What gender systems? Agreement classes vs. noun form classes in Niger-Congo with particular reference to Ghana-Togo-Mountain languages

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1 Theoretical cross-linguistic approach

+ gender = classification of noun (triggers) reflected by agreement on other word (targets)
- but very often also other features in agreement system, most often conflated with number
> full understanding of gender system requires that all agreement factors other than gender are analyzed exhaustively and “subtracted”: **Gender = Agreement minus Number et al.**
+ agreement of target(s) with a nominal trigger determined by:
- semantic properties mostly of a noun lexeme as an abstract item in the lexicon AND
- formal properties of a concrete noun form in a grammatical agreement context
> three crucial concepts in the analysis of gender (cf., e.g., Corbett 1991, 2000, 2006; Evans, Brown and Corbett 1998; Güldemann 2000):

a) GENDER (CLASS):
= class of nouns in the abstract lexicon - ultimate goal of analysis

b) AGREEMENT CLASS (abbreviated here as AGR):
= class of concrete noun forms established on account of identical behavior across all agreement contexts as overt but conflated reflex of diverse agreement features

c) NOUN (FORM) CLASS (abbreviated here as NFO):
= class of concrete noun forms established on account of identical properties in their own form which often determine agreement

2 Gender in Niger-Congo

2.1 “Ideal” one-to-one alliteration

+ analysis of gender systems in Niger-Congo with a strong historical and methodological bias towards the reconstructed system of Bantu and wider Benue-Congo
- predominantly analyzed on the assumption of a consistent one-to-one alliterative class marking which not only holds across different agreement hosts (representing the target(s)) but notably also between agreement target and noun form (representing the trigger)

(1)

wa^{NFO}-tu	**wa**^{AGR}-le	**wa**^{AGR}-wili	**wa**^{AGR}-me-ni-pa	cha-kula	cha-**o**^{AGR}
2-person	2-D.DEM	2-two	2-PERF-1S.OBJ-give	7-food	7:GEN-2:POSSR

those two people gave me their food (Swahili, Bantu)

+ a system with such an “ideal” mapping would allow one to infer the real agreement-based gender system from the system of noun form classes

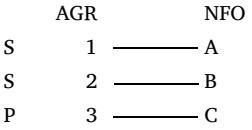


Figure 1: Full one-to-one mapping of noun form and agreement classes

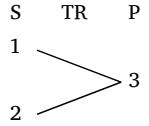


Figure 2: Real gender system according to agreement classes

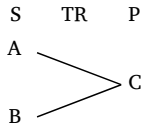
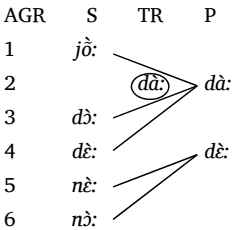


Figure 3: Apparent gender system according to noun form classes

2.2 The reality in Niger-Congo (and beyond)

+ strong alliterative trigger-target mapping in Niger-Congo counterfeits an ideal system so that the philological concept “noun class” does not distinguish but in fact silently conflates agreement and noun form class although these are in principle independent
> in reality, however, ideal trigger-target mapping as in Figure 1 rarely if ever exists so that noun form classes are unlikely to reflect the real gender system (even when disregarding the virtually universal presence of an additional completely unmarked Ø-noun form class):

+ illustrated here by Ikaan (Benue-Congo): overt gender system formed by 6 agreement classes and 5 segmental noun (form) classes (Ø-noun form class not treated in source)
- clear systemic divergence between a “convergent” type in the real gender system based on agreement classes (Figure 4) and a “crossed” type in the apparent gender system based on noun classes (Figure 5)
- divergence caused by a single “mismatch” between agreement and noun form classes in an otherwise perfect one-to-one mapping pattern (Figure 6): two agreement classes (1, 6) correlated with the same noun form class *O-*



Note: agreement classes represented by proximal demonstratives

Figure 4: Gender system of Ikaan (after Borchardt 2011: 75-8)

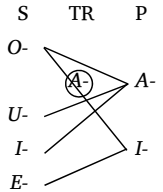


Figure 5: Noun form class mapping of Ikaan (after Borchardt 2011: 75-8)

