Chapter 10

Tense and aspect marking in Bantu languages of the Morogoro region, Tanzania

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A review of the verbal morphology of several Bantu languages of the Morogoro region, Tanzania, reveals surprising diversity in both their distribution and meaning. Bantu languages are renowned for their rich verbal morphology, including remoteness distinctions in the tenses. However, some Bantu languages of the region have essentially only two tenses (past and non-past), limited aspectual distinctions, and some have no negative tense/aspect markers. This chapter summarises our current knowledge of the tense/aspect systems of five Bantu languages of the Morogoro region: Kagulu (G12), Luguru (G35), Kami (G36), Ndamba (G52) and Pogoro (G51). In particular, the chapter reviews the distribution and meaning of these morphological distinctions, the abundance versus scarcity of specific tense/aspect markers, and the methods of expressing negation.

1 Introduction

1.1 Background

This chapter provides an analysis of the tense/aspect systems of five selected Bantu languages of the Morogoro region, Tanzania. The Morogoro region spreads from the area north of Morogoro town to the southern part of the Kilombero valley. Tanzania has about 100 Bantu languages (Maho & Sands 2002), most of them being poorly documented. Of the 100 Bantu languages spoken in Tanzania, 10 are spoken mainly in the Morogoro region:

- Kagulu (G12)

- Ngulu (G34)

- Luguru (G35)

- Kami (G36)

- Kutu (G37)

- Vidunda (G38)

- Pogoro (G51)

- Ndamba (G52)

- Sagala (G61)

- Mbunga (P15)

In addition, other languages which are spoken primarily in neighbouring regions but which have a significant presence in Morogoro region include:

- Zigula (G31)

- Kwere (G32)

- Zaramo (G33)

- Hehe (G62)

- Bena (G63)

- Ngoni (N12)

- Ngindo (P14)

Additionally, Swahili (G42) is spoken all over the country, and all consultants in this study are bilingual in Swahili.

Bantu languages are known for their rich verbal morphology, including elaborate sets of tense/aspect markers. The five chosen languages, although fairly closely related, show variation not only in the number of markers but also in their function. We will describe and analyse the tense/aspect marking in these languages based on models of Bantu verbal morphology, including tense/aspect,

by Meeussen (1967) and Guthrie (1967–1971). More recently, Nurse (2008) and Nurse & Devos (2019) present a review of tense/aspect data for 100 Bantu languages from across the entire Bantu language area, providing an analysis of the main patterns found and some proposals for their diachronic evolution, which we will also refer to.

The context and rationale for the present study was that both authors had been studying Bantu languages in different parts of the Morogoro region, and they decided to attempt to synthesise their results in one significant area of Bantu grammar: tense/aspect. The expectation was that, given their close proximity, the tense/aspect systems of the selected languages would show some similarities. In fact, they show a surprising amount of diversity.

1.2 The languages selected for the study

The five languages analysed in this study were selected on the basis that they are distributed across the region and that they might therefore be expected to expose variation in structures found throughout the region. The approximate locations of the five selected languages, Kagulu (G12), Luguru (G35), Kami (G36), Ndamba (G52) and Pogoro (G51), are shown in Figure 1.

In this chapter, all data in the examples are derived from the authors' fieldwork unless otherwise stated.

Kagulu (G12) is a Bantu language spoken in and around the Kagulu or *Itumba* mountains in the north-west of the region. The language is estimated to have between 240,000 (Petzell 2008) and 336,000 speakers (LOT 2009). Some speakers use the autonym *Chimegi* to refer to their language, while others prefer *Chikagulu,* since *Megi* is a derogatory term used by Maasai speakers, meaning 'non-Maasai' (Mol 1996: 251). The most prestigious Kagulu dialect stems from the mountains and is referred to as (*Chi*)*Tumba.* Data are sourced from Petzell (2008), supplemented from the authors' more recent fieldwork (2009–2020).

Luguru (G35) is a Bantu language spoken in the Luguru mountains south of Morogoro town. It is reported to have 400,000 speakers (LOT 2009) and it is a dominant language in the region. Data are sourced from Mkude (1974) and Petzell (2020), supplemented from the authors' fieldwork.

Mkude (1974) identifies two dialects of Luguru (highland and lowland), which are not well documented. An MA thesis (Moses 2018) questions this division and reaches the conclusion that there are indeed different dialects of Luguru, but that the division between highland and lowland is not clear (Moses 2018: 66). The dialects, which are mutually intelligible, are somewhat different in phonology and lexicon (Moses 2018).
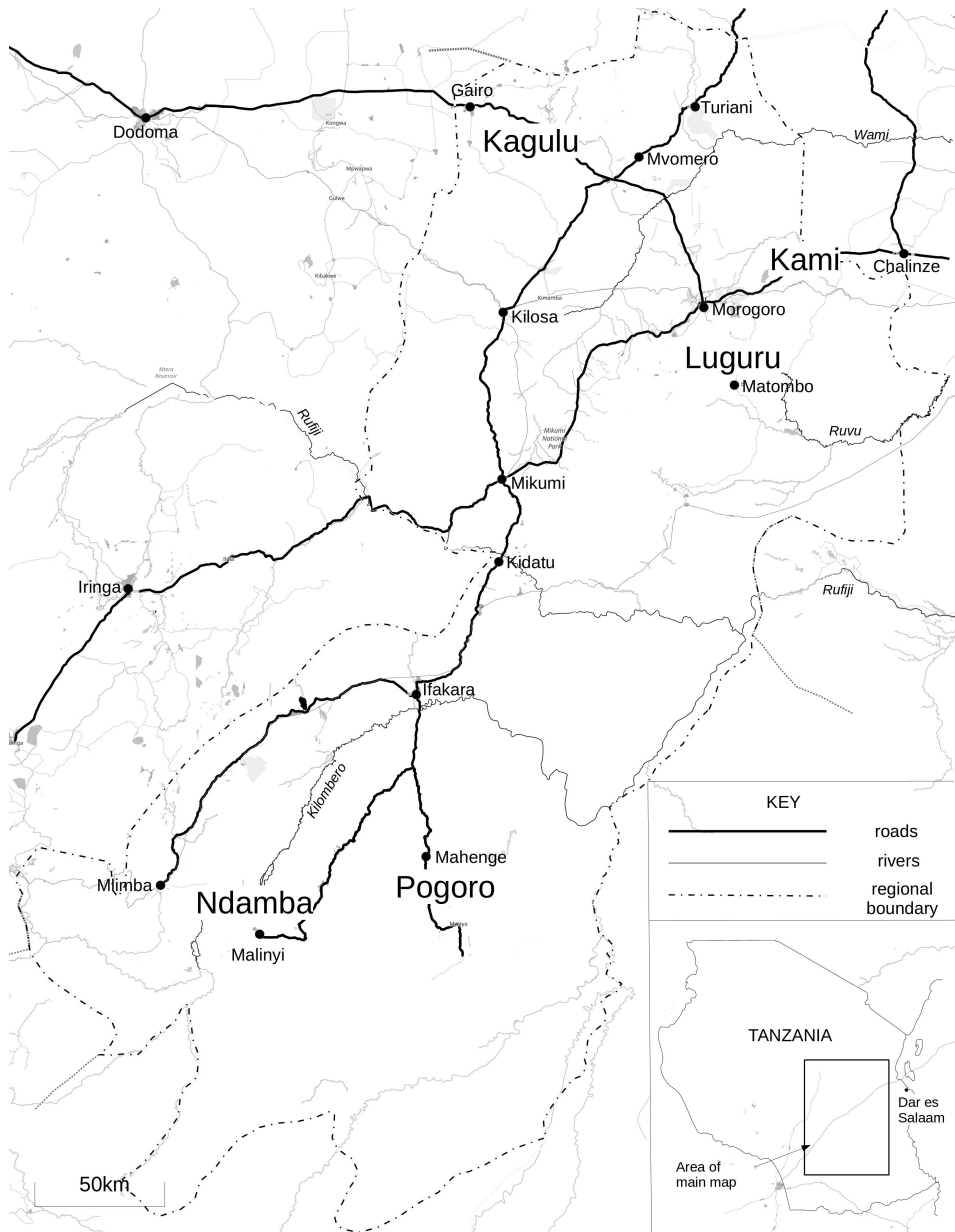
Figure 1: Languages of the study. Data sourced from © open-streetmap.org

Kami (G36) is a highly endangered Bantu language spoken around Mikese, east of Morogoro town. It is reported to have only 5000 speakers (LOT 2009). This figure refers to the number of persons who consider themselves to be Kami speakers, but it does not say anything about the competence of those speakers. There are significantly fewer than 5000 fluent speakers left, which was corroborated during field trips in the area. The youngest consultant we found was in his thirties, and he could understand but not speak Kami, which indicates that the language is not being transmitted to the next generation. Data are sourced from Petzell & Aunio (2019), supplemented by the authors' fieldwork.

