STRUCTURAL AFFINITIES OF THE VOLTA RIVER LANGUAGES

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Structural Affinities of the Volta River Languages and their significance for Linguistic Classification.

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1. Introduction

The languages of the Gold Coast are commonly divided into 2 groups:

(I) Languages of the Northern Territories:
Dagbane, Mamprule, Talense etc.
These languages are not considered further in this paper.

(II) Languages of Ashanti and the Colony:
- (1) Twi with the following major dialects and sub dialects.
  - (a) Twi (Akuapem)
  - (b) Fante
  - (c) Ashanti-Akim:
    - Ashanti
    - Akim
    - Brong
    - Kwahu etc.
- (2) Nzema with the following major dialects
  - (a) Nzema
  - (b) Evaloue
  - (c) Ahanta

(3) Ga with the following dialects

(a) Teshi

(b) Christiansborg

(4) Adangme with the following major dialects

(a) Krobo

(b) Shai

(c) Ada

(5) Ewe (Anglo dialect: Keta)

(6) Guang with the following major dialects and sub-dialects

(a) Kyerepong

(i) Apiredo

(ii) Abonse

(b) Nate

(c) Afutu

The interrelation of these six languages is the topic of this paper.

Plan of the Work:

For convenience in presenting the data, certain conclusions are anticipated early in the work. The Languages are divided first into three groups, viz:

Group A + B, Twi-Nzema(A)+Guang(B)

Group C + D, Ga-Adangme

Group E, Ewe

and the structural affinities of each group are then described under the three headings of

phonology

morphology and syntax

lexicon.

These affinities are held to be in each case evidence of a common source.

The thesis ~~paper~~ ends with a discussion of the inter-relation of the three established groups: earlier theories are presented, criticized, and an alternative hypothesis of acculturation is put forward to explain certain affinities between the groups.

Data:

Material published[1.] on Nzema, Guang and Adangme is scanty and in some cases unreliable; there is a considerable body of work on Ga, but it is also of very uneven quality; there are good grammars and dictionaries of Twi and Ewe. But all the information needed for this thesis ~~paper~~ was obtained from personal observations made in London and the field during the past six years; for reasons of space, no attempt is made to indicate where the facts presented in this paper disagree with statements made in other descriptions of the better-known languages, such as Ga, Twi and Ewe.

Transcription:

All texts, even from those languages for which there

1. See bibliography.

an official orthography (i.e. Twi, Ga, Ewe) are transcribed in the Africa alphabet with the following additional conventions:

In the 9 vowel languages only (i.e. Twi, Guang, Nzima):

(i) ɪ and ʊ to represent the closer of 2 close vowels, (the opener pair to be represented by i and u).

(ii) In Nzima and Ewe (1) only the digraph dh to represent a voiced dental plosive, (d to represent a voiced alveolar plosive).

(iii) In Nzima only, nl to represent a voiced naso-lateral.

(iv) The labiopalatals: for the special conventions regarding these sounds see page 17.

(3) Tones: (2)

à to represent a single syllable of low tone or the first of a succession of syllables of low tone immediately following a syllable of other than low low tone: (all other low tone syllables to be left unmarked).

á to represent a single syllable of high tone or the first of a succession of syllables of high tone, (the following high tone syllables to be left unmarked)

ā In Adangme and Ewe only, to represent a single syllable of mid tone or the first of a succession of syllables

(1) In Ewe orthography d represents the dental, <u>d</u> ~~of~~ the alveolar plosive.

(2) Owing to the high degree of tonal inflection of all six languages it is difficult and often misleading to indicate tones of words quoted in isolation: tone, therefore, is shown only when its representation is germaine to the argument of the thesis.

of mid tone (the following mid tone syllables to be left unmarked).

á In Twi, Nzima and Guang only, to represent a single syllable of mid tone or the first of a succession of syllables of mid tone (the following mid tone syllables to be left unmarked).

ǎ to represent a syllable of rising tone

â to represent a syllable of falling tone (high - low).

a᷄ to represent a syllable of falling tone (high - mid).

Language names: for simplicity of reference languages and dialects are listed by their official (i.e. English) names, although these names are frequently not used or recognised by the native speakers of the languages ; for example ,"Guang" is used throughout this paper instead of the more accurate but less widely known Gkiri , etc.; the Ga dialect of Adangme is called by its Ga name "Shai", the Ketu dialect of Gkiri by the English corruption of its Twi name "date" and Adangme and the Keta dialect of Ewe for example are spelt in romanized form and not dangme , agle etc.

2: PHONOLOGY

Preliminary Note: The influence of Twi on all six languages ha been considerable. So much so in the case Ga and Guang that any statement of the phonological structure of these languages ought t take account of their mixed nature. In the following pages the total lexicon of each language is first divided into:-

(1) native words and completely assimilated (i.e. unrecognisable) loans.[1.]

(2) partially assimilated (i.e. recognisable loans, usually from Twi.

and a different system of phonology is then postulated for each division of the lexicon.

Groups A & B:

Syllabic Structure: Common to all three languages are syllables of the following types:-

(1) V
(2) ~~M~~
(3) CV

(where V - vowel; M - ~~nasal consonant~~ syllabic nasal[2.], C - consonant.)

Notes: (3) is the ~~major~~ commonest syllable type; (1) and (2) are to be found in what are phonologically "sub-systems"

1. On the identification of loan words, see page 121

"sub-systems" of affixial elements and as particles and interjections only.

: Peculiar to Twi (Akuapem only) and Guang (loan words from Twi) only, are syllables of the pattern: (4) CVW[1]. (where W is best treated as a syllable prosody with closing and lengthening function.)

: A similar evaluation of the end nasals[2]. is suggested for syllables found only in Twi and Guang of the pattern: (5) C V m' (where m - closing nasality)

Syllable Prosodies: Unplaced features of the syllable in these languages are:-

(1) Quantity: length/shortness[3].

(2) Tone: high/mid/low/ etc., pitch.

(3) Accent: glottalization

(4) Labialization[4].

(5) Palatalization[5].
(prosody of junction within the syllable.)

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1. Described under "System of Vowels", page 23

2. m and n: see pages 13 and 27

3. In 'Lautbilder', length may be accorded to either part of the syllable, e.g. Twi: Kum(:) or Ku(:)m. 'quietly', see also page 16

4. See page 25, 26

5. See page 26

T-one: in group A there are 3 tones giving 6 essential intervals:-

Equal	Unequal
High-High	High-mid
Mid-mid	High-low
Low-low	Low-high.

(the distinctions low-mid/low-high/~~and high-mid~~ mid-high/high-low/mid-lo are inoperative).

In Guang only, a 4th tone (high falling) gives a further 2 essential intervals: high-fall
low-fall
(all other potential intervals with fall being inoperative)

Accent: peculiar to the languages of both groups is (-), a stress accent of the 'st$\acute{o}$d' type. Twi (Asante), for example, opposes weak (phonologically, zero) stress as in to.'buy' to strong stress combined with glottal stop or at least glottal stricture, as in -to?, 'die in battle'.

~~(2)~~ System of Consonants: The types of consonant sound that may be heard in the individual languages of these 2 groups may be represented in general phonetic terms as in Tables 1-3.

1: TWI

(a) Consonants:

	bilabial	labio-dental	dental	alveolar	alveolo-palatal	velar
plosive	p, b			t, d		k, kw, g, gw
affricate			ts, dz		tʃ, tʃw, dz, dzw.	
nasal	m			n	ny	ŋw
rolled				r		
fricative		f, fw		s, sy, sw.	ʃ, ʃw	h
semi-vowel	w				y	w

(b) Vowels:

	Front	Central	Back
close	ɨ, ɪ	ɯ	ʉ, ʏ
half close	i, ɪ	ɯe	ɯ, u
half open	e		o
open	ɛ, ɛ, æ	a	ɔ, ɔ

Notes:

sy- = palatalized s

sw- = labialized s

etc.

2: NZEMA

(a) Consonants:-

	bilabial	labio-dental	dental	alveolar	alveolo-palatal	velar	labio-velar
osive	b		dh	t, d		k, kw g, gw	kp, gb
fricate					tʃ, tʃw dz, dzw		
sal	m		nh	n	ny	ŋ, ŋw	ŋm
teral				l, nl			
lled					r		
icative		f, fw v, vw		s, sy, sw. z, zy, zw	ʃ, ʃw	h, y	
i-vowel	w				y	w	

(b) Vowels:-

	Front	Central	Back
close	i, ɪ		u, ʊ
half-close	i, ɪ		u, u
half-open	e	ə, ə̃	o
open	ɛ, ɛ̃	a, ã	ɔ, ɔ̃

3: GUANG

(a) Consonants:-

	bilabial	labio-dental	dental	alveolar	alveolo-palatal	velar	labio-velar
plosive	p, pw b, bw		t, d			k, kw g, gw	kp, gb
affricate			ts, dz		tʃ, tʃw dz, dzw		
nasal	m, mw			n	ny	ŋ	ŋm
lateral				l, lw			
rolled				r			
frictative		f, fw		s, sy, sw.	ʃ, ʃw	h	
semi-vowel	w				y	w	

(b) Vowels:-

	Front	Central	Back
close	i, ɪ		ɯ, ʉ
half-close	ɪ, ɪ		ɤ, u
half-open	e		o
open	ɛ, ɛ, æ	a, ɐ	ɔ, ɔ

Common features: plosives:

(1) a voiced and voiceless labial stop $^{\kappa}$p, $^{\kappa}$b (1

(2) a voiced and voiceless apical stop ,$^{\kappa}$ t,$^{\kappa}$ d

(3) a voiced and voiceless dorsal stop ,$^{\kappa}$ k,$^{\kappa}$ g

Notes: $^{\kappa}$ p in Nzema and Guang is phonetically a voiceless labio-velar plosive /kp/:

$^{\kappa}$ b is phonetically /b/

Both languages have also a voiced labio-velar plosive /gb/. This in Nzema occurs only as the 'mutated' form of $^{\kappa}$ p (Kp) (1); and in Guang is rare and only in loans from Ga or Ewe; eg. gbɔ̀ɔ́, 'dog' (Ga,id); agberi, cassava, (Ewe, agbeli) :/p/in Nzema is very rare and only in the most recent loans from Twi; in Guang it is common but again only in obvious and the more recent loan from Twi, Ga and Ewe: eg Guang, spaa(n), hired labour (Twi, paá)

but

Guang, Kpɛ(v), skim (Twi pá).

$^{\kappa}$ t is /t/(alveolar) in Asante, /th/ (dental) in Akuapem, /th/and /ts/ (affricate) in Fante (2)

/dh/ (dental) occurs only in Nzema and in that language only as the 'mutated' form of $^{\kappa}$t(th)(1)

Note (1) See note below on Consonant mutation in Nzema p. 27.

(2) See note below on palatalisation in Twi. p.26.

Nasals: (1) a labial, ^{N} m

(2) an apical, ^{N} n

(3) a dorsal, ^{N} ŋ

Notes: All languages of both groups have in addition a palatal nasal /ny/ and a labio-palatal-nasal /ŋʷ/(nyw). In A only these are to be evaluated phonologically as y- and yw- modified velars(1).

In Nzema and Guang the labiovelar nasal /ŋm/ is either to be evaluated phonologically as m (both languages)(2) or in Nzema only, as the mutated form of ^{N}p (/kp/).

Similarly, /nh/ (dental nasal) and /nl/ (naso-lateral) in Nzema occur only as the mutated forms of ^{N}t and as ^{N}d (/d/) respectively (3).

End nasals: in paragraph (1), page 6, ⁿ was used to indicate a feature of certain syllables called roughly, closing n-sality. Phonetically, this may be:

In A and B

Note (1) See note below on palatalisation in Twi, page 26.

(2) See note on syllabic structure, page 6 and note on homorganic nasal prefixes below, page 27.

(3) See note below on consonant mutation in Nzema, page 27.

In A and B (1) m: i.e. in final position, a bilabial nasal stop (without oral release); in included position, a bilabial nasal plosive with vocalic off glide.

In Twi and in Guang words loaned from Twi only (1) (2) n ; i.e. in Akuapem, /ŋ/, a velar nasal: in Fante, /n/, an alveolar nasal: in Asante and Guang (in final position) /ɪ̃/, /ʊ̃/, a Close nasal vowel; in included position, /n̩/, an apical nasal plosive with vocalic off glide: e.g.

(a) ᴷ tam (v) Twi embrace

	Akuapem	Asante
3 p.s present:	ɔ́tàm	ɔ tãm
(1) 3 ps preterite:	ɔ-tá-mɪ	ɔ̀-tà-mɔ̀-yɛ

(b) ᴷ dán (n) room

	Akuapem	Asante	Fante
the house	ɔ dáŋ nu	ɛdáɪ nu	ɛdán nu
the house which	ɔ dáŋ à	ɛdáni à	ɛdán à

(3)

Twi		Guang	
adwiŋ	=	adwíɪ	craft (n)
dáŋ	=	daɪ	turn (v)

(1) ~~note~~ The Nsema reflex of final ᴷ n is syllabic (n and v) see page 55

(1) Syllable division indicated by the hyphen.

Semi-vowels: (1) front unrounded, ^{x} y

(2) back rounded, ^{x} w

Notes: in the languages of both groups, /wy/, (1) a front rounded semi-vowel is heard as a variant of ^{x}w before front vowels (2)

: ~~/w/ may also be in Nzema only the 'mutated' form of ^{x}b.~~

laterals and trills. : Guang only has an apical lateral, ^{x}l.

Notes : /r/ is not heard in Nzema.

: /l/ is not heard in Twi.

: l occurs in Nzema only as the 'mutated' form of d.(1)

: the occurrence of r in Twi and Guang is limited to 2nd position only (i.e. C_2 in radicals of the type, C, V, C_2 V_2) (2) and is accordingly evaluated phonologically as [redacted] weakened *d

Notes: (1) = IPA ɾ
(2) See note below on palatalisation in Twi, page 26 .
(1) see note below on consonant mutation in Nzema, page 27.
(2) see note below on radical structure, page 56.

Double Nasals: are found in languages of both groups. They are in every case the phonetic realisation of m and voiced stop.[1.]

Long Nasals: are found in 'lautbilder'. Like other over-long finals they may be considered the result of contraction. In most cases there are variants with reduplicated stems, e.g. Twi: tùm(::) and tùntum: black)

Fricatives: an alternance of three voiceless fricatives ʷf/s/h.

Notes: the frontal fricatives ʃ, ʃw,[2.] in the languages of Group A are to be evaluated as y- and yw- modified h.[3.]

: /ʃ/ is also heard nowadays in Guang (Apiredo) as a variant of h before front vowels (Twi influence ?) and /ʃw/ is heard in the more recent loans from Twi.

: the voiced fricatives /v/, /z/, /ɣ/ occur only in Nzema and are then the 'mutated' forms of ʷf/s/b.[4.]

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1. See note below on prosodies of function, p. 26
2. = IPA, ɸ etc.
3. See note below on palatalisation in Twi, page 26
4. See note below on consonant mutation in Nzema, page 27

Affricates: the frontal affricates (tʃ, tʃw, dz, dzw) [1] of the languages of Group A are to be evaluated phonologically as y- and yw- modified velar plosives [2].

But Guang has the phonologically irreducible affricates, ᴺts/ ᴺdz: these are phonetically e.g. /ts/(dental affricate) in the Abonse-Asiesco dialects; /tʃ/[1] alveolo-palatal affricate in the Apirede dialect and /dz/ (voiced alveolo-palatal affricate) in all dialects.

: In Apirede the labio-palatal affricates tʃw, dzw are found not only in loans from Twi but as the labialised variants of tʃ, dz before back rounded vowels, eg.

all dialects; a d z w ʧ - 'craft' ∠ Twi, adzwʧ

Apirede, atʃwi , 'water' ≡ Abonse atsu

note also:

Apirede; edzwé yam ≡ other dialects, edzó [1].

Notes: (1) - I PA tɕ, ʧ or cɕ, ʤ the pronunciation varies considerably between dialects and speakers.
(2) See note below on palatalisation in Twi p. 26.

(1) See note below on labialisation, page 26.

(3) System of vowels: the types of vowel sound that may be heard in the individual languages of these two groups may be represented in general phonetic terms as in Tables 1-3.

Common features: a basic system five vowel units:

	front	mid	back
close	* i		* u
mid	* e		* o
open		* a	

Notes: Abstracted as a prosody at syllable level is 'q/h'[1]. Phonetically this is co-constriction of the pharynx (giving 'creak') and its obverse, widened pharynx (giving 'dull' or 'breathy' voice). Correlate with these differences in quality of voice are differences in quality of vowel; the pharyngalized series in general tends to be opener and retracted somewhat towards a central tongue position, viz:

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1. Some such treatment is necessary not only for comparative purposes but to enable a clearer statement of a feature common to the two groups and usually called vowel harmony. cf. the note on vowel sequences below, page 22

Table 4

	Phonological Unit	Phonetic realisation					with prosidic symbols
		Asante	Akuapem	Fante	Nzema	Guang	
1	x_i	ɨ	ɨ	ɨ	ɨ	ɨ	- hi
		i	i	i	i	i	- qi
2	x_e	e	e	e	e	e	-he
		ɛ	ɛ	ɛ	ɛ	ɛ	-qe
3	x_a	ɛ	ɐe	e	ɑ̈₂(3)	æ	-ha
		a	a	a	a	a	-qa
4	x_o	o	o	o	o	o	-ho
		ɔ	ɔ	ɔ	ɔ	ɔ	-qo
5	x_u	ʉ	ʉ	ʉ	ʉ	ʉ	-hu
		u	u	u	u	u	-qu

Successions of vowels: these are:

(1) successions of like vowels

(2) successions of unlike vowels.

Successions of type (1) may be phonetically in all three languages, long vowels and are usually described as such. But an alternative analysis for phonological purposes is suggested and length of vowel is here analysed in Twi, Guang, Nsema as a prosody of junction: of eg. from Twi only:-

(a) pairs like àtá: àtaá 'twin brother/twin sister'

àtaá < àtawá [1] by contraction. eg bfeni: bfoniwá etc

(b) the overlong finals of lautbilder etc. may be considered as contractions. In most cases there are variants with reduplicated stems: eg.

bhsaa or basabaea, muddled

Fitaa or Fitafita, white etc.

(c) verbs like thá, 'often', which have a paradigm tonally and in other respects comparable with the paradigms of eg. the verbs sɛí, 'spoilt', kaí, 'remember'. Similar examples justifying the analysis suggested are to hand in Guang and Nsema.

(1) wa = feminine suffix (obsc).

in Asante only

(d) words like dwɛ̀ɛ́, 'haughtiness' and ɔbɔ̀fá, 'woman' have variants in other dialects with successions of unlike vowels, eg Akuapem dwaí, ɔbía.

(e) long vowels due to elision of r.

