	Lenduic	2	northeastern DRC
8	Mangbutu-Efe	7	northeastern DRC
9	Mangbetu-Asua	3	northeastern DRC
	Total	~65	

Table 5: Basic genealogical units of Central Sudanic

2.2.2 Pronoun reconstruction

- profile of comparison of pronoun paradigms as single-language forms, established reconstructions, and “pseudo-reconstructions” similar to that in §2.1 > **APPENDIX 2**

> more extensive language coverage allows for more detailed reconstruction

> superficially, three blocks of lineages according to profile of pronominal systems:

a) Northwestern: Bongo-Bagirmi, Sinyar

b) Central: Kresh, Aja, Birri

c) Southeastern: Moru-Madi, Lenduic, Mangbutu-Efe, Mangbetu-Asua = Moru-Mangbetu

Moru-Mangbetu (Southeastern block)

+ Tucker and Bryan’s (1956, 1966) Moru-Mangbetu confirmed by a largely shared pronoun paradigm, pace previous scepticism > **Table 6**

> foreshadowed by Tucker and Bryan (1956: 142, “block pattern”) and Demolin (1988: 88)

but now based on intermediate proto-forms:

- all roots with initial /m/

- person distinction by vowel opposition /a/ vs. /i/

- number distinction by tone change on root and/or recurrent pre-root vowel

	1st person	2nd person
Singular	*(V).ma	*(V).mi
Plural	*^(V).ma	*^(V).mi

Table 6: Speech-act participant pronouns in Proto-Moru-Mangbetu

+ major synchronic deviations plausibly explained as result of subsequent changes:

a) /a/ > /u/ in 1st-person form: Mangbutu-Efe (remnants reflex of *ma in Mamvu)

b) /m/ > /n/~ /ŋ/ in 2nd-person: universal in Lenduic, almost complete in Mangbutu-Efe, occasional allomorph in Moru-Madi > **Table 7**

> !!! relevant for related phenomenon with Niger-Congo .mV^{front} for 1st person singular

Person/ Number	Object of postposition	Object of clause	Subject of clause before C	Subject of clause before V
1S	má	mā ^h	má	m´
2S	mí	mī	mí	ny´
1P	àmā	àmā	mà	m`
2P	àmī	àmī	mì	ny`

Table 7: Speech-act participant pronouns in Moru (Kilpatrick 2006: 271-3)

Kresh, Aja, and Birri (Central block)

+ Aja and Birri virtually identical pattern as in Moru-Mangbetu, except for /u/ rather than /i/ in 2nd-person form

- one possible direction of change, /i/ > /u/, has partial precedent in 1st-person form in Mangbutu-Efe, but more neutral reconstruction for common ancestor > **Table 9**

+ plural forms of Kresh substantially different but evidence for innovation:

a) verbal subject cross-reference with likely reflexes of older plural pronouns in *m(V)*-:

- plural imperative *m(V)*- (Tucker and Bryan 1966: 77, 80; Santandrea 1976: 160)

- initial *m*- also in relevant non-modal verb forms: cf. (1)c. for Woro, Table 8 for Dongo, verb paradigms in (Tucker and Bryan 1966: 76) for Kresh proper

(1)a. òk-ámě

3S:saw-1S.OBJ

he saw me

b. mək-et(è)

1S:saw-3S.OBJ

I saw him

c. mək-ét(e)

1P:saw-3S.OBJ

we saw him

(Santandrea 1976: 100)

	1st person	2nd person	3rd person
Singular	am ɔ’ɔ	um ʒ’ɔ	ot ɔ’ɔ
Plural	áge m’ɔ’ɔ	ígí m’ɔ’ɔ	épi ɔ’ɔ

Table 8: Pronoun-verb paradigm of ‘be ill’ in Dongo (Santandrea 1976: 100)

b) arguably innovative independent 2nd-person plural pronoun *f-gí likely to be derived from segmentally identical 3rd-person plural pronoun, as in languages like Portuguese, German, etc.,

> -gí with likely cognates in other Central Sudanic languages, notably pronominal plural markers like *gE in Bongo-Bagirmi (Boyeldieu and Nougayrol 2004: 37, Table 8) and *ki* in the Moru-Madi languages Aringa and Ma’di (Kilpatrick 2006: 273-6)

	1st person	2nd person
Singular	*(V).ma	*(V).mV ^{close}
Plural	*^(V).ma	*^(V).mV ^{close}

Table 9: Speech-act participant pronouns in an early stage of Central Sudanic

Bongo-Bagirmi and Sinyar (Northwestern block)

