Toward the reconstruction of the Guang gender system

Ines Fiedler, Tom Güldemann (Humboldt-Universität zu Berlin)

1 State of the art

1.1 Former approaches to gender in Guang

+ Guang languages are known for their elaborate nominal prefix system, but are said to show little in the way of agreement

> In all the Guang languages, singular and plural of nouns is indicated by prefixes. None exhibit concord systems, such as are found in many of the Central Togo languages. There is, however, at least a trace of number agreement between the noun and some types of adjectives in South Guang, Gichode, Krachi, and some dialects of Nchumburu, for instance … (Dakubu 1988: 82)

+ but this is not the whole story – new data available give evidence that there are languages showing a more "Bantu-like" agreement system, as shown in example (1) from Foodo (cf. also Plunkett 2009)

(1)   Foodo (Benin, Mountain Oti-North)

	NF-noun-NF	NF-big-NF	AGR-IDEF	
a.	**dí**-gbá-**lì**	**dʊ̀**-ŋ́lé-**lì**	**dʊ̀**-kó	'a big market'
	á-gbá-**à**	**à**-ŋ́lé-**ɛ̀**	**à**-kó	'some big markets'
b.	**ŋ**-kɔ́lˈɔ̀-**sɛ́-ɛ̀**	**ǹ**-ŋ́lé-**ɛ̀**	**sʊ̀**-kó	'some big rivers'
	ǹ-cɔ́-**ḿ**	**ǹ**-ŋ́lé-**ɛ̀**	**bʊ̀**-kó	'big water' (Fiedler, f.n.)

- four agreement classes, occurring (here) in a set of two different agreement contexts (ADJ showing agreement marking identical to noun form marking, IDEF as agreement target), triggered by three different noun forms
- (1a) shows formal identity between noun form class and agreement class, in singular and plural = alliterative mapping of gender dV^{Hi}-/A- and deriflection dV^{Hi}-/A-
- (1b) shows that the same noun form can trigger the two different agreement classes sV^{Hi} and bV^{Hi}

→ despite strong alliterative tendencies, prefixes on nouns and on agreement targets are not necessarily identical, e.g. one cannot infer one out of the other
→ any reconstruction of the nominal classification system also has to integrate methodologically the agreement system in addition to the noun forms

1.2 Methodology

+ around 18 languages within Potou-Tano branch of Kwa (Niger-Congo) (see Map 1)

North Guang (14):	**Gonja**-Dompo	
	Nkonya-Nkami	
	Mountain Oti-North:	**Foodo**, **Gichode**, **Ginyanga**, **Nawuri**
	River Oti-North:	**Chumburung**, *Nchumunu,* **Krachi**, *Dwang, Tchumbuli*, Kplang
South Guang (4):	**Awutu- Efutu**	
	Hill South Guang:	**Larteh**, *Cherepong, Anum-Boso*
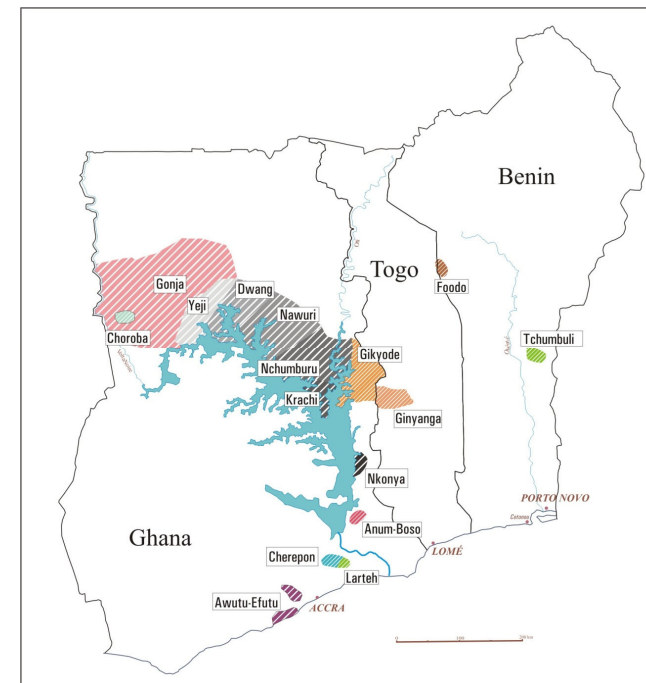
Map 1: Geographical distribution of Guang languages (© L. Marstaller, after Perrot 1981)

+ reconstruction of noun forms based on a 80-word-list collected for nearly all languages
- based on Leipzig-Jakarta-list plus some West African vocabulary (WALDS)
- establishment of cognates for every word, comparison of these with synchronic data
+ as for the agreement system, we only have information on part of the languages (9, see table A3)

+ typological characteristics of Guang languages

- SVO
- tone language with 2 tonemes: Low and High (prefixes on nouns reconstructed as low, cf. Snider 1990, Plunkett 2006)
- 3 different types of vowel harmony at work: quality of the stem vowel determines the quality of the prefix vowel concerning ATR value, rounding feature and vowel height
- noun classification system with prefixes on noun (noun form marking, NFO) and modifiers (agreement marking, AGR)
- noun phrases are head-initial, some modifiers agree with them

+ goal of the talk:
- present the reconstructed gender and deriflection systems of proto-Guang
- outline some of the challenges for reconstruction
- compare the new reconstruction based on nominal morphology AND agreement forms with the two already existing ones
- give some directions for a possible reconstruction of greater Niger-Congo gender systems

2 Comparison of nominal classification in synchronic Guang

2.1 General overview

+ contrary to Dakubu (1988), Snider (1988) and Manessy (1987)
1. there is an agreement system in all Guang languages (Table A3)
> highly divers, from full-fledged system in Foodo to animacy-based systems in the Southern languages
+ 2 different systems in modern Guang languages:
- semantico-morphological system which shows strong parallels to declension system (Chumburung, Foodo, Gichode-Ginyanga, Nawuri)
- animacy based system (Efutu, Gonja, Gua-Cherepong, Krachi, Larteh, Nkonya), using the formal features also found in the declension system, sometimes including a neutral gender