Pogoro (G51) is a Bantu language spoken in the Pogoro Mountains in the southeast of the region. It is estimated to have 200,000 speakers (LOT 2009). Data are sourced from Hendle (1907), supplemented from the authors' fieldwork. Given the age of Hendle's work, his main conclusions about morphosyntax seem to correlate remarkably well with data collected recently, over 100 years later. Less clear is the current validity of the translation of many of the words in the word list, but this may be as much to do with the evolution of their semantics in their German translations as in the original Pogoro.

Ndamba (G52) is a Bantu language spoken in the Kilombero Valley in the south-west of the region. It is estimated to have between 55,000 (Lewis 2009) and 196,000 speakers (LOT 2009). Data are sourced from Edelsten & Lijongwa (2010), supplemented from the authors' fieldwork.

The variant of Ndamba documented by Novotná (2005) shows some differences from that documented by Edelsten & Lijongwa (2010). In particular, Novotna describes phonological features such as verb final -*i* and the loss of inflectional future tenses. These differences may show an influence from Pogoro, which may have contributed to Ndamba and Pogoro being grouped together by Guthrie (1948) as the G50 group of languages, and to the comment by Nurse (2008: Appendix 1, p. 177) that "G51 and G52 are quite similar".

Edelsten & Lijongwa's (2010) data, however, point towards Ndamba being somewhat more distinct from Pogoro, with complex verbal tense/aspect morphology, as discussed in §3.5, more reminiscent of neighbouring G60 languages such as Bena (Morrison 2011) and Hehe (Nurse 2008: Appendix 1, pp. 178–180).

1.3 Structure of the chapter

Following this introductory section, §2 discusses the verbal template used for the analysis, and how tense/aspect and related morphemes fit into the template in the selected languages. The objective is to provide a consistent basis for comparing the morphological structure of verbs in the languages of the study, while at

the same time reviewing whether the generally accepted template proposed by Meeussen (1967), as amended by Nurse (2008), is consistent with our template.

This is followed in §3 with a discussion of tense/aspect in Bantu languages in general, followed by subsections for each of the five selected languages.

§4 discusses related verbal categories in the selected languages, including imperative, subjunctive, conditional, habitual and negative, followed by a final section which draws conclusions from the analysis and provides suggestions for further research.

2 The verbal template

Bantu languages are often analysed as using morphological verbal templates, into which various affixes fit (Meeussen 1967, Nurse 2008). One of the reasons for using a template is to show how the affixes concatenate, since the order of affixes is typically strict. The ordering of syntactic elements, on the other hand, is typically much less restricted.

The exact specification of the template slots varies across Bantu languages, but the five selected languages show some uniformity. To compare the verbal morphology of the five selected languages, the template shown in Table 1, based on Meeussen (1967: 108–111), is used in this chapter.

Table 1: The verbal template

Template slot	Abbreviated to
Pre-subject marker	PRE.SM
Subject marker	SM
Post-subject marker	POST.SM
First tense/aspect marker	TA1
Object marker	OM
Verb root	ROOT
Extensions	EXT
Second tense/aspect marker	TA2
Passive suffix	PASS
Final vowel	FV
Post-final marker	POST.FM

Meeussen distinguishes two tense/aspect slots, "formative" and "limitive", occurring before the object marker slot, but in Table 1, we have combined them in slot 4, as does Nurse (2008: 40).

Nurse (2008: 40) also combines TA2 with FV, such that FV then assumes a complex multi-morpheme role. For clarity, we have kept these slots separate. This is discussed further in §2.10.

(1) shows the use of the verbal template slots with data from Ndamba.[1]

(1)   Ndembo a-ka-mu-somol-el-ile ngwena lwimbo.   (Ndamba)
       'The elephant sang the crocodile a song.'

from which *a-ka-mu-somol-el-ile* may be analysed as:

(2)   morphemes: a-   ka-   mu-   somol- el-   ile
       slots: SM-   TA1- OM-   ROOT- EXT- TA2
       gloss: SM1- PST- OM1- SING- APPL- PFV
       's/he sang him/her a song'

Table 2 compares how the template slots are used in the five selected languages. Details and examples of how each of the slots is used are described in subsequent sections. The table shows that the way these slots are used is more varied than expected, given the proximity of the selected languages; this is discussed further in §3 and §4.

The following sections discuss how the template slots are used in the five selected languages.

2.1 Slot 1: Pre-subject marker (PRE.SM)

This slot is used for various pre-verbal affixes, the most common being the conditional/temporal marker (all five languages), the negative affix (four out of five languages) and the relative object marker (three out of five languages). Use of this slot for the two latter affixes is posited by Meeussen (1967: 108) for Proto-Bantu. Furthermore, Nurse (2008: 32) points out that negative and relative object markers are the affixes most commonly marked in this slot.

The negative markers found in this slot are discussed in §4.6.

Kagulu, Luguru and Pogoro all use a relative morpheme in this slot. Kagulu uses a relative morpheme based on -*o*-, which agrees with the noun class of the relativised object, as shown in examples (3), (4) and (5).

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[1]Most Bantu languages are tonal (Marlo & Odden 2019). However, none of the languages selected for the study employs grammatical or lexical tone, and none of the examples in this chapter are therefore marked for tone.

Table 2: Use of template slots in the five selected languages

Slot	Kagulu	Kami	Luguru	Ndamba	Pogoro
1 Pre-subject marker	relative object marker -o- temporal *fo-* negative marker 1 tense/aspect marker	negative marker temporal *fi-*	temporal *-(h)a-* relative object marker negative marker	conditional/temporal *pa-*	tense/aspect marker negative marker *na-* relative object marker temporal *pa-*
2 Subject marker	subject marker	subject marker temporal *-(h)a-*^a	subject marker	subject marker	subject marker
3 Post-subject marker	negative marker 2				
4 First tense/aspect marker (TA1)	tense/aspect marker conditional *-ngh'a-*	tense/aspect marker	tense/aspect marker	tense/aspect marker	tense/aspect marker
5 Object marker	object marker reflexive/ reciprocal *-ki-*	object marker reflexive/ reciprocal *-i-*	object marker reflexive *-i-*	object marker reflexive *-i-*	object marker reflexive *-i-*

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[a] It is impossible to be specific as to whether this morpheme is in slot 3 or slot 4 since it cannot co-occur with any TA marker.

Table 2: Use of template slots in the five selected languages (continued)

	Slot	Kagulu	Kami	Luguru	Ndamba	Pogoro
6	Verb root	verb root	verb root	verb root	verb root	verb root
7	Extensions	extensions	extensions	extensions	extensions	extensions
8	Second tense/ aspect marker (TA2)	habitual/ progressive *-ag- -ile*	habitual/ progressive *-ag- -ile*	habitual/ progressive *-ag- -ile*	habitual/ progressive *-agh-* perfective *-ile*	perfective *-iti*
9	Passive suffix	passive *-igw-*	passive *-igw-*	passive *-igw-*	*passive -w-*	
10	Final vowel (FV)	final vowel *-a* subjunctive *-e*	final vowel *-a* subjunctive *-e*	final vowel *-a* subjunctive *-e*	final vowel *-a* subjunctive *-e*	final vowel *-a* subjunctive *-e* future tense marker *-i*
11	Post-final marker	plural *-i*	plural *-ni*	plural *-ni* habitual/ progressive *-ag*	relative	

(3) Kagulu
yo-cha-mw-end-ile
REL.OM1-SM1PL.PST-OM1-love-PFV[2]
's/he who we loved'

(4) Luguru (Mkude 1974: 179)
mw-alimu, i-chi-tabu **chi**-a-mu-ing'-ile   i-mw-ana
1-teacher   AUP-7-book REL.**OM7**-SM1-OM1-give-PFV AUP-1-child
'the book which the teacher gave to the child'

(5) Pogoro
chi-gota chi-gu-kop-iti
7-chair   REL.OM7-SBJ.2SG-buy-PRF
'the chair you bought'

In Kami, there is no specific marking of object relatives, as shown in examples (6) and (7).

(6) Kami
chi-nu chi-no   wa-chi-sol-a   wa-uz-a
7-thing 7-DEM.PROX SM2-SM7-take-FV SM2-sell-FV
'This thing (which) they took, they sold.'

(7) u-mw-ele   a-kom-ile   nguku Rahma.
AUP-3-knife SM1-kill-PFV 9.   chicken NAME
'The knife with which Rahma killed the chicken.'

Ndamba also does not use slot 1 for a relative marker. Instead, it uses a post-verbal relative morpheme, as shown in example (8). This does not, however, seem to be derived from the pre-verbal relative morphemes used in other neighbouring languages like Bena and Ngoni (Morrison 2011, Ngonyani 2003).

