A typological study of modality in Luhya languages

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1 Introduction[1]

- We give a preliminary typology of modals (e.g. English *might, must, should, perhaps*) across six Luhya languages: Llogoori, Lubukusu, Lunyore, Lusaamia, Lutiriki, and Luwanga (Bantu).[2]

- Our data comes from original fieldwork in the United States and Kenya, and was collected using a modified version of Vander Klok (2014)'s modal fieldwork questionnaire.

- We situate our findings within the modal typology of van der Auwera and Plungian (1998) and Nauze (2008), as well as traditional Kratzerian modal semantics.

- We find that across all six languages:

[2]Luhya is a subfamily of Bantu, consisting of 18 languages spoken in western Kenya and northwestern Tanzania. There are approximately 5 million speakers in the Luhya subfamily (Lewis et al., 2016). The Luhya languages are referred to by a number of different names. Lubukusu is also called Bukusu, Llogoori is also called Logooli, Luragooli, Maragoli, and Lulogooli, among others; Lutiriki is also called Tiriki, and Luwanga is also called Wanga.

- There is a **shared set of verbs with both non-modal and modal uses**. (We refer to these as "modal verbs.")

- These modal verbs are generally **lexically specified for modal force, but underspecified with respect to modal flavor**.

- Moreover, **Luhya modals support the modal typology of van der Auwera and Plungian (1998) and Nauze (2008)**.

- Time permitting, we address points of variation in the Luhya modal system, focusing on modal borrowings and non-cognate modal verbs.

2 Brief background on modality and modal typologies

- We assume the definitions of modal force and modal flavor initially given by Kratzer (1981) and Kratzer (1991).

- **Modal force** concerns whether the modal describes a possibility (existential force), or a necessity (universal force).

    – English possibility modals: *might, may, perhaps*
    – English necessity modals: *must, have to*
    – English "weak necessity" modals: *should, probably*

- **Modal flavor** concerns what body of knowledge the speaker uses to evaluate the modal.

    – **Epistemic** modals are compatible with the speaker's facts about the world, whether stemming from evidence, belief, knowledge, or so on

        (1)   It might rain tomorrow.

    – **Deontic** modals are compatible with laws, rules, regulations, and so on

        (2)   Imali must go to Kisumu (because her job requires that she go).

    – **Teleological/goal-oriented** modals are compatible with someone's goals

        (3)   To get to the market, you have to take a matatu.

- We also refer to the tripartite modal classification that is made by some descriptive modal typologies, but is not typically referred to in the theoretical semantic literature on modality (van der Auwera and Plungian, 1998; Nauze, 2008). (See also Bybee et al. 1994, de Haan 1997, Palmer 2001, and Hengeveld 2004 for alternative typological approaches.)

- In addition to **epistemic modality**, which is defined similarly to Kratzer (1991), van der Auwera and Plungian (1998) distinguish between **participant-internal and participant-external modality**.

  – **Participant-internal (PI) modality** refers to the possibility or necessity internal to the participant, e.g. their ability or internal need.

    (4)   Boris <u>can</u> swim.   PI, ABILITY

    (5)   Boris <u>needs</u> to sleep ten hours a night.   PI, NECESSITY

  – **Participant-external (PE) modality** refers to circumstances that are external to the participant that make the state of affairs possible or necessary. This category is subdivided into **deontic** PE modality (expressing permission or obligation) (6), and **goal-oriented** (teleological) PE modality (7).

    (6)   a.   You <u>may</u> speak now.   PE, DEONTIC POSSIBILITY

          b.   You <u>have to</u> leave now.   PE, DEONTIC NECESSITY

    (7)   a.   To get downtown, you <u>can</u> take the 720 bus.
                                                  PE, GOAL-ORIENTED POSSIBILITY

          b.   To get downtown, you <u>must</u> take the 720 bus.
                                                  PE, GOAL-ORIENTED NECESSITY

Participant-internal	**Participant-external**		**Epistemic**
	Deontic	Goal-oriented	
Ability	Permission	Possibility	Possibility
Need	Obligation	Necessity	Necessity

Table 1: Modal typology from Nauze (2008).

