



Modal auxiliary verb constructions in East African Bantu languages

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ABSTRACT

In this article we offer an overview of the use of modal auxiliary verb constructions in East African Bantu (encompassing languages spoken from eastern Congo in the north-west to northern Mozambique in the south-east; viz. Guthrie zones JD, JE, E, F, G, M, N and P). Modality, here conceptualized as a semantic space comprising different subcategories (or flavors) of possibility and necessity, has traditionally been a neglected category within Bantu linguistics, which has tended to focus instead on the more grammatical(ized) categories of tense, aspect and to a lesser extent mood. Nonetheless, our survey shows that there exists a rich number of different verbs with specialized modal functions in East African Bantu. Moreover, when comparing the variety of modal verbs in East African Bantu and the wider constructions in which they operate, many similar patterns arise. In some cases, different languages make use of cognate verbs for expressing similar modal concepts, in other cases divergent verbs, but with essentially the same source meaning(s), are employed. In addition, both Bantu-internal and Bantu-external contact have played a key role in the formation of several of the languages' inventories of modal verbs. A typologically significant feature recurrently discovered among the languages surveyed is the tendency of structural manipulations of the same verb base to indicate semantic shift from participant-internal to participant-imposed modal flavors.

KEY WORDS: East Africa, Bantu, modality, auxiliary, verb





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1. Introduction

This study surveys modal auxiliary verb constructions as they occur in the Bantu language varieties of East Africa (EA). Based on HEINE (1993) and ANDERSON (2006, 2011: 2), we define an auxiliary as “a verbal element on a diachronic form-function continuum standing between a fully lexical verb and a bound grammatical affix” and an auxiliary verb construction as mono-clausal complex constructions (minimally) consisting of an auxiliary verb operating on a lexical predicate verb. Thus, in this conceptualization any verb-verb construction consisting of an (erstwhile) verb which contribute some functional quality to a lexical verb is counted as an auxiliary verb construction, regardless of the functional or formal specificities of either the auxiliary verb itself or the construction as a whole. We are aware that this is a broader conceptualization than in many other (traditional) definitions of auxiliaries (cf. HEINE 1993: Ch. 1).¹ We also acknowledge the fact that many of the modal verbs discussed in this paper arguably are at the very initial stage of the verb-to-affix continuum, i.e. they exhibit few formal signs of grammaticalization (as will be further described below). We treat modality as a grammatical domain which fundamentally encodes expressions of possibility and necessity (see e.g. VAN DER AUWERA and PLUNGIAN 1998 and further discussion in §2). Consequently, a modal auxiliary verb construction is a linguistic composition consisting of a verb expressing either possibility or necessity. An example of a possibility auxiliary is **-wez-** ‘can’ in Swahili in (1), and an example of a necessity auxiliary is **-xoy-** ‘ought’ in Lusaamia in (2).²

(1) Standard Swahili (G42d; ASHTON 1947: 276)

siku	y-o	y-ote	wa-wez-a	ku-wa-on-a	p-o	p-ote
9.day	9-of	9-all	SM2SG.PRS-able-FV	INF-OM2-see-FV	16-of	16-all
‘Any day you can see them anywhere’						

¹ For example, as noted by one of the reviewers, our conceptualization differs from the tradition in Southern Bantu studies of distinguishing a more narrow category of “auxiliaries” in contrast to so called “deficient verbs”. Together with ANDERSON (2006: 11), we believe that such a systematization leads to a too restrictive categorization of auxiliaries.

² Cited languages are given with their “Guthrie code” as commonly used when referring to Bantu languages, based on the alpha-numeric coding system introduced by GUTHRIE (1948, 1967-1971) and later updated by MAHO (2003, 2009); see also HAMMARSTRÖM (2019). In terms of transcription, we have represented the examples as in the original versions, but we have taken the liberty to add or alter the glosses as to fit with conventionalized abbreviations within linguistic typology and comparative Bantu linguistics.



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- (2) Lusaamia (JE34; BOTNE et al. 2006: 60)
a-xóy-eré **a-mény-é** **anó**
SM1-ought_to-PRF SM1-live-SBJV here
'S/he must live here'

As ANDERSON (2006: 30) notes: “Indeed, virtually every non-nominal (person, number, class) category described as ‘inflectional’ [...] can or has been encoded through an (erstwhile or present) AVC [Auxiliary Verb Construction].” To be sure, the functional category of modality is often treated as one of the primary categories expressed with auxiliaries, not least due to the fact that they form a salient category in English and many other Indo-European languages (see e.g. ZIEGELER 2011). Nonetheless, modal auxiliaries have traditionally gone under the radar in Bantu studies (cf. NURSE and DEVOS 2019). Modal auxiliaries are not included in NURSE (2008), to date the most thorough cross-Bantu work on verbal constructions. ANDERSON’S (2011) imposing investigation of auxiliary verb constructions in Africa (including a sample of 100 Bantu languages) only mentions a single Bantu modal verb. We can think of several possible reasons for this fact. Firstly, there is a general understanding that modality is mainly marked verb-internally in Bantu through the use of the subjunctive suffix *-e* (cf. NURSE and DEVOS 2019), which, in turn, is connected to the traditional focus on the already very intricate verb-internal Bantu morphology. When complex verbal constructions are addressed in work on Bantu languages, the description is often exclusively dedicated to copula compounds and/or markers of Tense-Aspect.³ Modal verbs are also generally considered as semantically “more weighty”, i.e. they pattern more with lexical verbs and typically show less signs of grammatical status than auxiliaries expressing e.g. tense and aspect (see e.g. KRUG 2011). This is a tendency which would also seem to be borne out in Bantu and which may have led to modal auxiliary verbs to be misleadingly classified as lexical verbs, with the result being that they have been excluded from grammars. The “lexicality” of modal verbs arguably also makes them more easily exposed to contact-induced change, a fact which may have caused modal verbs to be omitted from linguistic descriptions (e.g. in puristic attempts of editing out ‘borrowed’ terms; cf. MOUS 2019, BERNANDER, forthcoming).

³ A poignant example is the grammars written by the “Hamburg School” of German colonial linguists whose grammatical descriptions tend to include a chapter on “Hilfsverba ‘Sein und Haben’” while rarely addressing any other auxiliary verbs. In some cases, copula verbs inflected in the subjunctive in Bantu can have functions that can be argued to be modal, in line with the definition of modality by some scholars. However, such constructions do not fall within our delimitation of modality, as will be made further clear in §2).



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However, since the article by DEVOS (2008a), which constitutes a systematic account of the modal system of Shangaci (P312), recent years have witnessed an increasing interest in modality in Bantu, including both language-specific studies and work addressing a smaller set of Bantu varieties. Still, no overarching comparative study of a larger group of Bantu languages has been executed. The purpose of this paper is to offer such a comprehensive overview of modal auxiliary verb constructions, with a focus on East African Bantu. It surveys the various parts of Bantu-speaking East Africa (see §3.1 for discussion on this delimitation) to produce an inventory of modal verbs. Based on a comparison of the collected data, we offer some initial conclusions on general functional and morphosyntactic traits of modal auxiliary verb constructions in Bantu languages and their overall systematization within the domain of modality. The study also sets out to trace source constructions and to comment on pathways of change, as well as any cases of areal spread of certain construction types, thus considering the role of both internal and external (i.e. contact-induced) change in the development of Bantu modal auxiliiation.

The remainder of this paper is organized as followings. Section 2 provides a background to the concept of modality and its internal taxonomy of expressing subcategories of possibility and necessity. Section 3 surveys the use of auxiliary verb constructions for expressing modality in Bantu languages spoken across the East African area. Based on the comparative data presented in Section 3, Section 4 offers a generalized account of the organization and development of the modal domain. Section 5 represents a summary, offering some final conclusions while also pointing to possible fruitful avenues for further research.

2. On modality

2.1 Introduction and setting the scope

In this paper, we treat modality as a part of the wider domain of TAM (Tense-Aspect-Mood) categories (cf. NUYTS 2006, 2016). We chose to delimit this onomasiological grid as encompassing expressions of possibility (capability, ability, potentiality) and necessity (need and necessities). This delimitation is based on the generally held understanding of modality in functional-typological studies (e.g. BYBEE et al. 1994, VAN DER AUWERA and PLUNGIAN 1998, NUYTS 2006, NAUZE 2008) including those targeting Bantu varieties. This entails, for example, that we exclude so called “volitive” or “bouletic” modality from our conceptualization of modality. See e.g. VAN DER AUWERA and PLUNGIAN (1998) for the motivation of such a position. It is our feeling that volitional modality is often straightforwardly expressed with a volitional verb in East African Bantu, viz. a



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verb meaning ‘look for, want, need, love’ or similar. In some languages (e.g. Manda N11; see BERNANDER 2017: 220-224, 292), one and the same verb *-lond-* expresses both ‘want’ and ‘need’ which has the result that this verb (in an analogous construction) is used as a marker of both volitional modality as well as participant-internal modality. In Shangaci (P312; DEVOS 2008a), *-sakh-* ‘want’ is used as a marker of both epistemic possibility and necessity. Thus, essentially, we do not include volitive modality, except when the same auxiliary is also used for expressions of possibility/necessity. Similarly, although we discuss the “input” to the modal domain, viz. the lexical source verbs, we do not offer any detailed discussion of the “output” or the further expansion of erstwhile modal auxiliaries into marking other “postmodal” functional categories, such as future tense, imperatives and various subordinate clauses (cf. VAN DER AUWERA and PLUNGIAN 1998).⁴

2.2 The taxonomy of the modal domain

The modal categories, or modal forces (Kratzer 1981, 1991) of possibility and necessity stand in a scalar relationship to each other, with expressions of possibility encompassing a weaker force vis-à-vis necessity (cf. Coates 1983, Verstrate 2005). The notions of possibility and necessity may be further divided into various subcategories, or flavors (Kratzer 1981, 1991), generating particular modal meanings. Authors who otherwise agree in delimiting the modal domain to necessity and possibility as paradigmatic variants, tend to differ on the details of their further subcategorization as regards semantic cut-off points and labeling. We have chosen to operate with the following subcategories and associated terms: participant-internal (PI), participant-external (PE), deontic and epistemic modality.

Although some scholars prefer to merge the subtype of PE modality with that of deontic modality, we are inclined to agree with NUYTS (2006: 35) that it make sense to keep deontic modality apart from other types of participant-external modality. This is because deontic modality together with epistemic modality convey the speaker’s own viewpoint rather than describing the state of affairs more objectively. That is to say, they encompass more subjective/subjectified concepts, coding “attitudinal” notions of whether the state of affairs “exists or not, or is morally acceptable or not, or is ‘agreeable’ or not” (NUYTS 2015: 109). What

⁴ We also exclude any discussion about the conceptually very closely related linguistic category of evidentiality but refer the readers to the recent overviews of BOTNE (2020) and CRANE et al. (forthcoming) on this category in Bantu languages. As implied in these works, evidentiality is rarely, if ever, co-expressed with modal auxiliary verbs.



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this further implies is that the various modal subcategories are associated with a progression of increased grammaticality as well as subjectivity, viz. “the speaker’s subjective belief state / attitude toward the proposition” (NUYTS 2006, 2015, 2016: 35). In this taxonomy, “dynamic” PI and PE possibility/necessity are in both synchronic and diachronic perspectives taken as representing less mature, more lexical-like “pre-core” modal categories while deontic and particularly epistemic possibility/necessity are treated as representing a more mature stage of “core modals” (cf. TRAUGOTT and DASHER 2002, MUNRO 2006).

The following examples from different East African Bantu languages are meant to illustrate the subtypes within the onomasiological grid of modality, constituted by possibility and necessity further divided into its various subcategories. In this way, we also have a chance to briefly present the semantic particularities of each type.

Participant-Internal modality refers to properties inherent to the first participant engaged in the State of Affairs (SoA); either abilities or capacities in expressions of Participant-Internal possibility (3) or needs or necessities in expressions of Participant-Internal necessity (4).

(3) Luguru (G35; NYINONDI and LUSEKELO 2020: 75)

mai	ko-dah-a	ku-kal-a	ghoya	na	i-wa-ana
mother	SM1.PRS-POSB-FV	INF-stay-FV	better	COM	AUG-2-child
ku-bit-a	Mwenda				
INF-surpass-FV	Mwenda				

‘The mother can cope better with children than Mwenda’

(4) Shangaci (P312; DEVOS 2008a: 15)

ki-ná	y’oo-ráfúun-a
SM1SG-NEC	CONN9’INF-chew-FV

‘I need to eat’

Participant-External modality indicates that there are circumstances (partly) beyond the control of the first participant which either enable the SoA in expressions of Participant-External possibility (5) or makes them necessary in expressions of Participant-External necessity (6).



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- (5) Manda (N11; BERNANDER 2017: 279)
n-a-wonang-íni na vá-ndu bahápa pa-Ludéwa gólo
 SM1SG-PST-meet-REC.PFV COM 2-people EMPH.LOC LOC16-Ludewa yesterday
ndáya y-áke n-a-hotw-íli ku-kín-a m-píla
 reason 9-POSS3SG SM1SG-PST-POSB-PFV INF-play-FV 3-football
 'I met with some people here in Ludewa yesterday (and) because of that I could play football'
- (6) Rundi (JD62; MBERAMIHIGO 2014: 137)
ku-gum-a u-'ri mu-zima mu ki-he ki-óóse u-fit'-ye
 INF-stay-FV SM2SG-CJ-be 1-alive LOC18 7-time 7-all SM2SG-have-REL-FV
i-N-bányi u-tégerew-a ku-nyó-a i-bi-rahure u-mu-naáni
 AUG9-9-pregnancy SM2SG-NEC-FV 15-drink-FV AUG8-8-glass AUG3-3-eight
bya a-ma-əzi cánké bya i-mi-tóbe
 CONN8 AUG6-6-water or CONN8 AUG4-4-juice
 'In order to stay in good health during your entire pregnancy, you should drink eight glasses of water or juice'

Deontic modality can be seen as an outlier of Participant-external modality which is subjectively construed by the speaker and where the external circumstances affecting the first participant are socially created, e.g. through personal authority (usually the speaker) or a societal norm. While Deontic possibility expresses permission (7), Deontic necessity expresses obligation (8).

- (7) Lusoga (JE16; KAWALYA et al. 2019: 18)
é-N-sáwó yo o-sóból-á ó-kú-gi-rek-á
 AUG9-9-bag 9.POSS2SG SM2SG.PRS-POSB-IPFV AUG15-INF-OM9-leave-FV
wa-nó obá o-kú-gy-á ná-yo
 16-DEM or AUG15-INF-go-FV with-SBST9
 'Your bag, you can either leave it here or go with it'
- (8) Lusaamia (BOTNE et al. 2006: 62)
ómu-xasí a-xóy-eré a-mány'-e nga a-koy-á
 1-woman SM1-NEC-PFV SM1-know-SBJV now SM1-brew-FV
áma-lwa kééne kanó
 6-beer 6-kind 6.this
 'A woman ought to know how to brew this particular kind of beer'

Epistemic modality, finally, refers to the speaker's subjective judgements or estimations of the relative certainty of the truth of the conditions encompassed in the state of affairs. As seen in (9), epistemic possibility refers to a relative high degree of uncertainty whereas epistemic necessity refers to a relatively high degree of certainty (10).