2. the deriflection systems (Table A2) are more complex than the gender systems, i.e.:
- in most languages the number of noun form classes and deriflections is higher than that of the agreement classes and genders
- the deriflection systems are highly crossed, gender systems are parallel and crossed

Feature	Properties
Number of agreement classes	between 3 and 10
Number of genders	between 2 and 8 paired genders, plus additional 2 to 6 single genders
Number of agreement targets	from 2 (pronominals) to 11 (PRO, ADJ, NUM, DEM)
Basis of classification	where only two genders, semantic agreement (animacy) where more than 3, also morphological assignment involved
Number of NF classes	in most languages 7, min. 6, max. 10
Number of declensions	5 – 11 paired declensions, 4 – 7 transnumeral declensions
Form of the noun form marking	in Northern languages, mostly CV-prefixes, in Southern Guang often reduced to V only

Table 1: Overview on gender and deriflection in Guang

+ based on the assumption that gender and deriflection systems once started out as one system, a first rough conclusion would be:
1. There are not so many changes and differences in the synchronic deriflection systems compared to the reconstructed one observable.
2. Most important changes affect the gender system.

2.2 Detailed comparison: challenges for the reconstruction

2.2.1 Unambiguous cases

+ a number of NF classes in synchronic Guang are identical/similar in all modern languages (see table A2) and can therefore be reconstructed on a firm basis

Reconstructed NF form	Status in modern languages
*Ø-	retained in all languages Foodo: kV^{Hi}- ~ Ø
*O-	retained as such in many Gonja: *O- > E- Cherepong and Anum-Boso: *O- > A-
*ka-	Gichode, Ginyanga, Nawuri: *ka- > ga- > gE- Nkonya: *ka- > kE- > E- Efutu, Larteh, Anum: *ka- > A-
*N-	Southern languages: *N- > N-, E-

Table 2: Overview over uncontroversially reconstructed forms

2.2.2 Allomorphy of prefixes and reconstruction

+ vowel harmony is responsible for a great allomorphy of prefixes in single languages (disregarding the voicing of consonant *k* here)

Reconstructed noun forms	Possible allomorphs in synchronic languages	
*Ø	Ø	
*O-	o-, ɔ-	
*ba-	ba-, bi-, bu	
*kVᴴⁱ-	ki-, kɪ-, ku-, kʊ-,	kɔ-
*a-	a-, ə-,	e-, ɛ-
*I-	i-, ɪ-,	e-
*ka-	ka-, ke-, kɛ-, kə-,	ko-, kɔ-
*N-	n-, m-, ɲ-, ŋ-, in-	
*dI-	di-, dɪ-, du-, dʊ-	
*bI-	bi-, bɪ-, du-, dʊ-	

Table 3: Possible allomorphs of noun forms

+ generally, vowel harmony takes place across same vowel height for ATR and rounding
- mid vowels play a crucial role, as they belong in some cases to high vowels, but in other to low vowels (high stem vowels trigger the highest value of each set in the prefix, and so forth)

u	ʊ	i	ɪ	high vowels
o	ɔ	e	ɛ	
	a			low vowels

> thus, the reconstruction of prefixal forms has to take into consideration the vowel quality of the nominal root

+ close examination of *kV-* prefixes reveals two underlying prefixes for the proto-language, namely *ka-* and *kVᴴⁱ-*
- *kVᴴⁱ-* resulted presumably from merger of PB **ki-* and **ku-* (cf. de Wolf 1971, Williamson 1989) facilitated by rounding harmony in Guang

    PB cl. 7 **ki-* (SG)   neck, thorn
    PB cl. 15 **ku-* (SG, TN)   ear, leg, arm, knee

- **ka-* (cl.12) can be easily reconstructed and differentiated in modern languages, even though Painter (1970) for Gonja only established one single *kV-* prefix

- probably, data from Nkonya, Cherepong and Anum which show different vowel prefixes give a hint at a former differentiation even in proto-Guang that is no longer apparent in most other languages

PB	Gloss	Gonja	Foodo	Gichode	Nkonya	Cherepong	Anum
*kI-	neck	kú-bɔ́	kú-bɔ́-ʊ̀	gú-bɔ́	ɔ-boyi	ē-kwâ	Ø-kwa
	bone	kú-wúbî	dú-wú-lì	gù-wìyé	i-wu	ì-bóù	Ø-bou
	stone	kì-jèmbú	dù-bú-lì	gù-bʷí	i-bui	ì-búì	Ø-bwi
*kU-	ear	kò-só	kù-só-ó	gù-sɔ́	e-sō	ɔ̀-só	ɔ-so
	arm	n.a.	kù-báá-ó	gì-báá?	e-be	ɔ̀-bá	ɔ-ba
	leg/foot	kí-yá?	dí-yáá-lì	gí-yáā?	i-yabi	n.a.	n.a.
*ka-	mouth	kɔ́-nɔ́	kɔ́-nɔ́-ʊ̀	gɔ́-nɔ́	ɛ-nɔ	á-nū	a-nɔ
	bird	kà-bwíb↓í	kà-búíy-ˈá	gλ-bʷíî?	e-bubui	à-bóbì	a-bobi
	back	kà-mán?	n.a.	gà-máráá?	ɛ-mā	n.a.	a-mɛ

Table 4: Reflexes of *ki-/*ku- and *ka- in modern Guang

- this vowel differentiation might also be responsible for some unusual deriflections, as *kVᴴⁱ-/N-* or *ka-/a-*

+ similar observations can be made for the differentiation of **a-* and **I-* which both have reflexes as *E-* in modern languages

    PB cl. 6 **a-*   plural of: egg, head, name, eye, (5) and ear, leg, arm (15)
    PB cl. 10 **n-*   plural of animals (> I-)
    PB cl. ?6A **ma-*   transnumeral (> N- > I-~E-)

+ **a-* attested in many languages
- Cherepong, Larteh and Anum: **a-* > E- (to avoid confusion with singular *a-* < **O-* or **ka-*)
- for some languages (mainly Southern), body parts only have a single form

	Gonja	Foodo	Gichode	Nkonya	Cherepong	Anum
neck	á-bɔ́	à-bɔ́-ɔ̀	á-bɔ́	--	--	--
bone	á-wúbî	á-wú-m̀	á-wìyé	a-wu	è-bóù	--
stone	à-jèmbú	dù-bú-lì	à-bʷí	a-bui	è-búì	e-bwi
ear	à-sú	à-sɔ́-ɔ́	à-sɔ́	a-sō	--	--
arm	n.a.	à-báá-ḿ	à-báá?	a-be	--	--
leg/foot	á-yá?	á-yáá-m̀	á -yáā?	a-yabi	n.a.	n.a.