(8) Ndamba
li-piki tu-ka-li-dumul-ile-**lyo**   li-ka-pand-il-w-e   na
5-tree SM1PL-PST-OM5-cut-PFV-REL.5 SM5-PST-plant-PFV-PASS-FV by
tati.
1a.father
'The tree which we cut down was planted by father.'

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[2]Note that -*ile* no longer functions as a perfective in Kagulu.

In Kami, slot 1 may be used for the *fi-* conditional/temporal marker, as shown in example (9). However, this is less frequent than the *(h)a-* conditional/temporal marker in slot 3/4, as shown further below in example (14). The two markers *fi-* and *(h)a-* are mutually exclusive.

(9) Kami
fi-wa-tow-ile ngoma …
COND-SM2-play-PFV 9.drum
'when they played the drum …'

In Luguru, slot 1 can contain either a conditional/temporal marker or a negation. The two cannot co-occur. Either the conditional/temporal marker is used as shown in example (10), or an adverbial is used together with the negation marker, as shown in example (11). The conditional/temporal is further discussed in §4.4.

(10) Luguru
ha-ni-gend-ile ha-tali …
COND-SM1SG-go-PFV 16-distance
'if/when I had walked a long distance …'

(11) Luguru
kama si-gend-ile …
COND NEG.SM1SG -go-PFV
'if/when I did not go …'

In Ndamba, slot 1 is used for the *pa-* conditional/temporal marker, as shown in example (12).

(12) Ndamba
pa-tu-yend-ile pa-tali …
COND-SM1PL-go-PFV 16-far
'if/when we have walked far …'

In Kagulu, the conditional/temporal marker, or the relative object marker when present, appears before negation, as shown in (13), although a concatenation of markers such as this is rare, and periphrastic constructions are preferred.

(13) Kagulu
fo-si-cha-lut-e, wa-na wa-onel-a
COND-NEG-SM1PL.PST-go-FV 2child SM2-rejoice-FV
'When we could not go, the children were happy.'

In Pogoro, several different morphemes may appear in this slot, including future tense markers, negative *na-*, the relative object marker, and conditional/temporal *pa-*, but it is unclear from the source data in what order they may co-occur.

2.2 Slot 2: Subject marker (SM)

All five selected languages require a subject marker in this slot, except for imperatives, as is normally the case in Bantu languages (Meeussen 1967: 108). Examples of imperatives with no subject marker are given in §4.1.

2.3 Slot 3: Post-subject marker (POST.SM)

In Kagulu, this slot is used for negative markers, which may appear before or after the subject marker (see §4.6). In Kami, the slot is also used for the conditional/temporal marker *(h)a-* (which can occur in slot 1 as well), as shown in example (14) and discussed further in §4.4.

(14)   Kami
       wa-**ha**-to-a   ngoma …
       SM2-COND-play-FV 9.drum
       'when they play the drum …'

2.4 Slot 4: First tense/aspect marker (TA1)

This is the principal slot for inflectional tense/aspect markers in all the selected languages.

2.5 Slot 5: Object marker (OM)

All five selected languages use this slot for an optional object marker which, in most cases, agrees with the noun class of the object. An exception is seen for animate objects in Ndamba, which take class 1/2 agreement. Limited data would suggest that Pogoro also follows a system of animate agreement similar to that of Ndamba.

The slot is also used for the reflexive marker *-i-* in Ndamba, *-ki-* in Kagulu and *-li-* in Pogoro, as shown in examples (15) to (17). In Kagulu, Kami and Luguru the reflexive marker also acts as the reciprocal marker, as shown in example (17). When the reflexive marker is used with plural subjects, there is ambiguity between the reciprocal and reflexive meaning. The forms can be disambiguated by stress, or of course by a reciprocal independent pronoun (i.e. 'each other').

(15) Ndamba, reflexive
ka-**i**-gom-ile   → ke-gom-ile
SM1.PST-REFL-hit-PFV
'S/he hit him/herself'

(16) Pogoro, reflexive
ka-**li**-kom-iti
SM1-REFL-hit-PFV
'S/he hit him/herself'

(17) Kagulu, reciprocal and reflexive
wa-nhu   wa-**ki**-end-a
2-person SM2-RECP-love-FV
'People like each other' [The stress is on the morpheme *-ki-*] or 'People like themselves' [The stress is on the verb *-enda*]

2.6 Slot 6: Verb root

The verb root appears in this slot.

2.7 Slot 7: Extensions (EXT)

In all five selected languages, this slot is used for one or more derivational morphemes. In some cases, the extensions have become unproductive and appear only in specific lexicalised verb stems. The main productive extensions which appear in the selected languages are the applicative (*-il-* or *-el-*), causative (*-iz-*, *-is-*, *-ez-* or *-es-*), stative (*-ik-* or *-ek-*) and associative (*-an-*) extensions. A more complete description of verbal extensions is outside the scope of this chapter. A useful summary of Bantu verbal extensions may be found in Schadeberg & Bostoen (2019).

(18) to (21) illustrate the main productive extensions in the selected languages.

(18) Kagulu, applicative
ya-ku-chi-golos-**el**-a
SM1-PRS-OM1PL-do-APPL-FV
's/he is working for us'

(19) Kami, causative
Ni-mw-ang'-**iz**-a   ma-zi   m-bwanga.
SM1SG-OM1-drink-CAUS-FV 6-water 1-boy
'I made the boy drink water'

(20) Luguru, stative
      I-chi-dole   che mu-gheni chi-ben-**ek**-a.
      AUP-7-finger of   1-stranger sm7-break-STAT-FV
      'The stranger's finger is broken'

(21) Ndamba, associative
      va-ku-tov-**an**-a
      SM2-PRS-hit-RECP-FV
      'they are fighting (each other)'

2.8 Slot 8: Second tense/aspect marker (TA2)

This slot is also used in all the languages for the *-ag(h)-* habitual/progressive marker. Meeussen (1967: 110) states that habitual/progressive marking is the primary use of TA2 in Proto-Bantu.

This slot is also used for the suffix *-ile* (*-iti* in Pogoro), which is perfective in Ndamba and Pogoro but only used in dependant clauses in Kagulu, Kami and Luguru. Meeussen (1967: 111) places this in the FV slot. This implies that the *-ag(h)-* suffix in TA2 could co-exist with *-ile* in FV. Nevertheless, this is not the case in any of the selected languages; the *-ag(h)-* and *-ile* morphemes are mutually exclusive in all of them. We have therefore placed both *-ag(h)-* and *-ile* in TA2.

2.9 Slot 9: Passive suffix (PASS)

This slot is used for the passive derivational suffix (*-igw or -w-*) in all the selected languages except Pogoro, as illustrated in examples (22) and (23).

(22) Kagulu
      cho-kol-**igw**-a
      SM7.FUT-catch-PASS-FV
      'it will be trapped'

(23) Ndamba
      u-bagha u-ku-telek-**w**-a
      14-food SM14-PRS-cook-PASS-FV
      'the food is being cooked'

There is no passive marker in Pogoro. Instead, a periphrastic construction with an impersonal third person plural subject marker is used, as shown in example (24).

(24) Pogoro
      wa-m-fir-a   nene
      SM2-OM1SG-love-FV PRO.1SG
      'I am loved' lit. 'they love me'

Stappers (1967) proposes that the passive suffix was *-*u*- in Proto-Bantu. Meeussen (1967: 92) states that *-*u*- has the last position, following the pre-final (our slot 8), but does not assign it a specific slot. Similarly, Nurse (2008: 37) states that the passive marker is usually the last "extension" following the pre-final, but again does not assign it a separate slot. For our analysis, however, we assume that the passive marker appears in a separate slot, thus creating a second derivational slot. This is further corroborated by the fact that the passive can co-occur with other extensions (although semantic restrictions apply).

Nurse (2008: 37) and Meeussen (1967: 92) both point out that a tense/aspect morpheme in TA2 may merge with a following passive marker, leaving the final vowel of the morpheme in the FV slot. Examples (25) and (26) illustrate this using data from Ndamba.

(25) Ndamba
      /-ile- + -w-/ → -il-w-e
      lw-imbo lu-ka-somol-il-w-e
      11-song SM11-PST-sing-PFV-PASS-FV
      'the song was sung'

(26) Ndamba
      /-agha- + -w-/ → -egh-w-e
      lw-imbo lu-ka-somol-egh-w-e
      11-song SM11-PST-sing-PROG-PASS-FV
      'the song was being sung'

An alternative view of this process is that the passive marker is underlyingly an extension appearing as the last extension in slot 7 and that the merging process is as illustrated in example (27).

