

# Revising the substratal/adstratal influence on Arabic creoles

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## 1. Purpose and method

The “substratal” or “Nilotic” influence on Arabic creoles<sup>1</sup>, i.e. Nubi of East Africa, contemporary Juba Arabic (abbreviated JA) of South Sudan has been discussed through more than 35 years long studies on them. Yet, as a result, many stressed inheritance of lexifier Arabic varieties, or universals, and some works examined Bari influence (as it is prominent in the vocabulary).

This short paper intends to seek for revised explanation on the substrata/adstrata problem of Arabic creoles (i.e. where, when and which languages were the substrata/adstrata). Properly also, the definition of substrata/adstrata matters in this attempt (cf. 2.5). In Section 2, we revise the history of Arabic creoles concerning socio-historical perspectives in order to observe the status of substrata/adstrata influence in each period. Afterward, we treat some relatively clearer non-Arabic lexical borrowings and calques in Section 3, and some presumable (but unclear) grammatical borrowings (or contact-induced language changes) and fusions in Section 4.

## 2. Historical perspective on substratal/adstratal influence

### 2.1. Chronology and Languages of Equatoria Region

In this section, tentative developmental history of Arabic creoles is shown according to Nakao (2011), which must still needs enough revisions.

Here, we divide the modern history of, to say, greater Equatoria Region (including Equatoria states of South Sudan and North(west)ern parts of Uganda, and Northeastern parts of D. R.C.) into 4 periods as in (1), to describe the developmental stages of Arabic creoles (cf. Ushari 1983):

- (1) 1840s–1890s: Pre-Colonial Period
- 1890s–1910s: <Early> Colonial Period
- 1910s–1950s: <Core> Colonial Period
- 1950s–2010s: Post-Colonial Period

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<sup>1</sup> In this paper, we use the term “creole”, not considering the definition of pidgin and/or creole. In this paper, we exclude Arabic pidgins/creoles not genetically related to Nubi nor Juba Arabic.

Main ethnic languages (or *rutâns* in Juba Arabic) spoken in the Equatoria Region include Sudanese/Ugandan Lwo languages (e.g. Acholi, Pâri, etc.), Eastern Nilotic Bari languages and Lotuho languages, Centreal Sudanic Moru-Ma'di languages, Surmic languages (e.g. Didinga, Tenet, etc.) and Ubangian Zande languages.

## 2.2. Pre-Colonial Period 1840s–1890s

In the Pre-Colonial period, Egyptian military service gave birth to the *zeribas* (military camp), which is described by Schweinfurth (1873) as consisted of European/Egyptian commanders, *wakils* (officers) from Northern Sudan (including Southern Sudanese ex-slaves), Western Sudanese *faqih*s (Islamic teachers), Dongolese soldiers/traders and Southern Sudanese soldiers, workers etc.

Observing colonial documents, there seems not to be a crystallized Arabic creole in this period yet, while there were recorded several diverse non-native (perhaps pidginized) Arabic varieties in the region by the communities, in the *zeriba* as a kind of language-area.

### “Bimbashi Arabic” or Arabic of European commanders

Though Prokosch (1986) described “Bimbashi Arabic” as to be the proto-language of Nubi and Juba Arabic, in the colonial documents, this term indicates ‘ungrammatical’ (Egyptian) Arabic spoken by European officers (Comyn 1911: xiii, Hillelson 1919, Jarvis 1938: 183ff., Symes 1946: 8, Cruickshank 1962: 165–166, etc. The fact that the term *bimbashi* itself means “Major” in Turkish and Egypto-Sudanese Arabic doesn’t contradict their statements).

The main features of “Bimbashi Arabic” are: Egyptian Arabic-lexified, Imperative form used as indicative (e.g. Jarvis *ibid.* *ana isma* ‘I hear’), isolating possessives (e.g. Cruickshank *ibid.* *betaa ana* ‘my’, *betaaa enta* ‘your’), errors in definite article (e.g. Jarvis *ibid.* *el nas kubar* ‘the notables’, *el shoogl el bolis* ‘[the works of] the police’), etc. Besides, Hall (1907: 2) mentions a “jargon” Arabic used among European tourists and Egyptian donkey-boys, which resembles “Bimbashi Arabic”. The data of “Bimbashi Arabic” show no African substratal/adstratal influence.

### Dongolese jargon

Dongolese members in *zeribas*, who were bilingual in Dongolese Nubian and Sudanese Colloquial Arabic, have been suspected to have impacted the birth of Arabic creoles (cf. Ushari 1983), while Arabic creoles have no pure Dongolese words unique to them. The next statement given by Emin Pasha (Schweinfurth & Ratzel 1888: 218) is interesting for this paradox.

There is no doubt that words first introduced by Danagla have been incorporated in the Negro languages, and are now current throughout the country. As instances I may mention *meryem* (woman, female), *nyerkúk* (child, young), and *vagián* (proud, obstinate),

which must be familiar to any one who has traveled through the regions of the White Nile or the Bahr-el-Ghazal.

These lexical items are retained in the contemporary Arabic creoles, e.g. Nubi. *mária* “woman”, *nyerekú* “child” (Heine 1982). The extreme etymologies for these lexical items are still unknown, but it may deserve to consider these were a kind of jargon, originally used by Dongolese members.

#### **Arabic (varieties) of *wakils* and “ex-slave” soldiers.**

Amery (1905: xi–xiii) notes Sudanese officers’ (*wakils*) Arabic at that time is influenced by Egyptian Arabic. Some (semi-)colloquial Arabic letters which were probably written by the *wakils* (Hillelson 1925: 120, Luffin 2004a) exactly show some Egyptian Arabic influence.

Probably also there was another Arabic variety spoken by the regular ex-slave troops (*jihadiyas*), which might have developed into Arabic creoles later. One of the important example is a sentence given by Junker (1891: 472) for “Negro-Arabic” (first introduced in Tosco & Owens 1993), whose lexifier seems Egyptian Arabic. Junker also records *bongo* ‘cloth’, which would be Western Nilotic-origin (cf. Nebel 1979: Dinka. *buong* ‘dress for women’, Odonga 2005: Acholi. *boŋo* ‘cloth(es)’). Later, Spagnolo (1933: 15) records Bari *boŋo* ‘cloth’ as “Arabic” origin, though this lexical item does not appear in the contemporary Arabic creoles.