ɔbaántí, young man (cf. Akp. ɔbiráńtí)

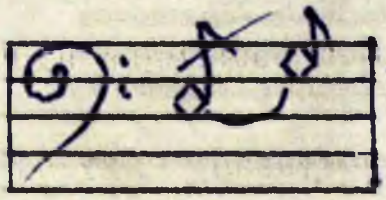
ɔbɛ́fá, 'vir', (cf Akp. ɔbaríma)

Successions of unlike vowels:

These are phonetically in Twi and Guang successions of 2 separate vowels. They are realised in utterance as 2 syllables having 2 separate pulses (1), are tonally comparable in paradigm with verbs of unambiguous syllable division (cf. gwaí, 'peel' warí, 'marry') and in deliberate speech are pronounced with a 'linking' semi-vowel, y or w, appropriate to the junction.

Almost identical successions of vowels in Nsema are diphthongs, i.e. have monosyllabic value and are accordingly to be transcribed without prosodic link.

(1) they are always 'drummed' ~~'flam and feint'~~ as follows:-



bar

i.e. 'flam and feint'.

TABLE: 5

Successions of vowels possible within the radical in Twi, Nzema, Guang are:-

Twi	Nzema	Guang	
ɪ-e	ɪe	ɪ-e	* i-e
i-e	ie	i-e	
ɪ-ɛɛ	ɪɛ	ɪ-ɛɛ	* i-ɛ
i-ɛ	iɛ	i-ɛ	
ʊ-ɔɔ	ʊɔ	ʊ-ɔɔ	* u-ɔ
u-ɔ	uɔ	u-ɔ	
ʊ-o	ʊo	ʊ-o	* u-o
u-o	uo	u-o	

: the following vowel successions are found in Guang and Twi only:

* e-i, * ɛ-i, * ʊ-e

: the corresponding Nzema forms have medial *k, e.g.:

Twi:	bʊe (v) 'open'	Nzema:	bʊke
	kai (v) 'remember'		kakyi
	sue (v) 'put down load'		sukwɛ

: between individual speakers and dialects the phonetic forms of *u + a, *u + e, etc., differ considerably in Twi, e.g.:

brother/sister:	nwia	nŭa	nua
open (v):	bwie	bʉe	bʉe

Note that *nua most probably ⟋ ni + ba = mother's child. cf. also Akuapem aduan (Fante adziban), food ⟋di, eat.

Diphthongs: true diphthongs are heard in Twi (except the Asante dialect), and in Guang: these are all analyzable phonogically into vowel + prosodic w: i.e. in end position they are in every case pronounced as an outgliding or ascending oral diphthong which starts at one of nine vowel positions and moves towards a fairly close ʉ; in included position this diphthong is resolved into a dyadic vowel sequence having ɣ in junction; the ɣ clearly initial to the second syllable: e.g. cf. Akuapem ɔsâw, 'he dances', and ɔsâ - wi, 'he danced'.

In the Asante dialect these forms with w are very rare, the regular correspondence being, Asante (V_{1-9}) = Akuapem, etc. (V_{1-9}) + w.

Sequence of Vowels: in paragraph 3 , page 18 , h/q was established to cover a type of vowel harmony characteristic of all three languages:

by which the vowels of a radical and its extensions are class members of one only of two possible sets.

: additional notes on the sequence of vowels are to be found under radical structure, page 59 , and reduplication, page 74.

Nasalization: there are seven nasal vowels, viz:

		Front	Central	Back
ɪ̃	close	ɨ̃, ɪ̃		ʉ̃, ʊ̃
ɘ̃	mid	ɘ̃		ɵ̃
ɐ̃	open		ɐ̃	

Notes: it is important to distinguish

O V E R

degrees of masality: all vowels after nasal consonants are to some extent masalised, but cf. the 'independent' masality of mmĩ, don't give it, with the 'dependent' masality of mma, children, which is to be analysed as ɱa + ba, i.e. a phonologically oral vowel.

Syllable Prosodies: labialisation: in addition to the simple consonants (i.e. having one articulation only), already enumerated, 'modified' consonants are found in both A and B; these are considered as having a complex articulation; i.e. a primary articulation with a secondary feature or secondary features. Examples are:-
from Groups A + B (1) labialised consonants
from Group A only (2) palatalised and labio palatalised consonants.

~~(but see note on page)~~

Labialised consonants in all three languages are followed only by front vowels, labialisation (w) is therefore abstracted as a prosody of the syllable;

: palatalised consonants in Twi and Nsema are followed only by front vowels and palatalisation (y) is therefore abstracted as a prosody of junction within the syllable (q.v.)

Phonetically, y and w is labio-palatalisation, which is so analyzed: tʃw, ʃw, ŋ͡m are therefore mixed and heard in A before front and (less frequently) back vowels: e.g. in Twi, Asante wyɔ, 'make' = Akuapem yɛ

ŋwyunu, 'weave' = ŋwyini

Prosodies of junction: these are of 2 types:-

(1) prosodies of junction within the syllable

(2) prosodies of syllable junction

Under (1) the frontal consonants of Twi and Nsema are analyzed as phonological velars:-

tʃ	is as analyzed as ky
tʃu	kyw
dz	gy
dzu	gyw
ʃ	hy
ʃw	hyw
ny	ŋy
ŋ͡m (nyw)	nyw

Fante only: ts, dz ty, dy.

Under (2), the syllabic nasals of A and B are analysed as m, and certain geminate nasals are analysed as m and c: e.g.

A and B	mm	∠	m and b
	nn	∠	n and d
Twi and Guang only	ŋŋ	∠	ŋ and g
Nzema only:	ŋŋ	∠	ŋ and w.

The latter are examples of a process peculiar to Nzema and commonly called 'consonant mutation'.

Table 6 sets out below the phonetic realisation of the 9 so-called 'mutable' consonants in the 2 relevant types of junction: columns 3 and 4.

Morphologically these junctions are

(1) Singular / plural prefix and nominal stem

(2) pronominal prefix and nominal stem

(3) tense prefix and verbal base.

: in each case the prefix is

(1) M, a homorganic nasal (column 3) or

(2) V, one of five possible vowels and zero Column 1 gives the phonological units postulated in this analysis and column 2 gives the phonetic realisation of these units when functioning as first consonant in an unaffixed radical

To face page 29.

TABLE 6.

In these examples, four processes are abstracted as occasioning the four prosodies of junction:

(I) gemination, already mentioned, and under the general heading of 'lenition'

(II) lateralization

(III) spirantization

(IV) voicing.

1	2	3	4
		M +	Zero + V +
x p	kp-	ŋmgb-	akp-
x b	b-	mm-	ay- aw-
x t	th-	nhdh-	adh-
x d	d-	nn-	al-
x k	K- ky- kyw-	ŋg-y(ng)- yw(ng)-	ah- ahy- ahyw-
x n	n-	nn-	anl-
x F	F-	mv-	av-
x s	s-	nz-	az-
x w	w-	ŋŋ-	aw-

~~2. Phonology (contd.)~~

Groups C and D

Syllabic structure: Common to both languages are syllables of 2 types:

(1) with one place only: V

(2) with 2 places, i.e. an initial and a final: CV

: Unplaced features of the syllable are:

(1) yotization (y) (1)

(2) labialisation (w) (1)

(3) lateralization (l) (1)

(4) quantity: length/shortness (2)

(5) pitch: high, mid, low etc. tone

: placed features of the syllable are:

restricted to 2nd place only (1) /˜/ nasality (4)

(II) /ː/ length of vowel (5)

---

(1) see note on semi-vowels pages 35 and 41
(2) see note on lautbilder below, page .
(3) see below
(4) 'placed' because syllables of type (1) are not found with nasal vowels. Similarly, yĩ, wĩ, lĩ, (V) y/w/l, are all equally impossible in either language but - fiĩ, sɑ̃ɔ, hlɛ̃ (CV) y/w/l, for example can and do occur in Adangme.
(5) as distinct from length of syllable, see note on vowels, page 37 .

Notes: syllabic nasals and syllables with end nasals are in every case identified as:-

(1) loans from Twi

Ga: ŋkatie, ground nut

dadesaŋ, cooking pot

(2) Adangme bem ∠ Twi him, innocence

cf. older Adangme (ye) ŋwɔ

(2) as a result of contraction, e.g.:

(a) in Adangme, bɛ̃m ∠ bɛ + mi[1]., 'sweepin

cf. (in included position)

bɛ̃mi ɔ, 'the sweeping'

(b) in Ga, ŋɛ̃gbɛ ∠ nɛgbɛ, where.

(see my "Pronunciation of GA" pp.)

: a third type of syllable is restricted to a phonological sub-system of 'lautbilder' and may be represented by the formulae- ~~formularically~~

CV:N, where N is closing nasality, i.e. in Ga, a velar nasal, /ŋ/, in Adangme, a close nasal vowel /I/ or /U/, and (:) is length of syllable, i.e. phonetically, length of vowel or length of nasal. Examples are:-

English: 'bright': Ga: haraŋŋ/haraaŋ

Adangme: hlaaI

---

1. See note on page 31

Tone: the pitch system of Gaclosely resembles the systems of Groups A and B described above : there are three level tones and these give in turn six intervals :-

Equal	Unequal
high-high	high-mid
mid-mid	high-low
low-low	low-high,

in addition a rising tone , which is heard in end position as a rise - fall, gives a further alternance of five intervals :-

(1) rise - high
(2) rise - mid
(3) rise - low.
(4) high- rise.
(5) low - rise.

~~In addition, a rising tone (1) gives a further alternance of 5 intervals; rise = (1) high/ (2) mid/ (3) low/ (5) high/ (6) low = rise.~~

Note: the distinctions mid-high, mid-low, low-mid are phonologically irrelevant in Gã: but in Adangme all potential intervals are realised; and for the disyllabic piece there is a full tonal alternance of 16 'terms',
: there is no stress accent in either language.

System of consonants: the types of consonant sound that may be heard in Ga and Adangme may be represented as in Table 7.

Common features: plosives: (1) a breathed bilabial x p
(2), its voiced correlate x b
(3) a breathed apical x t
(4) its voiced correlate x d
(5) a breathed velar x x k stop
(6) its voiced correlate x g
(7) a breathed labio velar x kp
(8) its voiced correlate x gb

Notes: in many words, x p is phonetically /p/ a voiceless bilabial plosive in the speech of the older Gamei but /f/, a voiceless bilabial fricative in the speech of the present generation, though /p/ is pronounced ~~in~~

(1) in end position, this is heard as rise-fall.

unexceptionally in loan words, usually from Twi,

x t is phonetically /t/(alveolar) in GÃ, /th/(dental) in Adangme.

x d is /d/ (alveolar) in both languages.

Affricates: common to both languages are:

(1) a breathed frontal affricate xts [1]

(2) its voiced correlate x dz [1]

Notes: peculiar to Ga are the labiopalatals /tʃw/[1] and /dzw/[1]. The former is found almost exclusively in loan words from the Twi but the latter in a number of words of common GÃ-Adangme origin (see note on labio-velarization page 42).

nasals: common to both languages are the following nasal consonants:

(1) a bilabial x m

(2) an apical x n

(3) a frontal x ny

(4) a dorsal x ŋ

(5) a labiovelar x ŋm.

---

(1) These are not phonetically identical with the affricates of Groups A and B; (see my "pronunciation of GÃ" page 10) cf. eg. the two distinct types of labialization; the affricates of Groups A and B are pronounced with inner rounding, those of Groups C and D with lips well-protruted.

Fricatives: common to both languages are the following fricative consonants:

(1) a breathed labio-dental xF

(2) its voiced correlate (rare except in loans from Ewe) xV

(3) a breathed apical xS

(4) its voiced correlate (rare in G%) xZ

(5) a glottal xh

: peculiar to G% is

(1) a breathed palato-alveolar fricative, unrounded, /ʃ/

labialised /ʃw/

these sounds occur (1) in loan words from Twi where it s Twi xhy, xhyw.

(II) in words of Ga-Adangme origin, where

Gx ʃ = Adangme S -

Gx ʃw = Adangme fy -

see pages .

Semi-vowels: these are in C and D (1) a liquid xl

in D only (2) its breathed correlate xhl.

Notes: x l in both Ga and Adangme is

(i) after apical and frontal consonants, /r/, a trill or with some speakers, a voiced alveolar fricative.

(ii) after labial consonants, a lateral flap.

(iii) elsewhere, /l/ , a voiced alveolar lateral.

But modern Ga speech tends to use r and l indiscriminately in other than initial position.

: x hl in Adangme is analysed as h plus l, i.e. as l-modified h and not as a simple consonant: see note on lateralisation below.

: for y and w , see notes on yotisation and labialisation below.

System of vowels: -

7: GA and ADANGME

(a) Consonants:-

	bilabial	labio-dental	alveolar	prepalatal and palatal	velar	labio-velar
plosive	p, b		t, d		k(kw) g(gw)	kp, gb
affricate				tʃ, dz (tʃw) (dzw)		
nasal	m		n	ny	ŋ	ŋm
lateral			l, (hl)			
rolled			r, hr			
fricative		f, v	s, z	(ʃ)(ʃw)	h	
semi-vowel	w			y	w	

(b) Vowels:-

	Front	Central	Back
close	i, ɪ		u, ʊ
half-close	e		o
half-open	ɛ, ɜ		ɞ, ɔ
open		a	

Notes: (1) (hl) - breathed, e: Adangme only

(2) (kw), (gw), (tʃw), (dzw), (ʃw) - labialised consonants Ga only.

(3) (ʃ) - Ga only.

System of vowels: The types of vowel sound that may be heard in Ga and Adangme may be represented in general phonetic terms as in Table 7.

Common features: 7 oral and 6 nasal vowels.

	Front		Mid		Back	
	Oral	Nasal	Oral	Nasal	Oral	Nasal
Close	i	ɪ			u	ʊ
Mid	e	ẽ			o	õ
	ɛ				ɔ	
Open			a	ã		

: the pronunciation of these vowels differs little between the 2 languages and has been described for GÃ in my 'Pronunciation of Ga' pages 2-6.

: Length of vowel: in certain cases is analysed in both languages as

(1) a prosody of function. eg. GÃ baa (n) coming ⟨ ba(v) 'come'
Adangme (Adaa): eŋɛ baa, 'he is coming', of (kɔ) eŋɛ, bae.

(2) Correlate with other syllable prosodies eg. tone.
e.g. in Ga and Adangme: with rising tone:

(G) ʂɛ̌ ɛ (A) ɓɛ̌do, where vowel duration is in each case noticeably longer than in e.g. (G) fe, (A) pɛ̀, surpass. see my "Pronunciation of G&" for recognition of at least 4 durations of vowel in Ga. (1)

(3) A result of contraction, e.g. (G&) ɓmáà ∠ ɓmámà, your cloth.

G& kǎá crab = Adangme kǎwi.

(4) As a syllable prosody: in lautbilder (G) dzɔ̀gbaaŋ or dzɔ̀gbaŋŋ 'well', which may itself be considered as by contraction ∠ dzogbaŋ dzogbaŋ.

(5) In Ga, as a feature of loan words eg. pɛ̈ɛ̈ ∠ Twi pɛ̈ɛ̈ 'many'

: but in Ga only there are words in which length of vowel is inexplicable under (1) - (4) above: these are all monosyllables with low tone and in every case the Adangme word has the corresponding short vowel with low tone: eg.

---

(1) Alternatively it would be possible to analyze stems and radicals with a moving tone as di - and poly - syllabics (as in Twi). This would simplify the tonal statement but is not done for 2 or more reasons:
(1) of the six possible tunes that accompany unambiguously disyllabic verbals(CVCV) in Adangme, for example, only one would be realized by verbs with long finals viz. the rise (low-high)
(2) the identical morpheme in comparable morphological but different tonal contexts may have at one time a level at another time a rising tone: the vowel duration will be different in the two cases. eg. Adangme ímáyà I shall go (ma)
ɔmǎyà you will go (ma:)

Ga		Adangme.
fàa	river	pá
bàa	leaf	bá
sàa	mat	sá

cf. also the Ga words in morphological junction, e.g.

fàa	river	but	fài	rivers
bàa	leaf	but	bài	leaves

and

Ga		Adangme
wè	house	wè
wò	honey	wò

Successions of vowel and diphthongs:-
Common to both languages are the following vowel sequences:-
$_{\times}$ie, $_{\times}$iɛ, $_{\times}$ia, $_{\times}$iɔ
$_{\times}$ue, $_{\times}$uɛ, $_{\times}$ua, $_{\times}$uɔ
these are pronounced as monosyllables in Adangme and in words of Ga-Adangme origin in Ga[1.]; for the analysis of these vowel sequences, see note on syllable initials below.

---

1. With about equal prominence on the two ~~syllables~~ vowels.

Notes: (1) in Ga only, the same sequence of vowels is in one word to be analyzed as (y/w and v) and in others as a disyllabic junction of (V and V), cf. sequences of the latter type in composition, e.g.

ʃɪ́, house but ʃínàa, window (house mouth)

cf.: abifao, child but abifábií, children..

(2) other sequences of vowels in both languages may be realized phonetically as diphthongs, but are here analyzed as

(a) prosodies of junction: e.g.

Adangme and Ga: èbíɔ̀, he asks ⟨bi (v), a

Adangme: púí = negative of pû, etc.

(b) as a distinctive feature of loan words from the Twi (Akuapem), e.g.:

Ga: hao (v), pester ⟨Twi: haw

Ga and Adangme: kai, remember ⟨Twi: kai

(3) Note also that Ga has certain successions of vowels not found in Adangme, but corresponding regularly with

(a) a pure Adangme vowel, e.g.

Ga: fàí, hat = Adangme: pɛ̀

làí, firewood = lɛ̀

or (b) the same Adangme vowels in reversed sequence:

Ga: ʃwéíʃwéí, ragged = Adangme: pía;

fɛ̃i, cold = fĩa

Syllable Initials: the pronunciation of words ending in the phonetic diphthongs emmerated above (page) suggests a structural dividing line after i and u, rather than the consonant initial, cf. for example, the pronunciation of Adangme flafiɛ̃ ⟋ fĩa, where the systematic tone (a rise, cf: fàfɛ̃ ⟋ fa) is carried by the second vowel, the first vowel having non-systematic level tone; i and u, in these vowel sequences, are, therefore, interpreted as realisations of a feature of the syllable initial and with l[1]. (lateralization) are grouped with the consonantal terms of the initial alternance : the semi-vowels w, y and l , initially are similarly considered as prosodies of syllablex beginning restricted to syllables of one-place : see Table 8 below.