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- (9) Shangaci (P312; DEVOS 2008a: 15)
a-ń-sákh-a **o-fiy-á** **á-tthú** **e-énkeénye**
 2-PRS-POSB-FV INF-arrive-FV 2-person 2-many
 ‘A lot of people might arrive’
- (10) Luganda (JE15; KAWALYA et al. 2019: 367)
obá **mugánda** **w-affe** **Napóólíyâni** **a-yogéddé**
 if 1.brother 1-POSS1PL Napoleon SM1.PRS-talk.PFV
bw’átyo **erá** **kí-téékw-á** **kú-bá** **ki-túufú**
 like=1-that then SM7.PRS-NEC-IPFV INF-be 7-true
 ‘If our brother Napoleon has talked like that, then it must be true’

2.3 Overlap in modal expressions

Often there is overlap in the reading of a modal expression between various flavors. An inferred reading can be conventionalized thus expanding and consolidating the semantic scope of a particular construction. This is exemplified by (11) from Nyamwezi.

- (11) Nyamwezi (F22; JONSSON 1954: 60)
Enea w-a-dul-a **ku-buk-a** **haha**
 Enea SM2SG-?-POSB-FV INF-rise-FV now
 ‘Eneas kan stiga upp nu (Eneas can/might get up now)’

This example is ambiguous. In the absence of further context and with its original Swedish translation, where the possibility auxiliary ‘can’ may be used for all types of flavors of possibility unlike English where the epistemic use tends to be restricted to questions and negative contexts (see e.g. VAN DER AUWERA and PLUNGAN 1998, NARROG 2005) the utterance can be associated with more or less any subtype of possibility, depending on how one wishes to interpret the proposition. That is, as participant-internal or -external possibility if the sentence is taken to denote that Eneas is able to rise now due to some internal or circumstantial reason, deontic possibility if the speaker uttering the sentence or some other normative force gives him permission to rise but also epistemic possibility if the speaker wishes to convey that there is a chance that Eneas will get up.

Just as a modal verb can expand between various flavors and from expressing pre- to core modal notions, it may also expand between the two modal forces, particularly within the deontic subdomain (cf. VAN DER AUWERA and PLUNGAN 1998). Similarly, a modal source does not necessarily have to start out marking PI modality but can be recruited directly into any of the subcategories of



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modality, e.g. like English 'be supposed (to)' which went directly into the modal system as a marker of PE.

With this in mind, a caveat is also needed. Namely, with a few notable examples, our surveyed sources on East African Bantu languages seldom offer any comprehensive overviews of the modal system in the given language, nor any detailed information on which exact subcategories of modality a specific auxiliary construction covers or does not cover (or offer enough contextualized examples for us to judge for ourselves). Our findings are necessarily therefore determined by the descriptive status of the languages under examination. As such there is a risk that some of the data presented and analyzed in the current work is inadequate or non-comprehensive.

3. Surveying Bantu modal auxiliary verb constructions across Eastern Africa

3.1 Introduction

In this section we offer a survey of auxiliary verbs expressing modality found in East African Bantu languages. The data comes both from general grammatical descriptions and articles specifically dedicated to modal expressions in East African Bantu. The latter are far fewer in number but much more detailed in their description of the modal system of a given language variety. It should be mentioned at the outset that with some notable exceptions, the sources surveyed seldom provide any complete descriptions of the inventory of modal verbs in a given language nor any detailed accounts of the various modal flavors any given auxiliary may express. Plenty more linguistic descriptions than those cited in this work have been perused in the hunt for modal auxiliaries, but where no information on the matter could be obtained.

The survey is geographically based in its scope and delimited to East Africa, which in this study is conceptualized as covering an area which reaches from Uganda and the Democratic Republic of the Congo (DRC) in the northwest to the coast of the Indian Ocean and further southward to Northern Mozambique, Malawi and Zambia. The languages considered are undeniably all also closely genetically related Eastern Bantu languages (cf. GROLLEMUND et al. 2015). By and large, the pool of languages (and subgroupings) equals those discussed in the genealogically oriented work of NURSE (1999) or EHRET'S (1998, 1999) grouping of "Mashariki-Kaskazi" under the "Eastern-Savannah subgroup" of "Savannah Bantu". Since most genealogical (sub-)groupings also are geographically coherent (and indeed often carry a geographically based designation) we have



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taken the liberty of using terminology perhaps mainly associated with genealogically-based studies when helpful.

3.2 Great Lakes

We start with the Great Lakes (zone J) languages in the north-western part of our designated area (cf. SCHOENBRUN 1990, 1994, NURSE 1999, BASTIN 2003), where the most substantial set of well-studied research on modal auxiliary verb constructions to date is to be found. Consequently, this section will also by far constitute the most elaborate and longest section. For ease of reference, we will further subdivide this section using the genealogical subgroups for Great Lakes established by SCHOENBRUN (1994, 1997). (Recall, however, that overall our study is geographically rather than genealogically organized).

3.2.1 Western Lakes

The interest in detailed research on modality in the Great Lakes Bantu was instigated by the diachronically detailed, corpus-driven investigations of modality markers in Rundi, a member of the Western Lakes subgroup of Great Lakes (JD62; BOSTOEN et al. 2012, MBERAMIHIGO 2014). In BOSTOEN et al. (2012), which focuses on auxiliary verbs expressing possibility, it is shown that **-shóbor-** is the most prominent modal possibility verb in Rundi, since it both transverse all subcategories of possibility and is most frequently attested in the corpus (see also Mberamihigo 2014: 80).⁵

Still, the verb **-shóbor-** is mostly confined to pre-core modal or “dynamic” senses, as in the participant-external construction in (12). Although it may also be used for core modal flavors as the deontic construction in (13) shows.

(12) Rundi (JD62; Mberamihigo et al. 2012: 16)

n-ra-shóbor-a	ku-siinziir-a	ha-ri-hó	i-ki-tánda
SM1SG-PRS.DISJ-POSB-FV	INF-sleep-FV	SM16-be-LOC16	AUG7-7-bed
'I can sleep (because) there is a bed'			

⁵ We exclude here from further discussion the verb **-shóbok-** which is an anti-causative or intransitivizing derivation of **-shóbor-**. See BOSTOEN et al. (2012) for a detailed account and the further discussion in § 4.1.4.



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(13) Rundi (JD62; MBERAMIHIGO et al. 2012: 16)

a-ba-ntu **ba-ó** **mu** **mi-ryango** **i-óóse**
AUG2-2-person 2-CONN LOC18 4-clan 4-all

ba-á-ra-shóbor-a **ku-bandw-a**
SM2-REM-DISJ-POSB-FV INF-participate.in.the.Kiranga.cult-FV
'People of all clans were allowed to participate in the Kiranga cult'

The verb **-shóbor-** may also be used for epistemic possibility in which case it has to occur in a more complex construction which includes the copula verb **-b-** in the infinitive and the semantic main verb in a type of dependent verb form, the so called "*conjunctif*". This verb form is characterized by an initial high tone and is used as a special verb form of unmarked subordinate clauses but also after auxiliaries, as in this case (see MEEUSSEN 1967: 113, NURSE 2008: 309; see also BOSTOEN et al. 2012: 17 for Rundi-specific references).

(14) Rundi (JD62; MBERAMIHIGO et al. 2012: 17)

u-u-jísh-a **i-bi-ziriko** **a-shóbor-a** **ku-bá**
REL1-SM1-plait-FV AUG8-8-rope SM1-POSB-FV INF-be

´a-a-ra-bi-i-têr-ir-ye
CJ-SM1-REM-DJ-OM8-REFL-plant-APPL-PFV
'Someone who plaits ropes may have planted them (for) himself'

The verb **-shóbor-** can be traced to a verb stem ***-còbud-** 'be able' reconstructed for Great Lakes Bantu (BASTIN et al. 2002). Cognates to Rundi **-shóbor-** also appear in several other closely related West Lakes languages like Ha (JD66 HARJULA 2004: 148), Fuliuro (JD63; VAN OTTERLOO 2011) and Vinza (JD67; Ko 2014), as well as other Great Lakes Bantu languages like Luganda, the latter two languages are discussed later in this section.

In addition to **-shóbor-**, Rundi also makes use of another possibility verb, namely **-bâsh-** with the source meaning 'be active', used in particular for marking pre-core modal participant-internal and -external modality (BOSTOEN et al. 2012: 16, MBERAMIHIGO 2014: 100-106). MBERAMIHIGO (2014: ch.3) investigates an additional set of other more peripheral possibility auxiliaries and in MBERAMIHIGO (2014: ch.4) several necessity auxiliaries are described. The most prominent necessity verb in terms of frequency is **-tégerezw-** 'have to, be obliged to'. This verb is particularly used for the expression of deontic necessity (but has been attested for the other subcategories too). The verb can be traced to the source verb **-té-g-**, a reflex of Proto-Bantu ***-té-g-** '(set) trap' with similar lexical meanings in Rundi (MBERAMIHIGO 2014: 122) and further derived with the suffix



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phraseme **-erez-** (consisting of a non-compositional sequence of two applicatives and a causative) and the common Bantu passive extension.⁶

Both Fuliuro (JD63) and Shi (JD53) – as described by VAN OTTERLOO (2011: 265-266) and POLAK-BYNON (1975), respectively – make use of a possibility verb **-hash-**, presumably related to **-bâsh-** previously discussed. As mentioned, Fuliuro also makes use of **-shóbol-**. In addition, the verbs **-lóng-** ‘get’ and **-zìgir-** ‘be able’ are employed as markers of PI possibility.

Another description of a West Lake language which includes a (brief) discussion of modal verbs is the aforementioned study on Vinza (JD67). KO (2014) shows that Vinza too makes use of a cognate of the Rundi **-shóbor-**, **-yoboor-** which seems to be to the most prominent (if only?) possibility auxiliary in the language. Furthermore, KO (2014) describes a spectacular combination of the verbs **-aang-** (< ‘refuse’) and **-kuund-** (< ‘like’) - used to express deontic necessity ‘must’ in the language, as in (15). Since the semantic main verb is inflected in the (finite) subjunctive verb form and not in the infinitive, however, it is difficult to be sure that we are really dealing with a mono-clausal (double) auxiliary construction in this case (although the translation would imply that this is indeed the case).

(15) Vinza (JD67; KO 2014: 97-98)

ya-aang-ye	a-kuund-ye	a-garuk-e	i-muhira	ntyanyene
SM1-refuse-PRF	SM1-like-PRF	SM1-return-SBJV	23-home	now
‘He/She must return home now (lit. he refuses or likes, he returns home now)’				

3.2.2 West Nyanza

The possibility verbs discussed for Rundi also show up in the West Nyanza languages (JE10, JE21-24), mostly spoken in Uganda and across the border into Tanzania. KAWALYA et al. (2014) is also a corpus-driven investigation on **-sóból-** in Luganda, a reflex of ***-còbud-** and cognate to the Rundi (and other Western Lakes) forms above. However, unlike its Rundi cognate, **-sóból-** in Luganda is not associated with epistemic possibility. In KAWALYA et al. (2021), it is furthermore shown that **-sóból-** stands in competition with the verb **-yînz-** (from a lexical source ‘be powerful’, ‘overcome’, ‘manage’, ‘control’, claimed by the authors to be obsolete as a lexical verb in present-day Luganda). Unlike **-sóból-**, **-yînz-** covers the entire range of possibility flavors, including the expression of the subjective core modal category of epistemic possibility.

⁶ For the use of the term ‘suffix phraseme’ see BOSTOEN and GUÉROIS (forthcoming).



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KAWALYA et al. (2019), in turn, investigates the modal auxiliary verbs **-téekw-** and **-lina** that are used (alongside other markers) in coding the necessity domain in Luganda. The modal verb **-téekw-** derived from a passivized form of the lexical verb **-téek-** ‘make a law, bind by law, edict’. Typically combined with an infinitive predicate verb, **-téekw-** is employed to express different subtypes of necessity, although it is primarily used with a deontic flavor, as in (16). In addition, it may not be employed for expressing PI necessity.

- (16) Luganda (JE16; KAWALYA et al. 2019: 365)
- | | | | |
|------------------|------------------|------------------------|-----------------------|
| ssemwandu | a-teekw-a | o-ku-kungubag-a | o-ku-mal-a |
| 1.widower | SM1.PRS-NEC-IPFV | AUG15-INF-mourn-FV | AUG15-INF-complete-FV |
| o-mu-aka | mu-lamba | | |
| AUG3-3-year | 3-full | | |
- ‘(And it is our custom,) a widower must mourn for a full year’

The possessive ‘have’-verb **-lina**, stems from the lexicalization (formal univerbation and functional re-analysis) of what was originally a copula verb **-li** and the comitative **na**. As a modal auxiliary verb, **-lina** too is mainly employed as marking deontic necessity as seen in (17).

- (17) Luganda (JE16; KAWALYA et al. 2019: 372)
- | | |
|---------------|---------------------------|
| o-lina | o-ku-bu-tuukiriz-a |
| SM2SG.PRS-NEC | AUG15-INF-OM14-fulfil-FV |
- ‘(Walukagga, that responsibility of making Bemba think that he is winning the battle, while he is being defeated,) you have to fulfil it...’

The modal system described for closely related Ruruuli-Lunyala (JE103) in NAMYALO et al. (2021) appears to be identical to that of Luganda.

KAWALYA et al. (2018), in turn, broaden the scope of research to include the expression of possibility in all of Luganda’s closest relatives of the West Nyanza branch of Great Lakes. As seen in Table 1, a simplified version of Table 6 in KAWALYA et al. (2018: 21), a relatively scattered picture appears when comparing these otherwise tightly interconnected languages. Thus, no modal verb is shared by all member languages of the West Nyanza branch. Some closely affiliated varieties to Luganda share its use of **-sóból** and **-yînz-** as possibility verbs, with roughly the same functional range. However, in the other languages **-yînz-** does not exist as a modal verb whereas **-sóból-**, where it does exist, differs in its semantic range (with more flavors of possibility covered in Rutooro, and less flavors covered in Haya and Nyamba compared to Luganda).



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LANGUAGE / AUXILIARY	-sóból-	-yînz-	-báas-	-kuhích-	(-ezy) ⁷
Luganda (JE15)	YES	YES	NO	NO	NO
Lusoga (JE16)	YES	YES	NO	NO	NO
Lugwere (JE17)	YES	YES	NO	NO	YES
Runyoro-Rutooro (JE11)	YES	NO	NO	NO	NO
Runyankore-Rukiga (JE13/14)	NO	NO	YES	NO	NO
Haya (JE22)	YES	NO	YES	NO	NO
Nyambo (JE21)	(YES)	NO	YES	NO	NO
Kerewe (JE24)	NO	NO	NO	YES	NO
Sinza (JE23)	NO	NO	NO	YES	NO

Table 1 – Possibility auxiliaries in West Nyanza Bantu languages (KAWALYA et al. 2018: 21)

Runyankore, Haya and Nyambo make use of a modal verb **-báas-**, cognate to Rundi **-bâsh-** presented above (and just as **-sobol-** a reflex of a regional reconstruction ***-báac-**; BASTIN et al. 2002). In Runyankore (JE13), **-baas-** is the only possibility auxiliary employed, a fact also pointed out by NYINONDI and LUSEKELO (2020). Example (18) illustrates the use of **-baas-** as a deontic marker in the language.

(18) Runyankore (JE13; NYINONDI and LUSEKELO 2020: 69)

ka-ku-mar-a **ku-kór-a** **e-mi-rimo=ye** **n-a-báas- a**
if-INF-finish-FV INF-do-FV AUG-4-work=POSS3SG PROG-SM3SG-POSB-FV

ku-zan-a

INF-play-FV

‘Once he is done with his work, he may play (on the street)’

NYINONDI and LUSEKELO (2020: 72-74) also report the use of the necessity auxiliary **-téekw-** ‘must/ought to’, which they link to a passivized variant of an original root **-téek-** ‘put’, but which most likely is cognate with the Luganda form previously discussed.