Table 5: Reflexes of *a- in modern Guang

+ *n- and *ma- show a number of different reflexes – difficult to reconstruct proto-form

	Gonja	Foodo	Gichode	Nkonya	Larteh	Anum
dogs	a-jɔ̀nɔ̃́	ɩ-kpídɛ́-ɛ̀	i-jònõ	n.a.	n.a.	n.a.
sheep (pl.)	n.a.	ì-sàŋdɛ̀ɛ́	i-sàndɛ̃ɪ̆	n-sɪanɪ	e-sente	n.a.
roots	ǹ-líɲ̂i	i-líŋd˥á-m̀	í-lĩŋ	i-lĩ	ɛ-la	n.a.
trees	ń-yíá	á-yé-è	í-yíĩʔ	i-yi ~ n-yi	e-yi	a-yi
tails	ń-dúʔ	í-dú-m̀	í-dúũʔ	n-ɖu	e-du	a-du ~ Ø-du
brooms	e-pesi	ì-fɛ́ɛ́	ɩ-fɛ	m-fɛsi	ɛ-fɛ̃	a-fĩ

Table 6: Reflexes of *I- and *N- in modern Guang

2.2.3 Rich noun form and agreement class inventory in Foodo

+ Foodo shows three noun form and agreement classes not attested in the other languages
- one is a clear innovation (AGR *tu-*, based on derivative element *-tɔ* for abstracta with religious and ideological meaning)
- the status of the other two is unclear, were already reconstructed for Proto-Benue-Congo and Proto-Bantu
- 2 possible scenarios: Foodo spoken in a remote area in Northern Benin, without having contact to other Guang languages for about 300 years
  - Foodo as the most conservative language because of isolated development
  - Foodo as the most innovative language because of contact to other languages

+ *dV^{Hi}-*
- dV^{Hi}- of Foodo corresponds to nouns with NF kV^{Hi}- in other languages (mainly body parts) (see Table A6) – in both cases, the agreement is alliterative dV^{Hi}- resp. kV^{Hi}-, plural in agreement and noun form is *a-*
- besides this, Foodo also has kV^{Hi}- nouns (body parts, snake, feather) - no clear semantic limits between the two groups of nouns
- no other Guang language has such nominal forms, except maybe

Kplang:	dɪ-po	'tongue'
Chumburung:	je-pu	'tongue'
Chumburung:	dì-kpã	'fire'
Tchumbuli	lo-kpa	'fire'
Krachi	dè̞-kpã	'fire'
Nkonya:	lu-fɔlɛ	'salt',
	lu-fɔ	'oil'
?Gonja	kì-jɛ̀m-bú	'stone'

+ question: what is the direction of change?
- form *di-* was reconstructed by Meussen (1967) for Proto-Bantu as pronominal agreement (class 5) and for Proto-Gur as NF and AGR (with plural PB *ga* and PG *$ka{\sim}a$*, class 6)
- its meaning embraces: egg, head, name, eye, tooth, breast, tongue, year (Williamson 1989: 38), i.e. those nouns that are also included in this agreement class in Foodo
> dV^{Hi}- in Foodo can be analyzed as inherited feature of gender and deriflection system

+ areal feature of Northern Benin/Togo (Atakora mountains and surrounding regions) where the language is spoken?
- contact languages of Foodo within last 300 years are Gur languages
- Tem is most important, but does not give direct evidence for contact-induced changes in Foodo even though it has a gender ɖi/a
- Ditammari is not really in contact with Foodo, as well as Miyobe, but there are striking similarities between Foodo and those two languages
> no clear hint for dV^{Hi}- as contact phenomenon

	Foodo	Tem	Ditammari	Miyobe
	Plunkett, MS.	Tchagbale 1976	Reineke 2012	Rongier 1996, Heyder, p.c.)
nom	dì-ɲíń-dí	yí-ɖɛ /yɪ-rá	dī-yè-tì-rì	ti-nyíri / a-
knee	dì-ŋmíĺˈí-í	ɖón-ɖɛ /ɖʊn-á	di-nú-n-nì	ti-nui /a-
egg	dù-bɔ́lˈí-í	yɛ́-lɛ /ya-lá	dī-yē-nì /yā-yê	ti-pele /a-
mouth	kɔ́-nɔ́-ù	nɔ-ɔ (>-a)	dī-nʊ̀ʊ̀	ti-nɔ́ɔ
tooth	dí-nyí-lì	ké-le (?Ø)	dī-nì-n-nì	kù-ní̋
liver	dó-kpó-ɫ̃	fɔɔ-rɛ (>-ɖi)	?	ti-wuu
head	dù-mú-lí	kʊ-jʊʊ	dī-yūū	tí-yu
seed	dí-bí-lì	?	?	ti-pi-pi
star	dì-félé-bí-lí	wɪlɔ-ɔ́ (>-ka)	dī-wã̀-t-i-rì	ti-wárɛ-pi

Table 7: Comparison of Foodo nouns with dV^{Hi}- prefix to contact languages

+ *bV^{Hi}-*
- bV^{Hi}- in Foodo exclusively used for infinitives

(2)   bí-dá-nɔ́   ˈaction of greetingˈ
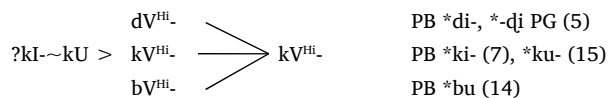   bí-jáà   ˈaction of chasingˈ