(27) Ndamba
      /-w- + -ile-/ → -il-w-e
      lw-imbo lu-ka-somol-il-w-e
      11-song SM11-PST-sing-PFV-PASS-FV
      'the song was sung'

This process is an example of a phonological process termed "imbrication" (Bastin 1983, Kula 2001, Chebanne 1993), in which, under certain conditions, a verb-final inflectional morpheme moves to a position prior to the last consonant of the extended base, as shown in (28) for Tswana and (29) for Bemba.

(28) Tswana (Chebanne 1993: 4)
/-rek-w-ile/ → -re-il-w-e
buy-PASS-PFV
'be bought'

(29) Bemba (Kula 2002: 153)
/βúng-il-ile/ → βúlung-i:l-e
mould-APPL-PFV
'has moulded for'

2.10 Slot 10: Final vowel (FV)

The final vowel is normally *-a* in all five languages, as illustrated in (30) for Kagulu. This is the unmarked default in most Bantu languages (Nurse 2008: 261). However, FV appears as *-e* in the subjunctive in all five languages, as illustrated in (31) for Ndamba. In Pogoro, FV also appears as *-i* as a future tense marker, as illustrated in (32).

(30) Kagulu, present indicative
Di-bwa di-ku-diy-**a**
5-dog   SM5-PRS-eat-FV
'the dog eats'

(31) Ndamba, subjunctive
tu-telek-**e**
SM1PL-cook-SBJV
'let us cook'

(32) Pogoro, future indicative
ha-ga-fir-**i**
FUT-SM1-love-FV
's/he will love'

2.11 Slot 11: Post-final vowel suffix (POST.FM)

Three of the languages (Kagulu, Luguru and Kami) use this slot for a *-ni* plural suffix in imperatives (see e.g. (33)), a feature claimed by Meeussen (1967: 111) to

be Proto-Bantu. Ndamba and Pogoro do not use this slot for plural imperatives, instead relying on a plural subject marker (see §4.1). Ndamba uses the slot for a relative marker, as illustrated in example (34), and Pogoro has nothing in this slot.

(33)   Kagulu, plural imperative marker
       Ni-ingh'h-e-**ni**
       OM1SG-give-SBJV-PL
       'you (PL) give me …'

(34)   Ndamba, relative marker
       va-yis-ile-**vo**   nalelo
       SM1PL-arrive-PFV-REL2 today
       'they who have arrived today'

2.12 Conclusions about the template

A verbal template was established for comparing the verbal morphology of the five languages in the study. This template closely follows the template proposed by Meeussen (1967) and amended by Nurse (2008), the main differences being

- Meeussen's "formative" and "limitive" slots are combined to form a "first tense/aspect marker" TA1

- A separate derivational slot is included for the passive suffix.

3 Tense/aspect

This section discusses how tense and aspect are represented in the languages of this study. The section starts with a general introduction to tense and aspect in Bantu, followed by a sub-section for each of the five selected languages. These are followed by further sub-sections dedicated to two specific topics: the suffix -*ile* and periphrastic constructions, followed by a preliminary summary of the data from the five languages. Periphrastic constructions are very common in Bantu languages and are typically used in languages where the inflectional tense/aspect system is inadequate, as discussed in §3.6.

   Negative tenses are subsequently discussed in §4.6.

3.1 Models of Bantu tense/aspect

Many Bantu languages have multiple past and future tenses. Nurse (2008: 103) estimates that 80% of Bantu languages have more than one past tense and nearly 50% have multiple future tenses. Botne & Kershner (2008: 147) describe how research comparing the tense/aspect markers of Bantu languages has mostly attempted to fit them into a standard model, based primarily on absolute and relative time-scales, but that this approach has tended to obscure more nuanced semantic details of these systems.

One approach to analysing the Bantu tenses is to distinguish "tense" and "aspect" (Dahl 1985, Nurse 2008). In this model, there are two dimensions: "tense" encodes the absolute time-scale of an event or action and "aspect" describes details of how that event or action takes place within a specific time-scale. Botne & Kershner (2008) makes use of this tense/aspect model to form a system of dimensions in which absolute timescales are represented as one dimension (the P-domain) and other contrasts are represented as multiple D-domain dimensions which operate at different points along the P-domain.

In many Bantu languages, tense and aspect are marked in the two distinct slots of the verbal template: TA1 and TA2 respectively. The sections below describe how these slots are used to express tense/aspect in the five languages of the study.

3.2 Tense/aspect morphology in Kagulu

Kagulu has three specific tense markers appearing in the TA1 slot: *-ku-* non-past (i.e. present or future), *-ka-* future and *-o-* future. The *-o-* marker merges with the preceding SM to produce modified subject markers such as *cho-* (class 7 *chi+o*). The three future forms appear to be in free variation and there is no apparent distinction in meaning (for a discussion of this, see Petzell 2008: 108–109). In addition to these forms, the past imperfective has *ha-* in PRE.SM, while the past perfective carries no overt marker. A summary of Kagulu tense/aspect markers is shown in Table 3.

3.3 Tense/aspect morphology in Kami

Kami marks non-past (present or future) with *-o-*, which merges with the preceding SM to produce a modified SM such as *to-* (*tu+o*). Past tense (perfective and imperfective) has a null marker in the TA1 slot. A summary of Kami tense markers is shown in Table 4.

Table 3: Kagulu inflectional tense markers

Tense	PRE.SM	TA1	Example
Non-past (present or future)		*ku*	*chi-**ku**-lut-a* SM1PL-PRS-go-FV 'we go/will go'
Future1		*o* ([o] merges with SM)	*ch**o**-lut-a* SM1PL.FUT-go-FV 'we will go'
Future2		*ka*	*chi-**ka**-lut-a* SM1PL-FUT-go-FV 'we will go'
Past perfective		*ø*	*chi-**ø**-lut-a* SM1PL-PST.PFV-go-FV 'we have gone/we went'
Past imperfective	*ha*	*ø*	***ha**-chi-**ø**-lut-a* IPFV-SM1PL-PST-go-FV 'we were going/we went'

Table 4: Kami inflectional tense markers

Tense	TA1	Example
Non-past (present or future)	*o* ([o] merges with SM)	*t**o**-gend-a* SM1PL.NON_PST-go-FV 'we are going' / 'we will go'
Past tense (perfective and imperfective)	*ø*	*tu-**ø**-himb-a simo* SM1PL-PST-dig-FV 9.hole 'We (have) dug a hole.'

3.4 Tense/aspect morphology in Luguru

In Luguru, the present tense is marked with -*o*- (which merges with the preceding SM), the future tense is marked with -*tso*[3] -, and the past tense (perfective and imperfective) has a null marker in the TA1 slot.

Apart from these inflectional markers, there is another verbal formative, the temporal/aspectual status of which is not clear. This formative *tsa*- (also realised as *dza*-) encodes some type of shared knowledge or shared reference, and conveys meanings such as 'at a specific time', 'at a place', 'as we know', or even 'for that reason' (Petzell 2020). It is used primarily in past-time contexts and refers to something like a 'definite span' of time or space, or to more abstract notions, e.g. reasons and expectations. For example, compare (35) with (36).

(35) Luguru
      ni-gend-a
      SM1SG-go-FV
      'I went'

(36) Luguru
      tsa-ni-gend-a
      at.that.time/because-SM1SG-go-FV
      'at that time/because I went.'

A summary of Luguru tense markers is shown in Table 5.

The future tense marker -*tso*- sometimes surfaces as -*tsa*- when followed by the morpheme *ku*-.

Two other markers, -*za*- and -*ya*-, are mentioned by Mkude (1974: 77, 101), but these appear to have become grammaticalised as future markers in current Luguru. Mkude refers to them as "verb like operators" and states that they represent motion towards and away from the speaker, i.e. 'come' and 'go' respectively. We assume that -*za*- combines with non-past -*o*- to form -*zo*-, realised as future -*tso*-, as is shown in the example in Table 5. It can either mean 'we will speak' or rarely, depending on the context, 'lest we speak'. The other morpheme, -*ya*-, does not exist in our data and is rejected by our consultants.

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[3]We believe the future marker has been grammaticalized from the present -*o*- combined with a remnant of the verb -*za* 'come'. The marker has several allomorphs that vary in spelling: -*dzo*- and -*nz'o*- being the most common (see also (96)–(98)).

Table 5: Luguru inflectional tense markers

Tense	TA1	Example
Present	*o* ([o] merges with SM)	*two-ghend-a* SM1PL.PRS-go-FV 'we are going'
Future	*tso (tsa)*	*tu-**tso**-long-a* SM1PL-FUT-speak-FV 'we will speak'
Past tense (perfective and imperfective)	*ø*	*tu-**ø**-himb-a simo* SM1PL-PST-dig-FV 9.hole 'We (have) dug a hole.'