Makris (1994, 2000) reports “pidgin Arabic” songs collected by Thorburn (1925) were composed between 1860s–1890s in the *jihadiya* army, and still remembered by ‘*tumbura*’ (spirit possession) ritual leaders in Khartoum. These kinds of ritual songs contain non-Arabic words (‘*rutana*’), but none of which exists in today’s Arabic creoles. If his accounts are real, these kinds of songs can be considered to have fossilized the Arabic spoken by the *jihadiyas*.

Lopashich (1958) is another report on Sudanese ex-slave descendants in Ulcinj, Montenegro. There is a word *nyenje*, recorded in their song, which is presumed to be a borrowing from Moru-Ma’di (cf. Tucker 1940: 359, Moru. *nyenye* ‘mosquito’).

Another known Arabic creole, Turku of the colonial French Equatorial Africa (Muraz 1931, analyzed in Tosco & Owens 1993) was brought by the descendants of private ex-slave soldiers (*bazingirs*) originated in Bahr el-Ghazal Region of Southern Sudan. Its resemblance with Nubi and Juba Arabic may indicate the Arabic variety spoken by *bazingirs* have had contact with Arabic spoken by *jihadiyas*. It has some non-Arabic words, but their etymology is not uncovered yet.

### **2.3. Early and Core Colonial Period 1890s–1950s**

#### **Vocabularies of early Arabic creoles**

In the Early Colonial Period, as far as we know, four notable vocabularies of early Arabic creoles as in (2) were published (Kaye & Tosco 1993, Luffin 2004b and 2005).

- (2) Jenkins (1909), of the “Uganda Sudanese” (or later Nubis)  
 Meldon (1913), of the “Sudanese in Uganda” (or later Nubis)  
 Wtterwulghé (1899), of the Lado Enclave  
 Moltedo (1905), of the Lado Enclave

Tucker (1934) reports, a form of jargon Arabic called ‘Mongaltese’ or ‘*Bimbashi* Arabic’ was in use broadly in the Southern Provinces of Sudan. This name seems to have had been used until 1950s (Cook 1955), besides we have no direct records for ‘Mongaltese’ (Arabic terms in some vocabularies for game-hunting, e.g. Reid 1952 perhaps may be those of ‘Mongaltese’).

Nakao (2011) considered the Arabic creoles shown in the vocabularies were further crystallized than the Arabic varieties of Pre-Colonial Period in some respects, but this stage precedes the reconstructed proto-language of Nubi and Juba Arabic<sup>2</sup>. From this observation, it is presumable that the crystallization of Arabic creole(s) began along with the modernization process of Equatoria Region (e.g. development of *zeribas* into towns), until the border lines are made in the 1910s.

One of the most prominent instances of crystallization seen in this stage is the stable use of some particular substratal/adstratal lexical items, which we treat in Section 3.

### **Lingue franche and multilingualism**

Another interesting point of the colonial period is the existence of plural lingue franche in the Equatoria Region, in addition to the Arabic creoles: Bangala (pidginized Lingala) were introduced by Belgian officials in the Lado Enclave (Ushari 1983), while Swahili has been the main lingua franca in Northern Uganda along with Luganda. Clear borrowings from these lingue franche are still observed in the contemporary Arabic creoles (see Section 3). This fact may give another possibility of explanation that these lingue franche effected the crystallization of Arabic creoles with relexification process.

Many (core-)colonial and modern descriptive studies on Equatorial languages report they have a lot of borrowings from Arabic creoles<sup>3</sup>, e.g. Bari (Spagnolo 1933, 1960), Acholi (Malandra 1952), Zande (Block et al. 1912), Lotuho (Muratori 1948, which also records Bari and Acholi) and Ma’di (Blackings 2000). This fact indicates these languages were in contact with early Arabic creoles.

These works also records Swahili borrowings (sometimes tagged ‘Arabic’) into these languages

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<sup>2</sup> This observation is paradoxical when we concern that ‘Ugandan Sudanese’ were descendants of *jihadiyas*, who escaped from then Northern Egyptian Equatoria (today South Sudan) with Emin Pasha in 1885, and their settlement in the East African colonial cities (e.g. Kibera, Bombo, Dar es Salaam) were already done in the early 1900s. Jonathan Owens (in the preface of *SUGIA* 14: 11) disputes Jenkins’ vocabulary that it doesn’t represent the pure basilect of the early Arabic creole.

<sup>3</sup> Especially, lexical items like *bagara* ‘cow’ and *waraga* ‘paper’ tend to be borrowed in Central African languages, e.g. Bangala (Wtterwulghé 1899), Sango (Samarin 1967), Mamvu (Coens & Goderie 1912), Mangbetu (Autriqué et al. 1912) and Barambu (Brugger et al. 1912).

(e.g. Muratori 1948 ‘table’, Bari. *meja*, Lotuho. *attarameja*, Acholi. *meja*, cf. Swahili. *meza*, Juba Arabic. *terebéza*). It would be arguable if Swahili was a lingua franca of then Southern Sudan, or these Swahili words were brought by foreign (Ugandan/Kenyan) merchants. We will argue again this problem in the conclusion.

#### 2.4. Post-Colonial Period 1950s–2010s

##### **Divergence and contact between Nubi and Juba Arabic**

After the independence of the Republic of the Sudan, the term “Mongaliese” seems to have changed its name into “Juba Arabic” (maybe contrasted to ‘Khartoum Arabic’).

One of the earliest linguistic descriptions on the contemporary Arabic creoles is Nhial (1975), which reports Juba Arabic and Nubi have diverged by the time to be distinct language varieties, though their differences were not large, and they are mutually intelligible. He also reports his informant told there were linguistic contacts between [Ugandan] Nubi and Juba Arabic.

There are a lot of new Ugandan Nubis working in Juba today, especially in the *Malakia* square, where was originally the settlement square of ex-*jihadiya* veterans (i.e. *malaki* ‘civilian’), and is now a major market place inhabited by de-tribalized Southern Sudanese who speak Juba Arabic as their only language, and Northern Sudanese Muslims.