- + pronominal data support the status of Sinyar as a Bongo-Bagirmi language
- + Proto-Bongo-Bagirmi with little similarity to the rest of Central Sudanic, except for 1st-person singular form > 2 hypotheses for Bongo-Bagirmi:
 - a) reflects older stage so that reconstructed system in Table 9 is innovative
 - b) underwent changes similar to those in Kresh
 - > some (mostly circumstantial) evidence favors scenario b):
 - rare evidence for a pattern as in Table 9: cf. Yulu paradigm in Table 1
 - Kresh, Aja, Birri, and Moru-Mangbetu are too diverse for being a late unitary split from a kind of Central Sudanic core represented by Bongo-Bagirmi
 - homogeneous Bongo-Bagirmi is instead a plausible late Central Sudanic off-shoot that innovated and then expanded in demographic and geographical terms

2.3 Defining the shared pronominal canon

- + synchronic similarities of pronoun paradigms in eastern Macro-Sudan belt (cf. Table 1) best characterized as **m-based CV-alliteration between 1st and 2nd person singular**
- > most likely origin in the same canon shared by early chronolects of Niger-Congo (cf. Table 4) and Central Sudanic (cf. Table 8) > **Table 10**

Family	1S	2S	1P	2P
Niger-Congo	.mV ^{front}	.mV ^{back}	.tV ^{?back}	.nV ^{?back}
Central Sudanic	*(V).ma	*(V).mV ^{close}	*(V).ma	*(V).mV ^{close}
Shared canon	mV ^A	mV ^B	-	-

Table 10: Early Niger-Congo and Central Sudanic pronoun paradigms compared

- + close-to-complete continent-wide survey of pronoun systems oriented towards early lineage states (ca. 50 lineages) so far yielded only one other case that is close to but not identical with the canon in Table 10

	1st person	2nd person
Singular	.am	.mV
Plural	.mi	.ki

Table 11: Approximate Proto-Maban system of speech-act participant pronouns (after Edgar 1991: 128, 129, 130, 131)

What is the historical status of the pronominal canon shared by early Niger-Congo and Central Sudanic?

3. Discussion

3.1 Explaining linguistic isoglosses

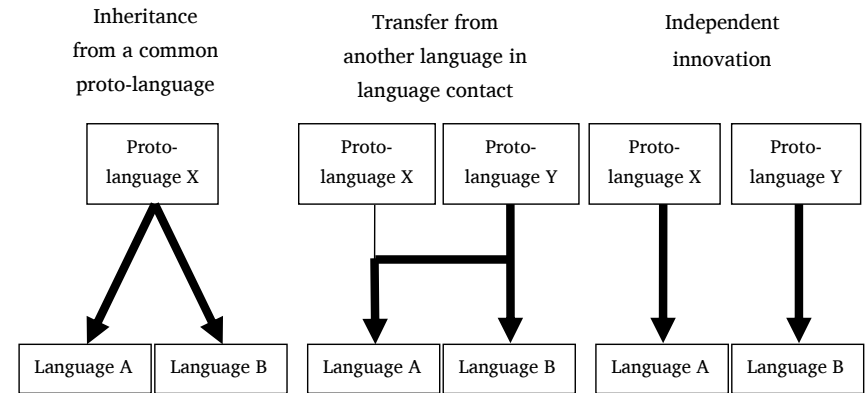


Figure 1: Three major scenarios how languages come to share linguistic features

- | | | |
|---|------------------|------------------------|
| a) parallel environmental drift? | (non-historical) | so far unlikely |
| b) coincidence | (non-historical) | cannot be excluded |
| c) parallel language-universal drift (“typology”) | (non-historical) | relevant > §3.2 |
| d) areal contact | (historical) | relevant > §3.3 |
| e) inheritance | (historical) | relevant > §3.4 |

3.2 Typology

- + sizeable amount of literature about cross-linguistic tendencies for the sound structure of pronoun forms as well as their paradigmatic systems:

- a) Gordon (1995) with a worldwide sample of 62 languages: small set of unmarked sounds, preference for *m* in 1st person (and *t* in 3rd person)
- b) Rhodes (1997): arbitrary association between person/number and sound, morphological templates can complement simple (supra)segmental features as distinctive traits
- c) Nichols and Peterson (1996), Nichols (2001) with a worldwide sample of 173 languages:

... the distribution of *n* is a matter of universal preferences, while that of *m* ... is less strongly linked to universals and more strongly linked to historical contingencies than that of *n*. *m* is therefore the better potential marker of historical connections. (Nichols and P. 1996: 351)

- bias towards certain speech sounds increase likelihood of chance resemblances
- thematic nasals overly frequent but without specific categorial correlations
- recurrent “closed-set phonosymbolism” (Nichols 2001: 265)

