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## Gender and deriflection morphosyntax in Southern Mel

### 0 Introduction

#### 0.1 The Mel languages

**Location:** Sierra Leone, Guinea, Liberia (see Simons et al. 2018)

**Classification:**

- traditional: > South > Atlantic > Niger-Congo (see e.g. Simons et al. 2018)
- Hammarström et al. 2018: primary branch of Niger-Congo (without Gola)

#### Northern Mel

Baga Koba  
 Baga Manduri  
 Baga Sitemu  
 Landuma  
 Temne

#### Southern Mel

Bullom  
 Northern Bullom  
 Bom-Kim  
 Bullom So  
 Sherbro  
 Kisi

#### Gola

**Figure 1: Internal classification of the Mel languages<sup>1</sup>**

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<sup>1</sup> Basically following Sapir (1971: 49); internal classification of Northern and Southern Mel following Hammarström et al. (2018); according to Hammarström et al. (2018) Gola is a primary branch of Niger-Congo

## 0.2 Background

### 0.2.1 Project “Noun classification systems in Africa between gender and nominal declension”

This work is embedded in the project “Noun classification systems in Africa between gender and nominal declension” at Humboldt Universität zu Berlin, funded by the “Deutsche Forschungsgemeinschaft” and headed by Tom Güldemann (see Güldemann 2016).

My dissertation is associated with this project and deals with the historical-comparative reconstruction of the Proto-Mel gender system.

### 0.2.2 Gender and deriflection

#### Gender

Definitory criterion: agreement (Corbett 1991: 4-5; Hockett 1958: 231)

→ Gender exponents are agreement morphemes.

#### Deriflection (Güldemann and Fiedler forthcoming)

- Noun form marking
- Exponents may have an inflectional and/or derivational function.
- Gender and deriflection must be analyzed separately.

## 1 Analysis of four Southern Mel languages

### Data:

#### 1) Mani

- ‘Mani’ is an alternative name for the Bullom So language
- Source: Childs 2011
- All grammatical information is taken from Childs (2011), but his analysis is not necessarily taken over.
- Examples quoted from Childs (2011) are modified if considered necessary:
  - differing separation of morphemes
  - revised morpheme glosses

#### 2) Krim

- Source: Pichl 1972
- Critical discussion of Pichl’s grammatical information
- Morpheme glosses of the examples taken from Pichl: MS

### 3) Sherbro

- Source: Rogers 1967, (Pichl 1964)
- Grammatical information from Rogers (1967), reanalyzed if considered necessary
- Rogers' morpheme glosses modified

### 4) Kisi

- Sources: grammatical information and most of the data from Childs (1995), some data from Heydorn (1969/70)
- Childs' grammatical analyses extensively revised
- Examples taken from Heydorn (1969/70): morphological glosses MS, based on grammatical information from Childs (1995) and own analysis
- Examples from Childs (1995): if considered necessary,
  - differing separation of morphemes
  - modification of Childs' morpheme glosses

The sources of examples are generally given. There is no special indication, if an example is modified or reanalyzed.

## 1.1 Mani

### 1.1.1 Agreement

#### 1.1.1.1 Agreement classes

AGR	Number value	SBJ PRO	ADJ	Noun prefix	Semantics
1	SG	wò	ù- ~ ø-	ù- ~ ø-	human singular; default singular
2	PL	à	à-	à-	human plural
3	SG, TN	lè	dì-	dì-	some singulars; diminutive, abstractions; only 8 core members
4	PL	sà / ɲà	sì-	sì-	most animal plurals (all gender 1/4)
5	SG, TN, PL	nyè	ì-	ì-	SG some animals, SG articles of daily use, collectives, abstractions, some plurals
6	PL	tà	tì-	tì-	most inanimate plurals
7	SG, TN, PL	mà	̀-	̀-	PL of internal body parts, PL of some fish and animals, PL of plants, mass nouns such as grains, liquids
8	TN	pè	pì-	--	yèn 'thing'

**Table 1: Agreement classes of Mani: selected agreement markers and associated noun prefixes**

(Childs 2011: 118, with modifications; class numbering: MS; number values: MS, using data from Childs [2011])

### 1.1.1.2 Agreement targets and exponents

- Adjectives: prefixes
- Numerals: prefixes
- Determiner: prefixes
- Demonstratives: prefixes
- Possessives: prefixes
- Dependent noun in associative construction: prefixes
- Pronouns

(Childs 2011: 118, 194-198)

Examples: see below. Agreement is usually overtly expressed, with the exception of agreement class 1 whose exponent is zero in most examples given by Childs.

### 1.1.1.3 Animate agreement

Childs describes animate agreement for animals in the plural, using the marker *a-* of agreement class 2. Animate agreement is – according to Childs – preferably found with pronouns, but also on demonstratives. For animals with a plural of noun form class SI, animate agreement may also occur on adjectives, numbers and the definite article (see Childs 2011: 125-126).

- (1)    *tùmè sì-cé ɲà à-pót*  
          dog    4-DET    2.PRO    2-weak  
          ‘The dogs are weak.’ (Childs 2011: 125)

- (2)    *sì-sú à-dìntè à-cəŋ à-cé*  
          SI-bird    2-white    2-two    2-DET  
          ‘the two white birds’ (Childs 2011: 126)<sup>2</sup>

### 1.1.2 Noun form marking

Noun forms are marked by means of prefixes (see Table 1). This is always the case on nouns without modifiers.

- (3)    *ì-cáŋ*                      *ɲ-cáŋ*  
          I-tooth                      N-tooth  
          ‘tooth’                      ‘teeth’ (Childs 2011: 119)

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<sup>2</sup> Wrong translation? Cf. *sì-sú* ‘fish (PL)’ (Childs 2011: 63) and *yé sí-cè* ‘the birds’ (Childs 2011: 229).