- The ordering of the table is significant. It reflects the universal relative scope of the modal meanings: if two modals co-occur, epistemic modals always scope above participant-external modals, which always scope above participant-internal modals (Nauze, 2008).[3]

2.1   Data collection

- We collected our Luhya data following a modified version of Vander Klok (2014)'s modal fieldwork questionnaire. The questionnaire provides contexts and then asks the consultant how to appropriately translate a sentence containing the target modal, given the context.

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[3]It may also reflect to some extent the diachronic "path" that modal elements may take (van der Auwera and Plungian, 1998).

- This questionnaire assumes the distinctions made by Kratzer (1991) and Kratzer (1981). It probes whether (Kratzerian) modal force and flavor are lexically specified in the language of study, and if so, how. We added additional contexts to distinguish between participant-internal and participant-external modality, following van der Auwera and Plungian (1998) and Nauze (2008).

  – See our Appendix at `http://bit.ly/2o40eKJ` for contexts and responses in each language.

- Previous work has shown that some languages' modals only mark force (English; Fintel 2006), whereas others only mark flavor (St'át'imcets; Rullmann et al. 2008). Others are argued to be underspecified for both force and flavor (Washo; Bochnak 2015), or mark both force *and* flavor (Paciran Javanese; Vander Klok 2014).

3 Core data: cross-linguistic similarities

3.1 Modal verbs

- The languages in our survey all use a core set of three verbs to express a range of modal meanings; we classify these into Class I, II, and III.

- The following table gives a cross-linguistic inventory of the three modal verbs arranged according to modal force and flavor as defined by Kratzer (1991). In this table, we present the verbs in their infinitival form (i.e, with a class 15 infinitival prefix). Many of these verbs can combine with a number of suffixes, an issue we do not address here.[4]

	Class I	**Class II**	**Class III**
Modal use →	≈Possibility	≈Weak necessity	≈Necessity & WN
Non-modal use →	'to manage [to do …]'	'to want'	'to arrive'/'to reach'
Llogoori (LG)	*kunyala*	*kwenya*	*kuduka*
Lubukusu (LB)	*khunyala*	*khwenya*	*kwenyekha/khoya*
Lunyore (LN)	*okhunyala*	*okhwenya*	*okhwola*
Lusaamia (LS)	*kunyala*	*kwenya/kudakha*	*kukhoyera*
Lutiriki (LT)	*khunyala*	*khwenya*	*khutukha*
Luwanga (LW)	*okhunyala*	*okhwenya*	*okhula*

Table 2: Cross-linguistic inventory of modal verbs.

- All the modal verbs have non-modal uses in addition to their modal uses. (8)-(10) show examples of these verbs in their non-modal uses in Llogoori. **From here on, we gloss the modals, even in their non-modal uses, as MOD.I, MOD.II, and MOD.III.**

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[4]We follow typical Bantuist transcription conventions. *kh* represents a voiceless velar fricative, *n'n* represents a geminate *n*, *ng'* represents a velar nasal, and *ny* represents a palatal nasal. We use β to represent a voiced bilabial fricative.

(8) **Class I** = 'to manage'/'to succeed'
Sira   ya-nyal-a   mu mipango jije
1Sira 1-MOD.I-FV in   4goal   4his
'Sira succeeded in his goals.'[5]   (LG)

(9) **Class II** = 'to want'
n-eny-a   mabarabandi
1SG-MOD.II-FV 6loquat
'I want loquats.'   (LG)

(10) **Class III** = 'to arrive'/'to reach'
Sira   a-duk-i   kutura Nairobi.
1Sira 1-MOD.III-FV from   Nairobi
'Sira arrived from Nairobi.'   (LG)