---

1. Also treated as a feature of the syllable initial for similar and obvious reasons.

Table 8

Adangme syllable initials

Syllable type	V (v = e)	CV (c = f, v = a)	
with yotization	ye	fya	
with labiovelarization	we	wa	
with both	---	wya/ywa	(1)
with lateralization	le	fla	
and yotization	---	yra	
with lateralization and labiovelarization	---	lwa/wla	
with none of the above	e	fa	

Notes: (1) variant pronunciations are

	Ada	Krobo
x wya	wia	yua
x lwa	a-wlá	a-lua

9: EWE

(a) Consonants:-

	bilabial	labio-dental	dental	alveolar	prepalatal and palatal	velar	labio-velar
plosive	p, b		t, dh	d		k, g	kp, gb
affricate					tʃ, dz		
nasal	m			n	ny	ŋ	ŋm
lateral				l			
rolled				r			
fricative	ɸ, β	f, v		s, z	ʃ, ʒ	x, (h) ɣ.	
semi-vowel					y	w	

(b) Vowels:-

	Front	Central	Back
close	i, ɪ		ʊ, u
half-close			
half-open	ɛ	ə, ɜ	o
open		a	ɔ, ɔ

Notes:- (h) - voiced pharyngeal fricative.

~~8. PHONOLOGY~~

GROUP E.

The types of consonant and vowel sound that may be heard in dialects of Ewe may be represented in general phonetic terms as in Table 9 . The pronunciation of these sounds in the Anglo dialect (Keta) is described in my "Pronunciation of Ewe" q.v.

Notes: syllable structure: syllables are of the pattern (1) v ,

(2) m [1].

or (3) cv

where v = a vowel, c, a consonant and m, a syllabic nasal, m.

: /ɳ/ with syllabic function is analysable in all cases as a result of contraction: cf. e.g. the pairs, ɳdí and nyídí 'morning', etc. where ɳ-/ nyi-

: similarly, any nasal consonant final in a syllable in words other than loan words is

---

~~1. but see note on nasals below.~~

here analyzed as a prosody of junction cf. e.g. ákpá / àmakpá, leaf[1].

Anecho andhe / ame de, someone.

: a fourth type of syllable is restricted to 'lautbilder' and similar words and may be represented formularically, CV:N where N = a velar nasal and (:) = length of syllable, i.e. phonetic length of vowel of nasal consonant.

sóŋŋ or sóɔŋ, "of the same kind'.

: unplaced features of the syllable are

(1) quantity: syllabic length/shortness; see above.

(2) tone : high/mid/low/etc. pitch. There are three level tones and these give the following significant intervals:-

---

1. The nasal consonant in the following words is a feature of dialects of the Western Interior only:

akáŋgẽ, vulture, kandzẽ, blood sandẹ, light, etc.
(cf. the Anglo akágẽ, kadzẽ, sadhẹ);

it too is obviously to be considered as a prosody of syllable junction.

Equal	Unequal	
high-high	high-low	low-high
mid-mid	high mid	mid-high
low-low		

/the distinctions high-low/mid-low and low-mid/low-high are irrelevant in Ewe/

: in addition monosyllables occur with tonal movement; there are syllables with (1) a rising tone, low-mid/high /the distinction is again irrelevant/ which may succede syllables of high or low tone; and syllables with one of two falling tones: (2) high-mid, (3) high-low; these may succede syllables of all types.

system of consonants: the consonant units postulated for this study are:

plosives: (1) a voiceless bilabial = p
(2) a voiced bilabial = b
(3) a voiceless dental = th
(4) its voiced correlate = dh
(5) a voiced alveolar = d
(6) a voiceless velar = k
(7) the same with labialisation = kp
(8) the voiced correlates } = g
(9) of (7) and (8) = gb

Notes: the phonetic realisation of ᴱp in Anglo is /ɸ/, a voiceless bilabial frictative; in Anecho /ph/ a strongly aspirated p;[1] in Dahomey /hw/ a labialised glottal frictative. /p/ a voiceless bilabial plosive is found in all dialects in loan words only, usually from Twi, e.g. Anglo pɛ̃, chisel ⟨ Twi pɛ̃.

; ᴱb is /b/ in all dialects.

; ᴱth and ᴱdh are realised as dental affricates /ʦ/ʤ/ before close front vowels in the dialects of the Western Interior, elsewhere as in Anglo; i.e. as dental plosives.

; similarly ᴱk and ᴱg before close front vowels are realised except in Dahomey as /ʧ/ and /ʤ/; i.e. are palatalised, e.g.

Dahomey		Other Dialects
ki (v) quench	≠	ʧi
gi (v) give birth		ʤi

; in Dahomey, ᴱkp, ᴱgh are phonetically, labialised velar plosives /kw/gw/; elsewhere

---

1. After Westermann, 1927. 'An hat ein stark aspiriertes p, dem in den Westlichen ɸ enspricht.'

the true labiovelars /kp/gb/; e.g.

Dahomey	Other dialects
gwa (v) break	gba
Fokwa (n) sandal	afokpa

Affricates: (1) a voiceless affricate ≠ ts

(2) a voiced dental affricate ≠ dz

Notes: ≠ ts/dz are palatalised in all dialects before close front vowels; i.e. are realised as /tʃ/dʒ [1].

; ts and dz interchange with s and t in many words cf. e.g.

	Anglo	Dahomey	Western Interior
take (v)	so	so	tso
water (n)	si	si	tsi
horn (n)	zo	zo	dzo
fire (n)	so	so	dso

Nasals: (1) a bilabial, ≠ m

(2) an alveolar, ≠ n

(3) a frontal ≠ ny

(4) a dorsal ≠ ŋ

Notes: a syllabic bilabial nasal, m, hasbeen noted under syllable structure, above; it is found only in the verbal paradigm where it

---

1. See note below on s, z.

has morphological function and appears to be a contraction, probably /me -
e.g. male yiyiń, I am going
cf. mèle yiyi gé, I shall be going.

* ny is realized phonetically as /ɲ/ before nasal vowels in the dialects of the Interior only, elsewhere as /ny/ a palatal nasal.

Liquids and Semivowels: (1) an apical liquid *
(2) a palatal semivowel * y
(3) a velar semivowel * w.

Notes: In all dialects except Dahomey * l is /r/, usually a voiced alveolar fricative or tap, when in junction with apical and frontal conconants; in Dahomey it is /l/ a voiced apical lateral.

* l in all dialects in /l̃/ before nasal vowels: in every other case /l/.

* y is /y/ in all dialects.

* w is /w/ before back vowels in all dialects; /ɣ/, a voiced weak velar fricative before mid and front vowels in Anglo only.

e.g.	Anglo	Other Dialects
	ɤe (n) sun	we
	ɤli (v) cry	wli
	ɤla (v) hide	wlɔ

fricatives: (1) a labial = hw

(2) a labio-dental = f

(3) its voiced correlate = v

(4) a voiceless apical = s

(5) its voiced correlate = z

(6) a dorsal = x

(7) its voiced correlate = h

Notes: ^{x}n, ^{x}z are palatalized before close front vowels in all dialects (cf. = ts, dz) e.g. ànf, hand, is phonetically anʃ.

ànf, egg, is anʃ.

* In Anglo only there are certain apparent exceptions which require notice:- the frontal fricatives and affricates (ʃ, ʒ tʃ, dʒ) occur before vowels other than = i:-

(1) in loans, àtʃatʃa mat ∠ Ga atʃatʃa

(2) before reduced diphthongs in i-:

ʃa (v) ∠ sia		dry
ʒɔ (v) ∠ zio		lean against
tʃɔ (v) ∠ taio		strain.

And under similar conditions, apical fricatives may occur before * i, eg. sĩ, pipe ⟀ diminutive se, pot.

* h in Anglo is a voiced pharyngal fricative having as a variant in the Western dialects /ɣ/ a voiced velar fricative.

* hw in Dahomey is phonetically a voiceless glottal fricative with lip rounding; in Anglo a voiced bilabial fricative /ʋ/; in Anecho a voiced pharyngal fricative with liprounding:

	Dahomey	Anecho	Anglo
blood	xu	hu	ʋu
war	axwa	ahwa	aʋa
smell	xwɛ̃	hwɛ̃	ʋɛ̃

System of Vowels: a system of 5 vowels is postulated for this study: viz.

	Front	mid	back
high	* i		* u
mid	* e		* o
low		* a	

Notes: * e is phonetically a mid central vowel in Anglo; in other dialects, a mid front.

2 vowel sounds heard in all dialects are here analysed phonologically as a result of contraction, viz.

: /ɛ/ a halfclose front vowel in Anglo, a half open front in other dialects, is heard only

(i) in loans, e.g. pɛ̃ ⟨ Twi pɛi, chisel

(ii) at certain morphological functions involving the suffixes e. eya, ye etc., e.g. verb + pronominal suffix kɛ̀ > kɛɛ, touch it

(iii) nominal + predicative particle
ga + ye > gɛ̃, it is money
Xea le dzɛ̃, the bird is red (dzɛ̃, red + ye > dzɛ̃)

(iv) nominal + diminutive suffix
ka + e > kɛ̃, thread (little string)
gbadza + e > gbàdzɛ̀, small and flat.

: similarly, a tentative analysis of /ɔ/, an open back vowel, as w + a suggests itself on the following counts:-

(1) /ua/and/wa/ is rare in Ewe[1]. except

---

1. I can find only bua (v) pretend, and nua (n) Priest in the larger Ewe Dictionary of Westermann.

at word junctions, e.g. nominal + demonstrative

in Anglo dhuá)
Interior dhuɔ[1.]) the town

(2) the dialectal variants a/ɔ with contextual velarity

Interior	Anglo
kpá (n) hedge	kpɔ́
avlá́ku (n) frog	avlɔ́kui

and in all dialects:-

ɣla (v) hide or w ɔ

(3) the treatment of loans, cf.

Twi	Ewe
kwàdʒwú	kɔ̀dzó (n) ~~Monday~~ boy born on Monday
kwàbína	kɔ̀mlá (n) ~~Tuesday~~ boy born on Tuesday
fua	fɔ (v) pick~~up~~ up
àbɣrogúa	àblegó (n) chair
ŋwani	ŋlɔ (v) scratch, write

: Nasalization:- all vowels occur oral or nasal

Length of vowel: is here analyzed as

(i) a prosody of junction: see note of successions of vowel below.

---

1. cf. in dialects of Interior adhes, the hunter adhe + a.

(ii) correlate with other syllable prosodies, i.e.

(a) mid tone

cf. tá, head; nú, month

(b) tonal movement

cf. avú, dog; gbɔ̃, goat[1].

(iii) a prosody of the syllable restricted to laudbilder and other phonologically special words: see note on page 45 .

Successions of vowel: certain successions of vowels are found in the unaffixed radical: these are pronounced as diphthongs with about equal prominence on the two parts: they are ɛ̈ve, ɛ̈ia, ɛ̈iɔ.

For similar reasons to those enumerated on page 44 for adangme, the i in these vowel sequences is interpreted as a realization of a feature of the syllable initial and with l is grouped with the terms of the initial consonantal alternance: of yotized and lateralized initials.

; the following vowel sequences are

---

1. see my Pronunciation of Ewe, p.7.

analyzed as junctural prosodies:-

ui ∠ u/o + e

uɛ ∠ o + e

ü ∠ e + e[1].

---

1. cf./tui/hit him ∠ tu

/ kui/cut it open ∠ ko

/ ywɛ/call him ∠ yɔ

3: MORPHOLOGY AND SYNTAX

GROUP A. and B.

Among the criteria used to establish group A. and B. are certain common features of morphology and syntax: e.g.

Word Structure: the morpheme constituents of words are in general easily identified as

(1) ~~invariable~~ lexical elements, here called radicals;

(2) affixial elements, i.e. nominal and verbal prefixes and suffixes, usually of the pattern V.

: Radicals are of 3 types:-

(1) simple

(2) extended

(3) compound

Simple radicals are monosyllabic, extended radicals are monosyllabic or disyllabic, and compound radicals are rarely in Twi, more commonly in Guang, trisyllabic.

~~: all types have unexceptionally a consonant initial.~~ The monosyllabicity

quotient[1] in Twi is approximately 45 per cent, or slightly less, in Nzema 40 per cent, about the same or more in Guang. From radicals are derived

(1) by affixation

(2) reduplication, etc.

(a) the verbal base, and

(b) the nominal stem:

but often both stem and base are identical with the radical.

Radical Structure: in all three languages simple radicals are of the pattern CV.

Extensions of the Radical: radicals of another type are here described as extended; the extending elements or, quite simply, the extensions, in each of the three languages may be represented formularically thus:-

Group A. and B: ^{w}d, ^{w}k, ^{w}n.

(Twi only): w, m.

Notes: before giving examples of each extension

---

1. i.e. the percentage of simple monosyllabic stems in a word count embracing the first 1,000 or so common words.

it is perhaps necessary to mention that the morphological process involved is no longer productive and that the morphemes themselves do not admit of accurate semantic analysis; they often interchange between dialects and have apparently different functions in different contexts. But they are here considered isolable[1] on several counts:-

(i) the dyadic nature of CVW, CVW, and CVV structures in Twi and Guang, established on phonological grounds in section 2, pages 23 ff.

(ii) the existence in all three languages of an identical, minimal element (CV) common to etymologically cognate words of different form classes. e.g. Twi, yaw, pain; yari (v) ill.

(iii) the occurrence in all three languages of a few pairs of the type:-

---

1. In this field, unfortunately, it is still necessary to stress the linguistic platitude that recognition and isolation of a radical and its extensions is essential for sound comparative studies. Many of Greenberg's starred forms, to quote the most recent example, are vitiated by failure to equate radical with radical, extension with extension, cf. for example, his reconstruction *bele, two as > Twi ebie

Twi:	bụa (v) close	bụe (v) open
	sua (v) take up	sue (v) put down
	tɔ (v) buy	tɔŋ (v) sell
	sã (v) tether	sãŋ (v) untether
Nzema:	bụa (v) close	bụke (v) open
	sua (v) take up	sukwe (v) put down
Guang:	sị (v) tie	sịkị (v) untie
	tị (v) stick in	tịkị (v) pull out
	surɛ (v) take up	suki (v) put down

Examples: (1) Twi only -ᴺ m

fũm (v) err, cf. Nz. fũ

anụm (n) five, cf. Nz. nnu

kyim (v) force out, cf. Guang kyĪ

(2) Twi only (Akuapem and Fante only) -ᴺw

Akp. dɔw (v) weed, cf. fɔw (v) wet, etc.

cf. Asarte Nzema dɔ, fɔ.

(3) ᴺ n: Akuapem ŋ ≡ Asante, Guang ŋ̂/ŋ̌ ≡ Fante

n ≡ Nzema nĺ.

melt (v) naŋ ≡ naĪ ≡ nan ≡

turn (v) daŋ ≡ daĪ ≡ dan ≡

sell (v) tɔŋ ≡ tɔũ ≡ tɔn ≡ tɔni

fort (n) abaŋ ≡ abaĪ ≡ abán ≡ asani

(4) ᴺ d-infix: Twi r ≡ Nzema l ≡ Guang r

call (v)	firɛ[1] =	fɛlɛ =	f̀iri
camp (n)	nsirá =	ǹzɛlá =	
rotten (v)	purɔ =	kpɔlɔ =	
take leave (v)	kira =	=	kirɛ

(5) = d̄-infix: Twi n = Nzema nl = Guang n[2].

salt (n)	nkyínî =	ngyinlí =	
python (n)	enɲi =	nyinlí =	enyani
sour (v)	nyanî =	nyanli =	
drum (n)	akyinî =	kìnli =	kwanî

(6) = k: Twi = Nzema Guang k

open (v)	bue =	byke =	buki
spoilt (v)	sɛi =	sɛkyi =	
strip (v)	wai =	=	waki

etc.

Compound radicals: are found in all three languages and are apparently composed of two or more of the radicals already enumerated, e.g. Twi bata: their, is uncertain in most cases.

---

1. Vowel shift in r-infixed radicals is identical with that in reduplicated radicals, see page 74

2. i.e. with contextual nasality.

Word Classification: in all three languages words may be grouped by the morpho-syntactical criteria enumerated passim below into

inflected { (i) nominals
inflected { (ii) verbals
uninflected (iii) particles

In the following pages the morphological structure of each class is described in turn.

Nominals: the structure of this class of words is most conveniently described under the headings of

(1) prefix
(2) stem

Nominal Prefixes: all three languages classify[1] nouns by prefixes: a prefix may be:-

(1) - (4) i.e. one of 4 oral vowels,

*i, *e, *a, *o

(2) a nasal sonant, *m

---

1. The classificatory system is lexical and rudimentary only; there is no concord of classes.

2. The vowels of prefix and suffix (below) belong to the same series (h/q) as the stem vowel: thus,

*i = /ɨ/or/i/, *e = /e/or/ɛ/, *a = /ɐ/ (Akuapem + Guang) /e/ (Fante), /ɜ/ (Nzema). *o = /ɔ/ or /o/.

(ɔ) zero [1].

and in Akuapem only,

(ɳ) am [2].

Examples: Twi: a-sʊ́ waterhole

o-sʊ́ rain

n-sʊ́ water

Guang: fbɪ́e market

ɓbɪ́e stool

cf. Twi egwa/agwa

: the prefixes frequently interchange between dialects particularly e and o, cf. Twi; Akuapem, ɔdan, house ≡ Asante ɛdaɪ́

edu, ten ≡ edan, Fante idu[3].

~~Guang etc: Apiredɔ, ekirieso, kyerepong, Apiredɔ, ekirieso.~~

Nominal Stems: may be

(1) unaffixed: viz, the simple or extended radicals enumerated on page

---

1. A few nouns especially loans and compound stems take no prefix.

2. Othe dialects of Twi have /a/, e.g. Akuapem ámpàɪ́ (n), bat, Asante ápɛ̆I.

3. ᵐ1 as a prefix is found in Twi only in Fante and is rare in that dialect.

(2) suffixed: the nominal suffixes are given below,

Nominal Suffixes: are

(1) Twi -i = Nzema -le = Guang -di

Examples: Twi: ɔpraf; Asante ɔpraays (/ɔpra-is)[1]. brush, cf. pra (v) sweep.

Guang: adɔdi, hoe; cf. dɔ, to weed.

Twi: akasai; Fante, akasaa[2] cymbal; cf. kasa (v) speak.

Nzema: elile: eating; cf. di: eat.

:Twi: mfrafrai, mixture; cf. fra (v) mix.

:Twi: anumii, drinking place; cf. num, (v) drink.

Guang: cf. the names of the boroughs of the Guang towns, e.g. of Adukrom, adzekidi, abonidi, abunni / abun-di) etc.[3].

---

1. For the correspondence, Asante je, ie, ɥo. ɯɔ = Twi i, i, ɥ, u. See Ward, 1945.

2. aa /ai is common in Fante, see note on page 20

3. Note, however, the calque in Adukrom dialect only, asukii, resting place / Twi asuei, G. suki = Twi sus (v) put down a load.

:Twi: adisãi, evening ∠ adi + sã

Nzema: ali gywule / ali hyile — ditto ∠ ali + gywo / kyĩ

Note: the verbal noun in Guang, only, is structurally prefix + radical, cf.
ègyi, eating ∠ gyi(v) eat
èbírì, talking ∠ biri(v) talk
etc.