In many cases, only the bare noun stem is used. Childs (2011) gives no specific rules for this absence of noun prefixes, but from his examples one can conclude, that

- the absence of the prefix occurs in noun phrases with modifiers, while the prefix is present with nouns without modifiers;
- the prefixes of the noun form classes A, I and N in most cases present in noun phrases with modifiers;
- the prefixes of the noun form classes DI, SI and THI are absent in noun phrases with modifiers in most cases;
- the presence of the prefix of noun form class U ~ Ø (associated with agreement class 1) shows much variation (see Childs 2011: 120).

Noun prefix present:

(4) Noun form class A:

à-bùlól    à-màní    à-pót    à-bèn    à-cé  
 A-farmer   2-Mani   2-lazy   2-old   2-DET  
 ‘the old lazy Mani farmers’ (Childs 2011: 193)

(5) Noun form class I:

ì-nyél    ì-sèkól    ì-dìnté    ì-cé  
 I-salt    5-dry    5-white   5-DET  
 ‘the dry white salt’ (Childs 2011: 193)

(6) Noun form class N:

̀n-kén    ̀n-dòyá    ̀n-tì    ̀n-cèn    ̀n-cé  
 N-knife   7-sharp   7-black   7-two   7-DET  
 ‘the two sharp, black knives’ (Childs 2011: 192)

Noun prefix absent:

(7) Noun form class DI: noun without modifier, with prefix

dì-kén  
 DI-knife  
 ‘knife’ (Childs 2011: 192)

- (8) Noun form class DI: noun without prefix in NP with modifier, note the tone spreading from the noun stem to the agreement prefix  
 kén dí-dỳá  
 knife 3-sharp  
 ‘sharp knife’ (Childs 2011: 192)
- (9) Noun form class SI: noun without modifier, with prefix; noun with modifier, without prefix  
 sì-tùmè, tùmè sì-cèŋ, tùmè sì-rà  
 SI-dog dog 4-two dog 4-three  
 ‘dogs, two dogs, three dogs’ (Childs 2011: 125)
- (10) Noun form class TI: noun without modifier, with prefix  
 tì-pà  
 TI-hand  
 ‘hand’ (Childs 2011: 53)
- (11) Noun form class TI: noun with modifiers, without prefix  
 pà tì-hìn tì-yíl  
 arm 6-POSS.1PL 6-long  
 ‘our long arms’ (Childs 2011: 196)

### 1.1.3 Analysis

- Noun form and agreement on modifiers are marked by prefixes.
- The exponents of noun form class U and its associated agreement class 1 may be *u-* or zero, probably due to phonological attrition.
- In noun phrases with modifiers, the prefixes of the noun form classes DI, SI, LI are absent in most examples given by Childs (2011), while the agreement prefixes on the modifier(s) are present.

## 1.2 Krim

### 1.2.1 Agreement

#### 1.2.1.1 Agreement classes

AGR	Number value	SBJ PRO	Attr. ADJ	Noun prefix	Noun suffix	Semantics
1	SG	ò, wò	?ø-	--	--	animates
2	PL	hà	a-	a-	-a	humans, animals with noun form SÈ (except ADJ agreement)
2a	PL	hà	sɛ- (?si-)	sɛ-	-sɛ	animals with noun form SÈ: ADJ agreement
3	SG	hà	?ya-	ha-	-ha	a few nouns
4	(SG), (TN), PL	thà	tha-	tha-	-tha	miscellaneous
5	SG, (PL)	hò	?ø-	--	--	default class
6	TN, PL	mà	?ma-	ma-	-ma	collective class; most liquids and collections of small things; as a PL class miscellaneous
7	SG	kà, gà	?ga-	ka-	-ga	few words
8	TN, PL	mò	?mo-	mo	-mo	miscellaneous; group class
9	SG, TN	kò, gò	?gu-	ku-	-gu	miscellaneous
10	SG, TN, PL	hì	?ɛ-, ?yi-	ɛ-, yi-, ?i-	-hī	abstract nouns (TN); some animal plurals
11	SG, TN	lò	?li-	li-	-li	abstract derived nouns (from nouns and verbs); some other words
13	TN	là	?la-, da-	--	-la	<i>jen</i> or <i>jenda</i> 'thing'

**Table 2: Agreement classes of Krim: Selected agreement targets with associated noun prefixes and suffixes<sup>3</sup>**

#### 1.2.1.2 Agreement targets and exponents

- Attributive adjectives: prefixes
- Predicative adjectives: prefixes
- Numerals: prefixes
- Dependent noun in an associative construction: prefixes?
- Possessives: prefixes?
- Determiner: prefixes?
- Pronouns

(Pichl 1972: 23 and elsewhere; Pichl 1976: KRI9)

<sup>3</sup> Pichl 1972: 23-28 and elsewhere; Pichl 1976: KRI9; class numbering: Pichl; number values: MS, using data from Pichl (1972)

(12) Noun with attributive adjective:

sɔgɔ      si-tên      si-tên<sup>4</sup>  
 chicken 2a-small 2a-small  
 ‘very small chickens’ (Pichl 1972: 42)

According to Pichl (1972: 29), in possessive constructions the possessive is followed by a noun class exponent. He leaves open whether he considers this exponent to be a suffixed agreement marker.

(13) wɔ      kɔ      hɔ      piẽ-ma      wɔ-ma  
 1.PRO go say brother-6 1.POSS-6:DET?  
 ‘He goes to tell his brothers’ (Pichl 1972: 34)

Pichl analyzes the first *-ma* as a noun suffix, the second *-ma* is according to Pichl’s analysis a noun class exponent which follows the possessive.