Those JE20-varieties spoken at the eastern shores of Lake Victoria which are still considered to form a part of the West Nyanza subgroup, viz. Kerewe (JE24) and Zinza (JE23), make exclusive use of a completely different possibility verb, namely **-kuhich-**, which appears to be of unknown origin. These languages are

⁷ KAWALYA et al. (2018) does not provide any etymology for **-ezy-**, only used as a PI possibility auxiliary in Lugwere. The authors furthermore note that “the verb **-ezy-** seems to be highly threatened by **-sobol-** in this language. The former is only provided as a synonym of the latter, but without clear contexts of usage” (ibid: 21). Maybe it is cognate with Ishenyi (JE45) **-esh-** (cf. §3.2.4).



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known to be in heavy contact with Suguti languages like Jita (JE25; cf. §3.2.4 below). However, we could not find any trace of this verb in Jita either.

3.2.3 Greater Luhya

There are also a substantial set of studies on modality from the eastward parts of Great Lakes Bantu, where we can start with zooming in to the Luhya branch (the JE30 languages + JE41). GLUCKMAN et al. (2017) have described the modal system, including several auxiliary verbs, in various Luhya varieties as summarized in Table 2 below. In working out the semantic differences between modal expressions in Luhya these authors have operated with an extra layer of scalar relationship of “weak” versus “strong” necessity. Their conceptualization of weak necessity relates to expressions such as English ‘should’ and refers to instances where “the source of the obligation or requirement is relative to something “less strict” than in instances of strong necessity modality [...]” (GLUCKMAN and BOWLER 2020: 224). In addition to this study, the same authors (GLUCKMAN and BOWLER 2020) offer a careful semantic investigation of the modal system in JE41 alone, whereas BOTNE et al. (2006: 60-62) address modal verbs in Lusaamia (JE34). Note that BOTNE et al.’s (2006) description of Lusaamia differs from that in Table 2 in that **-khoy-** (or **-xoy-** in their spelling) is formed without an additional applicative.

MODAL USE	possibility	necessity (weak)	necessity (strong)
NON-MODAL USE	‘manage’	‘want’	‘arrive/reach’
Llogoori (JE41)	-nyal-	-eny-	-duk-
Lubukusu (JE31c)	-nyal-	-eny-	-enyekh-/ -khoy-
Lunyore (JE33)	-nyal-	-eny-	-ol-
Lusaamia (JE34)	-nyal-	-eny-/ -dakh-	-khoyer-
Lutiriki (JE413)	-nyal-	-eny-	-tukh-
Luwanga (JE32a)	-nyal-	-eny-	-la-

Table 2 – Modal auxiliary verbs within the Luhya cluster (GLUCKMAN et al. 2017: 4)

As seen in Table 2, all Luhya varieties make use of the cognate verb **-nyal-** for expressing possibility. As further discussed in §4.1.4, this verb is borrowed from Luo. It is used to cover all types of flavors within the modal force of possibility, from participant-internal to epistemic possibility. Example (19) from Lunyore is an illustration of the latter function.



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(19) Lunyore (JE33; GLUCKMAN and BOWLER 2017: 6)

professor a-nyal-a okhu-its-a ng'ondi
1.professor SM1-POSB-FV INF-come-FV today
'The professor might come today'

Expressions of weak necessity are also formed with reflexes of the same verb **-eny-** (cognate with the necessity verb which occurs in some JE40 varieties discussed below).⁸ This weak necessity verb is reportedly rarely used with epistemic flavors (with the exception of Lubukusu). The verb, derived from a lexical source meaning 'want', occurs in its original active form for the expression of PI necessity alone. For expressions of PE and deontic necessity, the verb is additionally derived with a subject-demoting extension, in this case with the anti-causative and intransitivizing neuter suffix, as in (20) from Logoori. The predicate verb, in this case **-sav-** 'ask', appears in the subjunctive.

(20) Logoori (JE41; GLUCKMAN and BOWLER 2020: 229)

Sira y-enyek-a a-sav-e amu-aavo
1.Sira SM1-NEC-FV SM1-ask-SBJV 1-brother
'Sira should ask his brother'

The auxiliary verbs expressing "stronger" necessity in Luhya are all derived from lexical verbs meaning 'arrive/reach'. Thus, although these modal verbs are not cognates, they (more or less) seem to share the same source semantics. The 'arrive'-verbs are used to express all types of flavors of necessity, e.g. PE and epistemic necessity, as in (21). As indicated in these examples, however, they occur in different constructions. In (21a), the predicative verb is inflected in the subjunctive whereas in (21b) it is in the infinitive. Furthermore, in (21a), the verb is additionally derived with an applicative extension, which is not the case in the epistemic example in (21b).

(21) Lubukusu (JE31c; GLUCKMAN et al. 2017: 8)

a. **o-khoy-el-a o-bukul-ε endeke yi-no**
SM2SG-NEC-APPL-SBJV SM2SG-take-SBJV 9.flight 9-DEM
'You have to take this flight (to get to Kisumu)'

⁸ The only exception in the table is Lusaamia for which the authors claim that **-dakh-**, also meaning 'want', can be used in free variation with **-eny-**. This verb is not discussed by BOTNE et al. (2006) as a modal verb, however (although it is attested in their appended vocabulary as marking 'want (great need or desire)' (ibid: 131, 171). Can it be a Swahili loan from **-tak-** further integrated in the language through the productive process of Dahl's Law (where voiceless stops are voiced when the succeeding syllable also consists of a voiceless consonant; cf. DAVY and NURSE 1982)? Standard Swahili **-tak-** is a fortified variant of ***-cāk-** (NURSE and HINNEBUSCH 1993: 581), a type of sound law not characteristic of Luhya as far as we know.



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- b. **e-fula** **a-khoy-a** **khu-b-a** **nekwa**
 9-rain SM9-NEC-FV INF-be-FV fall
 'It must be raining'

Note finally for Luhya, that the verbs used for expression of necessity are more often not part of an auxiliary construction but in different types of impersonal constructions, either inflected with a dummy morph from a certain class (22)⁹ and further derived with valency-decreasing suffixes, namely associative suffix **-an-**, or with the verb in the infinitive (23).¹⁰

- (22) Llogori (JE41; GLUCKMAN et al. 2017: 14)
ga-duk-an-a **ndee** **u-zi-ε** **m-skolu**
 SM6-NEC-ASSOC-FV that SM2SG-go-SBJV 18-9.school
 'You must go to school'

- (23) Llogori (JE41; GLUCKMAN et al. 2017: 16)
ku-duk-a **Sira** **a-z-ε** **Nairobi**
 INF-NEC-FV 1.Sira SM1-go-SBJV Nairobi
 'Sira must go to Nairobi'

Although the infinitival use seems to be uncommon, the use of one and the same verb in both straightforward mono-clausal modal auxiliary constructions and in constructions with expletive subject markers is attested in many other eastern Bantu modal systems too. This fact will become clearer as we move along the other parts of Bantu-speaking East Africa. In §4.1.4 we return with a general discussion of such constructions and how some of them pose a problem in formal terms in relation to our delimitation of auxiliary verb constructions.

3.2.4 East Nyanza

Finally, for East Nyanza, Aunio et al. (2022) describes the modal system in some of the Mara languages, specifically those of the Western Serengeti branch of South Mara, i.e. Ikoma, Ishenyi, Nata (all three categorized as JE45) and Ngoreme (JE401). As for many of the other Great Lakes Bantu languages discussed above, these Mara languages also have one prominent possibility auxiliary employed

⁹ Interestingly, Luhya varieties seem to employ expletives from different noun classes for different functions, even in terms of modal flavor (see §4.1.4).

¹⁰ It may need to be stressed that the presentation of the data and discussion in GLUCKMAN and BOWLER (2020) seem to suggest that these verbs indeed stand in the infinitive (/deverbal noun) form and thus with the nominal class prefix of noun class 15, and not the subject marker of the same class (or the homomorphic locative class 17) as an expletive.



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throughout the whole spectrum of this modal force from PI (24) to epistemic possibility (25).¹¹

(24) Ikoma (JE45; AUNIO et al. 2022)

omo-kúngu **n-a-ago-tór-a** **ku-ghěgh-a** **amá-nche** **má-áru**
1-mother FOC-SM1-PRS-POSB-FV INF-carry-FV 6-water 6-plenty
'Mother is able to carry a lot of water'

(25) Ngoreme (JE401; AUNIO et al. 2022)

umu-kufu **go** **Neema** **gu-ra-tor-a** **ku-bh-a** **go-sir-re**
3-necklace CONN3 Neema 3-IPFV-POSB-FV INF-be(come)-FV 3-be_lost-PFV
'Neema's necklace might be lost'

The verb in question is **-tor-** (or occasionally **-tur-** due to processes of vowel harmony within the verbal word). All reflexes of the verb are shown to ultimately go back to a reflex of ***-túd-** 'pierce' (cf. BASTIN et al. 2002),¹² a curious etymology further discussed in §4.1.1.

Along with **-tor-**, Ishenyi also makes use of the verb **-esh-** 'become fitting', as illustrated in (26).

(26) Ishenyi (JE45; Aunio et al. 2022)

omó-óna **n-eesh-íre** **a-sháág-e**
1-child FOC-SM1.POSB-PFV SM1-swim-SBJV
'The child might be swimming'

As implied in the gloss, **-esh-** is a change-of-state verb and thus inflected in the perfective in present temporal contexts.¹³ In addition, the second verb appears in the subjunctive. This verb is only used for marking core modal flavors, i.e. the subject-oriented sub-categories of deontic and in particular epistemic possibility, as in (26) above. The source 'be(come) fitting' is a common source meaning for

¹¹ The pre-initial prefix **N-** found in the Ikoma-example stems from the common focus marker ***ní-** which has petrified on some verb forms in some of the Mara-varieties. Tone is not indicated on the Ngoreme-examples as recordings for this particular set of data were lacking.

¹² Nurse and ROTTLAND (1991: 201), EHRET (1998: 316) suggest that what appears to be a cognate verb, **-tol-** 'bore' in Sonjo (E46) and in other E50 languages, is borrowed from Cushitic. In light of the spread of ***túd** 'pierce' (3 PB Regions (NW Ce NE) and 6 zones B D E J M N (BASTIN et al. 2002)), we would be more inclined to believe the Mara modal verb to be an inherited verb (although attestations of Cushitic influence on Mara exists, see e.g. SHETLER (2003: 11-14, 288)).

¹³ In Bantu studies, the term change-of-state verbs are commonly referred to "those verbs whose aspectual potential includes a transition from one state to another on the part of the subject" (CRANE and PERSOHN 2019: 311), viz. 'become X'. Such verbs gain a (present) resultative reading when inflected with the perfective, as is also the case here.



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modal auxiliaries cross-linguistically and in Bantu. However, it is more often associated with necessity (e.g. BYBEE et al. 1994 ‘be fitting’ associated with obligation and thus necessity) than possibility as in this case. Based on this typological pattern one might be tempted to infer that the **-esh-** has expanded from an erstwhile necessity marker to a possibility marker (in line with the description in §2.3 above). In the absence of any concrete evidence, however, we have to refrain from drawing any such conclusions.

For expressing necessity, the JE45 language varieties use **-end-** ‘look for, want, need, wish, desire’. As seen in (27), Ngoreme makes use of a different non-cognate source verb **-tun-**, which, however, has a partly parallel etymology, namely that of ‘need’. As also described for many of the languages above, in their unaltered active forms **-end-** and **-tun-** are used to indicate the flavor of PI necessity. For PE and deontic necessity, **-end-** and **-tun-** is further derived with a participant-demoting passive extension.

- (27) Ngoreme (JE401; AUNIO et al. 2022)
- | | | | |
|-------------------------------|--|----------------|------------------|
| u-ra-tunu | | gw-eghi | ebh-into, |
| SM2SG-IPFV-NEC(<want-PASS) | | INF-wash | 8-utensils |
| gasi tare go che-nguru | | | |
| but NEG.COP CONN17 10-force | | | |
- ‘You should (**must) do the dishes, but you are not obliged to’

Both **-end-** and **-tun-** + PASSIVE VOICE are only used to express weak obligation, similar to JE30 **-eny-** above. This is visible in (27) above, where a more forceful deontic reading of **-tun-**, in this case, is cancelled by the following adversative clause.

To express a more forceful, strong obligation, the verb **-hatek-** can be used in Ikoma and Nata (at least), either derived in the passive form (28) in line with the common pattern of non-PI necessity verbs. Alternatively, the affected participant is demoted to an object and marked as such on the modal verb (29).

- (28) Ikoma (JE45; AUNIO et al. 2022)
- | | | |
|-----------------------|-------------------|-------------------|
| n-o-oku-háteku | u-mar-é | a-shúúre |
| FOC-SM2SG-PRS-NEC | SM2SG-finish-SBJV | 9-school |
| o-keéré | ghu-tém-a | omo-bhíira |
| SM2SG-before | INF-hit-FV | 3-football |
- ‘You must finish school before playing football’

- (29) Ikoma (JE45; AUNIO et al. 2022)
- | | | |
|----------------------------|-------------------|-----------------|
| n-e-egho-kú-hatek-a | u-mar-é | a-shúúre |
| FOC-9-PRS-OM2SG-NEC-FV | SM2SG-finish-SBJV | 9-school |



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o-keeré	ghu-tém-a	omo-bhíira
SM2SG-before	INF-hit-FV	3-football
'You must finish school before playing football'		

The verb can be suggested to be linked with ***-pát-** 'hold' > ***pát-ik-** (J,L) 'wedge in', so in the passive form 'be wedged in' (cf. BASTIN et al. 2002).¹⁴ Notice, that such a meaning is close to that of 'be made to fit in' ~ 'be fitting' and thus that the semasiological background of **-hatek-** could be argued to parallel other necessity source verbs related to meanings discussed for G42, N11 and P22 below.

Other peripheral modal verbs (i.e. verbs with fewer attestations and with a less extensive semantic range not including core modality) in the Mara languages, include PI possibility markers **-many-** from 'know' in Ikoma and **-nagy-** in Ngoreme (probably with the etymology 'have strength, power' + the causative extension, also present in other closely related languages such as Zanaki [JE44]).

3.3 Central Kenya

Moving further eastwards to Central Kenya (Guthrie's E50), far less detailed information on modal auxiliary verb constructions is available, both with regard to their specific semantics and the range of flavors they cover within the modal system, as well as to their semasiological background.

For Kamba (E55), LINDBLOM (1926: 59) describes two auxiliaries, which, given the examples provided, at least seem to express PI possibility. These are **-tonĩ-** 'be able (to)' (see also **-tony-** 'be able' in WHITELEY and MULI (1962: 123)), as in (30), and **-manĩ-** 'know' (see P22, JE40 and further discussion in §4.1.1) as in (31).

(30) Kamba (E55; LINDBLOM 1926: 59)
ṛḍr-tonĩ-a **u-sæmb-a** **mĩtuḵi**
 SM1SG-POSB-FV INF-run-FV quickly
 'I am not able to run quickly'

(31) **w-ĩ-manĩ-a** **ku-u-a** **ĩ-ú**
 SM2SG-?-POSB-FV INF-cook-FV 5.food
 'Can you cook food?'