Note: For this use of ≢ see page 148

(2) Twi ≡ ba ≢ Nzema ≡ kyi ≢ Guang ≢ bi

Twi: abúawa, small game; cf. abúa, animal.
adɔ́nna, little bell; cf. adɔŋ, bell.

Nzema: mànfkyĩ, small game; cf. màni, animal
dɔ̀nfkyĩ, little bell; cf. dɔ̀ni, bell.

Twi: ɔbàrɛ̃má, Asante ɔbèámá ∠ ɔbanim + ba;[1.] young man.

Guang: anyĩmi ∠ anyĩ + bi; young man; cf. anyĩ, man

Twi: abiriwá, old woman.[2.]

Guang: atʃikpebi, old woman; cf. atʃi, woman.

---

1. cf. Fante ɔbanyimba.

2. kyi is diminutive only Nzema èɣelɛɣá is ∠ Twi. abiriwa

(3) Twi = nɟ[1]. = Nzema = nlɟ[2]. = Guang = nɟ

Twi: ohwĩnɟ[3]: Ewe man : Hwĩ = Ewe

ɔkrãnnɟ: Ga man : nkraŋ = Gã

etc.

Nzema: bɔ̀lɔʃunlɟ: Axim man: Bɔlɔʃu = Axim

bàkunlɟ: Baku man

etc.

Guang: àkirenɟ: Kyerepong man: ɔkire = Kyere pong

asyantinɟ: Ashanti man: asyanti = Ashanti

(4) Twi = fu = Nzema = vùle[2]. = Guang = hu[4].

Twi: ɔkyirewfu, writer; cf. kyirew(v) write

ɔkyirekyireʃu, teacher; cf. kyire(v) show

Nzema: kɛlɛvulé, writer; cf. kɛlɛ(v) write

kilehilevulé, teacher; cf. kile(v) show.

---

1. = Fante/nyɟ

2. nlɟ by 'mutation' ∠ n; v by 'mutation' ∠ f

3. nɟ etc. were originally free nominals; the degree of autonomy still accorded in all three languages to this suffixial element, is shown by the absence of vowel harmony.

4. in Kyerepong; other dialects /pu/.

Guang: ɗhɛ̃hu, wise man; cf. ɗhɛ̃, wisdom

àbitihu, palm wine maker; cf. ɗbí, palm tree, ti(v) tap

Number: In all three languages, the plural of nominals is formed by

(1) prefixation: plural prefixes are:

Twi: ≠ a/m ≠ Nzema ≠ a/m [1.] = Guang ≠ e/m

Examples:

Twi:	ɔhíni	King	àhíni
	èdá	day	ànú
	ɔbá	child	nlmá
Nzema:	shaní	trap	ngani
	dàdíe	knife	ànnade
	aɲa	house	azɲa
Guang:	atsí	woman	etsí
	akpé	road	ŋmkpé
	ekɲró	town	ŋkuró

and/or

(2) suffixation: plural suffixes are:

(a) Twi ≠ ʃu ≠ Nzema ≠ ma ≠ Guang ≠ ese

(b) Twi ≠ ba ≠ Guang ≠ bi

---

1. prefixation involves consonant mutation in Nzema, see page 28.

(c) Twi * num ≠ Nzema * mɔ ≠ Guang ≠ ene

Examples: (a) Twi: ɔfantiɲi: Fante man: mfantifu

oburoɲi : European : abɔɔfu

Nzema: benyiɲliɲliɲ, man of Benyyinli — benyiɲliɲma[1].

ɔɔle vulé[2]. Priest (ɔɔle(v)pray) — ɔɔlevulémma

Guang: akirini, Kyerepong man — ɔkiriese

asyiantiɲi Ashanti man — asyantiese

(b) Akuapem adí, Asante adíe, thing, nniema

Guang: ɛté thing ntébi

(c) Twi: agya father agyanum

ena mother enanum

Nzema: egyé father egyémɔ̀

egɔŋu friend egɔŋmɔ̀

Guang: ani father aniene

aniɲ mother aniɲene

---

1. ehiɛnli, ehiɛvule, poor man, is to be considered as a calque, cf. Twi ohiaɲi, ahiafu ⟋ hiɛ(v) needy.

2. The corresponding Twi and Guang plurals are by prefix only, e.g. Twi ɔɔfúfú, Priest - plural, ɔɔfúfú.

:For plurality of a special kind, i.e. iteration, the nominal may be reduplicated, e.g. Twi: ɔ̀kɥwakɥ́ɥ́[1]. heaps of all kinds

∠ ɔ̀kɥ́ɥ́, a heap

Nsema: ndɛ̀bɛ́ndɛbɛ, flat things

∠ ɔ̀dɛbɛ́

---

1. Reduplication not repetition, note the tone.

Inflexion of the Noun: in Twi certain nominals may be reduplicated: these are usually called adjectives in the standard Twi Grammars. It is necessary to distinguish:

(1) a substantival form,

e.g. Twi: ni ɟɛ, its beauty

which is also

(2) a predicative form (i.e. used with one of several copulas).[1.]

e.g. Twi: dua yi yɛ ɟɛ, this tree is beautiful

(3) an adnominal form (reduplicated)

e.g. Twi: dua ɟɛɟɛ bi, a beautiful tree

(4) an adverbial form (reduplicated)

e.g. Twi: wɔgɔru ɟɛ, or

wogoru ɟɛɟɛ, or

wogoru ɟɛɟɛɟɛɟɛ [2.], they play nicely (very nicely)

cf. also from Guang and Nzema with and without reduplication:

---

1. e.g. in Twi, yɛ, ~~and~~ be; dan, become; nyin, grow.

2. Akuapem ⟨ ɟɛɟɛɟɛɟɛ: Asante tends here to use the uncontracted form.

Guang: mù kɔ́sɪ̀, its goodness

ɛ̀tɛ kɔsɪ̀, good thing

ɛ́f kɔsɪ̀, it is good

àbwé mù kɔ́sɪ̀, he did it well.

Nzema: ì kénlɛ̀ma, its beauty

bàká hyí lí kɛnlɛma, this tree is beautiful

bàka kénlɛ̀ma bio, a beautiful tree

bèdi agole kénlɛ̀ma, they play nicely

mmaka ngenlɛmm[1]., beautiful trees

Pronominals: Twi orthography, for example, is misleading in respect of pronouns and pronominal prefixes.[2]

---

1. In Twi and Guang a few only of these special nominals inflect for number, and are in these languages, words referring to size only, e.g.

   Twi: abo akɛnfakɛ̀sɪ̀, large stones

   Guang: ŋkuro ekpoŋmkpo, big towns

2. cf. the spelling of "ɔkɔ", he goes, where "ɔ" is treated as a prefix, and of "ne dan", his house, which suggests two autonomous elements, although "wo dan ana ne dan", etc., your house or his, <u>not</u> "wo ana ne dan".

True pronouns (i.e. absolute forms) in the 3 languages are:-

	Twi	Nzema	Guang
S1.	mi	mámi	mi
S2.	wu	wɔ́mɔ̀	wu
S3.	ɔnu (neuter ɛnɔ)	fmɛ́	mu
P1.	yɛɔ	yɛ́mɛ̀	ɛnf
P2.	mu (Fante hum)	bɛ́mɛ̀	ɛ́nf
P3.	wɔɔ (Asante yɛɔ) [1.]	bɛ́mɛ̀	ɔ̀nu

Pronominal Prefixes: are:-

	preverbal			pronominal		
	Twi	Nzema	Guang	Twi	Nzema	Guang
S1.	mi	mi	mi	mi	mi	mi
S2.	wu	ɛ/wɔ [2.]	wu	wu	wɔ/ɛ [3.]	wu
S3.	ɔ	ɔ/yɛ [2.]	a	ni/ɔ [3.]	ɪ/ɔ [3.]	mu
P1.	yɛ	yɛ	ɛni	yɛɔ	yɛ	ɛnf
P2.	mu	bɛ	ɛ́nf	mu	bɛ	ɛ́nf
P3.	wɔ	bɛ	ɔ̀nu	wɔɔ	bɛ	ɔnu

Note: vowels, h/q according to root vowel.

1. ɔbaa cf. Aburi dialect (obsc.)
2. according to tense.
3. a few nouns of family relationship have the pronominal prefix ɔ, e.g. Twi: ɔsɛf; Nzema: ɔ̀sɪ, his father.

Numeration: examples of Twi, Nzema and Guang numerals are set out in the comparative Table on page 103

Notes:

Ordination: by periphrasis, e.g.:

2nd, etc. Twi: nia otu so abɛɛn, etc.

Nzema: mɔ to zu ŋwɛ̃

~~Guang~~:

Iteration: cf. in all three languages the composite forms,

Twi: (* pɛ = occasion)

prɛkɔ once

mprɛnɛ twice

but

mpɛn abɛɛ̃ three times.

Nzema: (fani = occasion)

fani kɔ once

fani ŋuro twice

~~Guang~~:

Distribution: the distributive form of the numeral is a reduplication, e.g.:

one by one: Twi: mmɛakɔ̃ mmɛakɔ̃

one by one: Nzema: ŋguku

~~Guang:~~

Numeral System: is ~~mainly~~ decimal, cf. the composite forms 11-19.

11 = 10 + 1: Twi: dụbiakũ

Nzema: bụlụ ni ku

Guang: dụ aku

etc.

and 20-99

20 = 2 x 10 Twi: aduonụ

Nzema: abulaŋwiɔ̃

Guang: eduonyɔ̃

Verbals: the verb in its base form, i.e. as the verbal interjection, is identical with the simple or extended radicals described above:

: the base in Twi and Nzema may be reduplicated (to express plurality of subject/action/object)

Twi:	di,	eat;	didi,	feed
	bɔ,	break;	bubɔ,	shatter[1].
	gy̱,	spill;	gy̱gy̱,	spill in many places
Nzema:	fia,	hide;	fievia	
	f̱ia,	carry on back	f̱ievi̱a	
	tua,	follow;	tuɔdua	[2].

---

1. The possible vowel sequences in reduplicated and infixed stems are limited in all three languages to:

h/q. -	i - i	analyzed as	i i
	ɪ - e	" "	e e
	i - a)	" "	a a
(with contextual labialization).....	u - a)		
	u - o	" "	o o
	u - u	" "	u u

2. Note, lenition of radical Consonant in second place and the following additional vowel sequences for reduplicated disyllabic bases peculiar to Nzema; all analyzable as + a
h/q. - i.e., uo.

Guang: kpa, long; kpukpa

Note: plurality in Guang only is in a few cases indicated by terminal extension of the simple radical, e.g.:

ᵐd	tɛɛ	split	tɛɛri
	fwi	stray	fwiri
	dɛ	strike	dɛnf
ᵐb	dɔ	drop	dɔbf

: the following affixes are prefixed to the verbal base to indicate ingression in a compound radical:

Twi: ko/be

kodi go eat

bedi come eat

Nzema: ko/ba

mi an gonni I did not go and eat

mi ɔ ali I have come to eat

Guang: wo/bɛ

wodzi go eat

bedzi come eat

Negation: the negative prefix is :

in Twi and Nzema[1.] m, a homorganic nasal

in Guang : bɛ

---

1. with the exception of the perfect tense in Nzema where the negative sign is tɛ.

System of Tenses: the verbal paradigm is set out for all three languages in Table 12 pages 104 to 112

: common to the group are the following tenses:-

(1) present, unaffixed, e.g.

Twi: miba daa
Nzema: miba daa
Guang: mibɛ daa

I always come here.

(2) stative, unaffixed[1], e.g.:

Twi: ɛwari
Nzema: ɔwali
Guang: akpa

it is long.

(3) future, prefix :

Twi and Guang: bɛ[2].

Nzema: kɛ

e.g.

Twi: ɔbɛ́ba
Nzema: ɔkɛ̀a
Guang: abɛbɛ

he will come

---

1. Distinguished tonally from (1).
2. cf. ᵐba (v) come.

(4) imperfect, prefix ⁼d ;[1.]

Twi: (na)- ɔri_ba
Nzema: ɔlɛ_be
Guang: anɛ_bɛ
} I am/was coming

(5) future immediate, prefixes :

Twi and Guang: (4) and (3) above

Nzema: ba

e.g.

Twi: ɔribɛba
Guang: anɛbɛbɛ
Nzema: ɔbaʏa
} he is just coming

(6) Preterite; Twi and Nzema suffix, Guang unaffixed.[2.]

Twi: ɔbai [3.]
Nzema: ɔʏali
Guang: àbɛ
} he came

(7) Perfect; prefix,

Twi: waba (/ɔaba)
Nzema: ~~ánèbɛ~~ ıʊa
Guang: ~~á—a~~ ánɛ̌bɛ
} he has/had come

---

1. cf. copula in each language.
2. But tonally distinct from (1) and (2).
3. cf. nominal suffix.

(8) connected, prefix a, in Twi and Nzema only.

Twi: mikɔ aba)
Nzema: mikɔ aʊa) } I shall go and come

(9) an imperative; Twi, prefix a, Guang and Nzema, unaffixed, e.g.:

Twi: ɔŋkɔ he is to go

Nzema: ɔʊɛlá he is to come

Guang: ábɛ̀ he is to come

; the verbal noun is structurally identical with the unaffixed base, e.g.

Twi: Akraŋ kɔ going to Accra

Guang: teŋyi sɔ to buy food

~~Nzema:~~

3: MORPHOLOGY

GROUP C + D

Radical Structure: radicals may be:

(1) simple, CV or Cy/w V

(2) extended

by (a) liquid and nasal suffixes;

(b) l-infixation, y-infixation

(see pages 41 and 42)

(3) reduplicated

(4) compounds, i.e. of (1) and (2) above.

: the proportion of radicals of type (1), i.e. monosyllabic, to others of types (2)-(4) is higher in Adangme than in the languages of Group A and B, but not so high as in Ewe: in Gã the figure is nearer that for Twi.[1.]

Nominals: Structure: the nominal stem is in most cases not formally different from the radical as described above.

---

1. Monosyllabicity quotients are of the order:- Gã approx 50 per cent., Adangme 60 per cent.; Ewe 70 per cent.

Prefixes: a few nouns in Adangme have the prefix a, in Gã, more, as well as the prefix N,[1.] a homorganic nasal sonant, and o[1.] e.g.:

Gã:	àdaŋme		Ad: dàŋme
	àmádã	plantain	mádã
	òdɔ́tɔ́	thicket	dɔ́tɔ́
	ntáŋ	net bag	taí

: in both languages a special type of nominal has the prefix e, cf.

Gã:	édiŋ	black one	∠ dĩ (v) black
Adagme:	éyumú	" "	∠ yu (v) "

Nominal Suffixes: are

(1) Gã, bi ≠ Adangme, yo.

gbekɛ	child	dzukwéyo
plural		
gbékɛ'biĩ		dzukwéwi
abiʃao	baby	bimuɔyo
plural		
abiʃábiĩ		bimuɔwi

(2) Gã, nyo ≡ Adangme, no

krɔbɔnyo	man of Krobo	klono
blɔfonyo	European	blèʃónò

---

1. Usually in loans (from Twi and Ewe): Adangme has a vowel prefix only when the original has a nasal prefix: cf. ∠ Twi: ŋkátíɛ groundnut
Gã: ŋkátíɛ "
Adangme: ákátè "

(3) Gã,nuu/yoo ≡ Adangme,ku/yo

tsinanuu	bull	nakú
tsinayoo	cow	nãyo

etc.

(4) Gã, tsɛ/nyɛ ≡ Adangme tsɛ/nyɛ

màntsɛ	king	màtsɛ
mànnyɛ	queen	mànyɛ

(5) the verbal noun: suffixes are,

Gã: mɔ, lɛ, ŋ

Adangme: mi only, and

Gã: length of vowel,

Adangme: reduplication + suffix ɛ

e.g.

Gã: bàa	coming	Ad.	bámi
yàa	going		yámi
hámɔ́	giving		hámi
dzalɛ	right		dami
dzɔlɛ	soft		dzɔ̀mi

and in special constructions of the type:-

Gã: èní fɛ̃mɔ́ a possibility	≡ Adangme:	ení pɛ̃mi, or ení pɛ̃pɛ̃
éhèla dzɔlɛ his convelescence	≡	éhlɔ dzɔ̀mi, or éhlɔ dzɔ̀dzɔ̀ɛ

(6) <u>Gã, lɔ ≡ Adangme, lɔ</u>

ʃwɛ (v)	≥	ʃwélɔ́	player	ʃíɛlɔ́	∠ ʃiɛ (v)
wo (v)	⊳	wólɔ́	collector	hwélɔ́	∠ hwe (v)

Number: plural suffixes are

(1) Ga -i ≡ Klo -i ≡ Ada - hɪ̃

e.g. fai	pai	pahɪ̃	rivers
tsui	tsui	tsuhɪ̃	rooms
nyiɛmɛi	nyɛmii	nyɛmihɪ̃	walks (v.n.)

: the nomen agentis in Adangme has the special plural suffix -li ,e.g.

peli plural of pelɔ < pe, do

fiɛli " " fiɛlɔ < fiɛ,play

but Ga has regularly,

felɔi, ʃwɛlɔi etc.

: similarly, the special plural suffix of Ga words with stem extensions (page 79) has no correlate in Adangme Ga: nane,foot :nadzi,feet but Adangme nane, nanei

(2) Ga mɛ^{i} ≡ Adangme mɛ

e.g.

tʃɛmɛi	tʃɛmɛ	fathers
nyemimɛi	nyemimɛ	brothers

: Ga uses this suffix as the plural correlate of -nyo but Adangme has -li/nɔ cf.

Ga:	Krɔbɔnyo	Ktobo man	Krɔbɔmɛ	
Adangme	Klono	"	Kloli	

(3) Ga. -bíí ~ Adangme. - wi

child:	Ga:	gbékέ	children	gbékέbií
"	Adangme:	dɔukwɛ̃yo	"	dɔukwɛ̃wi
baby:	Ga:	àbiʃáo	babies	àbiʃábií
"	Adangme:	bimɔyo	"	bimɔwi
but				
ant:	Ga:	tsatsu	ants	tsatsubii
"	Adangme:	tatu	"	tatui
and				
twins:	Ga:	hɛ̃dzí		
	Adangme:	hɛ̃wí		

Note: certain nominals in both languages have (-hɔ- new) (1) a substantival form: e.g.

Ga: éhɔ̀ nί ɔ̀dzί
Adangme: éhɔ̀ nɛ ɔ̀dzί } new as it is

(2) a predicative form: e.g.

Ga: màmά lɛ́ yὲ hέhɔ̀, the cloth is new

of. Adangme: bó ɔ gɛ éhɔ̀

(3) an adjunctival form:[1].