##### **Expansion of Juba Arabic**

After the independence of the Republic of Sudan, (classical) Arabic had gained the official status in Southern Sudan, having begun the Sudanese Civil Wars. These incidents may have brought about the appearance of post-creole continuum of Juba Arabic, which contains mesolectal varieties spoken by Southern Sudanese IDPs in Khartoum or refugees abroad, and perhaps those which are spoken in northern states of South Sudan (Nakao, to appear a).

As for another example of expansion, there is slang-like Youth Juba Arabic. In the current Youth Juba Arabic, Bari plural suffix *-jin* with polar tone (e.g. *mede-jin* ‘school-PL’, *cámá-jin* ‘food-PL’), Bari prefix *lo-X* ‘one with X’ (e.g. *lo-pómbé* ‘drunk person’) and more Bari lexical items are being borrowed (e.g. JA. *watwát* vs. Youth JA. *lúkúlúli* ~ *lókwillili* ‘bat’, JA. *farása* vs. Youth JA. *kapáparát* ~ *kafáfarét* ‘butterfly’, cf. Spagnolo 1960, Bari. *lukululi* and *kapoportat*), maybe because Bari has a (covert) prestige in the urban situations especially in Juba<sup>4</sup>.

#### 2.5. Summary of the section

As we revised the history of the developmental stages of Arabic creoles in this section, the

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<sup>4</sup> As a result of this continuing heavy influence, the prosodic system of Juba Arabic consists of two split parts, very tonal system for African lexicon and pitch-accent system for Arabic lexicon (Nakao, to appear b). Such a split phonological system is ubiquitous among pidgins and creoles.

substrata/adstrata changed according to the developmental stages. I consider the substrata/ adstrata which influenced in the crystallization process (or the proto-level) of a pidgin/creole should be called their ‘main’ substrata/adstrata, which should be our extreme question. For this paper’s current purpose, it is necessary to rule out *rutana* words in the ex-slave songs (2.2), or the recent Bari influences (2.3) to determine Arabic creoles’ main substrata/adstrata<sup>5</sup>.

We can generally define ‘substratum’ as a L1 with low prestige in a bilingual speech community, and ‘adstratum’ as neither L1 nor L2. However, since the speech community of a pidgin/creole usually has a great diversity in their L1s (a substratum of some speakers could be an adstratum of other speakers), theoretically it’s impossible to determine if a language is a substratum or adstratum for the pidgin/creole. Here, we don’t distinguish these terms, and use ‘substrata/adstrata’.

### 3. Lexical borrowings and calques

In the previous studies, it has been discussed that Bari was the main “substratum” of Arabic creoles, especially for Juba Arabic (Bureng 1986, Miller 2002). As the following data show, though the Bari influence on Arabic creoles is apparent, there are an amount of borrowings and calques from ethnic languages/lingue franche rather than Bari. There are some trials of etymo-logical study especially on non-Arabic lexical items of Arabic creoles (e.g. Kaye 1991a, Chol 2005: 149ff, Luffin 2005: 415ff), but they are not standing on a historical linguistic view, the relative age of borrowings/calques have not been treated (for further discussion, see Section 5).

The orthography for the source languages is simplified here, and the abbreviations and resources of languages are as in (3). Most of the resources used in this section may be too old to analyze the very contemporary Arabic creoles, and revised studies for those languages are needed.

- (3) Ac. Acholi: C; Crazzolara (1955), O; Odonga (2005) and M; Muratori (1948).  
Br. Bari: S; Spagnolo (1960), L; Lokosang (2010) and M; Muratori (1948).  
JA. Juba Arabic; Nakao, fieldnotes taken from Pãri and Tenet speakers in Juba.  
Lg. Luganda: Kitching & Blackledge (1925)  
Ln. Lingala: Kaji (1992)  
Lt. Lotuho: Muratori (1948)  
Md. Ma’di: B; Blackings (2000) and T; Tucker (1940)  
Mr. Moru: Reid (1952)  
Nb. Nubi: Heine (1982)  
Sw. Swahili: TUKI (2001)  
BZ. Bangala (and Zande): Wtterwulghe (1899)

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<sup>5</sup> Synchronically, though, it is often difficult to confirm the time where a specific influence arose.

### 3.1. Etymology of lexical borrowings

First, there are some lexical borrowings which presumably go back to the proto-level stage (or the stage former to it) of Juba Arabic and Nubi, as shown in (4). However, as for the words not recorded in the colonial vocabularies (2.3), we cannot deny the possibility of later borrowings in the Post-Colonial period, as noted in 2.4. Bari stands out here, followed by Bantu *lingue franche*.

(4)	Ac. bura (O), Br. 'burön (S)	JA. búra, Nb. búra 'cat'
	Br. dañ (S, L) 'bow'	JA. dǎngǎ, Meldon (1913) danga, Hillelson (1925) danga (in "Negro Arabic of Southern Sudan") 'bow' Nb. dǎngǎ 'arrow' (cf. lakata-dǎngǎ 'bow')
	Br. gwǎngiri (L)	JA. bǎngǎrǐ ~ gwǎngǎrǐ, Nb. bǎngiri 'cheek'
	Br. juju (S), Md. juju (B)	JA. jújú, Nb. júúju 'shrew'
	Br. koropo (S, L)	JA. korófo, Nb. korófo, Jenkins (1909) karraffa, Wtterwulghe (1899) korfai 'leaf'
	Br. kayata (L), Ac. kiyata ~ layata (C, O), Md. kaata ~ kiata	Nb. kiáta, Wtterwulghe (1899) kiata 'potato'
	Br. kur-ju (S, L)	JA. kúruju 'to cultivate', Nb. kúruju
	Br. nyekem (S, L)	Old JA. nyekem (Chol 2005), Nb. nyékem 'chin'
	Br. rabolo (S, L), Ac. labolo, Md. rabolo ~ labolo	JA. laboro ~ labolo, Jenkins (1909) lobolo 'banana'
	Br. tur-jö (S, L)	JA. túruju (= túrudu), Nb. túruju 'to chase away'
	Lg. e-kibira	JA. kibira, Nb. kibíra, Wtterwulghe (1899) kibri 'forest'
	Ln. makako (< Portuguese)	JA. makáko ~ makáku, Nb. káku (cf. Sw. plural ma-)
	Md. gbanda (B), Br. gwanda (S, L), BZ. bwanda	Old JA. gwóndo (Miller 1991), Nb. gwánda 'cassava'
	Sw. panga	JA. pánga, Nb. pánga 'machete'
	Sw. kanga	JA. kǎnga, Nb. kǎnga '(East African) cloth for women'

In Nubi, the most standing-out source language rather than Swahili is Luganda, as in (5). In addition, Wellens (2003) lists up more Luganda words for Ugandan Nubi. Here we omit Swahili borrowings in Nubi, since they are too much to list up here.

