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Middle voice in Bantu: in- and detransitivizing morphology in Kagulu

<https://doi.org/10.1515/stuf-2023-2008>

Abstract: This paper explores the middle voice in Kagulu, a Bantu language of Tanzania. Although not traditionally recognized in Bantu languages, recent research has asserted that middle voice is attested in some Bantu languages. We propose that of eight affixes that might be considered middle markers, Kagulu has two affixes that are part of the middle voice system, each one coding two different detransitivizing voices. We argue that, from a diachronic viewpoint, the underdeveloped voice syncretism of Kagulu's middle markers is the result of competing morphology and minimal functional innovations towards voice syncretism in the derivational system of Kagulu.

Keywords: Bantu; Kagulu; middle voice systems; verbal derivation

1 Introduction

In this paper, we assess the middle voice system (MVS) of the Bantu language Kagulu (ISO 639-3 code: kki, Guthrie code: G12), spoken in the Morogoro region of Tanzania. Our analysis of Kagulu's MVS focuses on eight verbal affixes, presented in (1).

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- (1) Kagulu in- and detransitivizing affixes with corresponding names commonly used in Bantu linguistics (Schadeberg and Bostoen 2019)¹

-al	Extensive
-am	Positional
-an	Associative
i-	Reflexive
-igw	Passive
-ik	Neuter
ki-	Reflexive
-uk	Separative intransitive

Because verbs with these affixes generally have reduced transitivity patterns, we refer to them as in- or detransitivizing. We argue that, according to the middle voice definition provided below, Kagulu's MVS includes only two of the affixes in (1), namely *-ik* and *ki-*.

We follow a specific comparative-typological tradition in using the term *middle voice system* to refer to verbal coding strategies that (i) are used with (at least) bivalent verbs to encode minimally two of the following voices (in alphabetical order): anticausative, antipassive, autobenefactive, conversive, passive, reciprocal, reflexive; and (ii) occur with a set of verb forms that do not exist without one of the MVS coding strategies (see Bahrt 2021; Grestenberger 2014; Inglese 2020, 2022; Kulikov 2011, 2013; Shibatani 2004; Zúñiga and Kittilä 2019). We use the term *voice* to mean “the way a specific diathesis is formally marked on functional or lexical verbs” (Zúñiga and Kittilä 2019: 4), with *diathesis* being “any specific mapping of semantic roles [...] onto grammatical roles [...]” (Zúñiga and Kittilä 2019: 4).² The coding strategies of a MVS are called *middle marking*. *Middle verbs* are verbal predicates that have middle marking, and *non-middle verbs* are verbs without middle marking. Adopting terminology from Grestenberger (2014) and Inglese (2020), we use the term *oppositional middle verb* to refer to a middle verb that alternates with a non-middle verb and encodes one of the voices listed above, as in (2) below, and *non-oppositional middle verb* to refer to a middle verb that lacks a non-middle counterpart, as in (3).

¹ Regarding the placement of hyphens with morphemes, we follow the general convention to have roots without hyphens, and one hyphen to the left of suffixes and to the right of prefixes. This is at odds with the standard practice in Bantu Linguistics. Due to progressive vowel height harmony with the vowel of the verb root, the suffix *-am* can be realized as *-em* or *-om*, *-ik* as *-ek* and *-uk* as *-ok*.

² Many languages have a formally unmarked diathesis that is commonly referred to as *active voice*. We follow the widely accepted use of the term *voice* to cover both the formally unmarked and marked diatheses. A discussion of this terminological inconsistency is beyond the scope of this paper.

- (2) Kagulu oppositional middle verbs with the suffix *-ik*

MIDDLE		NON-MIDDLE		VOICE
<i>ban-ik</i>	‘become broken’	<i>ban</i>	‘break (tr.)’	anticausative
<i>di-ik</i>	‘become edible’	<i>di</i>	‘eat’	potential passive
- (3) Kagulu non-oppositional middle verbs with the suffix *-ik*

MIDDLE		NON-MIDDLE
<i>dul.ik</i> ³	‘go down’	—
<i>mul.ik</i>	‘shine, give light’	— ⁴

The definition of MVS adopted in this paper differs from other comparative-typological work, notably that of Kemmer (1993), likely the most well-known cross-linguistic account of middle voice. Kemmer (1993) defines a *semantic middle* as:

a coherent but relatively diffuse category that comprises a set of loosely linked semantic sub-domains centering roughly around the direct reflexive. Although lacking precise boundaries, the area of middle semantics can be delimited with reference to two semantic properties. These two properties, which are characteristic of every middle system during the period in which it has a functioning middle marker are 1) Initiator as affected entity (Endpoint) and 2) low degree of elaboration of events. (Kemmer 1993: 238)

The three central differences between Kemmer’s conceptualization of middle voice and that adopted in this paper are that (i) Kemmer distinguishes middle voice from other voice categories such as the reflexive, reciprocal or passive, while in our approach the co-expression of two or more of these voice categories by the same verbal coding device is an essential feature of a MVS (see also Bahrt 2021); (ii) Kemmer’s middle voice category consists exclusively of a set of semantic classes of situations (*middle situation types*) which are recurrently expressed by middle verbs cross-linguistically, while our definition incorporates a broader set of phenomena; and (iii) our definition does not attempt to capture a unifying semantic feature underlying the multiple heterogeneous (types of) meanings covered by a MVS in a language, in contrast to Kemmer’s “low degree of elaboration of events”.

This paper is organized as follows: We sketch an overview of the history of research on middle voice in Bantu linguistics in Section 2; we describe the main aspects of Kagulu verbal morphology and elaborate briefly on the data collection practices in Section 3; the analysis of Kagulu’s MVS is presented in Section 4, focusing

³ We use a dot to separate a lexicalized affix from the verb root, indicating the loss of a derivational function.

⁴ The verb stem *mul* ‘open’ exists in Kagulu but is semantically and etymologically unrelated to *mul.ik* ‘shine, give light’.

first on those in- and detransitivizing affixes that we consider as middle markers in Section 4.1, followed by an assessment of the affixes that we do not analyze as middle markers (Section 4.2), with a summary in Section 4.3. We conclude the paper in Section 5.

