A typological study of modality in Luhya languages

John Gluckman (UCLA), Margit Bowler (UCLA),
Maurice Sifuna (Kenyatta University),
Kelvin Alulu (United States International University, Nairobi),
Michael Diercks (Pomona College)

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1 Introduction

- 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).

- Our data comes from original fieldwork in the United States and Kenya, and was collected using a modified version of Vander Klok’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:

  1. We would like to thank our wonderful Llogoori consultant, Mwabeni Indire, for generously sharing his time and his language with us. We also thank the following speakers for their insights into the additional languages: Bernard Lavussa (Llogoori), Walter Kigale (Llogoori), Bernard Chahilu (Llogoori), Abigail Sanya (Lunyore), Polycap Wandera (Lusaamia), and Quinto Wamukoya (Luwanga). Lubukusu data was provided by the third author, Maurice Sifuna. Lutiriki data was provided by the fourth author, Kelvin Alulu. We would also like to thank audiences at the UCLA Semantics Tea, American Indian Seminar, and Linguistics Society of America 2017 for their thoughtful feedback. John Gluckman’s fieldwork was funded by a UCLA Lenart Travel Fellowship. Diercks contributions were supported by an NSF Collaborative Research Grant (Structure and Tone in Luyia: BCS-1355749).

  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, Lulagoooli, Maragoli, and Lulogooli, among others; Lutiriki is also called Tiriki, and Luwanga is also called Wanga.
• There is a \textit{shared set of verbs with both non-modal and modal uses}. (We refer to these as “modal verbs.”)

• These modal verbs are generally \textit{lexically specified for modal force, but under-specified with respect to modal flavor}.

• Moreover, \textit{Luhya modals support the modal typology} of \textit{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 \textit{Kratzer (1981)} and \textit{Kratzer (1991)}.

• \textbf{Modal force} concerns whether the modal describes a possibility (existential force), or a necessity (universal force).
  
  – English possibility modals: \textit{might, may, perhaps}
  
  – English necessity modals: \textit{must, have to}
  
  – English “weak necessity” modals: \textit{should, probably}

• \textbf{Modal flavor} concerns what body of knowledge the speaker uses to evaluate the modal.
  
  – \textbf{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.

  – \textbf{Deontic} modals are compatible with laws, rules, regulations, and so on
    
    (2) Imali must go to Kisumu (because her job requires that she go).

  – \textbf{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 \textit{(van der Auwera and Plungian, 1998; Nauze, 2008)}. (See also \textit{Bybee et al. 1994, de Haan 1997, Palmer 2001} and \textit{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.

\[
\begin{align*}
(4) & \text{ Boris can swim. } & \text{PI, ABILITY} \\
(5) & \text{ Boris needs to sleep ten hours a night. } & \text{PI, NECESSITY}
\end{align*}
\]

- **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).

\[
\begin{align*}
(6) & \text{ a. You may speak now. } & \text{PE, DEONTIC POSSIBILITY} \\
& \text{ b. You have to leave now. } & \text{PE, DEONTIC NECESSITY} \\
(7) & \text{ a. To get downtown, you can take the 720 bus. } & \text{PE, GOAL-ORIENTED POSSIBILITY} \\
& \text{ b. To get downtown, you must take the 720 bus. } & \text{PE, GOAL-ORIENTED NECESSITY}
\end{align*}
\]

<table>
<thead>
<tr>
<th>Participant-internal</th>
<th>Participant-external</th>
<th>Epistemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>Deontic</td>
<td>Possibility</td>
</tr>
<tr>
<td>Need</td>
<td>Goal-oriented</td>
<td>Necessity</td>
</tr>
<tr>
<td></td>
<td>Permission</td>
<td>Obligation</td>
</tr>
<tr>
<td></td>
<td>Possibility</td>
<td>Necessity</td>
</tr>
</tbody>
</table>

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).