- infinitives in other Guang languages found in noun form class kV^{Hi}- this class is used for verbal nouns in Bantu - whether one has to reconstruct both forms to indicate verbal nouns is not clear

(3) Gonja   kì-nyì   ˈboastingˈ
               kì-kpáng   ˈhuntingˈ

Nawuri	gi-dii	'climbing'
	gı-kıta	'catching'
Chumburung	kí-bá	'coming'
	kù-núú	'drinking'

- bV^{Hi}- for PBC and PB reconstructed with exactly this semantics (cl. 14, *BU-)

- contact languages all show a reflex of *bu- in NF and AGR: Ditammari mu- … -mu (AGR mu-), Miyobe pi-… (AGR pi-) and Tem –i (AGR bi-, Tchagbale 2000)

> unclear status of Foodo bV^{Hi}-

+ assuming that this form is inherited, one has to suppose a merger of three (or even four) NF and AGR classes into one in Oti-North Guang (except Foodo):

$$\begin{array}{ccc} dV^{Hi}- & \longrightarrow & PB *di-, *-ḍi \; PG (5) \\ ?kI- \sim kU > \; kV^{Hi}- & \longrightarrow kV^{Hi}- & PB *ki- (7), *ku- (15) \\ bV^{Hi}- & & PB *bu (14) \end{array}$$

→ loss of noun form classes and the following reorganization of the deriflection system resulted in today's strongly crossed systems

2.2.4 Status of *bA- in noun forms and agreement

+ NF *ba- (PB cl. 2) merges with *a- (PB cl. 6) in most languages: *ba- > a-

- with further change to E- in Hill Guang, Efutu (Snider 1988) and Larteh: *ba- > a- > E-

- Gonja is the only language showing a NF ba-: *ba- > bV-

- again, this could be due to contact to Gur languages having such a suffix (cf. reconstruction of proto-Gur in Miehe et al. 2012)

+ but, in most modern languages, AGR ba was retained for plural nouns referring to animates

> ba- must have been part of the gender and deriflection system of proto-Guang

(4) NF A-nouns show split between agreement classes (here Foodo)

à-nyí-m̀	bà-kú	some men	not: bà-nyím̀
kàdíyà	bà-kú	some people	
á-céὲ	à-kù	some beans	not: bà-kú

→ NF *ba- and NF *a- are merged to result in one NF-class, whose nouns belong to two agreement classes in most languages

3. Reconstruction in view of former accounts

+ basically, our reconstruction of the proto-Guang gender and deriflection system follows the premise laid out by Snider (1988)

> It is therefore reasonable to assume that proto-Guang had a system at least as complex as the most complex present day Guang language … (Snider 1988: 138)

> even though some of the agreement and noun forms have an unclear status as inherited or newly developed (see above), we take them as inherited from an older proto-language

- thus, proto-Guang must have had 11 different noun forms and 9 agreement forms

- the difference goes back to NF Ø which triggers different agreements in the languages, and a special plural form –ana which probably derived from an associative plural (mostly restricted to kin terms, but in Gonja on the way to a more general plural marker)

- Ø and –ana are not reconstructed for PB and PBC, but represent an important part of the deriflection system in most modern languages

- proves that nearly every noun form class and agreement class occurs with more than one single number value > thus, it has to be assumed that in the proto-system these morphemes did not have a number specification, but were transnumeral and developed only later a number specification by marking singulatives and pluratives

Table 8: Comparison of the gender and deriflection system of Proto-Guang with the reconstructions of Snider (1988) and Manessy (1987)

+ as can be seen, the four systems differ considerably, partly due to the fact that Manessy and Snider try to combine agreement and noun form classes within one reconstruction
- plural suffix –*ana* not recognized by both authors
- number of transnumeral agreement and noun form classes considerably lower in both reconstructions

+ Manessy (1987)
- based on noun form classes and pronominal forms
- does not consider allomorphic variation – his system therefore more inflated

  *ka- > ke- and *ka- > a-

  *ba- > a-

  *ki- > ke-

- prefix *I- is reconstructed as E- what is questionable: singular E- with plural bV- is rather reflex of *O-
- pairing of e-/e- unclear and not explained by him
- neglects the existence of a Ø form in the proto-language, what is reconstructed by us for the deriflection system

+ Snider (1988)
- basically based on large-scale lexical comparison in 9 languages but includes also agreement features
- sound reconstruction of the Guang system, similar to our reconstruction
- did not have access to Foodo data, therefore no inclusion of *dV^{Hi}- and *bV^{Hi}-
- main difference: plural of *O- nouns reconstructed as *N- for proto-Guang (by us as *I-): clearly influenced by PB reconstruction, but not attested by Guang data
Snider: PB cl. 6a ma- > *N- in proto-Guang > *I- in proto-Oti-North
- acknowledges transnumeral nouns far more than Manessy, but still not in their full diversity

4. Conclusion

+ Guang languages share with Niger-Congo the extensive "noun class system", including agreement in a full range of targets
- comparison of gender and deriflection systems in modern languages and Proto-Guang has shown that **both systems develop differently and independently** from each other, supporting findings by Good 2012 and Kießling 2013
- declension and gender system have to be reconstructed as elaborated system, consisting of at least 9 noun form resp. agreement classes, thus representing a slightly simplified version of an assumed Proto-Benue-Congo noun class system (cf. de Wolf 1971)

– simplification concerns the number of noun form classes, and, more importantly, the agreement system - more general semantics govern the system: introduction of agreement principles based on animacy (differing even in dialects of the same language)
> merger of agreement classes in both numbers according to animate-inanimate distinction, but retention of noun form classes is widespread in Guang, cf. Gonja, Larteh, and others