(5)	Br. koko'bo (L)	Nb. kókóbo 'bark' (cf. JA. dáhar ta séjera 'back of tree')
	Br. lugwake (S)	Nb. lóbeke 'flea' (cf. JA. morogôt)
	Lg. e-'banja	Nb. bǎnjá 'debt' (cf. JA. déyin)
	Lg. e-kisáto 'skin as garment'	Nb. kisááfu 'nose-ring' (Kaye 1991a kisáátu)

Lg. e-lyēnvu (pl. a-ma-)	Nb. mé(é)mvu ‘banana’ (cf. JA. mûs, laboro)
Lg. e-ntulege	Nb. ntulégé ‘zebra’ (cf. JA. humar-wádi ‘horse of bush’)
Lg. e-ntumbi ‘dropsy’	Nb. ntúmbi ‘lower leg’
Lg. e-mwānyi	Nb. mwaanyi (= bún) ‘coffee bean’ (cf. JA. bún)
Lg. e-’pēra (pl. a-ma-)	Nb. mapéra ‘guava’ (cf. JA. guwáfa)
Lg. o-mulaalo ‘herdsman’	Nb. murálo ‘shepherd’
Lg. o-musu’ja	Nb. musúja ‘malaria’ (cf. JA. melériya)
Md. keyikeyi (B), Ac. keekee (O)	Nb. keeké ‘sieve’ (cf. JA. gurbâl)
Mr. kingile, Avukaya. kiŋgili (T)	Nb. kíngílo ‘rhinoceros’ (cf. JA. abu-gírin)

There are also lexical borrowings known in Juba Arabic but unknown in Nubi, as in (6)<sup>6</sup>.

(6) Ac. aduju (C, O)	JA. adúŋgú ‘harp (of Acholi)’
Ac. dwar (O), Md. dwari (B)	JA. dwar ~ diwar ‘hunting’
Ac. laoi (C, O), Md. laoi (B)	JA. locwí ‘kind of local beer’
Br. doŋon (S) ~ doŋoŋ (L)	JA. dóŋóŋ ‘back of head’
Br. gulŋgulŋ (S)	JA. golŋgólóŋ ~ gulŋgúlŋ ‘round’
Br. gugu (S, L)	JA. gúgu ‘granary’
Br. kokorayi ‘distribution’ (L)	JA. kókóra ‘discrimination’
Br. köyini (S)	JA. kení ‘co-wife’
Br. köyimôt (S)	JA. keyimôt ‘groundnut paste’
Br. kuri (S)	JA. kúrikúri ~ kúri ‘falcon’
Br. laŋ-gu ‘to transgress’ (S), ‘to jump’ (L)	JA. lánŋa ~ lánŋálanŋa ‘to wander’
Br. logwu’di (L)	JA. logudí ~ logwidí ‘green peas’
Br. lokiliŋ (S, L)	JA. lókíliŋ ‘elbow’
Br. lokole (S, L)	JA. lókóle ‘obsession’
Br. manya (S) ~ manyaŋ (L)	JA. mányáŋ ‘monitor lizard’
Br. nyete (S) ~ ŋete (L)	JA. ŋéte ~ nyéte ‘black-eyed-pea leaf’

<sup>6</sup> There are non-Arabic words in Juba Arabic whose etymologies are still left unknown, e.g. *aliwára* ‘second-hand cloths’, *báfúrá* ‘cassava’, *bonjó* ‘pumpkin’, *imbíró* ‘palm tree’, *jengeli* ‘leper’, *jogôt* ‘thin, slim’, *kwátá* ‘wrestling’, *nyákamu* ‘to rob, attack’, *nyilá* ‘traditional slippers’, *(bagi-)pewú* ‘leftovers’, *tegiri* ‘kind of spinach’, *tuútuú* ‘poisonous ant’, *(kis-)werewéré* ‘plastic bag’, etc. Besides, lexical items like *babá* ‘father’, *mamá* ‘mother’, *’á’a* ‘nope’ are too ubiquitous to determine the sole original source language.

Br. payipayi (S), Ac. paipai (O), Md. paipai (B)	JA. payipáyí ‘papaya, pawpaw’
Br. toŋ-ga (S, L)	JA. tóngá ~ tónġu ‘to pinch’
Br. (w)ululu (S, L), Md. wululu (B)	JA. wúlulu ‘alas, oh my’
BZ. bangbe	JA. bambé ‘sweet potato’
BZ. potopoto	JA. potapóta ‘mud’
Lg. omukungu	Old JA. mukungu (Nhial 1975) ~ makungu (Yokwe 1985) ‘head-chief’
Ln. pondu, Br. pöndu (L)	JA. pondú ‘cassava leaf’
Lt. naaŋa, Br. koŋa (S, L), Md. oŋa (B)	JA. ŋóŋo ‘edible termite’ (cf. árda, inedible)
Md. gbe’degbe’de (B), Br. gwe’de’gwe’de (L)	JA. gwedegwédé ‘kind of green leaf’
Md. giri-giri ‘multicoloured’ (B)	JA. giringírín ‘spotted’
Md. janjaro (B)	JA. janjáro ‘kidney beans’
Md. kau (B)	JA. kawu ‘cowpea’
Md. kpete (B), Br. kwete (L)	JA. kwete ~ pwete ‘millet beer’
Md. mundru ‘white person’, kuro ‘cuckoo, Arab’ (B)	JA. mundukúru ‘Arab’
Md. nyanya (B)	JA. nyanyá ‘food’ (used for and by small children)
Md. putuku (B)	JA. putuku ‘hoof’
Sw. bangi	JA. bǎŋgi ~ bǎŋgu ‘marihuana’
Sw. kamba ‘rope’	JA. kámba (only in dúgu kámba ‘to tuck in the shirt’)
Sw. roho	JA. róho ‘throat, soul’
Sw. serikali ‘government’	JA. surukáli ~ turkáli ‘local police’

### 3.2. Calques

Juba Arabic has presumably substratal/adstratal calques, however as we see below, these calques are shared in many languages, and it is not praiseworthy to determine a specific original language.