### 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).


Previous work has shown that some languages’ modals only mark force (English; Fintel 2006), whereas others only mark flavor (St’át’ímçets; 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.\(^4\)

<table>
<thead>
<tr>
<th>Modal use →</th>
<th>Class I ≈Possibility</th>
<th>Class II ≈Weak necessity</th>
<th>Class III ≈Necessity &amp; WN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-modal use →</td>
<td>‘to manage [to do . . .]’</td>
<td>‘to want’</td>
<td>‘to arrive’/’to reach’</td>
</tr>
<tr>
<td>Llogoori (LG)</td>
<td>kunyala</td>
<td>kwenya</td>
<td>kuduka</td>
</tr>
<tr>
<td>Lubukusu (LB)</td>
<td>khunyala</td>
<td>khwenya</td>
<td>kwenyekha/khoya</td>
</tr>
<tr>
<td>Lunyore (LN)</td>
<td>okhunyala</td>
<td>okhwenya</td>
<td>okhwola</td>
</tr>
<tr>
<td>Lusaamia (LS)</td>
<td>kunyala</td>
<td>kwenya/kudakha</td>
<td>kukhoyera</td>
</tr>
<tr>
<td>Lutiriki (LT)</td>
<td>khunyala</td>
<td>khwenya</td>
<td>khuttukha</td>
</tr>
<tr>
<td>Luwanga (LW)</td>
<td>okhunyala</td>
<td>okhwenya</td>
<td>okhula</td>
</tr>
</tbody>
</table>

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.

\(^4\)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’

\[ \text{Sira ya-nyal-a mu mipango ji}j]e \]
1Sira 1-MOD.1-FV in 4goal 4his

‘Sira succeeded in his goals.’

(9) **Class II** = ‘to want’

\[ n-eny-a mabarabandi \]
1SG-MOD.2-FV 6loquat

‘I want loquats.’

(10) **Class III** = ‘to arrive’/‘to reach’

\[ \text{Sira a-duk-i kutura Nairobi.} \]
1Sira 1-MOD.3-FV from Nairobi

‘Sira arrived from Nairobi.’

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

(11) **Class I**

\[ \text{Sira a-nyal-a ku-tem-a msaara} \]
1Sira 1-MOD.1-FV 15-cut-FV 6tree

‘Sira might/may cut the tree down.’

(12) **Class II**

\[ \text{Sira a-eny-ek-a a-sav-ε amwaavo} \]
1Sira 1-MOD.2-AC-FV 1-ask-SBJV 1brother

‘Sira should ask his brother (to borrow his bike).’

(13) **Class III**

\[ \text{vaandu ku-duk-a va-ivik-ε ihelmet} \]
2person 15-MOD.3-FV 2-wear-SBJV 9helmet

‘People must wear a helmet (because it’s the law).’

• 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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5We use the following abbreviations in this handout:

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

<table>
<thead>
<tr>
<th>Participant-internal ability</th>
<th>Participant-external Deontic poss.</th>
<th>Goal-oriented poss.</th>
<th>Epistemic possibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubukusu: khunyala</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Llogoori: kunyala</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lunyore: okhunyala</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lusaamia: kunyala</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lutiriki: khunyala</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Luwanga: okhunyala</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

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.1-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.1-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 \( \times \) only if we have negative evidence showing that this is the case.

---

\( ^6 \)See [Gluckman and Bowler (2016a)](http://example.com) for discussion of this suffix in Llogoori.
<table>
<thead>
<tr>
<th></th>
<th>Participant-internal necessity</th>
<th>Participant-external Deontic WN</th>
<th>Participant-external Goal-oriented WN</th>
<th>Epistemic necessity/WN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubukusu: <em>khwenya</em></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Llogoori: <em>kwenya</em></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td>Lunyore: <em>okhwenya</em></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td>Lusaamia: <em>kwenya,</em> <em>kudakhikha</em></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td>Lutiriki: <em>khwenya</em></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>?</td>
</tr>
<tr>
<td>Luwanga: <em>okhwenya</em></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>?</td>
</tr>
</tbody>
</table>

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-saa|-e msiami wa|ju 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 waβwε 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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7Lusaamia *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. 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.