2 Middle voice in Bantu linguistics

The category ‘middle (voice/diathesis)’ has its origins in the study of older Indo-European languages such as Vedic, Sanskrit and Ancient Greek (Kulikov 2011: 368, 2013: 261; Zúñiga and Kittilä 2019: 168). In these studies, middle refers to a specific inflectional form or paradigm of the verb contrasting with an active inflectional form or paradigm. Table 1 illustrates the well-known case of Ancient Greek active versus middle verb forms.

Table 1: A comparison of Present Active and Present Middle forms of the Ancient Greek verb *lou-* ‘wash’ (Zúñiga and Kittilä 2019: 169).

	Present Active	Present Middle
1sg	<i>lou-ō</i>	<i>lou-omai</i>
2sg	<i>lou-eis</i>	<i>lou-ei</i>
3sg	<i>lou-ei</i>	<i>lou-etai</i>

The formal contrast between active and middle forms of a verb lies in the different inflectional suffixes, bolded in Table 1. Middle verb forms in those older Indo-European languages are typically attested in a wide range of different grammatical contexts such as reflexive, autobenefactive, reciprocal, passive and anticausative constructions (see, e.g., Grestenberger 2014: 20–22; Inglese 2020; Kulikov 2013: 273; Zúñiga and Kittilä 2019: 168–171). In addition, some verbs do not alternate between active and middle paradigms, but instead only appear in one or the other. Those verbs that only take the active inflections are called *activa tantum* (Latin for ‘active only’) and those that only appear in the middle form are called *media tantum* (Latin for ‘middle only’; for these terms, see also Delbrück 1897; Grestenberger 2014; Kulikov 2013: 275).

Indo-Europeanists at the beginning of the 20th century attempted to formulate an underlying semantic feature that could account for the eclectic usage of middle verb forms (for a detailed overview, see Gonda 1961: 30–43). For example, Meillet

(1908: 213) states that “*les désinences moyennes indiquent que le sujet est intéressé d’une manière personnelle à l’action*” [‘the middle inflections indicate that the subject is personally interested in the action’; translation added]. Drawing from this tradition of classical Indo-European linguistics, some older grammars of Bantu languages, written by European missionaries during the colonial era, mention the category of middle voice. For example, in his description of the Kikongo variety spoken in Mbanza Kongo in the late-19th century, Bentley (1887: 621–627) writes:

There is a third voice to nearly all Kongo verbs, which is neither active, transitive nor passive, but between the two, since it conveys the idea of action without the need of an object to complete the idea; as:

O nlele ubakuka: The cloth tears.

At the same time, it expresses the idea of an active condition, or state, which is attributed to the subject itself, and is not regarded as being suffered or caused by anything exterior to the subject. It is therefore neither active transitive nor passive; but possessing an idea half way between the two, has been called by grammarians the Middle voice. A verb in that voice, or of that nature or form, is Active Intransitive. [bold in original]

Dammann (1957: 77) describes a middle marker *-ar* in Kwangali (ISO 639-3 code: kwn, Guthrie code: K33) with the following semantic definition: “*Die ursprüngliche Bedeutung dieser Spezies ist, daß die Handlungen oder Vorgänge im Interesse des Subjektes liegen*” [‘the original meaning of these types is that the actions or processes are in the interests of the subject’; translation added]. The examples provided in the grammar are reproduced in (4).

- (4) Kwangali verbs with the suffix *-ar* described as denoting middle voice
- | | | | |
|----|-----------------|-----------------------|--------------------|
| a. | <i>tov-ar</i> | ‘be pleasant’ | |
| b. | <i>pupy-ar</i> | ‘be hot’ | |
| c. | <i>pyapy-ar</i> | ‘have a fever’ | |
| d. | <i>ku-ar</i> | ‘marry’ | |
| e. | <i>zuh-ar</i> | ‘spend the day’ | |
| f. | <i>zuhw-ar</i> | ‘go in the afternoon’ | [Dammann 1957: 77] |

However, in general, middle voice has not received much attention in the descriptive literature on Bantu languages. This absence could well be due to the typological difference in grammatical structure between Bantu languages and those Indo-European languages in which the category was first identified. For example, the specific type of inflectional active/middle voice system found in Ancient Greek has no equivalent in Bantu languages. Furthermore, the reflexive, reciprocal, passive and anticausative voices for which middle verb forms were used in older Indo-European languages are more typically expressed in Bantu languages by verb forms with

specialized derivational morphology. This is illustrated with examples from Chewa (ISO 639-3 code: *nya*, Guthrie code: N31b) in (5)–(8).

- (5) Chewa Reflexive construction with prefix ***dzi-***
 m-kángó u-na-***dzi-***súpŭl-a
 3-lion SBJ.3SG.3-PST-REFL-bruise-FV⁵
 ‘The lion bruised itself.’ [Mchombo 2004: 103]
- (6) Chewa Reciprocal construction with suffix ***-an***
 mi-kángó i-ku-phwáy-***-an***-a
 4-lion SBJ.3PL.4-PRS-SMASH-RECP-FV
 ‘The lions are smashing each other.’ [Mchombo 2004: 102]
- (7) Chewa Passive construction with suffix ***-idw***
 ma-úngu a-ku-phík-***-idw***-a (ndí á-lenje)
 6-pumpkin SBJ.3PL.6-PRS-COOK-PASS-FV (by 2-hunter)
 ‘The pumpkins are being cooked (by the hunters).’ [Mchombo 2004: 81]
- (8) Chewa Anticausative construction with suffix ***-ik***
 ma-úta a-na-pind-***-ik***-a
 6-bows SBJ.3PL.6-PST-BEND-ANTC-FV
 ‘The bows got bent.’ [Mchombo 2004: 95]

As with many language-particular grammatical categories, middle (voice/diathesis) has been integrated into the typological-comparative linguistics tradition as a comparative concept (among others, see Inglese 2022; Kazenin 2001; Kemmer 1993; Klaiman 1991; Kulikov 2013; Zúñiga and Kittilä 2019). Still, middle voice as defined in frameworks within this tradition has received little attention in Bantu linguistics (see, e.g., Bernander 2018; Bostoen and Nzang-Bi 2010; Chavula 2018; Creissels 2002: 399–404; Guérois and Bostoen 2018; Jerro 2018; Ngwasi 2021).