Other auxiliary verbs with modal meanings in Kamba are **-is-** 'get to, happen to, likely to, may', **-ti-** 'be inevitable, must' and **-ail-** 'be fitting, ought' as in (32).

¹⁴ In this case the suffix ***-ik-** refers to the transitive impositive verbal extension and not the homomorphic intransitivizing neuter (cf. SCHADEBERG and BOSTOEN 2019).



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(32) Kamba (E55; FARNSWORTH 1957:36)

ni-n-ail-e **ku-neen-a**
FOC-SM1SG-NEC-PFV INF-speak-FV
'I should speak'

Gikuyu (E51), in turn, makes use of the auxiliary verb **-hɔt-** for marking possibility, according to Kihara (2017); see also BARLOW (1961[1951]: 184-185). The translation seems to suggest that **-hɔt-** covers different subcategories of possibility, as also implied (albeit not explicitly stated) by KIHARA (2017: 79-80) in his description of this verb.

(33) Gikuyu (E51; KIHARA 2017: 80)

Maina a-hɔt-a ko-nin-a ma-rigo ikomi
Maina 1-POSB-FV INF-finish-FV 6-bananas ten
'Maina may/might finish ten bananas'

To express necessity, Gikuyu uses the verb **-agerer-** 'should/ought' (Kihara 2017), illustrated in (34). It is given as ~ **-agĩrĩr-** and claimed to have the lexical meaning 'behoove one, be becoming to one' by BARLOW (1951: 185), as in (35) (the "literal" translation here is that of the author). As further seen in the examples below, the authors do not only differ in vowel height but also in which constructional frame the verb occurs in. Whereas KIHARA's (2017) example consists of the active form of the verb + subjunctive, the example provided by BARLOW (1951) seems to consist of the passivized version of the modal verb plus an additional comitative marker.

(34) Gikuyu (E51; KIHARA 2017: 160)

reu w-a-agere-irɛ w-a-nji-ɛ go-cari-a wera
now SM2SG-PRS-NEC-PFV SM2SG-PRS-start-FV INF-look-FV 14.work
'Now you should start looking for work'

(35) Gikuyu (E51; BARLOW 1951: 185)

w-a-giriiruo no ku-mu-rih-a
SM2SG-PRS-NEC ?COM INF-OM1-pay-FV
'You ought to pay him (lit. It behoves you only to pay him)'

Tharaka (E54; LINDBLOM 1914: 28, 47) has a verb **-ut-** 'can, be able to', which based on differences in vowel quality does not seem to be related to **-hɔt-** in E51.

3.4 Kilimanjaro-Taita

Moving further south to the Taita Hills and the slopes of Mount Kilimanjaro around the border between Kenya and Tanzania, a salient modal verb attested in several varieties (and also nearby; see §3.5) is the possibility verb **-(i)dim-**,



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originally borrowed from Maasai. Section 4.2 offers a further discussion about this etymology. Example (36) comes from Dawida.

- (36) Dawida (E74a; SAKAMOTO 2005: 11)
n-a-dim-a **ku-rumaghi-a**
SM1SG-PRS-POSB-FV INF-bear-FV
'I am able to bear (it)'

SAKAMOTO (2005) also notes a (weak?) necessity verb 'ought', expressed by **-fwan-** 'to behave, to concern' (also 'become one'). The verb can be linked to the Proto-Bantu form ***-pú-an-** 'be fitting, resemble each other' (BASTIN et al. 2002). This verb occurs in a construction where the first participant is morpho-syntactically treated as the object and consequently indexed on the verb in the form of an object marker, the subject marker being indexed by an expletive subject marker of class 9.

- (37) Dawida (E74a; SAKAMOTO 2005: 11)
y-a-ni-fwan-a **ni-ghal-e**
SM9-PRS-OM1SG-NEC-FV SM1SG-go(home)-SBJV
'I ought to go'

3.5 North-East Coastal Bantu

3.5.1 Swahili(s)

Surprisingly, we were unable to detect any comprehensive description of the modal system and modal auxiliaries in (Standard) Swahili (G42), despite the prominent role it plays socio-culturally in East Africa and within Bantu linguistics. SCHICHO (1995) is the only work we know that specifically tackles modality in Swahili, but his conceptualization of modality and modal verbs in particular (ibid: 140-146) differs quite substantially from the one used in this paper. In lieu of a dedicated study on this topic, what is presented here is a fragmentized and far from complete picture of the Swahili modal system. Often nothing more than the possibility auxiliary **-wez-** is mentioned in grammatical descriptions of the language. NURSE and HINNEBUSCH (1993: 294; probably based on SACLEUX 1939: 1022) trace the etymology of this verb to Arabic '**ezz** 'power', '**azza** 'be powerful'. The auxiliary is used for both pre-core and core modal categories, as seen in the expressions of PE possibility (38), and of deontic (39) and epistemic possibility (40), respectively.



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(38) Standard Swahili (G42d; ASHTON 1947: 276)

Mtu a-ki-ji-pit-i-a ovyo, a-wez-a ku-pond-w-a
1.person SM1-COND-REFL-cross-APPL-FV carelessly SM1-POSB-FV INF-hit-PASS-FV
'If anyone crosses the road without due care, he is liable to be run over'

(39) Standard Swahili (G42d; KEZILAHABI 1988: 27)

Aksante sana Rosa. U-na-wez-a kw-end-a
thanks very Rosa. SM2SG-PRS-POSB-FV INF-go-FV
'Thank you very much, Rosa. You can leave'

(40) Standard Swahili (G42d; MOHAMED 2001: 82)

M-kutano u-na-wez-a ku-maliz-ik-a mapema
3-meeting SM3-PROG-POSB-FV INF-finish-NEUT-FV early
'The meeting can finish early'

ASHTON (1947: 276-277), SACLEUX (1939: 736) and SCHICHO (1995: 143), further present an auxiliary construction with the auxiliary verb **-pat-** 'get' (< ***-pát-** 'hold' (Bastin et al 2002)) plus an infinitive predicate verb. As an "acquisitive modal" (VAN DER AUWERA et al. 2009) verb **-pat-** appears to be confined to expressions of PE and deontic possibility. As indicated in the examples, the construction is used both in independent (41) and dependent clauses (42), the latter with **-pat-** inflected in the subjunctive verb form. Notice furthermore that example (42) shows the (optional) omission of the infinitive marker (i.e., **washinda** instead of **kuwashinda**) formally reflecting a more grammaticalized construction.

(41) Standard Swahili (G42d; SACLEUX 1939: 736)

a-me-pat-a ku-maliz-a kazi
SM1-PERF-get-FV INF-finish-FV 9.work
'He managed to finish the task'

(42) Standard Swahili (G42d; ASHTON 1947: 276)

ni vizuri m-ji w-etu u-ku-e, adui z-etu,
COP good 3-town 3- POSS1PL SM3-grow-SBJV 10.enemies 10-POSS1PL
wa-ki-tu-shambuli-a, tu-pat-e wa-shind-a
SM2-COND-OM1PL-attack-APPL-FV SM1PL-POSB-SBJV SM2.PRS-beat-FV(<INF)
'It is good that our town grows, so that if our enemies attack us, we may get the better of them'

The causative derivation of **-pat-**, viz. **-pas-** or **-pash-** (cf. NURSE and HINNEBUSCH 1993: 590) may in turn be used for PE and deontic necessity, either in a passivized form (43) or carrying a dummy subject marker (of class 9) whereas the first participant is object marked on the verb (44).



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(43) Standard Swahili (G42d; SACLEUX 1939: 737)

ni-me-pasw-a kw-end-a
SM1SG-PERF-NEC.PASS-FV INF-go-FV
'I am obliged to go, i.e., I must go'

(44) Standard Swahili (G42d; MADAN and STEERE 1890: 155)

i-me-ni-pas-a kw-end-a
SM9-PERF-OM1SG-NEC-FV INF-go-FV
'It concerns me to go, i.e., I ought to go'

Other necessity verbs include various verbal derivations of the Arabic loan **-lazimu** 'must' (from **lāzim(an)** 'necessary' (SACLEUX 1939: 469; SCHADEBERG 2009), with the first participant again deprived of agentivity, structurally marked either in the form of detransitivizing suffixes such as the neuter **-ik** in (45), or by the shift in indexation from subject to object, as in (46). The verb **-bidi**, yet another Arabic loan (ultimately derived from **budd** 'act of escaping' (SACLEUX 1939: 116) seems to be restricted to constructions with a dummy subject, typically (47) but not necessarily (48) including the first participant as an object marker.¹⁵

(45) Standard Swahili (G42d; SCHICHO 1995: 143)

Rajabu, a-li-ye-lazim-ik-a ku-zi-ju-a
Rajabu, SM1-PST-REL1-NEC-STAT-FV INF-OM10-know-FV
desturi za nyumba hii ...
10.habit CONN9 9.house 9.DEM
'Rajabu, who was obliged to know the habits of this house ...'

(46) Standard Swahili (G42d; SCHICHO 1995: 141)

i-na-tu-lazimu tu-fany-e m-kataba
SM9-PRS-OM1PL-NEC SM1PL-make-SBJV 3-agreement
'We have to make an agreement'

(47) Standard Swahili (G42d; SCHICHO 1995: 141)

hadithi amba=yo i-li-ni-bidi ni-i-sikiliz-e
9.story that=REL9 SM9-PST-OM1SG-NEC SM1-OM9-listen-SBJV
'A story that I had to listen to ...'

¹⁵ Note that a quick Google search gave several examples with **-bidi** where the first participant is not demoted but is rather indexed in the subject marker slot, for example:

(i) **w-anawake wa-na-bidi ku-m-shukuru m-gunduzi wa makeup**
2-woman SM2-PRS-NEC INF-OM1-thank 1-discoverer CONN1 makeup
'Women should thank the discoverer of make-up'

This apparent change in argument structure might be due to influence from English but more research is needed in this area.



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(48) Standard Swahili (G42d; SACLEUX 1939: 106)

i-ka-bidi yule m-toto ku-let-a ma-shahidi
SM9-CONS-NEC 1.DEM 1-child INF-bring-FV 6-proof
'That child needs to bring some proof'

Standard Swahili furthermore makes use of the verb **-faa** as a necessity marker, a reflex of ***-pú-** 'be fitting' (cf. NURSE and HINNEBUSCH (1993: 587), i.e. ultimately the same root as in Dawida (see §3.4) and several other languages discussed further on in this paper.

The set of modal auxiliaries attested in the Congo varieties of Swahili seems to be fairly similar to those used in Standard Swahili, given some general morphological and phonological differences, e.g. **-wez-** > **-ez-**. For Kivu Swahili, however, NASSENSTEIN and BOSE (2016: 56-57) notes an interesting semantic difference in that the modal auxiliary construction **-pashw-** + infinitive which has spread across forces, from marking only necessity (49a), as in Standard Swahili, to also include possibility (49b). Note furthermore that in these examples the infinitive prefix of the main verb has been dropped, a formal indication of the condensation and thus further grammaticalization of this construction.

(49) Kivu Swahili (G40x; NASSENSTEIN and BOSE 2016: 57-58)

- a. **mi-na-pashw-a ku-on-a**
SM1SG-PRS-NEC-FV OM2SG-see-FV(<INF)
'I have to see you'
- b. **Est-ce que mi-na-pashw-a ku-on-a**
INT SM1SG-PRS-POSB-FV OM2SG-see-FV(<INF)
'Could I (possibly) see you?'

In Kisangani Swahili (another Congo Swahili variety), it is the active form **-pash-** which is employed as a modal auxiliary verb. Again, the verb is used both to denote necessity and possibility. However, these differences in force are formally marked through different constructional embeddings of **-pash-**: A possibility reading arises when **-pash-** stands in the present tense verb form (50a), whereas a necessity reading occur when the verb **-pash-** is further inflected in the future tense verb form (50b). Note furthermore, the apparent lack of the infinitive marker of the predicate verb in (50b) as compared to (50a), which would indicate a further formal specialization of the necessity construction.

(50) Kisangani Swahili (G40x; NASSENSTEIN 2015: 105)

- a. **a-na-pash-a ku-tu-remonté moral**
SM3SG-PRS-POSB-FV INF-OM1PL-restore 9.courage
'S/he can restore our guts'



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- b. **ni-ta-pash-a** **sema** **i-ko** **partagé**
SM1SG-FUT-NEG-FV say SM9-COP divided
'I have to say it is divided...'

A formally encoded difference with regards the possibility auxiliary **-wez-** is noticed by DEVOS (2008b: 412) for Makwe (G402), where it is marked on the verb form of the predicate verb. Whereas PI possibility is construed with **-wez-** and a predicate verb in the infinitive, as in (51a), PE and deontic possibility is expressed with the second verb inflected in a type of dependent conjugation marking both conditional and consecutive clauses, as in (51b).¹⁶

(51) Makwe (G402; DEVOS 2008b: 412)

- a. **i-wééz-i** **ku-kú-nyákuúl-a**
NEG:SM1SG-POSB-PRS.NEG INF-OM2SG-take-FV
'I cannot carry you'
- b. **ń-na-weéz-a** **ni-ka-yaúul-a** **úyóoví**
SM1SG-PRS-POSB-FV SM1SG-CONS-speak thus
'Can I say it like this?'

3.5.2 Ruvu (Central Tanzania)

NYINONDI and LUSEKELO (2020) describes the modal system of Luguru (G35). Here, the modal verb **-dah-** is used for encoding all flavors of possibility, e.g. the deontic possibility as in (52).

(52) Luguru (G35; NYINONDI and LUSEKELO 2020: 33)

- ko-dah-a** **ku-ghend-a** **ku-dawal-a**
SM1.PRS-POSB-FV INF-go-FV INF-play-FV
'(He doesn't need to stay at home too much) he may go to play (on the street)'

The possibility verb **-dah-** is attested as a modal auxiliary denoting possibility (or at least listed as a verb meaning 'can', 'be able' etc.) in closely affiliated languages like Kagulu (G12; PETZELL 2008: 221), Bondei (G24; WOODWARD 1882: 44) Zigua (G31; WOODWARD 1902: 36), Zaramo (G33; WORMS 1897:306) and Kami (G36; VELTEN 1900: 43; PETZELL and AUNIO 2019: 583-584). We also found attestations further southwards in the Kilombero (G50) language Pogolo (G51) (HENDLE 1907: 137) as well as further north in Rift valley varieties such as Nyaturu (F32), further discussed in §3.6, and Langi (F33; SEIDEL 1898: 432). The etymology of this verb is not clear. However, in Last's grammar of KAGULU (1886: 130), **-dah-** is

¹⁶ Makwe, spoken in Northern Mozambique, is most likely a Swahilized variety of Makonde (see RZEWUSKI 1991, DEVOS 2008b: 2-3 for further discussion and references). As such, it should perhaps have been treated in some other subsection (either §3.7 or 3.9). However, since the modal verb construction is similar to Swahili, we keep Makwe in this section.



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provided with the translation ‘have power over’,¹⁷ a common source meaning for possibility verbs and thus a plausible source meaning. In at least Kami, the Swahili loan **-wez-** appears to occur along with **-dah-** as a possibility auxiliary verb (PETZELL and AUNIO 2019: 584).

The verb **-bam-** ‘want’ derived with the passive **-igw-** is used for expressions of PE and deontic necessity in Luguru, as illustrated in (53).¹⁸ In these constructions, the predicate verb needs to be inflected in the subjunctive. Again, the semasiological background of the source verb **-bam-** is opaque.