3.5 Tense/aspect morphology in Ndamba

Ndamba has inflectional markers for seven distinct tenses: three past tenses, one present tense and three future tenses. All these tense markers are assembled from combinations of TA1 morphemes and the *-ile* suffix in TA2. Table 6 shows a summary of Ndamba inflectional tense markers.

Three of the tenses (future indefinite and future and past emphatic) use a tense/aspect marker in TA1 that is used to express a level of certainty. It is possible that these are related to or derived from degrees of remoteness, but we do not have any data to be conclusive about this.

A way of analysing these tense/aspect markers might be to treat them as evidentiality markers as part of the TAME framework (Dahl 2013). In this framework, evidentiality is added as an additional category to the usual verbal categories of tense, aspect and mood. Evidentiality marking indicates how certain the speaker is about the source of information (the evidence) used to make a statement. Dahl states, based on data from WALS (de Haan 2013), that evidentiality markers are "almost entirely absent in Africa".

Another approach might be to treat these tense/aspect markers as having a modal meaning, as does Fleisch (2000) for the "definite future" tense of the Angolan language Luchazi (K13), as illustrated in (37).

Table 6: Ndamba inflectional tense markers

Tense	TA1	TA2	Example
Present	*ku*		*tu-**ku**-telek-a* SM1PL-PRS-cook-FV 'we cook'
Near future	*ta*		*tu-**ta**-telek-a* SM1PL-FUT.NEAR-cook-FV 'we will cook (in the near future)'
Future indefinite	*ala*		*tw-**ala**-telek-a* SM1PL-FUT.IND-cook-FV 'we will cook (at some undefined time in the future)'
Future emphatic	*aa*		*tw-**aa**-telek-a* SM1PL-FUT.EMPHATIC-cook-FV 'we will definitely cook'
Perfect	*ø*		*tu-**ø**-telek-a* SM1PL-PRF-cook-FV 'we have cooked'
Past	*ka*	*ile*	*tu-**ka**-telek-**ile*** SM1SG-PST-go-PFV 'we cooked'
Past emphatic	*aa*	*ile*	*tw-**aa**-telek-**ile*** SM1PL-PST.EMPHATIC-cook-PFV 'we definitely cooked'

(37)   Luchazi (Fleisch 2000: 150)
       nji-kųákù-y-a   ku-Venduka
       SM1SG-DEF_FUT-go-FV 17-Windhoek
       'I will definitely go to Windhoek / I will have to go to Windhoek'

Another interesting aspect of the Ndamba tense/aspect markers is that they may be grouped into symmetrical pairs of past and future. For example, the two emphatic tenses, marked by *-aa-* and *-aa-* + *-ile,* show a symmetry in which the same tense marker is used for both tenses, the contrast being achieved by adding *-ile* for the past tense.

This symmetrical contrast is analogous to that found in Nugunu (A62), which has eight tenses, including three future and three past tenses (Botne & Kershner 2008: 161, based on data from Gerhardt 1989). The future and past tenses form three pairs of near, mid and far past/future tenses respectively, in which each past/future tense marker pair uses the same basic tense morpheme, modified with a nasal prefix to convert the future version into the past tense. For example, the mid-future tense marker, high-toned *á,* becomes past tense by prefixing a nasal, as shown in examples (38) and (39). The non-hyphenated orthography is taken from the source.

(38)   Nugunu (Gerhardt 1989: 321)
       a   **á**   bolá
       SM1 **PST2** arrive
       's/he arrived'

(39)   Nugunu (Gerhardt 1989: 326)
       a   **ná**   bola
       SM1 **FUT2** arrive
       's/he will arrive'

Another symmetrical contrast may also be seen with the Ndamba *-ka-* + *-ile* past tense, in which dropping the final *-ile* generates an imperfective meaning of an event that started in the past and continues into the future, as shown by comparing (40) with (41).

(40)   Ndamba past imperfective
       tu-**ka**-telek-a
       SM1SG-PST-go-FV
       'we are still cooking'

(41) Ndamba past perfective
      tu-**ka**-telek-**ile**
      SM1SG-PST-go-PFV
      'we cooked'

3.6 Tense/aspect morphology in Pogoro

The Pogoro tense markers appear in three separate slots: PRE.SM, TA1 and TA2, as shown in Table 7. Present tense carries no marking in any of the three slots. Past is marked with -*iti* in TA2. There are two future tenses: near future is marked with *za-* in PRE.SM, while far future has *naga-* or *ha-* in PRE.SM and -*i* as FV. In addition, there are two secondary TA1 morphemes: inceptive -*mku-* and counter-expectational -*na.*

3.7 Loss of the suffix -*ile* in Kagulu, Kami and Luguru

The distribution of the "perfective" suffix -*ile* is restricted in Kagulu, Kami and Luguru, and it has lost its primary function of marking perfectivity. In Kagulu, Kami and Luguru, -*ile* is used only in conditional/temporal constructions, negative and relative clauses (Petzell 2008: 126, Petzell & Aunio 2019: 581–582, 588). That a morpheme is retained in subordinate clauses only is not unusual since subordinate clauses are considered more conservative (cf. Bybee 2002, among others). The usage of -*ile* in subordinate clauses is exemplified with Luguru in (42), where the first verb takes conditional/temporal marking plus -*ile* and the second verb is an (imperfective) negative. This contrasts with the use of -*ile* in the G50 group, where it is used as a productive perfective marker in Ndamba, and (as -*iti*) for past tense in Pogoro.

(42) Luguru
      Ha-fvik-ile   si-lim-**ile**   bae.
      TEMP.SM1-arrive-PFV NEG.1SG-cultivate-PFV NEG
      'When s/he arrived, I was not cultivating.'

Other G30 languages such as present day Zaramo (G33) have also lost the principal use of -*ile* as marking perfective (Petzell, field data; Brad Harvey, pers. comm.). This behaviour was also attested in Nurse's data from the 1970s (2008: Appendix 1, pp.169–170). Guthrie (1948: 49) also remarks on the unusual behaviour of -*ile* in some of the G30 languages, noting that the marker does not occur in "regular" affirmative sentences. Furthermore, in Mkude's (1974) grammatical sketch of Luguru there is only one occurrence of -*ile* in an affirmative clause,

Table 7: Pogoro inflectional tense markers

Tense	PRE.SM	TA1	TA2	Example
Present		ø		*ga-**ø**-fir-a* SM1SG-**PRS**-love-FV 's/he loves'
Near future	*za*	ø		***za**-gu-ø-gend-a* FUT-SM2SG-FUT-go-FV 'you (sg) will go'
Far future	*naga or ha*	ø		***naga**-ga-ø-fir-i* FUT-SM1-FUT-love-FV 's/he will love'
Past perfect		ø	*iti*	*ka-ø-gend-**iti*** SM1-PFV-go-PFV 's/he has gone'
Inceptive		*mku*		*na-**mku**-fir-a* SM1SG-**begin**-love-FV 'I am beginning to love'
Counter-expectational		*na*		*na-**na**-m-on-i* SM1SG-not_yet-OM1-see-FV 'I cannot yet see him/her'

shown in (43). This, however, is translated as an applicative by our consultants; see (44).

(43) Luguru, (Mkude 1974: 81)
    a-lim-**ile**
    SM1-cultivate-PFV
    's/he dug'

(44) Luguru
    a-lim-**il**-e
    SM1-cultivate-APPL-FV
    's/he dug (for somebody or at a place)'

What is more, another Luguru consultant explains the *-ile* marker in example (44) as having a conditional meaning: 'where/when s/he dug'. What is clear is that *-ile* is rejected as a perfective marker in affirmative clauses in today's Luguru.

3.8 Periphrastic constructions

Comparison of periphrastic tenses (referred to by Nurse 2008: 46 as "compound constructions") may be hampered by uneven levels of detail in the descriptions of the languages. Nevertheless, it is interesting to examine the range of periphrastic constructions used in the five languages under study to find patterns of similarity or difference.

In Kagulu, Kami and Luguru, several periphrastic tense/aspect constructions are used. One of the most common verbs used in periphrastic constructions is *kuwa* 'to be', as shown in example (45), which can be used for the habitual, among other functions.

(45) Kagulu, imperfective
      Ya-ku-uw-a   ya-sok-a   ku-lang-a   filamu.
      SM1-NON_PST-be-FV SM1-(be)come_tired-FV 15-watch-FV 9.film
      'S/he gets tired whenever she watches a film.'

Other verbs are used as well, such as modal[4] *-daha* 'be able' (in Kagulu), *-kala* 'remain' for past constructions in Kami and Luguru, and modal *-weza* 'can' (in Kami), as shown in (46) to (50).