- (11)-(13) shows basic examples of modal uses of each verb in Llogoori:

(11) **Class I**
Sira   a-nyal-a   ku-tem-a msaara
1Sira 1-MOD.I-FV 15-cut-FV 6tree
'Sira might/may cut the tree down.'   (LG)

(12) **Class II**
Sira   a-eny-ek-a   a-sav-ɛ   amwaavo
1Sira 1-MOD.II-AC-FV 1-ask-SBJV 1brother
'Sira should ask his brother (to borrow his bike).'   (LG)

(13) **Class III**
vaandu ku-duk-a   va-ivik-ɛ   ihelmet
2person 15-MOD.III-FV 2-wear-SBJV 9helmet
'People must wear a helmet (because it's the law).'   (LG)

- The Class I and II modals in (11)-(12) are in their "raised" form: the modal agrees in noun class/person with the subject. (See Mountjoy-Venning and Diercks 2016 for discussion of raising in Llogoori.)

- Class III modals typically occur in their infinitival form with the class 15 prefix (in Llogoori, *ku-*). Neither class I nor class II can similarly appear in this uninflected form in any of the languages.

- In the following sections, we will outline the range of meanings that each class of modal verbs can express.

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[5]We use the following abbreviations in this handout:

1-20: noun class	COP : copula	PROG : progressive
1/2/3: 1st/2nd/3rd person	FUT : future	PRT : particle
I, II, III: modal class	FV : final vowel	REC : reciprocal
AC : anticausative	ID : ideophone	SBJV : subjunctive
APPL : applicative	NEG : negative	SG/PL: singular/plural
CAUS: causative	POSS : possessive	

3.1.1 Class I modals

- Class I modals can express **all modal categories of possibility/existential force**. In Nauze's terminology, Class I covers **all ability and possibility** categories.

	Participant-internal ability	Participant-external		Epistemic possibility
		Deontic poss.	Goal-oriented poss.	
Lubukusu: *khunyala*	✓	✓	✓	✓
Llogoori: *kunyala*	✓	✓	✓	✓
Lunyore: *okhunyala*	✓	✓	✓	✓
Lusaamia: *kunyala*	✓	✓	✓	✓
Lutiriki: *khunyala*	✓	✓	✓	✓
Luwanga: *okhunyala*	✓	✓	✓	✓

Table 3: Modal uses of Class I verbs.

- The following data shows examples of the range of modal categories available for Llogoori *kunyala* and Lunyore *okhunyala*. For examples of contexts used to elicit each example below, see the Appendix.

(14) **Llogoori**

    a. *Imaali a-nyal-a   ku-koba ndumba*
        1Imali 1-MOD.I-FV 15beat 9drum

        'Imaali can (knows how to) play the drum.'   (PI ABILITY)

    b. *u-nyal-a   ku-zia mugati*
        2SG-MOD.I-FV 15go 3room
        'You may go in the room.'   (PE DEONTIC POSSIBILITY)

    c. *u-nyal-a   ku-vogola matatu*
        2sg-MOD.II-FV 15-take   matatu
        'You can take a matatu (to get to the market).' (PE GOAL-ORIENTED POSS.)

    d. *professor a-nyal-a   ku-za   mu kilasi karono*
        1professor 1-MOD.I-FV 15-come in   7class today
        'The professor might come to class today.'   (EPISTEMIC POSSIBILITY)

(15) **Lunyore**

    a. *Amisi a-nyal-a   okhu-teek-a amandazi*
        1Amisi 1-MOD.I-FV 15-cook-FV 6mandazi
        'Amisi can cook mandazi.'   (PE POSSIBILITY/PI ABILITY)

    b. *u-nyal-a   okhu-injil-a*
        2SG-MOD.I-FV 15-enter-FV
        'You may enter.'   (PE DEONTIC POSSIBILITY)

c.   *professor a-nyal-a   okhu-itsa ng'ondi*
       1professor 1-MOD.I-FV 15-come today
       'The professor might come today.'   (EPISTEMIC POSSIBILITY)

- Class I modals may appear with an detransitivizing suffix *-ek/-ekh* (glossed as an **anticausative**),[6] in which case the modal meaning is strongly biased towards epistemic modality.