#### Purely lexical calques

First of all, there are kinds of polysemy which are not seen in the lexifier (Sudanese Colloquial Arabic, abbreviated SCA) as in (7). Properly, as many of them are seen around the world (e.g. Japanese *te* ‘hand and arm’), this may also be attributed to the universals of human languages.

(7)		JA <sup>7</sup>	Ac.(M)	Br.(M)	Lt.(M)	Md.(B)	Sw.
	bitter & pungent	múr	kec			anya	kali
	foot & leg	kurâ	tyen	mokot	neeju	pa	mguu
	hand & arm	ída	cing	könin	aani	dri	mkono
	hard & difficult	gówi	tek	logo'	gol	okpo	-gumu
	stone & battery	hájer				oni	jiwe
	sweet & tastfull	hílu	mit	palelej	fifil	(limi)	tamu
	to drink & smoke	ásurubu	mato	mat	mata		
	to give & lend	wodí	miyo		isyo	ke	-pa
	to hear & feel	ásuma		yijga			-sikia
	to read & study	ágara	kwano	kendya	ixenio	la	-soma
	to pull & smoke	júru				ku, se	-vuta

### Calques with morphological process (compounds)

As another instances for calques, Juba Arabic has non-Arabic compounds as in (8)<sup>8</sup>. The data of Ac, Br. and Lt. are from Muratori (1948) and those of Md. are from Blackings (2000).

(8)	bee (fly of honey)	JA. duban-ásel, Nb. dubán-la(h)áásin Ac. lwaŋo kic
	branch (hand of tree)	JA. ída ta séjera, Nb. iida-lakáta Ac. jany-yat
	fruit (eye of tree)	JA. éna ta séjera ~ ena-séjera, Nb. eena-séder Br. koŋe (lo ködini)
	lip (skin of mouth)	JA. jílíd ta kásuma Ac. del-dog, Lt. abelelyo xutuk, Md. ti o'bo
	noon (half/middle of day)	JA. nus-nahâr Ac. dye-ceŋ, Br. tuparan-kiden, Lt. akil-fanni
	pestle (child of mortar)	JA. jéna ta fúnduk ~ jena-fúnduk, Nb. jina-fúndu Zande. wiri-sangu (Tucker & Bryan 1966: 157)
	roof (head of house)	JA. râs ta júwa ~ ras-júwa Ac. wi-ot, Br. kwe na kadi, Lt. axou xaji, Md. jo dri
	tear (water of eye)	JA. móyo ta éna ~ moyo-éna, Nb. moy-éena

<sup>7</sup> Nubi clearly has cognate *ágara*, *iida*, *júru*, *kurá*, but more information is needed.

<sup>8</sup> A Pári informant of mine gave ethnolectal calques for his Juba Arabic, which are not commonly used by other speakers. E.g. 'fruit' (child of tree) JA. *jéna ta séjera* cf. Pári. *nyii-yaath*, 'leaf' (ear of tree) JA. *adána ta séjera* cf. Pári. *ithi-yaath*.

	Ac. pig-waŋ, Ln. mai ya miso
trunk (anus of tree)	JA. giníta ta séjera ~ ginita-séjera
	Ac. kor-yat, Br. mukök na ködini, Lt. axwoyo 'yani
trunk (hand of elephant)	JA. ída ta fil
	Ac. ciŋ-lyec, Br. könin lo tome, Lt. naam tome

### Calques with syntactic process

Here are other examples of calques, which include syntactic constructions in the lexicon.

Juba Arabic has marriage/divorce expressions, in which females are treated only as objects (cf. Ac. *nyomo*, Br. *yem-*, Sw. *-oa* ‘to marry, take wife’, it’s not clear in Nubi). Besides, the agent of a passive construction<sup>9</sup> is marked with a commitative preposition, which would be considered as a grammatical borrowing, which we treat in the next section.

- (9)
- |         |                |             |         |                                |
|---------|----------------|-------------|---------|--------------------------------|
| ♂       | zóuju          |             | ♀       | “♂(a man) married ♀(a woman)”  |
| (man)   | take.wife      |             | (woman) |                                |
| ♀       | zouj-ú         | <b>ma</b>   | ♂       | “♀(a woman) married ♂(a man)”  |
| (woman) | take.wife-PASS | <b>with</b> | (man)   |                                |
| ♂       | tálagu         |             | ♀       | “♂(a man) divorced ♀(a woman)” |
| (man)   | divorce        |             | (woman) |                                |
| ♀       | talag-ú        | <b>ma</b>   | ♂       | “♀(a woman) divorced ♂(a man)” |
| (woman) | divorce-PASS   | <b>with</b> | (man)   |                                |
- (10)
- |       |                     |             |       |    |        |
|-------|---------------------|-------------|-------|----|--------|
| løjöŋ | a-yem-a             | <b>ko</b>   | tore’ | lu | matat. |
| Løjöŋ | PAST-take.wife-PASS | <b>with</b> | son   | of | chief  |
- “Løjöŋ is married to the Chief’s son.” (Bari, Spagnolo 1960: 340)
- (11)
- |           |                        |             |            |
|-----------|------------------------|-------------|------------|
| Bi. Pili  | a-ta-olewa             | <b>na</b>   | Bw. David. |
| Miss Pili | 3SG-FUT-take.wife.PASS | <b>with</b> | Mr. David  |
- “Miss Pili is going to be married to Mr. David” (Swahili, Russel 2003: 164)

In Juba Arabic, the disease expressions as ‘to catch a cold’ take an inanimate subject, as in (12). Similar structure is seen in Acholi, Ma’di, Bari, and Swahili (no report for Nubi). In Juba Arabic, the main verb also can be *góbudu* ‘catch’.