Alternatively, one could analyze the first *-ma* as the agreement prefix of the possessive *wɔ* and the second one as the determiner  $\varepsilon$  (see Pichl 1972: 21-22) merged with its agreement prefix or even as a phrasal enclitic (as in Kisi, see below). The hypothesis that the final suffix is actually a determiner with agreement prefix is strengthened by this example:

(14) kumɛ-gu      w’ɛ      gwɛ  
 son.in.law-9 1.POSS:DET? 9:DET  
 ‘her son-in-law’ (Pichl 1972: 29)

### 1.2.1.3 Animate agreement

- Semantic agreement is not mentioned by Pichl (1972).
- Human referents are in gender 1/2 (associated deriflection class  $\emptyset/A$ ) (Pichl 1972: 23-24, 26).
- Animals identified by Pichl are in gender 1/2a (associated deriflection class  $\emptyset/S\varepsilon$ ) (Pichl 1972: 23-24).
- Plural agreement class for animals has *sɛ-* as its exponent with adjectives, but for pronouns and predicatives it has the exponent of the human plural agreement class 2 (Pichl 1972: 23-24).
- Animate agreement seems to function in a similar way as in Mani (see 1.1.1.3):
  - Human referents trigger gender 1/2 agreement.
  - Animals have morphologically triggered agreement within the noun phrases (with a special plural exponent *si-* (Mani)/*sɛ-* (Krim) for most animals, while there is semantic

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<sup>4</sup> The circumflex used by Pichl (1972) does not seem to be a tonal mark, probably it marks vowel length.



agreement (gender 1/2) with pronouns (for Mani only plural agreement is mentioned by Childs [2011]).

- For this “mixed” agreement for animals, a special plural agreement class can be defined for Mani (AGR4) and Krim (AGR2a).

### 1.2.2 Noun form marking

- According to Pichl (1972: 28-29), both noun class prefixes and suffixes are used, a noun can be

- 1) without any affix
- 2) with a prefix
- 3) with both prefix and suffix
- 4) with a suffix

#### 1.2.2.1. Noun without affix

A noun has no affix, “if the speaker feels no need to put any stress on number, if the noun cannot be mistaken for another one or, if a nearer explanation of the noun is express by a qualificative, numeral etc.” (Pichl 1972: 28)

(15) No stress on number (affixless form in negative construction? [MS])

a    chən        sɔm    hag,        yum    gwɛ    kɔ  
 1SG NEG.HAB? eat cutlass.fish taboo 9:DET 9.PRO  
 ‘I don’t eat cutlass fish, it is taboo’ (Pichl 1972: 28)

The noun *hag* has SG agreement class 1 (Pichl 1972: 98), for which according to Pichl (1972: 23) prefixes and suffixes are not used. Alternatively, one could assume a zero affix (prefix or suffix?) so that this construction is actually not affixless.

(16) Unequivocal meaning of an otherwise ambiguous noun

(*kɔnth* is only used with *pɔm* ‘spirit’, not with *pɔm* ‘leaf’)

wɔ        kɔnthə    pɔm  
 1.PRO    lose        spirit  
 ‘He loses spirit (= he faints)’ (Pichl 1972: 28)

The affixless noun form could be a result of compounding.

## (17) Construction with numeral

a yema yung sɔŋ<sup>2</sup> si-tên si-tên a-ya  
 1SG want buy chicken 2a-small 2a-small 2-three  
 ‘I want to buy three very small chicken’ (Pichl 1972: 28)

This last construction is the only convincing case of a noun without affix mentioned by Pichl. It appears that in noun phrases with modifying adjectives and numerals the head noun is affixless, while the modifiers have agreement prefixes.

**1.2.2.2 Noun with prefix**

The dependent noun in an associative construction (possessor) has a prefix (Pichl 1972: 28).

(18) men-ma gu-sɛm  
 water-6 KU-Anthostema.senegalense  
 ‘resin’, ‘latex’; lit. ‘water of the Anthostema senegalense’ (Pichl 1972: 29)

The *-ma* suffix of the head noun obviously marks agreement of the following dependent noun, whereas the KU- prefix of the dependent noun is a noun form (deriflectional) marker.

(19) be-∅ ku-pɔŋ ε  
 chief-1 KU-country DET  
 ‘the chief of the country’ (Pichl 1972: 28)

The head noun is analyzed as having a zero suffix. Pichl (1972: 23) considers nouns of agreement class 1 as generally affixless.

**1.2.2.3 Noun with suffix**

Pichl (1972: 29) is not able to give rules for the use of noun class suffixes, but for him nouns with suffixes appear to be “less definite” than those with prefixes.

(20) wɔ yɔŋ-i yenthɛge<sup>3</sup>-ma  
 1.PRO carry-? load-6:DET?  
 ‘He carries a load’ (Pichl 1972: 29)

The object noun phrase only consists of a noun with its suffix. One could analyze this suffix as a noun form marker, i.e. a deriflectional element. But in the next example the suffix is followed by the determiner ε (allophone of *lɛ*, see Pichl 1972: 21-22, who notes that this element is “something like an article”, but “comes nearer to the Japanese particles ‘wa – subject’ and ‘wo – obj. accusative’”):

- (21) wɔ      hǎ    panth<sup>i</sup>-mo    ε  
 1.PRO    do    work-8    DET  
 ‘He works (= does work)’ (Pichl 1972: 29)

Here, the noun suffix obviously marks agreement of the determiner with its head noun. Unfortunately, Pichl (1972: 21-22) does not describe agreement of the determiner  $\varepsilon$ . The “suffix” *-ma* in (20) could be a merger of an agreement marker *ma* with a following determiner  $\varepsilon$ , but Pichl does not give a paradigm of such mergers, except the class-9-form *gwε* (*gu* +  $\varepsilon$ ) (Pichl 1972: 22).

#### 1.2.2.4 Noun with both prefix and suffix

According to Pichl (1972: 29), the use of both prefix and suffix with a noun expresses “a stronger definition” than the use of a prefix or suffix only.