The first general discussion of middle voice in Bantu from a typologically-informed perspective is presented by Dom et al. (2016). The authors assess the middle status of the following five verbal affixes reconstructed to the most recent common ancestor of the Bantu languages, Proto-Bantu (see Schadeberg and Bostoen 2019: 173): **-am*, **-an*, **-ik*, **-ji*- and **-uk*.⁶ The analysis by Dom et al. (2016: 129–130) draws heavily on Kemmer’s (1993) semantic middle situation types. They illustrate how reflexes for each of the five reconstructed affixes in various individual Bantu languages conform

⁵ FV or final vowel is the common label used in Bantu Linguistics to indicate the default vowel /a/ that occurs at the right edge of a semantically heterogeneous group of verb forms in many Bantu languages. The vowel typically contrasts with other suffixes that have specialized functions.

⁶ We use a single asterisk (*) to indicate that a certain form is a reconstruction.

to their definition of middle voice. For example, the suffix *-am* in Mongo (Hulstaert 1965: 247–250) occurs with verbs that denote middle situation types, such as *kukam* ‘become attached or stuck against something’. The lexical meaning corresponds to Kemmer’s ‘positional’ and ‘spontaneous’ middle situation types.⁷ In addition, *-am* is used to derive passive verb forms in Mongo, e.g. *tómbam* ‘be carried’ from *tómb* ‘carry’ (Dom et al. 2016: 137).

Dom et al. observe that in many Bantu languages these affixes are limited in their (co-)expression of voice alternations. They thus analyze these affixes as ‘quasi-middle’, distinguishing them from ‘canonical’ middle markers in other languages that encode the anticausative, antipassive, passive, reciprocal and reflexive voices. These five voices are taken by Dom et al. as the ‘functional core’ that make up the ‘canonical middle’. In Kagulu, as in the Bantu languages examined by Dom et al., reflexes of these Proto-Bantu affixes are limited in their (co-)expression of voice alternations. Unlike Dom et al. (2016), in this paper we do not distinguish between a canonical and quasi-middle, but instead consider any single coding strategy used for the co-expression of at least two detransitivizing voices to belong to the MVS of that particular language. This is in line with cross-linguistic observations that there are very few languages that have a single coding strategy co-expressing four or five voice alternations involving the anticausative, antipassive, passive, reciprocal and reflexive. In a typological sample of 222 languages, Bahrt (2021: 158–159) describes how patterns of two or three of these voices co-expressed by a single marker are much more frequent. A similar tendency has been observed by Inglese (2022) in a typological sample of 129 middle-marking languages.

3 Kagulu

Kagulu is a Bantu language spoken in the Morogoro region of Tanzania. The language is under-described: there is one older grammar (Last 1886) and a grammatical description for present-day Kagulu (Petzell 2008). Like all Bantu languages, Kagulu has a noun class system (for an overview of the nominal morphology of Kagulu, see Petzell 2008: 47–72). Unlike many Bantu languages, Kagulu is not tonal (Petzell 2008: 40) and has a reduced set of tense and aspect constructions (Bar-el and Petzell 2021: 534).

In this section, we briefly discuss the morphological structure of Kagulu verb stems, an understanding of which is essential for the analysis of the affixes under

⁷ Positional situation types are those that “express configuration of body or – by extension – object with relation to another, often supporting, object” (Kemmer 1993: 269), while spontaneous events are situations that occur without the instigation of an agentive participant.

investigation in this study. As is the case in all Bantu languages, the core building block of a verb form is the root. Kagulu verb roots can have various phonological shapes, given in (9).

- (9)
- | | | | |
|----|------|-------------|---|
| a. | C | <i>f</i> | ‘die’ |
| b. | VC | <i>ak</i> | ‘burn’ |
| c. | CVC | <i>ban</i> | ‘destroy’ |
| d. | VNC | <i>ang</i> | ‘fly (for birds), soar, run around making noise at a wedding’ |
| e. | CGVC | <i>bwak</i> | ‘scold’ |
| f. | CVNC | <i>tony</i> | ‘rain’ |

Not every root exists independently. For example, the verb stem *lakal* ‘become burned’ can be formally analyzed as consisting of a CVC root *lak* and a suffix *-al* (see also Section 4.2.5), but the root *lak* by itself is not attested in Kagulu.

There are 11 functionally distinct morpheme slots other than the root (see Petzell 2008: 98–99), including those for subject and object indices, relativizers, tense-aspect-mood-polarity affixes, and derivational affixes influencing the lexical meaning, aspectual semantics or valency of the stem. This study focuses on derivational affixes. These occur immediately before and after the verb root. There are only two derivational prefixes in Kagulu, namely *i-* and *ki-*. All other derivational morphemes are suffixes, most of which have the phonological shape *-V(N)C*, as illustrated in (10).

- (10)
- | | | | |
|----|-------------|---------------|--|
| a. | <i>-ul</i> | <i>tambul</i> | ‘discover, realize, recognize, reveal’ |
| b. | <i>-ang</i> | <i>inang</i> | ‘call’ |

Multiple derivational affixes can co-occur on a single verb root, e.g. *ki-* and *-an* in *kifan* ‘resemble’.

Derivational affixes in Kagulu vary in productivity. We define productivity as “the ability of word-forming elements to be used to form new linguistic expressions” (Brinton and Traugott 2005: 92).⁸ Of the eight affixes that we examine in this study, only three are used productively, namely *-igw*, *-ik* and *ki-*. The remaining five, i.e., *-al*, *-am*, *-an*, *i-* and *-uk*, are unproductive.