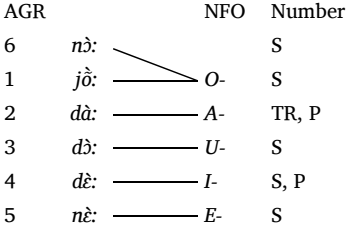


Figure 6: Mapping of noun form and agreement classes in Ikaan (after Borchardt 2011: 75-8)

2.3 Proto-Bantu as the “ideal” yardstick

\+ Proto-Bantu as the prime model for assessing other Niger-Congo gender systems

“Noun class”	*AGR	NUMB	Different agreement targets				*NFO
			CONC	NUM	SBJ	OBJ	
*1a	*1(a)	S	ju-	u- ?	u-, a-	mu-	Ø
*1		S	ju-	u- ?	u-, a-	mu-	*mu-
*3	*3	S	gu-	u- ?	gu-	gu-	
*18	*18	TR	mu-	mu-	mu-	mu-	
*2	*2	P	ba-	ba-	ba-	ba-	*ba-
*4	*4	P	gi-	i- ?	gi-	gi-	*mi-
*5	*5	S	di-	di-	di-	di-	*i̱-
*6A	*6(A)	TR	ga-	a- ?	ga-	ga-	*ma-
*6		P	ga-	a- ?	ga-	ga-	
*7	*7	S	ki-	ki-	ki-	ki-	*ki-
*8	*8	P	bi̱-	bi̱-	bi̱-	bi̱-	*bi̱-
*9	*9	S	ji-	i- ?	ji-	ji-	*n-
*10	*10	P	ji̱-	i̱-	ji̱-	ji̱-	
*11	*11	S	du-	du-	du-	du-	*du-
*12	*12	S	ka-	ka-	ka-	ka-	*ka-
*13	*13	P	tu-	tu-	tu-	tu-	*tu-
*14	*14	S, TR	bu-	bu-	bu-	bu-	*bu-
*15	*15/17	S, TR	ku-	ku-	ku-	ku-	*ku-
*17		TR	ku-	ku-	ku-	ku-	
*16	*16	TR	pa-	pa-	pa-	pa-	*pa-
*19	*19	S	pi̱-	pi̱-	pi̱-	pi̱-	*pi̱-

Note: single agreement class: *1/*1a (*6/*6A, *15/*17);
single noun form class: *1/*3/*18, *9/*10 (*6/*6A, *15/*17)

Table 1: Bantu “noun classes” (= conflate agreement and noun form classes) (after Meeussen 1967: 96-9)

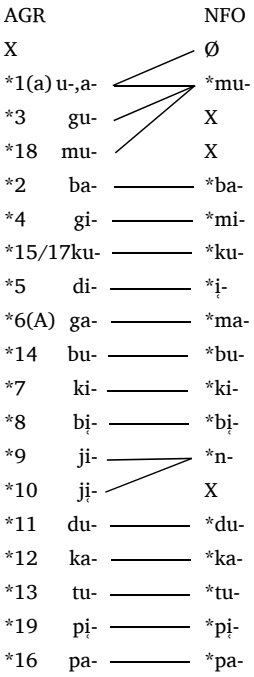
\+ assuming the adequacy of the reconstruction, the detailed information allows one to establish a close approximation to the original situation regarding:

a) mapping of agreement and noun form classes

b) real gender system based on agreement classes

c) apparent gender system based on noun form classes

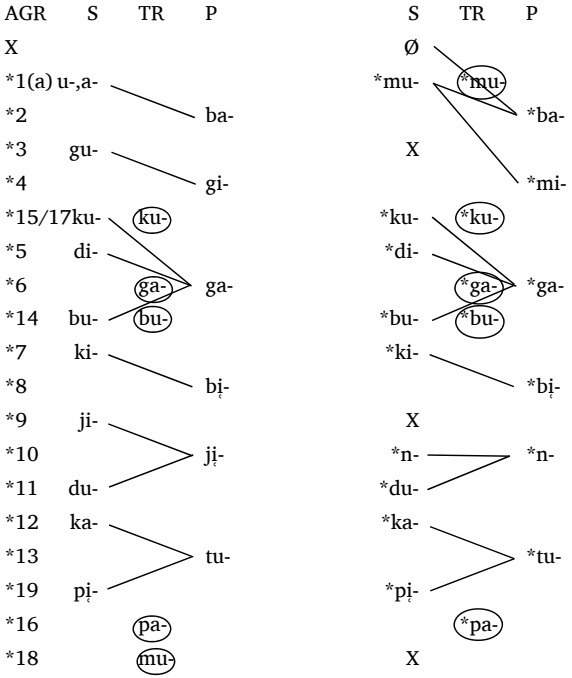
+ mapping of agreement and noun form classes strongly but not absolutely alliterative and more importantly with a one-to-one relation > Figure 7
- three mismatches: two cases where one noun form class matches more than one agreement class and one case for the inverse situation



Note: X = no independent counterpart

Figure 7: Mapping of 18 agreement and 16 noun form classes in Proto-Bantu

+ different number of agreement and head noun classes already suggests that real and apparent gender system cannot be identical > full comparison in Figure 8:



Note: X = no independent counterpart

Figure 8: Gender system (left) vs. noun form class mapping (right) of Proto-Bantu (after Meeussen 1967: 96-104)

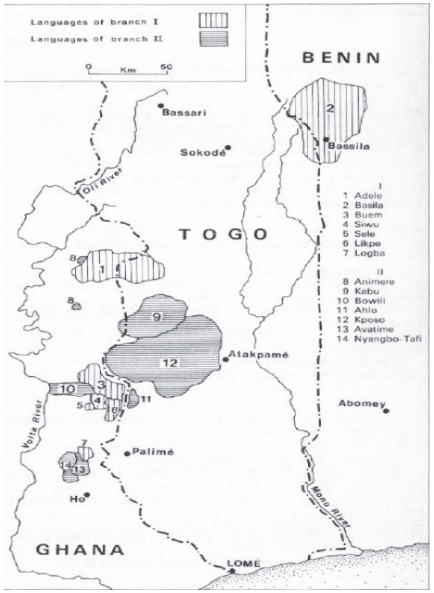
+ considerable differences despite strong one-to-one alliterative mapping:
- gender system with 18 agreement classes is “convergent” and entails 10 paired genders
- number mapping of 16 noun form classes is “crossed” and entails 11 pairs

+ general problem recognized in comparative Niger-Congo research (cf. Voorhoeve and de Wolf 1969: 4), nevertheless recurrent trend of describing and reconstructing gender systems on account of noun form classes and their number mapping
> demonstrate and elucidate the problem with data from the Ghana-Togo-Mountain (GTM, formerly Togo-Remnant) languages - a geographically and possibly also genealogically close-knit Kwa sub-group of Niger-Congo in West Africa

3 Ghana-Togo-Mountain (GTM) languages

No.	Glottolog (our term)	Abbr.	ISO	Ethno-logue	Specific source	Heine (1968b)	Westermann (1927)
1	Anii	AN	blo	Anii	Gisiḍa, Anii	Basila	Basila
2	Adele	AD	ade	Adele	Adele	Adele	Adele
3	Lelemi	LE	lef	Lelemi	Lɛlɛmi	Lelemi	Lefana-Lel., Buem
4	Siwu	SI	akp	Siwu	Siwu	Akpafu	Akpafu-Lolobi
5	Sekpele	SK	lip	Sekpele	Sɛkpɛlé	Likpe	Likpe
6	Selee	SE	snw	Selee	Sɛlɛɛ	Santrokofi	Santrokofi
7	Logba	LO	lgq	Logba	Ikpana	Logba	Logba
8	Boro	BO	-	-	-	Boro	Boro
9	Avatime	AV	avn	Avatime	Siya	Avatime	Avatime
10	Nyangbo	NY	nyb	Nyangbo	Tutrugbu	Nyangbo	Nyangbo
11	Tafi	TA	tcd	Tafi	Tɪgbɔ	-	Tafi
12	Tuwuli	TU	bov	Tuwuli	Tuwuli	Bowili	Bowili
13	Ikposo	IK	kpo	Ikposo	Ikpɔsɔ	Kposo	Akpɔsɔ
14	Igo	IG	ahl	Igo	Igo	Ahlo	Ahlɔ̃
15	Animere	AM	anf	Animere	Animere	Animere	Animere
16	Akebu	AK	keu	Akebu	Akebu	Kebu	Kebu