- (22) wɔ            wôn    i-wɔŋg-hĩ    ko  
 1.PRO    climb    I-hill-5:DET?    to  
 ‘he climbs up the hill (not any hill, but the hill before us)’ (Pichl 1972: 29)

- The status of the prefix as a deriflectional marker (noun form class I) is clear.
- The status of the suffix is less clear. Could it be an agreement affix merged with a determiner  $\varepsilon$  (see Pichl 1972: 21)?
- This analysis becomes more probable if one considers the following example, likewise mentioned by Pichl as a construction of a noun with both prefix and suffix:

- (23) a      yema    lim    ku-tem    gwε  
 1SG    want    tell    KU-story    9:DET  
 ‘I want to tell a (certain) story’ (Pichl 1972: 29)

The element *gwε* is a merger of the agreement marker *gu* with the determiner  $\varepsilon$  (see Pichl 1972: 22).

If the “suffix” can always be analyzed as an agreeing determiner, there is no category of nouns with both prefix and suffix.

### 1.2.3 Analysis

#### 1.2.3.1 Agreement exponents within the noun phrase

Agreement exponents within the noun phrase are generally prefixes (the doubtful cases of determiner and possessive being left open).

#### 1.2.3.2 Noun form marking

There are many open questions, but there is clear evidence that

- noun form marking is possible by means of prefixes;
- the bare noun stem without prefix may be used in constructions with following adjectives or numerals.

Affixless noun forms of class 1 and 5 (see Pichl 1972: 23) could be interpreted as having a zero affix, possibly a result of affix attrition.

It is not clear whether the suffixes described by Pichl (1972) serve as noun form markers. Alternative options would be an analysis as forms of the determiner  $\epsilon$  or as phrasal enclitics (as in Kisi, see below). But due to scanty data this problem is difficult to solve.

## 1.3 Sherbro

### 1.3.1 Agreement

#### 1.3.1.1 Agreement classes

AGR	Number value	PRO	ADJ/POSS	Noun affixes	Semantics
1	SG	ẁ	∅-	∅	animates
2	PL	h̀	a-	a-, si-, -si, N-, i-	animates
4	(TN), PL	th̀	thi-	thi-, -thi	
5	SG, PL	h̀	∅-	∅	
6	TN, PL	m̀	N-	N-	
9	SG, (TN)	k̀	∅-	∅	
10	SG, TN, PL	h̀	i- (optional)	i- (optional)	
11	TN, PL	l̀	li-	li-, -li	

**Table 3: Agreement classes of Sherbro with selected agreement targets and associated noun affixes<sup>5</sup>**

<sup>5</sup> Class names and subject pronouns: Pichl 1964: VI; class 10 added to Pichl's chart using data from Rogers (1967: 81 and 115), class number 10 in analogy to Krim class 10 (see Pichl 1972: 23); pronouns and agreement with ADJ/POSS: see Rogers 1967: 78, 81, 84, 102, 104, 108, 111, 115-117; optionality of prefix *i-*: see Rogers 1967: 96; semantics: data from Pichl (1964), only classes 1 and 2 considered; number values: MS, using data from Pichl (1964)

### 1.3.1.2 Agreement targets and exponents

- Adjectives: prefixes
- Numerals: prefixes
- Possessives: prefixes
- Pronoun (Rogers 1967: 84, 96)

The list is not exhaustive, Rogers does not cover all parts of the grammar. The agreement classes 1, 5 and 7 are only distinguished with pronouns, within the noun phrase they are marked with zero.

- (24) Noun with possessive and attributive adjective:

n-thók má-mi n-víl-dè  
 N-tree 6-POSS.1SG 6-tall-DET  
 ‘my tall trees’ (Rogers 1967: 97)

- (25) Noun with numeral:

í-wáa í-tíj  
 I-oil.palm.tree 10-two  
 ‘two oil palm trees’ (Rogers 1967: 96)

### 1.3.1.3 Animate agreement

Animate agreement is only implicitly dealt with by Rogers (1967: 78). One can conclude from his grammatical information that nouns of the plural noun form classes N, I and SI trigger class-2-agreement.

- (26) n-dànbáj à-kélèŋ à-hìl-lé  
 N-man 2-good 2-four-DET  
 ‘the four good men’ (Rogers 1967: 116)

- (27) ì-lá à-mí-è hǎ à-bòm  
 I-lice 2-POSS.1SG 2.PRO 2-big  
 ‘My lice are big.’ (Rogers 1967: 115)

- (28) véé sà-híl-lè  
 bird SI:2-flying-DET  
 ‘the flying birds’ (Rogers 1967: 112)
-

It appears that animates always trigger class-2-agreement in the plural. There is no special plural agreement class with an exponent *si* as it is the case in Mani and Krim (see 1.2.1.3). In (28) the marker *sa-* is interpreted to be a contraction of a noun form marker *si* and an agreement prefix *a-*, see (34).

### 1.3.2 Noun form marking

- Both prefixes and suffixes are used (Rogers 1967).
- Nouns of the SG agreement classes 1, 5, 7 have no affix (Rogers 1967: 102).

(29)  $\emptyset$ -ná     $\emptyset$ -mí            ẁ             $\emptyset$ -bòm  
 Ø-cow 1-POSS.1SG 1.PRO 1-big  
 ‘My cow is big.’ (Rogers 1967: 115)

(30)  $\emptyset$ -s̀k-é  
 1-chicken-DET  
 ‘the chicken’ (Rogers 1967: 144)

- Nouns of the PL agreement class 6 have a prefix N-, see (26).
- The exponent of noun form class I is always a prefix *i-*. This prefix is optional and may be replaced by zero (see Rogers 1967: 96, 102), see (27).
- Reinterpreting Rogers’ information, the following can be said about the noun form class exponents LI (SG) and THI, SI (PL) (Rogers 1967: 102, 104):
  - LI, THI, SI may be realized as noun prefixes *li-*, *thi-*, *si-* on nouns without modifiers.
  - Nouns of the noun form class LI and THI have no prefix, if they are followed by a modifier (Rogers’ [1967: 102, 104] offers a different analysis).
  - Nouns of noun form class SI (semantically animals) show instead of a prefix a suffix *-si*, if they are followed by a modifier. This modifier takes the animate agreement prefix *a-* (Rogers 1967: 102, 104).