<sup>9</sup> The word order of Arabic creoles’ passive construction is basically V<sub>-PASS</sub> S (O), or optionally S V<sub>-PASS</sub> (O). In the latter, the subject may be topicalized, cf. (12)

- (12) **nízila ámsuku ána. / amsuk-ú ána ma nízila.**  
**mucus catch 1SG / catch-PASS 1SG with mucus**  
 “I caught a cold.” (Juba Arabic, Nakao field notes)
- (13) **aburo o-makk-a.**  
**mucus 3SG-catch-1SG**  
 “I caught a cold.” (Acholi, Odonga 2005: 3. Acholi doesn’t have passive.)
- (14) **i’gbe ka ma ti.**  
**coldness 3SG 1SG catch**  
 “I feel cold.” (Ma’di, Blackings 2000: 92. Ma’di also doesn’t have passive.)

#### 4. Grammatical borrowings and fusions

Arabic creoles have developed a number of non-Arabic morpho-syntactic properties, which can be regarded grammatical borrowings or contact-induced grammaticalizations.

There are several works examined the possibility of grammatical borrowing, but those share two problems: They didn’t exclude the possibility of superstratal influence or universals enough, and unfairly chose the sample languages, e.g. Miller (2002, 2003) treats Bari influence on JA in reduplication, Bureng (1986) compares JA’s number-agreement for adjectives and the argument-structure of passive constructions with Bari, and Owens (1990, 1991) compares basic grammatical properties of Nubi with Bari and Mamvu. Miller (2002), Bureng (1986) and Owens (1991) suggest substratal (Bari) influence on the segmental inventory of Arabic creoles, but it is difficult to discuss them rigidly since it is susceptible to the speakers’ L1 (and SCA, if spoken as L2).

As concluded in 2.5, we must examine properties unique to Arabic creoles with all the languages spoken in the Colonial Equatoria Region. However it is not accomplishable in this short paper, so we focus on one of the most neglected languages, Acholi and Ma’di (for the reason, see 4.2). In this section, we focus on Juba Arabic, but most of the treated properties are also seen in Nubi.

##### 4.1. Grammatical similarity shared with Bari

First of all, we examine some grammatical properties shared similarity with Bari, but in most cases, they are also seen in other possible substrata/adstrata.

##### **Complement clause as predicate**

Arabic creoles have a complementizer JA. *galí*, Nb. *gal* (Wellens 2003: 204), whose the most probable etymology, concerning its pitch representation, is SCA. *gāl-léy* “he said to me”. This *galí* clause can be a predicate (15b), or a sentence (15c), and it can be preceded by a topic (16).

- (15) a. babá tai [kélím [galí [úwo dêr móyo]]].  
 father 1SG.POSS say COMP 3SG want water  
 “My father said that he wants water.” (Juba Arabic, Nakao field notes)
- b. babá tai Ø [galí [úwo dêr móyo]].  
 father 1SG.POSS COMP 3SG want water  
 “My father (said) that he wants water.” (id.)
- c. [galí [úwo dêr móyo]].  
 COMP 3SG want water  
 “(He said/I heard that) He wants water.” (id.)
- (16) fékira ta morfoîn, [galí [úwo kátulu dáb]].  
 thought of hyena COMP 3SG kill lizard  
 “In Hyena’s thought, (he thought that) he killed Lizard.” (id.)

Typologically similar construction appears in Bari (17)<sup>10</sup>, but in Acholi (18) as well.

- (17) a. yanjo’ a-kulya [adi [ni lopiret]].  
 my mother PAST-say COMP here stirring.stick  
 “My mother said; here is the stirring stick!” (Spagnolo 1960: 2)
- b. nan Ø [di [nan ko ti-ni asut]].  
 1SG COMP 1SG shall go later.on  
 “I said, I shall go later on.” (ibid.)
- (18) a. latin o-byeko [ni [man waŋ dyaŋ-e]].  
 child 3SG-claim COMP this eye cow-3SG  
 “The boy claimed first that this was his eye-piece of the cow.” (Crazzolara 1955: 165)
- b. [ni [ka i-mito cit i-e gi kum-i]].  
 COMP if 2SG-want go for-3SG with self-2SG  
 “He said: If you want it, go yourself for it!” (ibid.)

### Discourse particle and question particle

Arabic creoles has developed discourse particle, JA *ke*, Nb. *ke* (Heine 1982: 29, Wellens 2003: 173) and question particle JA. *seyî*, Nb. *seyi* (Wellens 2003: 176). Miller (1991) compares JA *ke* with Bari *ko*, as “used in the same context”. Typologically similar sentence-final discourse particle are not restricted to Bari, but also we find them in Acholi and Ma’di as in (20) and (21).

<sup>10</sup> Miller (2001, 2002) considers JA *galí* and Bari *adi* to be verbs, but they are not in any sense. Other African languages (e.g. Ewe) also have typologically similar complementizer.

- (19) a. wónusu ke, íta munú ke?  
 talk DP 2SG who DP  
 “Please talk, who are you?” (Juba Arabic, Nakao fieldnotes)
- b. íta gí ámulu sunú seyî?  
 2SG PROG do what QP  
 “What are you doing?” (id.)
- (20) a. tye kany do.  
 exist here DP  
 “It is here.” (Acholi, Odonga 2005: 57)
- b. i-t[i]mmo ŋoo kaa  
 2SG-do what QP  
 “What are you doing?” (Acholi, *ibid*: 93)
- (21) a. nyi mu ’do!  
 2SG go DP  
 “Do go please!” (Ma’di, Blackings 2000: 27)
- b. opi ko-mu ra kia?  
 Opi 3SG-go AFFIRM QP  
 “Opi is going, isn’t it so?” (Ma’di, *ibid*: 56)

#### Grammaticalization of ANOTHER > SPECIFIC (INDEFINITE)

In Juba Arabic, *táni* ‘another’ is grammaticalized into a specificity (or indefiniteness) marker (no report for Nubi). The same multifunctionality is also seen in Bari, along with Lotuho (Muratori 1948: 6, 29, *obo*), Ma’di (Blackings 2000: 103, *zi*) and Swahili (TUKI 2001: 110, *-ingine*).

