

Focused investigation of modality in African languages*

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1 Modal typology

1.

Modal expressions talk about the world not as it is, but as it **could** be, **ought** to be, or **must** be. They have force and flavor:

Modal force is almost always one of

- possibility (like English *may*)
- weak necessity (like English *ought*)
- strong necessity (like English *must*)

Modal force is about the strength of the modal expression.

2.

Modal flavor characterizes what sort of considerations are used to make the modal claim.

Possible modal flavors include:

- epistemic (knowledge and beliefs)
- deontic (obligations/permissions)
- circumstantial (needs/abilities)

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- teleological (goal-based)
- or others!

3.

English modals are ambiguous for their modal flavor. The same modal expression can be applicable in both knowledge-based contexts and obligation-based ones, for example:

- (1) **Context:** You know that Sally’s work schedule has her at work every Thursday night. It’s 8pm on Thursday now, so...
- (Certainty/Epistemic necessity)
- a. Sally **must** be at work (given what I know about her).

4.

- (2) **Context:** You know that Sally’s contract stipulates her work hours very specifically, and that includes working Thursday nights. It’s 8pm on Thursday now, so...
- (Obligation/Deontic necessity)
- a. Sally **must** be at work (given what her contract says).

5.

But English modals are unambiguous for their modal force:

- (3) **Context:** Nolan’s mom said he was allowed to go swimming with his friends, if he wants to.
- (Permission/Deontic possibility)
- a. Nolan **may** go swimming
- b. # Nolan **must** go swimming

6.

- (4) **Context:** Nolan’s teacher took all of the students to go swimming, so they can practice and have some exercise. They all have to swim as part of gym class.
- (Obligation/Deontic necessity)
- a. # Nolan **may** go swimming
- b. Nolan **must** go swimming

7.

Some other languages¹ have modals that are ambiguous in modal force, and depending on their context can be translated into English as either strong necessity modals or possibility modals

¹Including St’at’incets (Rullmann et al., 2008), Gitksan (Peterson, 2010), Nez Perce (Deal, 2011), and Washo (Bochnak, 2015).

(5) St’at’imcets (Rullmann et al., 2008):

Context 1: The cougar was on a rampage and was killing cats, dogs, and racoons, and it had a child cornered and was growling; it would have killed a child.

Context 2: You just know that sometimes cougars kill children when they venture into built-up areas; it could have killed a child.

zúqw-s-as **ka** ta sk’úk’wmi7t-a ti7 ku swúw’a lh-cw7áoz-as kw
 die-CAUS-3ERG **IRR** DET child-DET DEIC DET cougar COMP-NEG-3CONJ DET
 s-qus-cit-ítas
 NOM-shoot-IND-3PL.ERG

‘That cougar would/could have killed a child if they hadn’t shot it.’

Analyses of variable force divide roughly into two strategies: Either they claim that variable force modals have the option of extra restriction of the set of worlds the modals quantify over, or they are variable because they don’t have another competing modal in the same semantic space, so a single modal pragmatically covers the entire space.

8.

Yet other languages, such as Paciran Javanese (Vander Kloek, 2008) and the Luhya languages (Gluckman et al., 2017), split along both the axes of modal flavor and modal force

9.

	Variable force	Fixed force
Variable flavor	Nez Perce, Washo	English
Fixed flavor	St’at’imcets, Gitksan	Javanese, Luhya

Table 1: Basic modal typology

10.

Questions arising from the work so far:

- What are the other possible points of variation?
- How do we form a theory of modals cross-linguistically that accounts for all of them?

Answering the first will help answer the second, but it requires a proper plan for getting adequate semantic facts for more languages.

2 Getting useful data

11.

Meanings are inherently dependent on context, so all of the data has to be contextual. A sufficient point of semantic data has three things:

1. A context setting up a situation for an utterance
2. An utterance in/about that context
3. An acceptability judgment for that utterance in that context

12.

The first sort of task to include is one aimed at getting a first idea of what the available morphology is for modal expressions in the language.

Step 1: Present a context targeting a particular modal flavor/force combination (in the metalanguage)

Step 2: Present a target sentence (in the metalanguage)²

Step 3: Ask for a translation of that sentence appropriate to the context

Repeat for a wide variety of contexts and modal sentences

Result: A preliminary list of the ways of expressing modality in the language

13.

In a follow-up, the translated sentences are paired with new contexts

Step 1: Make new contexts targeting other force/flavor combinations (or reuse the ones you can)

Step 2: Pair previously-translated sentences with new contexts

Step 3: Ask whether the sentence is acceptable and true in the new context

Repeat for each modal item across every possible kind of modal context

Result: Paradigms for each modal expression and the sorts of uses it can and cannot express

14.