(31) rái    thì-t̀nt̀n-dé  
 book THI-small-DET  
 ‘the small books’ (Rogers 1967: 97)

(32) rái thó  
 book THI:PROX.DEM  
 ‘these books’ (Rogers 1967: 125)

- (33) véé sà-híl-lè (= 28)  
bird SI:2-flying-DET  
'the flying birds' (Rogers 1967: 112)
- (34) ná-sí à-bòm-dé  
cow-SI 2-big-DET  
'the big cows' (Rogers 1967: 96)
- (35) ná-sò  
cow-SI:PROX.DEM  
'these cows' (Rogers 1967: 125)
- (36) sòk-sé  
chicken-SI:DET  
'the chickens' (Rogers 1967: 140)

- At least one noun, the noun 'knife' (root *kén*), has a weird noun form marking (see Rogers 1967: 102, 104):

- (37) SG without modifier  
li-kən  
LI-knife  
'knife' (Pichl 1964: 54)
- (38) SG with proximal demonstrative  
kén-dò  
knife-LI:PROX.DEM  
'this knife' (Rogers 1967: 125)
- (39) SG with modifier  
kén-dì mí-è lè lè-bòm  
knife-11 POSS.1SG-DET 11.PRO 11-big  
'My knife is big.' (Rogers 1967: 115)
- (40) η-kén-dì mà-mí-è mà m-bòm  
N-knife-LI 6-POSS.1SG-DET 6.PRO 6-big  
'My knives are big.' (Rogers 1967: 115)

### 1.3.3 Analysis

#### 1.3.3.1 Agreement exponents within the noun phrase

- Modifiers within the noun phrase are marked by prefixes.
- It seems that animate referents have semantic agreement in class 2.

#### 1.3.3.2 Noun form marking

- In most cases, noun forms are marked by prefixes.
- Nouns of noun form classes LI, SI, THI have no prefix when they are followed by modifiers.
  - According to Rogers (1967), the exponents of these noun form classes are suffixed to the noun in this case.
  - It is obvious, that these suffixes originate in the agreement marker of the following modifier.
  - The plural affix *thi* and the singular affix *li* of the noun (see (31), (32), (39)) can still be interpreted as agreement exponents synchronically.
  - The plural suffix *-si* (see (33)-(36)) probably originates in an agreement marker of the following modifier, too, which is still the synchronic situation in Mani and Krim. The animate agreement with an exponent *a-* (agreement class 2) is obviously an innovative development.

The interpretation of the suffix *-si* is problematic. In the glosses above, it is marked as a noun form marker (grammaticalized from a former agreement marker). But likewise, the combination of *si* and *a* (contracted to *sa* in (33)) could be analyzed as an innovative agreement marker.

- Example (40) presents an odd situation:

In the PL noun form *ŋ-kén-dì*, the SG morpheme *-dì* is retained. The plural noun form is marked by a Prefix *ŋ-*, the following modifiers have the nasal prefix of the plural agreement class 6, corresponding to the noun prefix. It is possible that *-dì* originates in a former SG agreement exponent which has successively grammaticalized as a noun form marker. Alternatively, one could assume that the combination of *-dì* and following nasal agreement marker is reinterpreted as a new agreement exponent (i.e. the exponent of an innovative agreement class). The following constructions with the emphatic possessive pronoun give a small hint at the latter analysis. In (42) the emphatic possessive pronoun is connected with both *li* and *ma*, which could be interpreted as a compound agreement marker.

- (41) *hà-thì-nò*                      *kìl-thé*  
 EMPH-4-POSS.2PL    house-THI:DET  
 ‘your own houses’ (Rogers 1967: 117)



- (42) hǎ-lì-mà-mò                      ŋ-kén-dé  
 EMPH-11-6-POSS.2SG    N-knife-LI:DET  
 ‘your own knives’ (Rogers 1967: 120)

## 1.4 Kisi

### 1.4.1 Noun class exponents and agreement classes

#### 1.4.1.1 Noun class exponents

- Phrasal enclitics
- Class suffixes indicating agreement of a following modifier
- Agreement prefixes on numerals and predicative adjectives
- Noun prefixes
- Pronouns (subject and object)
- Demonstratives

Subject pronouns, class suffixes, agreement prefixes and noun prefixes have the same form, pronouns standing alone, the other elements being used as affixes (see Childs 1995).

#### 1.4.1.2 Agreement classes

AGR	Number values	Phrasal enclitic	SBJ PRO	Demonstratives		Numerals		Semantics
				PROX	DIST	two	three	
1	SG	= ó	ò	hóò	kón			all animates, some inanimates
2	PL	= á	à	háà	káj	ŋìóóŋ	yàá	animates
3	SG	= léŋ	lè	lêŋ	léŋ			inanimates
4	PL	= láŋ	là	lâŋ	láŋ	tìóóŋ	yàá	inanimates
5	SG, PL	= é	ì	héì	kéŋ	ŋìíŋ	yàá	collective plants
6	PL	= óŋ	ŋ	môŋ	móŋ	mùúŋ	ŋgàá	collective grains, etc.
7	PL	= áŋ	mà	mâŋ	máŋ	mìóóŋ	yàá	liquids

**Table 4: Agreement classes and selected noun class exponents in Kisi**

(data from Childs [1995: 107, 110, 113, 148], with modifications; class numbering MS; number values see Driemel [2011, based on data from Childs 2000], transnumerality not considered; semantics: see Childs 1995: 107, 148)

- From the phrasal enclitics used in the citation form all other noun class exponents can be predicted: deriflectional noun prefixes and all agreement markers (see Childs 1995).
- Childs (1995) does not mention cases of semantic agreement, but all animates have gender 1/2 agreement (see Table 4).