- (22) ána háse dé dêr wónusu [gísa tání].  
 1SG now want talk story SPEC  
 “I am going to talk a story.” (Juba Arabic, Nakao field notes)
- (23) nan a-met [ŋo lele’].  
 1SG PAST-see thing SPEC  
 “I saw something.” (Spagnolo 1933: 96)

#### 4.2. Grammatical similarity not shared with Bari

Arabic creoles have some unique grammatical properties which are not seen in Bari, but seen in other possible substrata/adstrata. These could be positive evidence for the hypothesis that there was

at least another substratum rather than Bari. Here we treat some grammatical properties commonly seen in Juba Arabic with Acholi and/or Ma'di, historically whose speakers had strong cultural and matrimony contacts with Nubi.

#### Grammaticalization HEAD > ON

Juba Arabic *rás*, Nubi *ras* (Wellens 2003: 159), Acholi *wic* and Ma'di *dri* 'head' are grammaticalized into a preposition 'on' through the compounding process.

- (24)      *merísa*    *fi*            *fi*            **ras-terebéza.**  
              beer        exist        in            **on-table**  
              "Beer is on the table." (Juba Arabic, Nakao field notes)

- (25)      *cib*            **wi-meja!**  
              put            **on-table**  
              "Put it on the table!" (Acholi, Clazzolara 1995: 157)

- (26)      *nyi*            'ba            *jo-dri.*  
              2SG          put            house-**on**  
              "Put it on the roof." (Ma'di, Blackings 2000: 29)

#### Grammaticalization of GROUND > IMPERSONAL (Weather)

In Juba Arabic, Acholi and Ma'di, a noun for 'ground/below' is grammaticalized into an impersonal subject for weather situation (i.e. 'it is hot', 'it is summer'). Heine (1982) lists *latá* 'weather' and *falatá* 'down' separately for Nubi, but both can be regarded cognate with JA.

- (27)      **(fu)watá**                    *súkun.*  
              **ground**                    hot  
              "It is hot." (Juba Arabic, Nakao field notes)

- (28)      **piiny**                        *lyeet.*  
              **ground**                    warm  
              "It is warm." (Acholi, Crazzolara 1955: 139)

- (29)      **vu**                            *aci.*  
              **ground**                    hot  
              "It is hot." (Madi, Blackings 2000: 100)

### Grammaticalization of FIND > CIRCUMSTANTIAL

Arabic creoles have an (evidential) circumstantial clause marker JA. *ligó*, Nb. *ligo* (Wellens 2003: 167), which developed from a verb ‘to find’ (JA. *ligó*). Tosco (1995) compares this process with the development of Acholi past TAM marker *onoŋo* (< *o-noŋo* ‘he found’). Ma’di has similar polysemy, *esu* ‘to find’ and ‘at that time’. These TAM markers or time adverbs have functional gap with *ligó*, but it deserves to consider they have something to do.

- (30) a.   zoujú                      úwo<sub>i</sub>        [**ligó**    Ø<sub>i</sub>        lísa        sukêr].  
           marry-PASS            3SG        **FIND**                      yet        small/young  
           “She has married young.” (Juba Arabic, Nakao field notes)
- b.   [**ligó**    nâs        dé        wósulu], bâs        dé        tála.  
           **FIND**    people    DEM    arrive    bus        DEM    depart  
           “Having the people arrived, the bus started.” (id.)
- (31)    **esu**        [eyi        o-`di        kuru                      para].  
           **FIND**    water        3SG-rain PAST.NEG        long.time  
           “It had not rained for a long time.” (Blackings 2000: 37)

### Focus construction

Juba Arabic has a multifunctional particle *yaú*, whose most probable etymology is SCA. *yā-hú* (*dá*) ‘look, there/here is (SG.M)’. Synchronically, it has three functions as (32) a presentative existential (optionally followed by demonstrative *dé*) ‘look, there/here is/are’, (34) focus marker with left-dislocation of the argument (optionally followed by relative *al*), and (33) storyline marking adverb ‘then, that’s when’ (cf. *ma yaú* ‘in fact’), as shown below.

- (32)    gurûs    [**yaú**    (dé)]. /        [**yaú**    (dé)]    gurûs.  
           money **EXS**    (DEM)                      **EXS**    (DEM)    money  
           “Here is money.” (Juba Arabic, Nakao field notes)
- (33) a.   [gurus<sub>i</sub>    **yaú**]    (al)        ána        wodí    Ø<sub>i</sub>        le        íta.  
           money **FOC**    (REL)    1SG        give                      to        2SG  
           “It is money that I gave you.” (id.)
- b.   [munú<sub>j</sub>    **yaú**]    (al)        Ø<sub>j</sub>        báda    sákila    dé?  
           who    **FOC**    (REL)    start    fight    DEM  
           “Who began this fight?” (id.)

- (34) ána géni ma úwo, [yaú [ána rija]].  
 1SG stay with him then 1SG return  
 “I stayed with him, and after that, I came back.” (id.)

Nubi also has similar and cognate particle *yaá* (Heine 1982: 28–29), which Owens (1990) discussed to be an inheritance of Nigerian Arabic’s ‘topic’ marker *ye*, and this has nothing to do with substrata/adstrata (at least Bari and Mamvu), but this hypothesis can be revised as below.

Seemingly, Acholi has a comparable focus construction with a focus marker *aye* (< *a-ye* ‘I agree’, Odonga 2005: 20), as in (35). The left-dislocation process and optional use of relative marker may indicate this construction has developed from a cleft sentence (cf. Heine & Reh 1984: 177ff). Often argued Kwa-like focus construction in West African and Caribbean creoles may support the hypothesis that Acholi has influenced the development of Arabic creoles’ focus construction.