3.3 Contact and areality

+ general assumption that pronouns are relatively stable and not frequently borrowed but some controversy, notably revolving around American languages: Nichols and Peterson (1996, 1998), Nichols (2003: 292-4) vs. Campbell (1997) > reliance on empirical facts

+ 2 large-scale pronominal areas proposed by Nichols and Peterson (1996), Nichols (2001):

a) *n:m* person opposition in the western Americas (vs. controversial “Amerind” family)

b) *B:T* person opposition in northeastern Eurasia (vs. controversial “Nostratic” family)

> eastern Macro-Sudan appears to represent a similar case in that languages concerned are areally related in various ways and suspected by some scholars to be related genealogically

+ *m:m* canon not recognized in previous work despite its deep entrenchment - due to old age but also sample bias > African sub-samples in worldwide surveys tend to have:

a) overall fewer languages due to Greenberg’s (1963) lumping classification

b) fewer genealogically related but sufficiently distant languages

c) languages from larger and better described subgroups which are often innovative, e.g.:

- Bongo-Bagirmi in Central Sudanic: loss of **mV*^{close} in 2nd-person singular

- Benue-Kwa in Niger-Congo: shift *.mV*^{back} > *.(B)V*^{back} in 2nd-person singular

> Nichols and Peterson (1996): Africa with only 5 relevant languages, namely **Logbara** (Central Sudanic) and Fula, **Gbeya**, Luganda, Yoruba (Niger-Congo), as opposed to, e.g., smaller Europe with 4 Indo-European, 2 Uralic, 2 Nakh-Dagestanian languages

+ possible contact effects?: some languages in the area (presumably) changed inherited vowel pattern and thereby became similar to unrelated but geographically close languages

- 1st-person singular /*V*^{front}/ > /a/ in some Niger-Congo languages

- 2nd-person singular /i/ > /u/ in some Central Sudanic languages?

Genealogical group		1S	2S	Source
Early Niger-Congo		<i>.mV</i> ^{front}	<i>.mV</i> ^{back}	cf. §2.1.2, Table 4
<i>Day</i>	Adamawa	-mà	-mɔ̀	Nougayrol (1979: 167)
Proto-Mundu-Baka	Ubangi	*mā	*mU	Winkhart (2016: 66)
<i>Birri</i>	Central	má	mú	Santandrea (1966: 201-2)
<i>Aja</i>	Central	(m)a.ma	(m)u.mu	Santandrea (1976: 93)
Kresh	Central	.a.ma	.u.mu	Santandrea (1976: 93)
Early Central Sudanic		* <i>(V).ma</i>	?* <i>(V).mi</i>	cf. §2.2.2, Tables 6 + 9

Note: **Bold** = (possibly) diverges from inherited form

Table 12: Languages in the eastern Macro-Sudan belt with pronominal canons that (may) deviate from the relevant reconstructed pattern

3.4 Inheritance

+ repeated speculation about a genealogical relationship between Niger-Kordofanian and Nilo-Saharan, whereby Central Sudanic plays central role (cf. §1.2), based on:

- superficial lexical comparisons

- typological features shared elsewhere in the Macro-Sudan belt

+ *m:m* canon as genealogical evidence:

a) is of old genealogical vintage rather than shallow synchronic relevance

b) is morphological and paradigmatic, so in principle promising but:

- the first and only evidence of this kind (pace Dimmendaal (2001) on logophorics)

- not quite “individual-identifying” in terms of Nichols (1996)

3.5 Summary

+ robust evidence in Macro-Sudan belt of an old alliterative canon in singular pronouns:

***mV*^A vs. *mV*^B**

+ 4 explanations are in principle (partly) relevant:

a) coincidence

b) independent emergence due to universal trends in pronoun paradigms

c) areal convergence between Niger-Congo core and Central Sudanic

d) inheritance from a genealogical supergroup comprising the two lineages

> final decision difficult at the present due to little-advanced historical work in Africa

+ my current assessment: neither a) pure coincidence nor d) sufficient for genealogical hypothesis (but stay alert in future research), instead a multiple-causation scenario that combines b) typological tendencies with c) ancient areal relationship:

Both lineages had pronoun paradigms sharing partly counterposed nasals and came into contact whereby interference took place enhancing paradigm-internal phono-symbolism causing subtle submorphemic change in at least one lineage.

- is in line with common typological trends

- does not involve borrowing of any pronoun form

- areal hypothesis exists independently in the form of the Macro-Sudan belt (cf. §1.1)

> if viable, possibly significant for indicating an eastern homeland of Niger-Congo!!!

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