### 1.4.2 Structure of the noun phrase

Construction types

1) Constructions with phrasal enclitics:

- |                                                                                                     |                                                                |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| a) N = CL.ENCL                                                                                      | Simple noun phrase                                             |
| b) N-CL.SUFF (MOD-CL.SUFF) MOD = CL.ENCL                                                            | Construction with adjectives, possessives and relative clauses |
| c) N <sub>1</sub> -CL.SUFF <sub>1</sub> CL.PREF <sub>2</sub> -N <sub>2</sub> = CL.ENCL <sub>1</sub> | Associative construction                                       |
| d) N(-CL.SUFF MOD) = CL.ENCL PROX.DEM                                                               | Construction with proximal demonstrative                       |

2) Construction with distal demonstrative:

N-CL.SUFF DIST.DEM

3) Construction with numeral/quantifier:

N( = CL.ENCL) AGR.PREF-NUM

4) Construction with predicative adjective:

NP COP AGR.PREF-ADJ

5) Use of noun prefixes in certain environments:

CL.PREF-N

#### 1.4.2.1 Constructions with phrasal enclitics

##### a) Simple noun phrases

N = CL.ENCL (see Childs 1995: 150)

- Noun stem is followed by class-specific phrasal enclitic.
- Often morphophonological interactions between stem and enclitic (see Childs 1995: 80-88, 150-158)

- (43) mènɲ + áɲ (cl. 7) → mènɲ = ndáɲ ‘water’ (Childs 1995: 151)  
 mèè + áɲ (cl. 7) → mèè = yáɲ ‘milk’ (Childs 1995: 152)  
 làndù + (ó)ɲ (cl. 6) → làndóɲ ‘pawns’ (Childs 1995: 154)  
 siàù + léɲ (cl. 3) → siàù = léɲ ‘orange’ (Childs 1995: 155)

### b) Construction with adjectives, possessives and relative clauses

N-CL.SUFF (MOD-CL.SUFF) MOD = CL.ENCL

- Modifiers: adjectives, possessives or relative clause (see Childs 1995: 106, 150, 285ff.)
- Element which marks agreement of a modifier with its head noun is suffixed to the previous word (head noun or previous modifier); Childs’ analysis of this suffix as a suffixed pronoun is not followed here
- Class-specific phrasal clitic appears at the end of the construction (after the last modifier)

(44) Noun + adjective (class 4)

lèèn-là yùwéí = láɲ  
 cutlass-4 old = 4.ENCL  
 ‘old cutlasses’ (Childs 1995: 150)

(45) Noun + possessive (class 3)

ì címíá h̀l-lè nì = léɲ  
 I rub eye-3 POSS.1SG = 3.ENCL  
 ‘I rubbed my eye’ (Childs 1995: 106)

(46) Noun + relative clause (class 4):

kàmbéí-lá [s̀sùù = wá cò lènɲɲ] = láɲ  
 hamper-4 [fish = 2.ENCL COP inside] = 4.ENCL  
 ‘the baskets that the fish are inside’ (Childs 1995: 286)

(47) Noun with 2 modifiers (possessive and adjective):

nàù-ø ní-ø béndô  
 cow-1 POSS.1SG-1 big:1.ENCL  
 ‘my big cow’ (Heydorn 1969/70: 205)

(48) Presence and position of the zero markers in (c) can be concluded from the plural version:

nàwá ní-à bëndóà  
 cow:2 POSS.1SG-2 big:2.ENCL  
 ‘my big cows’ (Heydorn 1969/70: 205)

### c) Associative construction

$N_1$ -CL.SUFF<sub>1</sub> CL.PREF<sub>2</sub>-N<sub>2</sub>=CL.ENCL<sub>1</sub> (see Childs 1995: 209)

- Head noun takes noun suffix of its own agreement class
- Modifying noun takes deriflectional noun prefix
- Phrasal enclitic (class of the head noun) follows the whole construction

(49) kèlèí lànièí

kèlà-í là-nì = é

ring-5 4-ear = 5.ENCL

'earring' (Childs 1995: 209)

### d) Construction with proximal demonstrative

$N$  = CL.ENCL PROX.DEM

- Head noun takes phrasal enclitic, class-specific proximal demonstrative follows (see Childs 1995: 110)
- l-initial demonstratives undergo nasal spreading

(50) Class 3:

lééŋ = ndéŋ	lêŋ	→	lééŋ = ndéŋ	ndêŋ
cutlass = 3.ENCL	3.PROX.DEM		cutlass = 3.ENCL	3.PROX.DEM
				'this cutlass'

Class 4:

lééŋ = ndáŋ	lâŋ	→	lééŋ = ndáŋ	ndâŋ
cutlass = 4.ENCL	4.PROX.DEM		cutlass = 4.ENCL	4.PROX.DEM
				'these cutlasses' (Childs 1995: 110)

#### 1.4.2.2 Construction with distal demonstrative

$N$ -CL.SUFF DIST.DEM

- Head noun takes class-specific suffix, distal demonstrative follows (see Childs 1995: 110-111); the distal demonstratives have class-specific forms, too, which leads to double agreement.

(51) Class 1:

sò-ò kóŋ  
fowl-1.PRO 1.DIST.DEM  
'that fowl'

Class 3:

pèl-lè léŋ  
egg-3.PRO 3.DIST.DEM  
'that egg' (Childs 1995: 111)

### 1.4.2.3 Construction with numeral/quantity word

N(=CL.ENCL) AGR.PREF-NUM

- Noun stem is optionally followed by phrasal enclitic
  - Numeral/quantity word follows head noun and takes agreement prefix
  - Numeral stems additionally show class-specific forms (with some syncretism, see Table 4).
- So, there is a kind of double agreement of numerals.