Table 2: Inventory of languages and terminological concordance



Map 1: Geographical distribution (Kropp Dakubu and Ford 1988)

\+ various internal classifications, notably by Heine (1968b); latest less fusional account by Blench (2006: 8) on the basis of a superficial lexical comparison - followed here:

1 Anii-Adele
- Adele AD
- Anii AN

2 Na-Togo
- Lelemic
  - Lelemi-Akpafu
    - Lelemi LE
    - Siwu SI
  - Likpe-Santrokofi
    - Sekpele SK
    - Selee SL
- Logba LO
- Boro (†) BO

3 Ka-Togo
- Avatime-Nyangbo
  - Avatime AV
  - Nyangbo-Tafi
    - Nyangbo NY
    - Tafi TA
- Kposo-Ahlo-Bowili
  - Tuwuli TU
  - Ikposo IK
  - Igo IG

4 Kebu-Animere
- Animere AM
- Akebu AK

Figure 9: Genealogical classification (Blench 2006)

\+ our data survey
- use of as many language-specific and modern relevant data sources as possible: all languages covered except extinct Boro without data and Ikposo which completely lost both agreement and noun form classes
- in each language, identification of agreement class system, gender system based thereof, noun form class system with example nouns, noun form class mapping, and mapping of agreement and noun form classes

!!! caveat: quite diverse quantity and quality of data across languages (see below)

+ survey example of one representative language, Siwu, with notational conventions:
a) system of language-specific agreement classes with number behavior
> shorthand representation by language acronym and an arbitrary number
> associated in a preliminary fashion with likely cognate of Proto-Bantu “noun class”

AGR	NUMB	SBJ	REL	OBJ	PRO	NFO default	Bantu
SI1	S	ɔ-	gɔ-	ù	ɔ̃	O-, Ø	*1/3
SI2	P	ma-	ma-	mã	mã	MA-	*2
SI3	S, P	si-	dzɛ-	sɛ̃	sɛ̃	SI-	*7, 10
SI4	S	i-	nɛ-	nɛ̃	nɛ̃	I-	*5
SI5	P	a-	wa-	wã	wã	A-	*6
SI6	S	ka-	ga-	kã	kã	KA-	*12
SI7	S, P	ku-	gɔ-	kɔ̃	kɔ̃	KU-	*15
SI8	TR	mi-	mɛ-	mɛ̃	mɛ̃	N-	*6A
	P					N-, MI-	*8

Note: additional agreement on demonstratives, numerals and adjectives (Heine 1968)
Table 3: Agreement classes of Siwu (after Dingemanse 2007, 2011)

b) system of language-specific noun form classes with number behavior and example nouns
> Ø-class (e.g., loans, personal names, kinship terms) taken into account as far as possible
> shorthand representation for non-Ø by an abstract thematic element in capital letters
> associated in a preliminary fashion with likely cognate of Proto-Bantu “noun class”

NFO	NUMB	Form(s)	Example(s)	*Bantu
Ø	S	Ø	sōò 'elephant'; kpise 'ghost'	*Ø
MA-	P	ma-	ma-kpise 'ghosts'; ma-turi 'persons'	*2
O-	S	ɔ-	ɔ̀-turi 'person'; ɔ̀-tu 'gun'	*1/3
SI-	S	si-	sì-ri 'yam'	*7
	P		sì-tu 'guns'	*4/10
MI-	P	mi-	mì-ri 'yam, P'	*8
I-	S	ɪ-	ì-yo 'house'	*5
A-	P	a-	à-yo 'houses'; à-dziri 'trees'	*6
KU-	S	ku-	kù-dziri 'tree'; kù-kpaa 'leg'	*15
	P		kù-rɔdzaì 'birds'	
KA-	S	ka-	kà-ɣɛ̀ 'mortar'; kà-rɔdzaì 'bird'	*12
N-	TR	N-	n-du 'water'	*6A
	P		ǹ-kpaà 'legs'; ǹ-ɣɛ̀ 'mortars'	NP