⁸ While productivity is sometimes defined in terms of frequency, these two concepts are nevertheless distinct (see Brinton and Traugott 2005: 17–18). For example, there are two homonymous suffixes with the form *-is* in Kagulu. One is productively used to add an ‘intensive’ meaning to the situation denoted by a verb, e.g. *hanangis* ‘search extensively for’ from *hanang* ‘search for’. The other is an unproductive reflex of the Proto-Bantu causative suffix **-ic* that is no longer used to derive causative verbs (Petzell 2008: 135–136). While there are still many verbs with the causative suffix *-is*, e.g., *imis* ‘stop (tr.)’ from *im* ‘stop (intr.)’, these are remnants from an older stage of Kagulu in which the word-formation process to form causative verbs through derivation with the causative suffix *-is* was productive.

Table 2: Overview of database.

Affix	# Verbs in the database
<i>-al</i>	10
<i>-am</i>	7
<i>-an</i>	4 (2 in combination with <i>ki-</i>)
<i>i-</i>	3
<i>-igw</i>	3
<i>-ik</i>	17
<i>ki-</i>	12 (2 in combination with <i>-an</i>)
<i>-uk</i>	14
Total	68

The data for this study stem from three sources: (i) Petzell’s (2008) grammatical description and word list, (ii) a corpus of five stories (Petzell 2008, 2015), and (iii) fieldwork data collected in 2020 and 2021. We compiled a database of all verbs with any one of the eight affixes examined for this study, drawn from the grammar, stories and fieldwork data. An overview of the number of attestations of each affix is given in Table 2.

For each verb, we queried the published sources on Kagulu for roots or semantically related derived verb forms in correspondence with the coded in- or detransitivized verbs of the database. We re-checked all verb forms and filled gaps in the data with a language consultant. To obtain the etymology of the derived verbs or their corresponding roots, we linked lexical reconstructions from the online ‘Bantu lexical reconstructions’ (BLR) database (Bastin et al. 2002) to the Kagulu verb forms. In total, we found lexical reconstructions with varying time depths for 48 of the 68 verbs in the database.

4 Kagulu in- and detransitivizing affixes

In this section, we analyze the middle marking status of eight affixes in Kagulu that attach to verb roots forming stems with reduced transitivity patterns. Our assessment is based on the two criteria for MVS that we adopt in this paper: (i) co-expression of two or more detransitivizing voices, and (ii) the attestation of non-oppositional verbs. Out of the eight affixes, we analyze only two as middle markers: *-ik* and *ki-* (Section 4.1). We argue that the remaining six affixes, namely *-al*, *-am*, *-an*, *i-*, *-igw* and *-uk*, do not qualify as middle markers (Section 4.2).

4.1 Kagulu's middle voice system

4.1.1 *-ik*

The Kagulu suffix *-ik* is a reflex of the reconstructed Proto-Bantu suffix **-ik*. Cognates of this suffix are widespread throughout Bantu and have been called 'neuter', 'neutropassive', 'mediopassive', and 'stative', among others. Dom et al. (2018: 168) present an overview of clause constructions in which verbs derived with reflexes of Proto-Bantu **-ik* are used in several Bantu languages (see also Dom et al. 2016: 132–135; Schadeberg and Bostoen 2019: 179–181). These constructions include anticausative, agentless passive, agentive passive, impersonal passive, potential passive, facilitative, stimulus-oriented perception and evidential constructions.

In Kagulu, the suffix *-ik* has the productive function of deriving anticausative and potential passive verbs, illustrated in examples (11) and (12), respectively.

- (11) Intransitive construction with the anticausative verb *benek* 'become broken'
- | | | | |
|------------------|------------|--------------|--|
| <i>u-mu-kono</i> | <i>w-a</i> | <i>Komba</i> | <i>u-ben-ek-a</i> |
| AUG-3-arm | 3-CONN | Komba | SBJ.3SG.3-break_something- <i>ik</i> -FV |
- 'Komba's arm is broken.' or 'Komba's arm broke.' [Fieldwork data 2020]

- (12) Intransitive construction with the potential passive verb *onek* 'become visible'

<i>kila</i>	<i>mu-nhu</i>	<i>ya-sugus-e</i>	<i>ya-on-ek-e</i>
every	1-person	SBJ.3SG.1-gargle-SBJV	SBJ.3SG.1-see- <i>ik</i> -SBJV
<i>ya-hij-ile</i>	<i>au</i>	<i>ya-di-ile</i>	<i>no ya-ihoki</i>
SBJ.3SG.1-steal-PFV	or	SBJ.3SG.1-eat-PFV	COP SBJ.3SG.1-INT

'Everyone must gargle, s/he who has stolen or eaten will be found.'

[Petzell 2015: 54, 58]

Only one oppositional verb is attested in the dataset where *-ik* does not encode a voice alternation, namely *sumik* 'become impossible, fail' from the root *sum* 'win, conquer'.

In addition to attaching to verbs, the suffix *-ik* is also found in the database with two stems derived from non-verbal roots, shown in (13). This type of formal derivation is rare in Kagulu, and furthermore not commonly reported in Bantu languages (for a brief discussion, see Schadeberg and Bostoen 2019: 189).

- (13) a. *seh-ek* 'become old' *sehe* 'old'; *musehe* 'old person'
- b. *tal-ik* 'become tall' *tali* 'tall, long, far'

The use of *-ik* to form a verbal predicate from an adjectival modifier to mean 'to become STATE' is motivated by the suffix's similar function to form anticausative verbs in verb-to-verb derivations, as illustrated in (11).

Our dataset contains two non-oppositional verb stems with *-ik*, given in (14).

- (14) a. *dul.ik* 'go down' (***dul*)⁹
 b. *mul.ik* 'shine, give light to' (*mul* 'open'; etymologically unrelated)¹⁰

Semantically, *-ik* follows a common pattern also attested with its cognates in many Bantu languages: the productive derivational function of the suffix is to derive either anticausative or potential passive verbs. In addition, *-ik* appears on other verb stems with which it does not derive anticausative nor potential passive verbs; those verb stems do not correspond to any existing form without *-ik*.

In Kagulu, *-ik* has the two features of a middle voice marker, i.e. the co-expression of two or more detransitivizing voices with oppositional middle verbs, namely anticausative and potential passive, and the marking of non-oppositional verbs. Therefore, we argue it constitutes a part of the MVS of Kagulu.