(16)   **Llogoori**

     y-a-nyal-ek-a   ndee Sira a-la-zi-a   Nairobi
     9-TNS-MOD.I-AC-FV that 1Sira 1-FUT-GO-FV Nairobi

     'It's possible that Sira will go to Nairobi'   (PE EPISTEMIC POSSIBILITY)
     # 'Sira may go to Nairobi.'   (PE DEONTIC POSSIBILITY)
     # 'Sira can go to Nairobi.'   (PI ABILITY)

3.1.2 Class II modals

- Class II modals generally express **(weak) necessity (WN)** (i.e. something slightly weaker than universal force; in English, *should*). They express strong necessity only in the case of participant-internal modality.

- Class II modals are used for both **participant-internal and participant-external modality**, but not epistemic modality (with one exception).

- Question marks in the table below indicate a lack of conclusive evidence. We will indicate that the lexical item is unable to mark a given category with a ✗ only if we have negative evidence showing that this is the case.

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[6]See Gluckman and Bowler (2016a) for discussion of this suffix in Llogoori.

	Participant-internal necessity	Participant-external		Epistemic necessity/WN
		Deontic WN	Goal-oriented WN	
Lubukusu: *khwenya*	✓	✓	✓	✓
Llogoori: *kwenya*	✓	✓	✓	✗
Lunyore: *okhwenya*	✓	✓	✓	?
Lusaamia: *kwenya,*	✓	✓	✓	?
kudakha	✓	✓	✓	?
Lutiriki: *khwenya*	✓	✓	✓	✗
Luwanga: *okhwenya*	✓	✓	✓	?

Table 4: Modal uses of Class II verbs.

- The following data shows the range of modal categories available for Luwanga *okhwenya* and Lusaamia *kwenya/kudakhikha*.[7]

(17) **Luwanga**

    a.   *n-eny-a   okhusumula*
            1sg-MOD.II-FV 15sneeze

            'I need to sneeze.'   (PI NECESSITY)

    b.   *fi-eny-ekh-a   Osundwe a-saaβ-e msiami waβu indike*
            8-MOD.II-AC-FV 1Osundwe 1-ask-SBJV 3brother 3his   9bike

            'Osundwe should ask his brother for his bike.'   (PE DEONTIC WN)

    c.   *y-eny-ekh-a   o-βukhul-e   matatu*
            9-MOD.II-AC-FV 2sg-take-SBJV 6matatu

            'You should take a matatu (to get to the market).'

                                            (PE GOAL-ORIENTED WN)

(18) **Lusaamia**

    a.   *n-eny-a   okhwinyala*
            1sg-MOD.II-FV 15.pee

            'I have/need to pee.'   (PI NECESSITY)

    b.   *vi-dakh-ikh-an-a Wabwire a-saav-e omusiamo waβwɛ endika*
            8-MOD.II-AC-REC-FV 1Wabwire 1-ask-SBJV 3brother   3his   9bike

            'Wabwire should ask his brother for his bike.'   (PE DEONTIC WN)

    c.   *vi-dakh-ikh-an-a o-vukul-e   matatu*
            8-MOD.II-AC-REC-FV 2sg-take-SBJV 6matatu

            'You should take a matatu (to get to the market).'

                                              (PE GOAL-ORIENTED WN)

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[7]Lusaamia *kudakhikha* and *kwenya* appear to share the same semantic space. Note that there is a cognate verb for *kudakhikha* in the other Luhya languages; it means 'to desire' in those languages.

- Class II modals must occur without the **anticausative** marker (-*ek/-ekh*) when expressing participant-internal modality.[8] We take this as motivation for the use of van der Auwera and Plungian (1998)'s distinction between participant-internal and participant-external modality.