---

1. but cf. the special formations:

Ga:	kpɔikpɔi	knotted	kpɔ	knot
Adangme:	pfɛpiɛ	ragged	pfɛ	rag
Ga:	ʃwɛ́iʃwɛ́i		ʃwɛ́	

and the adjunctival form of the verbal noun in Adangme only:- ɔ̀nί pέpέ ehiɔ dzɔdzɔɛ́

Ga: màmí hèɔ̀) new cloth
Adangme: bɔ̀ he)

Adangme: ɔ̀pɔ̃ lɛ̀ he, he did it in a new way

cf. Ga: ɔ̀ɟɔ̃ lɛ̀ ɗhɛ̀e

Pronominals: the pronouns and pronominal prefixes are set out below ~~in Tables and~~

Pronouns are:-

TABLE

	Ga	Adangme
S1.	mi	fmi, mmi, emi
S2.	bo	mo
S3.	lɛ	lɛ
P1.	wɔ	wa
P2.	nyɛ	nyɛ
P3.	mɛ	mɛ

Note: mmi, Adan dialect

imi, Krobo dialect

emi, Prampram dialect.

pronominal (pronominal and preverbal) prefixes are:-

TABLE II.

	Ga	Adangme
S1.	mi	i
S2.	o	o
S3.	e	e
P1.	wo	wa
P2.	nyɛ	nyɛ
P3.	amɛ	a

Verbals: the verbal base in its simplest form is structurally not different from the radical as described above:-

: the simple base may be extended

(1) by affixation

(2) by reduplication

: affixes are:-

(1) ingressives -

Ga, Adangme: ya, ba

ingressive base, yafo = yapo = go cut

bafo = bapo = come cut

(2) negative prefix

Ga, ka = Adangme, ko; e.g.:

ʃo/po - cut: negative base is

Ga, kɑ̃fɔ̀; Adangme kɔ̃po.

pluralizing:

(3) suffix -mɔ

(4) infix -l/i

cf. e.g. the following plural bases[1] in Ga:-

kɑ̃mɔ	lie	∠ kɑ̃
sɔmɔ	perch	∠ sɔ̃
dra	big	∠ da
ŋmɔ̃	tie	∠ ŋmlɔ̃
tʃwia	strike	∠ tʃwa

: also to express plurality[2]. the base may be reduplicated, e.g.:

Ga: amɛ yeye nii, amɛnunu daĩ: they ate and drank continuously.

System of Tenses:

The verbal paradigm is set out for both languages in Table 14 , pages 113-116

Common to both languages are the following tenses:-

(1) aorist, unaffixed, e.g.:

Ga:	eʃo	he cut it
Adangme:	ipo	he cut it, or he has cut it.

---

1. i.e. to express plurality of subject, object, complement.

2. In the sense of an action repeated.

(2) future, prefixed ma/ba, e.g.

Ga: ɔ́ɛ́ʃo,[1]. he will cut it

Adangme: ɔmɛ̃pɔ̀

(3) Iterative, suffix ɔ, e.g.

Ga: ɔ̀ʃɔ́ɔ̀, he always cuts it

Adangme: ɔ̀poɔ́

(4) imperative, unaffixed[2]., e.g.

Ga: ɔ́ʃɔ́, he is to cut it

Adangme: ɔ́pɔ̀

Notes: ~~Ga has uniquely~~ Only Ga has:

(5) a perfect tense, unaffixed:

ɔ́ʃɔ̀, he has cut it

<u>for which Adangme has no correlate</u>.

(6) a progressive tense, prefix mi, e.g.

ɔ́ɛʃɔ́ / ɔ́miʃɔ́, he is cutting it

cf. nyɔ̀mɪʃo

for which the corresponding Adangme is:

ɔ̀ɲɛ poe, he is cutting it

ɔ̀bɔ́ pɔ̀e, he isn't cutting it

i.e. copula + verbal noun.

(7) a second imperative, suffix a,

nyɛʃoa, cut it

: the Adangme has only a verbal interjection:

---

1. ɔ́ɛʃo /ɔ̀bɔ́ʃɔ̀, c.f. mɔ́ʃɔ̀ / ɔ́bɔʃɔ̀ / mɪbɔʃɔ̀

2. But tonally distinct from (1) above and (5) below.

po, cut it

kopo, don't cut it

i.e. the verbal base.

Negation: derivation of the negative base is described under that heading, page

: there are in addition certain negative tenses:

: tense (1) only, in both languages, the negative tense is derived by suffixation, i.e. Adangme ᴷwe; e.g. he didn't cut it:epʊi⁄ᴷepe we

cf. etêwê, he didn't keep it

Ga: v = vowel length: e$\overline{\text{ɔ}}$ɔ́o

: tense (5) Ga only; the negative tense is derived by suffixation, i.e.

suffix ko: e$\overline{\text{ɔ}}$ɔ́kɔ̀, he hasn't cut it.

: tense (6) Ga only; the negative tense is derived by suffixation, i.e.

suffix ŋ: ɔ́$\overline{\text{ɔ}}$ɔ́ŋ, he isn't cutting it.

Numeration: Examples of Ga and Adangme numerals are set out in the comparative table on page 103

Notes:

Ordination: ordinal suffix in Adangme only is -ne, e.g.

ɛ́kpàné 6th

lɛ̀ɛ́né 100th

in Ga, there are no ordinal numbers, cf.

mɔni ji ekpa lɛ, the 6th person

ʃinaa ni dzi ɔha lɛ, the 100th deer.

Iteration: is expressed by ᵂsi, occasion, e.g.

Ga: eba ʃii[1] enyɔ
Adangme: eba ei enyɔ
} he came twice.

Distribution: the distributive form of the numeral is a reduplication, e.g.

1 each: Adangme: kakaŋka ∠ kake (1)

Ga: kɔmɛkɔmɛ ∠ ekɔmɛ

Numeral System: is mainly decimal, cf. the composite forms 11-19,

11 = 10 + 1: Adangme: nyɔŋma kɛ kake

Ga: nyɔŋma kɛ ekɔmɛ

etc.

and 20-99,

20 = 2 x 10: Adangme: nyiŋmi enyɔ

30 = 3 x 10: Ga: nyɔŋma enyɔ

---

1. Plural of ʃi.

: traces of a sextal system are to be found in the numerals 1-10:

cf. the change-point between 6-7.

7 (G) kpawo)
(A) kpaago) = 6 + 1

8 (G/A) kpaanyɔ = 6 + 2.[1].

---

1. Note: also in Ga only:
ŋmɛdzi enyɔ, etɛ, etc., 2 - 6 o'clock

but

ŋmlɛ kpawo, kpanyɔ, etc., 6 - 10 o'clock.

3: MORPHOLOGY:

GROUP E.

Radical Structure: Radicals are

(1) simple, or

(2) extended, i.e. with l-infix, with y-infix[1].

(3) reduplicated ~~structure: many nominals.~~

Nominals: Many nominals are not recognizable by shape alone; their structure is that of the radical, described above.

e.g. ba, mud; ga, metal; fia, chief; trɔ, deity.

: other nominals have

(1) a prefix

(2) a suffix.

Nominal Prefixes: are a, e. o. e occurs as prefix in the word 'Ewe' and in certain numerals, elsewhere rarely.

o/ɔ is heard in Dahomey only, and is not common in that dialect.

There however, okpɔ, leopard; ɔso, mountain.

---

1. See note on lateralization and yotization, pages 54.

: a as a prefix is common in all dialects, e.g.

adu	tooth;	cf. du (v) bite
afu	mist ;	cf. fu (v) white
aflui	rumour;	cf. flu (v) chatter
alalae	name of stream	cf. lalala (v) slowly flowing

Nominal Suffixes: are (1) -a

(2) -e (-ɛ)

(3) tɔ

(4) nɔ

(5) vi

(6) me

(7) fe

(8) li .

Examples: (1)ahea, pauper ∠ ahe, poverty.

Anglo Dialect. agblea, farmer ∠ agble (n) farm

ahakpaa, maker of palm wine ∠aha, palm wine + kpa (v) tap.

Ablotsia, White man ∠ Ablotsi, Europe

Kukuda, corpse ∠ Kuku, dead

tsitsia, elder ∠ tsitsi, old.

(2) xɔe, cottage ∠ xɔ, house

goe, little gourd ∠ go, gourd

(3) afetɔ, landlord ∠ afe, house

yevetɔ, man of Yewe order.

(4) dɔnɔ, invalid ∠ dɔ, sickness
tokunɔ, deaf man ∠ to, ear; ku (v) die

(5) nyivi, calf ∠ nyi, cow
sɔvi, foal ∠ sɔ, horse

(6) kekeme, breadth ∠ ke (v) broad
kɔkɔme, length ∠ kɔ (v) high, long
nɔnɔme, character ∠ nɔ (v) be

(7) dɔwɔfe, place of work ∠ wɔ dɔ, work
nunyáfe, washing place ∠ nyá (v) wash

(8) vɔvɔ̃li, fear ∠ vɔ̃ (v) afraid
aɔli, going ∠ ɔ (v) go

the nomen agentis is formed with the suffix-la, e.g.
(9) yíyila, he who goes ∠ yi (v) go
dɔwɔla, he who works ∠ wɔ (v) work

Reduplication: the stems of many nominals are morphologically reduplications for which no simple radical exists: e.g.
baba, white ant
bɔbɔ̃, bean dish, etc.

: for others, a correlate simple radical is still to be found:-

tsaetsae, 2nd younger brother; tsae, younger brother

ʃoeʃoe, 2nd younger sister; ʃoe, younger sister

: all verbal nouns have reduplicated stems

e.g. dɔ wɔwɔ, the act of working ⟨ wɔ

nu dudu, the act of eating ⟨ du

etc.

Number: plurals of nominals and nominal pieces are formed by suffixation ⟨suffix wo⟩ e.g.

devi,	child	deviwo,	children
devi nyui,	a good child	devi nyuiwo	good children
xɔa	the house	xɔawo	the houses
xɔ̃ nye	my friend	xɔ̃nye wo	my friends

Adjectives: a special type of nominal is formed from verbals -

(1) by reduplication

(2) by suffixation (-e)

e.g. kɔ (v) high nyo (v) nice, good

atí la kɔ, the tree is high

atí kɔkɔ, a high tree

xevi la nyo, the bird is nice

xevi nyuil., a nice bird.

: nominals may be :-

---

1. nyui ⟨ nyo + e, see page 55

(1) reduplicated

(2) suffixed

in post verbal position, e.g.

ɳusɛ̃ɳusɛ̃, energetically ∠ ɳusɛ̃, strength

busɑ̃bûsɑ̃ũ, monstrously ∠ busɑ̃, something unheard of

nɔvitɔ̀e, in brotherly fashion ∠ nɔvi, brother[1].

: with comparable syntactic function are words derived from verbals by lengthening of the radical vowel[2]. e.g.

bee, secretly ∠ be (v) hide

buu, covertly ∠ bu (v) cover over

cf. also

dɔdɔɔdɔ (∠ dɔdɔdɔdɔ) softly ∠dɔ (v) soft.

Pronominals: absolute pronouns are

S 1. nyɛ̀

S 2. wɔ̀

S.3. ɛ́yɛ́

P 1. mɪawo

P 2. miàwɔ́

P 3. woawo

pronominal affixes are:-

---

1. See note on to, page 92

2. See note on page 53 , where length of vowel is analysed as resulting from contraction.

	adnominal		adverbal
	prefix	suffix	prefix
S1.	nye	nye	me
S2.	wo	wo	è, nè
S3.	e		é, wé
P1.	mía/ míaʃe		míe, mí
P2.	mia/ miaʃe		mie, mi
P3.	wo/woʃe		wó

Notes: nye, wo, are suffixed to a very few nominals,[1.] prefixed to most, e.g.

nòvínyè ɳútsù, my brother

yónyè me, behind me

but

nyè la, my beloved.

etc.

: all other pronominal affixes are prefixed.

: e, mía, mié, wo are prefixed to locative and

1. Chiefly kinship terms and parts of the body.

verbal nouns under special conditions, e.g.

ɛ̀gu, outside it

mía ɟɔ̀ɟe, striking us[1].

(1) ne, we, mi are pronominal prefixes for the 'connected' form of the verb[2], e.g.

nekpɔ wo neva, I saw you coming

and

eva etsɔ, you came yesterday

but with front shifting, etsɔ neva.

See page

---

1. cf. míaɟé ɟɔ̀ɟe, our striking
2. See page 101.

Numeration: examples of Ewe numerals are set out in the comparative table on page 103.

Notes:

Ordination: ordinal suffix is -lia, e.g.

evelia 2nd ∠ eve

etɔlié 3rd ∠ etɔ

1st (gbatɔ) by suppletion.

Iteration: is expressed by zi, occasion, e.g.

ewoe zi etɔ, he did it three times

zi evelié, the second time.

Distribution: distributive form of the numeral is a reduplication, e.g.

eveevo, two each

Fractions: afɨ̃ = 1/2

ordinals are used for all other fractions, e.g.

enelié dekɛ́ = 1/4

eneliéwo etɔ = 3/4

The numeral System: is mainly decimal, cf. the compounds 11-19, wuideke ∠ ewo + deka = 10 + 1, etc. and 20-99.

20 blaave = 2 x 10

30 blaatɔ = 3 x 10

etc.

: traces of a sextal and a quartal system

are to be found in the numerals 1-10:

a change-point occurs between 6-7 and 8-9, cf.

7 adhre ⟨ adhe + de = 6 + 1.

9 enyide ⟨ enyi + de = 8 + 1.[1].

---

1. cf. also the four day market week.

Verbals: Verbal bases are

(1) simple, i.e. monosyllabic and structurally identical with the radical.

(2) reduplicated, (disyllabic):

e.g. lolo, by

dudɔ, lick.

(3) compounds, of two simple radicals,

e.g. ʃanyã, knead; cf. also ʃa, knead and nyã, knead: but of these bases only a few are etymologically reducible at the present time.

Tenses: tense inflection is by affixation:

table 15 page 116.

gives the paradigm of yi, go.

Tenses are:

(1) aorist, unaffixed, e.g.

meyi, I am going

eva me, it happened

ekɔ, it is high

ésí wòwui lé, esi le xɔ me.
when he had killed him, he fled from the house.

ne eva la, if he comes.

(2) future, prefix a,

mayi I shall go

avɑ etɔɔa? will he come to-morrow?

mawu enu hafi, I shall have finished before you come.

(3) habitual, suffix, na,

meyina, I usually go

wɔme wɔnɛ o, one doesn't do it.

(4) 'connected', with special prefix,

(see note on page 97.)

e.g. nami yi, let's go

mekpɔ wo nevɑ, I saw you coming

miwɔ dɔ, do some work!

: the verbal noun is structurally the base reduplicated[1].,

e.g. xɔ tutu, building houses (∠ tu, build, xɔ house)

egbe yiyi, he refused to go

yiyi sesĕ wu gboɣbɔ, to go is harder than to come.

agbeli dudĕ, eating cassava

la dudĕ, edible meat

: cf. also the following verbal pieces

(le (v) = be, nɔ (v) = always)

(1) mele yiyim I am going

(2) mele yiyi ge I am about to go

(3) menɔ yiyim I always went

---

1. cf. also note on page 94

(4) mɛnɔ yiyim I always go

(5) manɔ yiyim I shall always go

etc.

Verbal Interjection: the simple base may be used as an imperative, e.g. yi, go!

Note: properly speaking, there are no negative tenses in Ewe. Negation is a feature of clause and sentence; the negative sign consists of,

(1) a preverbal particle - mɛ

and

(2) a sentence final particle - o.

Table 19.

Numerals

Groups A - E

	TWI	NZEMA	GUANG	GA	ADANGME	EWE
1	Kúr/kũ	kũ̀	àkú	ékbmé	kákẽ	deka
2	òbįéŋ/mmįenú	ŋwį̃ɔ	nyɔ̃	ényɔ̀	ényɔ̀	eve
3	òbaásã/mmįensá	ǹsã́	sã́	étɛ́	ètã	etɔ̃
4	ànáŋ/ənãí	ǹnã	nɛ́	édzwɛ̀	éwɛ̃	ene
5	ànúm	ǹnų	nį	énũmɔ	ènũ̀ɔ	atɔ́
6	òsį̃á/nsįã́	ǹsĩa	sįɛ	ékpà	èkpa	adhé
7	òsóŋ/nsũũ	nsũ̂	sų̀nó	kpàwo	kpáangó	adhré
8	àwɔtʃwí	mɔ̀tʃwi	tʃwí	kpànyɔ	kpaànyɔ	enyi
9	àkrúŋ/ŋkrũú	ŋgɔ̃nla	kpónó	nɛ̀ɛ́hũ	nɛ̀ɛ́	enyíde
10	dų́	bų̀lų́	dų̃	nyɔɔŋmá	nyɔɔŋmá	ewó
11	dúbìákũ	bulunyku ~~[illegible]~~	dų̀áku	nyɔɔŋma kɛ/ekome		wuídekɛ
20	òdųonu	àbų̀laŋwĩɔ	edųonyɔ	nyɔɔŋmai enyɔ	nyiŋmí enyɔ̀	bláavè
100	òha	ɛ̀ya	ɔloɸɛ́	oha	lafá	àlafá
200	àhɛ́ebleų́	ɛ̀yaŋwíɔ	ɔloɸɛ́ényɔ	ohai enyɔ	lafá enyɔ̀	àlaɸáeve
1000	àpím	àtpinli	ákpe	akpé	akpé	akpé

TABLE 13

Groups A and B

The Verb

ba, etc. = come

TWI (Akp)		FANTE		
Affirmative	Negative	Affirmative	Negative	
mfbà	mimmá	mfbà	mimbá	
wdbà	wõmmá	ibà	imbá	
ɔbà	ɔmmá	ɔbà	ɔmbá	Tense I
ɛbà	ɛmmá	ɛbà	ɛmbá	
yɛbà	yɛmmá	yɛbà	yɛmbá	
mdbà	mõmmá	hɔ́mbà	hɔ́hbá	
wɔba	wɔmmá	wɔ́bà	wɔmbá	
mìwari	mìnwári	mìwar	mìnwár	
wdwari	wõnwári	iwar	inwár	
ɔwari	ɔnwári	ɔwar	ɔnwár or ɔnwár	
ɛwari	ɛnwári	ɔwar	ɔnwár	Tense II
yɛwawari	yɛnwiwári	yɛwar	yɛnwar	
mdwawari	mõnwiwári	hõnwár	hõhwár	
wɔwawari	wɔnwiwári	wɔwar	wɔnwár	
ɛwawari	ɛnwiwári	wɔwar	wɔnwár	

ba, etc. - come

TWI (Akp)		FANT E		
Affirmative	Negative	Affirmative	Negative	
mɛ́ba	mɛ̀mmá	mibɛ́ba	minkɛ́ba	
wíbɛba	wírɛ̀mmá	ibɛ́ba	inkɛ́ba	
ɔ̀bɛ́ba	ɔ́rɛ̀mmá	ɔbɛ́ba	ɔnkɛ́ba	Tense III
ɛ̀bɛ́ba	ɛ́rɛ̀mma	ɛbɛ́ba	ɛnkɛ́ba	
yɛ̀bɛ́ba	yɛ́rɛ̀mmá	yɛbɛ́ba	yɛnkɛ́ba	
mɛ́bɛba	wírɛ̀mma	hɛmbɛ́ba	hɛ̃mkɛ́ba	
wɔ̀bɛ́ba	wɔ́rɛ̀mma	wɔbɛ́ba	wɔnkɛ́ba	
mìribɛbá	mɛ̀rɛ̀	miribɛ́ba		
wɔ́ribɛbá		íribɛ́ba		
ɔ̀ribɛbá	Tense III	ɔribɛ́ba	Tense VI →	
ɛ̀ribɛbá		ɛribɛ́ba		Tense IV
yɛ̀ribɛbá		yɛribɛ́ba		
mɔ́ribɛbá		hɛmribɛ́ba		
wɔ̀ribɛbá		wɔribɛ́ba		
ɛ́bá	mɛ̀á	abá	ammá →	Tense V