+ Foodo with the most complex system – as the split of Foodo is dated about 200-300 years ago, it might well be that Foodo preserved a system closely similar to the inherited system
- with its sister languages of Oti-North Guang, it retained the inherited, complex system both in the deriflection as well as in the gender system

+ our reconstruction supports most of the reconstructed forms in proto-Bantu (Meussen 1967), but challenges some of them:
- it confirms the following reconstructed classes and pairings:

  *o- (cl. 1~3) / *ba- (cl. 2)

  *di- (cl. 5) / *a- (cl. 6)

  *ka- (cl. 12) / *N- (cl. 6a)

  *bu- (cl. 14 for verbal nouns)

  *ku- (cl. 15~17, but not as verbal nouns, but primarily locative transnumeral class)

- it cannot confirm the following classes and pairings:

  *mi- (cl. 4)

  *n- (cl. 9, 10)

  *bi- (cl. 8)

  *du- (cl. 11)

  *tu- (cl. 13, but attested in GTM)

  *ki- (cl. 7, questioned)

> more language data have to be taken into consideration for a better understanding of the dynamics of gender and deriflection systems

References

Abunya, Levina. 2017. Kaakye noun class system. Paper presented at 30th West African Languages Conference and 10th LAG conference, 31.07. - 05.08.2017, Winneba: University of Winneba.

Agyeman, Nana Ama. 2016. A descriptive grammar of Efutu (southern Ghana) with a focus on serial verb constructions: a language documentation study. PhD Thesis. SOAS, University of London. http://eprints.soas.ac.uk/id/eprint/23586

Akrofi Ansah, Mercy. 2005. Number marking on Lete nouns. Studies in the languages of the Volta Basin, ed. by M.E. Kropp Dakubu & E.K. Osam, 88-95. Legon: Departement of Linguistics, University of Ghana.

Akrofi Ansah, Mercy. 2009. Aspects of Lete (Larteh) grammar. University of Manchester. (Doctoral dissertation).

Asante, Krobea Rogers & George Akanlig-Pare. 2015. Animacy in Nkami. Ghana Journal of Linguistics 4.2: 64-91.

Blench, Roger M. 1999. Recent fieldwork in Ghana: report on Dompo and a note on Mpre. Ogmios 11: 14-15.

Blench, Roger. 2015. The Dompo language of Central Ghana and its affinities. pdf MS fr January 6 2015, 13 p.

Casali, Roderic F. 1994. Nominal tone on Nawuri. Journal of West African Languages 24. 45-64.

Casali, Roderic F. 1995. An overview over the Nawuri verbal system. Journal of West African Languages 25:1, 63-86.

Casali, Roderic F. 1995. An overview over the Nawuri verbal system. Journal of West African Languages 25:1, 63-86.

Cleal, Alizon M. & Norman Price. 1976. Nchumuru. In Kropp Dakubu, M. E. (ed.), West African language data sheets 1, xx. Legon & Leiden: West African Linguistic Society (WALS); African Studies Centre (ASC).

Cleal, Alizon M. 1974. A comparative study of three Guan languages: Ncumuru, Acode and Anyanga. Inst. of African Studies (IAS), Univ. of Ghana.

Cleal, Alizon M. 1976a. Gechode. In Kropp Dakubu, M. E. (ed.), West African Language Data Sheets 1. Legon & Leiden: West African Linguistic Society (WALS); African Studies Centre (ASC).

Cleal, Alizon M. 1976b. Genyanga. In Kropp Dakubu, M. E. (ed.), West African Language Data Sheets 1. Legon & Leiden: West African Linguistic Society (WALS); African Studies Centre (ASC).

Cleal, Alizon M. 1976c. Krachi. In Kropp Dakubu, M. E. (ed.), West African language data sheets 1, 366-373. Legon & Leiden: West African Linguistic Society (WALS); African Studies Centre (ASC).

Corbett, Greville G. 1991. Gender. Cambridge: Cambridge University Press.

Corbett, Greville G. 2006. Agreement. Cambridge: Cambridge University Press.

Dakubu, Mary Esther Kropp. 1988. The Volta-Comoé languages. In Kropp Dakubu, Mary Esther (ed.), The languages of Ghana. London: Kegan Paul International (for the International African Institute), 50-90.

Demuth, Katherine, Faraclas, Nicolas, and Marchese, Lynell. 1986. Niger-Congo noun class and agreement systems in language acquisition and historical change. In Noun classes and categorization, ed. Craig Colette, 453-471. Amsterdam/Philadelphia: John Benjamins.

Forson, B. 1976. Efutu Data Sheet. In West African Language Data Sheets, ed. M. E. Kropp Dakubu: West African Linguistic Society.

Good, Jeff. 2012. How to become a "Kwa" noun. Morphology 22:293-335.

Güldemann, Tom and Ines Fiedler. to appear. Niger-Congo "noun classes" conflate gender with declension. In Francesca di Garbo and Bernhard Wälchi (eds.), Grammatical gender and linguistic complexity, 85-135. Berlin: Language Science Press.

Güldemann, Tom. 2000. Noun categorization systems in Non-Khoe lineages of Khoisan. Afrikanistische Arbeitspapiere 63:5-33.

Hansford, Keir and Hansford, Gillian F. 1989. Borrowed words in Chumburung. African Languages and Cultures 2. 39-50.

Hansford, Keir Lewis. 1990. A grammar of Chumburung: a structure-function hierarchical description of the syntax of a Ghanaian language. University of London. 495pp. (Doctoral disseration).

Kießling, Roland. 2013. On the origin of Niger-Congo nominal classification. In Historical linguistics 2011: Selected papers from the 20th international conference on historical linguistics, Osaka, 25-30 July 2011, eds. Ritsuko Kikusawa and Lawrence A. Reid, 43-66. Amsterdam / Philadelphia: John Benjamins.

Kilarski, Marcin. 2013. Nominal classification: A history of its study from the classical period until the present. Studies in the history of the language sciences 121. Amsterdam: John Benjamins.

Manessy, Gabriel. 1987. La classification nominale en Proto-Guang. Afrikanistische Arbeitspapiere 9:5-49.