(Childs 1995: 113)

(52) Class 4:		Class 4:
sálà = lán	là-tìóóŋ	cú      là-tíŋ
sacrifice = 4.ENCL	4-two	spoon    4-some
'two sacrifices'		'some spoons' (Childs 1995: 113)

### 1.4.2.4 Construction with predicative adjective

A predicative adjective takes an agreement prefix (see Childs 1995: 251).

(53) dómàá	cò	ò-hùmbù	fófó
shirt:1.ENCL?	COP	1-white	IDEO
'the shirt is bright white' (Childs 1995: 251)			

### 1.4.2.5 Deriflectional noun prefixes

Environments in which deriflectional noun prefixes (called class pronouns by Childs, this analysis is not followed here) are prefixed to noun stems, while there is no suffix (Childs 1995: 159):

- 1) Negated constructions
- 2) Comparative constructions
- 3) Some adpositional constructions
- 4) Some questions
- 5) Exclamations
- 6) Indefinite pronouns and time words
- 7) Non-finite verb forms

Childs (1995: 159): the environments are in “decreasingly obligatory order”, e.g. prefixing is obligatory in negative constructions, while “only a few non-finite verb forms [...] appear with a prefixed pronoun”.

In addition to the environments mentioned by Childs, a possessor noun in an associative construction takes a noun prefix (see 1.4.2.1 c)).

## (54) Negative construction (class 3)

(a) citation form with suffix (class 3)

cà = léŋ

pumpkin = 3.ENCL

'pumpkin'

(Childs 1995: 159)

(b) Prefixed form in a negative construction

ò      có      lé-cá      lé

1.PRO    COP    LE-pumpkin    NEG

'It's not a pumpkin.'

(55) Comparative construction: obligatory prefixed form after comparative *màà*

Class 7:

ò    tìŋì    màà    mà-jùm

he   black   as    MA-night

'he is black as night' (Childs 1995: 160)

## (56) Prefixing in emphatic statements

(a) Non-emphatic statement

mbó            tùl    yá    yè = léŋ

CONJ:1.PRO   bear   me   hate = 3.ENCL

'She hated me'

(Childs 1995: 160)

(b) Emphatic statement

mbó            tùl    yá    lè-yè

CONJ:1.PRO   bear   me   LE-hate

'She really hated me.'

**1.4.3 Analysis****1.4.3.1 Phrasal enclitics**

- once in a noun phrase

- follow noun stems (citation form) or certain modifiers

- do not cooccur with

- deriflectional noun prefixes

- distal demonstratives

- Since they mark the whole noun phrase, it is difficult to determine whether they are part of the deriflection or the agreement system.

- With nouns in citation form they could be considered as noun form markers.

- In noun phrases with modifiers, their status is more difficult to determine:

Are they "displaced" noun form markers or do they indicate agreement of the preceding modifier with its head noun?

- The mutual exclusivity with the distal demonstrative and their formal similarity to demonstratives (see Childs 1995: 110) points out to a possible demonstrative origin of the phrasal enclitics.
- Childs (1995) does not mention definiteness markers for Kisi. So, an interpretation of the phrasal enclitics as definite articles showing agreement is not possible.

#### **1.4.3.2 Deriflectional noun prefixes**

- The noun prefixes are inseparable from the noun stem and have no other function than noun form marking as gender-number portmanteau morphemes, so they are clearly deriflectional elements.

#### **1.4.3.3 Agreement affixes**

- These affixes are called “class pronouns” by Childs (1995).
- Indeed, they are formally identical with the subject pronouns, but an analysis as pronouns is not compatible with their function as agreement markers affixed on agreeing elements.

##### **a) Agreement prefixes**

- Mark agreement of numerals/quantifiers with their head noun and of predicative adjectives with the subject
- Clearly prefixes because they are always followed by the agreeing element and can be separated from the governing noun by intervening material

##### **b) Agreement suffixes**

- In the examples analyzed so far, agreement morphemes with adjectives, possessives, relative clauses and the dependent noun in an associative construction are in direct contact both with the preceding head noun and the following modifier.
- So, at first glance, it is unclear whether they should be analyzed as prefixes, suffixes or even detached agreement morphemes.
- They are formally identical with the agreement prefixes, but undergo morphophonological changes in contact with the preceding head noun (seen in many examples given by Childs [1995]).
- As they form a phonological word together with the head noun, an analysis as agreement morphemes suffixed to the head noun is plausible.
- In constructions with distal demonstratives this analysis bears the complication, that the distal demonstrative itself already has a class-specific form. So, the additional presence of agreement suffixes between head noun and demonstrative would be double agreement marking (as with numerals).

## 2 Proto-Bullom and Proto-Southern-Mel

### 2.1 Proto-Bullom

- Mani has the most conservative system of the Bullom languages considered:
  - agreement prefixes on noun modifiers;
  - noun prefixes;
  - nouns with noun form markers *di-*, *li-*, *si-*: absence of noun prefixes in noun phrases with modifiers
  - noun form marker *u-* and associated agreement marker *u-*: often zero prefix (distribution of *u-* and  $\emptyset$ - not clear)
- The Krim data are scarce, but the system seems to be very similar to Mani; the status of the “suffixes” described by Pichl (1972) remains unclear.
- The system of Sherbro is basically similar to its Bullom relatives:
  - agreement prefixes on noun modifiers;
  - prefixed markers for most noun form classes;
  - noun form classes DI, LI, SI: no prefix in noun phrases with modifiers;
  - zero markers for 3 agreement classes and their associated noun form class, among them agreement class 1
- Sherbro is innovative in the following aspects:
  - Agreement prefixes of modifiers following the head noun have been reinterpreted as suffixes of the prefixless head noun of the noun form class DI, LI and SI
  - This can be seen in cases of animate agreement with SI noun forms: as an innovation, the agreement prefix *a-* of class 2 intervenes between the suffixed older *si* marker and the following modifier, cf. also ex. (40) with the odd form  $\eta$ -*kén-dì*. In the case of animate agreement, the *si* suffix could have become a noun form marker (grammaticalization from a former agreement marker) or it could be analyzed in combination with the following *a-* as a new agreement marker *-si a-* or *sa-*.
- The Proto-Bullom system was most probably much like the Mani system. Animate agreement was present within the noun phrase only.