(46) Kagulu, modal (Petzell 2008: 187)
      Wa-gamb-a   si-chi-ku-dah-a   ku-seng-a.
      SM2-speak-FV NEG-SM1PL-PRES-be_able-FV 15-cut-FV
      'They said we cannot cut/cultivate. '

(47) Kami, past (Petzell & Aunio 2019: 583)
      To-kal-a   tu-lim-a.
      SM1PL.NON_PST-remain-FV SM1PL-cultivate-FV
      'We (had) cultivated.'

(48) Luguru, past
      Tu-kal-a   tu-bigh-a.
      SM1PL-remain-FV SM1PL-dance-FV
      'We had danced.'

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[4] The term "model verb" is used here in the conventional sense as being a non-affirmative verb expressing mood, often used as an auxiliary (Crystal 2003: 295).

(49) Kami, modal (Petzell & Aunio 2019: 584)
      No-wez-a   ku-fik-a?
      SM1SG.NON_PST-can-FV INF-arrive-FV
      'Can/may I get (there)?'

(50) Luguru, modal
      Two-dah-a   ku-himb-a pondo.
      SM1PL.PRS-can-FV INF-dig-FV 5.hole
      'We can dig a hole.'

Other periphrastic constructions are made up of a defective verb, *ng'(h)ali* 'be still', as shown in (51). In Kagulu, and occasionally in Kami, it also conveys the meaning of 'not yet', as shown in (52). In agreement with Nurse, we assume that *ng'ali* contains a negation, *ng'(h)a,* and the copula *li* 'be' (Nurse 2008: 173).

(51) Kami, persistive
      Di-tunda di-ng'ali   dyo-d-igw-a.
      5-fruit SM5-be_still 5.NON_PST-eat-PASS-FV
      'The fruit is still edible.'

(52) Kagulu, persistive
      Ni-ng'hali   ku-lim-a.
      SM1SG-be_still INF-cultivate-FV
      'I have not yet cultivated.'

In Ndamba, a periphrastic future tense may be constructed from *-daya* 'want', as shown in (53).

(53) Ndamba
      Va-henja va-ku-day-a   va-yis-e   chilawu
      2-guest SM2-PRS-like-FV SM2-come-SBJV tomorrow
      'The guests will arrive tomorrow.'

va-ku-day-a may be contracted to a cliticised prefix *da-,* as shown in example (54), showing a process of grammaticalisation. Some speakers defined this as their preferred or only method of constructing the future tense, suggesting that the use of the system of inflectional future tenses described above in §3.5 may be in the process of disappearing.

(54) Ndamba
      Va-henja **da**-va-yis-e   chilawu
      2-guest FUT-SM2-come-SBJV tomorrow
      'The guests would like to / will arrive tomorrow.'

Additional tense/aspect constructions may be formed in Pogoro using adverbial or conjunctional particles, as shown in (55) and (56).

(55) Pogoro, temporal conditional
      hangu gu-on-i   wa-ndu
      when sm2sg-see-fv 2-person
      'when you see the people …'

(56) Pogoro, far past
      ka-lewer-a   kala
      sm1-forbid-fv long_ago
      's/he forbade it'

Adverbial *kala* in Pogoro, as seen in example (56), may derive from Proto-Bantu **yikala* 'be, live, stay' (Nurse & Philippson 2006: 166). A similar construction is available in Ndamba, as shown in example (57).

(57) Ndamba
      tu-ka-telek-ile   kala
      sm1sg-pst-go-pfv already/long_ago
      'we have already cooked / we cooked long ago'

These examples contrast with the use of *kala* 'remain' as an auxiliary in Kami and Luguru, as shown in examples (47) and (48).

In conclusion, comparing the five languages, there seem to be some similarities in periphrastic constructions between the three northern languages, Kagulu, Kami and Luguru, but the two southern languages, Ndamba and Pogoro, are different.

3.9 Summary of tense/aspect morphology

The tense/aspect morphology of the five selected languages described above show that there are three groups of languages.

The first group, consisting of the two G30 languages, Kami and Luguru, exhibit notably little tense/aspect morphology. They essentially have just one tense marker, based on *-o-,* which is used for non-past, apart from Luguru that also has a future marker (*-tso-*). In this group of languages, there is only one past tense, which in turn doubles as a perfective and which carries no overt marking (Bar-el & Petzell 2021). In addition, the use of the "perfective" marker *-ile* has disappeared in these languages, except in certain specific contexts such as

dependant clauses. Our data also appear to show that these languages make use of periphrastic constructions to express tense/aspect, enhancing their reduced systems of inflectional markers.

The question is why these languages have such reduced verbal tense morphology compared with most other Bantu languages? Nurse (2008: 103) proposes that this is a result of a two-stage historical process. Proto-Bantu initially had a very rudimentary inventory of tenses, possibly only one past and one future tense. In the first stage of transformation, innovations increased this inventory, resulting in the complex tense systems seen in many Bantu languages today. Some languages, however, went through a second stage of transformation in which multiple tenses reduced back to a minimal set. Nurse's evidence for this is that there is little uniformity across the Bantu languages with reduced tense systems. He goes on to hypothesise that the unusual null marked past tense in Kami and Luguru (and occasionally Kagulu) derives from so called "vowel copy forms" (Nurse 2008: 84–85).

The second group consists of two G50 languages, Ndamba and Pogoro, which lie in the southern part of the region and have richer sets of tenses, typical of Bantu languages. Nonetheless, the Ndamba data show that these tense distinctions are based less on temporal remoteness and more on degrees of certainty.

The final group consists of the Kagulu language (G12). This language lies somewhere between the two other groups in terms of the complexity of its system of tenses, while there is no morphological encoding of degrees of certainty.

4 Other related markers

This section addresses aspects of verbal morphology in the five languages not covered in §3. The reason for including a discussion of other markers at this stage is that they often interact with the tense/aspect system, such that it becomes difficult to delineate structures which are specific to tense/aspect. For example, §4.5 describes the use of conditional affix -*ng'a*-, which typically takes the place of a tense marker. In his cross-linguistic review of tense/aspect systems, Dahl (1985) concludes that Bantu languages have the most complex tense/aspect systems of the languages included in his review. In particular, prefix positions assigned for tense/aspect markers are often also used for other categories which, in other languages, are typically expressed by adverbs (Dahl 1985: 176).

As with the preceding section, the objective is to review similarities and differences in structures used by the five languages in the study. This review is presented in sections covering the verbal categories of imperative, subjunctive, conditional, temporal, habitual/progressive/intensive and negative.

4.1 Imperative

The constructions of imperatives are similar across the five languages. In all languages there is a contrast between an emphatic imperative with no SM and FV *-a*, and a "polite" imperative formed from the subjunctive *-e* (Nurse 2008: 28, Devos & Van Olmen 2013). (58) shows the emphatic imperative and (59) shows the polite imperative.

(58) Kagulu, imperative
       Leuk-**a**!
       go_away-ꜰᴠ
       'go away!'

(59) Kagulu, polite imperative
       Ni-tamil-**e**!
       ᴏᴍ1sɢ-tell-sʙᴊᴠ
       'Tell me!'

All five languages require a subject or object marker to precede the verb stem when the polite imperative is used in the singular, as shown in examples (60) to (64).

(60) Luguru
       Mu-himb-e   i-vi-adzi
       sᴍ2sɢ-dig-sʙᴊᴠ ᴀᴜᴘ-7-potato
       'Dig up (pl.) the potatoes'

(61) Kagulu
       ni-lim-e
       sᴍ**1**sɢ-cultivate-sʙᴊᴠ
       'I should cultivate'

(62) Kami
       M-kem-e!
       ᴏᴍ1-call-sʙᴊᴠ
       'Please call (him/her)!'

(63) Ndamba
       wu-gholok-e
       sᴍ2sɢ-get-up-sʙᴊᴠ
       'get up!'

(64) Pogoro
      gu-fir-e!
      SM2SG-love-SBJV
      'love!'

For plural imperatives, three languages (Kagulu, Kami and Luguru) use verb-final *-ni,* as illustrated in (65), whereas Ndamba and Pogoro use a plural SM, as illustrated in (66). Kagulu and Luguru may also make use of a plural SM as an alternative to the *-ni* suffix, as illustrated in (67).

(65) Kami, plural polite imperative
      Himb-e-**ni**   vi-bogwa!
      dig-SBJV-PL 8-potato
      'Dig up (pl) the potatoes!'

(66) Ndamba, plural polite imperative
      Mu-telek-e!
      SM2PL-cook-SBJV
      'You (PL) cook!'

(67) Kagulu, plural polite imperative
      Mu-kumul-e!
      SM2PL-open-SBJV
      'You (PL) cook!'

Nurse (2008: 39) states that the *-ni* suffix is the most common form of plural negative in Bantu languages.