Groups A and B

ba, etc. ɛ come

ASANT E

Affirmative	Negative		Affirmative	Negative	
		Tense I		Tense VI	Tense III
mibá	mimmá		mɛ́ba		
wɔba	wɔ̃mma		ɔubɛba		
ɔbá	ɔmmá		ɔɔbɛ́ba		
ɛbá	ɛmmá		ɛbɛ́ba		
yɛbá	yɛmmá		yɛbɛ́ba		
mɔba	mɔ̃mmá		mɔbɛba		
yɛbá	yɛmmá		yɛbɛ́ba		
		Tense II		Tense VI	Tense IV
miwari	miŋwari		mɔ̃bɛbá		
wɔwari	wɔŋwari		wɔ̃ɔbɛbá		
ɔwari	ɔŋwari		ɔɔbɛbá		
ɛwari	ɔɛŋwari		ɛɛbɛbá		
yɛwuwari	yɛŋwuwari		yɛɛbɛbá		
mɔwuwari	mɔŋwuwari		mɔ̃ɔbɛbá		
yɛwuwari	yɛŋwuwari		yɛɛbɛbá		
yɛwuwari	yɛwuwari				
			abá	ammá	Tense V

Groups A and B

TWI (Akp)		FANTE		ASANTE		
Affirmative	Negative	Affirmative	Negative	Affirmative	Negative	Te[nse]
mìfibà		mìrfbà	mìrfìhbá	hàbá	mîmmá	
wòribà		ìrfkà	ìrfìhbá	wòòbá	wòòmmá	VI
òìfbà	Tense I	òrfbà	òrfìhbá	oòbá	oòmmá	
èrfbà		òrfbà	òrfìhbá	èebá	eèmmá	
yèrfbà		yèrfbà	yefìhbá	yèebá	yeèmmá	
mòribà		hòmfibà	hòmrìhbá	mòòbá	mòòmmá	
wòrfbà		wòrfbà	wòrìhbá	yeèbá	yèèmmá	
mìbà	mìmmaì	mìbà	mìmbáì	màbá	mìmmàaye	
wòabà	wòmmaì	ìbà	ìmbaì/	wòabá	wòmmàaye	
wàbà	òmmaì	wàbà	òmbáì	wabá	òmmàaye	
ábà	èmmaì		òmbàì	abá	èmmàaye	VII
yèábà	yèmmaì	yàábà	yèmbaì	yèabá	yèmmàaye	
mòabà	mòmmàì	hòmábà	hòmbàì	mòabá	mòmmàaye	
wòábà	wòmmaì	waàbà	wòmbaì	yèabá	yèmmàaye	
mìbaì	mammá	mìbaì	màmbá	mìbaaye	màmmá	
wòbaì	wòmmá	ìbaì	àmbá	wòbàaye	wòammá	
obaì	wàmmá	òbaì	wàmbá	òbaaye	wàmmá	
ebaì	àmmá	ebaì	wàmbá	èbaaye	àmmá	• VIII
yèbaì	yèammá	yèbáì	yàmbá	yèbaaye	yèammá	
mòbaì	mòàmmá	hòmbáì	hòmóàbá	mòbàaye	mòammá	
wòbaì	wòammá	wòbaì	waàmbà	yèbaaye	yèammá	

Groups A and B

TWI (Akp)		FANTE		ASANTE		
Affirmative	Negative	Affirmative	Negative	Affirmative	Negative	
mfummrã	mìmmá	mímbrã	mèmbá	mímmra	mfàmá	
wúmmrã	wùmmá	ímbrã	ìmbá	wúmmra	wùàmá	
ómmrã	òmmá	ómbrã	sìmbá	ómmra	òǹmá	
émmrã	èmmá	ómbrã	òmbá	émmra	èǹmá	Tense IX
yémmrã	yèmmá	yémbrã	yèmbá	yémmra	yèǹmá	
múmmrã	mùmmá	hómbra	hòmbá	mómmra	mùǹmá	
wómmrã	wòmmá	wómbrã	~~némbrã~~ wònbá	yémmra	yèǹmá	
brà	mmá	bra	mámbá	brà	mmá	Tense X

Groups A and B

The Verb

wari, etc. = tall, long.

NZEMA		GUANG (Apiredo)		
Affirmative	Negative	Affirmative	Negative	
mìba	mimmá	mfbɛ̀	mɛ̀cbɛ̀	Tense I
ɛ̀ba	emmá	wɛ́bɛ̀	ɔbɛ́bɛ̀	
ɔ̀ba	ommá	ɛ́bɛ̀	ɔ̀bɛ́bɛ̀	
ɔ̀ba	ommá	fbɛ̀	bɛ̀ɛ́bɛ̀	
yɛ̀ba	yemmá	ɛ̀mfibɛ̀	ɛ̀nfbɛcbɛ̀	
bɛ̀ba	bemmá	ɛ́nibɛ̀	ɛ́naibɛcbɛ̀	
bɛ̀ba	bemmá	ɔ̀mfibɛ̀	ɔ̀mubɛ́bɛ̀	
		ɛ̀mfibɛ̀	ɛ̀mubɛ́bɛ̀	
mìwali	mìɲwáli	mìkpa	mɛ̀ɛ̀ɲakpa	
ɛ̀wali	ɛ̀ɲwáli	ɔ̀kpa	ɔbɛ́ɛ̀ɲakpa	
ɔ̀wali	ɔ̀ɲwáli	ɛ̀kpa	ɔbɛ́ɛ̀ɲakpa	Tense II
ɔ̀wali	ɔ̀ɲwáli	kpà	bɛ́ɛ̀ɲakpa	
yɛ̀wali	yɛ̀ɲwá	ɛ̀nfikpɛ̀kpa	ɛ̀nfbɛ̀ɲakpukpa	
bɛ̀wali	bɛ̀ɲwá	ɛ́nfikpɛ̀kpa	ɛ́nfbɛ̀ɲakpukpa	
bɛ̀wali	bɛ̀ɲwá	ɔ̀mukpukpa	ɔ̀mubɛ̀ɲakpukpa	
		ɛ̀mukpukpa	ɛ̀mubɛ̀ɲakpukpa	

wari, etc. - tall, long.

NZEMA		GUANG (Apirede)		
Affirmative	Negative	Affirmative	Negative	
mlkeya	mipoya	ɛmɛbɛ	mɛɛbɛ	
ɛkeya	epoyá	ɔbɛbɛ	ɔbɛɛbɛ	Tense III
ɔkeya	opoyá	ɛbɛbɛ	ɛbɛɛbɛ	
ɔkeya	opoyá	ɛbɛbɛ	bɛɛbɛ	
ɔkeya	yepoyá	ɛnɛbɛbɛ	ɛnɛbɛɛbɛ	
bɛkeya	bepoyá	ɛnɛbɛbɛ	ɛnɛbɛɛbɛ	
bɛkeya	bepoyá	ɔmɛbɛbɛ	ɔmɛbɛɛbɛ	
		ɛmɛbɛbɛ	ɛmɛbɛɛbɛ	
mlbáyɛ		mlɛbɛbɛ		
ɛbáyɛ		ɔnɛbɛbɛ		
ɔbáyɛ	Tense III	ɛnɛbɛbɛ	Tense III	
ɔbáyɛ		nɛɛbɛbɛ		Tense IV
yɛbáyɛ		ɛnɛɛbɛbɛ		
bɛbáyɛ		ɛnɛɛbɛbɛ		
bɛbáyɛ		ɔmɛɛbɛbɛ		
		ɛmɛɛbɛbɛ		
áya	amá	---	----	Tense V

Groups A and B

	EZEMA		GUANG (Apirede)		
	Affirmative	Negative	Affirmative	Negative	Tense
1	mìlɛ́bá		mìɛ́bɛ̀	mɛ̀ɛ́nɛbɛ̀	
2	ɛ̀lɛ́bá		ɔ̀nɛ́bɛ̀	ɔ̀bɛ́nɛbɛ́	
3	ɔ̀lɛ́bá	Tense I	ànɛ́bɛ̀	àbɛ́nɛbɛ̀	VI
3	ɔ̀lɛ́bá		nɛ̀ɛ́bɛ̀	bɛ̀ɛ́nɛbɛ̀	
1	yɛ̀lɛ́bá		ɛ̀nìɛbɛ̀	ɛnɪ́bɛnɛbɛ̀	
2	bɛ̀lɛ́bá		ɛ́nìɛbɛ̀	ɛ́nɪ́bɛnɛbɛ̀	
3	bɛ̀lɛ́bá		ɔ̀mùɛ́bɛ̀	ɔ̀mùbɛ́nɛbɛ̀	
3			ɛ̀mùɛ́bɛ̀	ɛ̀mùbɛ́nɛbɛ̀	
	mìya	mìtɛbáll	mɪ́ɛ̀bɛ	mɛ̀ɛ́bɛ́	
	wɔ̀ya	ɛ̀tɛbáll	wɪ́ɛ̀bɛ	ɔ̀bɛ́bɛ́	
	lya	ɔ̀tɛbáll	ɛ́nɛ̀bɛ (ɛ)	àbɛ́bɛ́	VII
	lya	ɔ̀tɛbáll	ɪnɛ̀bɛ	bɛ̀ɛ́bɛ́	
	yɛ̀ya	yɛ̀tɛbáll	ɛ̀nɪ́ɛ̀bɛ	ɛ̀nɪ́bɛbɛ́	
	bɛ̀ya	bɛ̀tɛbáll	ɛ́nɪ́ɛ̀bɛ	ɛ́nɪ́bɛbɛ́	
	bɛ̀ya	bɛ̀tɛbáll	ɔmɪ́ɛ̀bɛ	ɔ̀mùbɛ́bɛ́	
			ɛ̀mɪ́ɛ̀bɛ	ɛ̀mùbɛ́bɛ́	

Groups A and B

NZEMA		GUANG (Apirede)		
Affirmative	Negative	Affirmative	Negative	Tense
mìmali	mamá	[illegible] mìbe	[illegible] mìɛmme	
ɛyali	wamá	ɔ̀be	ɔbɛmme	
ɔyali	yamá	ɔ̀be	ɔbɛ̀mme	
ɔyali	yamá	bɛ̀	bɛ̀ɛmme	VIII
yɛ̀yali	yamá	ɛnìbɛ̀	ɛ̀nìbɛmme	
bɛ̀yali	bamá	ɛ́nìbɛ̀	ɛ́nìɛmme	
bɛ̀yali	bamá	ɔ̀mabe	ɔ̀mabɛmme	
		ɛ̀mabe	ɛ̀mabɛmme	
mimelá	mɛ́bà	mìbɛ̀	nímebɛ̀	
eyelá	ɛ́bà	wɛ́bɛ̀	ɔ́bebɛ̀	
oyelá	ɔ́bà	ɔ́bɛ̀	ɔ́bebɛ́	IX
oyelá	ɔ́bà	ɔ̀bɛ̀	ɔ̀bebɛ̀	
yeyelá	yɛ́bà	ɛhìbɛ̀	ɛ̀nìbebɛ̀	
beyelá	bɛ́bà	ɛ́nìbe	ɛ́nìbe	
beyelá	bɛ́bà	ɔ̀mibe	ɔ̀mabe	
		ɛ̀mabe	ɛ̀mabe	
bɛ̀la	mɛ́bà	bɛ̀	bɛ̀bɛ́	
bɛ̀yelá	bɛ̀mɛ́bà	ɛ́bɛ̀`	ɛ́bebɛ̀	X

TABLE 14.

Group C and D

The Verbs

fo = po = cut

Ga		Adangme		
Affirmative	Negative	Affirmative	Negative	
mlfo	mlfɔɔ	lpo	lpui	
ɔfo	ɔfoɔ	ɔpo	ɔpɛi	
ɛfo	ɛfɔɔ	ɛpo	ɛpɛi	
hɔfo	hɔfɔɔ	hɔpo	hɔpɛi	Tense I
nyɛfo	nyɛfɔɔ	nyɛpo	nyɛpui	
hmɛfo	hmɛfɔɔ	ɛpo	ɛpɛi	
hfo	hfɔɔ			
mlfɔ	mlfɔkɔ			
ɔfɔ	ɔfɔkɔ			
ɛfɔ	ɛfɔkɔ			Tense II
hɔfɔ	hɔfɔkɔ			
nyɛfɔ	nyɛfɔkɔ			
hmɛfɔ	hmɛfɔkɔ			
hfɔ	hfɔkɔ			

Group C and D

fo = po = cut

Ga		Adangme		
Affirmative	Negative	Affirmative	Negative	
miífó		fɲɛ-poe	fbe - pbe	
ófófó		ɔyɛ - poe	ɔbɔ́ - pbe	
ófófó	Tense I	ɔ-poe	ɔbɔ́-pbe	Tense III
wɔmífó		waɲɛ-poe	wɔbɔ́-pbe	
nyɛmífó		nyɛɲɛ-poe	nyɛbɔ́-pbe	
bmɛmífó		aɲɛ-poe	ɔbɔ́-pbe	
áafó				
1 máfɔ	mífóŋ	fmɛ́pɔ		
2 bófɔ	ófóŋ	bmɛ́pɔ		
3 bófɔ	ófóŋ	bmɛ́pɔ	Tense III	Tense IV
	mɛ́fóŋ			
1 wɔ̃ɔfɔ	wófóŋ	wɔmɛ́pɔ		
2 nyɛ́fɔ	nyɛ́fóŋ	nyɛmɛ́pɔ		
3 bmɛ́fɔ	bmɛ́fóŋ	bmɛ́pɔ		
báfɔ	áfóŋ			

Ga		Adangme		
Affirmative	Negative	Affirmative	Negative	
máfó	míkafó	ìpɔ̀	íkopɔ̀	
ófó	ókafó	ópɔ̀	ókopɔ̀	
éfó	ékafó	épɔ̀	ékopɔ̀	
wófó	wókafó	wápɔ̀	wakópɔ̀	Tense V
nyéfó	nyékafó	nyépɔ̀	nyekópɔ̀	
àméfó	àmékafó	ápɔ̀	ákopɔ̀	
éfó	ékafó			
míf̀ɔo		ìpɔ̀ɔ́		
ɔ̀fɔo		ɔ̀pɔɔ́		
èfɔo	Tense I	èpɔɔ́	Tense I	Tense VI
wɔ̀fɔo		wàpɔɔ́		
nyèafɔo		nyèàpɔɔ́		
àmɛfɔo		àpɔɔ́		
èfɔo				
fɔ̃	kɛ̃fó	pɔ̃	kɔ̃pɔ̀	
nyéfɔa	nyékafɔà			
		ìmàhì -poe		
		ɔ̀màhì-poe		
		èmàhì-poe		
		wàmàhì-poe	Tense III	
		nyèmàhì-poe		
		àmàhì-poe		

TABLE 15

Ewe

The Verb

yi = go

		Affirmative	Negative
Tense I	Sl	mèyi	nyemáyi o
	2	èyi	màyi o
	3	éyi	méyi o
	Pl	míeyi	míeyi o
	2	mieyi	mèeyi o
	3	wóyi	wómeyi o
Tense II		mèyi	nyemáyi o
		èyi	etc.
		éyi	
		míeyi	
		miéyi	
		wóeyi	
Tense III		mèyina	nyemáyina o
		èyina	etc.
		éyina	
		mieyina	
		mieyina	
		wóyina	

Ewe

yi - go

	Affirmative	Negative
Tense IV	mɔ̀le-yiyiní	nyemélɔ̀-yiyiní o
	ele-yiyní	etc.
	élɔ̀-yiyiní	
	míelɔ̀-yiyíí	
	miele-yiyíí	
	wólɔ̀-yiyíí	
Tense V	mɔ̀no-yiyíí	nyɔ̀ménɔ̀-yiyíí ɔ̀
	ɔ̀no-yiyíí	etc.
	ɔ̀nɔ̀-yiyíí	
	míenɔ̀-yiyíí	
	mieno-yiyíí	
	wónɔ̀-yiyíí	
Tense VI	mánɔ̀-yiyíí	nyɔ̀mánɔ-yiyíí ɔ̀
	Ènɔ̀-yiyíí	etc.
	ána-yiyíí	
	míanɔ̀-yiyíí	
	miánɔ̀-yiyíí	
	wóanɔ̀-yiyíí	

Ewe

yi - go

	Affirmative	Negative
Tense VII	menɔ̀à-yiyiḿ	nyèménɔà-yiyim ɔ
	ènɔ̀à-yiyiḿ	etc.
	énɔà-yiyiḿ	
	mɪ̀enɔà-yiyiḿ	
	mɪ̀enɔ̀à-yiyiḿ	
	wónɔà-yiyiḿ	
Tense VIII	mèle - yiyi - gé	nyèmélè - yiyi-gé ɔ
	èle - titi - gé	etc.
	élè - yiyi - gé	
	mɪ̀elè - yiyi - gé	
	mɪ̀ele - yiyi - gé	
	wólè - yiyi - gé	
Tense IX	yi	mégàyi o
	mɪ̀yi	

4 : LEXICON.

Introductory Note : in establishing the 3 groups the primary evidence is lexical; i.e. within each group a proportion of the total lexicon (affixes and radicals) is common to 2 or all languages.

Obviously, the entries in any shared vocabulary of this sort are like-ly to be of 3 major types:

(i) primary: i.e. for which it is not possible or necessary to postulate a source external to the language group as it is ~~currently~~ now constituted.

(ii) derived: i.e. acquired directly or indirectly by the individual languages from a source external to the group.

(iii) diffused: i.e. originating in one of the languages of the group and thence acquired directly or indirectly by other languages of the group.

Entries of type (ii) are usually recognizable by direct historico-cultural evidence , e.g. book, lorry, bread etc and other European loans.