(53) Luguru (G35; NYINONDI and LUSEKELO 2020: 79)

u-ghali	wa-li-bondo	w-o-bamigw-a	wa-bik-igw-e
3-gali	CONN3-5-cassava	SM3-PROG-NEC-FV	SM3-cook-PASS-SBJV
na	tsi-mbogha	au	wa-dagala
with	7-vegetable	or	2-sardine

‘(and when this dance is played) ugali from cassava must be cooked and served with vegetables or sardine (**dagaa**)’

For Bondei (G24) and Zigua (G31), WOODWARD (1882: 44, 1902: 36) mentions the verb **-agiz-** ‘concern’, ‘behoove’ as being used for ‘must’ and ‘ought’, viz. PE and deontic necessity meanings. This verb can be set in comparison with the forms ***-lagil-** ‘agree, suit’, **-agir-** ‘be fitting, behoove’, and also ***-lag-** ‘promise’ and ***-lagizy-** ‘command’ reconstructed for the closely related Sabaki cluster by NURSE and HINNEBUSCH (1993: 595). WOODWARD (1882: 44) furthermore notes, that just as was described for Swahili in the previous section (§3.5.1), Bondei uses **-faa** ‘be of use, avail’ as a modal verb.

3.5.3 Other North-East Coastal languages

We have also found some brief notes about modal verbs in other North-East Coastal Bantu languages. Thus, PATIN et al. (2019: 609) presents for Ngazidja (G44a) the verb **-find-** ‘be able’ (= non-core possibility alone?); cp. Swahili **-shind-** ‘win, overpower, subject, tame, master, overcome, be stronger, surpass, push-to-end’ (Sacleux 1939: 838-839).

NICOLLE (2013: 131) reports the use of **-wez-** as expressing possibility and **-londw-** necessity in the Mijikenda-variety Digo (E73). Whereas the former is the same possibility auxiliary as found in Swahili, the latter stems from a

¹⁷ NYINONDI and LUSEKELO (2020) also refer to this grammar when discussing the semantics of **-dah-**, albeit not this specific lexical meaning.

¹⁸ In the interests of clarity, we have slightly altered the original English translation in this example.



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passivized variant of the verb **-lond-** ‘want’ – ultimately from ***-dònd-** ‘search for’ and/or ‘follow’, reconstructable for Eastern Bantu (see BERNANDER 2017: 221 for some elaboration on the doubled meaning of the reconstructed verb; see also footnote 21 in §4.1.2). Interestingly, the same verb occurs with the same function in languages spoken along Lake Nyasa and thus at the very other side of Tanzania (See §3.7).

3.6 West Tanzania and the Rift Valley Bantu languages

Recall from example (11) in §2.3 that Nyamwezi has a possibility verb **-dul-** originating from a lexical source verb meaning ‘bore’, i.e. a similar etymology to the possibility verb **-tor-/-tur-** in East Nyanza JE40 (§3.2.4) but also **-hotol-** in southern Tanzania (further presented in §3.7). In addition to **-dul-**, JONSSON (1954: 59-60) mentions for Nyamwezi the possibility auxiliary verbs **-duj-**, **-vej-** (copied from Swahili **-wez-** or perhaps even directly from Arabic?) and **-kobol-**. He also describes the use of the verb **-igel-ile** ‘be worthy (vara värdig)’ for marking necessity (< (petrified) reflexive **-i-** + ***-ged-** ‘measure’ + perfective **-ile?**). Interestingly, there seems to be a clear semantic difference in modal meaning depending on how the participants are indexed on the modal verb. Where a weak necessity reading ‘should’ (‘bör’) is conveyed when the verb is inflected with a dummy morph **shi-** (< class 8?) alone, whereas a strong necessity reading is conveyed when the verb additionally carries the 1st participant indexed as an object marker (54). (When inflected with 1st participant as subject marker, the verb denotes the lexical ‘be worthy’). In all cases, the predicate verb is inflected in the subjunctive (but in the infinitive form in negated constructions).

(54) Nyamwezi (F22; JONSSON 1954: 61)

shi-b-igel-ile	boi	ba-ba-w-ile
SM?8-OM2-NEC-PFV	PERS.PRON2	SM2-OM2-say-PFV
‘they must tell them’ (‘de måste säga till dem’)		

Like several other languages spoken in the central parts of Tanzania, Nyaturu (Rimi; F32), spoken at the south-western fringes of the Rift Valley, makes use of the auxiliary verb **-dah-** as a possibility auxiliary (OLSON 1964: 213). In addition, Nyaturu has a necessity auxiliary verb **-noney-** ‘behoove’ < ‘deserve, be worthy’. As seen in (55a), the modal necessity meaning is again expressed through the type of construction with an expletive subject marker and the first participant indexed as an object marker. Sentence (55b) is included here to show the “automatic” lexical meaning that arises when the first participant is indexed as a subject (marker).



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(55) Nyaturu (F32; OLSON 1964: 214)

- a. **i-qu-nónéy-é** **ú-l-á** **mwiimo**
SM9-OM1PL-NEC-PFV INF-eat-FV 3.work
'It behooves us to work'
- b. **n-ti-nónéy-é** **u-kuríw-a**
SM1SG-NEG-behoove-PFV INF-praise.PASS-FV
'I don't deserve to be praised'

3.7 Southern Tanzania (The Southern Highlands and Rufiji-Ruvuma)

For the southern parts of Tanzania (G60, N10 + P10-P20), BERNANDER (2016, 2017: ch.10) describes the modal system in Manda (N11) along with comparative notes for several neighboring and closely affiliated languages. In Manda, the possibility verb **-hotol-** has a pre-modal meaning 'overcome, defeat' but also, and originally, 'pierce' (cf. the reconstructed root ***-cotud-**; BASTIN et al. 2002). It is used for all subtypes of possibility all the way to marking epistemic meanings, as in (56).

(56) Manda (BERNANDER 2017: 280)

- a-hótól-a** **kú-y-a** **ku-nyúmba** **ni-wón-a** **baiskéli** **y-áki**
SM1-POSB-FV INF-be-FV 17-9.home SM1SG-see-FV 9.bicycle 9-POSS3SG
'He might be at home; I can see his bicycle'

The modal auxiliary **-hotol-** exists also in several of Manda's closest relatives/neighbors, like Kisi (G67), as illustrated in (57).

(57) Kisi (G67; NGONYANI 2011: 153)

- li-boma** **lya** **twenga** **lya** **nganda**
5-troupe CONN5 us CONN5 mganda
- li-hotol-a** **ku-kwel-a** **mw-aka** **ughu**
SM5-POSB-FV INF-win-FV 3-year DEM3
'Our mganda (dance) troupe can win this year'

However, as reported in BERNANDER (2017: 290-291), the expression of possibility seems to be increasingly replaced with the Swahili loan **-wez-** in many of Manda's closest affiliates. In Matengo (N13), for example, the verb **hwes-** (< borrowed and adapted from Swahili **-wez-**) has increased significantly in use (in particular among younger speakers) at the expense of **-hotol-** (YONEDA 2010, BERNANDER 2017: 291).

For the subdomain of necessity, Manda primarily uses the verb **-lond-** 'look for, want, need, desire'. This reflects a similar formally encoded shift of this verb from marking PI to marking PE and deontic flavors, where the two latter forms are expressed with the verb further derived with the medio-passive neuter



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suffix **-ik-**, thus morphologically coding the semantic shift from a requirement inherent in the first participant, as in (58), to one being externally imposed (59). In the latter example with the neuter **-londek-** (59), the 1st participant is indexed as a subject marker on the modal verb.

(58) Manda (N11; BERNANDER 2017: 296)
ni-lónd-a **kú-nyw-a** **kaháwa**
SM1SG-NEC-FV INF-drink-FV 9.coffee
'I need to drink coffee'

(59) Manda (N11; BERNANDER 2017: 297)
a-lóndék-a **ku-bít-a** **ku-shuli**
SM1-NEC-FV INF-go-FV 17-9.school
'She has to go to school'

Modal **-londek-** may also be inflected with a 'dummy morph' – the subject marker of class 9. In such cases in Manda, however, the 1st participant may not be de-ranked to an object marker on the verb (probably since Manda is quite reluctant to object marking in general). The verb has scope over a whole matrix clause rather than over the single action/event of the predicate verb (cf. BERNANDER 2017: 294-295) and does not really count as an auxiliary (see discussion in §4.1.4). Note also here also the predicate verb occurs in the subjunctive rather than in the infinitive (see BERNANDER 2020 on the special subjunctive form in Manda).

(60) **i-lóndék-a** **a-lót-áyi** **ku-héng-a** **li-héngu**
SM9-NEC-FV SM3SG-go-SBJV INF-work-FV 5-work
'It is necessary (that) he goes to work'

Another necessity verb used by some Manda speakers for PE and deontic flavors is **-yenelek-**, which BERNANDER (2017: 298) traces to a verb meaning 'be fitting', again further extended with the neuter suffix. BERNANDER (2017: 299-301) argues that neither **-lond(-ek)-** or **-yenelek-** can be considered core modals as they tend to be more "descriptively" than "performatively" used (NUYTS 2006: 15), and thus seldom with the speaker as the source of obligation, but rather with reference to other external forces (TRAUGOTT and DASHER 2002: 114-117). None of the verbs are used for expressing epistemic meanings.

Just as Manda **-yenelek-**, a verb meaning 'be fitting' used as a necessity marker has also been attested in Mwera (P22; HARRIES 1950)¹⁹. In this case, however, the

¹⁹ It may be noted that Harries' Mwera data is also sampled and discussed in BYBEE et al.'s (1994: ch.6) cross-linguistic investigation of modal expressions.



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verb is not derived with agent-demoting morphology alone as with the neuter in Manda. Instead, the active verb form is used albeit with the first participant indexed as an object (marker) and a dummy morph indexing the subject marker (as, e.g., the Swahili example in (43) above).²⁰

(61) Mwera (P22; HARRIES 1950: 109)

i-tu-wāndicīle	ku-wal-a	ukoto
SM9-OM1PL-NEC.PFV	INF-dress-FV	properly
‘We ought to dress properly’		

We are not sure how to decompose this verb stem. HARRIES (1950: 67) shows that the neuter + applicative form together is realized as **-icila**, which would make sense semantically and iconically: First, the verb is derived with the neuter extension which de-ranks the 1st participant but also detransitivizes the verb. With the addition of the applicative, the verb construction is made transitive again accommodating the treatment of the 1st participant as an object. Peeling away the applicative and neuter would leave us with a root **-wānd-**; (from ***-band-** ‘flatten’??). Finally, the verb must be a change-of-state verb inflected with the perfect(ive) suffix **-ile**, leading to the present stative reading and to the type of verb-stem modification where the verb base final */il/* coalesces with the suffix into forming **<īle>** */i:le/* (cf. Harries 1950: 79-81).

For marking possibility, Mwera employs the verb **-many-** originally meaning ‘know’ (cf. HARRIES 1950: 110), just as in Kamba (§3.3) and Ikoma (§3.2.4) discussed previously. See (§4.1.1) for further discussion on the extension of this verb to marking modal possibility.

Also Bena-Hehe (G63-G62), spoken in the Southern Highlands, use a reflex of **-many-** along with two other verbs originally meaning ‘know’, namely **-kagul-** and **-dzēl-**, for expressions of possibility. This according to PRIEBUSCH (1935: 98-100)²¹, who additionally mentions the verb **-vagil-**, derived from **-vag-** ‘be enough’ with the valency-increasing applicative suffix – thus, ‘do to be enough’ or similar – used inflected in the perfective **-ile** (with stem modification) for expressions of deontic possibility. For expressing deontic necessity, Bena uses the verb **-nogel-** ‘be appealing’, also derived with the applicative suffix from the stem **-nog-** ‘be/taste good’. The latter verb is

²⁰ When used with proper subject indexation on the auxiliary verb, the in other terms similar construction has a proximative ‘nearly’ or ‘almost’-meaning, e.g. **wawandiciile kujawula** ‘they were almost going’ (HARRIES 1950: 109).

²¹ Priebusch explicitly refers to his work as a “Bena-Hehe-Grammatik” and claims it to include a mixed set of linguistic data from both Bena (G63) and Hehe (G62).



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illustrated in (62). All constructions are formed with the predicate verb in the infinitive. Although mainly associated with possibility and necessity, respectively, Priebusch mentions that both **-vagil-** and **-nogel-** may also be used interchangeably with the opposing force. In (63), for example, **-nogel-** expresses deontic possibility.

(62) Bena (G63; PRIEBUSCH 1935: 98)
u-nogye ukw-im-a
SM2SG-NEG.PFV INF-stand-FV
'You have to get up' ('Du musst aufstehen')

(63) Bena (G63; PRIEBUSCH 1935: 100)
a-si-nogye nda uku-l-idz-an-a na juhwe
SM2SG-NEG-NEG.PFV NEG INF-eat-CAUS-ASS-FV COM PRON1PL
'He may not eat with us' ('Er darf nicht mit uns mitessen')

See also MORRISON (2011: passim) where **-wes-** (most likely an adapted variant of Swahili **-wez-**) occurs as a possibility auxiliary verb in Bena, indicative of a later introduction of this verb to this language.

3.8 The Lake corridor area + Nyakyusa

For the languages spoken in the "corridor" between Lake Tanganyika and Lake Nyasa (M10-M20) and the Nyakyusa varieties (M30) of southwestern Tanzania and continuing into Malawi and Zambia, we have not found much information on modal auxiliary verbs.

One exception is Lungu (M14), which has the potential prefix **-nga-** for possibility force but uses modal verbs for the expression of necessity. Firstly, by a complex combination of the copula and comitative **na** 'be with' > 'have' plus an infinitive predicate verb, as in (64). Secondly, with auxiliary **-fw-** in the perfective plus an infinitive predicate verb as in (65).

(64) Lungu (M14; KAGAYA 1987; cited in NURSE 2008: appendix)
tú-lí n-ú'kú-lím-a
SM1PL-COP COM-INF-cultivate-FV
'We have to farm'

(65) Lungu (M14; KAGAYA 1987; cited in NURSE 2008: appendix)
tú-fw-íí(e) úkú-lím-a
SM1PL-NEG-PFV INF-cultivate-FV
'We ought to farm'

The construction in (64) is reminiscent to one of the necessity constructions in Luganda (cf. §3.2.2), while the one in (65) appears to include a reflex of the same



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*-pú- ‘be fitting’ (BASTIN et al. 2002), as found in necessity expressions in Dawida (§3.5) and Swahili (§3.5.1) as well as Makhuwa (P31) discussed below in §3.9.

Another exception is Ndali (M301), as described by BOTNE (2008). Whereas a verb-internal prefix, **-nga-**, appears to be the main marker of possibility (see also the note on N20-40 languages in §3.9), modal verbs are used for expressions of necessity. Most prominent is the verb **-bagil-** with the predicate verb in the infinitive, illustrated in (66). Comparing with closely related Nyakyusa (M31), it is clear that **-bagil-** is derived from a lexical source verb (again) meaning ‘suit, fit, deserve, be eligible’ as indicated in FELBERG’s (1996: 9) dictionary.²²

- (66) Ndali (M302; BOTNE 2008: 126)
a-bagile **u-ku-yi-many’-a** **ii-síla**
 SM1-NEC.PFV AUG15-INF-OM9-know-FV 9-way
 ‘S/he must know the way’

In addition, BOTNE (2008) mentions two other verbs being used in complex construction as markers of “obligation” (i.e. PE/deontic necessity), namely the motion verbs + **íse**, from **-is-** ‘come’, and the (rarer) **íye** from **-y-** ‘go’, both being inflected in the subjunctive (and with the predicate verb likewise inflected in the subjunctive). Given Botne’s examples they would seem to also function as marking subordinate purpose clauses. It is hard to tell whether these erstwhile motion verbs have lost their subject marking or whether they are “raised” constructions with a dummy morph in the subject prefix position (i.e. **í-ye** [SM9-go.SBJV]).