4.1.2 *ki-*

The verbal prefix *ki-* is an innovated morpheme, and thus not reconstructed to Proto-Bantu. Cognates of this prefix occur throughout the Bantu languages (Polak 1983: 280–281). Its formal etymology is most likely related to the Proto-Bantu reflexive prefix **i-*. We assume that the initial consonant indicates an origin in which the archaic prefix **i-* was combined and ultimately fused with another prefix containing the voiceless velar consonant /k/. The prefix *ki-* is productively used in Kagulu to derive reflexive and reciprocal verbs, as is illustrated in (15) and (16).

- (15) Reflexive construction
fo-ni-ku-fulus-a *ni-ki-bak-a* *ma-futa*
TEMP-SBJ.1SG-PRS-finish_something-FV SBJ.1SG-KI-put-FV 6-oil
‘When I have finished, I put oil on myself.’ [Petzell 2008: 2019]
- (16) Reciprocal construction¹¹
mu-ki-many-a *na* *Bwana*
SBJ.2PL-KI-know-FV with mister
‘You (and mister) know each other?’ (lit. ‘You (PL) know each other with mister?’)
[Petzell 2008: 103]

9 We use double asterisks (**) to indicate a synchronically unattested form.

10 *mulik* is a reflex of the lexical reconstruction **mòdik* ‘shine, give light’ (ID 2222 in Bastin et al. 2002). The etymology of *mul* ‘open’ is less clear, though it might be related to the lexical reconstruction **tumbul* ‘cut open, pierce’ (ID 3062 in Bastin et al. 2002).

11 This is an example of a discontinuous reciprocal construction (see also Bostoen et al. 2015: 761–765). This type of reciprocal construction involves a postverbal oblique argument headed by the comitative preposition *na* encoding one of the participants of the symmetric reciprocal event. Note that the subject index on the verb is plural.

Two non-oppositional verbs with *ki-* are attested in the database, given in (17). The verb in (17) is also affixed with the unproductive suffix *-an* (see Section 4.2.2).

- (17) a. *ki.fun* ‘boast’ (***fun*)
 b. *ki.fan* ‘resemble’ (*f* ‘die’; etymologically unrelated)

Because the prefix *ki-* encodes both reflexive and reciprocal voice as well as marking non-oppositional verbs, we analyze the derivational morpheme as part of Kagulu’s MVS.

4.2 Intransitivizing and detransitivizing affixes not part of Kagulu’s MVS

In this section, we examine the middle marking status of the six remaining in- or detransitivizing affixes and argue that they are not part of the MVS of Kagulu. Four of these affixes, namely *-am*, *-an*, *i-* and *-uk*, are cognates of affixes that have been argued by Dom et al. (2016) to encode middle voice in other Bantu languages. We discuss these first, followed by *-al* and *-igw*. The main argument for not treating these six affixes as middle markers in Kagulu is the fact that they do not co-express two or more of the relevant voice alternations.

4.2.1 *-am*

The Kagulu suffix *-am*, a reflex of Proto-Bantu **-am*, is unproductive. It is only attested with non-oppositional verbs, as shown in (18).

- (18) a. *fug.am* ‘kneel’ (***fug*)
 b. *tet.em* ‘shiver’ (***tet*)
 c. *chonyh.om* ‘hesitate’ (***chonyh*)
 d. *as.am* ‘open mouth wide, yawn’ (*as* ‘burn (tr.)’; etymologically unrelated)¹²
 e. *kol.om* ‘snore’ (*kol* ‘hold, touch, catch’; etymologically unrelated)¹³

¹² The stem *asam* ‘open mouth wide, yawn’ is a reflex of the reconstructed Proto-Bantu verb **jácam* (ID 3146 in Bastin et al. 2002), a derived form of the reconstructed root **jác* ‘open the mouth, yawn’ (ID 3145 in Bastin et al. 2002) which has not been retained as such in Kagulu. The verb root *as* ‘burn (tr.)’ is a reflex of the stem **bák-i* ‘become_burned-CAUS’, containing a historical causative suffix **-i*. It is the causal counterpart to *ak* ‘burn (intr.)’, and thus unrelated to *asam*.

¹³ The verb *kolom* ‘snore’ is a recently innovated lexeme and most likely a reflex of the reconstruction **kòdom* ‘growl’, derived from **kòd* ‘choke’ (IDs 1896 and 1896 in Bastin et al. 2002). The verb root *kol* ‘hold, touch, catch’ is a reflex of the lexical reconstruction **kód* ‘take; touch’ (ID 6999 in Bastin et al. 2002).

- | | | | |
|----|---------------|----------------------|---|
| f. | <i>and.am</i> | ‘become sick’ | (<i>and</i> ‘begin, start (tr.)’; etymology unknown) ¹⁴ |
| g. | <i>son.om</i> | ‘fail to learn sth.’ | (<i>son</i> ‘sew’; etymologies unknown) |

The fact that *-am* does not encode any detransitivizing voice alternations in Kagulu is evidence that the suffix is not a middle marker. The lack of any voice-related functions is also identified by Dom et al. (2016: 135) for cognates of Kagulu *-am* in other Bantu languages.

4.2.2 *-an*

The Kagulu suffix *-an* is a reflex of the reconstructed Proto-Bantu form **-an*, with cognates attested in many Bantu languages. The most commonly attested function of reflexes of **-an* is the coding of reciprocal voice (Schadeberg and Bostoen 2019: 182) from which a wide range of related meanings have developed in individual Bantu languages (see Bostoen et al. 2015). Well-known to be highly polysemous throughout Bantu, reflexes of **-an* have been argued to be part of the MVS of many Bantu languages (Dom et al. 2016: 137–140). However, in Kagulu the coding of reciprocal voice has shifted to the prefix *ki-* (see Section 4.1.2). The prefix *ki-* now also occurs on archaic stems with *-an* that denote so-called “natural reciprocal events”, that is, events that have by default symmetric relationships between the semantic participants. Our database contains two such verbs: *kifan* ‘resemble’, which has no synchronically attested form without *ki-* (***fan*), and *kihakan* ‘become adjacent’, which does have a corresponding form *hakan* ‘become adjacent’. However, because the two stems have the same meaning, *ki-* does not encode any valency-changing or semantic derivational function.