Entries of type (iii) are more difficult to identify and since ultimately the only valid proof of loaning is the historical fact of ~~prior~~ an entry's prior existence in one language , the accurate recognition of either type (ii), or (iii) cannot be guaranteed.(1)

An attempt , however, has been made to exclude all such entries from the examples of common radicals given in the following pages , since the 3 types of entry have different historical implications and involve different types of linguistic relationship.

Under each group heading then a number of radicals common to the group are set out by way of example and in every case are quoted with notes on the phonological transformation rules involved.

---

(1) In this field the historical evidence , whether from literar y documents or whatever source is notoriously meagre. The earliest extant text in Twi is the word list of P(eter) D(e) M(arees) , Beschryvinghe ende Historische Verhael Van Het GOUT KONINCKRIJK Van GUNEA. Amstelredam . 1602 For the other languages source material begins much later.

In this ~~paper~~ thesis the following features of a word are considered, among others, as evidence of borrowing:

(1) phonological irregularity:

e.g. (a) p in Ewe

pɛ̃ ∠ Twi: pɛ̀f, chisel.[1.] (see page 47)

(b) si in Gbugbla Adangme

: in this dialect the juncture ≠ s + i is realized ~~=~~ phonetically /ʃi/, but

sikli ∠ Fr. sucre.

(c) tone: in all languages

e.g. (Asante) Twi: ákɔ̌, parrot ∠?

kr̀ɔ̌tɔ̌, paper (Port. carta),

the unique tonal pattern of borrowed words being first established by a comparison of loans identifiable, on other evidence,[2.] e.g. kr̀ɔ̌tɔ̌ and kr̀ákyì ∠clerk; pùrósì ∠ police, and dúkɔ̌ ∠ Dutch dock.

(2) morphological transparency:

a word common to more than one language, if it is obviously a secondary formation in one language (and irreducible in others) is assigned to that

---

1. The examples are purposely taken from Westermann's 'Das Tschi und Guang', and 'Die Westlichen Sudansprachen' to support later criticism of his classification of these languages.

2. In names for obvious cultural innovations.

language and eliminated as a diffusion.

e.g. paano, needle - in Ga

Paani - in Guang

∠ Twi, paani[1]. ∠ pam (v) sew + di, thing

Ewe: ablotsiri, Europe

∠ Twi: aburo + kyiri

Twi: kyiri = land

cf. oburoni = man of "buro"

European in Ewe is yevu.

(3) topology: see page 146

when all possible entries of types (2) and (3) have been eliminated there still remains within each Group a fairly large corpus of 'primary' entries common to all the languages of the group. The figures given in Table 16 are based on comparative lists of radicals made for the respective groups. For Group A + B, for example, a list of the first 1,000 common radicals[2]. in Twi was made and equivalent lists compiled for Guang and Nzema. Strict identity of semantic function was demanded

---

1. cf. also length of vowel elsewh re analysed as a junctural prosody in Twi.

2. (simple monosyllables (CV) and extended monosyllables, i.e. CV + the extensions enumerated on page 57 , only)

of any word pair admitted for comparison and, undoubtedly a less rigorous method would produce higher and no less valid percentage figures, but it was felt that in the first instance, the evidence provided by well attested pairs only was sufficient to establish the relationship postulated in this ~~paper~~ thesis.

Table 16.

Language Pairs	Radicals Counted	Common to both languages.	Per Centum
. Twi-Nzema	737	198	27.
. Twi-Guang	695	147	21
. Nzema -Guang	712	133	18.
. Ga- Adangme	672	210	31.

Not counted are

(1) Compound radicals

(2) Established loans.

GROUP A

Notes: the following transformation rules apply:

(1) Twi p ≡ Nsema kp

m̀-pá (n)	mat	è-kpá
pɛ́ (n)	similar	tpɛ̂
pu (v)	refuse	kpu
àm-pá	truly	aŋm̀-gba[1]. (< -m- + *pa)

(2) Twi b ≡ Nzema b

à-ba-á (n)	stick	bà-ká
bɨ́ (n)	some	bɨ̀-e
bu-e (v)	open	bʉ-ke

(3) Twi b ≡ Nzema m (< m + b)[2].

à-bá (n)	seed	à-ma (am + ba?).
è-bí-r-i (n)	time	m̀-mi-kɛ
bógyá (n)	blood	m̀-mogya

(4) Twi b ≡ Nzema ɣ

bá (n)	child	ɣá
ɔ̀-bá-a (n)	woman	ɣa̋-lɛ
ɛ̀-bɛ́ (n)	proverb	ɛ̀-ɣɛ-lɛ́

(5) Twi t ≡ Nzema t

ti (v)	feel, hear	ti
è-tɨ́-r-ɨ̀ (n)	head	tɨ̀-le
tɔ-ŋ (v)	sell	tɔ-ni

1. See note on page 27
2. See note on page 27

(6) Twi t = Nzema dh = t[1].

ɔ̀-tá-m (n)	cloth	ɛ̀-dha-nli
ǹ-tá (n)	twin	ǹ-ḍha-lɛ
tɔ́-w (n)	ball	ɛ̀-dhɔ-kɛ́

(7) Twi d = Nzema d

da (v)	sleep	da
di (v)	eat	di

(8) Twi k, kw = Nzema k, kw

ka-w (v)	bite	ka
ka-i (v)	remember	ka-kyi
kʊ- (n)	1	ku-
kwa-w (v)	daub	ku-kwa (redupl. ⟨ kwa)

and with nasal prefix:

ŋ̀-kwá (n)	life force	ŋ̀-gwaŋnli
ŋ̀-kʊ́ (n)	shea butter	ŋ̀-gʊ́

(9) Twi k = Nzema h = k[2].

ɔ̀-kɔ́-m (n)	hunger	ɛ̀-hɔ-ni
kʊ́-nu (n)	husband	-hʊ̀-nli

(10) Twi g = Nzema g

gu-w (v)	slack	gu

and

ŋu (⟨n + gu?)	(n)	oil	ŋu-li ⟨ (ŋ + gu-?)

---

1. See note on page 27

2. See note on page 27

(11) Twi gw ≠ Nzema bi-

gwá (n)	stool	bi̱a
gwa-w (v)	flog	bi̱a
gwa-ri (v)	bathe	bi̱a

(12) Twi f ≠ Nzema f

fi̱-r-i (v)	buy or sell on credit	fi-l-i
fɔ-w (v)	wet	fɔ
è-fú-n-u̱ (n)	corpse	fù-li̱

(13) Twi s ≠ Nzema s

sa-w (v)	scoop	sa
ǹ-sá (n)	hand	sà-lé
e-sí-ɱ (n)	piece	sĩ-nli

(14) Twi s ≠ Nzema s ɾ s[1].

ǹ-sa-wá (n)	funeral money	ǹ-za-bá(2)
ǹ-su̱ (n)	water	ǹ-zu̱-le
ǹ-sũ (n)	ashes	ǹ-zũ-nli

(15) Twi h ≠ Nzema h

a-hɪ̃ (n)	afternoon	a-hɪ̃
hɪ̃-n-i̱ (v)	shut	hɪ̃
hu̱-w (v)	winnow	hu̱

(16) Twi h ≠ Nzema ʃ ≠ hy

à-hɪ̃́ (n)	teasing	à-ʃɪ̃́
hɪ̃-a (v)	poor	ʃɪ̃-a

---

1. See note on page 27
2. see note on page 64.

(17) Twi h ≠ Nzema n

hʊ̀ (n)	outside	ŋu
hɪ̰ (v)	see	ŋɪ̰

(18) Twi ʃ ≠ hy[1]. ≠ Nzema y

ʃɪ̰-a (v)	meet	yɪ̰-a
ʃi-r-a (v)	bless	yɪ̰-r-a

(19) Twi ʃw ≠ hyw[1]. ≠ Nzema w

ʃwi-w (v)	bale out	wi
à-ʃwɪ-á (n)	sand	à-wɪ-a

(20) Twi tʃ ≠ ky[2]. ≠ Nzema k

à-tʃí-n-i (n)	drum	kɪ̀-nli
tʃi-r-ɛ-ɷ (v)	write	kɛ-l-ɛ

(21) Twi tʃ ≠ ky ≠ Nzema h ≠ k[3].

ǹ-tʃɛ́-ŋ (n)	side	à-hɛ-nlɛ
a-tʃɪ (n)	morning	a-hɪ

(22) Twi dz ≠ gy ≠ Nzema dz ≠ gy[4].

dza-i (v)	stop	dza-tʃi
a-dza (n)	father	a-dza
a-dzwi (v)	cool	dzwu [5].
dzwi (v)	hack	dzwi
à-dzwʉ́-ma (n)	work	à-dzɪ̰́-ma[5].
dzwí-w (n)	louse	dzɪ̰̀-ké

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1. See note on page 26
2. See note on page 27
3. See note on page 27
4. See note on page 26
5. See note on page 26

(23) Twi dz ~ gy ~ Nzema dɣ

dze (v)	receive	dɣe
dzɣ-dze (v)	tinkle	dɣe-dɣe
a-dze (n)	deliverance	a-lie-le[1].

(24) Twi m ~ Nzema m

ma (v)	give	ma
ɔ-ma-ŋ (n)	nation	mà-nli
a-mú-n-u (n)	fresh	à-mu-nlé

(25) Twi n ~ Nzema n

ni (v)	be	ni
e-nɣ (n)	honour	nɣ
nu-m (v)	drink	nu
nɣ (v)	stir	nɣ

(26) Twi n ~ Nzema ny

à-nɣ́ (n)	eye	ɔ-nye
è-nɣ́-nɣ (n)	python	è-nyi-nlí

(27) Twi ny ~ Nzema ny

nya (v)	get	nya
nya-ŋ (v)	insipid	nya-nli
nyɣ-ŋ (v)	grow	nyɣ

(28) Twi ŋyw ~ Nzema ŋ

nywi-n-i (v)	bitter	ŋu-nli
ŋywi-n-i (v)	weave	ŋu
ŋywɣ-n-i (v)	leak	ŋɣ

---

1. Where l ~ d, see note on page 27

(29) Twi w ≠ Nzema w

wa-ri (v)	long	wa-li
à-wɔ́ (n)	snake	ɛ̀-wɔ-lɛ
à-wí̱-a (n)	sun	è-wi̱-a
wu̱ (v)	die	wu̱

(30) Twi y ≠ Nzema y

ɔ̀-yí-r-i (n)	wife	ɔ̀-yi
yɛ-ŋ (v)	rear	yɛ-ni

GROUP A + B.

Notes: The following transformation rules apply:-

Vowels:-

(1) Twi i ≡ Guang i

sɨ́-ŋ(n)	piece	tɨ́
ǹ-sɨ́-á(n)	6	sɨ́-c
ki-ri(v)	catch	kyi-ri
hĭ-m (v)	blow nose	ʃĭ

(2) Twi e ɛ Guang e

à-bé-ŋ (n)	horn	á-be-rì
è-kɛ́ (n)	side	nyè-kyé-ŋ

(3) Twi a ɛ Guang a

ǹ-tá-m (n)	oath	ǹ-tɛ̂
á-dze (n)	fire	à-gyá
á-bɟe (n)	stool	è-gwá
hire[1.] (V)	mix	ʃra[1.]

(4) Twi o ɔ Guang o

dɔ (v)	love	dɔ
pɔ́-w (n)	knot	kpɔ́
tɔ́-w (n)	ball	í-tɔ̂

---

1. Note: radicals are he and ʃa, both with r-infix. See page 60

(5) Twi u ≡ Guang ụ

ǹ-sụ́ (n)	water	ǹ-tsụ́
dụ-á (n)	tail	á-dụ̂
sṹ-m (v)	support	sṹ

(6) Twi u ≡ Guang w(e)

ǹ-sṹ́ (n)	ashes	ń-swɛ̂
tṹ (v)	err	twɛ̃
kṹ (v)	fight	kwɛ̃

Consonants:-

(7) Twi p ≡ Guang kp[1].

pa (v)	skim	kpɛ
pɔ́-w (n)	knot	kpɔ́
à-pí-m (n)	1,000	á-kpi

Twi b ≡ Guang b

ba (v)	come	bɛ
bí-m (n)	innocence	bí
à-bɛ́-ŋ (n)	horn	á-bɛ-rì

Twi b ≡ Guang f

bá-ŋ (n)	fence	è-fã́
bụ-e (v)	open	fụ-ŋkɨ
bṹ-ŋ (n)	bark	fú-ri

(8) Twi t ≡ Guang t

ǹ-tá-m (n)	oath	ǹ-tɛ̂

---

1. p ≡ p only in presumed loans from Twi; see note page 12.

tɔ́w (n)	ball	ítɔ̂
twɛ̄ (v)	err	tū

(9) Twi d ≡ Guang d

dɔ (v)	love	dɔ
dụ̀á (n)	tail	ádụ̂
è-dú (n)	lo	í-dụ̂

(10) Twi k, tʃ = ky ≡ Guang k

kā (v)	say	kɛ̄
ŋ̀-krá (n)	blood	ŋ̀-krɛ́
ɔ-kụ́-nụ (n)	husband	á-kụ-rì
kyi-ri (v)	catch	ki-ri
nỳ-kyɛ́-ŋ(n)	side	è-kɛ̄

Twi kw ≡ Guang kp

ɔ̀-kwá-ŋ(n)	road	ɔ̀-kpɛ̄
ŋ̀-kwā (n)	life force	ŋ̀m-kpɛ̄

(11) Twi gw ≡ Guang by

gwa-ri (v)	bathe	bie
è-gwá (n)	stool	á-bie

(12) Twi f ≡ Guang h

à-fī (n)	comb	à-hī
f-r-a/ (*fa)(v)	mix	hirɛ/ hɛ-r-ɛ
fụ́-nụ(n)	corpse	hụ́-nì

(13) Twi s ≡ Guang s

ɔ̀-sá (n)	war	ɛ́-sɛ̄

ǹ-sɪ́-á(n)	6	sɪ́-ɛ
ǹ-sṹ (n)	ashes	ń-swɛ̃̂

(14) Twi s ≡ Guang t

ǹ-sã́ (n)	strong drink	ń-tɛ̃
sã (v)	finish	tɛ̃
sɪ́-ŋ (n)	piece	tɪ́

(15) Twi s ≡ Guang ts

sa (v)	cure	tsa
sɔ (v)	try, peck	tsɔ
ǹ-sṵ́ (n)	water	ǹ-tsṵ́

(16) Twi h,f ≡ hy ≡ Guang f

hɪ̃-m (v)	blow nose	fɪ̃
hu-n-u(v)	dissolve	fũ-ɔ
~~è~~hṹ (n)	fear	ɪ́-fṹ̂
hyɛ-ŋ (v)	blow	fɛ-rɪ

(17) Twi hw ≡ Guang fy

hwã (v)	beg for food	fiɛ̃
hwa-m(v)	smell	fɪ̃-n-ɛ̃

(18) Twi m ≡ Guang m

à-má-ni(n)	gum	ɛ́-mɛ̃̂
à-mɪ́-m(n)	greed	à-mɪ́
mṵ-a (v)	shut	mṵ

(19) Twi n ≡ Guang n

à-ná-ŋ (n)	4	nḗ
nị-m (v)	know	nī
a-nú (n)	mouth	á-nu

(20) Twi w ≡ Guang w

wị-a (wụ-a) (v)	steal	wụ-rị
ò-wị-á (n)	sun	á-wị
wụ (v)	die	wụ

(21) Twi w ≡ Guang k

wu (v)	give birth	ku-ki (Ku)
ɛ-wú (n)	honey	á-ku

GROUP C + D

Notes: The following transformation rules apply:-

Consonants:-

(1) Adangme p ≡ Ga f

pɛ̌ (v)	do	fɛ̌
plɛ (v)	irritate	flɛ
po (v)	cut	fo

(2) Adangme b ≡ Ga b

bɛ̌ (v)	sweep	bɛ̌
bɛ́ (n)	horn	b-l-ɛ́
ba (v)	come	ba

(3) Adangme b ≡ Ga gb

bɔ (v)	grow old	gbɔ
g-bɔ- (in compounds)	foreign	-gbɔ -

(4) Adangme b ≡ Ga m

ba (v)	borrow, lend	ma
b-l-ǎ (n)	gum	à-má

(5) Adangme t ≡ Ga t

tɛ́ (n)	stone	tɛ́

	tó (n)	sheep	tòo [1]
	tũ (v)	jump	tũ

(6) Adangme d ≡ Ga d

dɔ (n)	grief	dɔ
dũ (v)	catch	dũ

(7) Adangme d ≡ Ga dz

da (v)	right	dza
do (v)	dance	dzo
du (v)	bathe	dzu

(8) Adangme k ≡ Ga k, kw

kẹ (v)	give as a present	kẹ
kũ (v)	break across	kũ
kùɛ (n)	neck	kùɛ [2]
kuɔ (v)	climb	kwo

(9) Adangme g ≡ Ga g

gã̀ (n)	garden egg	gã̀
gúgũo (n)	nose	gùgõ
gã̀gã (n)	black ant	gã̀gã

(10) Adangme g ≡ Ga ŋ

gá (n)	advice	ŋàa
gá (n)	craft	ŋàa
gṍgõ (n)	cymbal	ŋṍŋo

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1. See note on page 38
2. See note on page

(11) Adangme kp = Ga kp

kpe (v)	meet	kpe
kpɛ (v)	chip off	kpɛ
kpɔ (n)	knot	kpɔ

(12) Adangme gb = Ga gb

gba (n)	bridge	a-gba
gbĩ (v)	dry	gb-l-ĩ
gbo (v)	die	gbo

(13) Adangme ʃ = Ga ʃ

ʃĩ (v)	tie	ʃĩ
ʃli (v)	winnow	ʃli
ʃũ (v)	rise, eg. of dough	ʃũ

(14) Adangme ʃv = Ga ʃw

ʃĩa (v)	set on edge	ʃwã
ʃiɛ (v)	play	ʃwɛ
ʃiɔ (v)	suck	ʃwɔ

(15) Adangme z = Ga ʃ

zĩ́a (n)	sand	ʃĩ́a
zà-mi (n)	urine	ʃà-mɔ
zì-gbã́ (n)	ground	ʃì-kpɔ́ŋ́

(16) Adangme s = Ga s

sá (n)	mat	sàa
sɛ̃́ (n)	stool	sɛ̃́i
s-l-e (v)	melt	se-r-e

(17) Adangme s = Ga f-

sɛ̃ (v)	burn	ʃɛ̃
sɪ (v)	leave	ʃɪ
se (v)	take leave of	ʃe

(18) Adangme h = Ga h

hɛ̃ (v)	give	hɛ̃
he (v)	accept	he
hũ (v)	weed	hũ

(19) Adangme hy, hw = Ga y, w

hi (v)	full up	yi
hie (v)	white	ye
with contextual nasality		
hĩ́e (n)	yesterday	nyɛ̃́
hĩ́o (n)	debt	nyɔ̃́-mɔ
hua (v)	hard	wa
huɔ (v)	sleep	wɔ
huɔ (n)	tomorrow	wɔ

(20) Adangme m = Ga m

mɛ̃ (v)	build	mɛ̃
mɪ (v)	swallow	mɪ
mɔ̃̀ (n)	fort	mɔ̃̂o

(21) Adangme m = Ga ŋm

mɔ́sɔ (n)	mud	ŋmɔ̀to
mɔ̃ (mĩe) (v)	laugh	ŋmɔ̃

(22) Adangme m ≡ Ga b

m-l-ã (v)	coil round	b-l-a
mɔ́mɔ̀ (n)	pity	mɔ́bɔ̀
mo (n)	you	bo

(23) Adangme m̀ ≡ Ga m

mɔ̀̃ (n)	person	nɔ̀̃
mù (n)	oil	nù

(24) Adangme n ≡ Ga n

nánè (n)	foot	nàne
na (v)	get	na
nõ (v)	fight	nõ

(25) Adangme ny ≡ Ga ny

nyɛ̃́ (n)	mother	nyɛ̀
nyẽ (v)	hate	nyẽ
nyẽ (v)	walk	ny-i-ẽ

(26) Adangme ny ≡ Ga n

nyú (n)	water	≡ Ga nù
nyú-mu (n)	male	≡ Ga nùu

(27) Adangme ŋ ≡ Ga ŋ

ŋã (v)	shut	ŋa
ŋ-l-ã (v)	wither	ŋã-l-ã
ŋò (n)	salt	ŋɔ̀

(28) Adangme ŋm ≡ Ga ŋm

ŋmā́ (n)	food	ŋmā̀a
ŋmɛ́ (n)	palm kernel	ŋmɛ̀
ŋmlɛ̀ (n)	bell	ŋmlɛ̀

(29) Adangme l ≡ Ga l

lɛ (v)	rear	lɛ
lɛ (n)	canoe	lɛ-lɛ
lɔ́ (n)	meat	lɔ̀o

(30) Adangme ts ≡ Ga ts

tsɛ́ (n)	father	tsɛ̀
tsɔ̃ (n)	too much	tsɔ̃
tsʉ́ (n)	room	tsʉ̀

(31) Adangme dz ≡ Ga dz

dza (v)	worship	dza
dze (v)	resemble	dze
dzɔ (v)	cool	dzɔ

(32) Adangme w ≡ Ga w

wɔ́ (n)	fetish	wɔ́-ŋ́
wo (v)	wear	wo
wu (v)	smear	wu

(33) Adangme wv ≡ Ga dzw

wia (v)	break	dzwa
ewiɛ̀ (n)	4	edzwɛ̀

(34) Adangme y = Ga y

ya (v) scoop water yɛ

yɔ̀ (n) woman yɔ̀.