- (67) Ndali (M302; BOTNE 2008: 126)
n-aa-tumíw-a **ukuti** **íse** **n-gulísh-e** **ii-ny’ama**
 SM1-PRF-be.sent-FV COMPL NEC SM1-sell-SBJV 9-meat
 ‘I have been sent so that I should (come to) sell the meat’

This last construction is reminiscent of a complex verb form expressing possibility in Safwa (M25; VOORHOEVE n.d.: 46). Following VOORHOEVE (ibid: 46-47) it consists of **nza** ‘come’ followed by the main verb in the present subjunctive. The subject is indexed on the ‘auxiliary’ only if it consists of a vowel. Accordingly, the examples in (67a) and (68b) show ‘double’ (SM = **a-**) and “single” agreement (SM = **tú-**).

²² Peculiarly, FELBERG (ibid) also gives the meaning ‘be able, can, be possible’ and as an equivalent of Swahili **-wez-**, thus suggesting a reading of possibility rather than necessity in Nyakyusa. We have not been able to investigate this apparent discrepancy further.



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(68) Safwa (M25; VOORHOEVE n.d.: 46)

- a. **a-nza-á-bal-e**
SM1-POSB-SM1-go-SBJV
'He may go today'
- b. **nza-tú-zi-fis-e**
POSB-SM1PL-OM10-hide-SBJV
'We may hide them today'

3.9 Further southwards (N20-40 and P30)

This section closes with a final note on modality in the Eastern Bantu zone N and P languages spoken further southwards in Malawi and Mozambique. Firstly, the N-languages spoken in the south of Tanzania (N20-N40), seem primarily to make use of dedicated verb-internal morphology for the marking of modality, e.g. the use of the post-initial prefix **-nga-** for possibility and **-ka-** and **-zi-** for necessity in Chewa-Nyanja (N31), described by HETHERWICK (1916) and MCHOMBO (2004), as in (69). It is possible that the latter form is related, though, to the 'come'-auxiliary construction described for Ndali and Safwa in the §3.8 above. NGONYANI (2020: 68-69) does report the presence of a possibility verb **-koz-** 'be able' in the Nyanja variety spoken in Tanzania without offering more detail on the matter, however.

(69) Chewa (N31b; MCHOMBO 2004: 30-31)

- a. **mu-nga ndi-thandiz-e**
SM2PL.POT SM1SG-help-SBJV
'You can/may help me'
- b. **m-kango u-zi-b-a mi-kanda**
3-lion SM3-NEC-steal-FV 4-beads
'The lion must (should) steal beads'

With regard to the Makhuwa group (P30), the most substantial documentation of the modal system is to be found in the aforementioned study by Devos (2008a) on Shangaci (P312). As she shows, different verbs are used to express flavors both within the possibility and necessity domain. The inventory of modal verbs are based on the potential **pode** 'can' borrowed from Portuguese (whose status as an auxiliary verb is a problematic, however, a fact further discussed in §4.2) and the necessity verbs **-na** 'have (to)' for PI flavor, the PE/deontic **-on-** 'see' (used only with an impersonal subject concord, and thus again having a bit of an irresolute status as an auxiliary; see §4.1.4), and **-sal-** 'remain' also marking PE/deontic necessity. The auxiliary construction with **-sal-** illustrated in (70) with both the auxiliary and the predicate verb being inflected in a verb form (**-i-B-a**) otherwise only used in subordinate clauses (the 'conditional/subsecutive'). This leads DEVOS (2008a), along with other



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concomitant evidence, to suggest that the construction's modal use is the result of insubordination.

(70) Shangaci (P312; DEVOS 2008a: 20)

aphaáno w-ii-sál-á w-ii-khoól-a khaázi za vaánce
now SM2SG-CON-remain-FV SM2SG-CON-hold-FV 10.work CONN10 16.outside
'Now you have to start working around the house again (after your periods have ended)'

The perhaps most remarkable feature concerning Shangaci modal verbs is what occurs in the epistemic domain, however. Here, the language makes use of a segmentally identical construction consisting of the auxiliary verb **-sakh-** (< 'want') and the predicate verb in the infinitive which is used both for expressing epistemic possibility (71) as well as epistemic necessity (72).

(71) Shangaci (P312; DEVOS 2008a: 15)

leélo ni-ń-sákh' o-khól-á n-cúuwa
today SM5-PRS-want' FV.INF-hold-FV 5-sun
'Today, the sun might shine'

(72) Shangaci (P312; DEVOS 2008a: 23)

násaámbi ni-ń-sakh' o-khol-a n-cúuwa
now SM1SG-PRS-want' FV.INF-hold-FV 5-sun
'Right now the sun will shine (you can already see it appearing from behind the clouds)'

As indicated in these examples, it is only the prosody of the predicate verb that indicates its modal meaning. That is, high tones are missing on the predicate (infinitive) verb in the construction expressing epistemic necessity. DEVOS (2008a) relates this omission of tones (more specifically tone omission of the first high tone and concurrent shifts in the following tone pattern) to "predicative lowering", a strategy, which among other functions is used for marking focus and here, in turn, to strengthen the modal force of the expression.²³ Interestingly this type of shift directly between epistemic possibility and necessity is not accounted for in van der AUWERA and PLUNGIAN'S

²³ Notice moreover the word order of these examples with the subject noun in a post-verbal position. With the subject in the canonical pre-verbal position **-sakh-** automatically receives the original source meaning of 'want'. Thus, there is a morpho-syntactic difference between the source construction and the modal constructions, which DEVOS (2008a) suggests is a syntactic reflection of the fact that the epistemic expression has scope over the proposition as a whole, rather than just the complement verb.



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(1998) semantic map and thus contradicts their suggested pathways of extension and change.

For other P30-languages the documentation on modal auxiliary verb constructions appears rather slim. For Cuwabo (P34), GUÉROIS (2015: 403) reports an auxiliary verb **-wodh-** 'be able' (< 'defeat'; cf. *ibid*: 537, 631) used to express possibility, but only dynamic participant-internal possibility it would seem.

(73) Cuwabo (GUÉROIS 2015: 403)

ka-wódh-fle	o-mú-téy-ih-a	námwáli	le
NEG.SM2-POSB-PFV	INF-OM1-laugh-CAUS-FV	1a.girl	DEM1
'None succeeded in making that girl laugh'			

As further discussed along with Shangaci **pode** in §4.1.4 and §4.2, in the necessity domain Cuwabo has also borrowed the Portuguese **ter que** 'have to' for marking obligation, however without morpho-syntactically integrating it as a verb, thus making its position as an auxiliary suspicious.

For Makuwa (P31) WOODWARD (1926: 303), gives, without exemplifying, **-wory-** 'can' (cognate w. Cuwabo **wodha** above?) as a possibility verb. PIRES PRATA (1990: 410) rather gives **-wer-/wery-** and adds more translation equivalents suggesting that the auxiliary has an origin in a verb meaning 'win, overcome, be superior' which appears to be a common source for possibility verbs in Eastern Bantu (cf. also § 4.1.1). Next, WOODWARD (1926: 303) gives **-pwanel-** 'must/ought' as a necessity verb. This is again a verb that can be linked up to readings of 'be fitting' (cf. ***pú-an-** 'be fitting', resemble each other'; BASTIN et al 2002). Interestingly, PIRES PRATA (1990: 324) gives the meanings 'be equal, alike, resemble each other' for underived **-pwan-**. The same verb with the applicative suffix (**-pwanel-**) is translated as 'deserve', whereas it is the sequence of the applicative and the detransitivizing stative suffix (**-pwaneley-**) which seems to give the necessity reading. Moreover, PIRES PRATA (*ibid*: 387) gives yet another necessity verb derived from the verb **-tthun-** 'want, desire' by addition of a stative suffix, i.e., **-tthuney-**, thus confirming the recurrent trait of detransitivizing morpho-syntax in modal constructions expressing necessity (cf. also §4.1.4).

4. East African Bantu modal auxiliary verb constructions - general traits and comparative inferences

After surveying the Eastern African Bantu modal verbs, some comparatively induced patterns emerge that are summarized and discussed in this section.



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Starting with the most fundamental traits, it is first and foremost clear that there do exist an extensive amount of modal auxiliary verbs in this Bantu-speaking area, both expressing the concepts of necessity and possibility. However, there is also a bewildering diversity between the various languages with few real cognancies attested beyond very tightly inter-related groups. With that said, there are still striking similarities with regard to the source semantics of the verbs recruited for a specific modal function and their constructional make-up as well as that of the predicate verbs.

The EA Bantu modal auxiliary verb constructions would generally seem to prefer to stick to one and the same force. Thus, although they often vary and may be employed in different categories (“flavors”) within a single category of either possibility or necessity, they do not often seem to be intersecting between these overarching categories. Counterexamples do exist, however. Firstly, in Congo Swahili, the auxiliary **-pash-** is a PE/Deontic marker and thus the switch in force can be accounted as adhering to a typical cross-linguistic pathway of expansion; cf. VAN DER AUWERA and PLUNGIAN (1998). A similar case is attested for Bena, although in this case it seems to be both a possibility verb that may be used for necessity and vice-versa a necessity verb used for expressing possibility force. Secondly, for **-esh-** in Ishenyi, the source meaning of the verb would suggest an erstwhile history as necessity verb albeit no language-internal (or comparative) evidence exist to allow us to draw such a conclusion. Thirdly, and most striking, is the case of **-sakh-** in Shangaci where the switch from possibility to necessity occurs within the epistemic subdomain thus breaching the universal pathways of extension postulated by VAN DER AUWERA and PLUNGIAN (1998).

Often, the category of possibility appears to be more cohesive, in the sense that many of the surveyed languages make use of one possibility verb, in one concurring form, dedicated to marking out the full spectrum of possibility flavors. In comparison, the domain of necessity appears as slightly more shattered. This in the sense that different verbs may be employed for marking weak vs strong necessity, but also that what is essentially the same verb is exposed to different morphological and constructional modifications when marking different flavors (as further discussed in §4.1.2). Unlike its equivalents in the possibility domain, auxiliary verbs also appear to be less often extended to be used for expressing epistemic necessity. Additionally, the predicate verb-internal subjunctive suffix, omnipresent in Bantu, may by itself cover the expression of necessity directly on the predicate verb. We could speculate that this feature of the subjunctive leaves less motivation for the developments of auxiliaries within the necessity domain (cf. NURSE and DEVOS 2019 and further references therein). Such circumstances



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may, in turn, explain the fact that more focus has been put on the research of possibility verbs in EA Bantu.

4.1 Source verbs and source constructions

In the survey of EA Bantu modal auxiliaries (cf. Tables 3, 4 and 5 in the appendix) it is interesting to note the diversity of lexical source verbs, on the one hand, and, on the other, the similarities in their meaning, the similar constructions they are formed in and the similar ways they tend to be integrated and expanded within the modal domain.

Note that in some cases we have not been able to work out the (exact) source meaning of a modality verb or to trace its lexical etymology further. A case in point is the verb **-dah-** discussed for several languages of our survey.

4.1.1 Possibility verb sources

Starting with possibility verbs in EA Bantu, these may often quite straightforwardly be linked up with the broader non-Bantu typological literature in terms of cross-linguistically common source meanings and further pathways of extension. Most possibility verbs in our survey are derived from verbs roughly meaning ‘overcome, defeat, have power (over)’. This adheres to a common cross-linguistic pattern where verbs predicating physical ability extends to cover all types of abilities (cf. BYBEE et al. 1994: 190). Interestingly however, in quite many of these EA Bantu verbs, the lexical etymology can be shown to go even further to a source etymology of ‘pierce’ or ‘bore’, namely for **-hotol-** in many languages in Southern Tanzania, **-tur-/-tor-** in the Western Serengeti languages, and **-dul-** in Nyamwezi. BERNANDER (2017: 284) notes with regard to this semasiological background that: “In the same manner as the extended meaning of ‘overcome’, the more narrow reconstructed original meaning ‘pierce’ also encompasses the first participant succeeding in forcing his/her way through a physical barrier [...]. The recruitment of this verb to denote ability and capacity can thus be seen as a generalization and abstraction from this physical ability to overcome and dominate a concrete referential entity to the mastery of a more abstract activity or event.”

There are also some attestations of ‘know’, mostly represented by cognates of the same verb **-many-** (reconstructable for PB as ***-many-** ‘know’). Again, the recruitment of ‘know’ into marking possibility adheres to a very common cross-linguistic pattern. BYBEE et al. (1994: 190) notes that: “The most commonly documented lexical source for ability is a verb meaning ‘to know’ or ‘to know how to’ [...] A verb originally restricted to mental ability is extended to apply as



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well to physical ability, and thus becomes a general signal of ability”. With that said, given the descriptions at hand, the use of **-many-** seems quite marginal in the EA Bantu where it has been attested, often not being the pre-dominant strategy of marking possibility and often not having expanded beyond expressing pre-core (dynamic) concepts of PI and PE possibility.

4.1.2 Necessity verb sources

For the necessity domain, the dominant pattern is the use of a verb expressing ‘need’ often co-expressing ‘want’ and other volitional uses, such as **-lond-**, **-tak-/sakh-**, **-end-**, **-bam-**, **-tun-**.²⁴

Used in its original, active, transitive form the verb is used for marking participant-internal necessity. The categories of participant-external and deontic (and occasionally also epistemic) necessity is, in turn, expressed by the additional modification of the verb, either with the dedicated Bantu passive, a reflex of Proto-Bantu ***(ib)u-**, or less commonly the medio-passive or middle-voice marking neuter, a reflex of Proto-Bantu ***-ik-** (cf. SCHADEBERG and BOSTOEN 2019), the latter being the case in Luhya and Manda.²⁵ Functionally, it signals the detachment of the 1st participant from no longer being co-referential with subject and thus being the agent or the instigator of the event depicted in the predicate (semantic main) verb, but as rather being in the hand of external forces. There exist alternative syntactic strategies for coding this semantic re-perspectivization than to just add the passive and neuter. These are further discussed in the next section (§4.1.4).

Another strand of necessity source constructions are verbs originally carrying denotations of ‘(make) fit, suit’ etc., again with the first participant demoted from a default subject position. To this set of source verbs, we could arguably also accommodate the semantically broader **-téek-** ‘put, edict’ (+ passive extension) in West Nyanza (JE10 + some JE20). Verbs denoting ‘be fitting’ is also a common cross-linguistic source for expressing PE/deontic necessity (BYBEE et al. 1994: 182-183).

²⁴ BERNANDER (2017: 295) notes for Manda (N11) that the necessity verb **-lond-** probably at first meant ‘follow, look for’ as the same meanings have been reconstructed for Proto-Bantu (***dònd;** GUTHRIE 1967-71. vol3: 178, BASTIN et al. 2002), but that its lexical-semantic range was expanded into additional meanings such as ‘want’, ‘desire’, and specifically ‘need’, based on “the inference that what one is looking for is subsequently something one wants (to have) or desires”.

²⁵ In Manda, these two similar strategies can be said to have collapsed since the neuter has expanded its functional range at the expense of the passive which is rarely used; see BERNANDER (2018).