3.1.3 Class III modals

- Class III modals generally express **all modal categories of necessity/universal force**. These are typically the strongest modals of the three classes.

	Participant-internal necessity	Participant-external		Epistemic necessity
		Deontic nec.	Goal-oriented nec.	
Lubukusu: *khoya*	✓	✓	✓	✓
Llogoori: *kuduka*	✓	✓	✓	✓
Lunyore: *okhwola*	✓	✓	✓	✓
Lusaamia: *kukhoyera*	?	✓	✓	✓
Lutiriki: *khutukha*	✓	✓	✓	✓
Luwanga: *okhula*[9]	✓	✓	✓	✓

Table 5: Modal uses of Class III verbs.

- The following data shows the range of modal flavors available for Lubukusu *khoya* and Llogoori *kuduka*.[10]

(19) **Lubukusu**

    a.   ∅-*khoy-el-a*   *ni-inyal-ɛ*   *buubi po*
          1SG-MOD.III-APPL-SBJV 1SG-pee-SBJV very   ID
          'I really have to pee.'   (PI NECESSITY)

    b.   *o-khoy-el-a*   *o-fwal-ɛ*   *kukofia*
          2SG-MOD.III-APPL-SBJV 2SG-wear-FV helmet
          'You must wear a helmet.'   (PE DEONTIC NECESSITY)

    c.   *o-khoy-el-a*   *o-bukul-ɛ*   *endeke yino*
          2SG-MOD.III-APPL-SBJV 2SG-take-FV 9flight 9this
          'You have to take this flight (to get to Kisumu).'
                                     (PE GOAL-ORIENTED NECESSITY)

    d.   *efula a-khoy-a*   *khu-ba nekwa*
          9rain 9-MOD.III-FV 15-COP fall
          'It must be raining.'   (EPISTEMIC NECESSITY)

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[8]Lubukusu is an exception in this regard, as it permits the cognate of this marker when expressing participant-internal necessity.

[9]In Luwanga, *okhula* typically co-occurs with the necessity adverbial *mpaka*. We return to this lexical item later.

[10]We only have examples of Lubukusu *khoya* co-occurring with the applicative *-el* suffix to express PI necessity and PE goal-oriented necessity.

(20) **Llogoori**

    a.   *ku-duk-a*   *nzi yashambul-ɛ*
       15-MOD.III-FV I   sneeze-SBJV
       'I have to sneeze.'   (PI NECESSITY)

    b.   *ku-duk-a*   *w-evek-ɛ*   *igudwe*
       15-MOD.III-FV 2SG-wear-SBJV 9helmet
       'You must wear a helmet.'   (PE DEONTIC NECESSITY)

    c.   *AFC ku-duk-a*   *e-leg-ɛ*   *Gor Mahia*
       1AFC 15-MOD.III-FV 9-beat-SBJV 1Gor Mahia
       'AFC must beat Gor Mahia (to advance in the tournament).'
                                           (PE GOAL-ORIENTED NECESSITY)

    d.   *(ku-duk-a)*   *mbura (ku-duk-a)*   *e-v-ɛ*   *neekuba*
       15-MOD.III-FV 9rain   15-MOD.III-FV 9-COP-SBJV falling
       'It must be raining.'   (EPISTEMIC NECESSITY)

- Class III is the only modal category that can be used in its infinitival form (i.e, hosting the class 15 prefix). It can occur either before or after the subject, as in (20d).

    - In three languages (Lubukusu, Llogoori, and Lutiriki) Class III modals may also appear as fully inflected modal verbs.

- Class III modals may not appear with the anticausative suffix *-ek/-ekh*.