Miehe, Gudrun et al. 2007. Overview on noun classes in Gur. In Miehe, Gudrun, and Winkelmann, Kerstin (eds.), Noun class systems in Gur languages. vol. 1 (Southwestern Gur Languages (without Gurunsi). Gur Monographs/Monographies Voltaïques. Köln: Rüdiger Köppe.

Obeng, Samuel Gyasi. 2008. Efutu grammar. (Languages of the world: materials, 472.) München: Lincom Europa. 110pp.

Painter, Colin. 1967. The distribution of Guang in Ghana, and a statistical pre-testing on 25 idiolects. Journal of West African Languages 4:25-78.

Painter, Colin. 1970. Gonja: A phonological and grammatical study. (Indiana University Publications: African Series, 1.) Bloomington/ Berlin: Mouton de Gruyter.

Painter, Colin. 1980. Hill Guang. In West African language data sheets, ed. M. E. Kropp Dakubu: West African Linguistc Society/African Studies Centre.

Perrot, J. 1981. Les langues dans le monde ancien et moderne. Pt.1. Les langues de l'Afrique Subsaharienne; Pt. 2, Pidgins et créoles; (c). Cartes. 1981. Paris: Éd. du Centre National de la Recherche Scientifique.

Plunkett, Gray C. n.d. Foodo: Toolbox project. (unpublished).

Plunkett, Gray C. 1991. The tone system of Foodo nouns, Dep. of Linguistics, University of North Dakota: M.A. thesis.

Plunkett, Gray C. 1997. Foodo: Les classes nominales. Ms.

Plunkett, Gray C. 2006. An Overview of the Tone System of Foodo and its Implications for a Standard Orthography. Paper presented at International Workshop on the description and documentation of the Ghana-Togo-Mountain Languages, Bishop Konings Social Centre, Ho, Ghana.

Plunkett, Gray. 2009. An overview of Foodo. A linguistic island in Benin. Journal of West African Languages 36: 107-138.

Rapp, Eugen Ludwig. 1957. The Gonja language (Guang Studien II). Mitteilungen des Instituts für Orientforschung 5. 235-286. (Brief grammar followed by a Gonja-English wordlist.)

Rapp, Eugen Ludwig. 1977. Miszellen zum Guáng - Kwa-Sprachen in Ghana, Togo und Dahomey (Guang-Studien VIII). In Voigt, W. (ed.), XIX. Deutschen Orientalistentag vom 28. September bis 4. Oktober 1975 in Freiburg im Breisgau: Vorträge, 1467-1472. Wiesbaden: Franz Steiner Verlag.

Reineke, Brigitte. 1966. Die nominale Struktur des Nkunya. Mitteilungen des Instituts für Orientforschung Band XII. Heft 3.:209-219.

Reineke, Brigitte. 1972. The structure of the Nkonya language, with texts and glossary. Leipzig: VEB Verlag Enzyklopädie.

Reineke, Brigitte. 2012b. B2: Ditammari. In Gudrun Miehe, Brigitte Reineke & Kerstin Winkelmann. (eds.), Noun Class Systems in Gur Languages II: North central Gur languages (Gur Monographs/Monographies Voltaiques11). 115-150. Köln: Köppe.

Sherwood, Barbara. 1982. A grammatical description of Nawuri. University of London. London: Univ. 403pp. (Doctoral dissertation).

Snider, Keith L. 1989. North Guang comparative wordlist: Chumburung, Krachi, Nawuri, Gichode, Gonja. (Comparative African Wordlists, 4.) Legon: Institute of African Studies, University of Ghana.

Snider, Keith L. 1990. Tone in proto-Guang nouns. African Languages and Cultures 3. 87-105.

Snider, Keith. 1988. The Noun class system of Proto-Guang and its implications for internal Classification. Journal of African Languages and Linguistics 10, 137-64.

Tchagbale, Zakari. 1987. Classes et genres nominaux du Foodo langue guang du Bénin. Cahiers ivoiriens de recherche linguistique 22, 61-126.

Tchagbale, Zakari. 1976. Phonologie et tonologie du tem, avec fascicule complémentaire: noms, infinitifs et texte, Université de la Sorbonne Nouvelle.

Tchagbale, Zakari. 2000. L'infinitif tem, statut et structure. Cahiers voltaïques / Gur papers 5:169-180.

Westermann, Diedrich. 1922. Die Sprache der Guang in Togo und fünf andere Togosprachen. Berlin: Dietrich Reimer (Ernst Vohsen).

Westermann, Diedrich. 1935. Nominalklassen in westafrikanischen Klassensprachen und in Bantusprachen. Mitteilungen des Seminars für Orientalische Sprachen - Afrikanische Studien 38: 1-52.

Williamson, Kay. 1989. Niger-Congo overview. In John Bendor-Samuel (ed.), The Niger-Congo languages, 3-46. Lanham: University Press of America.

Appendix: Tables for comparison

	Gonja-Dompo	Nkonya-Nkami	Mountain Oti-North			River Oti-North				Awutu-Efutu	Hill South Guang		
Languages	Gonja	Nkonya	Foodo	Gichode	Nawuri	Chumburung	Dwang	Krachi	Tchumbuli	Efutu	Anum	Larteh	Cherepong
AGR classes	4	3	10	6	7	7	4	4	?	3	?	3	?
Paired genders	2	2	5+2	4+1	4+1	4+1	3	2	?	2	?	2	?
Single genders	-	-	7	6	5	6	-	-	?	-	?	-	?
AGR targets	5	4	11	6	5	4	2	3	?	3	?	2	?
Basis of classification	animacy	animacy	formal	formal	formal	formal	animacy	animacy	?	animacy	?	animacy	?
NF classes	9	7	11	8	8	8	7	7	8	6	6	7	7
Paired deriflections	7+5	7	8+3	8+4	8+1	6+2	5+6	7+4	7+2	5	5	6	5
Single deriflections	7	7	9	7	6	7	7	6	8	6	6	5	6
Form	CV-	(C)V-	CV-.-V/N	CV-	CV-	CV-	CV-	CV-	CV-	V-	V-	V-	V-