4.2 Subjunctive

All five selected languages have a verb final *-e* for subjunctive, as illustrated in (68) to (72). (68) and (69) illustrate the use of subjunctive forms in non-affirmative subordinate clauses. (70) to (72) illustrate the use of the subjunctive for hortatives. These two uses of the subjunctive are also found in other Bantu languages (cf. Nurse & Devos 2019)

(68) Kami
      no-lond-a   ni-lim-**e**   m-gunda w-angu
      SM1SG.NON_PST-want-FV SM1SG-cultivate-SBJV 3-farm   3-POSS.1SG
      'I want to cultivate my farm.'

(69) Luguru
no-bama-a   ni-lim-**e**   m-gunda gw-angu
SM1SG.PRS-want-FV SM1SG-cultivate-SBJV 3-farm   3-POSS.1SG
'I want to cultivate my farm.'

(70) Kagulu
ni-lim-**e**
SM1SG-cultivate-SBJV
'I should cultivate'

(71) Ndamba
tu-telek-**e**
SM1PL-cook-SBJV
'let us cook'

(72) Pogoro
ni-fir-**e**
SM1SG-love-SBJV
'I may love'

4.3 Conditional

The conditional is often marked morphologically in Bantu languages, usually in the TA1 slot (Nurse 2008: 34). Variations of the conditional affix *-ng'a-*, which is reconstructed for Proto-Bantu (Meeussen 1967: 113), are seen in all the languages in this study except Pogoro. In Kagulu, Kami and Luguru, *-ng'ha-* is used for 'if …' conditional clauses, as shown in (73). In Kami, *-ng'-* together with an *-ile* suffix is used in past conditional clauses, as shown in (74).

(73) Kagulu
u-**ng'ha**-ij-a
SM2SG-COND-come-FV
'if you come …'

(74) Kami
kama u-**ng'**-ez-ile
if   SM2SG-COND-come-FV
'if you came …'

In Ndamba, *-nga-* is used in both the antecedent and consequent of hypothetical conditional 'if … then … would …' statements, as shown in (75).

(75) Ndamba
      ma-huka gha-**nga**-dumuk-ile   ndi-**nga**-gha-gol-ile
      6-hoe   SM6-COND-break-PFV SM1SG-COND-OM6-mend-PFV
      'if the hoes were broken, I would mend them'

Instead of -*ng'a-*, Pogoro, uses the affix -*ya*- for conditional 'if …', as shown in example (76).

(76) Pogoro
      na-**ya**-m-fir-a   m-dalla   a-yu
      SM1SG-COND-OM1-love-FV 1-woman DEM-1.1
      'if I loved that woman …'

Apart from these conditional markers, there are also non-hypothetical conditional/temporal markers meaning 'if/when …', as described in the §4.4.

4.4 Conditional/temporal 'when …'

Bantu languages often have a marker which may be used both for conditional 'if' and temporal 'when' (Doke 1935: 75). This is the case for the languages in this study, all of which use a morpheme in the PRE.SM slot for conditional/temporal 'if/when …', as shown in examples (77) to (81).

(77) Kagulu
      fo-chi-ku-mal-a   …
      COND-SM1PL-PRS-finish-FV
      'if/when we finish …'

(78) Kami
      fi-wa-tow-ile   ngoma …
      COND-SM2-play-FV 9.drum
      'if/when they played the drum …'

(79) Luguru
      ha-ni-gend-ile   ha-tali   …
      COND-SM1SG-go-PFV 16-distance
      'if/when I had walked a long distance …'

(80) Ndamba
      pa-tu-yend-ile   pa-tali …
      COND-SM1PL-go-PFV 16-far
      'if/when we have walked far …'

(81) Pogoro (Hendle 1907: 52)
      pa-ga-fik-iti
      COND-SM1-arrive-PFV
      'if/when s/he arrived …'

While Luguru, Ndamba and Pogoro make use of what looks like the noun class prefix of class 16, as shown in (79), (80) and (81) respectively, Kagulu (77) and occasionally Kami (78) use morphemes that can be traced to noun class 8. The origin of the Kagulu *fo-* marker shown in (77) is the most unclear, since the *fo-* also appears to contain the reference marker *-o-* plus noun class 8 *fi-*. The anaphoric marker *-o-* is often used in Bantu languages to refer to something previously mentioned in the discourse (Güldemann 2002: 275).

When Kami uses the less frequent class 8 *fi-*, it appears in slot 1, as shown in (78), while the more commonly used class 16 *ha-* (often realised only as *a-*) appears in slot 3, as shown in (82).

(82) Kami
      wa-**(h)a**-to-a   ngoma …
      SM2-16-play-FV 9.drum
      'when they play the drum …'

Furthermore, the same Kami speaker may use the *fi-* prefix and *-ha-* morphemes interchangeably, as shown in examples (78) and (82) (both examples given during the same elicitation session). This type of variation is not unusual for Kami – being a small and endangered language, it has borrowed many forms from neighbouring and dominating languages such as Luguru and Swahili (Petzell & Aunio 2019).

4.5 Habitual/progressive/intensive

All the languages except Pogoro have an *-ag(h)-* affix which may be used for habitual, progressive, imperfective, continuous or intensive. This affix appears in the TA2 post-extension slot in all four languages, as shown in examples (83) and (84).

(83) Kagulu
      Ha-ka-ij-**ag**-a.
      PST-SM1-come-HAB-FV
      's/he came (regularly)'

(84)   Luguru
        Tu-gend-**ag**-a   chila mara Dar_es_Salaam.
        SM1PL-go-HAB-FV every time place_name
        'We go to Dar es Salaam frequently.'

In Pogoro there is a progressive affix *-aŋku-* which appears in TA1, as shown in (85).

(85)   Pogoro (Nurse 2008: Appendix 1, p.176)
        tw-**aŋku**-hemer-a
        SM1PL-PROG-buy-FV
        'we are buying'

The derivation of Pogoro *-aŋku-* is unclear, and may not be a variant of *-ag(h)-,* given that *-ag(h)-* variants usually appear in TA2 (Meeussen 1967: 110).

Some Bantu languages use *-ang-* rather than *-ag(h)-* for progressive/intensive (Nurse 2008: 263). Ndamba and Pogoro, however, use both variants, showing a distinction between habitual/progressive/imperfective *-ag(h)-* and augmentative/intensive *-ang-*, as illustrated in (86) and (87) for Ndamba.

(86)   Ndamba
        a-ku-va-tov-**agh**-a
        SM1-PRS-OM2-hit-HAB-FV
        's/he usually beats them' or 's/he is beating them'

(87)   Ndamba
        a-ku-va-tov-**ang**-a
        SM1-PRS-OM2-beat-AUG-FV
        's/he is beating them intensively'

Another distinction between *-ang-* and *-agh-* in Ndamba is that *-ang-* behaves more like a derivational extension than *-ag(h)-,* which behaves as expected for an inflectional affix. For example, *-ang-* is affected by reduplication processes, as shown in (88).

(88)   Ndamba
        a-ku-va-tov-**ang**-a-tov-**ang**-a
        SM1-PRS-OM2-hit-AUG-FV-hit-AUG-FV
        's/he is continuously and intensively beating them'

However, *-ag(h)-* is not affected by reduplication processes, as shown in (89).

(89)   Ndamba
    a-ku-yend-a-yend-**agh**-a
    SM1-PRS-go-FV-go-HAB-FV
    's/he usually walks'

Furthermore, the two morphemes *-ang-* and *-ag(h)-* can be used together, as seen in (90).

(90)   Ndamba
    a-ku-va-tov-**ang-agh**-a
    SM1-PRS-OM2-beat-AUG-HAB-FV
    's/he usually beats them intensively'

This co-occurrence of *-ang-* and *-ag(h)-* is also observed in Bena (G63), a neighbouring language to Ndamba, as shown in example (91).

(91)   Bena (Nurse 2008: 37)
    ndi-laa-gul-**ang-ag**-a
    SM1SG-FUT-buy-AUG-HAB-FV
    'I'll be buying in quantities'

4.6 Negatives

This section discusses how negatives are formed in the selected languages, and how these interact with the tense/aspect system. A summary of how negative strategies interact with Bantu tense/aspect systems is provided by Nurse (2008: 180–184), who identifies six strategies. The two most common strategies are to use a negative morpheme in the pre-subject marker (PRE.SM) or post-subject marker (POST.SM) slots. This follows a pattern common in Bantu languages (Guérois et al. forthcoming). Three of the selected languages (Kagulu, Kami and Luguru) have inflectional negatives using these strategies, while the other two (Pogoro and Ndamba) do not, relying instead on periphrastic forms.

None of the languages uses a strategy of having specific negative tense/aspect morphemes that alternate with their non-negative counterparts, a strategy identified by Nurse (2008: 34) with an example from Nen (A44), which is spoken in Cameroon. A further example of this strategy is the Swahili (G42) past perfect *-me* / *-ja* alternation, illustrated in (92) and (93).