4   Modal verbs from a typological perspective

- The Luhya modal verbs map onto the typology proposed by Nauze (2008) as follows:

Participant-internal	**Participant-external**		**Epistemic**
	Deontic	Goal-oriented	
Ability	Permission	Possibility	Possibility
Need	Obligation	Necessity	Necessity

Class II → (Ability, Permission, Possibility, Possibility) = Class I
Class III → (Need, Obligation, Necessity, Necessity)

Table 6: Modal typology from Nauze (2008) with Luhya modal classes I, II, and III overlaid.

- **Class I modals express all categories of ability, permission, and possibility** (i.e., existential force modality).

- **Class II modals express participant-internal need and participant-external obligation and necessity**, but not epistemic necessity.

- **Class III modals express all categories of need, obligation, and necessity** (i.e., universal force modality).

- Our findings support the typology proposed by Nauze/van der Auwera & Plungian:

  1. The typology appears to capture all the modal uses across the languages. Note that some of the meanings arise via the interaction of modal verbs and affixes (e.g., Class II participant-external modality).[11]

  2. Luhya modals only vary along one "axis." They have **fixed force**, but **may express different categories** (in Kratzerian terminology, flavors).

  3. The distribution of the anticausative *-ek/-ekh* in combination with Class II modals supports distinguishing participant-internal modality as a modal category of its own.

Some issues for the typology

- Our study shows that **volitional modality**, which is purposefully omitted from Nauze/van der Auwera & Plungian's typology, plays an important role in the Luhya modal system. We see this in the Class II modal, which functions in its non-modal use as the verb used to express desires ('to want').

  – We take it as given that the modal uses of roots share a semantic core with the non-modal uses, for all three modal classes. The precise relationship between these meanings remains to be formalized.

- There is a grammatical distinction between weak and strong necessity modals—at least for participant-external modality. This is not distinguished in the typology.

  – Weak deontic obligation is expressed using Class II, but strong deontic obligation is expressed using Class III.

  – Likewise, weak goal-oriented necessity is expressed using Class II, but strong goal-oriented necessity is expressed using Class III.

  – It's unclear to us whether there is a meaning difference between Class II and Class III for participant-internal modality. Part of the problem is identifying a meaningful difference between weak and strong participant-internal necessity.[12]

5   Modal borrowings

- There are a number of apparently non-verbal modal elements shared across the languages. We focus in this section on two elements that appear frequently in our survey.[13]

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[11]We also put aside here the addition of **expletive subjects** which is a major area of inter-language and inter-speaker variation. Expletive subjects may further refine the meaning of the modal element. See Gluckman and Bowler (2016b) for a discussion of the expletive subjects in Llogoori.

[12]Jozina Vander Klok (p.c.) has suggested to us that Paciran Javanese makes a distinction between what might be participant-internal weak and strong necessity. However, it's not clear to us which contexts can disambiguate between these two meanings.

[13]Another frequent strategy is a modal adverb (e.g. *possibly*). In all languages, epistemic modality can be expressed with a modal adverb, cognate with Llogoori *haondi*.

Modal borrowing #1: *(m)paka*

- With the possible exception of Lubukusu, all of the languages in our survey have borrowed the lexical item *(m)paka* from Swahili, with various phonological changes.

- *(M)paka* has universal force. It seems to have stronger modal force than the class III modal, although speakers sometimes report that these two items are interchangeable.

- This lexical item can occur clause-initially, or precede the verb, and the complement verb always appears in the subjunctive mood.[14]

(21)   **Llogoori**
    (mpaka) Hungary   (mpaka) va-leg-ɛ   Portugal
    must   1Hungary must   2-beat-FV 1Portugal
    'Hungary must beat Portugal (to advance in the tournament).'[15]

                                        (PE GOAL-ORIENTED NECESSITY)

- Note that this lexical item is also used to express the preposition 'until' in all of the languages in our survey, as well as in Swahili.

(22)   **Llogoori**
    Imali   a-maamer-i mkopo mpaka ne   gu-bam-ek-a
    1Imali 1-pound-FV 3can   until   COP 3-flat-AC-FV
    'Imali pounded the can until it was flat.'