Table A1: Overview over some features of the gender and deriflection system in Guang

SG	TN	PL	SG	TN	PL	SG	TN	PL	SG	TN	PL	SG	TN	PL	SG	TN	PL	SG	TN	PL

-ana (Foodo, Gichode, Nawuri, Chumburung, Krachi, Dwang, Tchumbuli)

Ø, Ø, O-, O-, A-, A-, KV^Hi-, KV^Hi-, GV^Hi-, GV^Hi-, I-, I-, KA-, KA-, GA-, GE-, GE-, N-, N-, DV^Hi-, BV^Hi-, TO-, BV-, E-

Foodo (Oti-North)   **Gichode (Oti-North)**   **Nawuri (Oti-North)**   **Chumburung (Oti-N)**   **Krachi (Oti-North)**   **Dwang (Oti-North)**   **Tchumbuli (Oti-N)**

-ana, -ɛnɛ, -ɛnɛ, -ana

Ø, Ø, BV-, E-, E-, O-, O-, A-, A-, KV^Hi-, KV^Hi-, I-, I-, KA-, KA-, E-/KE-, E-, N-, N-, E-/A-, E-/A-, E-/I-, BA-, DV^Hi-, BU-

Gonja (North)   **Nkonya (North)**   **Nkami (North)**   **Efutu (South)**   **Larteh (South)**   **Cherepong (South)**   **Proto-Guang**

Table A2: Deriflection systems in synchronic Guang

SG	TN	PL		SG	TN	PL		SG	TN	PL		SG	TN	PL		SG	TN	PL		SG	TN	PL		SG	TN	PL

Foodo (Oti-North)
- ba-
- O- / O-
- a- / a-
- kV^Hi- / kV^Hi-
- yV^Hi- / yV^Hi-
- ka- / ka-
- sV^Hi-
- dV^Hi-
- bV^Hi-
- tO-

Gichode (Oti-North)
- O- / O-
- ba-
- a- / a-
- gV^Hi- / gV^Hi-
- I- / I-
- gE- / gE-
- N- / N-

Nawuri (Oti-North)
- ba-
- O- / O-
- A- / a-
- gV^Hi- / gV^Hi-
- I- / I-
- gA-
- N- / N-

Chumburung (Oti-N)
- bU-
- O- / O-
- a- / a-
- kV^Hi- / kV^Hi-
- I- / I-
- ka- / ka-
- N- / N-

Krachi (Oti-North)
- ba-
- O-
- a-
- I-
- (yoo

Dwang (North)
- O-
- ba-
- a-
- kV^Hi-
- I- — I-

Tchumbuli (Oti-N.)

Gonja (North)
- bo-
- E-
- a-
- kV^Hi-

Nkonya (North)
- bV-
- O-
- E- — E-

Nkami (North)
- bE-
- O-
- E- — E-

Efutu (South)
- amʊ
- mʊ-
- a-
- I- — I-

Larteh (South)
- amʊ
- a-
- I- / I-
- E-

Cherepong (South)

Proto-Guang
- ba-
- O- / O-
- a- / a-
- kV^Hi- / kV^Hi-
- I- / I-
- ka- / ka-
- N- / N-
- dV^Hi-
- BV^Hi-

Table A3: Gender systems in synchronic Guang

18

			*O-	*BA-	*KV^Hi-	*A-	*KA-	*N-	*I-	*Ø	*DV^Hi-	TO-	*-ana
North Guang	Gonja-Dompo	Gonja	E- (~KA-)	BV-	KV^Hi-	A-~E-	KA-	N-~A-	N-	Ø	KV^Hi-	n.a.	-ana
	Nkonya-Nkami	Nkonya	O-	A-	I-~ E-	A-	(KE-) ~E-/ O-	N-~I-	I-~N-	Ø	I-~ Ø	n.a.	?
		Nkami	O-	A-	E-	A-	E-	N-~A-	A-	Ø	E-	n.a.	?
	Mountain Oti-North	Foodo	O-	A-	KV^Hi-	A-~I-	KA-	N-~I-	I-	Ø	DV^Hi-	TO-	-ana
		Gichode	O-	A-	GV^Hi-	A-~I-	GA-	N-~I-	I-	Ø	KV^Hi-	n.a.	-ana
		Ginyanga	O-	A-	GV^Hi-	A-~I-	GA-	N-~I-	I-	Ø	KV^Hi-	n.a.	-ana
		Nawuri	O-	A-	GV^Hi-	A-~I-	GA-	N-~I-	I-	Ø	KV^Hi-	n.a.	
	River Oti-North	Chumburung	O-~Ø	A-	KV^Hi-	A-	KA-	N-~I-~Ø	I-	Ø	KV^Hi-	n.a.	-ana
		Krachi	O-	A-	KV^Hi-	A-	KA-	N-~I-	I-~A-	Ø	KV^Hi-	n.a.	--
		Dwang	O-	A-	KV^Hi-	A-	KA-	N-~I-	I-	Ø	KV^Hi-	n.a.	?
		Tchumbuli	O-	A-	KV^Hi-	A-	KA-	N-~I-	I-	Ø	KV^Hi-	n.a.	?
South Guang	Awutu	Efutu	O-~E-	A-~E-	Ø	A-~E-	A-	N-~I-	I-~Ø	Ø	Ø	n.a.	?
	Hill South Guang	Larteh	O-	A-~E-	Ø	A-~E-	A-	N-	E-~I-	Ø~O-	Ø	n.a.	-ɛnɛ
		Cherepong	A-, O-	E-	E-,I-~O-	E-	A-	N-	A-	Ø	E-~I-	n.a.	-ɛnɛ
		Anum-Boso	A-	E-	Ø~O-	E-	A-	N-	A-	E-, O-~Ø	Ø~O-	n.a.	?