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This is also the case with 'have' attested as a necessity source verb in Luganda, Lungu and Shangaci as a source for obligation (see BYBEE et al. 1985, 1994: 183-186 for elaboration on the semantic factors at play behind this extension). These 'have'-constructions are in turn derived, in different ways and in different degrees of lexicalization, from the in Bantu common comitative pattern based on a copula and the comitative conjunction **na** 'with', in which 'be with' > 'have'.

4.1.3 Motion verbs as modal verb sources

There are also attestations in our survey of what we may jointly refer to as motion verbs as source verbs for expressions of both possibility and necessity. For the use of verbs meaning 'arrive, reach' for expressions of (strong) necessity in Luhya varieties in general, and Llogoori in particular, GLUCKMAN and BOWLER (2020) suggest that the extension to a modal verb involves the expansion in referential range from a concretely defined (locational) threshold to an abstract one "of goodness" stipulated by external forces of which the 1st participant reaches or exceeds. In a similar vein, Shangaci's **-sal-** 'remain' could be indicated to implore to stay put in an extended locus of goodness. Other more basic motion verbs used like 'come' and 'go (to)' that we see mostly in the southern languages of our survey, might also fit within this idea. Or, when expressing possibility, with BYBEE et al.'s (1994: 190-191) remark that 'arrive' implies the successful completion of an act which is then easily conventionalized as denoting the capability of the 1st participant to complete the act. More generally, of course, 'come' and 'go'-verbs in Bantu are ubiquitously recruited for expressing all types of grammatical functions, not only associated motion, tense and aspect but also focus, for discourse structuring and in presentational and existential constructions. Apparently, these verbs are quickly undergoing formal truncation, univerbation and morphologization as modal auxiliaries too, something which makes them stand out in relation to the other relatively modestly grammaticalized modal verbs.

4.1.4 Source constructions

Construction-wise it may firstly be noted that almost all auxiliary verb constructions expressing possibility in our survey are formed with the predicate verb in the infinitive. In a few languages (cf. Ishenyi in (26), Makwe in (51b) and Safwa in (68) the auxiliary is followed by a more finite verb form (cf. MIESTAMO 2005: 74 on finiteness being a non-categorical notion) which includes a SM but is still typically found in dependent clauses, i.e. the subjunctive or a conditional/consecutive tense. In at least Ishenyi and Makwe the constructions appear to be reserved for core modal notions. Swahili similarly allows for a



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choice between an infinitive, a subjunctive or a consecutive tense after the auxiliary **-wez-** ‘be able’, but further research is needed to assess what determines the choice. LÉONARD (1980) argues that the consecutive (marked by **-ka-**) implies a lower level of likelihood than suggested by the infinitive (or the subjunctive for that matter), which does point towards an epistemic and therefore core-modal reading. Following LÉONARD (ibid: 218-219), the use of the consecutive (74b) rather than the infinitive (74a) after the auxiliary **-wez-** in (74), taken from the late Tanzanian president Nyerere’s tract on socialism, implies that it is less likely for a rich person to have a “socialist soul” than for a poor person to be a capitalist at heart.

(74) Standard Swahili (G42; LÉONARD 1980: 218-219)

- a. **Maskini wa-na-wez-a ku-w-a na roho za ki-bepari ...**
 2a.poor SM2-PRS-POSB-FV INF-be-FV with 10.heart CONN10
 ‘Poor men can have the souls of capitalists ...’
- b. **Vilevile Tajiri a-na-wez-a a-ka-w-a na roho ya u-jamaa**
 also 1.rich SM1-PRS-POSB-FV SM1-CONS-be-FV with 9.heart CONN9 11-socialism
 ‘Likewise, a rich man can have a socialist spirit’

Another exception is the more complex construction with both an infinitive copula and the predicate verb in the “*conjunctif*” verb form discussed for Rundi epistemic possibility constructions (§3.2.1).

Auxiliary verb constructions devoted to marking necessity vary. Often, the predicate verb is obligatory or in some cases optionally inflected in the subjunctive verb form rather than in the infinitive. This is most straightforwardly connected to the fact that the subjunctive verb form in itself is also often used to form modal expressions of necessity (see §4.1.2), which is a rarer, if at all possible, strategy for expressing possibility cross-Bantu (cf. NURSE and DEVOS 2019).

A significant tendency in the formation of the category of necessity in EA Bantu is the constructional shift in the morphology of the auxiliary verb, between PI and other non-PI flavors. Thus, PI necessity tend to be expressed with an active transitive verb where the subject of the clause also harmonies in semantic terms with the first participant of the SoA, accordingly indexed as the subject marker on the verb. Non-PI flavors, viz PE/deontic and in some rare cases epistemic flavors, are instead expressed with a verb (often the same verb as that employed for PI necessity) somehow associated with the demoting of the first participant of the SoA. As seen, languages vary within themselves and between each other in



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the strategies they use for morpho-syntactically coding this type of downgrading of the first participant, and so congenially also marking the fact that the forces – the needs, obligations or necessities, affecting the 1st participant are external to him/her/them (or it). Broadly, three such strategies have been encountered in our survey.

1) The modification of valency of the auxiliary verb by passive or middle voice suffixation, in which case the 1st participant is deprived of its agentivity but is still indexed on the auxiliary as the subject. Examples include **-pas-w-** in Swahili (with the passive suffix) and **-eny-ek-** in Logooli (with the neuter suffix).

2) No shifts in the valency of the verb but instead a shift of the 1st participant from being indexed as a subject to an object on the verb. In these cases, the (obligatory) subject marker slot is filled with an expletive or dummy morph, typically recruited from class 9 as in Swahili (see examples (45) and (47) in §3.5.1) and Mwera (example (61) in §3.7), although examples from other classes also exist, e.g. in Nyamwezi, where it seems that the plural class 8 SM is used, as in example (54) in §3.6.

3) The combination of 1 and 2 insofar that there is de-transitive voice marking on the verb as well as an expletive occupying the subject marker slot. In these cases the 1st participant is thus not indexed anywhere on the verb. Example (60) in §3.7 with SM9-**londeka** in Manda is a case in point. With regard to the choice of subject marker in these constructions, in Logoori, the use of different dummy subject markers from either noun class 9 **e-** or 6 **ga-** even triggers different readings of the proposition including difference in modal force. Thus, (75b), expressed with an expletive **ga-** would convey stronger obligation than (75a) expressed with **e-**. See GLUCKMAN and BOWLER (2016), GLUCKMAN et al. (2017) for further elaboration on this fact.

(75) Llogoori (JE41; GLUCKMAN and BOWLER 2017: 14)

- | | | | | |
|----|---------------------------|-------------|---------------|----------------|
| a. | e-duk-an-a | ndee | u-zi-ε | m-skolu |
| | SM9-NEC-REC-FV | that | SM2SG-go-SBJV | 18-9.school |
| | 'You should go to school' | | | |
| b. | ga-duk-an-a | ndee | u-zi-ε | m-skolu |
| | SM6-NEC-REC-FV | that | SM2SG-go-SBJV | 18-9.school |
| | 'You must go to school' | | | |

To this category we would also assign constructions with no subject marking at all, such as the Portuguese loans discussed in section §4.2, or the constructions in the Luhya cluster expressed with the modal verb in the infinitive (see example (23) in §3.2.4).



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The strategy of an expletive subject marker only with the verb modified with some de-transitive voice marking suffix significant for Type 3 constructions exists also for possibility verbs (see SCHADEBERG and BOSTOEN 2019 for more information on these various suffixes, commonly referred to as “extensions”, in Bantu). Examples include **-hotol-** derived with the neuter **-ik-** to yield **-hotol-ek-** ‘be possible (that)’ in Manda (see example (76) in the next paragraph for an illustration of its use); Rundi **-shobok-** which is an intransitive variant of **-shobor-**, the final /ok/ and /or/ in these verb bases representing the intransitive and transitive pair of the commuting separative suffixes; Swahili **-wezekan-** which is actually a combination of two valency-decreasing suffixes, namely the neuter **-ik-** and the associative **-an-**.

Although all these strategies are clearly functionally related, some of them pose a problem in formal terms in relation to our delimitation to auxiliary verb constructions. The structural challenge described here and how it relates to the notion of auxiliary verb constructions definitely merits further investigations. In a simplified manner, however, we would treat these various constructions as on a continuum where we feel that category 1) and, more reluctantly so, category 2), falls within our definitional limits of an auxiliary. Category 3) does not, mainly because being translatable to “it is possible/necessary (that)’ it is more reminiscent of a bi-clausal structure where the modal marker does not only operate on the single action/event of a second verb but over a whole matrix clause. This is perhaps most visible in examples like (22), in §3.2.3, and (54), in §3.6, from Llogooli and Nyamwezi, respectively, where an explicit subject noun (i.e. the first participant) interfere between the modal verb and the predicate verb. The Llogori examples above and example (76) from Manda furthermore contain an explicit complementizer.

(76) Manda (N11; BERNANDER *field notes*)

i-hotól-ék-a	kukíta	va-na	va-gón-íli	hmu
SM9-POSB-NEUT-FV	COMPL	2-children	SM2-sleep-FV	now
‘It is possible that the children are sleeping now’				

The regular shift within the necessity paradigm of what is often the same auxiliary verb from a plain form to a passivized or at least intrasitivized variant, has seldom been discussed in the typological literature and might thus be a specific trait significant for (EA) Bantu languages. That passive and middle voice markers are cross-linguistically employed as markers of modality has been pointed out by e.g. NARROG (2012: ch.7). However, he discusses such a function with reference to the morphemes themselves, i.e. in their production with any



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verb root.²⁶ Here, we are instead dealing with the recurrent application of a passive or middle marker as an extra modification of an auxiliary verb already carrying a specialized modal function. The result is the regular shift in the coding of the auxiliary verb accompanying the semantic shift from a participant-internal orientation to what in some way or another is imposed to the 1st participant externally (through circumstances outside the participant's control, whether objectively or subjectively construed).

4.2 On the role of contact

Contact has played a significant part in the formation of EA Bantu modal systems at large, also including the genesis of modal auxiliary verbs. This phenomenon is in line with general cross-linguistic tendencies where the domain of modality is more open to the influx of external influences than to those of tense and aspect (cf. MATRAS 2007; FRIEDMAN 2012). The influx of contact-induced modal verbs could probably in part be explained by the fact that modality is more lexical-like and semantically weighty compared to other markers of the wider TAM-domain (as already mentioned at the outset in §1), lexical items generally being more easily borrowed than grammatical markers. At the same time, the most mature core modal concepts, i.e. deontic and epistemic modality, are also sensitive for contact-induced transfer as they can be taken to belong to MATRAS' (1998, 2020) category of "utterance modifiers", highly (inter-)subjective markers of the pragmatically dominant language to which bilingual speakers tend to switch in order to maintain the assertive authority during conversational interaction. However, in these cases the most prominently transferred markers are not (auxiliary) verbs but rather adverbs and other types of invariable elements. The perhaps most commonly attested one in EA Bantu is the Swahili adverbs/discourse markers expressing core necessity **lazima** 'must' (in turn copied from Arabic into Swahili)²⁷. It was attested for Nata already by MEKACHA (1993: 157,161) and is also described as an actively used modal marker in Manda (BERNANDER 2017: 303-304), Nyakyusa (Persohn p.c.), Matuumbi (ODDEN 1996), Tanzanian Nyanja (Ngonyani 2020), Runyambo (Nyinondi and Lusekelo 2020), Logooli (GLUCKMAN and BOWLER 2020) and other Luhya varieties

²⁶ In which case the modal reading is actually also often different as it more readily seems to target the modal domain of possibility see also the discussion of the "passive-facilitive" from a cross-linguistic perspective in KEMMER (1993), and especially with regard to the neuter in Bantu in DOM et al. (2016, 2018).

²⁷ In fact, necessity expressions (of stronger force) seem to have been transferred from Arabic to several languages across the globe (see MATRAS 2007).



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(GLUCKMAN and BOWLER 2017), and Rufumbira (JD61; NASSENSTEIN 2019: 141).²⁸ See also GLUCKMAN and BOWLER (2020), also Bernander (forthcoming), on the curious adaptation (replicated from Luo?) of the Swahili loan **mpaka** into a marker of necessity; see also MOUS (2020).

The transfer of the Swahili possibility auxiliary verb **-wez-** ‘can’ appears as a clear case of Swahili-induced change (or “Swahilization”) in several of the surveyed Bantu languages of Eastern Africa. As mentioned in §3.5. the verb in Swahili is in itself borrowed from Arabic. Another minor attendance of this sort, worth mentioning, is the use of **-khitiri** and **-kidiri** for the expression of possibility in Koti (P311; SCHADEBERG and MUCANHEIA 2000: 223) and Mwani (G403; Devos field notes), respectively. The word originates from Arabic **qadara** ‘can, be able, appreciate’ (SACLEUX 1939: 355). As it does not appear to be regularly used in Standard Swahili, however, it must have been used in the Southern Swahili dialect giving rise to the mixed Koti and Mwani varieties. Alternatively, these varieties borrowed the form directly from Arabic.

Except for Swahilization, modal auxiliary verbs have also been transferred to Bantu languages due to contact with Nilotic at the northern fringes of the Bantu borderland.²⁹ BERNANDER (forthcoming) compares the Luhya (JE31) modal markers (GLUCKMAN et al. 2017) with those found in Luo (TUCKER 1994: 469-470) and reaches the conclusion that the Luhya language varieties most likely borrowed the possibility auxiliary **-nyal-** ‘be able’ presented in §3.2 from Luo **nya-lo** with the same meaning (see also BOTNE 2004 who makes this connection for Lusaamia JE34). However, as also indicated in §3.2.3, once integrated into Luhya, its functional range seems to have expanded to also include epistemic possibility unlike in the source language. Another case of a borrowed modality verb is **-(i)dima** ‘be able, overcome’ which have been transferred to a broad area of languages including the Chaga varieties and various North-East Coast Bantu languages from Eastern Nilotic Maasai (NURSE 1979: 285, 509-511; see also, e.g. KOTZ 1909: 32; HOHENBERGER 1929-1930: 198; RAUM 1909: 274). Nurse (ibid) notes that this transfer must be relatively recent as the Maasai are claimed to have been in the area for no longer than 200-300 years. Although reflexes of **-(i)dima** generally appears to be used for expressions of pre-core dynamic ability, it has at times also been extended in use compared to its source language.

²⁸ In Rufumbira, **lazima** (~**razima**) is integrated into a verb-like construction with what appears to be the quotative verb **-ti** (ibid: 141, BERNANDER forthcoming).

²⁹ To the best of our knowledge there exist no transferred (modal) auxiliary verbs from Cushitic nor the isolate/Khoisan varieties Hadza and Sandawe also in contact with EA Bantu languages.



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At least in Kasigau (E74c) where it even appears to have developed post-modal functions of future tense.

(77) Kasigau (E74c; NURSE 1979: 510)

e-dem-a wa-kab-a
SM1-FUT-FV ?-hit-FV
'He will hit'

Finally, an influx of markers within the modal domain can also be traced to influences from colonial languages, what appears to most prominently be transfer from Portuguese into Mozambican Bantu varieties. DEVOS (2008a) reports that Shangaci expresses participant-external possibility with **pode** borrowed from Portuguese **poder** 'be able to, be allowed to, may'. Interestingly, DEVOS (2008a) notes that although the Portuguese source originally is a verb it has not been incorporated in the verbal morphotaxis of Shangaci (unlike other Portuguese loan verbs) but acts more like modal particle.