4: Lexicon (contd).

Under this heading may be considered the outstanding problem of the interrelation of the 3 groups so far established , since much of the argument centres on the lexical affinities of the 6 languages.

A preliminary note is required on the ambiguity of the term "related" as used by earlier writers on the languages of the Sudan and Guinea Coast in general and on the Volta River languages in particular. Caught in the lawless revelry of similarity as William James used to put it, these writers have tended on the whole to emphasize a superficial resemblance between the languages of this area and to neglect the more important differences which make necessary at least a primary grouping of the type adopted here(1).

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1) Though by comparison a scholarly and sober work, Delafosse's artificial classification based on two quite arbitrarily selected diagnostic criteria (class prefixes and tone) falls under this heading. see. bibliography , Delafosse 1924.

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(1) The only comment possible on this type of classification is Plato's on the word "barbaroi". In many cases the "related" languages are similar only in being different from the Indo European norm.

Others have attempted natural classifications. Cf. A.N. Tucker's elaborate "definition" of a Sudanic language which lists 16 attributes. (1)

Since classification is essentially arbitrary and pragmatic both types of classification and their concomitant and different usages of the term "related" are equally valid, if pre-defined. (2) But these classificatory schedules are frequently held to have historical implications, i.e. are put forward as 'phylogenetic' (3). This alone demands some examination of the differentia used. Most commonly these are listed as

(i) Phonetic : Mention has already been made of Delafosse's criterion of tone. Green (4) has suggested refinements.

: characteristic sounds, e.g. kp, gb and the implosives 'b and 'd.

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(1) The Eastern Sudanic Languages. vol 1. 1940 p.56.

(2) cf. J.R. Firth, Speech, 1930, p55. (of Dutch, Danes, Swedes and the English) "If we consider their phonetic habits in the common sensual life, these people speak kindred languages."

(3) cf. especially Carl Meinhof., ZK 1.

(4) The Classification of West African Tone Languages: Igbo and Efik. Africa vol XIX, 3, 1949. It is not clear what type of classification Green has in mind but obviously it can only be an artificial classification in the most restricted sense of the term. Using her differentia Ga could not be grouped with Adangme despite the obviously close relationship that exists between the two languages in almost every other respect.

(2) morphological : Mention has already been made of Delafosse's use of nominal prefixes. Other and more dubious criteria are for example, that "the singular and plural of nouns is not normally distinguished"; that "there is no case in nouns" and "no mood in verbs". (1)

(3) syntactic and/or semantic. : these vary from 'criteria' of the type, "the adjective precedes or follows (sic) the noun it qualifies" to the more elaborate hypotheses of Schober (2) and Blok. (3)

The view taken in this ~~paper~~ thesis may be summarized as follows:

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(1) cf. Westermann, e.g. "Charakter und Einteilung der Sudanssprachen" Africa (1935).

(2) "anschauungsfuhlle" - cf. Die Semantische Gestalt des Ewe, Anthropos, vol 28, pp 621-632. "Es ist der Fall denkbar dass Sprachen trotz verschiedenen Wortschatzes, trotz verschiedener Grammatik, Phonetik usw. doch in der Art verwandt sind, wie sie gegebenes Geistesgutsprachlich gestalten, d h verwandt in semantischer Beziehung."

(3) "lokalisme", "polariteit," "onsekerheids-relatie", etc. cf. Afrikanistische Taalwetenschap, Problemen, Taak en Doel Leiden 1950.

(a-) that the use of such evidence for special and ad hoc (i.e. artificial) classifications is valid but that the existing schedules are too wide . For example there is a marked difference between the fairly elaborate nominal prefix system of the languages of this ~~paper's~~ thesis's Group A plus B and the morphological process of prefixation in the languages of Groups C plus D and E and again between these and the grammatical concord systems of Bantu.

(b) that in general, common phonaesthetic and categorial habits such as these present not a proof but a problem. In many cases the answer to this problem can be found in a hypothesi of "diffusion". The view has already been expressed that insufficient attention has been paid in African comparative linguistics to the two important factors of geographic contiguity and continuity. To these factors have already been attributed certain lexical affinities , i.e. calques like Guang asukwɛi by analogy from Twi asuɛi, resting place and simple borrowings

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(i) note also the difficulties of classifying the 6 languages of this ~~paper~~ thesis by the verbal systems: both language types have certain attributes in common but cf. the complex system of 10 tenses in the languages of Group A plus B (with tense and negation by prefix) and the much less complex system of the verb in the languages of Group C plus D and E (with negation by suffix or special sign.

Cassava: Ga: dunde ⟋ Twi = tree yam

Adangme: agbeli ⟋ Ewe: agbeli

It is equally feasible to appeal to diffusion in certain cases to explain departures from the established language type. For example, it is not unreasonable to assume that the Ga system of accentuation, which differs markedly from the Adangme, is due to Twi influence on Ga speech. Similarly, the existence of true labio-palatals in Ga and Guang dialects bordering on Twi speaking territory, and the growing tendency to palatalization of velars[1.] in these dialects and to the labialization of velars in Ga, are not improbably innovations due to Twi. At another level, too, recourse is made to this argument to explain differences of syntax and morphology between Ga and Adangme.

It is not insignificant that Adangme resembles the geographically contiguous Ewe in possessing, for example, a 'definite article'[2.] and in forming nominals of a special type by reduplication of the verbal base[3.].

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1. See note on page 17

2. cf. Adangme: tso ɔ, tso ɔmɛ, the tree, the trees, and Ga: tsɔ lɛ, tsɔi lɛ (lɛ = 3rd p.s. pronoun cf. Twi: dua nu, the tree and ɔnu, he, him).

3. cf. pages 81 and 94.

note (1). page 148: In these languages what-
have been called in this thesis
~~paper~~, "velarization",
"labio velarization" and
"lateralization", for example,
are common phonetic habits
just as 'palatalization' is
a universal phonetic trend,
and they have the same value
for classificatory purposes.

whereas Ga resembles Twi in the one case in its suppletive use of the 3 p.s. pronoun and lack of the reduplicative process in the other.

In the present writer's view , the special conditions obtaining in the Gold Coast(and much of West Africa)i.e. almost universal bilingualism , frequent intertribal marriage and the political ascendancy of the Akan peoples give added credibility to a diffusionist theory of this type.

In the last resort,of course, many of these "semantic affinities" can only be explained as due to the unavoidable necessity of classifying eperience in speech with an obviously limited number of categories and physiological possiblities of articulation. For instance it is interesting to note that in all 6 languages

"brother/sister ≠ mother's child. cf Twi nua (ni and ba);Ga nyɛmi (nyɛ and bi) etc.

"believe" is expressed as a serial predicate = take, eat . cf. Twi gyi'dɨ ; Ga he , ye etc.

but this is at most equivalence of semantic function not identity of sememe unless a phonological correspondence can be established . This type of equivalence has been represented in this ~~paper~~ thesis by the symbol ≠ which signifies that it is to be ignored for purposes of the main argument. cf. page 64 Nsema kyɨ ≠ Twi ba.

(c) the type of relationship envisaged for the languages of the 3 groups established in this ~~paper~~ thesis is of a different order and has implications of some form of common elaboration either ~~by~~ divergent , convergent or reticulate.

It is now possible to discuss the question whether the languages of all 3 groups are interrelated in this way.

The only writer to bring forward detailed evidence in support of this view is Westermann, who makes the five languages[1] a major sub-group (Ewe-Tschi Gruppe) of the so-called Kwa family. In his "Das Tschi und Guang", a considerable amount of lexical material is produced for comparison; from it certain deductions are made as to an earlier common vocabulary; the method used also involves the reconstruction of an imposing number[2] of hypothetical radicals. Westermann is generally considered to have proved his case,[3] but the present writer believes that, irrespective of the truth or not of Westermann's basic hypothesis, the picture he presents is misleading. The relationship specified for these languages is a genetic relationship, and an uncritical reader of his paper might be forgiven for assuming it a close or recent one. It is not the purpose of this ~~paper~~ thesis categorically to deny that these languages are related in this way, but rather to emphasize the remoteness of the relationship and the difficulties of its proof. Since the

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1. Die Westlichen Sudansprachen, 1927.

2. The total of such radicals listed in "Das Tschi und Guang" is 511, but not all, of course, are presumed common to all five languages. It is significant, in fact, that the number of such radicals is relatively small.

3. Greenberg, for example, calls him "an eminently cautious observer".

evidence acceptable to the present writer is largely negative, the simplest method appears to be an examination of Westermann's own data in some detail.

The evidence he presents seems unacceptable on several counts. Some of these have been mentioned previously in different connections: they are -

(1) failure to recognize loans; of many, one or two examples will suffice:

<u>rust</u>

Two: ŋkãnnare, Ga: ŋkanale, Ewe: akada;

but

ŋkannare in Twi ⁄ nea ekãnnade = that which affects iron[1].

: similarly,

Twi: <u>agyaŋka</u> (n) orphan ⁄ agya ŋka = father not left

is equated with the Ewe <u>wɔ adza</u>, to expose orphan children.

(2) the degree of latitude allowed in the semantic equations, e.g.:

: Ewe: vi, child = Twi: obi, person[2].

: Ewe: ku, die = Twi: ku, kill[3].

[illegible][4].

---

1. However improbable to speakers of Indo European such compounds may seem, they are very frequently to be found in Twi and Ewe.

2. child is 'ba'

3. die is 'wu'

: Ga: gblo, wash = Twi: guare[1].

: Ga: mlu, powder = Twi: aduru[2].

: Ewe: ma, nicht = Twi: m, negation[3].

(3) the partial nature of the phonological correspondences, e.g.

: Ewe: axa, side = Twi: nkeŋ (∠ ia? (sic))

: Ewe: (dhe) bala, palmwedel = Twi: bergw

: Ewe: vẽ, durchsauert sein = Twi: boŋ, penetrate as leaven does the dough

but also

Ewe: vẽ, riechen = Twi: boŋ, smell.

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1. Twi: guare is English 'bathe' for which the Ga is du.

2. Ga: mlu is dust, Twi: aduru is medicine ∠ dua, tree cf. Ga: ʃoʃa ∠ tʃo = tree.

3. m is one only of several realizations of m.

But when much of the lexical evidence has been eliminated under these headings, there still remains certain seemingly valid correspondences which can only be explained by one of two hypotheses:-

(1) that they are true vestiges of the postulated proto-language;

(2) that they are loans from a period earlier than the inception of current phonological and morphological habits with regard to borrowings. For example, Ewe nowadays pronounces borrowed words from Twi with /p/, pɛ has already been quoted; in the light of this, a correspondence Ewe: kpa, scrape ≡ Twi: pa, cannot be dismissed immediately as an example of loaning.

Evidence which seems to fall more probably under (1) is, for example, certain resemblances between the pronominal prefixes of the languages of all groups, but the sound changes involved are not sufficiently corroborated elsewhere in the lexicon.

Evidence which seems to fall more probably under (2), is the example: Twi: k ≡ Ewe: kp, in a few cases. A further example of this correspondence occurs in the numeral for 1,000 which seems common to all languages; here the special nature of the word in question renders a hypothesis of diffusion more plausible.

~~The question is not pursued further in this paper~~

The numeral systems of all six languages show traces of possible diffusion: cf. the words for 1,000 already mentioned and for example iteration in Groups C & D and E.

Ga - Adangme si/ʃi ≡ Ewe zi.

and the traces of earlier sexial systems in the numerals of Groups C+D and E.

The question is not pursued further in this ~~paper~~ thesis since obviously to decide categorically between (1) and (2) demands ideally a special type of historical knowledge that does not exist for these languages or, at least, a detailed consideration of peripheral languages beyond the scope of the present study and for which material is as yet not readily available.

For similar reasons it is not proposed to discuss the peculiarly restricted view held by both Westermann and Greenberg of the monogenetic implications of their evidence.(1)

A functionalist view is taken in this ~~paper~~ thesis: because of the meagre and highly dialectalised nature of any common language system to be established by such a hypothesis, the interrelation of the 6 languages is considered an irrelevant and methodologically improper question.

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(1) convergent or reticulate formation (i.e. polygenesis) are not excluded as hypotheses.

5. Conclusions

Briefly to summarize, the following conclusions are reached in this ~~paper~~ thesis.

(i) that the following languages are related in structure and vocabulary.

Twi - Nzema - Guang

Ga - Adangme.

: that these structural and lexical affinities are such as to suggest an earlier common origin for the languages of ~~xxxxxxxx~~ each group;

(ii) that there are affinities of various kinds between the languages of different groups and that these affinities are most probably due to acculturation and

(iii) that it is unnecessary to postulate a common source for all six languages in order to explain them.

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ZAS - Zeitschrift für Afrikanische Sprachen.
ZAOS - Zeitschrift für Afrikanische und Ozeanische Sprachen.
ZAOOS - Zeitschrift für Afrikanische, Ozeanische und Ostasiatische Sprachen.
ZK - Zeitschrift für Kolonialsprachen.
ZE - Zeitschrift für Eingeborenensprachen.

Glossary.

adjunct : a word which defines (modifies, qualifies) the primary words of a sentence or phrase; adnominals so define nominals, adverbals define verbals.
Jespersen, O. "Philosophy of Grammar", London 1924, pp.97 ff.

acculturation: "the process of the envelopment or change of culture which occurs when one socio-economic system influences another in a thorough-going manner".
Jacobs, M and Stern B.J. "Outline of Antropology", Cambridge, 1947.

calque : "Transposition, soit rigoureuse soit approximative d'un mot (gr. attikisein = lat. atticissare), d'un systeme (lat. tra-ducere, all. uber-tragen), d'une construction (all. Was ist er fur ein Mann? fr. Qu'est-ce que c'est pour un homme?) ".
Marouseau, J. Lexique de la Terminologie Linguistique Paris, 1933, p.42.

dyadic: secondary units are dyadic if under analysis they are found to consist of two sub-units.
cf. Twi diphthongs , pp.23 ff.

elaboration, linguistic: may be divergent (i.e. two or more languages derive from an original language) convergent (i.e. a third language is produced from the influence of one language on another) reticulate (i.e. both divergent and convergent in turn).

gemination: doubling of consonant or vowel.

ingressive : the ingressive form of verbs in all 6 languages expresses motion (to or from the speaker) prior to the performance of the main action expressed by the verbal radical.

lateralization: cf. Eugenie Henderson, "Prosodies in Siamese"

Asia Major, vol 1,part 11, 1949, page 191.

lautbilder : i.e. "picture words". These are semi-interjections of an onomatopoeic nature which may in these languages accompany almost any verb to describe for example,the noise or manner of the action or the effect of the action on the doer or the watcher. Tucker calls them "ideophones", see his "The Eastern Sudanic Languages" pp.312 ff

lenition: "Pour une consonne, passage de la serie des fortes a la serie des douces, qui equivant d'ordinaire a une sonorisation; ainsi dans le changement de s en z. "

Marouzeau J. op.cit.p.18.

phonaesthetic habits: attitudes to and preference for certain sounds.

piece: any segment of the chain of speech, complete in itself and which may serve as an isolate . e.g. in Ewe the verbal piece often consists of a verb and its concomitant nominal , neither of which exists independently of the other.
cf. Firth,J.R. "Sounds and Prosdies; TPS 1948.

prosody: the term"prosodic feature" etc., is applied in this thesis to certain properties of the six languages which may be regarded as abstractions apart from the consonant and vowel systems. Consonants and vowels occur in fixed order or places; prosodic features are in this sense unplaced.

cf. Henderson ,op.cit., Firth, op. cit.

spirantization: "On designe quelquefois de ce nom la lenition des langues celtiques qui consists en ce qu'une consonne, augmentant d'aperture, est affectee d'une sorte d'aspiration ou de renforcement de souffle, qui fait par example une occlusive devient spirante".
Marouzeau J, op. cit., p.18.

topology: consideration of the geographical facts about a language from which conclusions can be drawn as to its history.

yotization: (yodisation); "Se dit quelquefois de la palatalisation ou mouillure qui donne a l'oreille approximativement l'impression d'un yod (l'i en fonction de sonante) ajoute apres la consonne."

Marouzeau, J. op. cit., p 195. See also Henderson op.cit.p. 191.

cf. lateralization and labiovelarization which may be defined as above reading l and w(u) respectively for i.