- (35) a. [dyaŋ aye] an a-mito  
 cow FOC 1SG 1SG-want  
 “It is a cow that I want” (Acholi, Crazzolara 1955: 105)
- b. [[dyaŋ ma-col] aye] loyo wadi-gi  
 cow REL-black FOC surpass mate-3PL  
 “It is a black cow that surpasses the rest” (Acholi, *ibid.*)
- c. [man aye] (ma) in i-yeny-a kwed-e  
 that FOC (REL) 2SG 2SG-want-1SG with-3SG  
 “That is (it) what you wanted me for” (Acholi, *ibid.*)

However, Acholi influence cannot explain the function of (34). By the way, Russel (2003: 140) notes for Swahili, when the focus marker *ndi-* is suffixed the time-class marker (= *ndi-po*), it means ‘then (that is when)’, which could be regarded parallel development to (34).

#### 4.3. Fusions in morphology

As we observed above, Acholi seems to have had influence on Arabic creoles (at least JA). From this, we examine another possibility that some properties have emerged from fusions with Acholi, which resulted from functional and formal similarity with a language in contact.

#### **Irrealis (or future) marker *bi***

Juba Arabic and Nubi have an irrealis (or future) TAM marker *bi*, whose function is different from the cognate TAM marker of SCA *bi-*, but this gap has not been treated in the previous works on Arabic creoles. Here, Acholi has a future TAM marker *-bi-* (< *binó* ‘to come’, Heine & Reh 1984), and it can be explained if we admit the fusion process.

(36)	Ac	JA	SCA	
	in i-cito	íta rúwa	inta mašēt	“you went” (Realis, Perfect)
	in i-cito	íta gí rúwa	inta <b>bi</b> -tamši	“you are going” (Realis, Imperfect)
	in i- <b>bi</b> -cito	íta <b>bi</b> rúwa	inta (ħa)-tamši	“you will go” (Irrealis, Imperfect)

### Verbal ending *-u*

The famous verbal ending (or ‘transitive marker’) *-u* of Arabic creoles has been disputed if it is an inheritance from SCA’s 3SG.M object enclitic pronoun, *-(h)u* (Kaye & Tosco 1993)<sup>11</sup> or 3PL subject verbal inflection for imperative, *-ū* (Owens 1985). This element appears in the early Arabic creole vocabularies (Kaye & Tosco 1993), and synchronically it is quite freely variable with zero in Juba Arabic (e.g. *kátulu ~ kátul* ‘to kill’).

No previous study considered the possibility of substrata influence, while Lwo languages have formally and functionally similar verbal ending (Acholi. *-o*, it is obligatory to transitive verbs, but also appears in some particular intransitive verbs). The examples of noun-verb co-ordination as in (37) and (38) may suggest this element underwent another fusion process.

#### (37) Acholi Noun-Verb Co-ordination

dwar	‘hunt’ (noun)	dwar- <b>o</b>	‘to hunt’ (verb)
cam	‘food’ (noun)	cam- <b>o</b>	‘to eat’ (verb)

#### (38) Juba Arabic Noun-Verb Co-ordination (Denominal Verb Derivation)

gurbâl	‘sieve’ (noun)	gúrbal- <b>u</b>	‘to sift’ (verb)
dusmân	‘fight’ (noun)	dúsman- <b>u</b>	‘to fight’ (verb)
gísir	‘skin’ (noun)	gísir- <b>u</b>	‘to skin/peel’ (verb)

## 5. Conclusion

This paper treated the substrata/adstrata of Arabic creoles, from a historical viewpoint. We treated the history of Arabic creoles in Section 2 and concrete lexical borrowings and calques in Section 3, focusing on the crystallization in the proto-level stage of Arabic creoles. We found out, in the Early Colonial Period, there were many ethnic languages and *lingue franche* in contact with early Arabic creoles, which already had had some Bari (and Bantu) borrowings. In Section 4, we saw grammatical borrowings, and we confirmed the possibility there were substrata/adstrata rather than

<sup>11</sup> It is often compared with the transitive marker of Melanesian English-based Creoles (e.g. Tok Pisin of Papua New Guinea, *-im* < him) to say it is a universal feature of pidgin/creoles. However, this rather should be explained to be a morphological calque from Melanesian languages which have similar transitive marker (e.g. Tolai. *-(an)e*). What’s more, any other pidgin/creole language except Hiri Motu (Motu-based pidgin of PNG, *-ia*) has developed similar transitivity marker.

Bari, especially Acholi and Ma'di whose speakers were strongly related to Nubis in Uganda.

In fact, all the possible grammatical borrowings we treated in Section 4 except verbal ending *-u*, are not seen (had not developed yet) in the early Arabic creoles. This fact indicates the relative age of substrata/adstrata that lexical borrowings were earlier, and grammatical borrowings were later. Thence, we can present another revised history that early Arabic creoles finally crystallized in the colonial Northern Uganda, among Nubis along with Acholi and/or Ma'di, and they brought their language<sup>12</sup> into colonial cities (especially *malakia* squares) of Southern Sudan, which developed into Mongaltese or Juba Arabic. This can be summarized as in (39).

- (39) Pre-Colonial Period: Many Arabic varieties co-existed in *zeribas*.  
<Early> Colonial Period: Early Arabic creole(s) began to crystallize along with the modernization in the Southern Sudan. Lexical borrowings especially from Bari (and Bantu) crystallized in Early Arabic creole(s).  
<Core> Colonial Period: Grammatical borrowings especially from Ma'di and Acholi crystallized in early Nubi. Early Nubi was brought into Southern Sudan, and it influenced the Southern Sudanese languages.  
Post-Colonial Period: Nubi and Juba Arabic diverged along with the separation of Southern Sudan from East Africa.

This hypothetical historical view is still a mere speculation at the present moment, though it can explain the Swahili influence in the colonial Southern Sudan (2.3) as brought by Nubis (merchants or laborers) who came back into Southern Sudan, and also can explain the strong similarity between Nubi and Juba Arabic as a result of very recent divergence.

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<sup>12</sup> It could be Early Nubi or "Malakiya Arabic" (Kaye 1991b: 6, see also Bureng 1986: 71).

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