Table 4: Noun form classes of Siwu (after Dingemanse 2007, 2011)

c) mapping of noun form and agreement classes attempting to reflect, if relevant, the original alliterative match between agreement and noun form class in early Niger-Congo
> agreement classes represented in addition by a maximally distinct agreement target

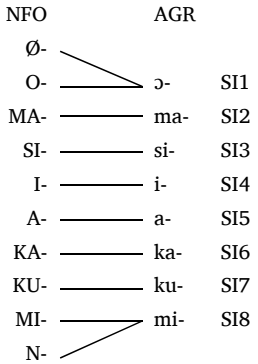
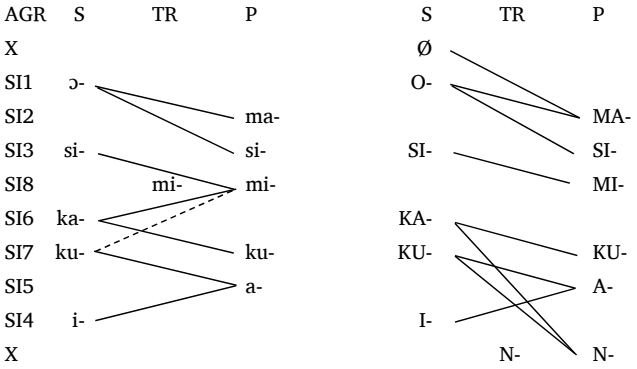


Figure 10: Mapping of 10 noun form and 8 agreement classes in Siwu (after Dingemanse 2011)

d) comparison of gender system and noun form class mapping reflecting any original match
- some genders are marked as inquorate (cf. Corbett 1991), represented by a broken line
> considerable differences which get in the way of inferring the gender system from the noun form class system, viz.:
- 8 agreement classes vs. 10 noun form classes
- crossed system of 7 normal and 1 inquorate paired gender and 1 single-class gender vs. crossed system of 9 noun form class pairings and 1 single class



Note: X = no independent counterpart
Figure 11: Gender system (left) vs. noun form class mapping (right) of Siwu

4 Discussion

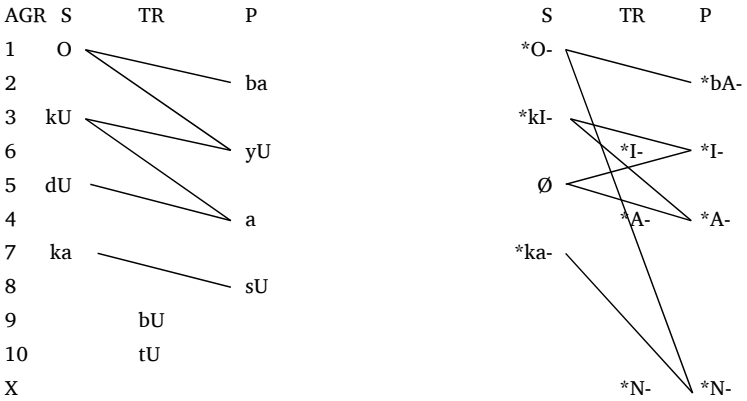
4.1 Agreement-based vs. noun form-based gender assessment

+ many language-specific treatments of gender across GTM describe first of all the system of noun form classes and their mapping across number > Table 5

Language	NFO (matching)	AGR (mapping)	NFO-AGR matching	Source(s)
Anii	secondary (table)	primary (table)	table	Heine 1968b
Adele	primary (prose)	NO	prose	Christaller 1895, Westermann 1922
Lelemi	primary (table)	NO	prose + figure	Allan 1973
Siwu	primary (table + figure)	secondary (table)	table + figure	Dingemanse 2011
Sekpele	primary (table)	secondary (table)	table	Allan 1974
Selee	secondary (figure)	primary (table + figure)	table	Agbetsoamedo 2014a,b
Logba	primary (table)	secondary (no)	table	Dorvlo 2008, 2009
Avatime	primary (table)	secondary (table)	table	Schuh 1995, van Putten 2014
Nyangbo	secondary (table)	primary (table + figure)	table + figure	Essegbey 2009
Tafi	primary (figure)	secondary (table)	table	Bobuafor 2009
Tuwuli	primary (table)	secondary (no)	table	Harley 2005
Igo	separate (figure)	separate (prose)	NO	Gblem-Poidi 2007
Animere	primary (list)	1 secondary (prose) 2 NO	NO	1 Westermann 1933, 2 Casali 2006
Akebu	primary (table)	secondary (no)	table	Storch and Koffi 2000