### 2.2 Proto-Southern-Mel

- The phrasal enclitic seems to be an innovation which sets Kisi apart from the related Bullom languages.
- In Kisi, nouns never have prefixes, except in restricted environments.
- The prefixless noun forms could have been conditioned by following modifiers, as it is the case in Bullom.



- As the phrasal enclitic probably has evolved from a demonstrative, diachronically, the head nouns in noun phrases with this prefix always are followed by at least one modifier; that is why nouns in citation form have the phrasal enclitic, but no prefix.

- In Kisi, it appears that former agreement prefixes of the modifier following the head noun became suffixes of the head noun, due to morphophonological interactions. But functionally, they are still agreement markers.

If one compares Kisi with the probable Proto-Bullom system, it becomes clear, that a reconstructed Proto-Southern-Mel system should have

- agreement prefixes on modifiers;
- prefixes as noun form markers in noun phrases without modifiers;
- an absence of noun prefixes in noun phrases with modifiers.

It is not clear, whether noun prefixes in noun phrases with modifiers were absent with nouns of certain noun form classes only (presumably \*LI, \*SI, \*THI) as in Bullom, or whether they were absent with nouns of all noun form classes. In the latter case, prefix marking would have become obligatory in Proto-Bullom in all cases except for nouns of the above-mentioned noun form classes. This obligatory marking would be an innovation diagnostic for Bullom as a subgroup of Southern Mel.

In Kisi, animates have gender 1/2, so there is no semantic agreement. But the final affiliation of all animates with this gender could have been the result of a former system with animate agreement, so that a number of animals could have originally been members of other deriflection classes. So, it remains open until further reconstruction whether the system of Proto-Southern-Mel had animate agreement within the noun phrase or whether this animate agreement is an innovation of Proto-Bullom.

### 3 Conclusion

In Southern Mel one can observe the development of exclusively prefixing gender and deriflection systems (with the absence of noun prefixes in certain contexts) towards a system where both prefixing and suffixing are present.

In this regard, two grammaticalization paths are at work in Southern Mel:

1) A morphosyntactic reanalysis of noun phrases with a prefixless head noun and following modifiers:

Noun AGR-modifier → noun-AGR modifier

This grammaticalization path has already been described by Hoffmann (1967: 252-254), using the example of the Kainji (> Benue-Congo) language Dakarkari.

In Kisi, the new status of a former agreement prefix as a suffix has been cemented by morphophonological interaction between the stem of the head noun and the following agreement morpheme, both becoming a phonological word (Güldemann p. c.).

In Sherbro, the new status as a suffix becomes clear in cases, where the older agreement morpheme is followed by an innovative animate agreement prefix on the modifier. This new suffix can synchronically either be interpreted as a noun form marker or – in combination with the following new agreement prefix – as an innovative agreement marker with a new agreement class having been born.

The absence of noun prefixes in noun phrases with modifiers is described for other Niger-Congo languages, too, e.g. for the Grassfields language Aghem (Benue-Congo > Bantoid) (see Hyman 1979: 27-28). This absence of a noun prefix need not necessarily be a “prefix deletion”, as interpreted by Hyman (Güldemann p. c.). If one considers the possibility that Niger-Congo noun class exponents have developed from classifiers (cf. Kießling 2013), it could equally have been the case that the prefix has never been present in noun phrases with modifiers diachronically, the noun class having being marked on the modifiers only.

2) The development of a suffixed or enclitic class marker from a class-specific demonstrative or determiner.

Greenberg (1977) describes this grammaticalization path (development from a free article via an affixed article to a class marker).

N CL.DEM/CL.DET → N-CL.SUFF or

N (MOD) CL.DEM/CL.DET → N (MOD) = CL.ENCL

The second mechanism can be assumed for the development of the phrasal enclitics in Kisi. A possible explanation for the absence of a noun prefix whenever the enclitic is present is, that diachronically the original demonstrative/determiner triggered the prefixless noun form.

Childs (1983) gives a different account on the diachronic development of the phrasal enclitics (called “suffixes” by him):

“In Kisi the process is clear. Kisi nouns (with their suffixes) are almost always followed by their class pronouns when in subject position, and Kisi pronouns are close in form to the suffixes of the nouns with which they agree. If we can assume that animate nouns are most of subjects of Kisi sentences, this might explain why animate nouns are the first to develop suffixes.” (Childs 1983: 27)

## Abbreviations

1, 2, 2a, 6...	agreement class numbers	ENCL	phrasal enclitic
1SG, 1PL...	1 <sup>st</sup> person singular, ...	IDEO	ideophone
A, SI, N, I...	noun form classes	MOD	modifier
ADJ	adjective	N	noun
AGR	agreement (class)	NEG	negative particle
AGR.PREF	agreement prefix	NEG.HAB	negative habitual
cl.	class	NP	noun phrase
CL.DEM	class-specific demonstrative	NUM	numeral
CL.DET	class-specific determiner	PL	plural
CL.ENCL	class-specific phrasal enclitic	POSS	possessive
CL.PREF	class-specific prefix	PRO	pronoun
CL.SUFF	class-specific suffix	PROX	proximal
CONJ	conjunction	PROX.DEM	proximal demonstrative
COP	copula	SBJ PRO	subject pronoun
DET	determiner	SG	singular
DIST	distal	SUFF	suffix
DIST.DEM	distal demonstrative	TN	transnumeral

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