A second widely attested function of cognates of Kagulu *-an* throughout Bantu is the coding of sociativity. However, in Kagulu this meaning is expressed by a compound suffix *-any* (Petzell 2008: 138), a fixed combination of *-an* and the archaic causative suffix *-i*. The sociative suffix *-any* is illustrated in (19).

- (19) Sociative construction with *-any*
- | | | |
|---|-----------|---------------------|
| m-ku-law- any -a | kw-i-lolo | |
| SBJ.2PL-PRS-Come_from-soc-FV | 17-5-farm | |
| ‘You (PL) come together from the farm.’ | | [Petzell 2008: 139] |

As a result of these innovations, the suffix *-an* by itself no longer has any productive derivational function(s). In our dataset, *-an* is exclusively attested in frozen verb

¹⁴ The etymology of *andam* ‘become sick’ is unknown to us. The root *and* ‘begin, start (tr.)’ is reconstructed as **jand* ‘begin (tr.)’ to an earlier proto-stage, but not to Proto-Bantu (ID 3214 in Bastin et al. 2002).

forms, including two with the prefix *ki-*, and as a constituent of three fixed compound suffixes, i.e. *-anis*, *-any* and *-anyil*. All eight attestations of *-an* are provided in (20).

- (20)
- | | | | |
|----|------------------|----------------------------|---|
| a. | <i>ag.an</i> | ‘find’ | (<i>ag</i> ‘die’; used as a euphemism; etymologies unknown) |
| b. | <i>hak.an</i> | ‘become adjacent’ | (** <i>hak</i>) |
| c. | <i>ki-hak.an</i> | ‘become adjacent’ | (** <i>hak</i>) |
| d. | <i>ki.f.an</i> | ‘resemble’ | (<i>f</i> ‘die’; etymologically unrelated) |
| e. | <i>law.anis</i> | ‘become prominent, appear’ | (<i>law</i> ‘leave, bring forward, come from’) ¹⁵ |
| f. | <i>lig.anis</i> | ‘compare’ | (<i>lig</i> ‘abuse, insult’; etymologies unknown) |
| g. | <i>saŋ.any</i> | ‘prepare for a journey’ | (** <i>saŋ</i>) |
| h. | <i>taŋ.anyil</i> | ‘meet’ | (<i>tang</i> ‘find, recognize, realize’) |

Because *-an* does not encode two or more of the relevant detransitivizing voices, we argue that the suffix is not part of Kagulu’s MVS.

4.2.3 *i-*

Reflexive voice is the only voice alternation that is encoded by a verbal prefix in most Bantu languages (Polak 1983). The form of the prefix is reconstructed to Proto-Bantu as **i-* (Meeussen 1967: 109; Polak 1983: 292), which has been retained in Kagulu as *i-*. However, reflexive voice is productively encoded by the innovated prefix *ki-* (see Section 4.1.2 above). In our database, only three verbal stems with the archaic prefix *i-* are attested. Reflexive voice appears in two of the three verbs, as shown in (21). For both of these verbs, the underived verb stem is attested in Kagulu.

- (21)
- | | | | | |
|----|----------------|-------------------|--------------|-----------------------|
| a. | <i>i-yeg</i> | ‘scratch oneself’ | <i>yeg</i> | ‘scratch’ |
| b. | <i>i-golol</i> | ‘stretch oneself’ | <i>golol</i> | ‘stretch, straighten’ |

The third verb stem in our database, *ichak* ‘be without, lack’, has an underived root *chak* with the same meaning as its derived counterpart.

The fact that *i-* does not encode two or more detransitivizing voices, coupled with the fact that it does not appear in non-oppositional verbs in our dataset, leads us to argue that *i-* is not part of Kagulu’s MVS.

¹⁵ Because the etymologies of both stems are unknown, it is unclear whether *lawanis* and *law* are etymologically related. There is no transparent link between the meanings of the two verbs which would suggest that *lawanis* is derived from *law*.

4.2.4 -uk

The Kagulu suffix *-uk*, a reflex of Proto-Bantu **-uk*, does not have a productive derivational function. Verb stems with *-uk* can be the intransitive member of an equipollent pair, with the related transitive verb carrying either the suffix *-ul* or *-us*. Semantically, such verb pairs predominantly appear in a noncausal/causal alternation in which the noncausal event is denoted by the verb form with *-uk*, and the causal event is denoted by the verb form with *-ul* or *-us* (for a detailed study on the noncausal/causal alternation in Kagulu, see Dom et al. forthcoming). Examples of these equipollent noncausal/causal verb pairs are illustrated in (22).

- | | | | | | |
|------|----|----------------|----------------------------|----------------|--------------------------|
| (22) | a. | <i>kum.uk</i> | ‘open (intr.)’ | <i>kum.ul</i> | ‘open (tr.)’ |
| | | | | <i>kum.us</i> | ‘open (tr.)’ |
| | b. | <i>hung.uk</i> | ‘diminish, reduce (intr.)’ | <i>hung.ul</i> | ‘diminish, reduce (tr.)’ |
| | | | | <i>hung.us</i> | ‘diminish, reduce (tr.)’ |
| | c. | <i>tob.ok</i> | ‘become pierced’ | <i>tob.ol</i> | ‘make a hole, pierce’ |

Most equipollent pairs with the suffix *-uk* in our database do not have a corresponding basic verb root. We have found only two, shown in (23).

- | | | | | | |
|------|----|----------------|---|----------------|---------------------------------------|
| (23) | a. | <i>bid-uk</i> | ‘turn (intr.), roll (intr.),
change (intr.)’ | <i>bid</i> | ‘turn (tr.)’ |
| | | | | <i>bid-ul</i> | ‘turn (tr.), change
(tr.), answer’ |
| | | | | <i>bid-us</i> | ‘turn (tr.), roll (tr.)’ |
| | b. | <i>kand-uk</i> | ‘become broken (of plaster)’ | <i>kand</i> | ‘plaster a wall’ |
| | | | | <i>kand-ul</i> | ‘unplaster a wall’ |

Three non-oppositional verbs with *-uk* are attested in our database, presented in (24).