Table 5: Treatment of agreement and noun form classes in GTM sources

+ similar approach in other families: e.g., Guang (Kwa, Niger-Congo) all languages but Foodo have lost agreement but retained different inventories of noun form class marking > pertinent question of gender system in Proto-Guang



Note: X = no independent counterpart

Figure 12: Gender system of Foodo (after Fiedler field notes, left) vs. “gender” system of Proto-Guang based on noun form classes (after Snider 1990: 138)

Niger-Congo gender analysis is biased towards unsuitable noun form class domain.

4.2 Simplification vs. complexification

+ numerous gender-related changes in GTM languages that affect the design and overall complexity of the systems can be tracked by external and internal reconstruction > largely still work in progress, only exemplify a few patterns

Logba

+ most inherited singular agreement classes merged to LO1, retention of noun form classes

AGR	NUMB	SBJ	DEM	NUM	‘which?’	NFO default	*Bantu?
LO1	S	o-/ɔ-	o-/ɔ-	ɔ-	o-/ɔ-	-	*1/3
LO2	S	a-	a-	a-	a-	A-/ E-	?
LO3	P	e-/ɛ-	a-	a-	a-	E-	*2
LO4	TR, P	N-	m-	n-	m-	N-	*6A
LO5	TR, P	i-	i-	?	i-	I-	*4/8/10
LO6	P	a-	n-	?	?	?	*6

Table 6: Agreement classes of Logba (after Dorvlo 2009)

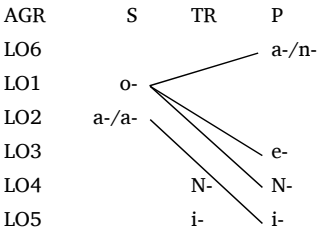


Figure 13: Gender system of Logba

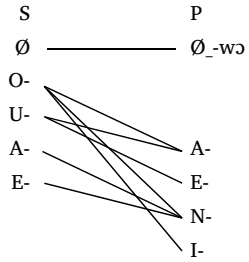


Figure 14: Number-sensitive noun form class mapping of Logba

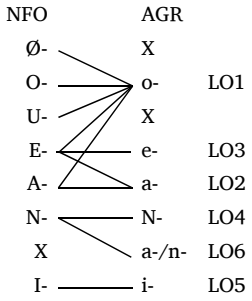


Figure 15: Mapping of noun form and agreement classes in Logba

Animere

\+ inherited agreement classes merged in both singular and plural according to a simple animate-inanimate distinction but retention of noun form classes

AGR	NUMB	SBJ	OBJ	*Bantu
AM1	S	e-	-ye	*1
AM2	P	be-	-bɛ	*2
AM3	S	o-	-wɛ	*3
AM4	P	e-	-yɛ	*4

Table 7: Agreement classes of Animere (Heine 1968b: 127)