Table A4: Noun forms in synchronic Guang as reflexes of Proto-Guang (based on 80-words-list)

			ADJ	NUM	DEM	DEF	IDEF	REL	SBJ	OBJ	POSS	EMPH	Switch-reference
North Guang	Gonja-Dompo	Gonja	-	x	(Nu)	(Nu)	?	-	x	x	x	x	?
		Dompo	no info										
	Nkonya-Nkami	Nkonya	?x	x	-	-	x	-	x	x	?	?	?
		Nkami	?x	(Nu)	(Nu)	-	(Nu)	-	x	x	x	?	?
	Nterato	Nterato	extinct, no info										
	Mountain Oti-North	Foodo	NF	NF	x	x	x	x	x	x	x	x	x
		Gichode	-	x	(Nu)	-	x	x	x	x	?	?	?
		Ginyanga	-	?x	?x	?	?	?	x	x	?	?	?
		Nawuri	-	-	x	-	x	-	x	x	x	?	?
	River Oti-North	Chumburung	(Nu)	x	(Nu)	-	(Nu)	-	x	x	?	?	?
		Kplang	no info										
		Krachi	(Nu)	x	-	-	?	?	x	x	?	?	?
		Dwang	-	?	x	?	?	?	x	?	?	?	?
		Nchumbuli	no info										
		Tchumbuli	no info										
South Guang	Awutu	Awutu-Efutu	(Nu)	?	(Nu)	(Nu)	-	-	x	x	-	x	?
	Hill South Guang	Gua	no info										
		Cherepong	no info										
		Larteh	(Nu)	(Nu)	(Nu)	-	(Nu)	-	x	x	?	?	?

Note: (Nu) means that there is agreement with number only; NF means that there is rather nominal marking on target

Table A5: Comparison of agreement targets in Guang

	Gonja-Dompo	Nkonya-Nkami	Mountain Oti-North			River Oti-North			
Languages	Gonja	Nkonya	Foodo	Gichode	Nawuri	Chumburung	Dwang	Krachi	Tchumbuli
kV^Hi/A ~ I/A ~ dV^Hi/A									
5. bone	kú-wúbí	i-wu	dú-wú-lì	gù-wìyé	gù-wìyá	kì-bòwíʔ			ku-gbowi
57. stone	kì-jèmbú	i-bui	dù-bú-lì	gù-bʷí	gù-bú	kà-bú	kì-bó	kù-bú	ku-bu
31. egg	kò-fólɛ̃ʔ	e-bɔnɔ	dù-bɔ́lˈí-í	gò-bɔ́líʔ				kò-fórɛ̃ʔ	
11. tooth	kí-ɲí	i-nyĩ	dí-nyí-lì	gí-ɲí	gí-ɲí		kí-ɲī		
23. head	kù-mú	i-ŋu	dù-mú-lí	gù-mú	gù-mú	kù-ŋú	kò-nʷōə	kù-mú	kunn
6. breast	kí-ɲápũ̄	e-ɲabo	dí-nyɔ́wˈɔ́-lí	gí-ɲápṍ	gí-ɲápũ̄	kí-ɲápũ̄	kì-ɲápū̄	kí-ɲápṍ	
29. horn		e-siyebi	dì-síí-lí	gì-sé					
49. seed		i-bi	dí-bí-lì	gí-bí	gí-bí	kí-jí	kì-gbì	kí-jí	
22. eye	kì-nìʃí	nsibi	dì-ńsí-lì	gì-nsí	gì-nsí		kì-ɲásì	kì-ɲísí	
17. knee	kì-ŋmúlĩ̄ʔ	e-kpaŋunu	dì-ŋmílˈí-í	gì-ŋmílĩ̄ʔ	gù-múlíí̯ʔ	kù-ŋúríʔ	kà-ŋʷónī		ku-wuni
13. leg	kí-yáʔ		dí-yáá-lì	gí-yáā̯ʔ	gí-yáā̯ʔ	kí-yáʔ	kī-yáá	kí-yáā̯ʔ	ke-ya
76. name			dì-nyíń-dí	gí-ɲàŋ		kì-ɲárí	kà-ɲíná	kì-ɲíní	
15. navel	kì-jèpùlóʔ		dù-pùlí-í	gù-pùlíʔ	gù-pùlúū̯ʔ	kà-pùréʔ	kà-pùníí	kù-pùnííʔ	
18. liver		a-kpõ	dó-kpú-lì	gi-kpɔ		kì-kpó			
30. fish			dì-kìm̀-bí-lí	ɔ́-kĩ́ŋ	ɔ́-kĩ́ŋ	kà-kìɲjí		kè-kìŋɲí	
kV^Hi/A ~ I/A ~ kV^Hi/A									
7. arm		e-be	kò-báá-ṹ	gì-bááʔ	gì-bááʔ				
25. wing	kì-báʔ		kú-báá-ṹ	gí-báŋ	gì-bàmbàntʸɛ́ɛ̄ʔ	kí-bámbáŋ		kí-bámbáŋ	
9. ear	kò-sú	e-sõ	kò-sú-ṹ	gù-sɔ́	gù-sú	kì-síbɔ́	kò-sᵛ̀è	kò-sú	ko-sugbo
41. snake	kò-wɔ́	e-wɔ	kò-wɔ́ɔ́-ṹ	gù-wɔ́ɔ́ʔ		kò-wɔ́			
42. feather	kì-téʔ	e-tɛ	kì-tèɛ́tˈé-ṹ	gì-tʸɛ̃́ʔ	gì-tʸɛ́ɛ̄ʔ	kì-téʔ	kì-tíè	kì-téɛ̄ʔ	
44. leaf	kì-fàntáŋ	e-feta	kò-fádá-ṹ	gì-fàdáā̯ʔ	gì-fàtɛ́ɛ̄ʔ	kì-fĩ́ráʔ	kì-frá	kì-fítã̄ʔ	
10. neck	kó-bɔ́	ɔ-boyi	kú-bɔ́-ṵ̀	gó-bɔ́	ɔ̀-búlɛ̃́ĩ̄	kí-bɔ́			ku-bo

Table A6: Alternatives to DI-/A- deriflection of Foodo in Northern Guang