- | | | | | |
|------|----|----------------|-------------------------------|--|
| (24) | a. | <i>junj.uk</i> | ‘become angry’ | (** <i>junj</i>) |
| | b. | <i>od.ok</i> | ‘become sick’ | (** <i>od</i>) |
| | c. | <i>gal.uk</i> | ‘grow, change, become (sth.)’ | (<i>gal</i> ‘send, deliver, escort’;
etymologically unrelated) ¹⁶ |

Dom et al. (2016: 142) report that reflexes of Proto-Bantu **-uk* are typically not used to encode any type of detransitivizing voice. This is also the case for Kagulu *-uk*. Thus,

¹⁶ The Kagulu verb *galuk* might be a reflex of the lexical reconstruction **gàdúk* ‘turn (intr.), go back, come back’ (ID 1288 in Bastin et al. 2002), a derivational form of **gàd* ‘turn (tr.), come (or go) back, alter’ (ID 1286 in Bastin et al. 2002). The verb *gal* ‘send, deliver, escort’ might also be related to the lexical reconstruction **gàd*. We leave this analysis for further research.

although *-uk* does appear in non-oppositional verb forms, the fact that *-uk* does not productively co-express at least two of the detransitivizing voice alternations is evidence that *-uk* is not a middle marker in Kagulu.

4.2.5 *-al*

The Kagulu suffix *-al* is a reflex of the Proto-Bantu reconstruction **-ad*. The morpheme has no productive derivational function in Kagulu. None of the verb stems with *-al* in our database has a corresponding underived root that is semantically related to the derived form. Instead, all oppositional verbs with *-al* in our database have a corresponding verb carrying the suffix *-as*. Semantically, these verb pairs encode different types of voice and valency alternations such as the reflexive (25a), the noncausal/causal alternation (25b), and the comitative alternation (25c).

- | | | | | | |
|------|----|---------------|---------------------------------|---------------|---------------------|
| (25) | a. | <i>f.al</i> | ‘wear (clothes), dress oneself’ | <i>f.as</i> | ‘dress someone’ |
| | b. | <i>lak.al</i> | ‘burn (intr.)’ | <i>lak.as</i> | ‘burn (tr.)’ |
| | c. | <i>ik.al</i> | ‘stay, remain, sit’ | <i>ik.as</i> | ‘stay with someone’ |

The Kagulu suffix *-as* is the synchronic reflex of a diachronic combination of two suffixes, namely **-al* and a causative suffix **-i*, both reconstructed to Proto-Bantu. The vocalic suffix **-i* is well-known in Bantu linguistics to trigger morphophonological changes resulting in the modification of the preceding consonant into a fricative (in this case /l/ > /s/) and the subsequent loss of the suffix **-i* itself, i.e. **-al-i* > **as-i* > **as-y* > *as* (Hyman 2003; Schadeberg and Bostoen 2019: 174). Synchronically, the vocalic suffix has become segmentally unanalyzable due to these morphophonological changes, and it is no longer productively used in Kagulu to form causatives (see Dom et al. 2022, forthcoming). Given the different types of voice alternations illustrated in (25) above, it appears that the semantic contribution of the suffix **-i* was verb-specific.¹⁷

There are two non-oppositional verb stems with *-al* in our database, given in (26).

- | | | | | |
|------|----|----------------|---|--|
| (26) | a. | <i>ig.al</i> | ‘bring, escort, accompany, carry, send’ | (** <i>ig</i>) |
| | b. | <i>tamb.al</i> | ‘crawl’ | (<i>tamb</i> ‘boast; etymologically unrelated’) ¹⁸ |

¹⁷ The noncausal/causal alternation is the most frequently attested valency alternation in our database for the opposition of corresponding *-al* and *-as* verb stems. This is because a majority of the verb pairs was collected as part of a study on the noncausal/causal alternation in Kagulu. Whether this type of semantic opposition is overall more prevalent than the other alternations shown in (25) is left for further research.

¹⁸ The verb stem *tambas* is also attested but it is the intensive form of *tamb* ‘boast’ coded by the intensive suffix *-is*, resulting in the meaning ‘boast a lot’. The intensive suffix *-is* undergoes

Despite the attestation of non-oppositional verb stems with *-al* in our database, we argue that the Kagulu suffix *-al* is not a middle marker because it lacks any valency-decreasing function. The oppositional verbs with *-al* are frozen forms alternating with historically causativized verbs with the suffix *-as*. Synchronically, the pairs in (25) have an undirected, equipollent correspondence, meaning both verbs are equally marked by derivational morphology. This is the outcome of the aforementioned morphophonological diachronic changes involved in the causative derivation with **-i*. Thus, etymologically the types of valency alternations illustrated by the three verb pairs in (25) are valency-increasing, coded by the former causative suffix **-i*. While synchronically the semantic alternations of some pairs can be reanalyzed as valency-decreasing, such as those in (24a–b), the suffix *-al* is not used productively to express reflexive and anticausative voice. The fact that none of the verbs with *-al* in our database have an attested underived root is further evidence that *-al* lacks any productive derivational function.

4.2.6 *-igw*

The suffix *-igw* in Kagulu derives passive verb stems. An agentless passive construction is illustrated in (27), and (28) presents an agentive passive construction.

- (27) *chi-dege cho-kol-igw-a nhosiku*
 7-bird FUT.SBJ.3SG.7-catch-PASS-FV tomorrow
 ‘The bird will be caught tomorrow.’ [Petzell 2008: 119]

- (28) *m-buli si-ku-tegeles-igw-a na Ali*
 10-word SBJ.3PL.10-PRS-listen_to-PASS-FV by Ali
 ‘The news is listened to by Ali.’ [Petzell 2008: 119]

Non-oppositional verbs with *-igw* are not attested in the database.¹⁹ While many middle markers in the world’s languages encode passive voice (Kulikov 2013: 267), the Kagulu suffix *-igw* does not encode any other detransitivizing voice alternations, and therefore cannot be analyzed as part of Kagulu’s MVS.

progressive vowel harmony with the vowel of the verb root. For further discussion on the intensive suffix in Kagulu, see Petzell (2008: 137–138).