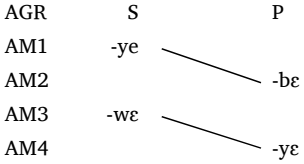


Figure 16: Gender system of Animere

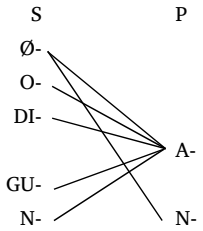


Figure 17: Number-sensitive noun form class mapping of Animere

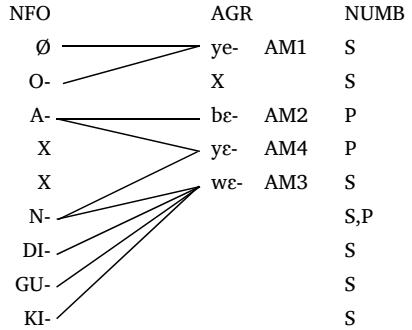


Figure 18: Mapping of noun form and agreement classes in Animere

Anii

+ different mergers result in convergence into different directions

AGR	NUMB	SBJ	OBJ	FOC	ADJ	NUM/ DET	IDEF	DEM/ REL	NFO Default	*Bantu
AN1	S	a-	-nɪ	na	a-	ʊ-	Ø-	-Ø-	Ø, A-, U-	*1P
AN2	P	ba-	-pɪ	nɪ/pɪ	ba-	ba-	ba-	-ba-	BA-	*2
AN3	S	ʊ-	-ʊ	na	ʊ-	ʊ-	ʊ-	-Ø-	Ø, A-	*1/3
AN4	P	ɪ-	-ɪ	nɪ	ɪ-	ɪ-	ɪ-	-Ø-	I-, A-	*8
AN5	S	n-	-njɪ	njɪ	n-	n-	n-	-Ø-	N-	*5
AN6	S	gɪ-	-jɪ	jɪ	gɪ-	gɪ-	gɪ-	-gɪ-	GI-	*7
AN7	S	gʊ-	-kʊ	kʊ	gʊ-	gʊ-	gʊ-	-gʊ-	GU-	*15
AN8	S	ga-	-jɪ	jɪ	ga-	ga-	ga-	-ga-	GA-	*12
AN9	TR, P	bʊ-	-bʊ	bʊ	bʊ-	bʊ-	bʊ-	-bʊ-	BU-	*14

Table 8: Agreement classes of Anii (after Heine 1968a, Zaske 2007, Fiedler f.n.)

- different noun form classes converge in one agreement class: *A-* and *I*-prefix nouns both trigger AN4
- different agreement classes converge in one noun form class: AN1, AN3, AN4 all relate partly *A*-prefix nouns, which are also diverse in their number feature

(2) **à**-yó **ì**-ní **í**-jálá **ì**-nyìó
***A*:P**-tree **AN4**-DEM **AN4**-small **AN4**-two
those two small trees

(3) **ì**-kùtú **ì**-ní **í**-jálá **ì**-nyìó
***I*:P**-orange **AN4**-DEM **AN4**-small **AN4**-two
those two small oranges

(4) **à**-kùtú **ú**-jálá
***A*:S**-orange **AN3**-small
a small orange

(5) **à**-ká **á**-jálá
***A*:S**-woman **AN1**-small
a small woman (after Heine 1968a, Fiedler field notes)

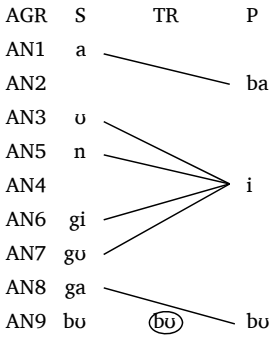


Figure 19: Gender system of Anii

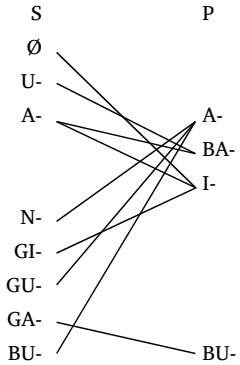


Figure 20: Number-sensitive noun form class mapping of Anii

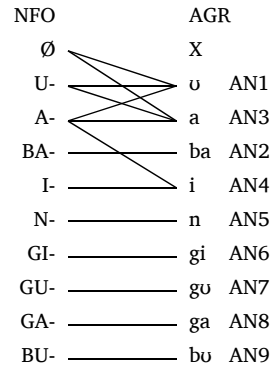


Figure 21: Mapping of noun form and agreement classes in Anii

Localized irregular changes complexify while more global regular changes simplify.

Abbreviations

ADJ adjective, AGR agreement class, CONC concord, D distal, DEM demonstrative, DET determiner, FOC focus marker, IDEF indefinite, NFO noun form class, NUM numeral, NUMB number, OBJ object, P plural, PERF perfect, POSSR possessor, PRO pronoun, REL relative (pronoun), S singular, SBJ subject, TR transnumeral

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