Modal borrowing #2: *la(a)zima*

- Several languages in our study (at least Lubukusu, Llogoori, and Lutiriki) have borrowed the lexical item *la(a)zima*. This is used to mark necessity in the languages in our study, as well as in Swahili.

  - This word is etymologically from Arabic; stress placement in Lubukusu suggests that *laazima* might not be borrowed from Swahili, but instead directly from Arabic.

(23)   **Lutiriki**
    (lazima) shipaka (lazima) shi-ve irwanyi
    must   7cat   must   7-COP outside
    'The cat must be outside.'   (EPISTEMIC NECESSITY)

- We believe that the borrowings reflect the fact that "absolute" necessity (i.e., the strongest necessity) is **ineffable** in standard Luhya. Speakers generally report that the Class III modal is weaker than either *(m)paka* and *lazima*. That is, the lexical item with the strongest force across Luhya cannot express "absolute" necessity. Thus, to assert this meaning, the Luhya languages have borrowed lexical items from other languages.

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[14]In Lutiriki, this lexical item is demonstrated to have weaker modal force than in the other languages. Lutiriki consultants give *mpaka* in response to weak necessity prompts, although speakers of other languages in our study report that *(m)paka* is too strong in these contexts.

[15]Speakers use noun class 2 in this sentence (indicating a plurality of humans) because they use the term *Hungary* to refer to the team of players.

6 Lexical variation

- While most modal elements are cognate across Luhya, some languages choose a different lexical item for a modal category.

Lexical variation #1: Class II modal verbs

- Lusaamia predominantly chooses a non-cognate form for Class II modals—although the cognate verb is permitted as well.

Modal use →	≈Weak necessity
Non-modal use →	'to want'
Llogoori	*kwenya*
Lubukusu	*khwenya*
Lunyore	*okhwenya*
Lusaamia	*kwenya*/*kudakha*
Lutiriki	*khwenya*
Luwanga	*okhwenya*

Table 7: Lexical variation in Class II modals.

Lexical variation #2: Class III modal verbs

- Llogoori and Lutiriki choose a form that is not cognate with the other languages.

Modal use →	≈Necessity & WN
Non-modal use →	'to arrive'/'to reach'
Llogoori	*kuduka*
Lubukusu	*khoya*
Lunyore	*okhwola*
Lusaamia	*okhoyera*
Lutiriki	*khutukha*
Luwanga	*okhula*

Table 8: Lexical variation in Class III modals.

- The lexical variation is significant because it demonstrates that it's not the lexical item *per se*, but the semantic space. In all languages, the verb that has as its non-modal meaning 'to want' is used for Class II. And in all languages, the verb which has as its non-modal meaning 'to arrive'/'to reach' is used for Class III.

7 Conclusion

- We conclude from this preliminary study that the Luhya languages share a core strategy for encoding modal distinctions.

- From a Kratzerian perspective, **the data suggest that Luhya modal verbs, like English modals, are lexically specified for force, but compatible with a number of different flavors**.

- From a typological perspective, the modal categories across Luhya neatly map onto the typology established by Nauze (2008) and van der Auwera and Plungian (1998), differentiating between participant-internal, participant-external, and epistemic categories ("flavors"), as well as between possibility and necessity forces.

- The adoption of modal elements from Swahili and/or Arabic likely reflects a gap in the modal system for expression "absolute" necessity.

- We leave a number of questions open for further research, including the various combinations of affixes available for each class, the syntactic properties of the modal elements, the formal relationship between the modal and non-modal uses, the type of complement clause (nonfinite vs. indicative vs. subjunctive) that the modal requires, and more fine-grained distinctions in modal meanings which can arise from various morphological processes.

- Most importantly, we continue to work on the variation between Luhya languages in the modal system, as this will ultimately provide a more fine-grained picture of the cross-linguistic modal map.

<div align="center">Thanks!</div>

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