¹⁹ The database does contain one frozen verb stem with the passive suffix, namely *filigw* ‘be bereaved of’, and one idiomatic verb with *-igw*, namely *tamigw* ‘feel sick’. The frozen verb *filigw* is a complex derivational form of the root *f* ‘die’ derived by the compound suffix *-iligw*. This suffix consists of the applicative *-il* and the passive *-igw*. The applied stem without the passive, i.e. *fil*, does not exist in Kagulu. The idiomatic verb *tamigw* ‘feel sick’ derives from *tam* ‘hurt’. The supposed compositional meaning of *tamigw*, i.e. ‘be hurt’, has become semantically specialized into a non-compositional meaning ‘feel sick’.

4.3 Summary

Of the eight in- or detransitivizing affixes examined in this paper, we argue that only two can be analyzed as middle markers in Kagulu, namely *-ik* and *ki-*. These two affixes each mark oppositional verb forms, encoding at least two detransitivizing voice alternations, as well as non-oppositional verb forms. The voice alternations encoded by these affixes are anticausative and potential passive for *-ik*, and reflexive and reciprocal for *ki-*.

The remaining six affixes, *-al*, *-am*, *-an*, *i-*, *-igw* and *-uk*, do not satisfy the two criteria for middle marker status that we adopt in this paper. While four of the six affixes occur in non-oppositional verb forms, none of the six affixes encodes at least two voice alternations. Consequently, we argue that these affixes are not part of Kagulu’s MVS. Our analysis is summarized in Table 3.

Table 3: In- and detransitivizing affixes in Kagulu and their middle voice status.

Affixes	Voice syncretism	Non-oppositional forms
<i>-ik</i>	✓	✓
<i>ki-</i>	✓	✓
<i>-al</i>	X	✓
<i>-am</i>	X	✓
<i>-an</i>	X	✓
<i>i-</i>	X	X
<i>-igw</i>	X	X
<i>-uk</i>	X	✓

The shaded rows in Table 3 indicate the MVS of Kagulu, highlighting the two middle marking affixes *-ik* and *ki-*.

5 On the role of middle voice systems in Bantu languages

The middle voice system, as adopted in this paper, is defined as a cluster of non-oppositional and oppositional verb forms, the latter of which exhibit voice syncretism, that is, marked by a single coding strategy that expresses at least two of the following voice alternations: anticausative, antipassive, autobenefactive, conversive, passive, reciprocal, and reflexive (Kulikov 2013). The range of voice alternations encoded by individual middle markers varies from language to language. Some languages have a well-developed middle marker whose voice syncretism covers up

most or all of the detransitivizing voice categories, such as the suffix *-šk* in Udmurt (ISO 639-3: udm; see Bahrt 2021: 263). Kagulu is not such a language. It does not have one dedicated middle marker, but rather two affixes that can be analyzed as middle markers, each encoding only two voice alternations.

The underdeveloped status of middle markers in Kagulu has implications for our understanding of MVs in Bantu languages. We suggest that middle voice is not a salient grammatical category in most Bantu languages, if any at all. In Chewa, those voices that are typically subsumed under the middle voice cluster are all encoded by different verbal affixes (see Section 2). This situation goes back to Proto-Bantu, as different verbal affixes are reconstructed to the ancestral language for almost every voice that is part of the middle system as proposed in Kulikov (2013): **(ib)u* for passive, **i-* for reflexive, **-an* for reciprocal, **-ik* and **-uk* for anticausative (Polak 1983; Schadeberg and Bostoen 2019). Middle markers in a particular Bantu language thus develop through changes in a language's derivational system and functional innovations of one or more derivational affixes.

In one such diachronic situation, the functional range of a given affix gradually expands to include the coding of voices previously encoded by other affixes. This type of development has been described for the Kagulu prefix *ki-* in Section 4.1.2, which developed a reflexive-reciprocal syncretism resulting in the suffix *-an*, a reflex of the Proto-Bantu reciprocal marker **-an*, becoming unproductive. Other examples of this type of development in Bantu are the reflexes of Proto-Bantu **-rk* in Tonga (ISO 639-3 code: toi; Guthrie code: N15), Tumbuka (ISO 639-3 code: tum; Guthrie code: N21) and Manda (ISO 639-3 code: mgs; Guthrie code: N11) (see Bernander 2018; Chavula 2018). In these languages, the coding of passive voice has shifted from reflexes of Proto-Bantu **-ibu* to the reflexes of the neuter **-rk*, with the former suffix still attested but its productivity reduced, and the latter co-expressing not two but three voices, namely anticausative, potential passive and passive.

Further attested developments of middle markers in Bantu languages include affixes innovating new voice functions that did not previously exist in the language or its ancestors. One well-studied example is the development of antipassive voice encoded by reciprocal markers (Bostoen et al. 2015). The diachronic development of Bantu affixes into middle markers along with the multiplicity of dedicated derivational morphology raises important questions as to the viability of cross-linguistic comparisons of middle voice systems.

Acknowledgments: We are grateful to the Kagulu speakers for their assistance and sharing their knowledge, to the reviewers for their insightful comments, and to the Swedish Research Council for funding this research (Grant number 2019-02880).

Abbreviations

1, 2, 3 ...	prefix corresponding to noun class 1, 2, 3, ...
1/2/3 _{PL}	1st/2nd/3rd person plural
1/2/3 _{SG}	1st/2nd/3rd person singular
ANTC	anticausative
AUG	augment
C	consonant
CAUS	causative
CONN	connective
COP	copula
FUT	future
FV	final vowel
G	glide
INT	interrogative
intr.	intransitive
MVS	middle voice system
N	nasal
PASS	passive
PFV	perfective
PL	plural
PRS	present tense
PST	past tense
RECP	reciprocal
REFL	reflexive
SBJ	subject index
SBJV	subjunctive
SG	singular
SOC	sociative
TEMP	temporal
tr.	transitive
V	vowel

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