(78) Shangaci (P312; DEVOS 2008a: 10)

pode o-mw-úreereex-a
NEG.POSB INF-OM1-eat.with.tea-FV
'You can eat (it) with tea'

The negative equivalent is marked by adding the Portuguese negative particle **nãõ**. A similar case is reported for another Mozambiquan language, Ngoni N12x (Kröger forthcoming), where the nasalized /o/ of **naõ** has been adapted to /m/.

(79) Mozambican Ngoni (KRÖGER forthcoming)

Nampode ne' ku-jenda wangali li-hona
NEG.POSB I INF-go without 5-tobacco
'I can't go without tobacco'

In a similar manner of (non-)integration, the Portuguese modal auxiliary verb **ter que** 'have to' has been borrowed and phonologically adapted as a marker of necessity in Cuwabo (P34).

(80) Cuwabo (P34; GUÉROIS 2015: 387)

tinyá ke-a-ved-úw-e áttu
NEC SM2-look.for-PASS-SBJV 2.people
'They had to look for people'

As was already noted in §4.1.4, the non-integrative character of these Portuguese-originating modal verbs make them resemble modal markers of Category 3, viz. markers originating in verbs but which do not act like auxiliaries.



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5. Concluding remarks and directions for further research

This paper has offered a survey of the use of auxiliary verb constructions for expressing modality – here conceptualized as expressions of possibility and necessity – in East African Bantu. That is, in languages spoken from eastern Congo in the north-west to northern Mozambique in the south-east and covering zones JD, JE, E, F, G, M, N and P. For this group of languages, it has been shown that contrary to many traditional standpoints, there does exist a bewildering number of modal verbs.

In many ways, the various language-internal modal systems behave quite similarly. Often, the auxiliary verbs are recruited from lexical sources with analogous meanings, in turn often adhering to cross-linguistically common sources. Interestingly, however, the verbs themselves are seldom cognate which would point towards shared cognitive patterns rather than shared innovations. With that said, some modal verbs derived from cognate lexemes such as reflexes of ***-many-**, ***-dond-** and ***-pú-(an-)** appear across diffuse parts of the surveyed area. Furthermore, some shared cognates do also appear in delimited regions indicative of shared innovation or diffusion, e.g. reflexes of ***-còbud-** and ***-báac-** in the western parts of Great Lakes Bantu, **-dah-** in a large part of central Tanzania and **-hotol-** in the very southern parts of Tanzania. Some of the shared modal auxiliaries are in turn externally transferred loans, from Nilotic (**-nyal-** and **-(i)dim-**) or from the highly influential Swahili in the case of **-wez-** (in turn copied into Swahili from Arabic).

The verbs also occur in largely the same constructional frames. The predicate verb, i.e. the verb depicting the main event of the proposition tends to occur in its infinitival form or, occasionally in necessity constructions, in the subjunctive. In some cases, the infinitival prefix may be dropped, indicative of further maturation of the construction along the route to univerbation and morphologization. This factor aside, however, it is striking how the modal verbs in Eastern Bantu seldom, if at all, seem to expose any formal indications of being grammaticalized. This stands in contrast to many European languages like in English where modal verbs often are argued to form a class of their own with characteristic formal features which set them apart from other (auxiliary) verbs (cf. COATES 1983: 4). From a Bantu-internal perspective it also makes the modal verb constructions differ significantly from other auxiliary constructions marking tense and aspect (as well as other functions) which are renown for recurrently and rapidly undergoing formal reductions of univerbation and morphologization (NURSE 2008: 25, ANDERSON 2011, GÜLDEMANN 2003). At the same time, this tendency found in East African Bantu adheres to more general claims in which modal verbs are seen as semantically more weighty, belonging to



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a category settled within the lexico-grammatical interphase rather than a clear-cut grammatical domain.

Another typologically striking feature identified in this survey is the regular manipulation of what is essentially the same verb base in order to “rob” the subjecthood and agentivity of the 1st participant, and thus indicating the modal force as participant-external and imposed. Often such constructions also denote a more speaker-oriented (subjective) rather than a participant- and event-oriented (objective) expression. This regular difference in constructional make-up merits a more elaborate investigation and needs to be further situated within the broader cross-linguistic knowledge of modal constructions.

There are several avenues for further research and ways this study could be extended. First and foremost, it could be expanded to include the rest of the Eastern Bantu branch, and, indeed, the whole Bantu language family. It could also be expanded to include other formal types of modal markers than auxiliary verbs, e.g. adverbs, particles or inflectional – affixational – categories like the subjunctive but also potential prefixes like **-oo-** used in some JD-languages or **-nga-** which occurs in several N-languages. This additional category of modal markers would also include erstwhile lexical verbs which have been grammaticalized to a new word class, e.g. the epistemic possibility adverbial **many(yi)** in N10-languages, and **manyango~manyanga** in Rundi³⁰, both transparently derived from the lexical verb **-many-** ‘know’ (i.e. the same source which has also been recruited to an auxiliary verb in some of the languages studied). Elaborating on such items and their diachronic trajectories, would enable a more sophisticated understanding of whether a verb used as a modal marker also qualifies as an auxiliary verb or not.

With that said, it is clear that comparative research on Bantu modality like this one, is still severely impacted by the lack of comprehensive investigation into the modal domain in individual languages. It is our sincere hope that this study in its infancy and rudimentary setting, can provide a helpful overview of the subject matter along with a thorough and up-to-date bibliographic account of work on modality in East African Bantu. To this end, we hope it acts as impetus and inspiration for other scholars to take up or to continue the study of the

³⁰ See also MBERAMIHIGO et al. (2016) for this curious case of de-grammaticalization of a modal verb construction in Rundi in which a source construction consisting of the modal verb **-meny-** ‘know’ + quotative **ngo** inflected in sm2sg, viz. ‘you know that’, was reanalyzed and underwent univerbation into a modal adverb **umenyago~umenyaga** ‘probably, apparently’. From there, it further expanded into a lexical verb **-menyag-** ‘believe, judge, doubt’.



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expression of modality and the use of modal auxiliary verbs in Bantu languages, and indeed more widely.³¹

Abbreviations

Abbreviations follow the Leipzig Glossing Rules with the following additions: 1, 2, 3 = noun classes 1, 2 3 etc.; ASSOC = associative; CJ = conjunctif; CONN = connective; DISJ = disjoint; OM = object marker, NEUT= neuter; SBST = substitutive, SM = subject marker.

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³¹ In connection to this plea, we wish to mention Vander KLOK's (2014) methodological contributions to the elicitation of modality. Many of the latter Bantu studies on modality (AUNIO et al. 2022, BERNANDER 2017, KAWALYA et al. 2018 and GLUCKMAN and BOWLER 2017, 2020) draw on this work.



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Appendix

The following three tables list the modal auxiliaries discussed in this paper. Table 3 and 5 concern modal auxiliaries used for the expression of possibility and necessity, respectively. Table 4 gives ‘hybrid’ auxiliaries that can be employed in both domains in particular languages. Within each table, the verbs are grouped following similarity in source meanings (cf. the second column). The starred forms are reconstructions to Proto-Bantu or lower nodes within the Bantu tree (cf. the main text). Concerning the construction types, we make a distinction between two main types of constructions according to the formal characteristics of the main verb. Constructions with infinitival main verbs are referred to as ‘compound’, whereas constructions with an inflected main verb are referred to as ‘complex’ (cf. SCHADEBERG 1992 for a discussion of compound and complex verb constructions in Standard Swahili). Next, we also indicate whether the construction involves agent-demoting morphology (typically passive or neuter derivational suffixes) or syntax (typically an expletive subject marker with or without demotion of the first participant to the object marker slot).

*reconstruction/(<i>reflex</i>)/<source language	non-modal (source) meaning(s)	languages	modal meanings	construction types
*cotud	‘pierce’ > ‘overcome, defeat’	Manda N11, Matengo N13, Kisi G67	PI, PE, deontic epistemic	compound
*tód	‘pierce’	Ngoreme JE401, Ikoma JE45, Ishenyi JE45, Nata JE45	PI, PE, deontic, epistemic	compound
(dul)	‘bore’	Nyamwezi F22	?	compound?
*còbud	‘be able’	Rundi JD62, Fuliiru JD63, Ha JD66, Vinza JD67, Luganda Runyoro-Rutooro JE11, Luganda JE15, Lusoga JE16, Lugwere JE17, Haya JE22	PI, PE, deontic epistemic	compound complex (AUX + INF(be) + DEPENDENT)
(yínz)	‘be powerful, overcome, manage, control’	Luganda JE15, Lusoga JE16, Lugwere JE17	PI, PE, deontic, epistemic	compound
(nyal) < Luo	‘manage’	Lubukusu	PI, PE,	compound



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		JE31c, Luwanga JE32a, Lunyore JE33, Lusaamia JE34, Llogoori JE41, Lutiriki JE413	deontic, epistemic	
(dah)	'have power over'	Kagulu G12, Bondei G24, Zigua G31, Zaramo G33, Kami G36, Kilombero G50, Pogolo G51, Nyaturu F32, Langi F33, Nyaturu F32	PI, PE, deontic, epistemic	compound
(nagy)	'have strength, power' (+ causative morphology)	Ngoreme JE402	PI	compound
(wez) < Arabic	'be powerful'	Standard Swahili G42, Kivu Swahili G40x, Makwe G402, Kami G36, Digo E73, Nyamwezi F22, Matengo N13, Bena G63	PI, PE, deontic, epistemic	compound/complex
(wodh)	'defeat, be able'	Cuwabo P34, Makhuwa P31	PI	compound
((i)dim) < Maasai	'be able, overcome'	Dawida E74, Kasigau E74c	PI	compound
(zigir)	'be able'	Fuliiru JD63	PI	compound
(tony)	'be able'	Kamba E55	PI	compound
(ut)	'be able'	Tharaka E54	PI	compound?
(find)	'be able'	Ngazidja G44a	PI?	?
(kithiri, kidiri) < Arabic	'be able, appreciate'	Koti P311, Mwani G403	PI?	compound
(pode) < Portuguese	'be able'	Shangaci P312	PE, deontic epistemic	compound
*màny	'know'	Ikoma JE45, Kamba E55, Mwera P22, Hehe G62, Bena G63	PI, PE	compound



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(kagul)	'know'	Hehe G62, Bena G63	PI, PE	compound
(dzel)	'know'	Hehe G62, Bena G63	PI, PE	compound
(is)	'get to, happen to?'	Kamba E55	epistemic	compound
(long)	'get'	Fuliiru JD63	PI	compound
*pát	'hold'	Standard Swahili G42	PI	compound
*báac	'be active'	Runyakore-Rukiga JE13/14, Nyambo JE21, Haya JE22, Rundi JD62, Fuliiru JD63	PI, PE, deontic	compound
(esh)	'become fitting'	Ishenyi JE45	deontic, epistemic	complex
(vag)	'be enough' (+ applicative morphology)	Hehe G62, Bena G63	deontic	compound
(ezy)	?	Lugwere JE17	PI	?
(hɔt)	?	Gikuyu E51	PI, PE, deontic, epistemic	compound
(kuhích)	?	Kerewe JE24, Sinza JE23	?	compound

Table 3 – Possibility auxiliaries

*pát-i	'hold' (+ causative morphology)	Kivu Swahili G40x	possibility deontic	compound + participant-demoting morphology
			necessity deontic	compound + participant-demoting morphology
*pát-i	'hold' (+ causative morphology)	Kisangani Swahili G40x	possibility deontic	compound (AUX in PRS)
			necessity deontic	compound (AUX in FUT)



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(bagil)	'suit, fit deserve, be eligible'	Ndali M301	necessity deontic? (also possibility ?)	compound
*càk	'want'	Shangaci P312	necessity epistemic possibility epistemic	compound compound
*jij	'come'	Ndali M302 Safwa M25	necessity PE, deontic possibility ?	complex (+ participant-demoting syntax) complex (+ participant-demoting syntax)

Table 4 - 'Hybrid' auxiliaries

*pu(-an)	'be fitting, resemble each other'	Dawida E74, Standard Swahili G42, Bondei G24, Lungu M14 Makhuwa P31	(weak) deontic	complex/compound ? + participant-demoting morphology
*lagil	'agree, suit, be fitting' (+ causative morphology)	Bondei G24, Zigua G31	PE, deontic	?
(agerer)	'behoove one, be becoming to one'	Gikuyu E51	deontic	complex/compound + participant-demoting morphology
(ail)	'be fitting'	Kamba E55	deontic	compound
(igel)	'be worthy'	Nyamwezi F22	weak strong	complex + participant-demoting (no OM) complex + participant-demoting (with OM)
(noney)	'behoove, deserve, be worthy'	Nyaturu F32	deontic	compound + participant-demoting syntax
(yenel)	'be fitting'	Manda N11		compound + participant-demoting morphology
(wandicil)	'be fitting'	Mwera P22		compound + participant-demoting morphology&syntax



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*dònd	'search for, follow'	Manda N11, Digo	PI PE, deontic	compound compound + participant-demoting morphology/syntax
(dakh) < Swahili ?	'want'	Lusaamia JE34	weak	?
(eny)	'want'	Lubukusu JE31c, Luwanga JE32a, Lunyore JE33, Lusaamia JE34, Llogoori JE41, Lutiriki JE413	PI (weak) PE, deontic, (epistemic)	compound complex + participant- demoting morphology
(end)	'look for, want desire'	Ikoma JE45, Ishenyi JE45, Nata JE45	PI (weak) PE, deontic	compound compound + participant-demoting morphology
(bam)	'want'	Luguru G35	PE, deontic	complex + participant- demoting morphology
(tun)	'need'	Ngoreme JE401	PI (weak) PE, deontic	compound compound + participant-demoting morphology
(tthun)	'want, desire'	Makhuwa P31	deontic?	? + participant- demoting morphology
*pát-i	'hold' (+ causative morphology)	Standard Swahili G42	necessity deontic	compound + participant-demoting morphology/syntax
*pát-ik	'wedge in'	Ikoma JE45, Nata JE45	(strong) deontic	compound +participant-demoting morphology/syntax
*téǵ	'set (trap)'	Rundi JD62	PI, PE, deontic, epistemic	compound (participant-demoting morphology)
(téek)	'make a law, bind by law, edict'	Runyakore- Rukiga JE13/14, Luganda JE15	PE, deontic, epistemic	compound (participant-demoting morphology)
*(di) nà	'have'	Luganda JE15, Lungu M14, Shangaci P312	deontic	compound
(duk, tukh, khoy, khoyer, ol, l)	'arrive, reach'	Llogoori JE41, Lutiriki JE413, Lubukusu JE31c, Lusaamia JE34, Lunyore JE33, Luwanga JE32a	PI, PE, deontic, epistemic	compound/complex + participant-demoting syntax



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*gì	'go'	Ndali M302	PE, deontic	complex (+ participant-demoting syntax)
(ti)	'be inevitable?'	Kamba E55	epistemic	compound
(lazimu) < Arabic	'be necessary'	Standard Swahili	PE, deontic	compound/complex + participant-demoting morphology/syntax
(bidi) < Arabic	'be necessary'	Standard Kiswahili G42	PE, deontic	compound/complex + participant-demoting syntax
(nog)	'be/taste good' (+ applicative morphology)	Hehe G62, Bena G63	deontic	compound
*bón	'see'	Shangaci P312	PE, deontic	compound (+participant-demoting morphology)
*cíad	'remain'	Shangaci P312	PE, deontic	complex

Table 5 – Necessity auxiliaries