(92)   Swahili
    wa-**me**-kul-a
    2.SM-PRF-eat-FV
    'they have eaten'

(93) Swahili
      ha-wa-**ja**-kul-a
      NEG-2.SM-NEG.PRF-eat-FV
      'they have not eaten'

The three languages with inflectional negatives (Kagulu, Kami and Luguru) use the PRE.SM slot for their negative morphemes, which include *si-, hu-, ha-*, and *ng'h-*. One of these (Kagulu) also allows the negative markers to occur in the POST.SM position; see Table 8 below for a discussion of this variation. According to Nurse (2008: 180), use of the POST.SM slot for the negative marker is the most common pattern across the Bantu languages. Table 8 summarises how negatives are formed in the five selected languages, with examples for each language.

Kagulu generally uses the negative marker *si-*, but for second person singular and class 1, *ng'h-* is used. This systematic alternation between two negative morphemes is not unusual and can be traced back to Proto-Bantu. When the former marker is used, its position in the verb phrase is in free variation. The *si-* morpheme appears either in the PRE.SM slot, as shown in (94), or in the POST.SM slot, as shown in (95), depending on the speaker's dialect or even idiolect (Petzell 2010). Moreover, the same speaker can switch slots in the middle of an utterance without any apparent change in meaning. This type of variation is highly unusual, not only for this region, but for Bantu languages in general.

(94) Kagulu
      si-chi-ka-lim-a
      NEG-SM1PL-FUT-cultivate-FV
      'we will not cultivate'

(95) Kagulu
      chi-**si**-ka-lim-a
      SM1PL-NEG-FUT-cultivate-FV
      'we will not cultivate'

Kami and Luguru use the negation markers *si-, hu-* and *ha-* for first, second, and third person animates (i.e. in class 1) respectively. These negation markers merge with the subject marker, as shown in (96) to (98).

(96) Luguru
      si-nz'o[5]-lim-a   u-m-gunda
      NEG.SM1SG-FUT-cultivate-FV AUP-3-field
      'I shall not cultivate the field'

Table 8: Negatives

Tense	Kagulu	Kami	Luguru	Ndamba	Pogoro
Imperative	*ng'ha* in PRE.SM	periphrastic	periphrastic	periphrastic	*na* (in PRE.SM)
Present / non-past	*si* or *ng'ha* in PRE.SM + *ku* in TA1 or *si* in POST.SM + *ku* in TA1	*ha, hu, si* in PRE.SM	*ha, hu, si* in PRE.SM		periphrastic
Future	*si* in PRE.SM + *ka/ku* in TA1 or *si* in POST.SM + *ka* in TA1		*ha, hu, si* in PRE.SM + *tso* in TA1		
Past	*si* or *ng'ha* in PRE.SM + *a* in TA1 + *ile* or *si* in PRE.SM or POST.SM + *ile* or *s* in POST.SM + *a* in TA1 (+ *ile*)	*ha, hu, si* in PRE.SM + *ile*	*ha, hu, si* in PRE.SM + *ile*		

(97) Luguru
hu-nz'o-lim-a u-m-gunda
NEG.SM2SG-FUT-cultivate-FV AUP-3-field
'you (sg) shall not cultivate the field'

(98) Luguru
ha-nz'o-lim-a u-m-gunda
NEG.SM**1**-FUT-cultivate-FV AUP-3-field
's/he shall not cultivate the field'

For all other persons and noun classes, *ha-* is used in the PRE.SM slot. Mkude (1974: 100) states that the Luguru negative marker is *ng'(a)- instead of ha-*, which is also occasionally found in our data (see (99) and (100)). Our hypothesis is that *ha-* is a phonological (or possibly dialectal) variant of the same morpheme, conceivably due to the influence of Swahili.

(99) Luguru
ng'a-wa-mw-on-ile
NEG-SM1PL-OM1-see-FV
'they did not see him/her'

(100) Luguru
ha-wa-mw-on-ile
NEG-SM1PL-OM1-see-FV
'they did not see him/her'

Ndamba and Pogoro do not have inflectional negatives, and instead use periphrastic negatives, as illustrated in (101) and (102).

(101) Ndamba
N-gu-yend-a **duhu**
SM1SG-PRS-go-FV not
'I am not going'

(102) Pogoro
gwa-fir-a **ndiri**
SM2SG-love-FV not
'you (sg) do not love'

Pogoro does, however, have an inflectional negative imperative morpheme *na-* which appears in the pre-subject marker slot, as shown in example (103).

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[5]This is an allomorph of the future marker *-tso-*, see footnote 4.

(103) **na**-gu-fir-a!
       NEG-SM2SG-love-FV
       'do not love!'

4.7 Summary of other related markers

Much of the data in this section shows consistency between the five languages in the study. Imperatives use the same structure across the five languages, with the exception of methods of expressing plurals. All the languages use verb-final *-e* for subjunctives. All five languages use a conditional marker in place of the primary tense/aspect marker in TA1, and a conditional/temporal marker in the pre-subject marker slot. All the languages expect Pogoro use variants of the habitual/progressive/intensive marker *-ah(h)-* as the secondary tense/aspect marker in TA2. The main differences found in this section relate to how negatives are formed, with several different strategies being used.

5 Conclusions

The tense/aspect systems of the five selected languages from the Morogoro region show surprising diversity. One of the languages (Ndamba) has a typical Bantu inflectional system of multiple past and future tenses, while the G30 group of languages (Luguru and especially Kami) have a greatly reduced tense/aspect system, relying heavily on periphrastic forms. The other two languages (Kagulu and Pogoro) are intermediate in terms of tense/aspect system complexity, but they are still fairly reduced compared to most other Bantu languages. A common theme across all five languages is that none has a tense/aspect system showing sharp time distinctions, as documented for many Bantu languages (Nurse 2008: 88–94). These reduced systems, especially the ones with the neutralised past/perfective, are not recognised in the literature. We are still looking into how this affects the aspectual categories and vice versa, and how much temporal (and aspectual) information is conveyed through other constituents such as adverbials.

A particular aim of this study was to look at how negative tenses are handled. This revealed two patterns:

Firstly, the three northern languages (Kagulu, Luguru and Kami) have systems based on pre-verbal markers, while the two southern languages (Ndamba and Pogoro) have no inflectional negatives, relying on periphrastic forms.

Secondly, an interesting feature is that in the three languages with inflectional negatives, *-ile* surfaces only in non-affirmative contexts, supporting the view that it has lost its primary role of marking past perfective in these languages.

Aspects of the study merit further investigation. As these are under-described languages, the amount of morphological description and analysis available for the languages is limited, although increasing. In particular, the descriptions of their tense/aspect markers lack contextual information. It would be interesting to collect more data on the contexts in which the tense/aspect markers are used. This may help us go further into temporal interpretations for a deeper understanding beyond the standard paradigms.

The available data would suggest that tense/aspect marking is evolving in all the languages of the study due to increased contact with other languages, particularly, but not exclusively, Swahili. Swahili is the dominant language in Tanzania, spoken by nearly everyone, including all of our consultants, and given that it is a related Bantu language, it is unsurprising that other local languages are evolving to incorporate aspects of Swahili. That said, the intense contact does not necessarily imply accommodation to the dominant language, Swahili; it may also be non-accommodation, as described by Petzell & Kühl (2017). They analyse the overuse of a nominal marker in Luguru as *stability despite contact* due to *covert prestige*.

It may be interesting to document the evolution of markers more thoroughly by comparing current data with older data in a more systematic manner. Furthermore, for the languages that currently display little overt tense/aspect marking, it may be interesting to see if other strategies are emerging and if periphrastic constructions are becoming more common.

Finally, a specific topic worthy of further investigation would be an exploration of the semantics of the Ndamba tense/aspect markers within the context of the evidentialty component of the TAME framework (Dahl 2013).

Acknowledgements

Abbreviations

In addition to the abbreviations listed below, numbers in abbreviations refer to noun classes.

APPL	applicative		PASS	passive
AUG	augmentative		PFV	perfective
AUP	augment prefix		PL	plural
CAUS	causative		PRF	perfect
COND	conditional		PRO	pronoun
DEM	demonstrative		PROG	progressive
EXT	extension		PROX	proximate
FUT	future		PST	past
FUT.IND	future indefinite		RECP	reciprocal
FUT.NEAR	near future		REFL	reflexive
FV	final vowel		REL	relative
HAB	habitual		REL.OM	relative object marker
IPFV	imperfect(ive)		SBJV	subjunctive
INF	infinitive		SG	singular
neg	negative		SM	subject marker
NON_PST	non-past		STAT	stative
OM	object marker			

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