Even then, it takes additional, theoretically-informed follow-up to find the points of interest in a language's modal system³

Meanings tend to be idiosyncratic, and it's impossible to discover them without extra digging

That said, questionnaires like the one developed by Vander Klok (2014) can provide a good first look at the morphology and provide a good foundation for follow-up investigation

3 An example: Kinande

15.

- Five fairly brief questionnaires since July
- Most contexts adapted from Vander Klok (2014)
- Translation and judgment tasks

²See Matthewson (2004) for discussion of whether presenting contexts and sentences in a metalanguage is likely to interfere with the interpretation of the target language

³Matthewson (2013)

16.

Kinande has a few different modal expressions of interest, but in particular there is a modal prefix *-anga-* that shows variable force

However, Kinande also has a fixed-force strong modal, *eripaswa*

As a result, the organization of Kinande’s modal system is different from the ones described earlier

17.

Eripaswa is a strong necessity modal borrowed from Swahili. It can be used in contexts where there is certainty, or obligation:

- (6) **Context:** Kambale regularly eats dinner at Swera’s restaurant. He never misses a day, even when he is sick. It’s not obligatory for Kambale, he just goes for dinner there every day. It’s dinner time now, so...

(Certainty/Epistemic necessity)

Kámbale a-na-**pásw**-a e-ri-byá é-yi-ry’ e-restorá ya Swera
 Kambale 3sg-NA-**must**-fv inf-inf-be RC-c9-assoc? loc-restaurant of Swera

‘Kambale must be at Swera’s restaurant.’

18.

But *eripaswa* is not acceptable in possibility contexts:

- (7) **Context:** Kambale’s parents told him that he is not allowed to go see his friend in Kibangya because it is too far away. You know that Kambale is leaving Kampala next week, but you don’t know where he will go. Kambale is a daring type of guy that often does things that he is not permitted to do. You think:

(Potential/epistemic possibility)

Kámbale a-na-**pasw**-a e-ri-genda e-Kibángya
 Kambale 3sg-NA-**must**-fv inf-inf-go loc-Kibangya

Intended: ‘Kambale may go to Kibangya.’

19.

	Epistemic	Deontic	Circumstantial	Teleological
Possibility	#	# ?		
Weak necessity				
Strong necessity	ok	ok		ok

Table 2: Summary of contexts for *eripaswa*

20.

-anga-, other hand, is a prefix that at first glance seems to be a possibility modal:

- (8) **Context:** Kambale’s parents told him that he is not allowed to go see his friend in Kibangya because it is too far away. You know that Kambale is leaving Kampala next week, but you don’t know where he will go. Kambale is a daring type of guy that often does things that he is not permitted to do. You think:

(Potential/epistemic possibility)

Kámbele a-**anga**-na-génd’ e-Kibángya
 Kambale 3sg-MOD-NA-go loc-Kibangya

‘Kambale might go to Kibangya.’

21.

But *-anga-* is also allowed in weak necessity contexts:

- (9) **Context:** Kábunga is not a consistent student, and often skips class on Wednesdays, but he is usually there on Mondays. Today is Monday, and so the professor isn’t entirely sure whether Kábunga will show up, but since it’s Monday and Kábunga is relatively consistent on Mondays, he thinks Kábunga will probably be there..

(Probable/epistemic weak necessity)

Kábunga a-**anga**-ná-sya oko kalhásí kó munábwire
 Kábunga SM.c1-TM-MOD-NA-come LOC class LNK today

‘Kábunga should be coming to class today’

22.

	Epistemic	Deontic	Circumstantial	Teleological
Possibility	ok	ok	ok	ok
Weak necessity	ok	ok	ok	ok
Strong necessity	*?	#	#	#

Table 3: Summary of contexts for *-anga-*

23.

St’at’imcets and the other languages from before only seemed to have variable modals, no fixed ones Kinande has at least one of each, calling into question analyses that rely on the lack of competition among modal expressions

These findings promise interesting future results, but clearly much more work is needed, in Kinande and other languages

24.

Questions for further investigation:

- How does *-anga-* interact with tense, aspect, and negation?
- Is *eripaswa* also compatible with weak necessity contexts?

- How (else) does this system differentiate itself from other modal systems?
- What does that tell us about modality as a whole?

And what could we find in other languages, too?

4 Wrapping up

25.

Storing semantic data means storing contextual data as well, on top of the grammatical judgment for the sentence

The text of the context itself (as well as the judgment for that sentence in that context) can be stored in the further details, but for searchability the context should also be categorized according to the force and flavor they target.

Luckily, the changes in the backend should readily extend to any other semantic or context-requiring projects Afranaph might decide to undertake in the future

26.

To sum up:

- Obtaining semantic data on modals across languages of Africa would make great inroads into a theoretically important but severely understudied area
- Questionnaires are a good place to start, but will need extensive follow-up to get the full data paradigm
- We saw from preliminary Kinande findings that this sort of approach can result in some interesting and important findings for linguistic theory
- All of which promises fruitful future work in the area

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