<table>
<thead>
<tr>
<th>Language</th>
<th>Participant-internal necessity</th>
<th>Participant-external Deontic nec.</th>
<th>Goal-oriented nec.</th>
<th>Epistemic necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubukusu: khoya</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Llogoori: kuduka</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lunyore: okhwola</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lusaaania: kukhoyera</td>
<td>?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Lutiriki: khutukha</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Luwanga: okhula</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 5: Modal uses of Class III verbs.

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

(19) **Lubukusu**

a. ∅-khoy-el-a ni-inyal-ε 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-ε 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-ε 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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8Lubukusu is an exception in this regard, as it permits the cognate of this marker when expressing participant-internal necessity.
9In Luwanga, okhula typically co-occurs with the necessity adverbial mpaka. We return to this lexical item later.
10We only have examples of Lubukusu khoya co-occurring with the applicative -el suffix to express PI necessity and PE goal-oriented 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:

<table>
<thead>
<tr>
<th>Participant-internal</th>
<th>Participant-external</th>
<th>Epistemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>Deontic</td>
<td>Goal-oriented</td>
</tr>
<tr>
<td>(Need)</td>
<td>Permission</td>
<td>Possibility</td>
</tr>
<tr>
<td></td>
<td>Obligation</td>
<td>Necessity</td>
</tr>
</tbody>
</table>

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).
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.

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.

11We 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.

12Jozina 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.

13Another 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.

\[(21) \text{ Llogoori} \]
\[(mpaka) \text{ Hungary (mpaka) va-leg-e Portugal}\]
\[\text{must 1Hungary must 2-beat-FV 1Portugal}\]
\[\text{‘Hungary must beat Portugal (to advance in the tournament).}^{15}\]

- 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.

\[(22) \text{ Llogoori} \]
\[\text{Imali a-maamer-i mkopo mpaka ne gu-bam-ek-a}\]
\[\text{1Imali 1-pound-FV 3can until COP 3-flat-AC-FV}\]
\[\text{‘Imali pounded the can until it was flat.’}\]

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.

\[(23) \text{ Lutiriki} \]
\[(lazima) \text{ shipaka (lazima) shi-ve irwanyi}\]
\[\text{must 7cat must 7-COP outside}\]
\[\text{‘The cat must be outside.’ (EPISTEMIC NECESSITY)}\]

- 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.

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

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

<table>
<thead>
<tr>
<th>Modal use →</th>
<th>≈Weak necessity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-modal use →</td>
<td>‘to want’</td>
</tr>
<tr>
<td>Llogoori</td>
<td>kwenya</td>
</tr>
<tr>
<td>Lubukusu</td>
<td>khwenya</td>
</tr>
<tr>
<td>Lunyore</td>
<td>okhwenya</td>
</tr>
<tr>
<td>Lusaamia</td>
<td>kwenya, kudakha</td>
</tr>
<tr>
<td>Lutiriki</td>
<td>khwenya</td>
</tr>
<tr>
<td>Luwanga</td>
<td>okhwenya</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Modal use →</th>
<th>≈Necessity &amp; WN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-modal use →</td>
<td>‘to arrive’/‘to reach’</td>
</tr>
<tr>
<td>Llogoori</td>
<td>kudaka</td>
</tr>
<tr>
<td>Lubukusu</td>
<td>khoya</td>
</tr>
<tr>
<td>Lunyore</td>
<td>okhwola</td>
</tr>
<tr>
<td>Lusaamia</td>
<td>okhoyera</td>
</tr>
<tr>
<td>Lutiriki</td>
<td>khutukha</td>
</tr>
<tr>
<td>Luwanga</td>
<td>okhula</td>
</tr>
</tbody>
</table>

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.

Thanks!
References


